



PROTEZIONE CIVILE
 Presidenza del Consiglio dei Ministri
 Dipartimento della Protezione Civile



CONFERENZA DELLE REGIONI E
 DELLE PROVINCE AUTONOME

Attuazione dell'articolo 11 della legge 24 giugno 2009, n.77

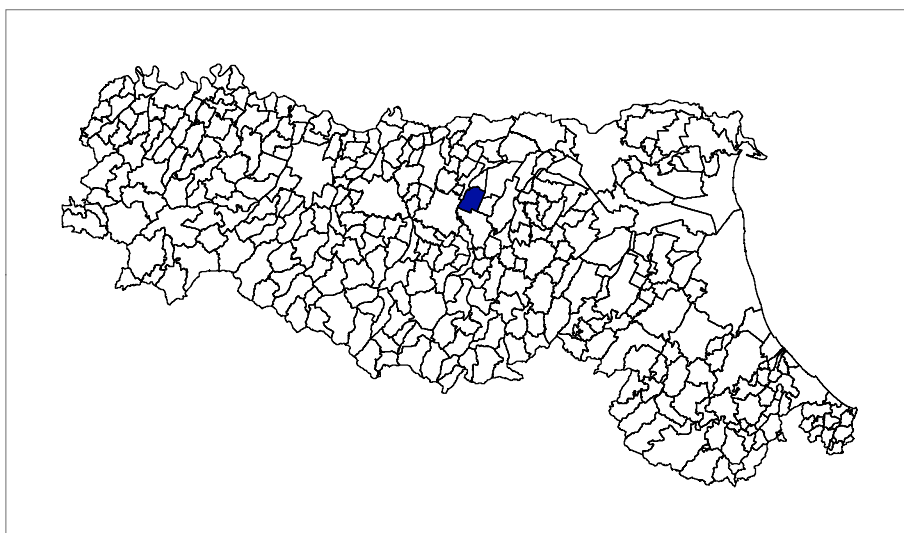
MICROZONAZIONE SISMICA

QUADRO CONOSCITIVO PSC 2013

INDAGINI GEOGNOSTICHE E GEOFISICHE

Regione Emilia-Romagna

Comune di Nonantola



Regione
 Emilia Romagna

Studio realizzato con il contributo di cui all'OPCM 4007/2012.

Coordinamento della Regione Emilia-Romagna - Servizio Geologico Luca Martelli

Coordinamento della Provincia di Modena - Servizio Urbanistica e SIT Antonella Manicardi

Soggetto realizzatore
 Studio Geologico CENTROGEO

Progetto:

Gian Pietro Mazzetti

Collaboratori:

Stefano Gilli, Andrea Arbizzi, Mauro Mazzetti

ELaborazioni GIS:

Studio Benaglia
 Professionisti Associati
 Corrado Ugoletti

Amministrazione comunale

Sindaco:

Pier Paolo Borsari

Direttore

Area Tecnica:

Antonella Barbara Munari

Data

Maggio 2014

INDAGINI DI NUOVA ESECUZIONE

STUDIO GEOLOGICO CENTROGEO

42015 Correggio (RE) - Piazza S. Quirino, 6 - tel 0522/641001 - Fax: 632162

INDAGINI RE.MI. E
RE.MI./MASW

STUDIO GEOLOGICO CENTROGEO

42015 Correggio (RE) - Piazza S.Quirino, 6 - tel 0522/641001 - Fax: 632162

STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

**INDAGINE Re.Mi.
01**

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 29-09-2009

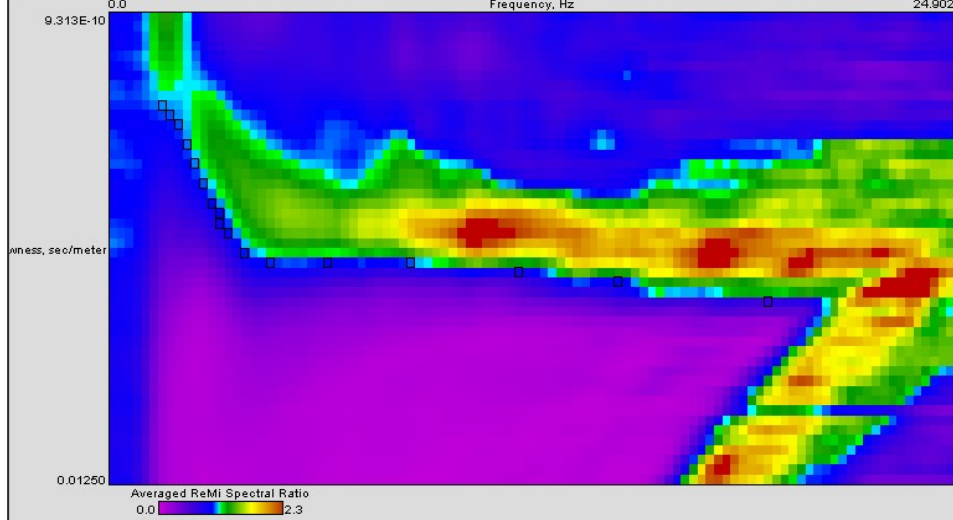
CANTIERE: PSC

QUOTA: m. s.l.m.

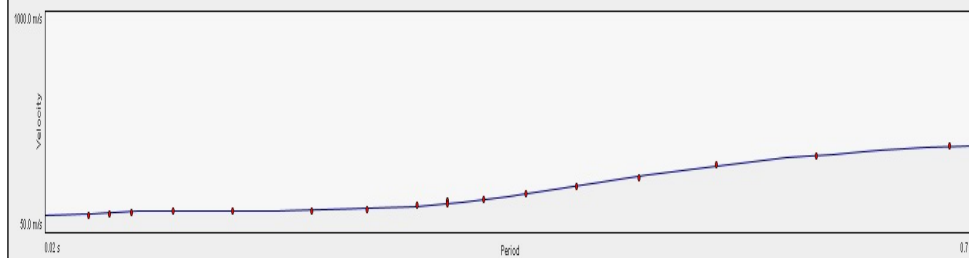
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

V4.0 Vspectr C:\SIS\MC\Anonantola\0109\101.sgy + Step 2, 3, 4, 5 - Planes: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19



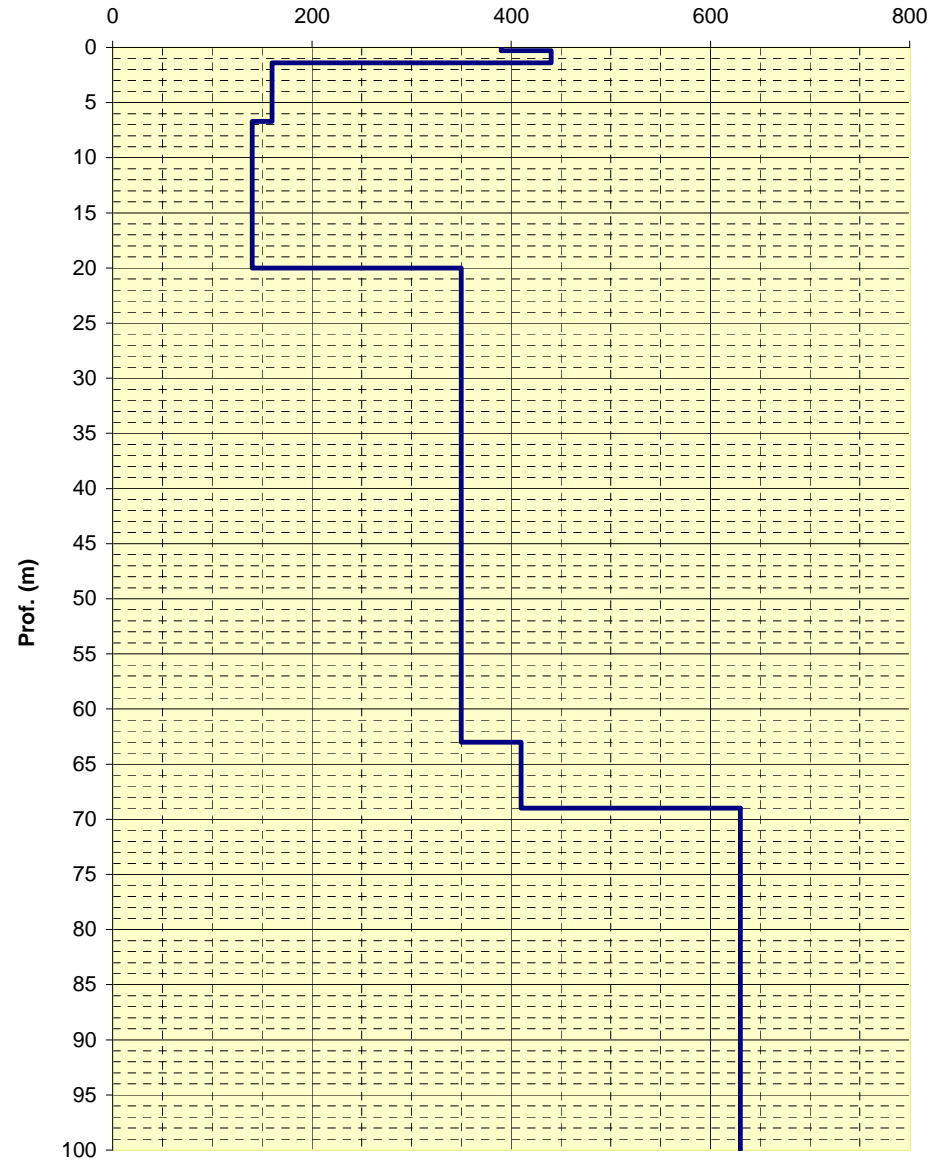
Curva di dispersione



Note:

| Modello interpretativo | | | | |
|------------------------|-----------|-----|------------|----------|
| Strato n° | Prof. (m) | | Spess. (m) | Vs (m/s) |
| 1 | 0 | 0.3 | 0.3 | 390 |
| 2 | 0.3 | 1.4 | 1.1 | 440 |
| 3 | 1.4 | 6.7 | 5.3 | 160 |
| 4 | 6.7 | 20 | 13.3 | 140 |
| 5 | 20 | 63 | 43 | 350 |
| 6 | 63 | 69 | 6 | 410 |
| 7 | 69 | INF | INF | 630 |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |

**Modello interpretativo
profilo Vs (m/s)**



— Vs

STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

**INDAGINE Re.Mi.
02**

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 29-09-2009

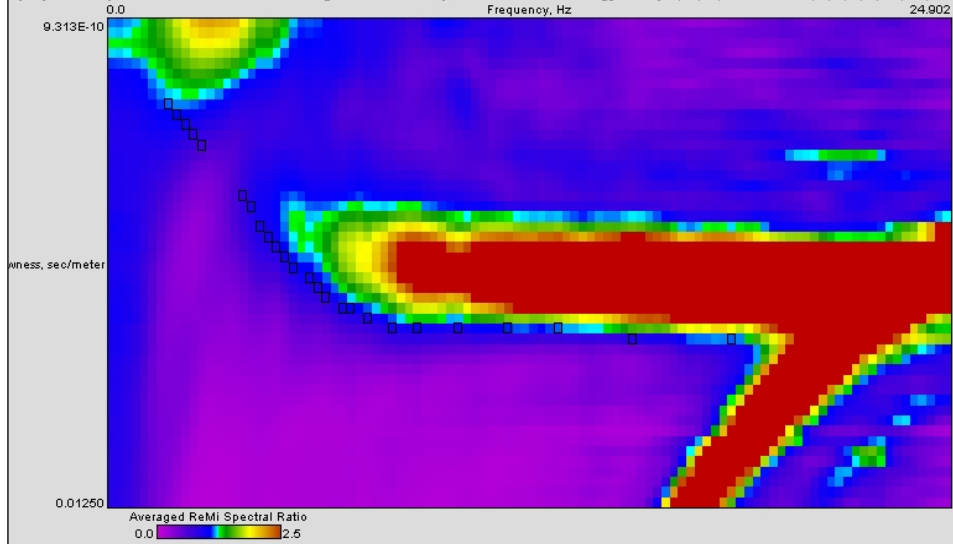
CANTIERE: PSC

QUOTA: m. s.l.m.

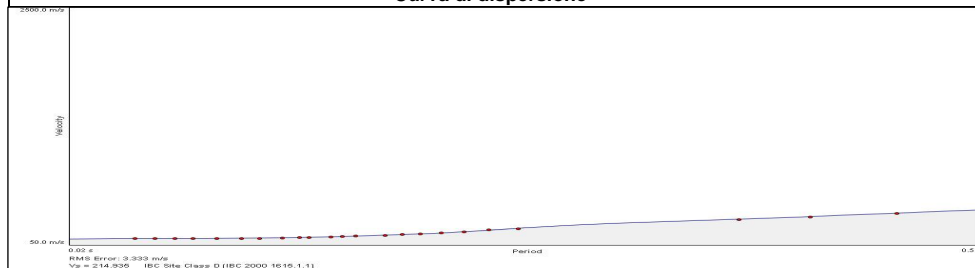
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

Path: C:\Documents and Settings\arnz\Desktop\Nonantola\02\09101.sgy + Step 2, 3, 4, 5 - Planes: 0, 2, 3, 8, 9, 14, 15, 16



Curva di dispersione

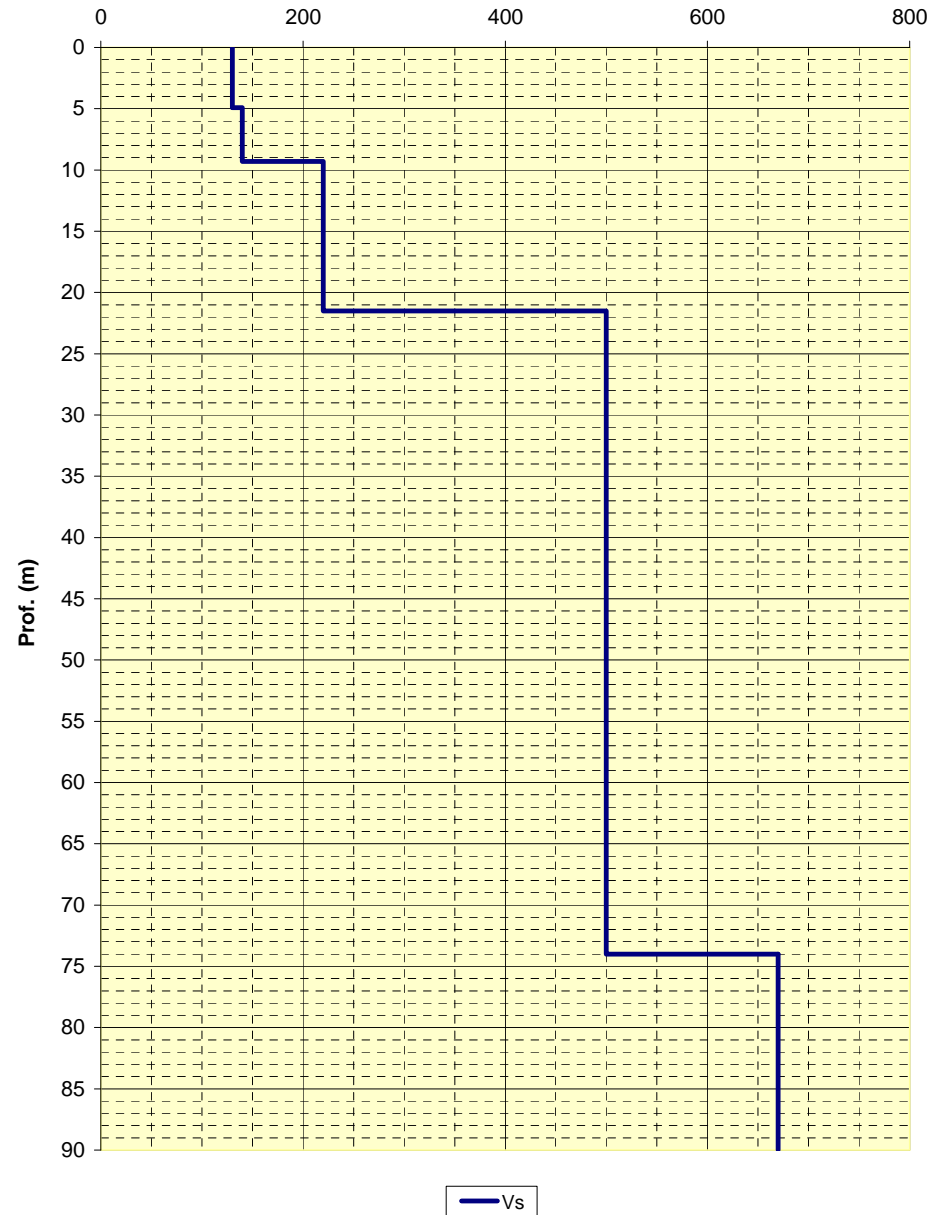


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 4.9 | 130 |
| 2 | 4.9 | 9.3 | 140 |
| 3 | 9.3 | 21.5 | 220 |
| 4 | 21.5 | 74 | 500 |
| 5 | 74 | INF | 670 |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

**Modello interpretativo
profilo Vs (m/s)**



LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 29-09-2009

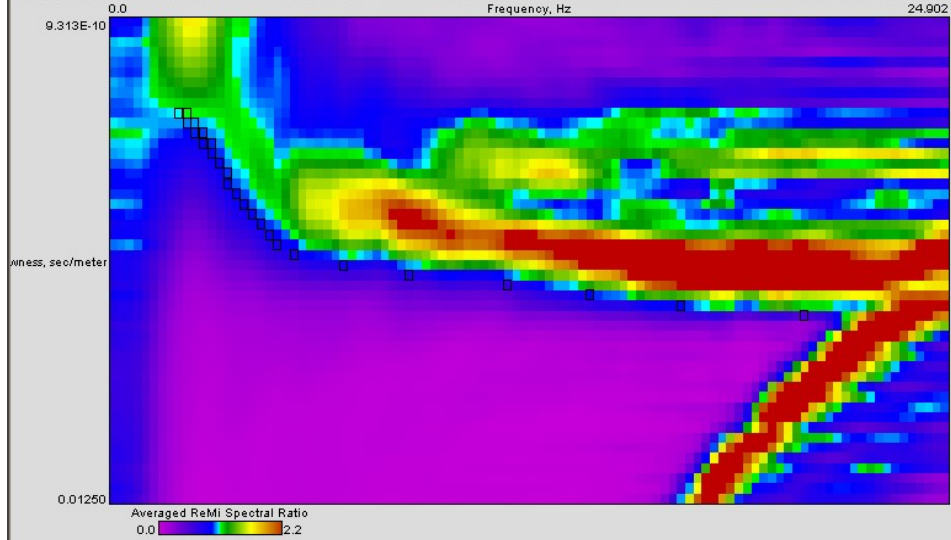
CANTIERE: PSC

QUOTA: m. s.l.m.

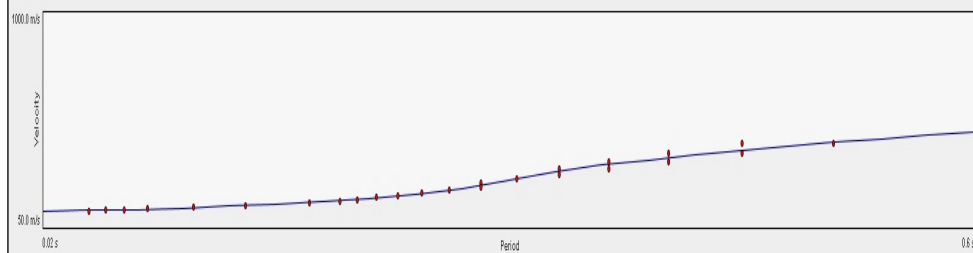
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

V4.0 Vspect C:\SISMICA\Nonantola\0309101.sgy + Step 2, 3, 4, 5 - Planes: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19



Curva di dispersione

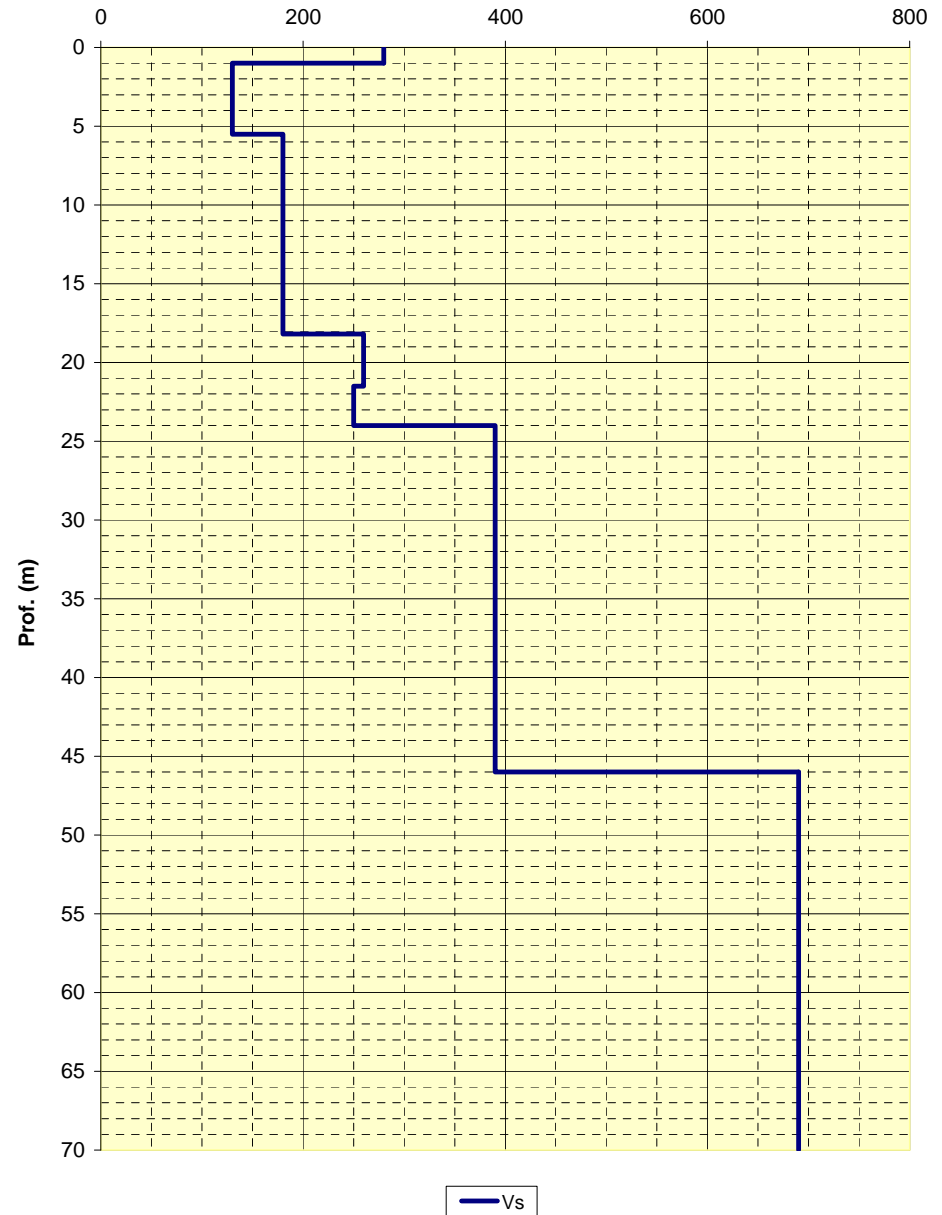


Note:

Modello interpretativo

| Strato n° | Prof. (m) | | Spess. (m) | Vs (m/s) |
|-----------|-----------|------|------------|----------|
| 1 | 0 | 1 | 1 | 280 |
| 2 | 1 | 5.5 | 4.5 | 130 |
| 3 | 5.5 | 18.2 | 12.7 | 180 |
| 4 | 18.2 | 21.5 | 3.3 | 260 |
| 5 | 21.5 | 24 | 2.5 | 250 |
| 6 | 24 | 46 | 22 | 390 |
| 7 | 46 | INF | INF | 690 |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |

Modello interpretativo
profilo Vs (m/s)



LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 29-09-2009

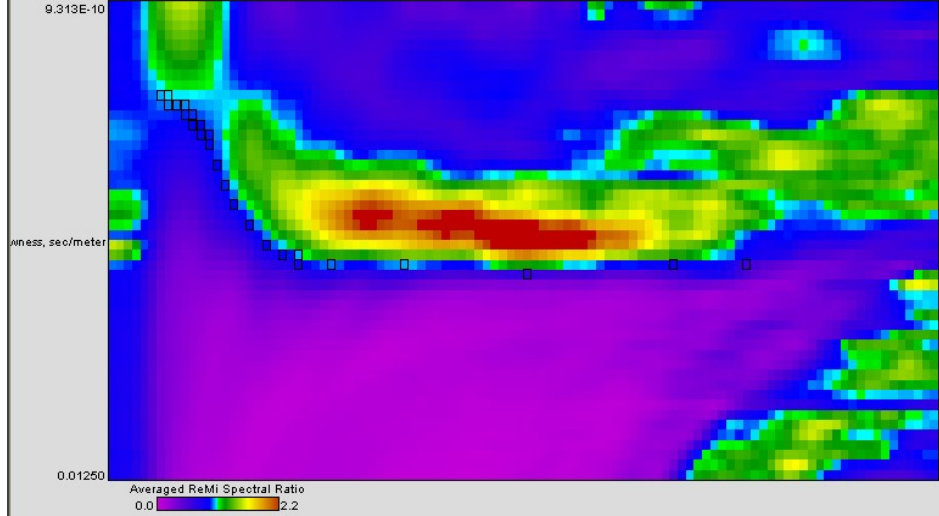
CANTIERE: PSC

QUOTA: m. s.l.m.

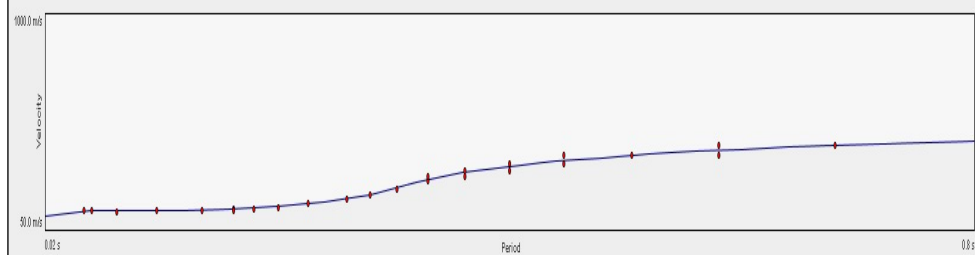
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

V4.0 Vspect C:\SIS\MC\Nonantola\0409\101.sgy + Step 2, 3, 4, 5 - Planes: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
0.0 Frequency, Hz 24.902



Curva di dispersione

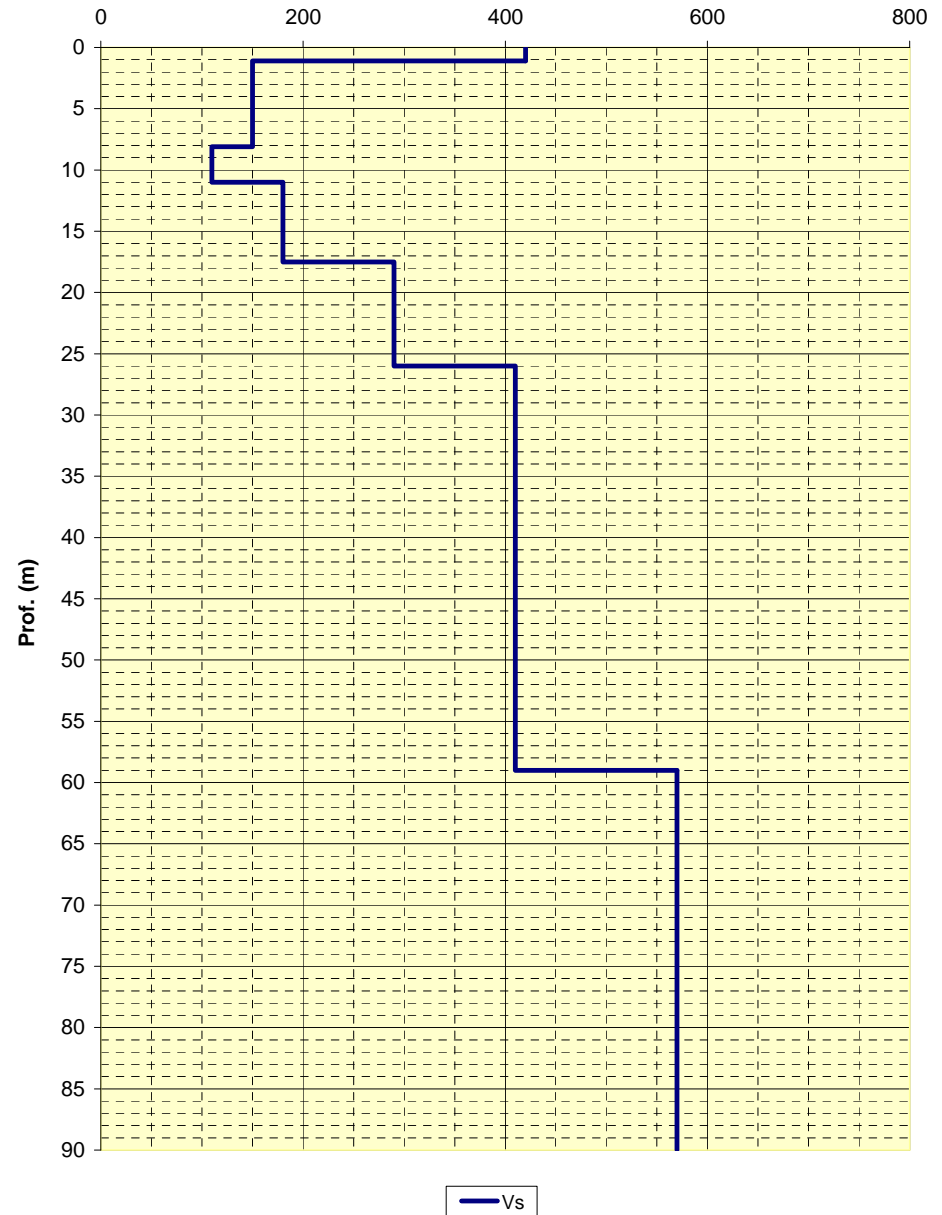


Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 1.1 | 420 |
| 2 | 1.1 | 8.1 | 150 |
| 3 | 8.1 | 11 | 110 |
| 4 | 11 | 17.5 | 180 |
| 5 | 17.5 | 26 | 290 |
| 6 | 26 | 59 | 410 |
| 7 | 59 | INF | 570 |
| 8 | | | |
| 9 | | | |
| 10 | | | |

Note:

Modello interpretativo
profilo Vs (m/s)



— Vs

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 29-09-2009

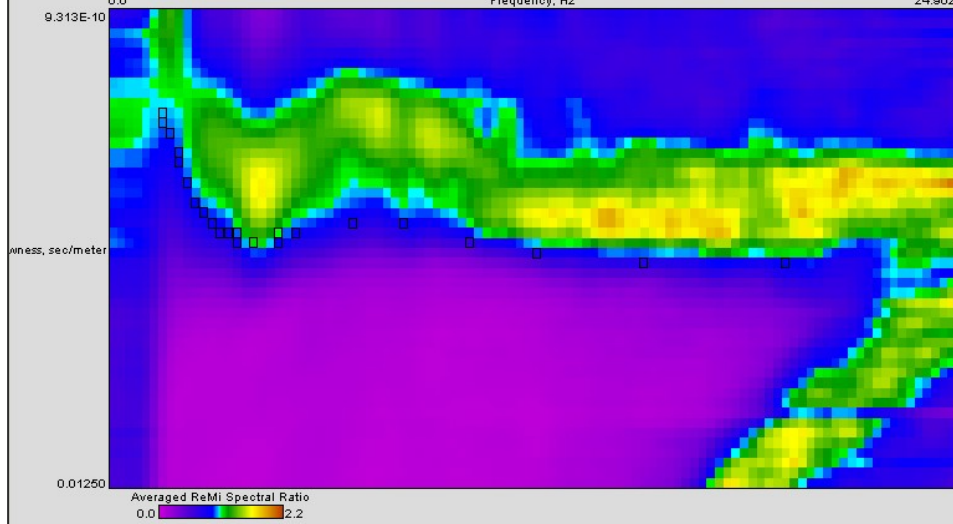
CANTIERE: PSC

QUOTA: m. s.l.m.

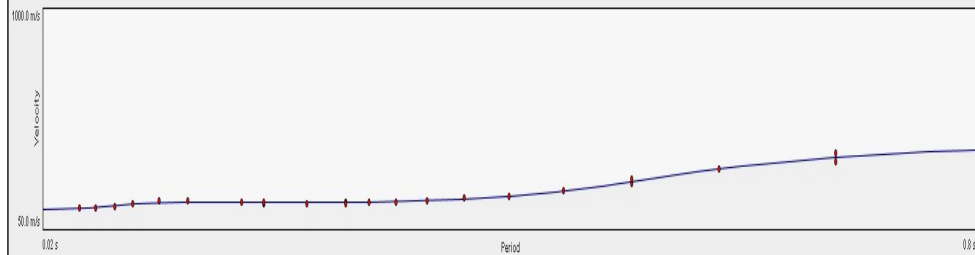
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

V4.0 Vspect C:\SIS\MI\CA\nonantola0509\101.sgy + Step 2, 3, 4, 5 - Planes: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
Frequency, Hz 24.902



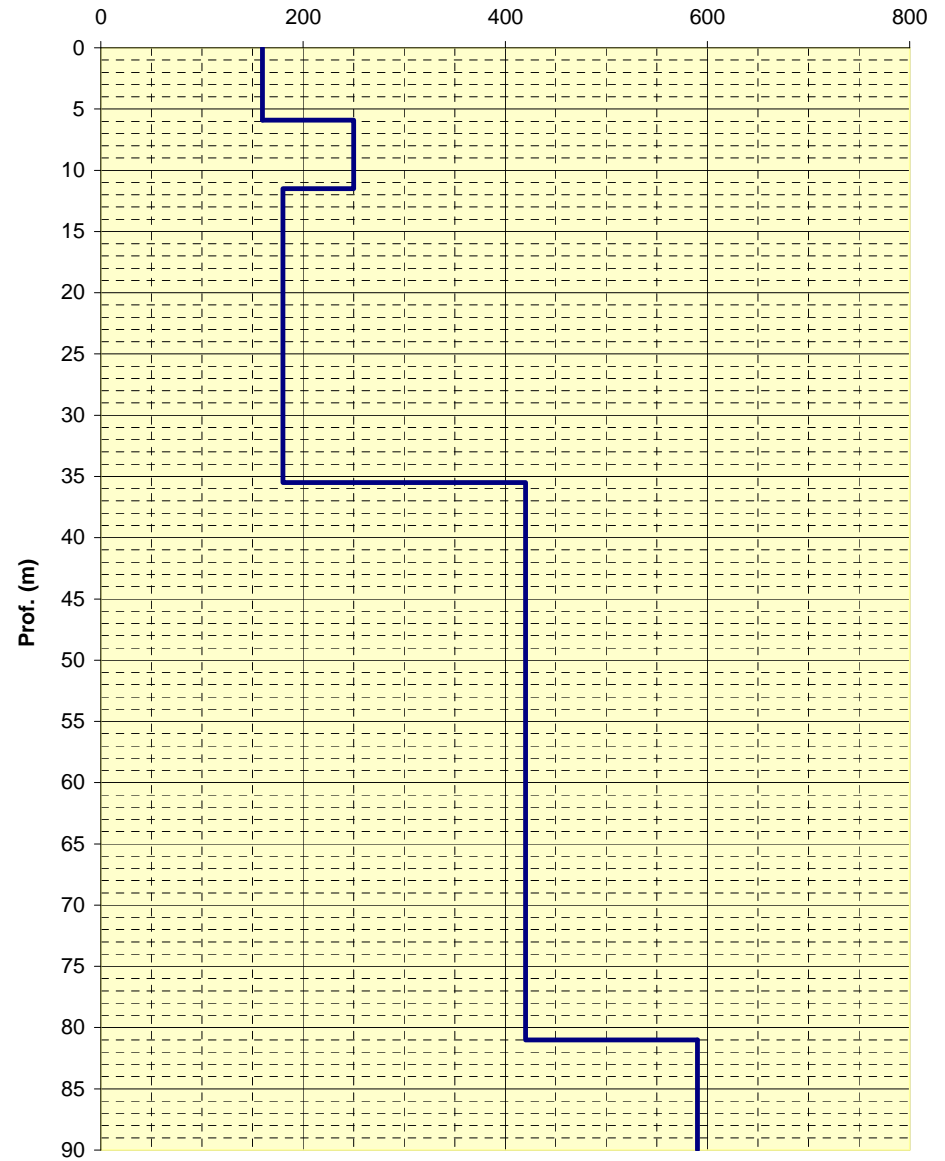
Curva di dispersione



Note:

| Modello interpretativo | | | | |
|------------------------|-----------|------------|----------|-----|
| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) | |
| 1 | 0 | 5.9 | 5.9 | 160 |
| 2 | 5.9 | 11.5 | 5.6 | 250 |
| 3 | 11.5 | 35.5 | 24 | 180 |
| 4 | 35.5 | 81 | 45.5 | 420 |
| 5 | 81 | INF | INF | 590 |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |

**Modello interpretativo
profilo Vs (m/s)**



— Vs

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

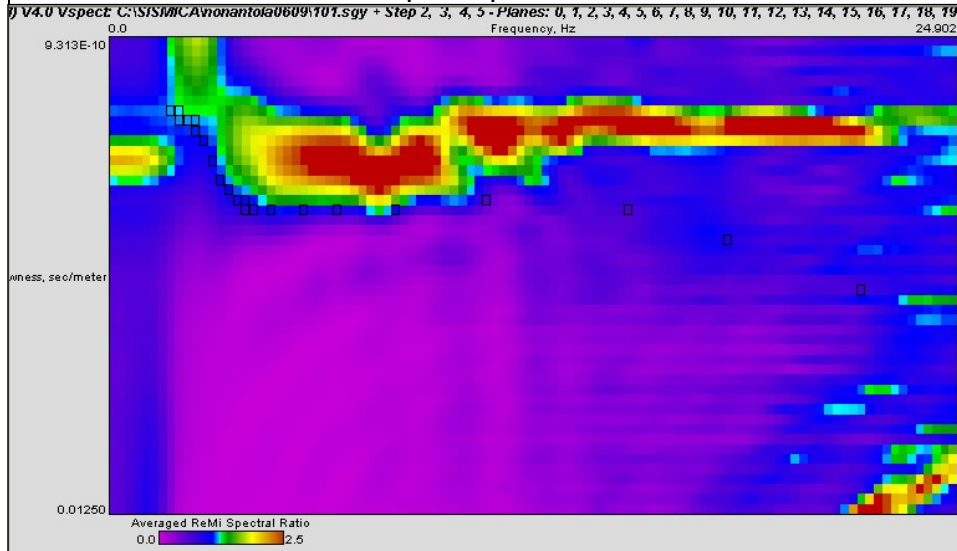
DATA: 29-09-2009

CANTIERE: PSC

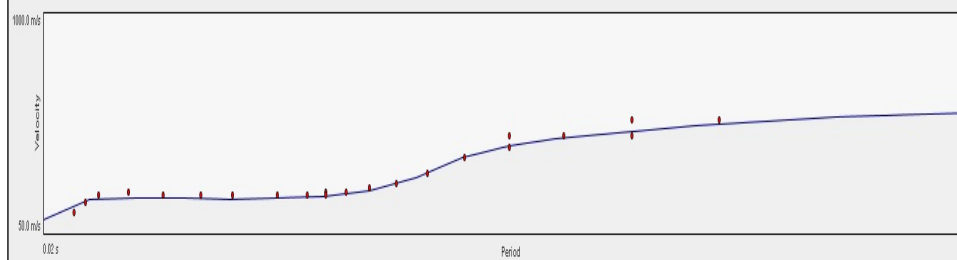
QUOTA: m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza



Curva di dispersione

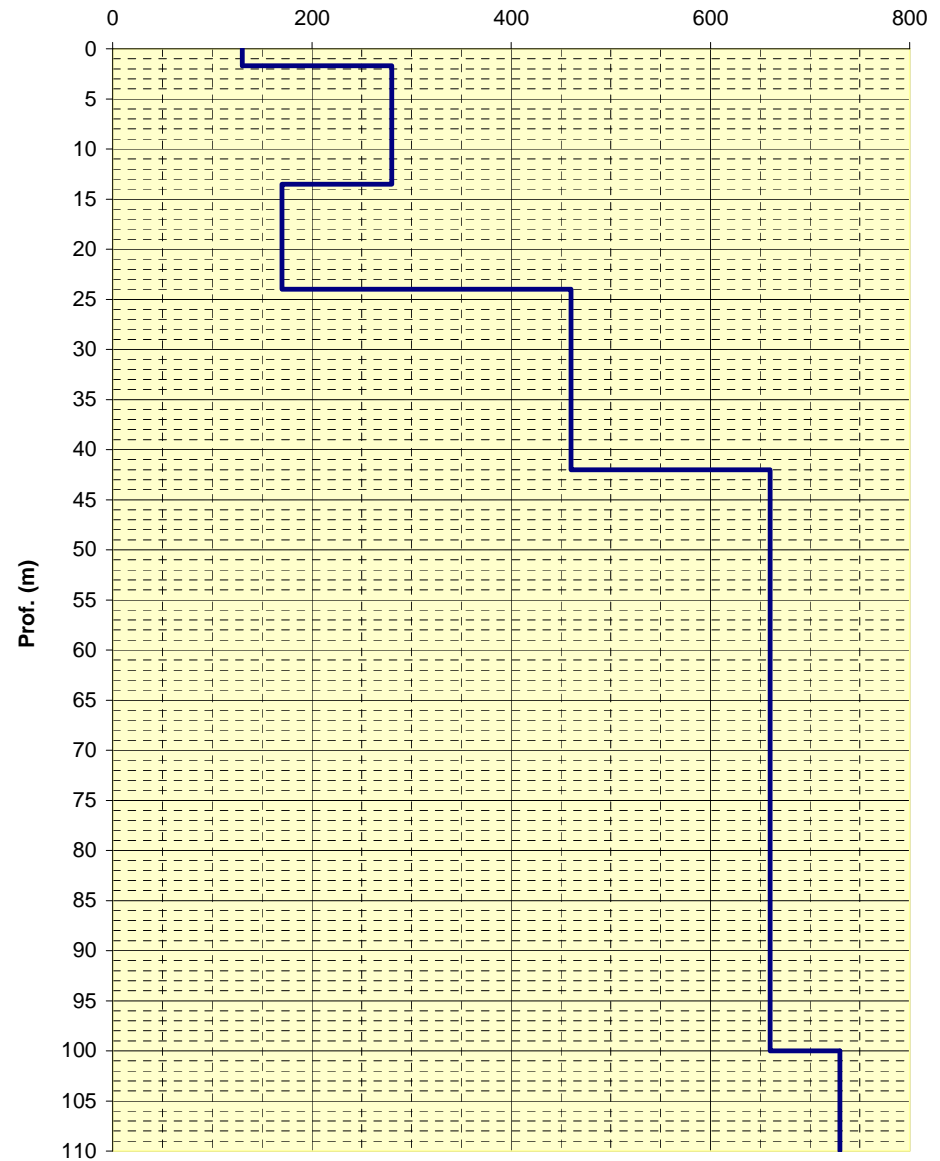


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 1.7 | 130 |
| 2 | 1.7 | 13.5 | 280 |
| 3 | 13.5 | 24 | 170 |
| 4 | 24 | 42 | 460 |
| 5 | 42 | 100 | 660 |
| 6 | 100 | INF | 730 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

**Modello interpretativo
profilo Vs (m/s)**



— Vs

STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

**INDAGINE Re.Mi.
07**

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 30-09-2009

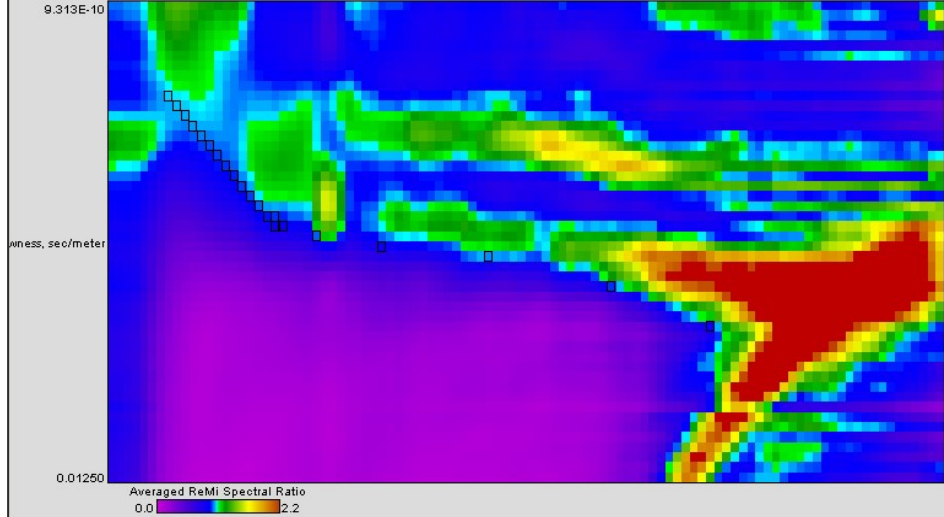
CANTIERE: PSC

QUOTA: m. s.l.m.

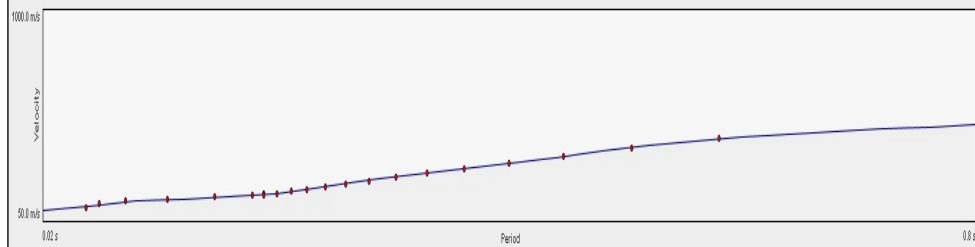
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

EMV (11M) V4.0 Vspect: C:\SIS\MI\CA\nonantola\0109\101.sgy + Step 2, 3, 4, 5 - Planes: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
Frequency, Hz 24,902



Curva di dispersione

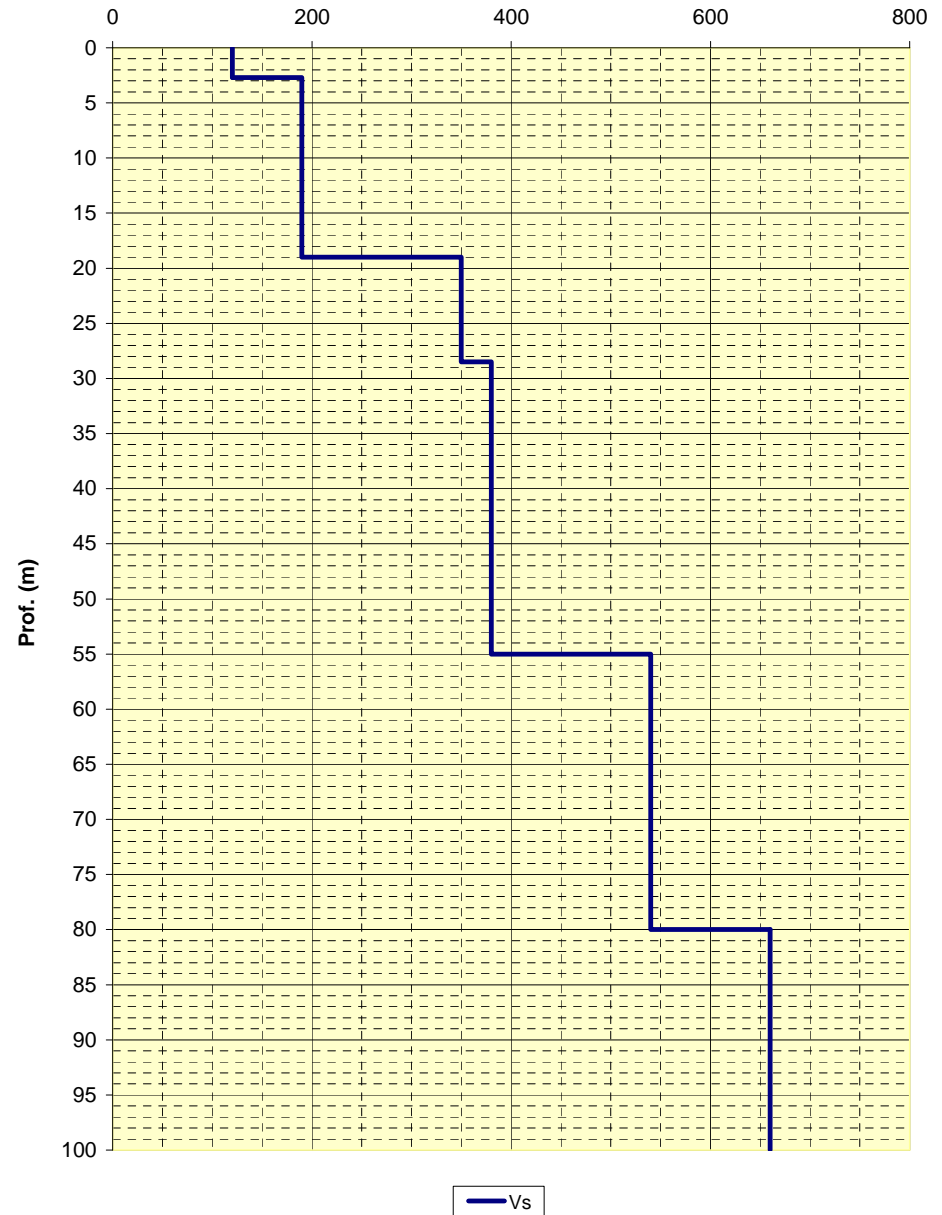


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 2.7 | 120 |
| 2 | 2.7 | 19 | 190 |
| 3 | 19 | 28.5 | 350 |
| 4 | 28.5 | 55 | 380 |
| 5 | 55 | 80 | 540 |
| 6 | 80 | INF | 660 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

**Modello interpretativo
profilo Vs (m/s)**



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

**INDAGINE Re.Mi.
08**

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 30-09-2009

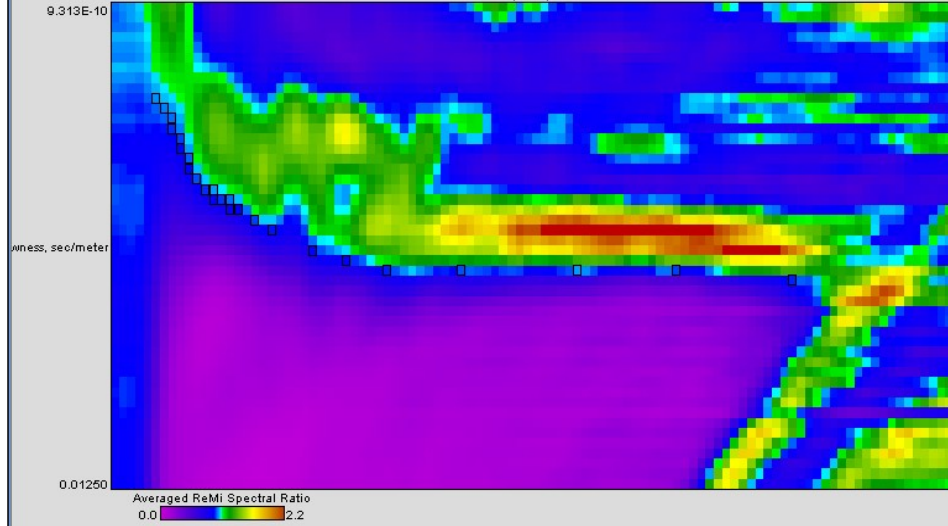
CANTIERE: PSC

QUOTA: m. s.l.m.

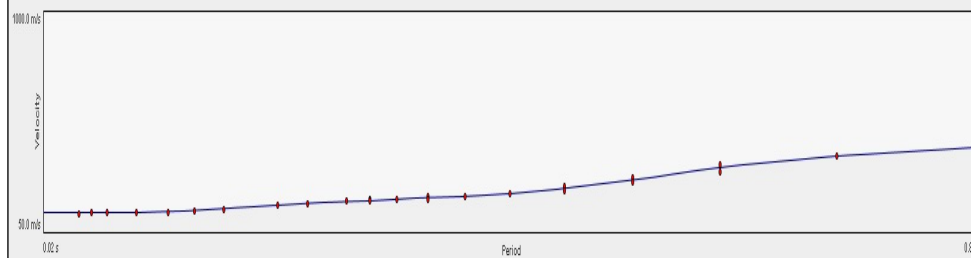
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

V4.0 Vspect: C:\SIS\MC\Nonantola\0809\101.sgy + Step 2, 3, 4, 5 - Planes: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
Frequency, Hz 24.902



Curva di dispersione

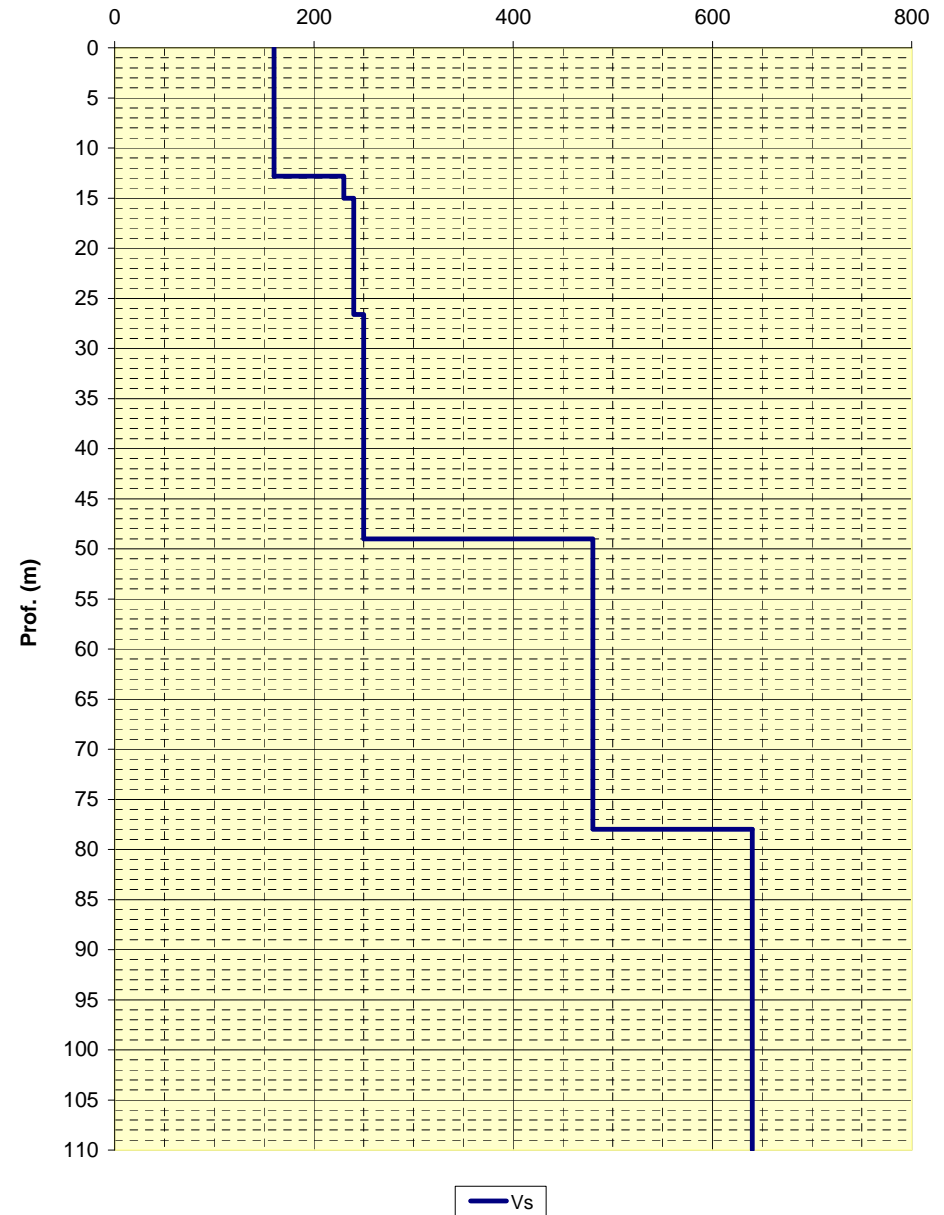


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 12.8 | 12.8 |
| 2 | 12.8 | 15 | 2.2 |
| 3 | 15 | 26.6 | 11.6 |
| 4 | 26.6 | 49 | 22.4 |
| 5 | 49 | 78 | 29 |
| 6 | 78 | INF | INF |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

**Modello interpretativo
profilo Vs (m/s)**



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 Correggio (RE)

**INDAGINE Re.Mi.
09**

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 30-09-2009

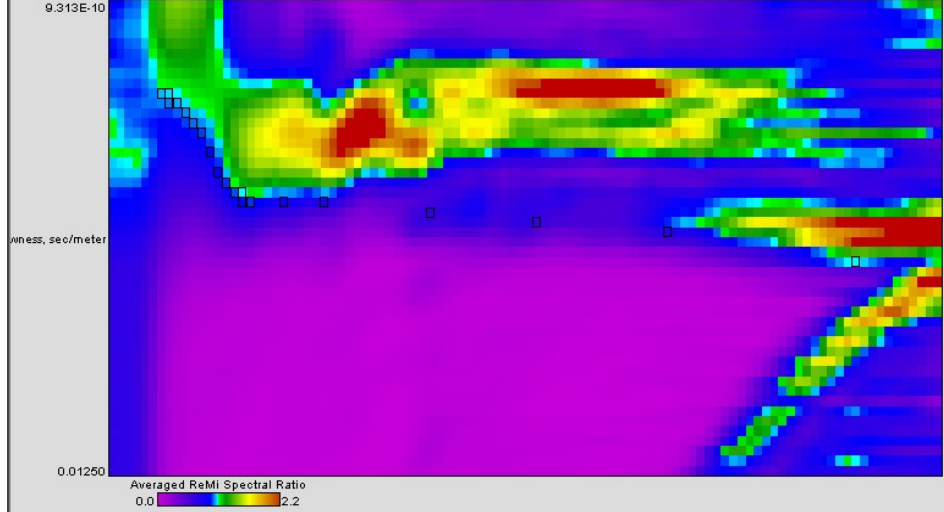
CANTIERE: POC

QUOTA: m. s.l.m.

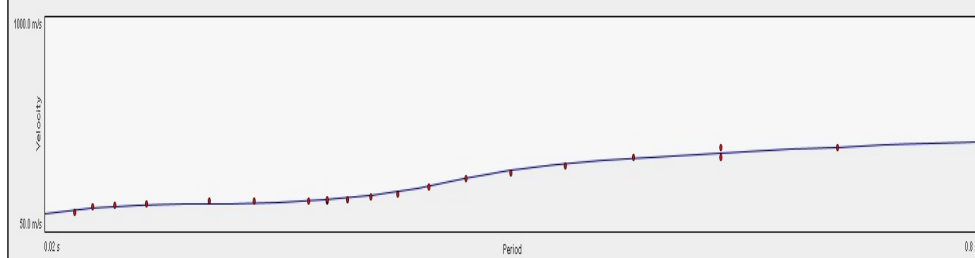
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

V4.0 Vspectr C:\SIS\MC\Nonantola\0909\101.sgy + Step 2, 3, 4, 5 - Planes: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
Frequency, Hz 24.902



Curva di dispersione

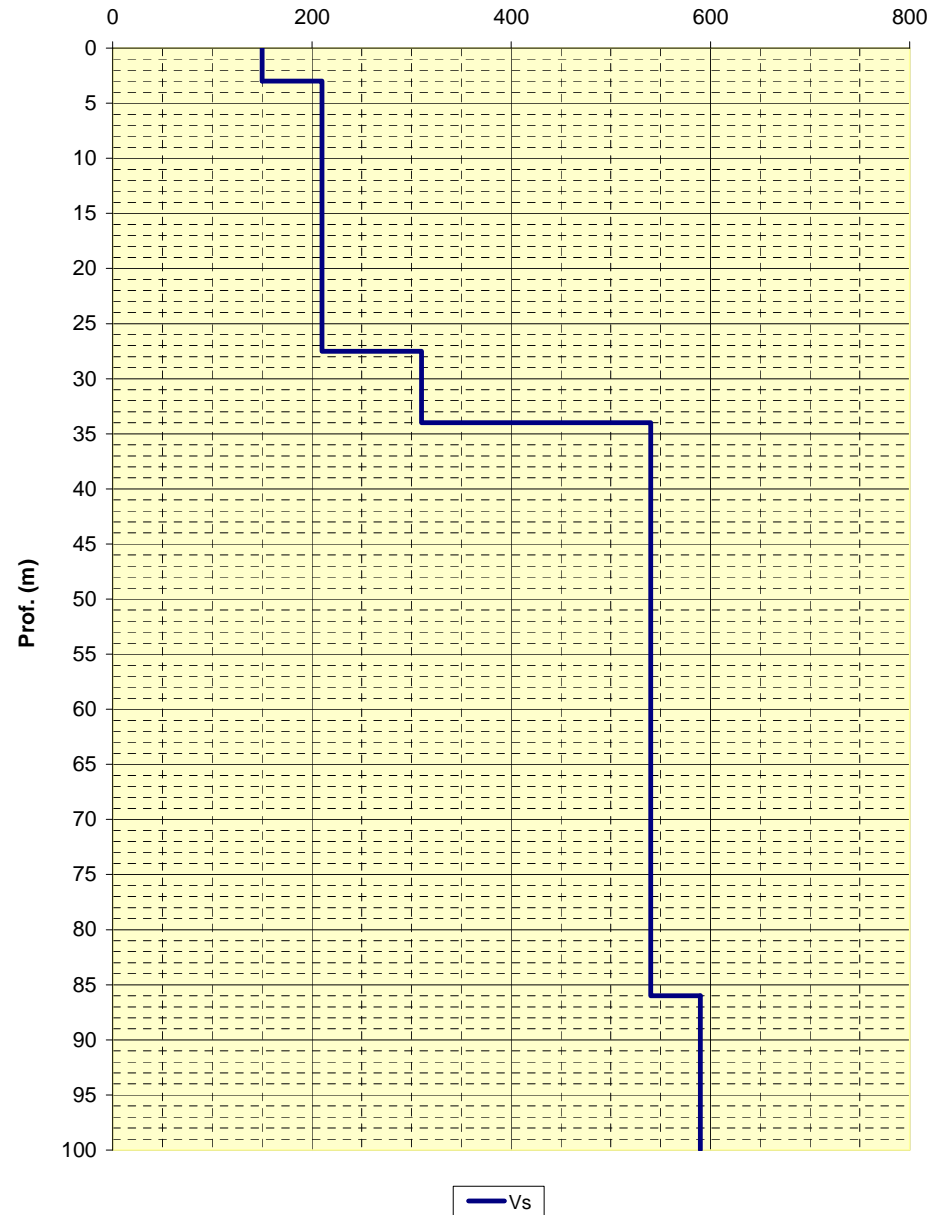


Modello interpretativo

| Strato n° | Prof. (m) | | Spess. (m) | Vs (m/s) |
|-----------|-----------|------|------------|----------|
| 1 | 0 | 3 | 3 | 150 |
| 2 | 3 | 27.5 | 24.5 | 210 |
| 3 | 27.5 | 34 | 6.5 | 310 |
| 4 | 34 | 86 | 52 | 540 |
| 5 | 86 | INF | INF | 590 |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |

Note:

**Modello interpretativo
profilo Vs (m/s)**



— Vs

STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 Correggio (RE)

**INDAGINE Re.Mi.
10**

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 30-09-2009

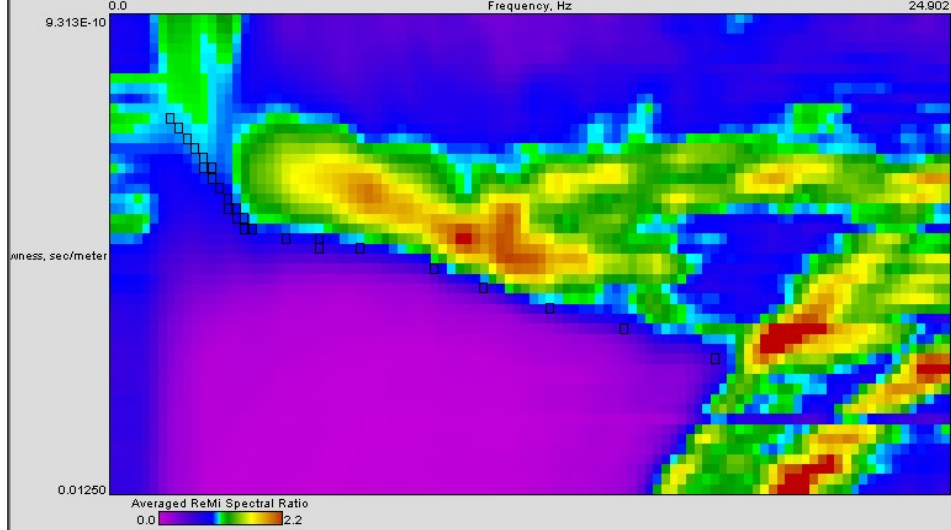
CANTIERE: PSC

QUOTA: m. s.l.m.

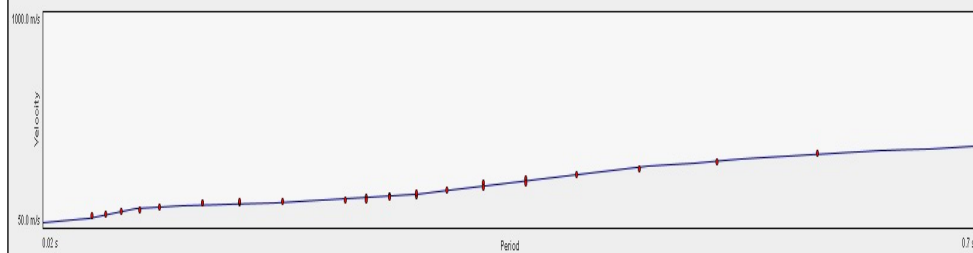
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

0) V4.0 Vspect: C:\SIS\MI\CA\Nonantola\1009\101.sgy + Step 2, 3, 4, 5 - Planes: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19



Curva di dispersione

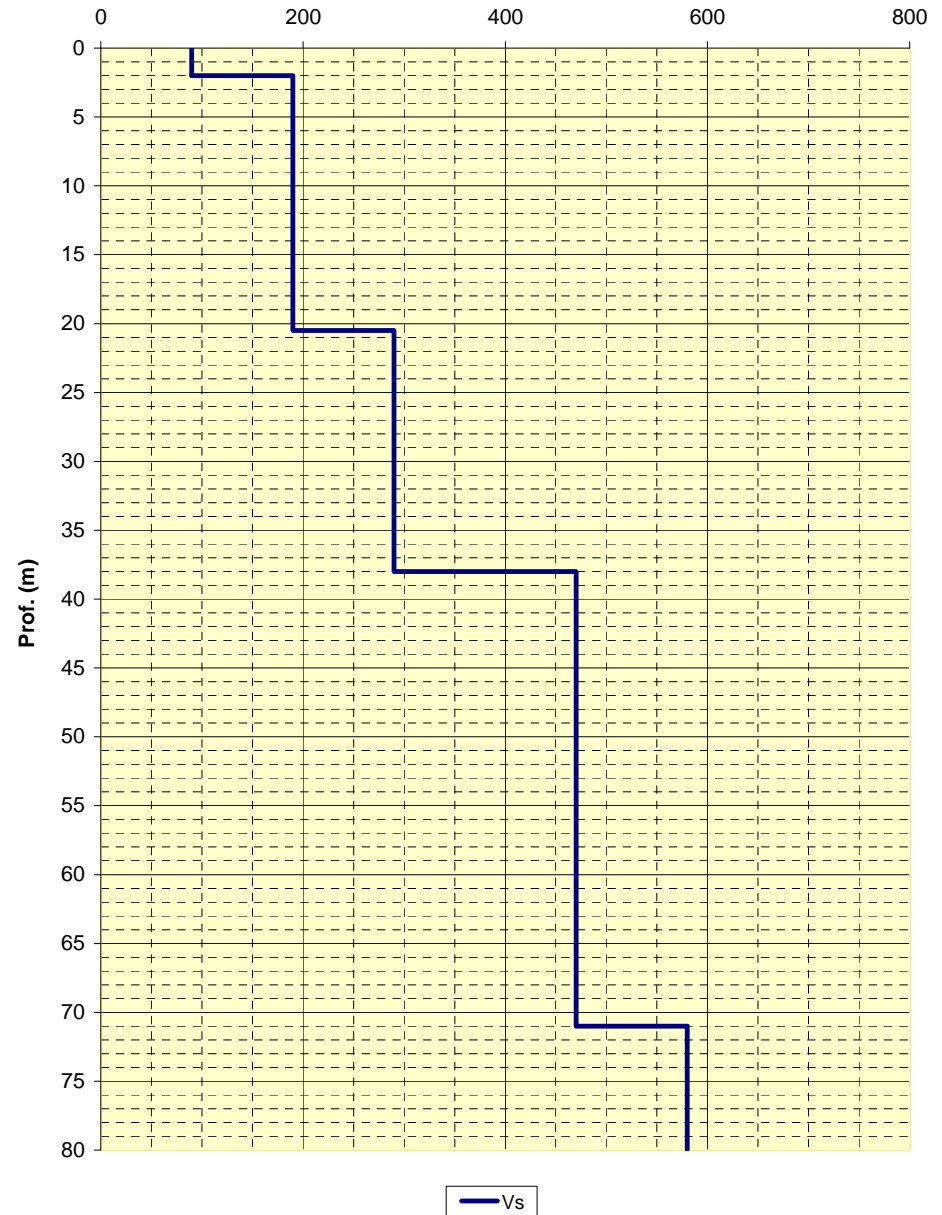


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 2 | 90 |
| 2 | 2 | 20.5 | 190 |
| 3 | 20.5 | 38 | 290 |
| 4 | 38 | 71 | 470 |
| 5 | 71 | INF | 580 |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

**Modello interpretativo
profilo Vs (m/s)**



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

INDAGINE Re.Mi.
11

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 30-09-2009

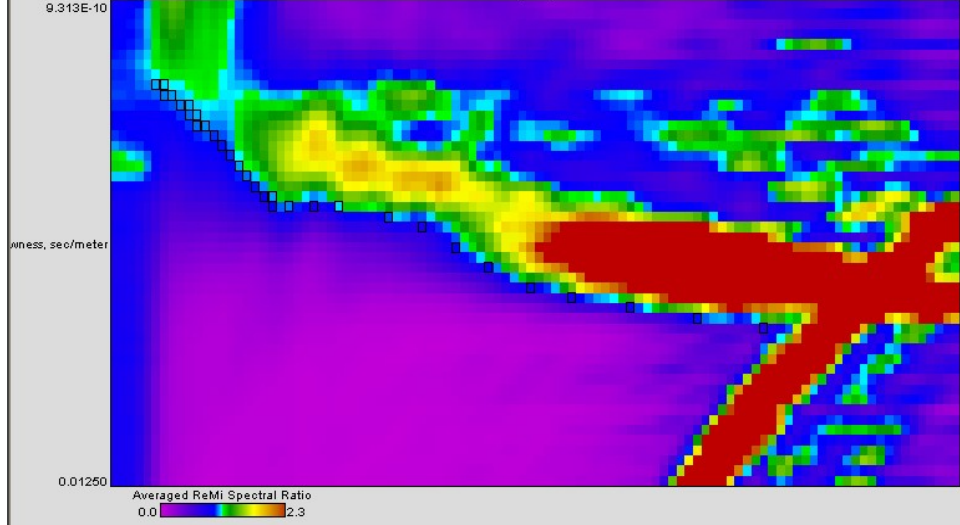
CANTIERE: PSC

QUOTA: m. s.l.m.

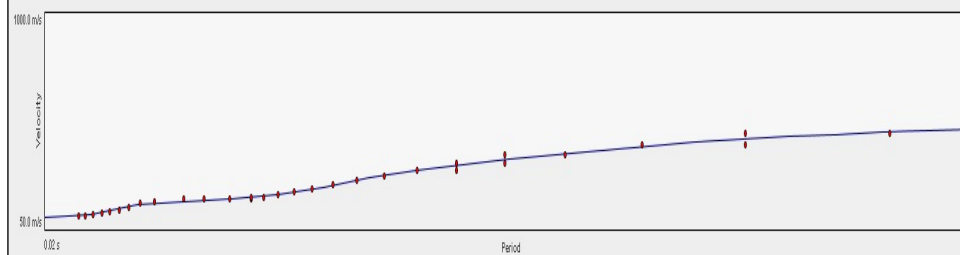
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

f) V4.0 Vspect: C:\ISIS\MIC\Nonantola1109\101.sgy + Step 2, 3, 4, 5 - Planes: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
Frequency, Hz 24.902



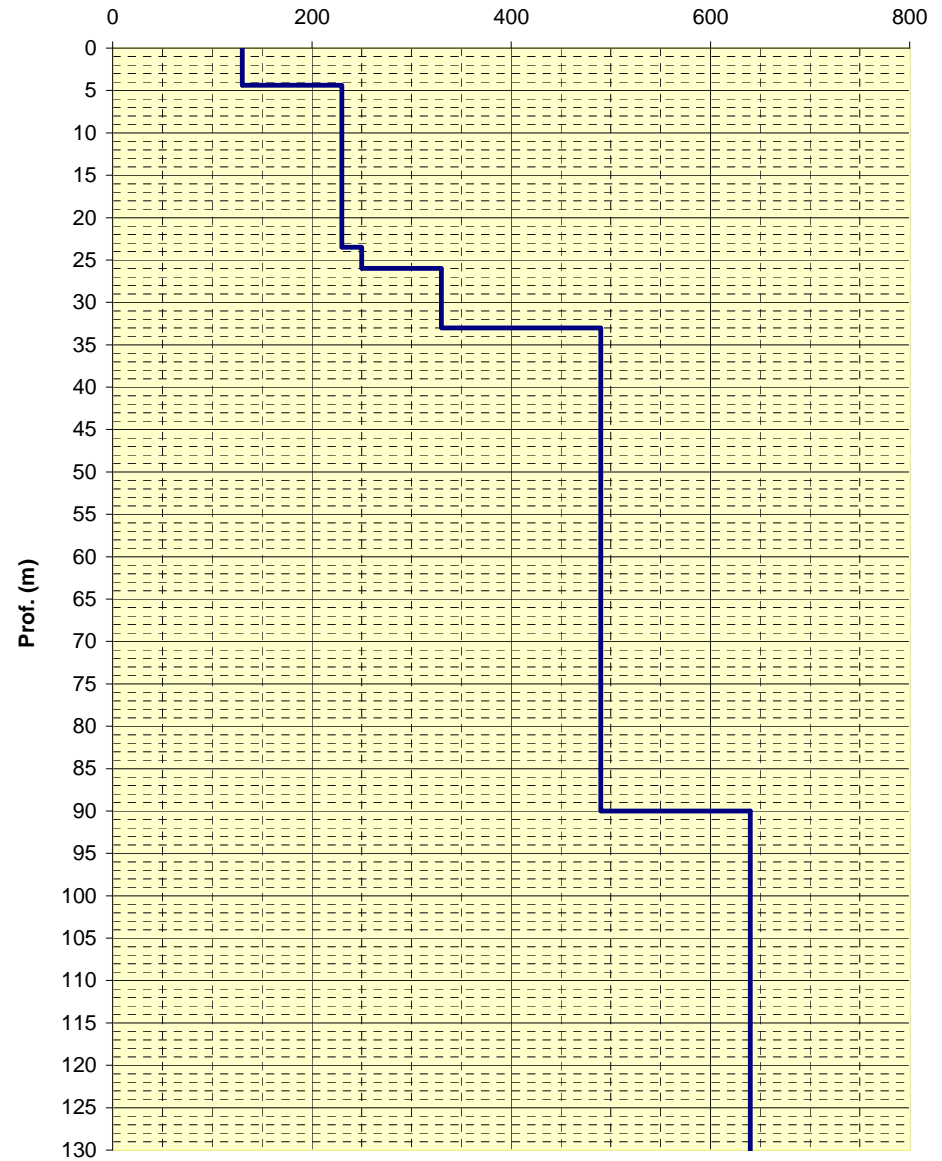
Curva di dispersione



Note:

| Modello interpretativo | | | | |
|------------------------|-----------|------------|----------|-----|
| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) | |
| 1 | 0 | 4.4 | 4.4 | 130 |
| 2 | 4.4 | 23.5 | 19.1 | 230 |
| 3 | 23.5 | 26 | 2.5 | 250 |
| 4 | 26 | 33 | 7 | 330 |
| 5 | 33 | 90 | 57 | 490 |
| 6 | 90 | INF | INF | 640 |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |

Modello interpretativo
profilo Vs (m/s)



— Vs

STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

**INDAGINE Re.Mi.
12**

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

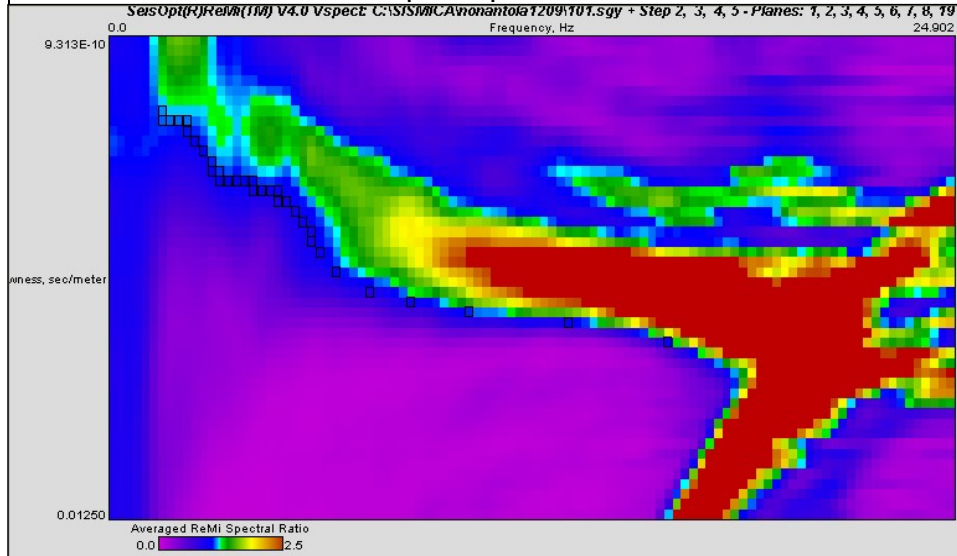
DATA: 30-09-2009

CANTIERE: PSC

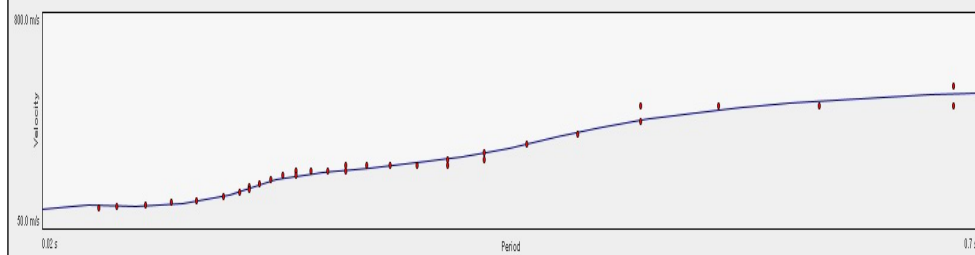
QUOTA: m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza



Curva di dispersione

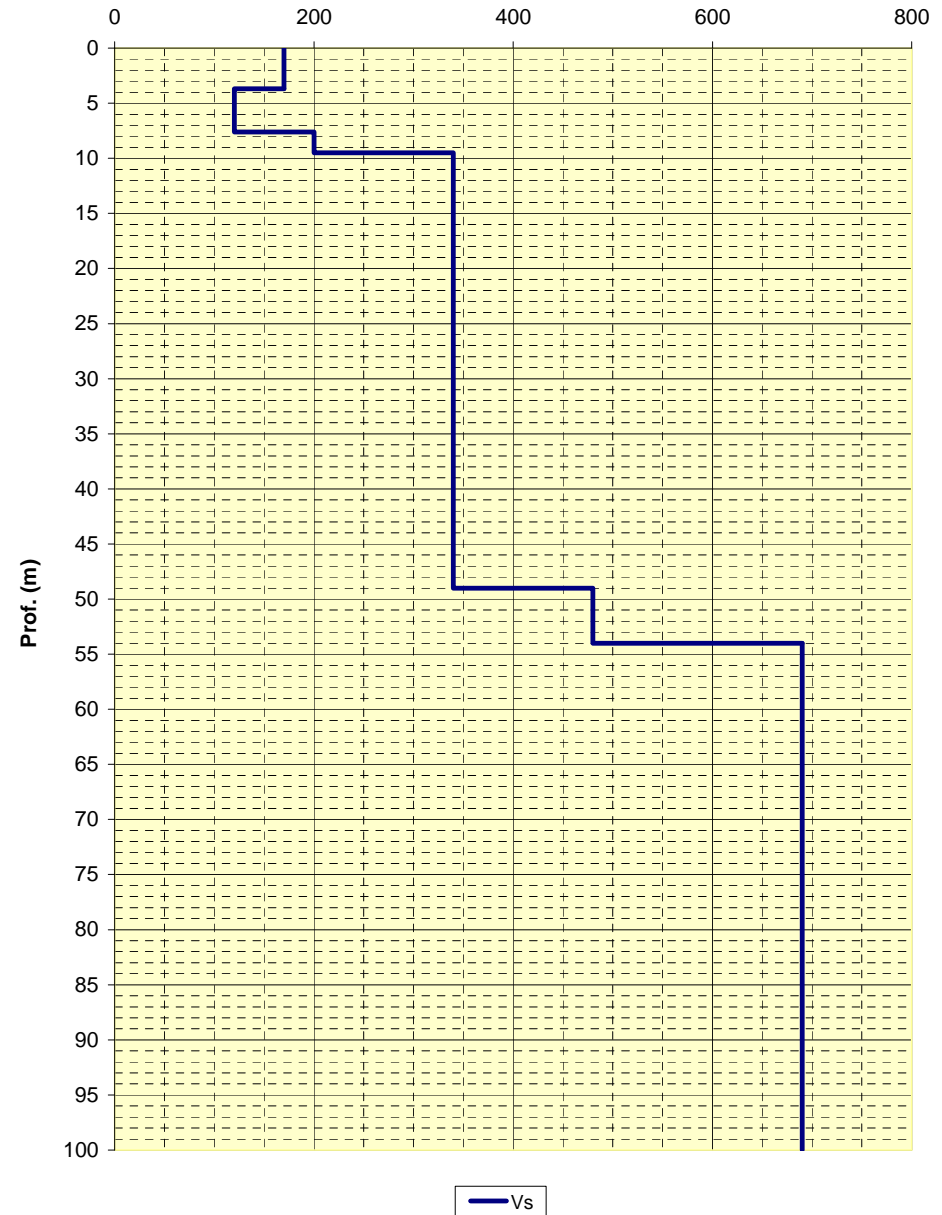


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 3.7 | 170 |
| 2 | 3.7 | 7.6 | 120 |
| 3 | 7.6 | 9.5 | 200 |
| 4 | 9.5 | 49 | 340 |
| 5 | 49 | 54 | 480 |
| 6 | 54 | INF | 690 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

**Modello interpretativo
profilo Vs (m/s)**



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 Correggio (RE)

**INDAGINE Re.Mi.
13**

LOCALITA': Nonantola (MO)

COMMITTENTE: Dott. Geol. V. Franchi

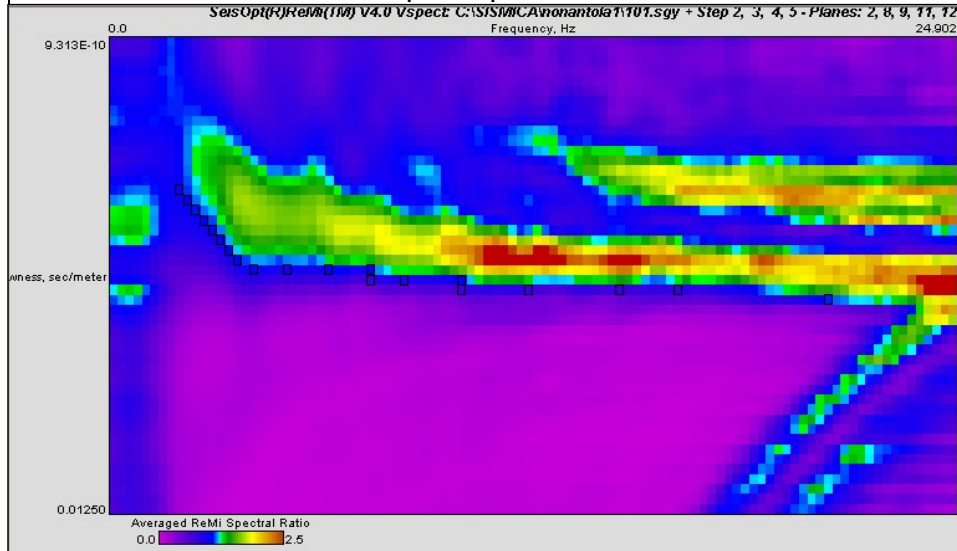
DATA: 24-03-2009

CANTIERE: Area di variante n° 1

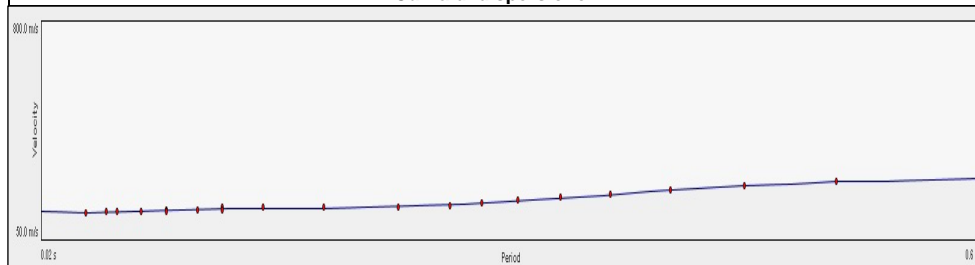
QUOTA: 22,6 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza



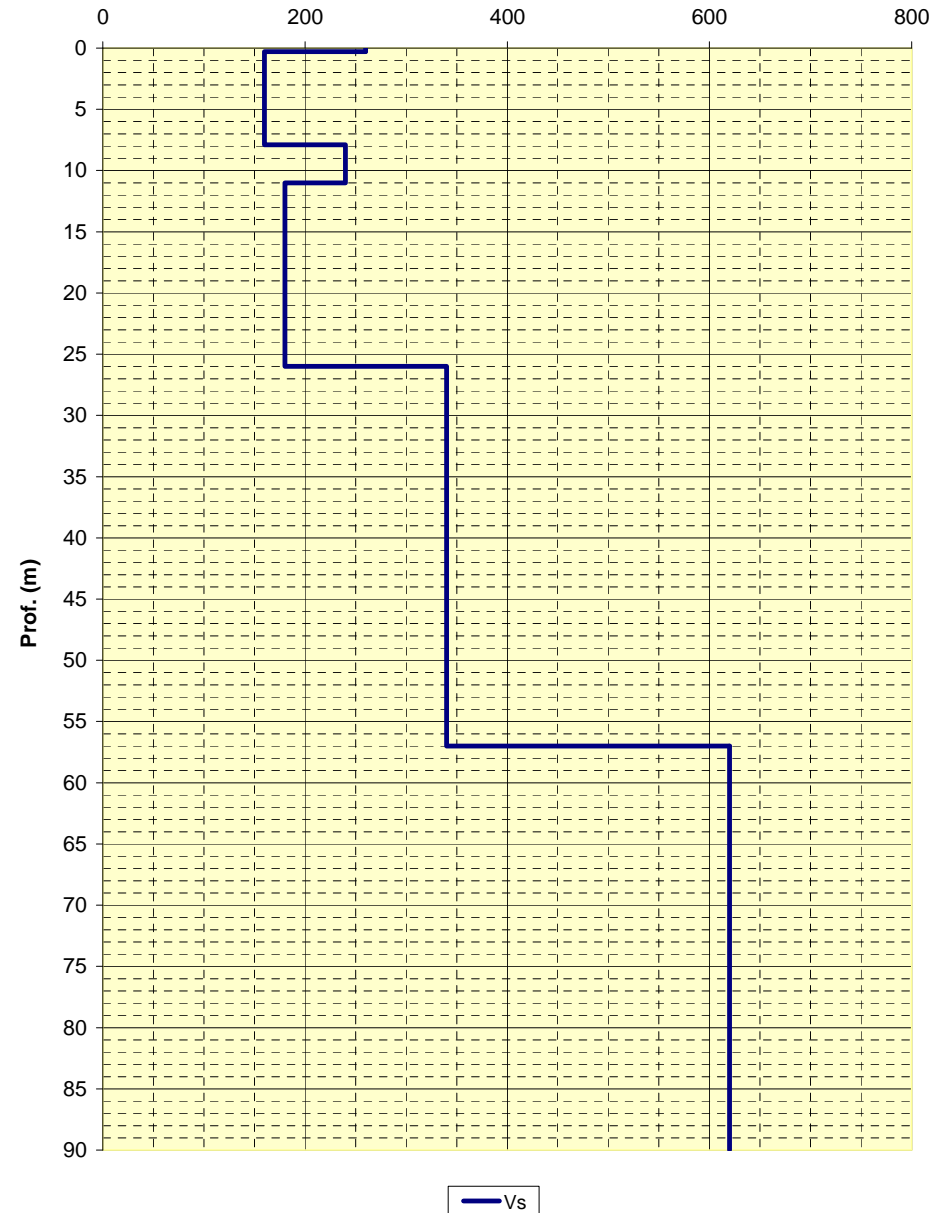
Curva di dispersione



Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 0.3 | 260 |
| 2 | 0.3 | 7.9 | 160 |
| 3 | 7.9 | 11 | 240 |
| 4 | 11 | 26 | 180 |
| 5 | 26 | 57 | 340 |
| 6 | 57 | INF | 620 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

**Modello interpretativo
profilo Vs (m/s)**



LOCALITA': Nonantola (MO)

COMMITTENTE: Dott. Geol. V. Franchi

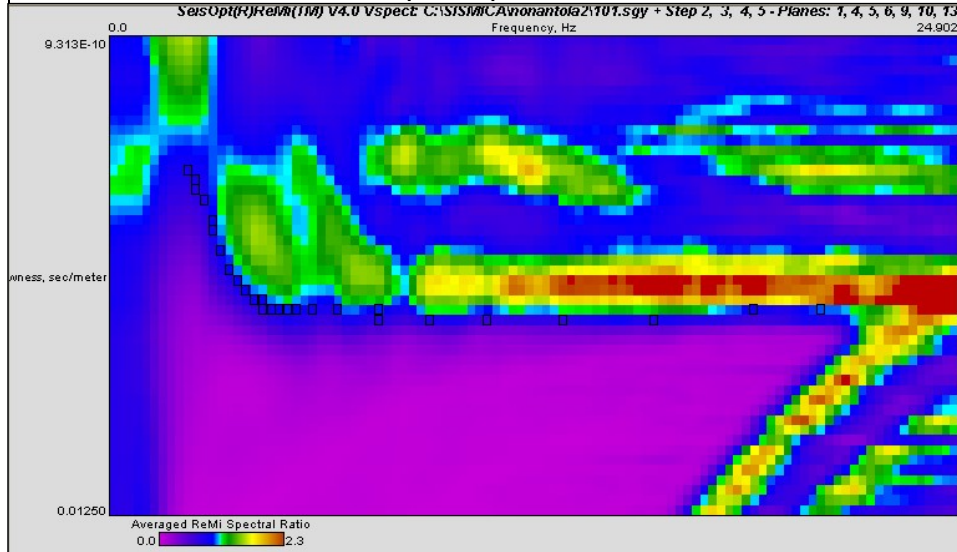
DATA: 24-03-2009

CANTIERE: Area di variante n° 2

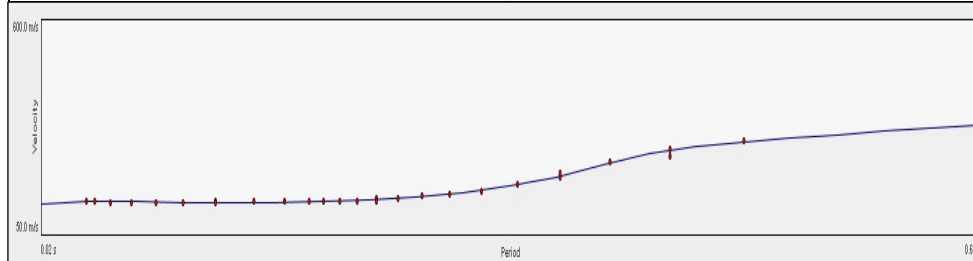
QUOTA: 23,4 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza



Curva di dispersione

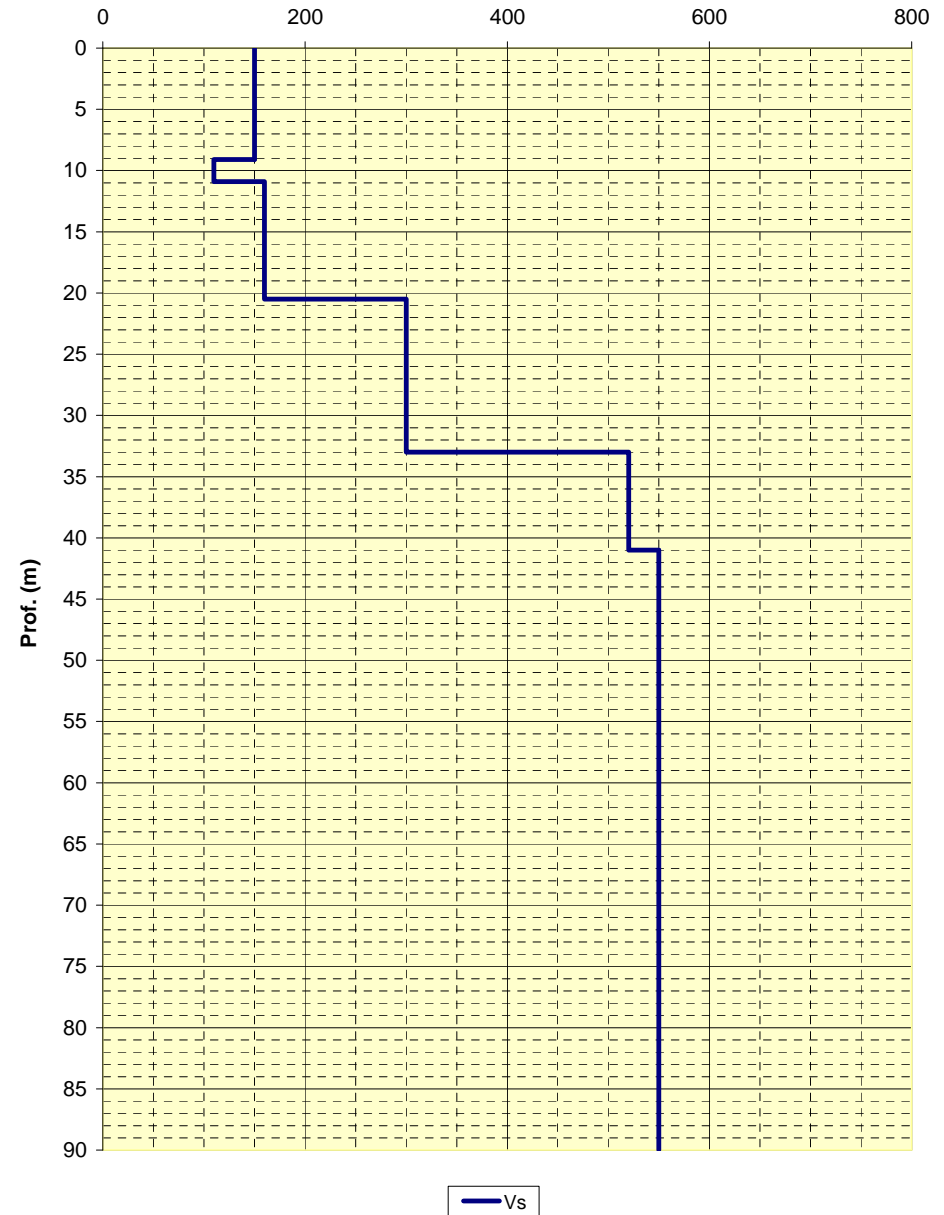


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 9.1 | 150 |
| 2 | 9.1 | 10.9 | 110 |
| 3 | 10.9 | 20.5 | 160 |
| 4 | 20.5 | 33 | 300 |
| 5 | 33 | 41 | 520 |
| 6 | 41 | INF | 550 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

Modello interpretativo
profilo Vs (m/s)



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

**INDAGINE Re.Mi.
15**

LOCALITA': Nonantola (MO)

COMMITTENTE: Dott. Geol. V. Franchi

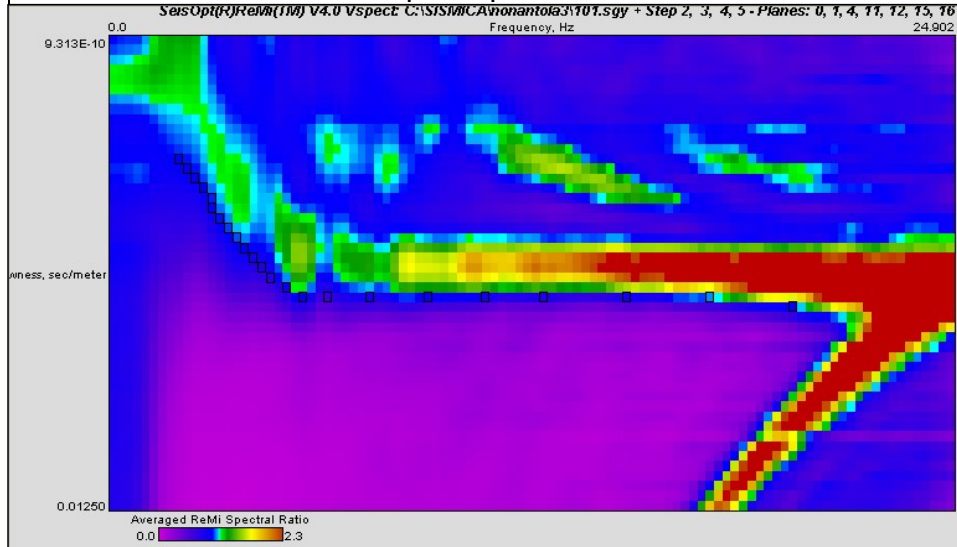
DATA: 24-03-2009

CANTIERE: Area di variante n° 3

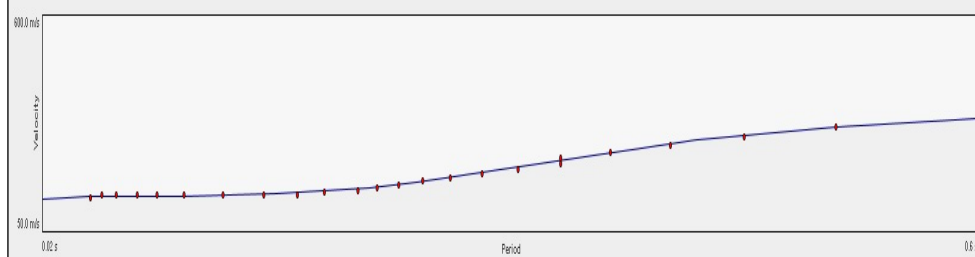
QUOTA: 26.0 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza



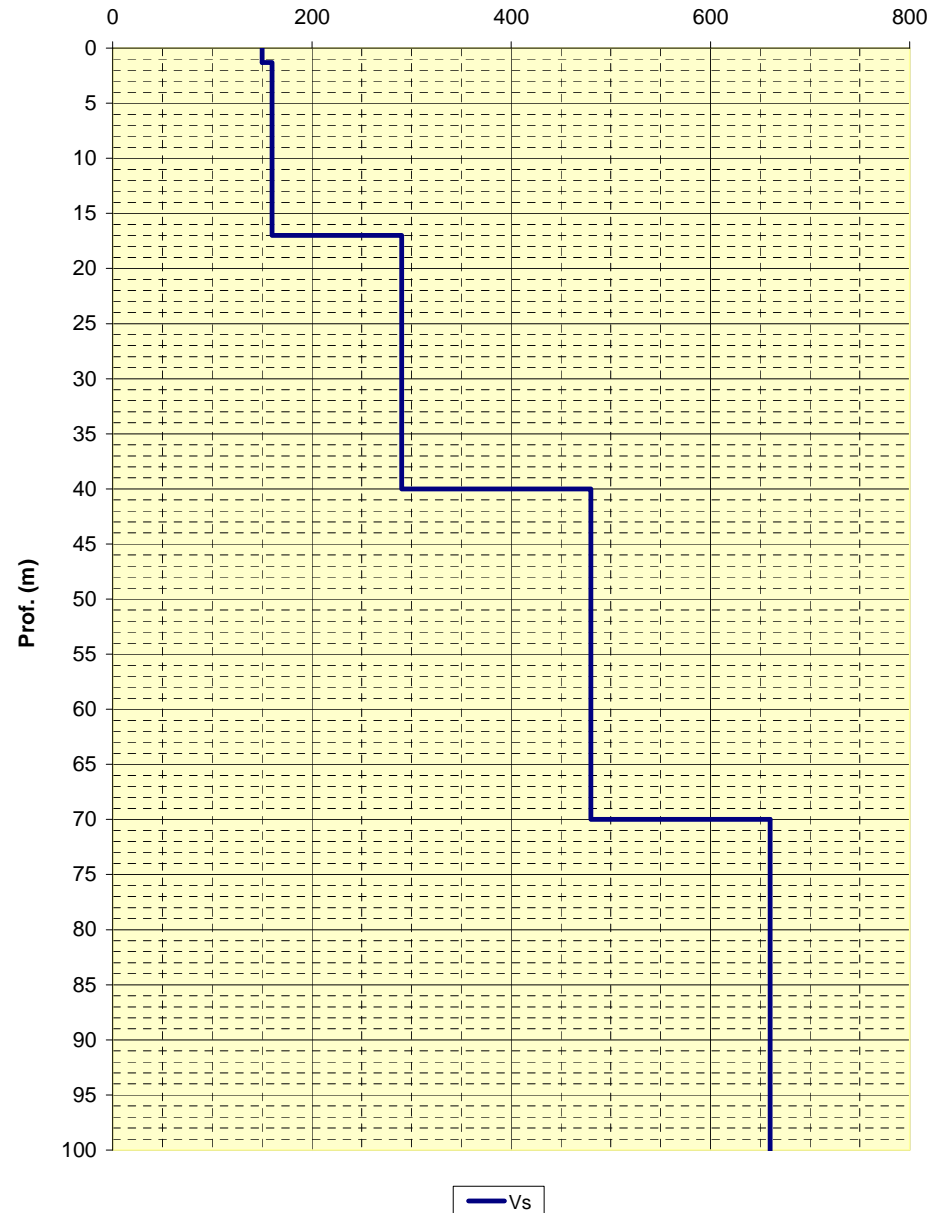
Curva di dispersione



Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 1.3 | 150 |
| 2 | 1.3 | 17 | 160 |
| 3 | 17 | 40 | 290 |
| 4 | 40 | 70 | 480 |
| 5 | 70 | 103 | 660 |
| 6 | 103 | INF | 790 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

**Modello interpretativo
profilo Vs (m/s)**



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

**INDAGINE Re.Mi.
16**

LOCALITA': Nonantola (MO)

COMMITTENTE: Dott. Geol. V. Franchi

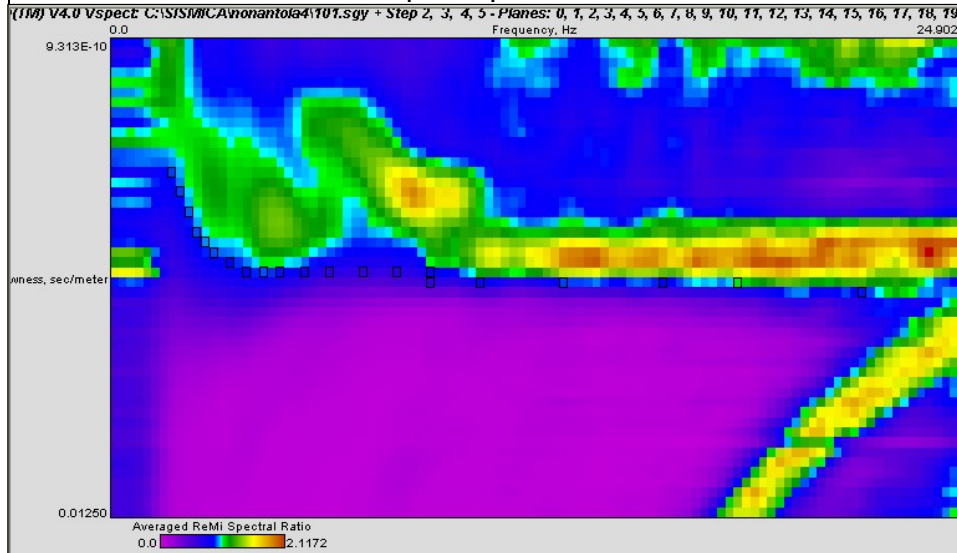
DATA: 24-03-2009

CANTIERE: Area di variante n° 4

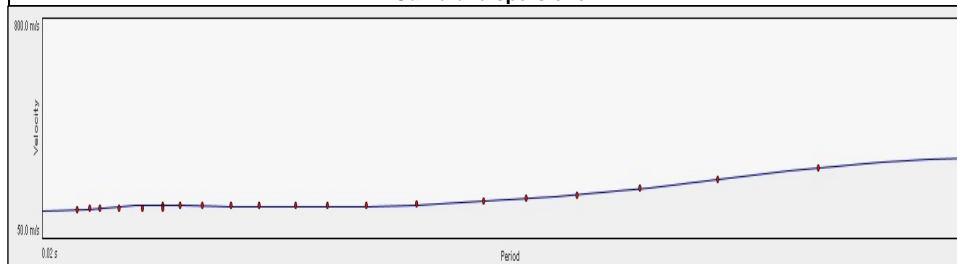
QUOTA: 27,8 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza



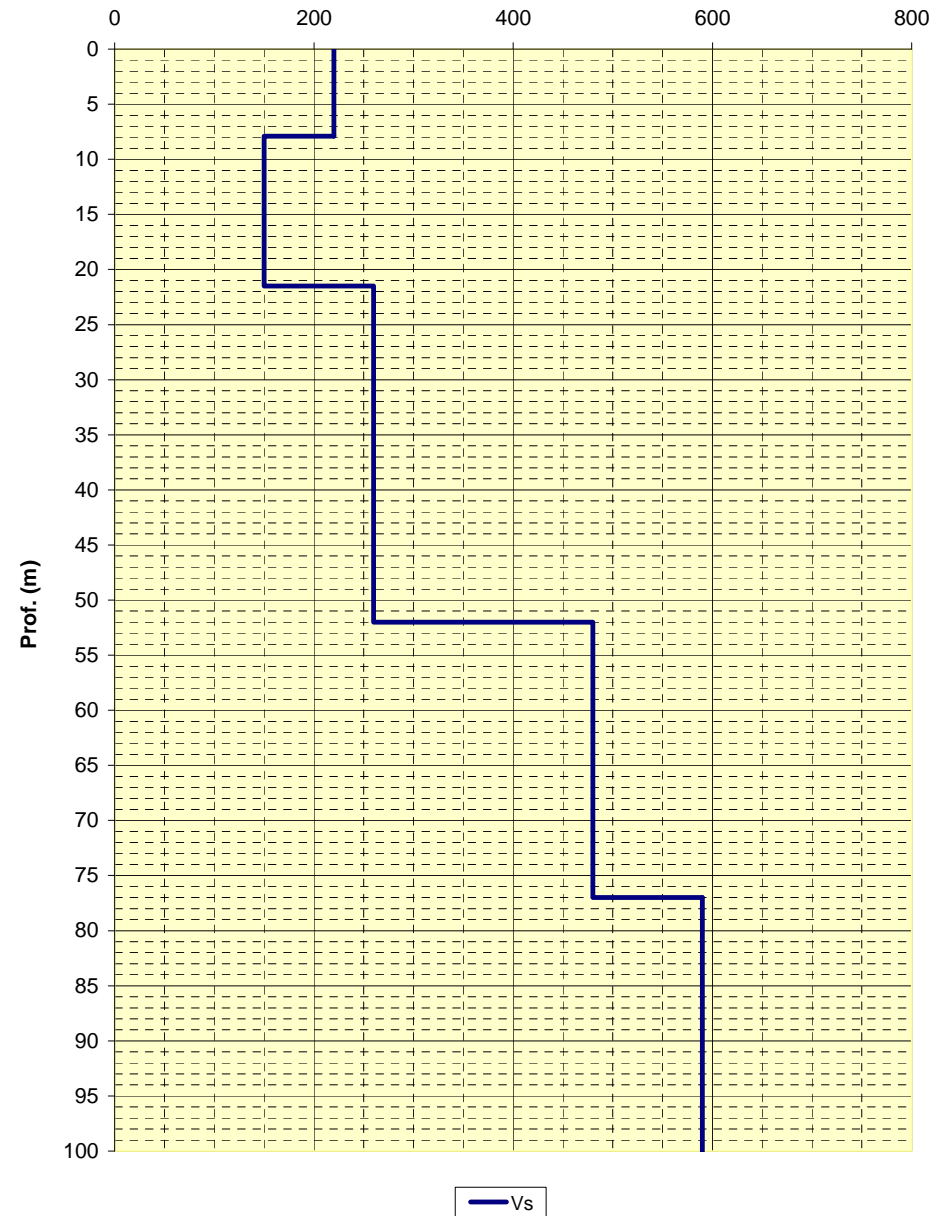
Curva di dispersione



Note:

| Modello interpretativo | | | | |
|------------------------|-----------|------------|----------|-----|
| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) | |
| 1 | 0 | 7.9 | 7.9 | 220 |
| 2 | 7.9 | 21.5 | 13.6 | 150 |
| 3 | 21.5 | 52 | 30.5 | 260 |
| 4 | 52 | 77 | 25 | 480 |
| 5 | 77 | INF | INF | 590 |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |

**Modello interpretativo
profilo Vs (m/s)**



LOCALITA': Nonantola (MO)

COMMITTENTE:

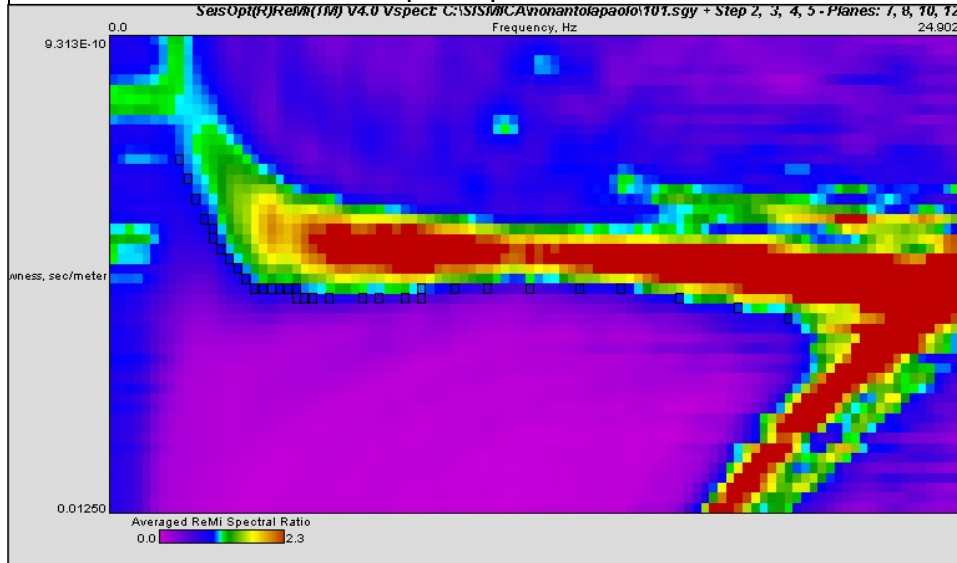
DATA:

CANTIERE: Nonantola

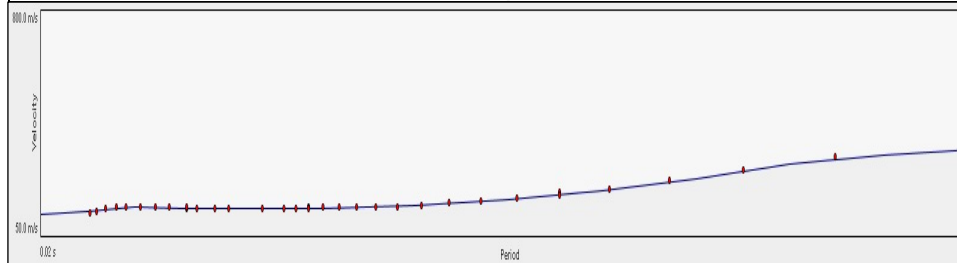
QUOTA:

OPERATORI: Dr. P. Beretti

Spettro di potenza



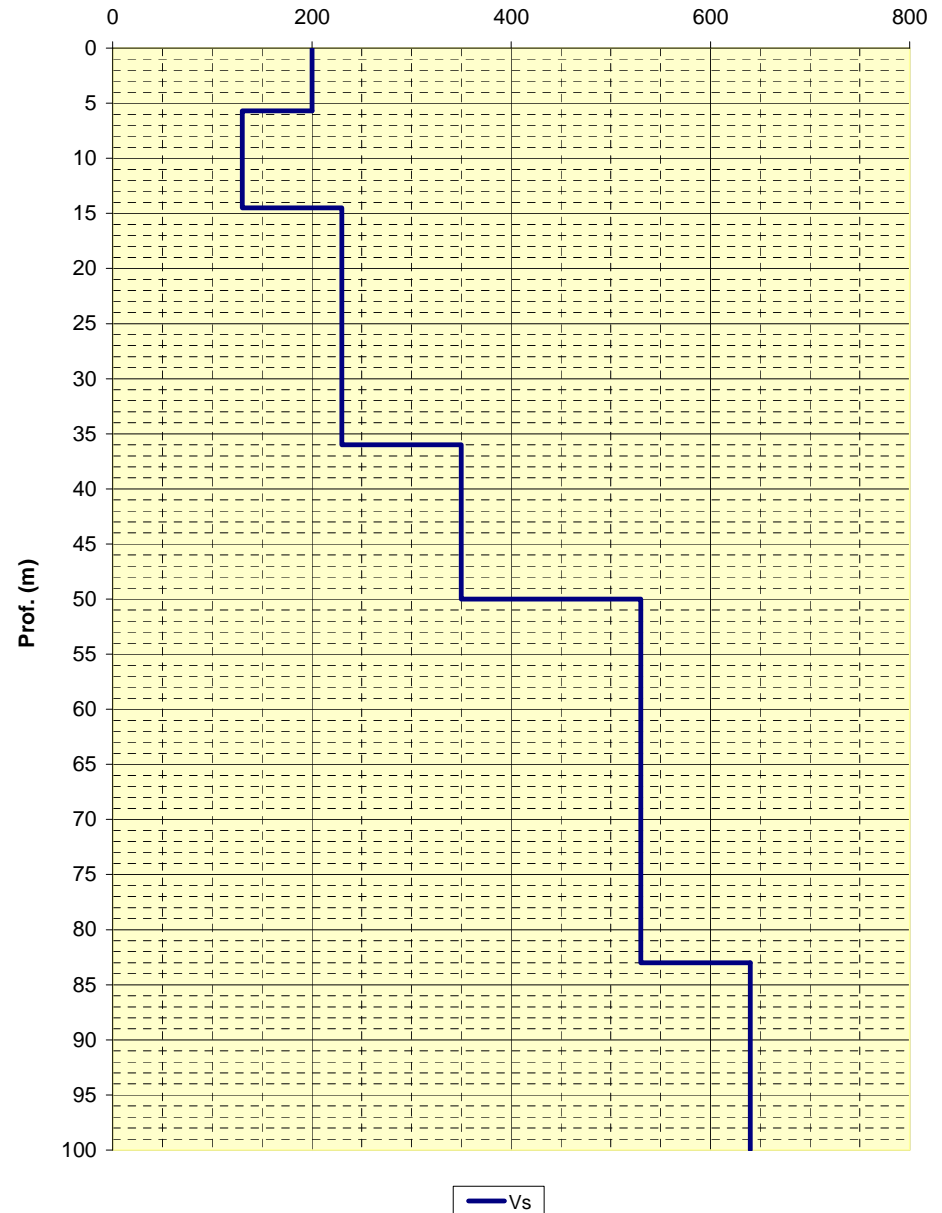
Curva di dispersione



Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 5.7 | 200 |
| 2 | 5.7 | 14.5 | 130 |
| 3 | 14.5 | 36 | 230 |
| 4 | 36 | 50 | 350 |
| 5 | 50 | 83 | 530 |
| 6 | 83 | INF | 640 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

Modello interpretativo
profilo Vs (m/s)



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

**INDAGINE Re.Mi.
18**

LOCALITA': Nonantola (MO)

COMMITTENTE: NONAGINTA SRL

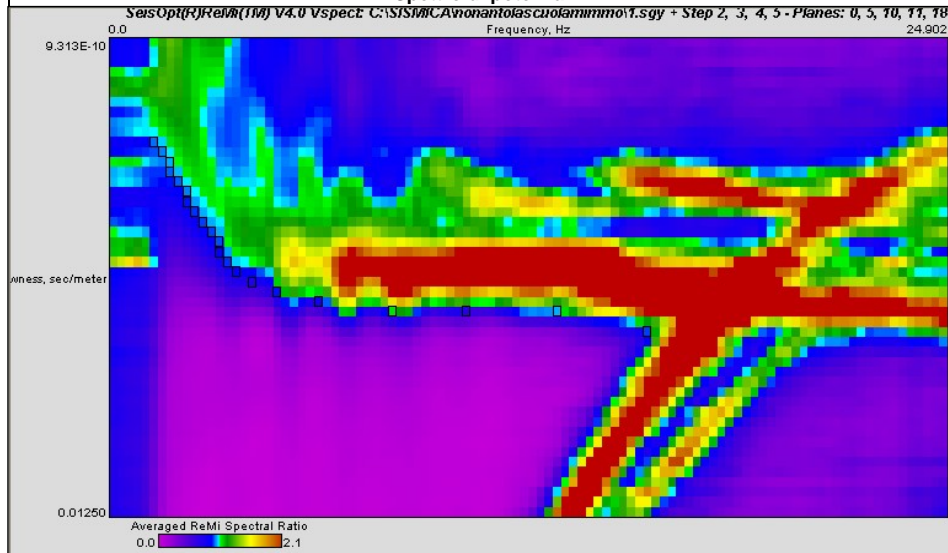
DATA: 11-04-2007

CANTIERE: Nuova Scuola

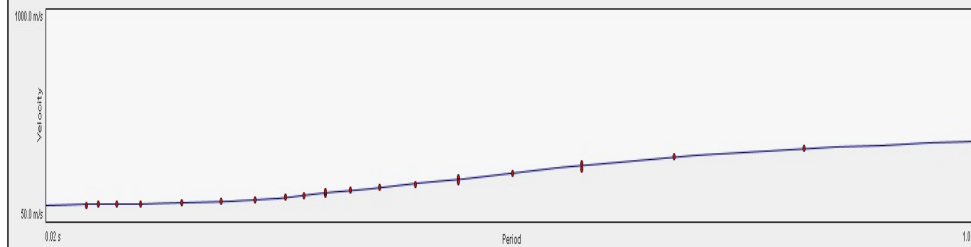
QUOTA: 24,5 m sim

OPERATORI: Dr. Arbizzi - Mazzetti M.

Spettro di potenza



Curva di dispersione

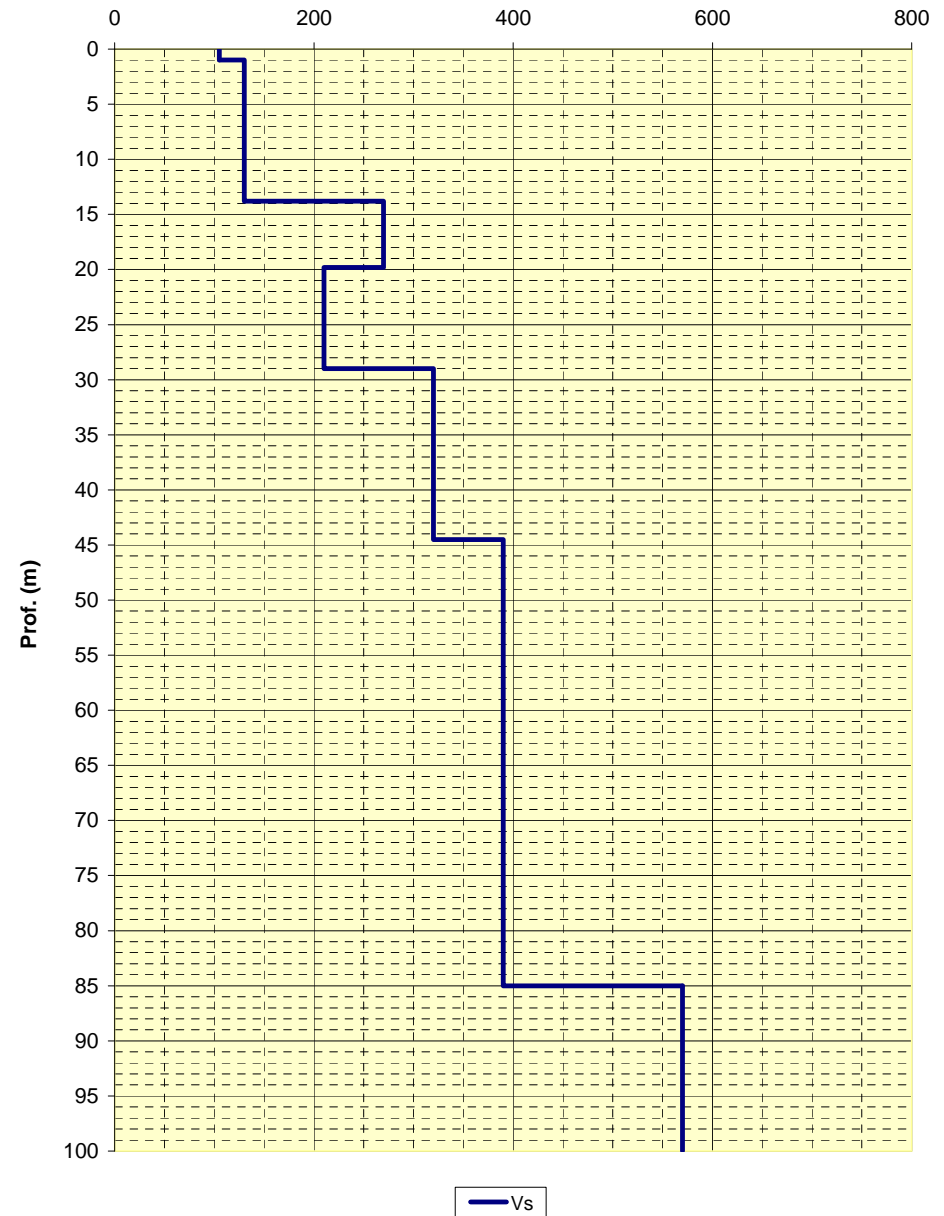


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 1 | 105 |
| 2 | 1 | 13.8 | 130 |
| 3 | 13.8 | 19.8 | 270 |
| 4 | 19.8 | 29 | 210 |
| 5 | 29 | 44.5 | 320 |
| 6 | 44.5 | 85 | 390 |
| 7 | 85 | INF | 570 |
| 8 | | | |
| 9 | | | |
| 10 | | | |

**Modello interpretativo
profilo Vs (m/s)**



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

**INDAGINE Re.Mi.
19**

LOCALITA': Nonantola (MO)

COMMITTENTE: NONAGINTA SRL

DATA: 03-03-2008

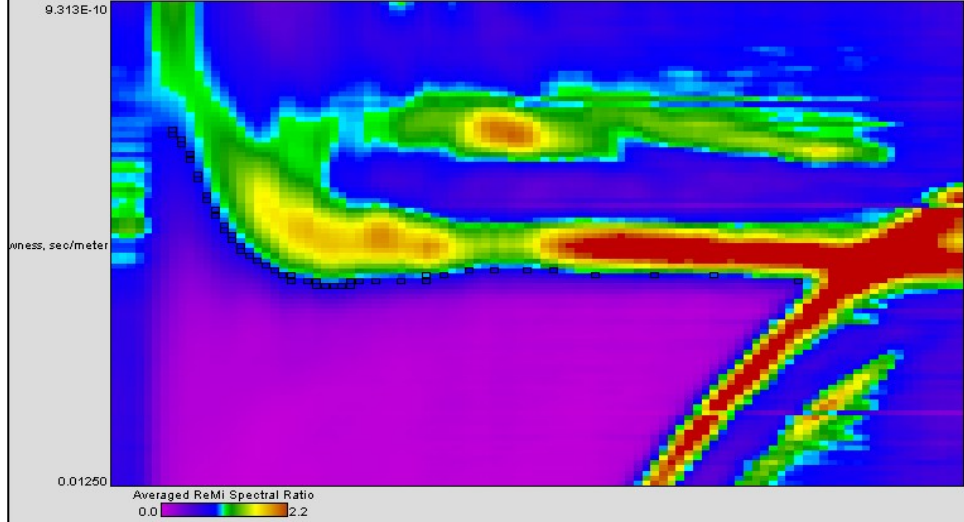
CANTIERE: Nuova Palestra

QUOTA: 25 m slm

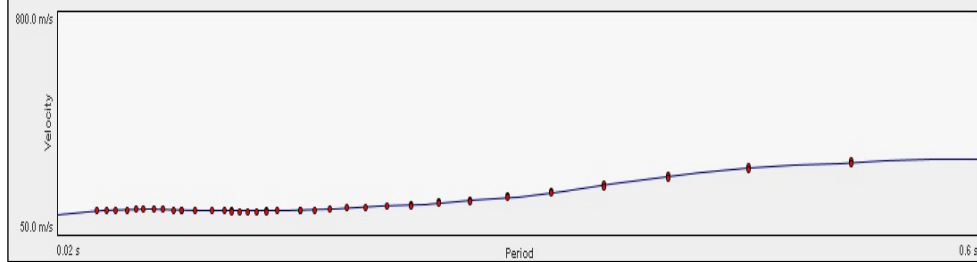
OPERATORI: Dr. Arbizzi - Mazzetti M.

Spettro di potenza

4.0 Vspect C:\SISMI\C\Nonantola\mimo\101.sgy + Step 2, 3, 4, 5 - Planes: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
Frequency, Hz 27.740



Curva di dispersione

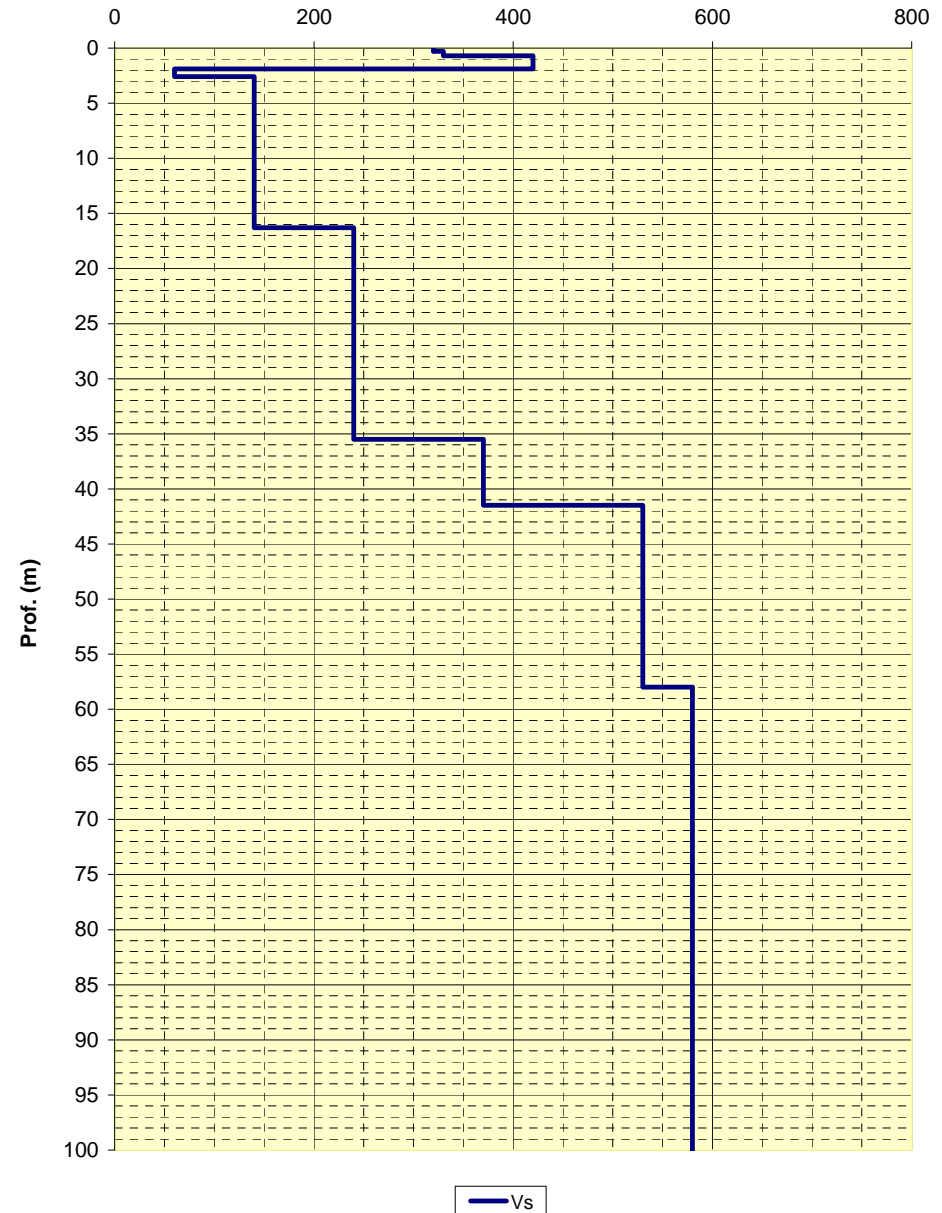


Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 0.3 | 320 |
| 2 | 0.3 | 0.7 | 330 |
| 3 | 0.7 | 1.9 | 420 |
| 4 | 1.9 | 2.6 | 60 |
| 5 | 2.6 | 16.3 | 140 |
| 6 | 16.3 | 35.5 | 240 |
| 7 | 35.5 | 41.5 | 370 |
| 8 | 41.5 | 58 | 530 |
| 9 | 58 | INF | 580 |
| 10 | | | |

Note:

**Modello interpretativo
profilo Vs (m/s)**



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

INDAGINE Re.Mi./MASW
20

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 29-01-2013

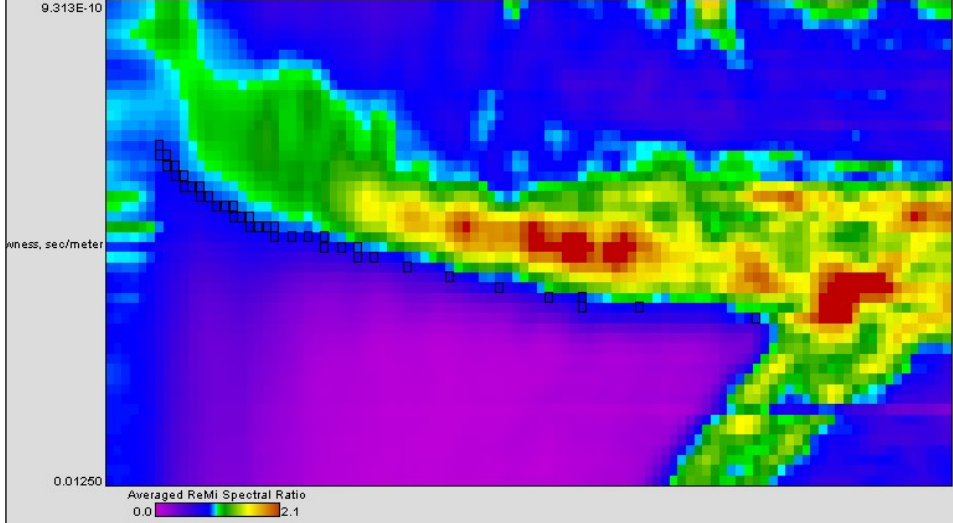
CANTIERE: PSC

QUOTA: 22 m slm

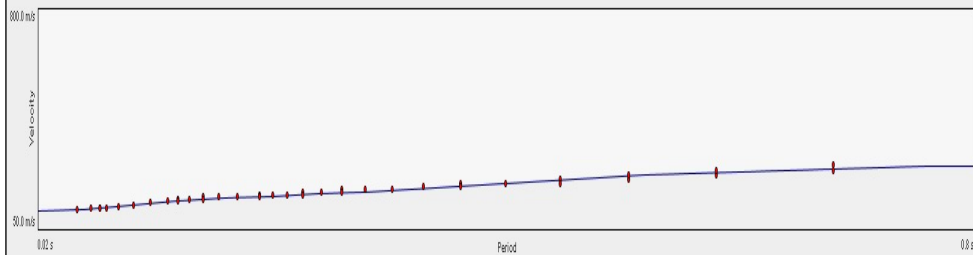
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

Desktop\SISMICAWONANTOLA2013\nonantola_1101.Sgy + Step 2, 3, 4, 5 - Planes: 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
0.0 24.902
Frequency, Hz



Curva di dispersione

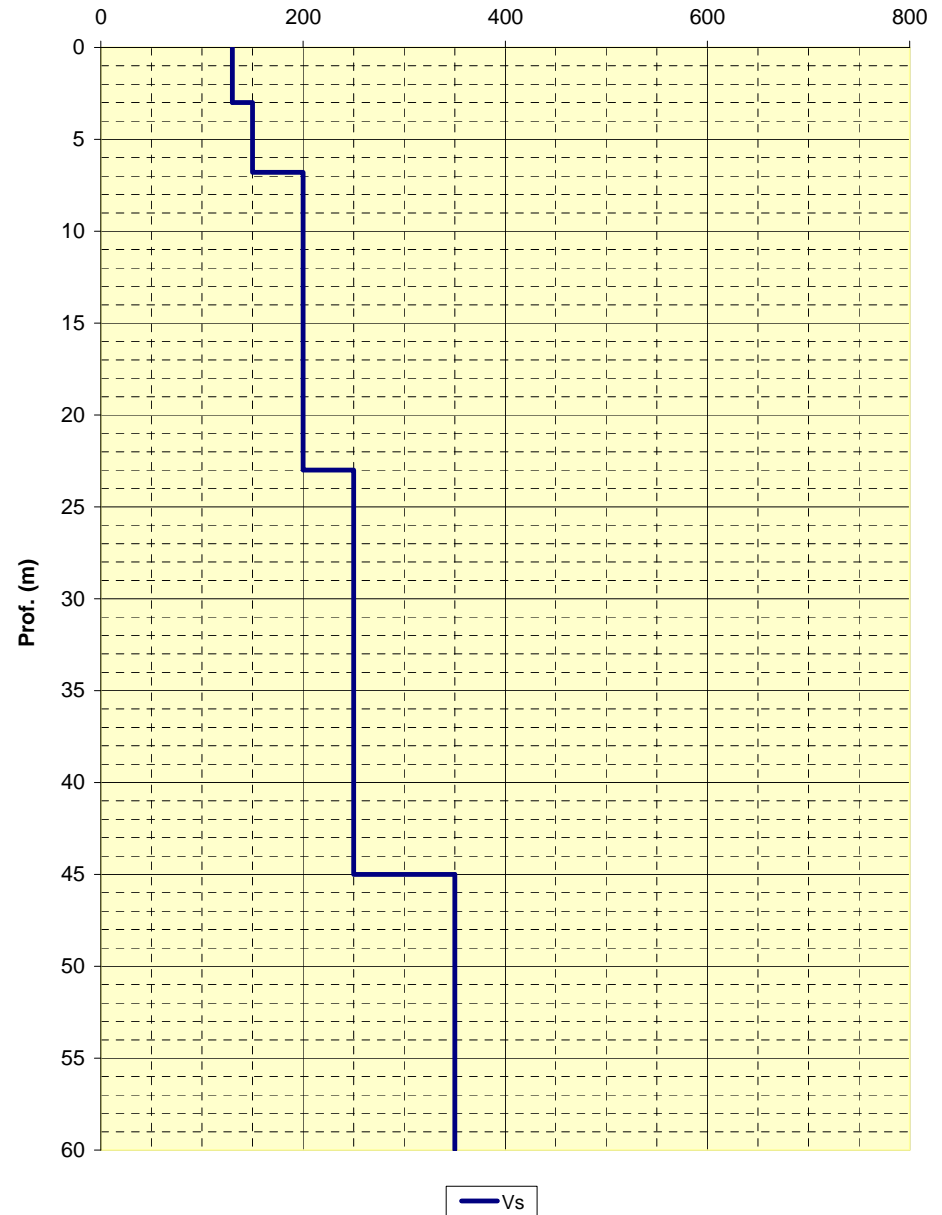


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 3 | 130 |
| 2 | 3 | 6.8 | 150 |
| 3 | 6.8 | 23 | 200 |
| 4 | 23 | 45 | 250 |
| 5 | 45 | INF | 350 |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

Modello interpretativo
profilo Vs (m/s)



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

INDAGINE Re.Mi./MASW
21

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 29-01-2013

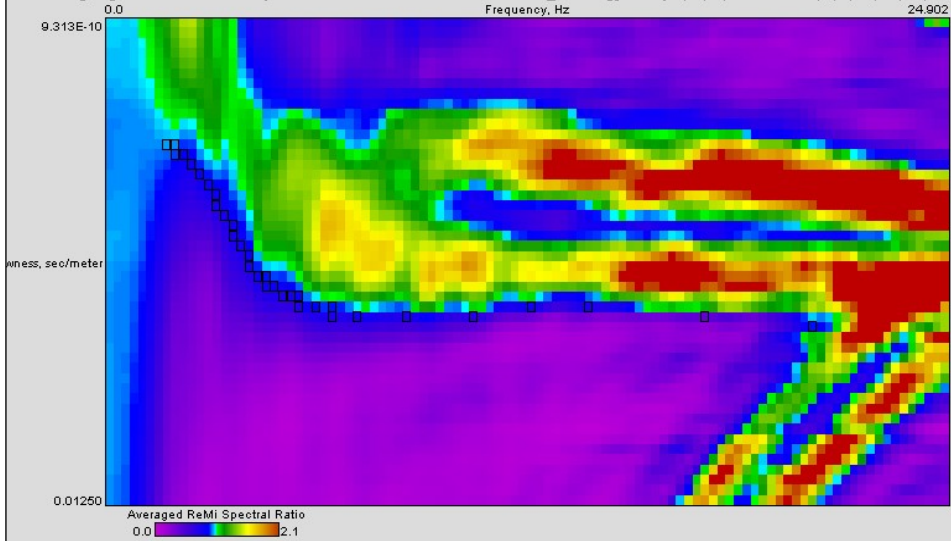
CANTIERE: PSC

QUOTA: 21 m slm

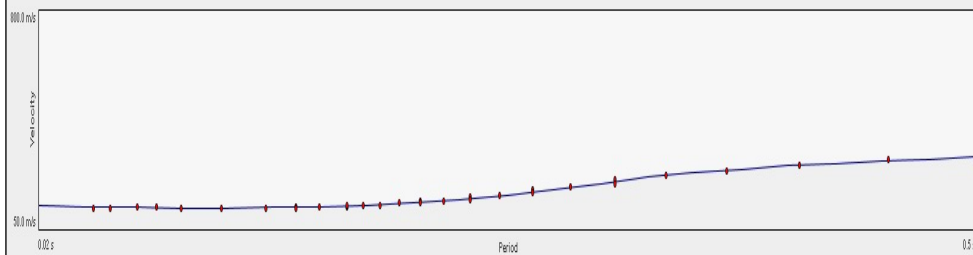
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

and Settings: C:\NTGEO\DESKTOP\SYSTEM\CAVONANTOLA\21013\Nonantola_21013.sgy + Step 2, 3, 4, 5 - Planes: 6, 7, 9, 11, 12, 13, 15



Curva di dispersione

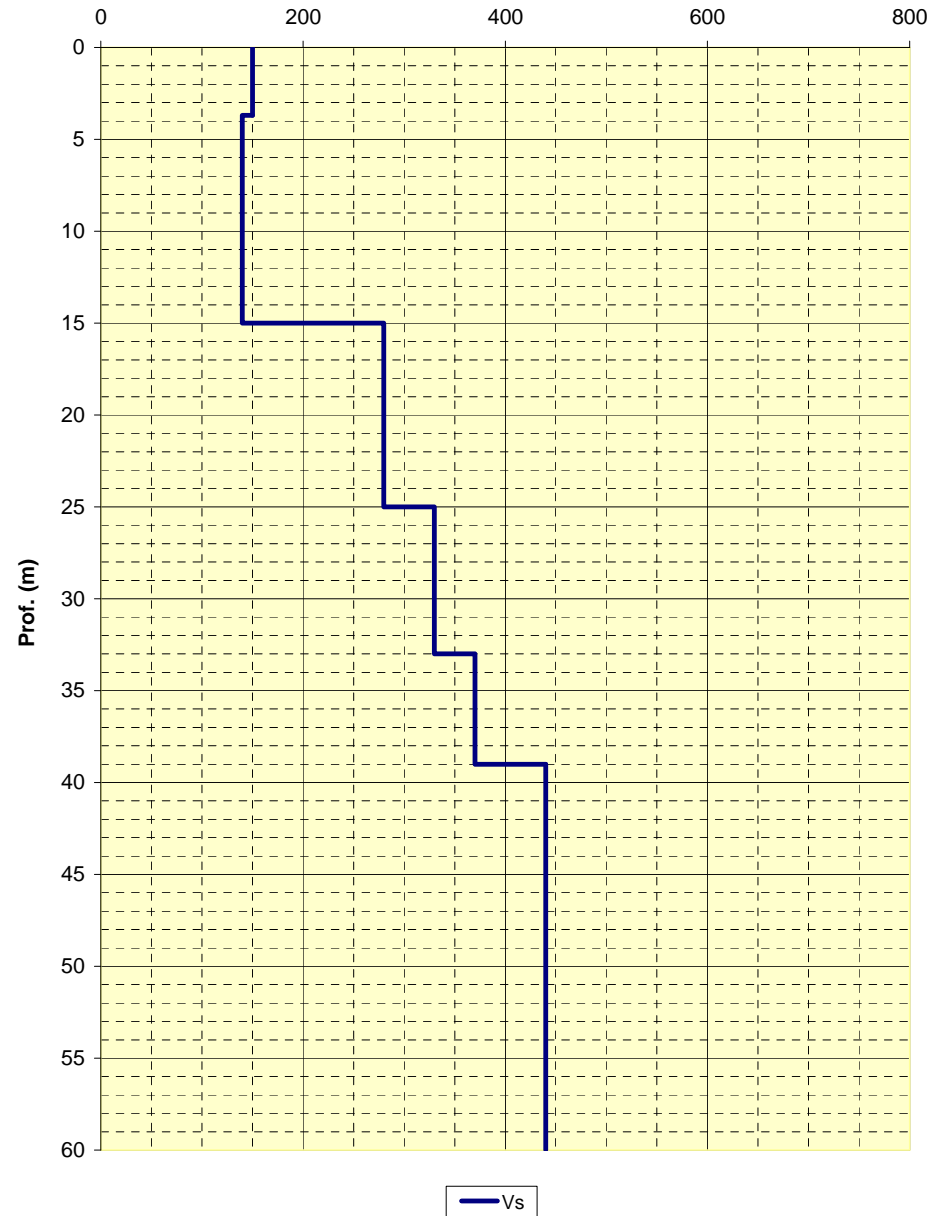


Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 3.7 | 150 |
| 2 | 3.7 | 15 | 140 |
| 3 | 15 | 25 | 280 |
| 4 | 25 | 33 | 330 |
| 5 | 33 | 39 | 370 |
| 6 | 39 | INF | 440 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

Note:

Modello interpretativo
profilo Vs (m/s)



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

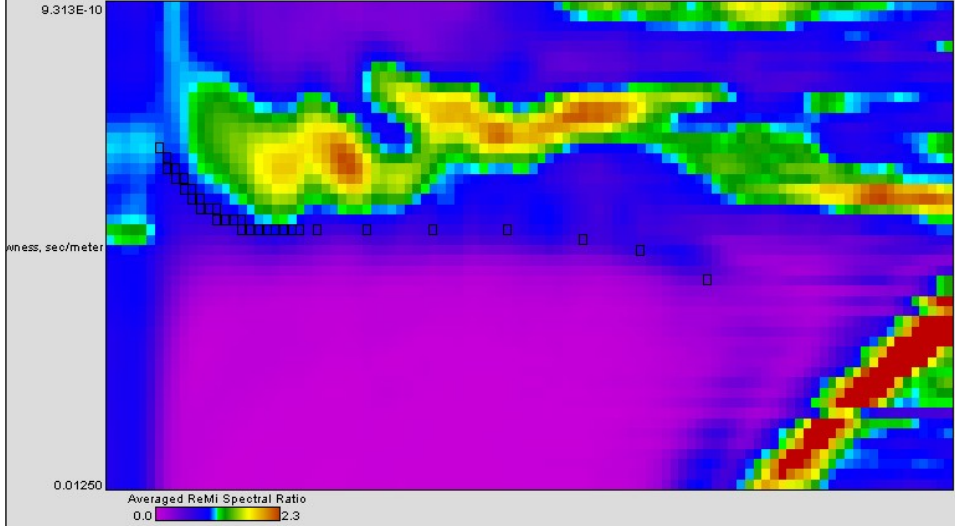
INDAGINE Re.Mi./MASW
22

LOCALITA': Nonantola (MO)
DATA: 29-01-2013
QUOTA: 23 m slm

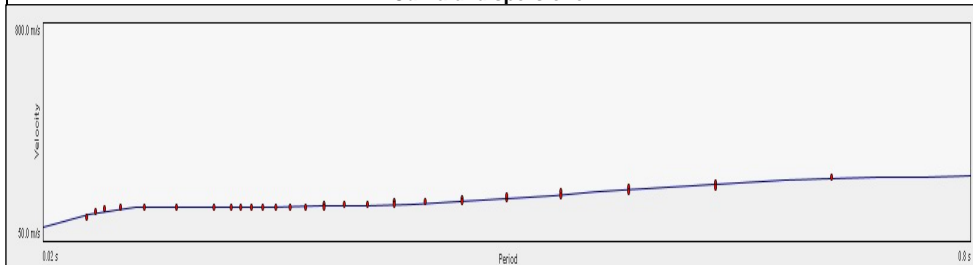
COMMITTENTE: Amm. Comun. Nonantola
CANTIERE: PSC
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

SISMICAWONANTOLA2013nonantola_3101.sgy + Step 2, 3, 4, 5 - Planes: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
Frequency, Hz 24,902



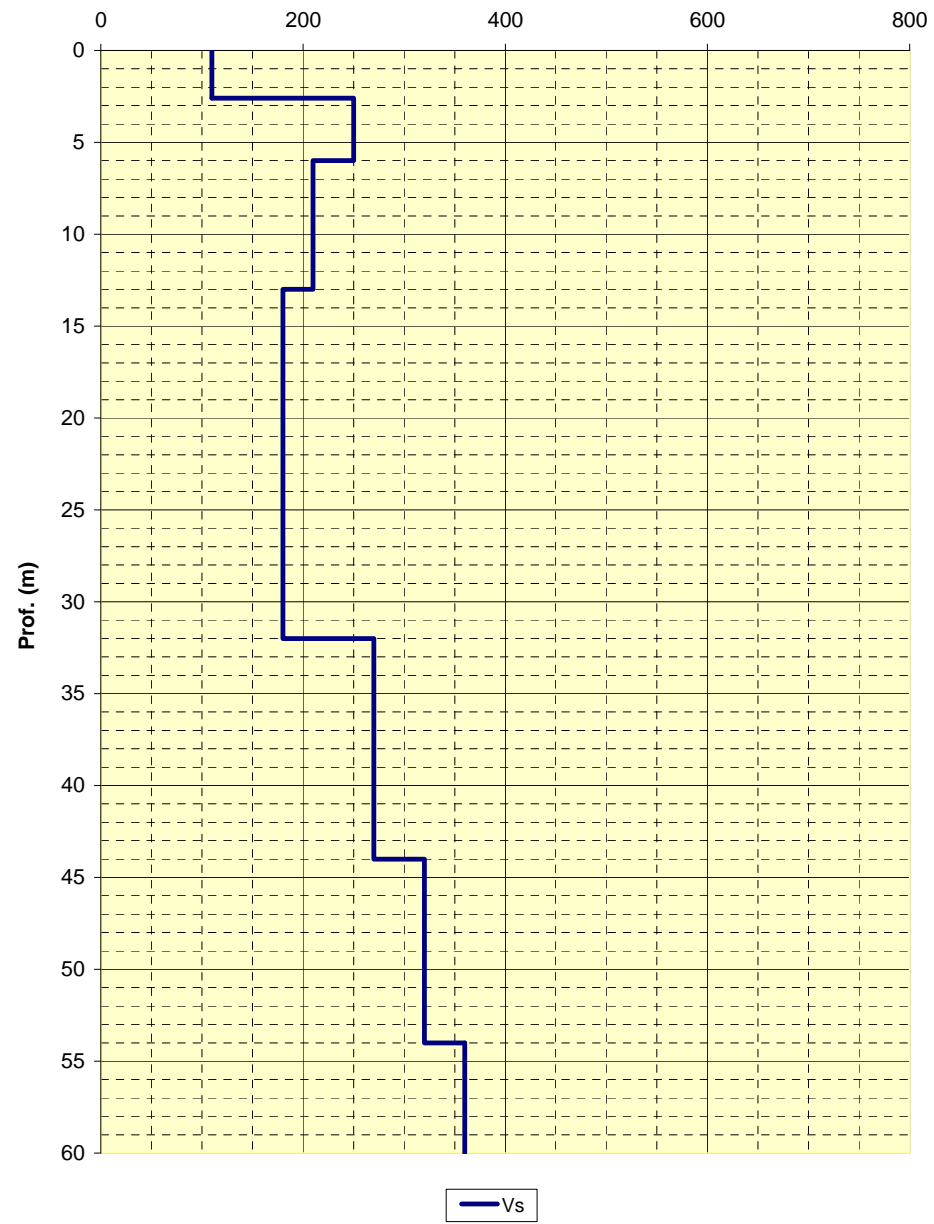
Curva di dispersione



Note:

| Modello interpretativo | | | | |
|------------------------|-----------|-----|------------|----------|
| Strato n° | Prof. (m) | | Spess. (m) | Vs (m/s) |
| 1 | 0 | 2.6 | 2.6 | 110 |
| 2 | 2.6 | 6 | 3.4 | 250 |
| 3 | 6 | 13 | 7 | 210 |
| 4 | 13 | 32 | 19 | 180 |
| 5 | 32 | 44 | 12 | 270 |
| 6 | 44 | 54 | 10 | 320 |
| 7 | 54 | INF | INF | 360 |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |

Modello interpretativo
profilo Vs (m/s)



LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

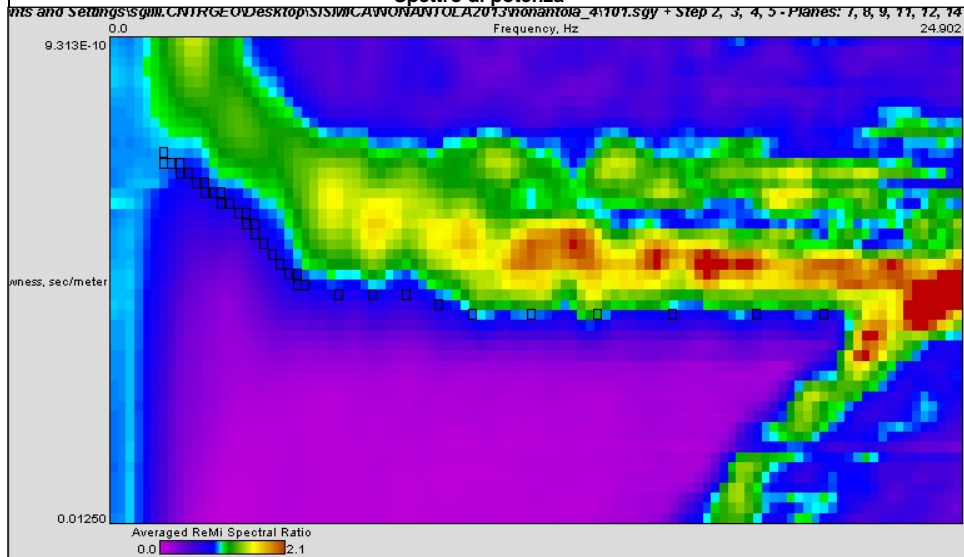
DATA: 29-01-2013

CANTIERE: PSC

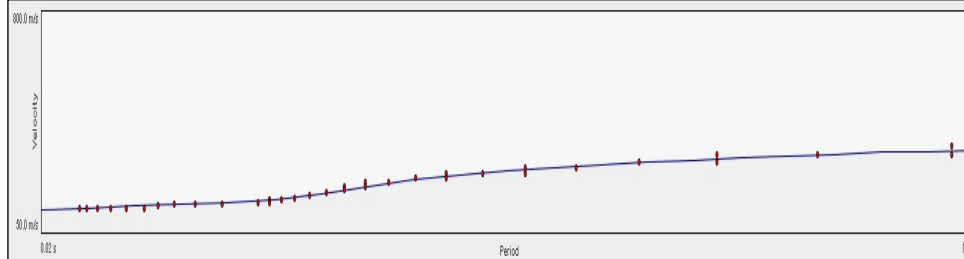
QUOTA: 25 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza



Curva di dispersione

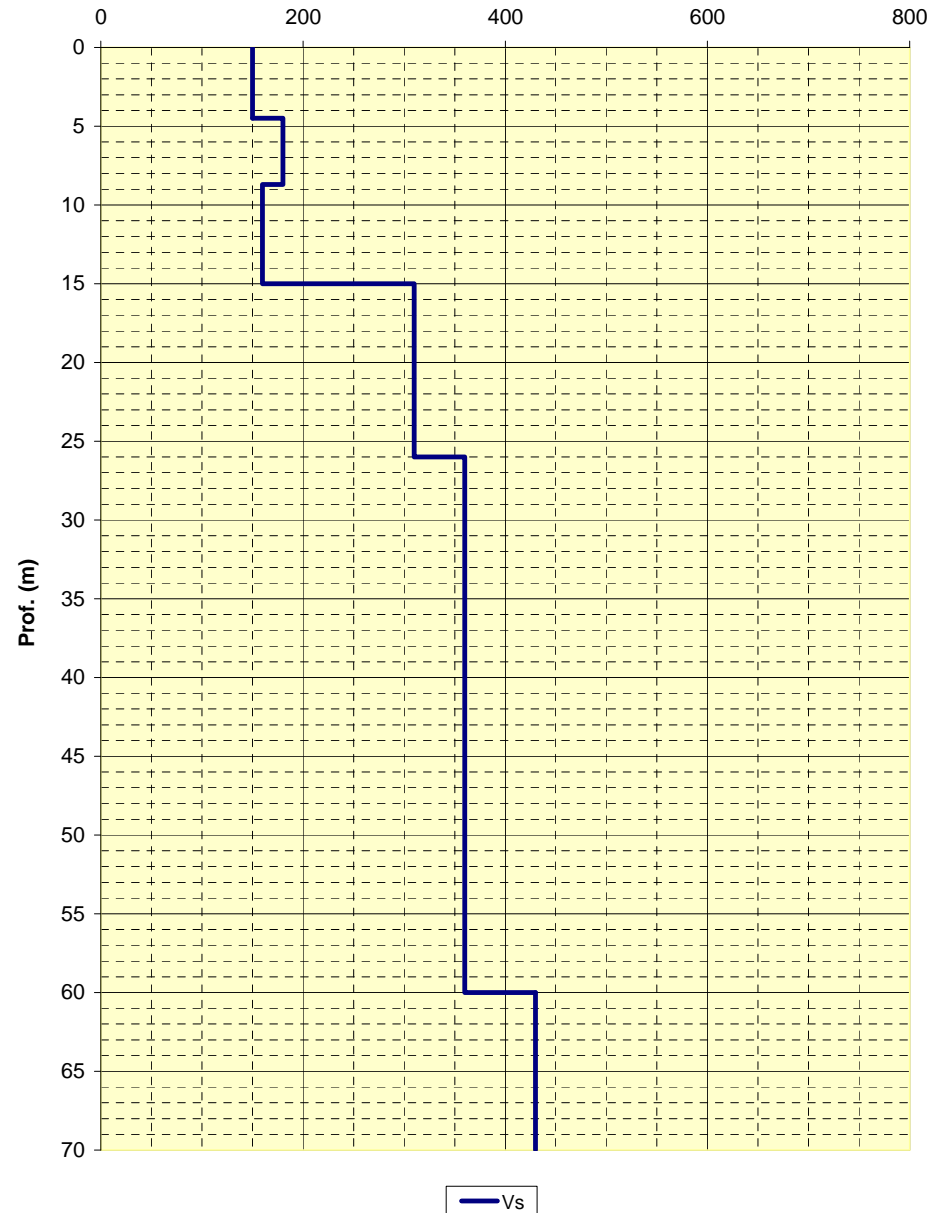


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 4.5 | 150 |
| 2 | 4.5 | 8.7 | 180 |
| 3 | 8.7 | 15 | 160 |
| 4 | 15 | 26 | 310 |
| 5 | 26 | 60 | 360 |
| 6 | 60 | INF | 430 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

Modello interpretativo
profilo Vs (m/s)



LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

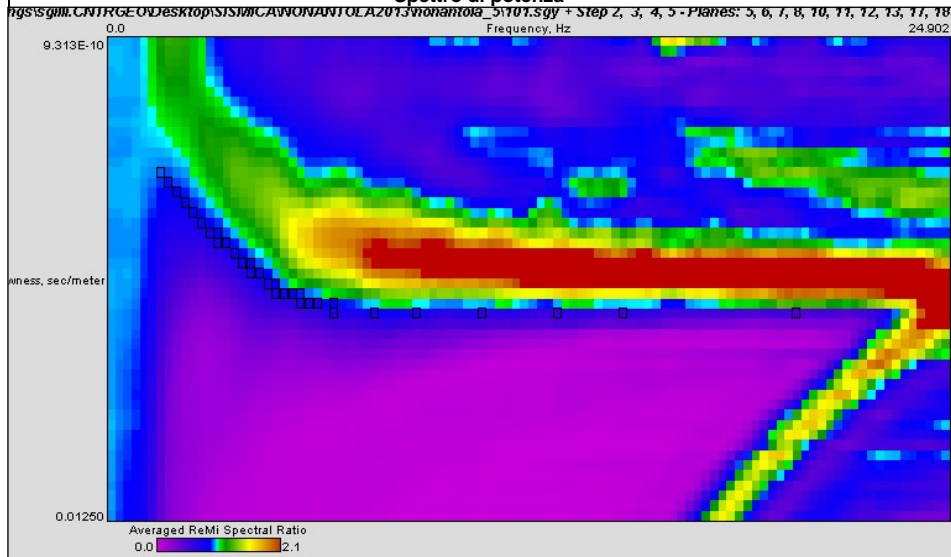
DATA: 29-01-2013

CANTIERE: PSC

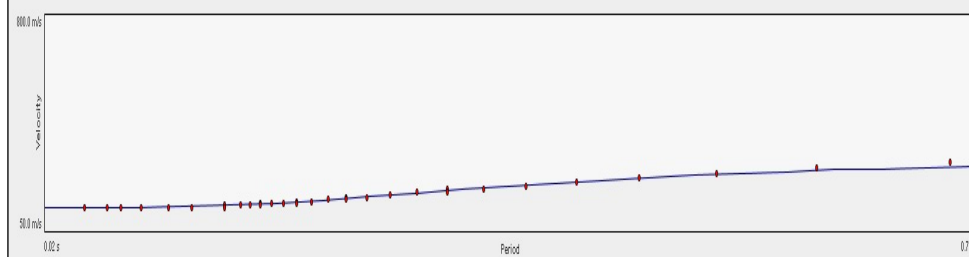
QUOTA: 28 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza



Curva di dispersione

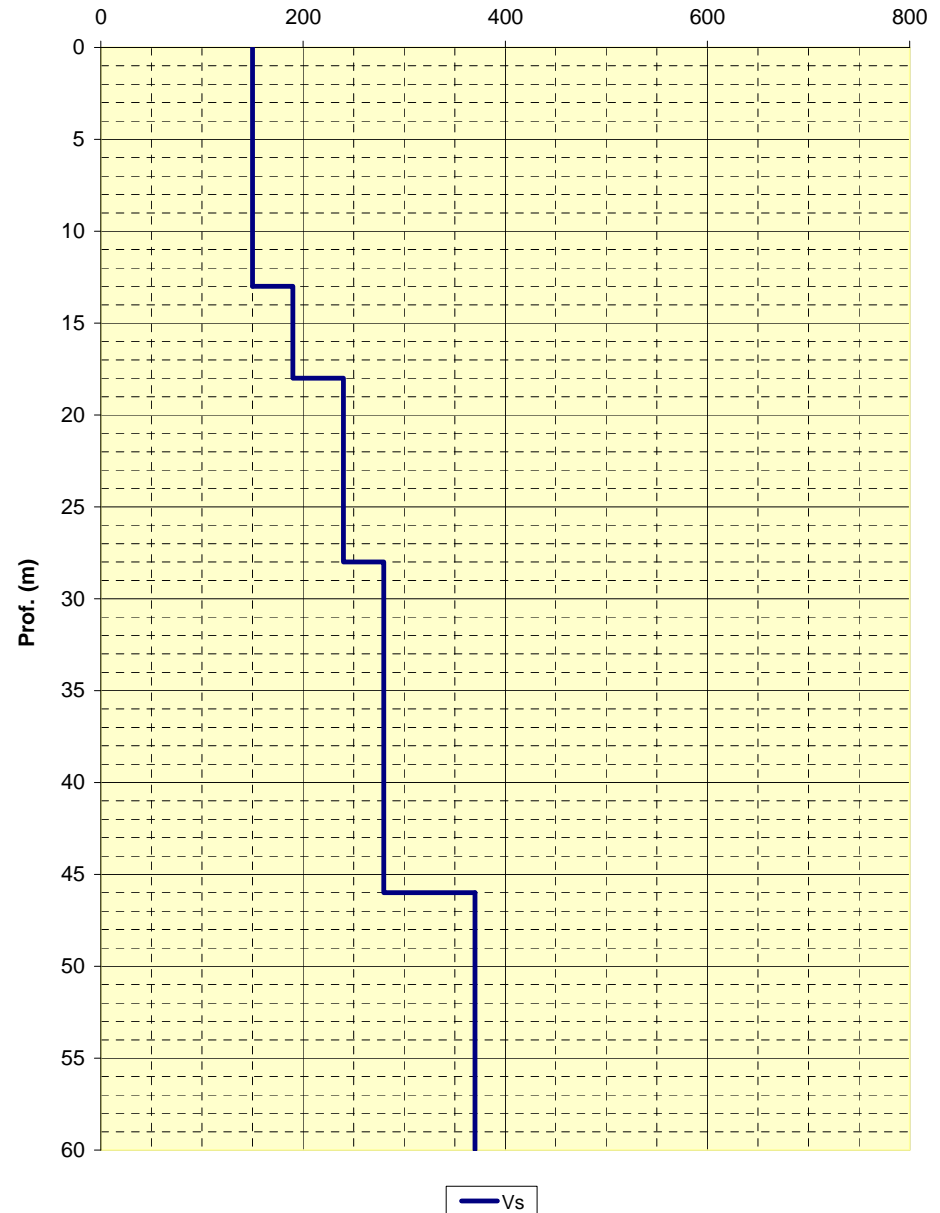


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 13 | 150 |
| 2 | 13 | 18 | 190 |
| 3 | 18 | 28 | 240 |
| 4 | 28 | 46 | 280 |
| 5 | 46 | INF | 370 |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

Modello interpretativo
profilo Vs (m/s)



LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

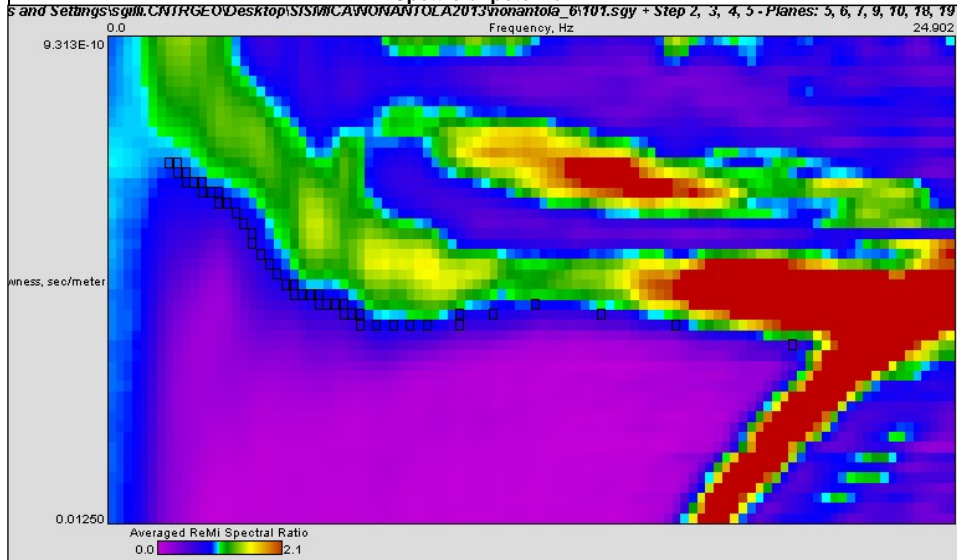
DATA: 29-01-2013

CANTIERE: PSC

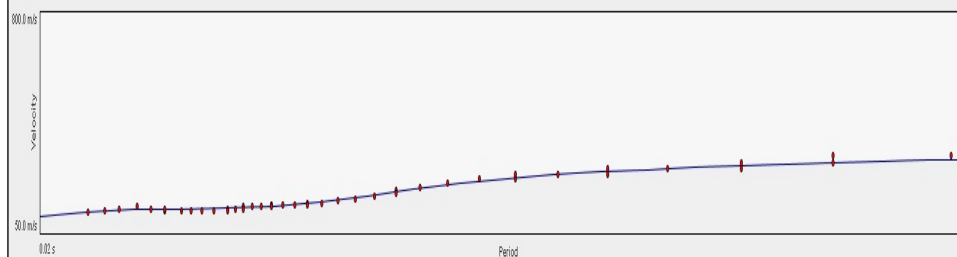
QUOTA: 28 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza



Curva di dispersione

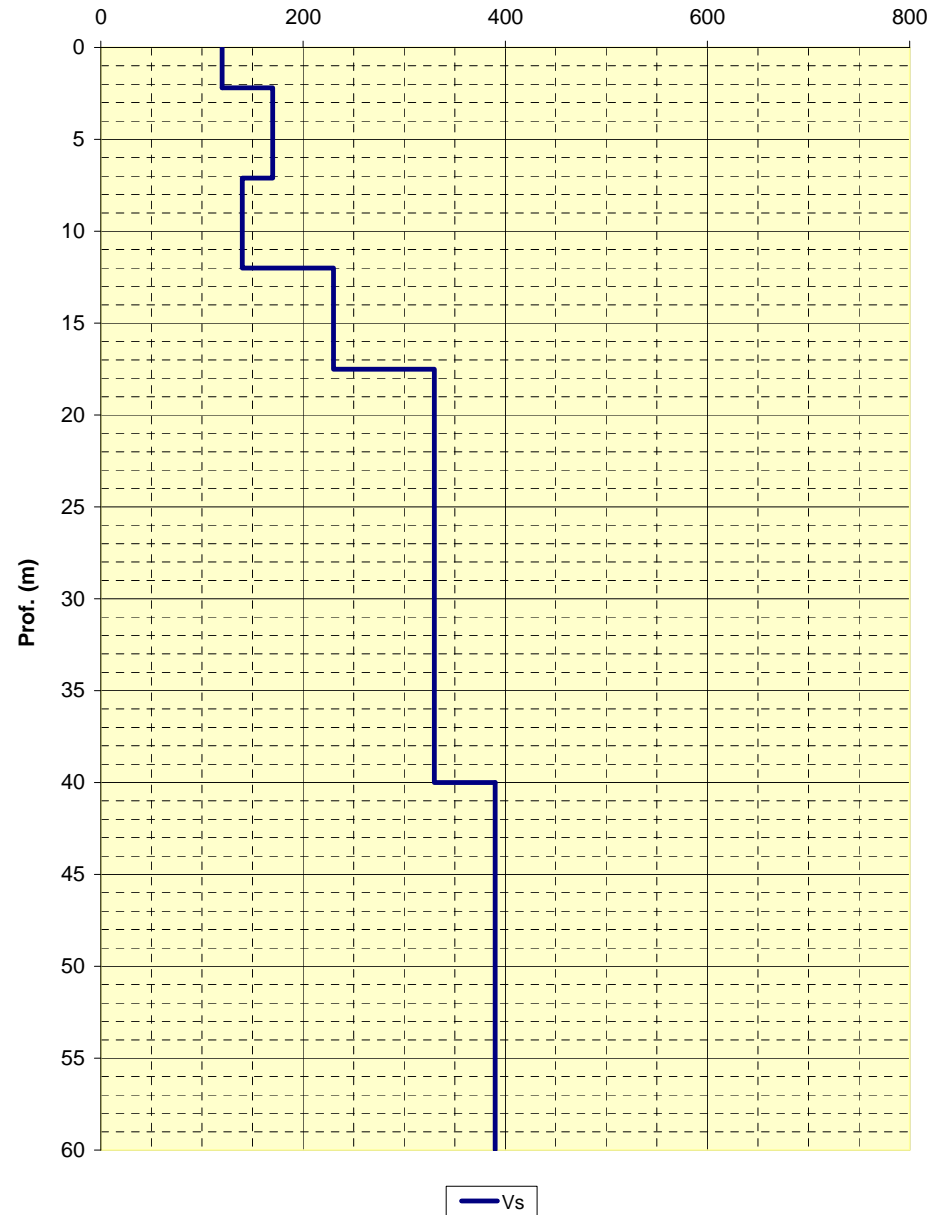


Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 2.2 | 120 |
| 2 | 2.2 | 7.1 | 170 |
| 3 | 7.1 | 12 | 140 |
| 4 | 12 | 17.5 | 230 |
| 5 | 17.5 | 40 | 330 |
| 6 | 40 | INF | 390 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

Note:

Modello interpretativo
profilo Vs (m/s)



LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 30-01-2013

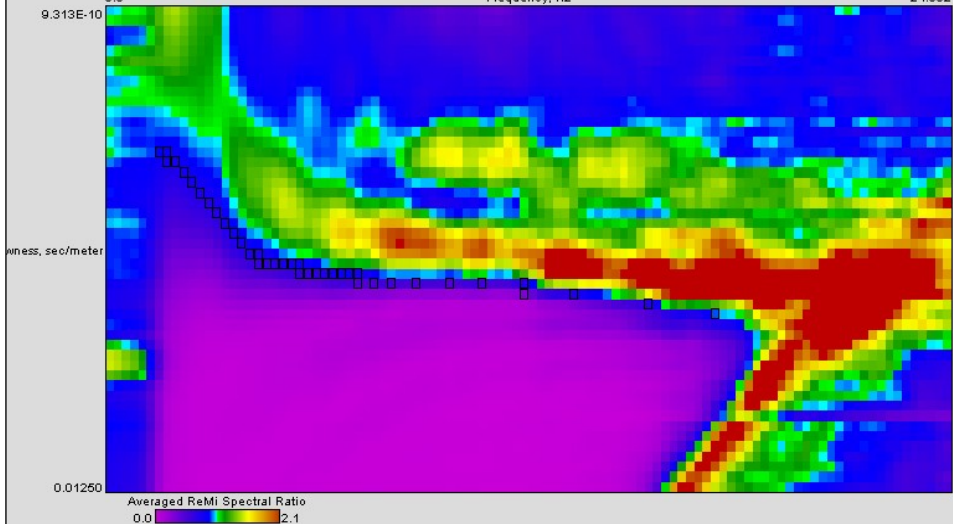
CANTIERE: PSC

QUOTA: 26 m slm

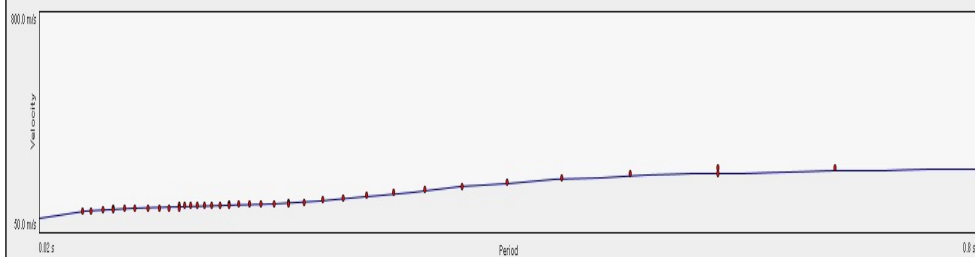
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

etungssgm.CENTROGEO.Desktop\SISMI\CANONANTOLA\2013\Nonantola_7101.sgy + Step 2, 3, 4, 5 - Planes: 0, 3, 5, 7, 12, 14, 15, 18, 19
Frequency, Hz 24.902



Curva di dispersione

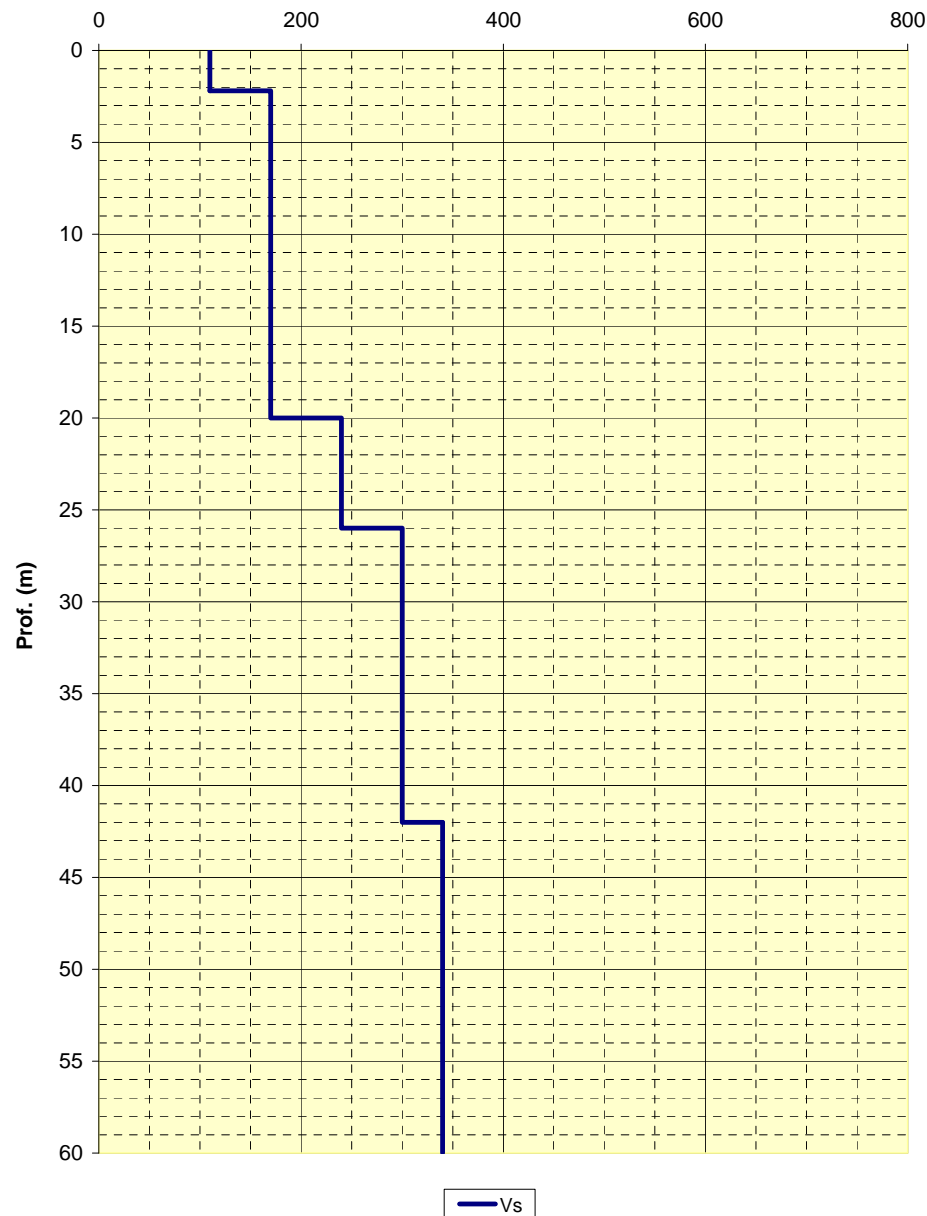


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 2.2 | 110 |
| 2 | 2.2 | 20 | 170 |
| 3 | 20 | 26 | 240 |
| 4 | 26 | 42 | 300 |
| 5 | 42 | INF | 340 |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

Modello interpretativo
profilo Vs (m/s)



LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 30-01-2013

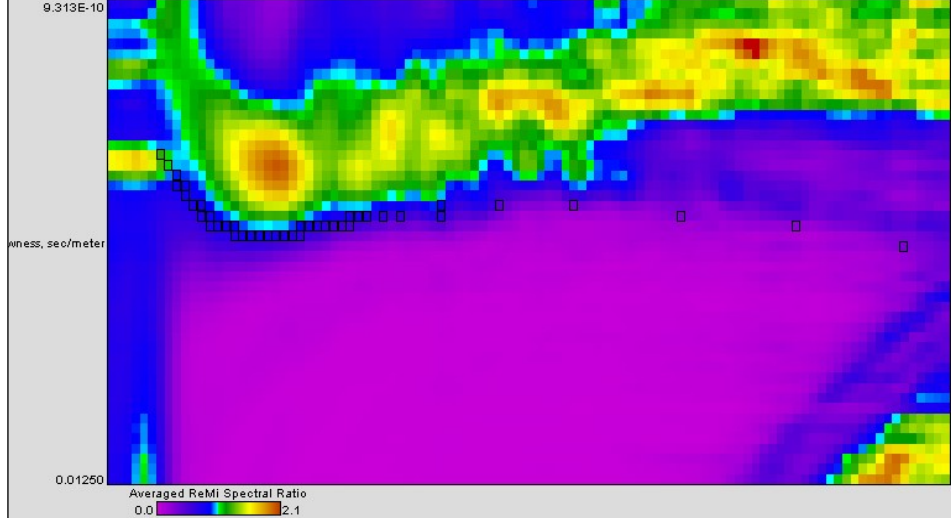
CANTIERE: PSC

QUOTA: 25 m slm

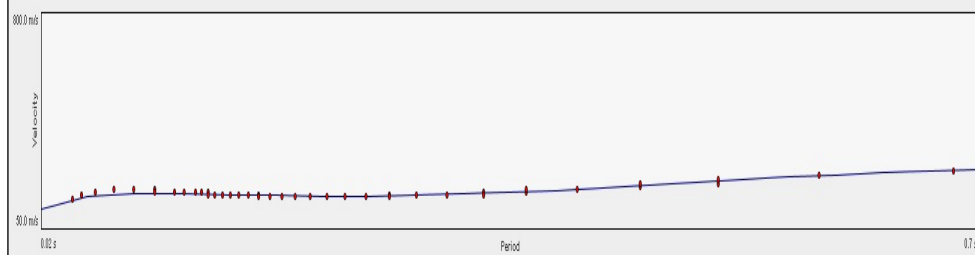
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

File and Settings: g:\CNR\GEO\Desktop\SISMI\CAVONANTOLA\2013\Nonantola_81701.sgy + Step 2, 3, 4, 5 - Planes: 1, 3, 4, 13, 16, 17
Frequency, Hz 24.902



Curva di dispersione

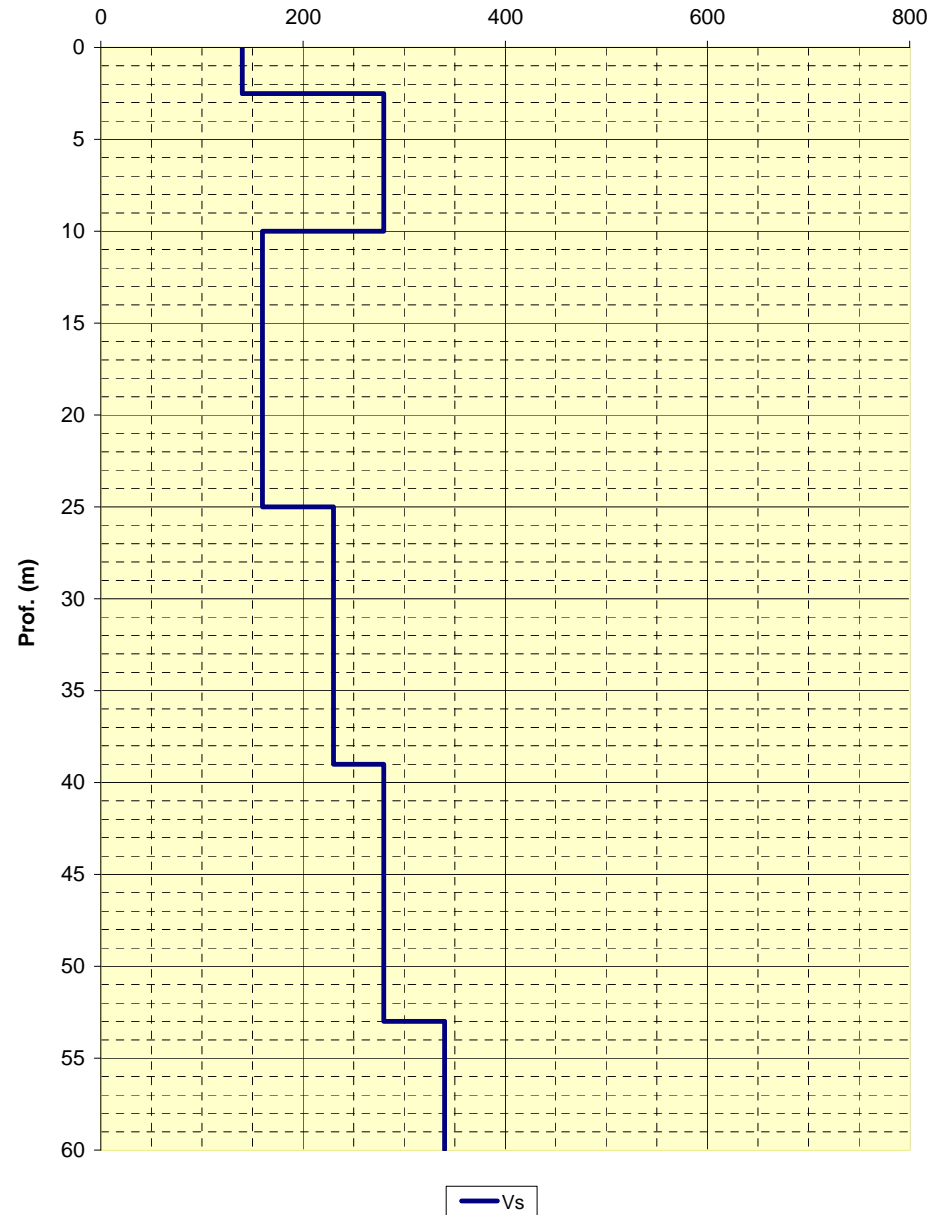


Note:

Modello interpretativo

| Strato n° | Prof. (m) | | Spess. (m) | Vs (m/s) |
|-----------|-----------|-----|------------|----------|
| 1 | 0 | 2.5 | 2.5 | 140 |
| 2 | 2.5 | 10 | 7.5 | 280 |
| 3 | 10 | 25 | 15 | 160 |
| 4 | 25 | 39 | 14 | 230 |
| 5 | 39 | 53 | 14 | 280 |
| 6 | 53 | INF | INF | 340 |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |

Modello interpretativo
profilo Vs (m/s)



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 Correggio (RE)

INDAGINE Re.Mi./MASW
28

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 30-01-2013

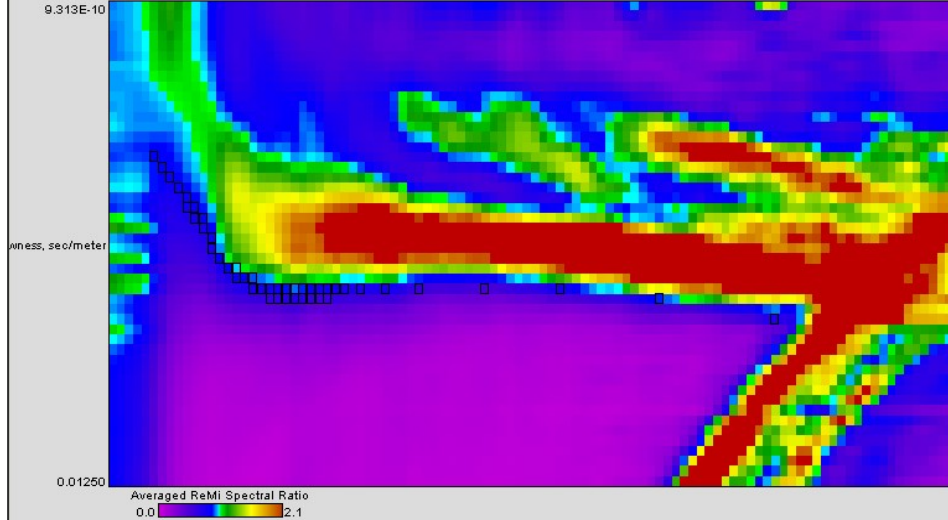
CANTIERE: PSC

QUOTA: 26 m slm

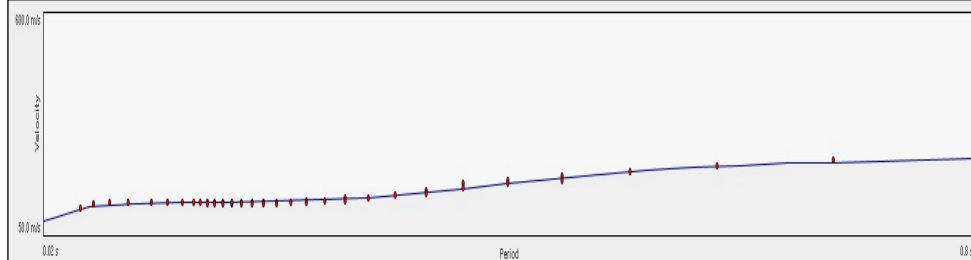
OPERATORI: Mazzetti M. - Arbizzi A.

Spettro di potenza

File and Settings: g:\m\CNTGEO\Desktop\SISMICA\NONANTOLA\2013\Nonantola_9\101.sgy + Step 2, 3, 4, 5 - Planes: 0, 2, 5, 9, 11, 16, 19
Frequency, Hz 24.902



Curva di dispersione

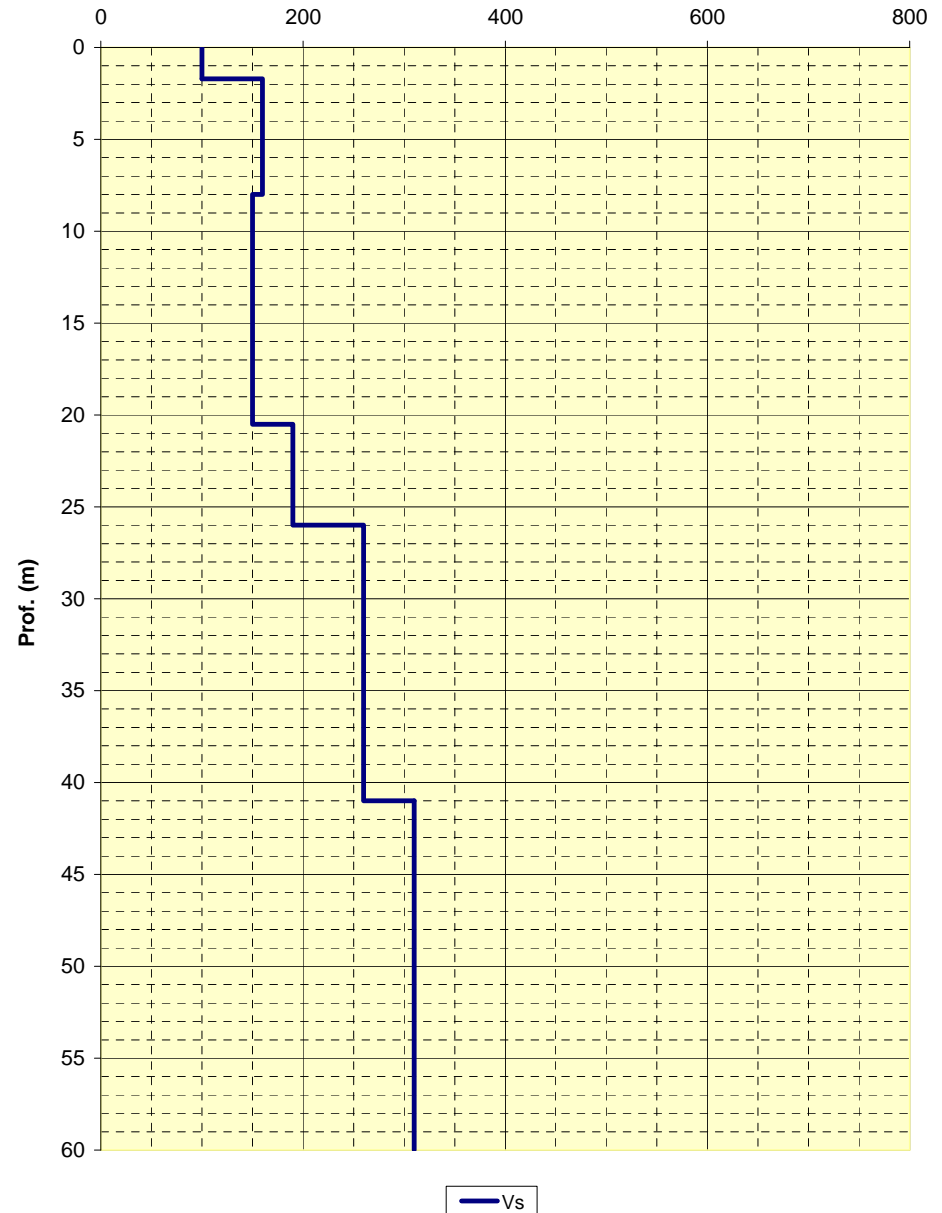


Note:

Modello interpretativo

| Strato n° | Prof. (m) | Spess. (m) | Vs (m/s) |
|-----------|-----------|------------|----------|
| 1 | 0 | 1.7 | 100 |
| 2 | 1.7 | 8 | 160 |
| 3 | 8 | 20.5 | 150 |
| 4 | 20.5 | 26 | 190 |
| 5 | 26 | 41 | 260 |
| 6 | 41 | INF | 310 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

Modello interpretativo
profilo Vs (m/s)



INDAGINI HVSR

STUDIO GEOLOGICO CENTROGEO

42015 Correggio (RE) - Piazza S. Quirino, 6 - tel 0522/641001 - Fax: 632162

STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 1

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

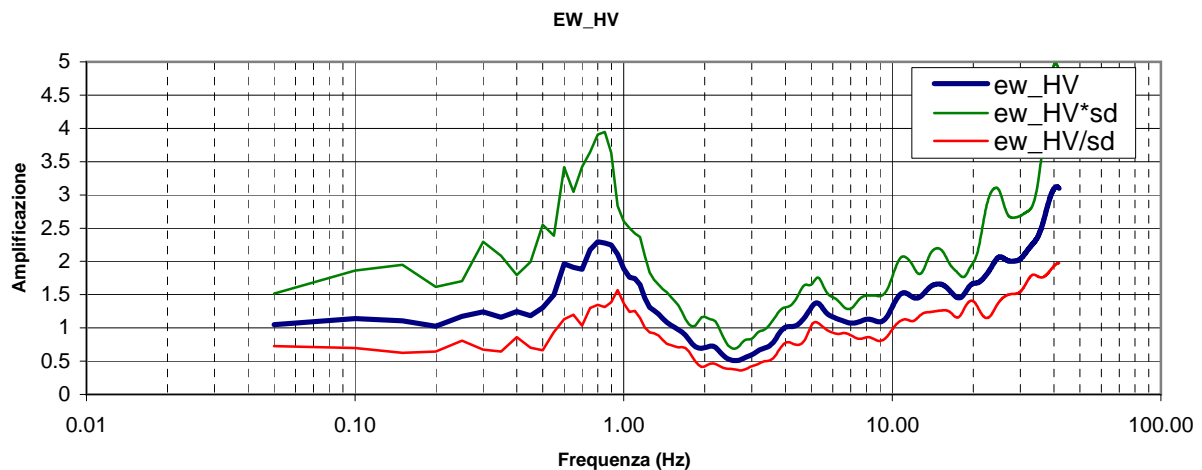
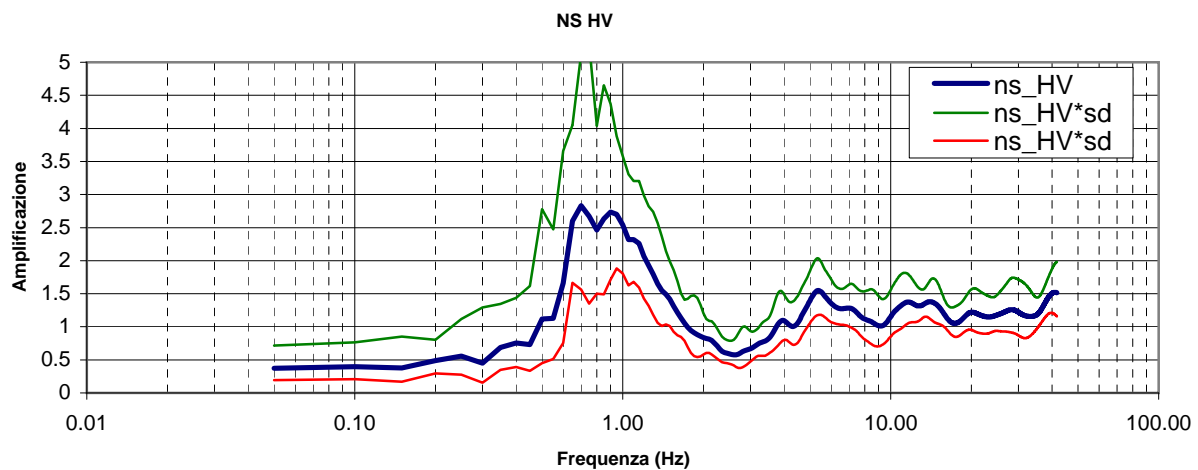
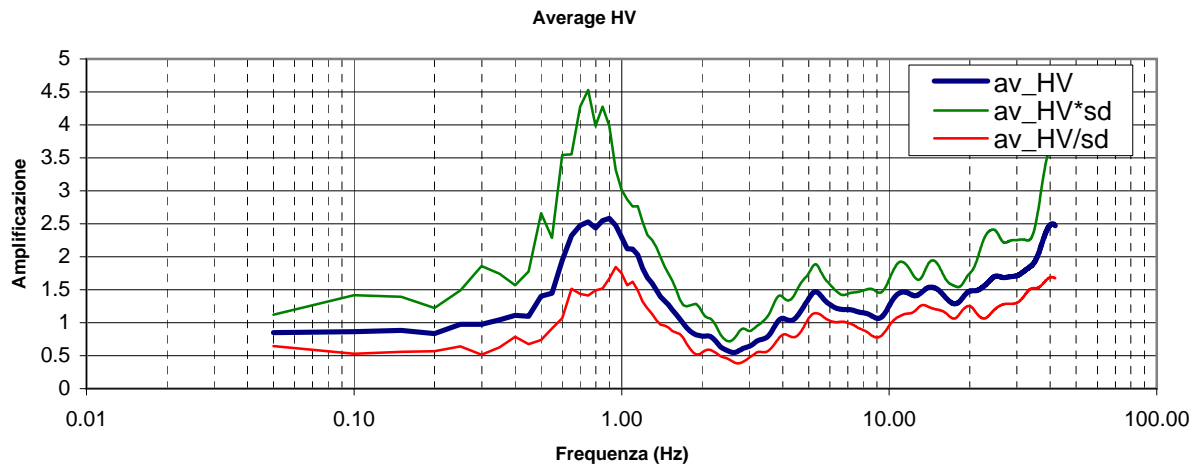
DATA: 29-09-2009

CANTIERE: PSC

QUOTA: 28,4 m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 2

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

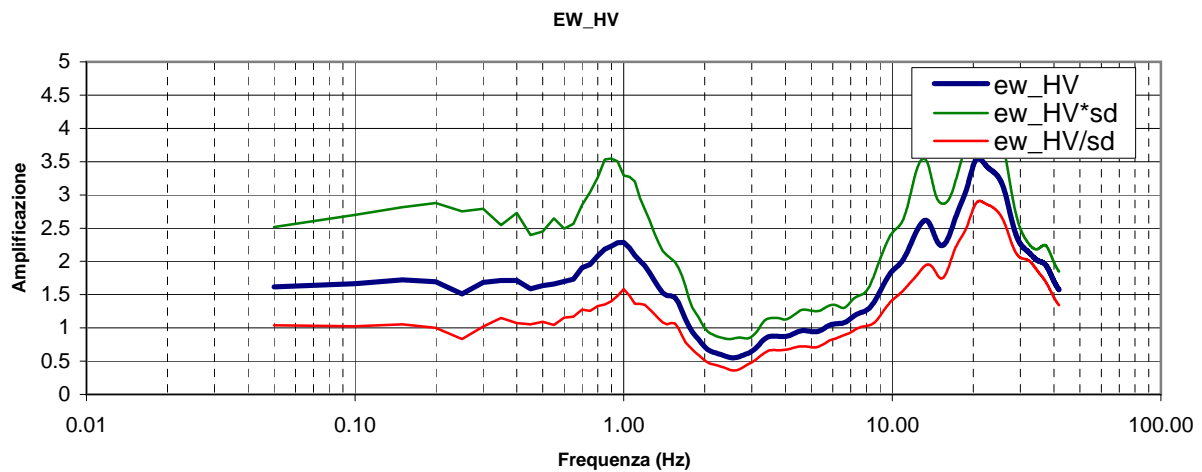
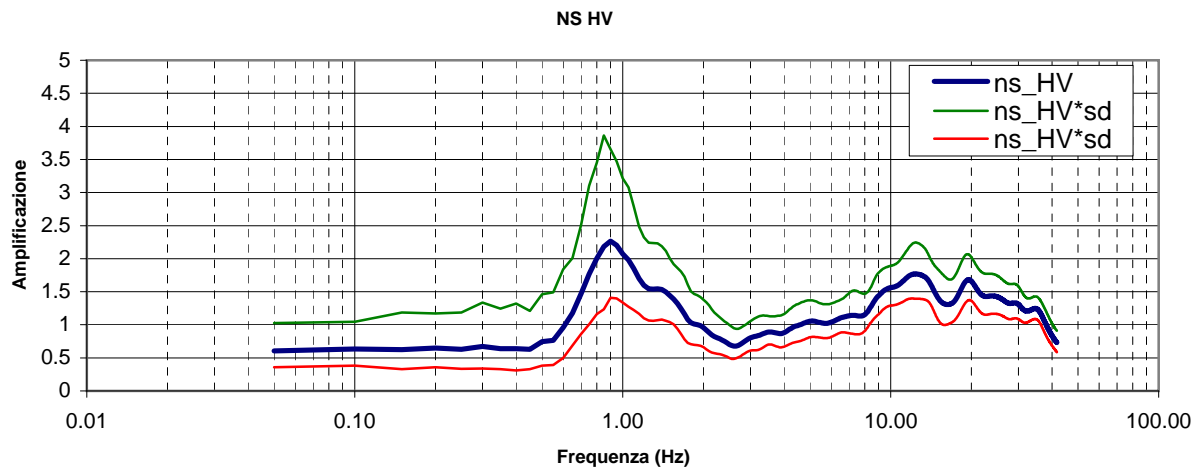
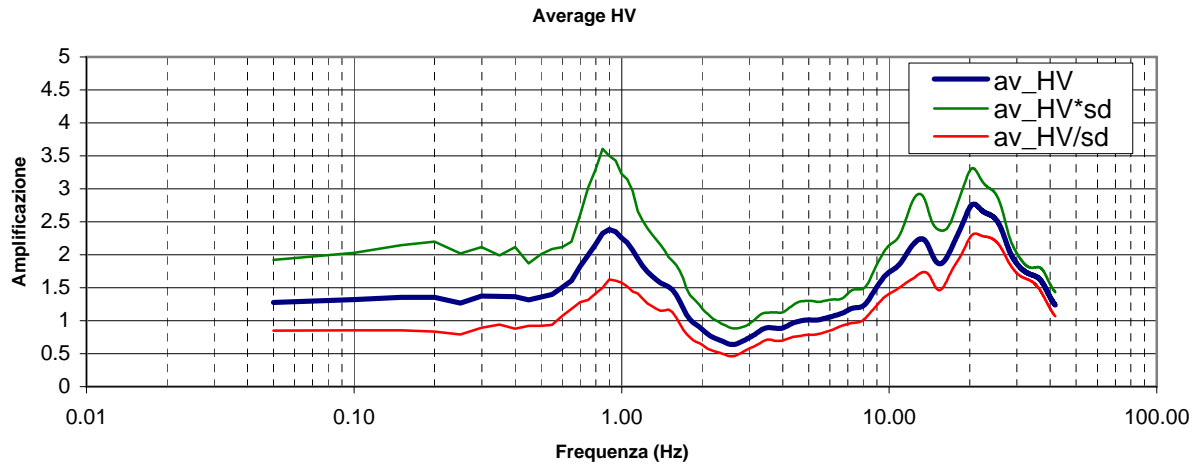
DATA: 29-09-2009

CANTIERE: PSC

QUOTA: 28,9 m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 3

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

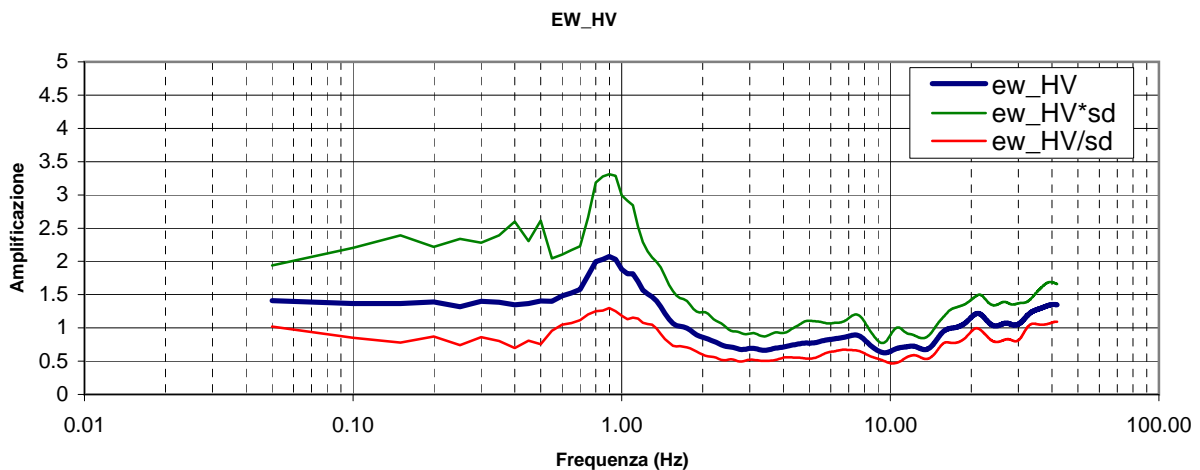
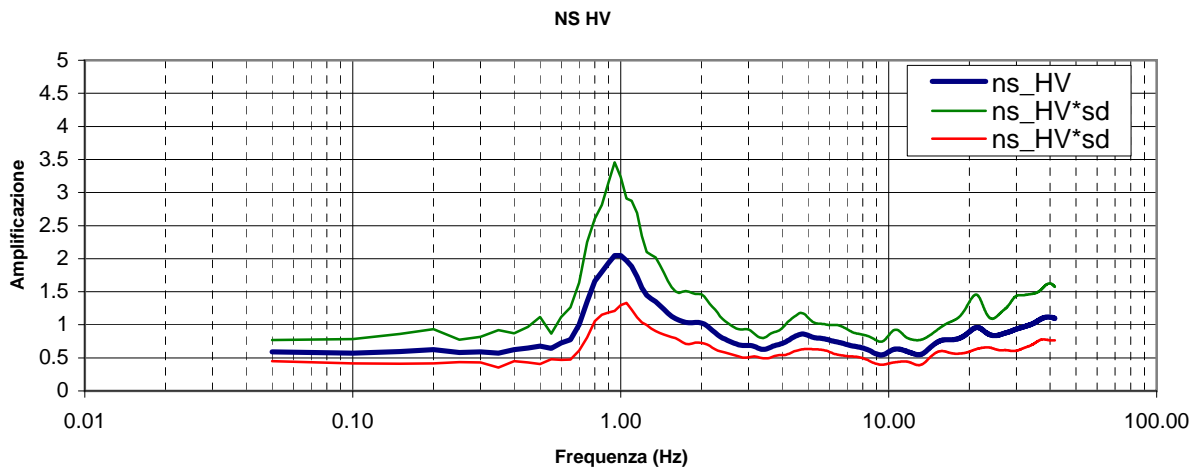
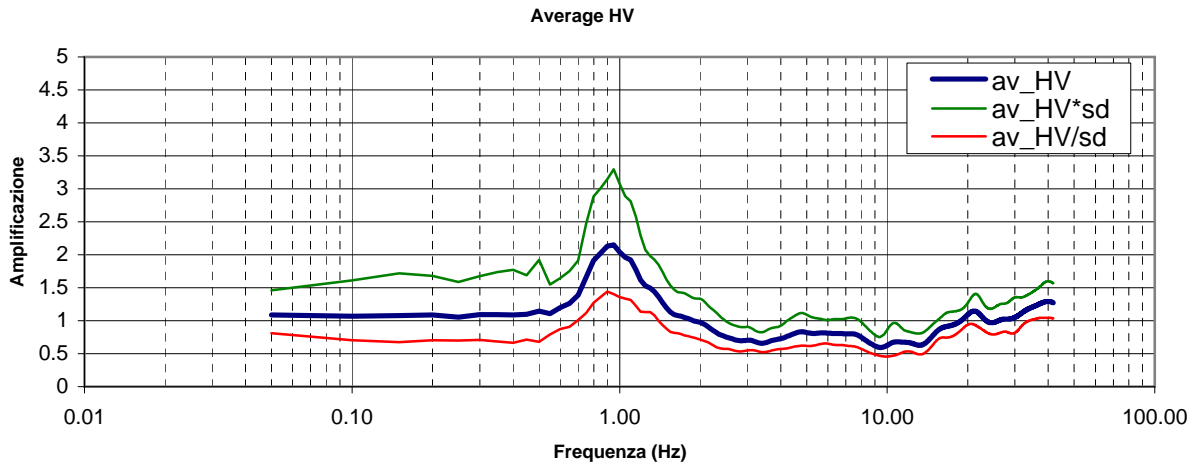
DATA: 29-09-2009

CANTIERE: PSC

QUOTA: 26,2 m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 4

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

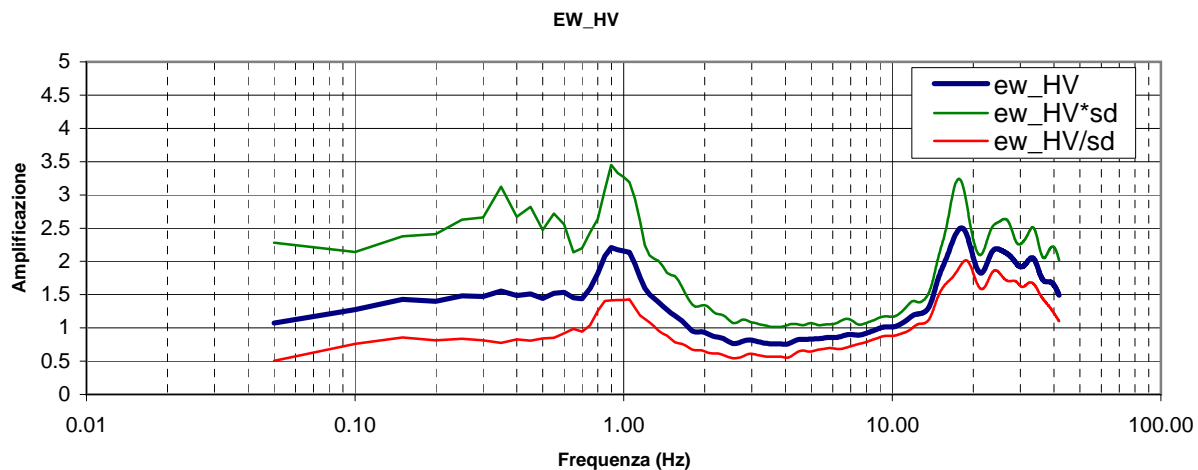
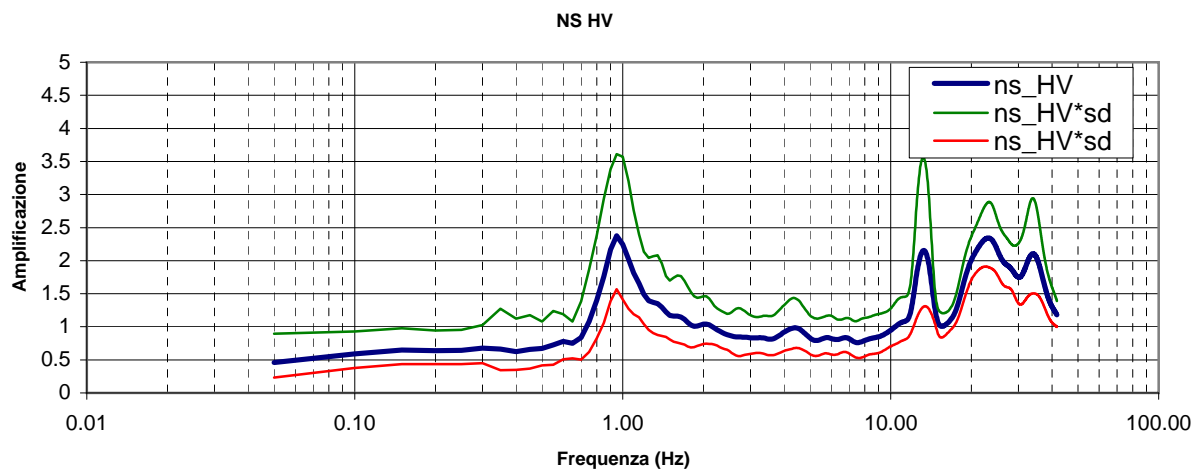
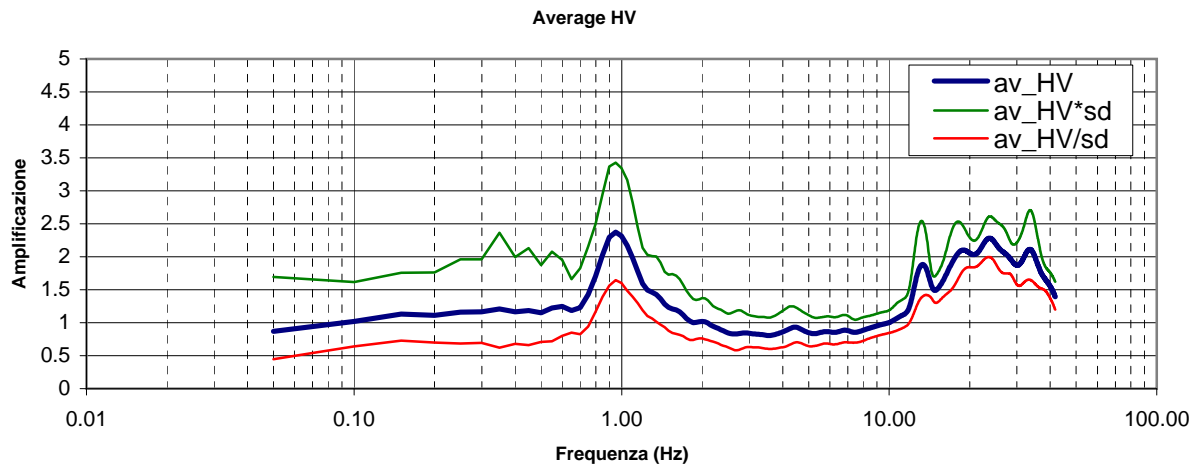
DATA: 29-09-2009

CANTIERE: PSC

QUOTA: 25,6 m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

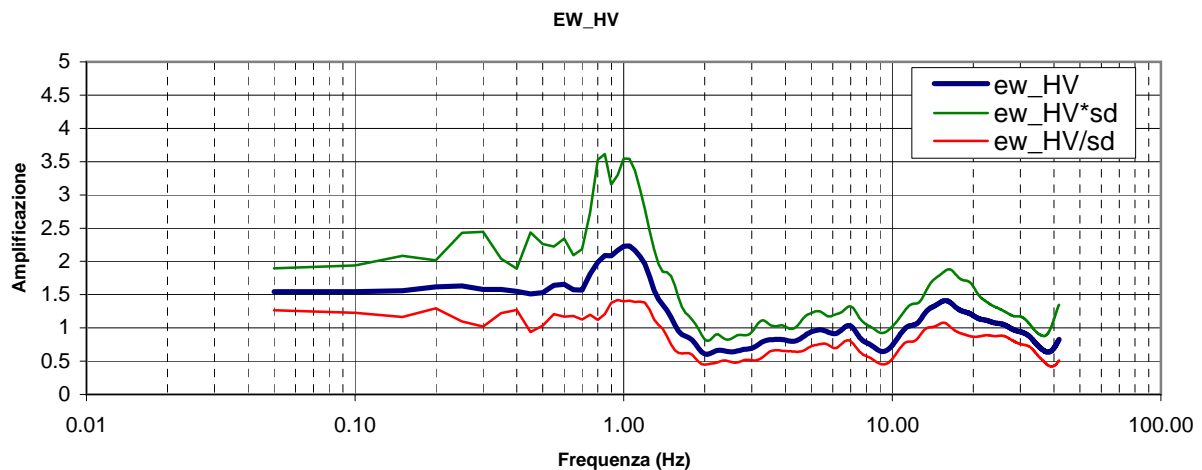
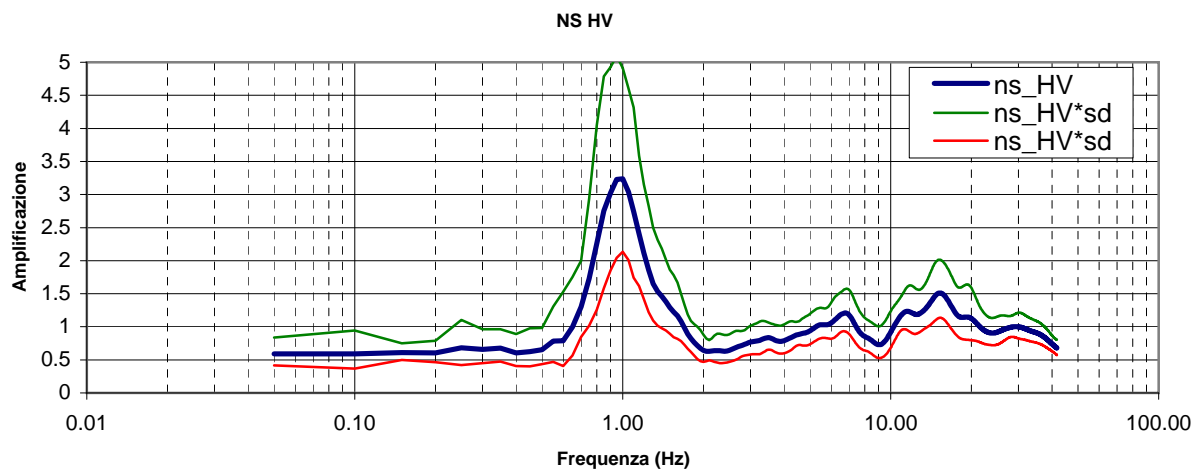
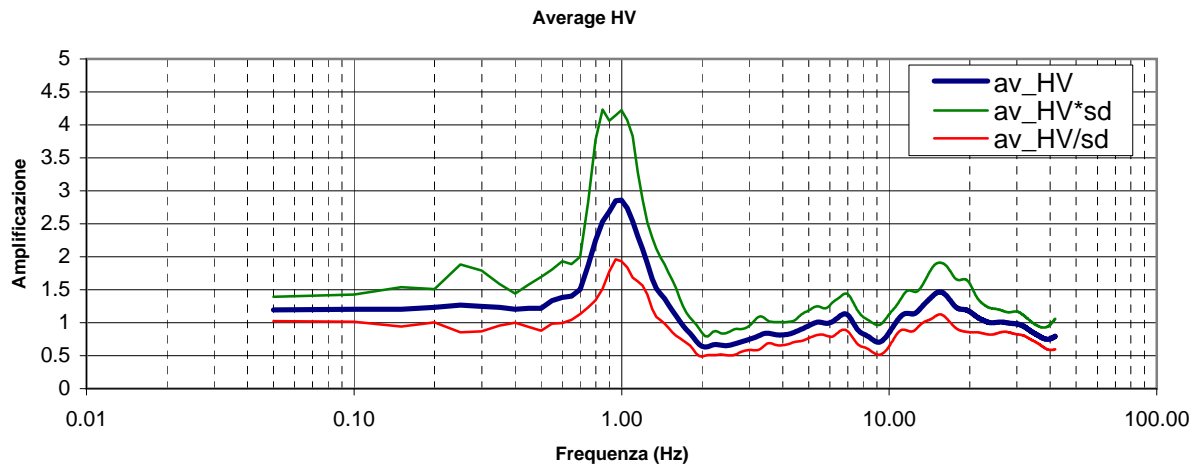
DATA: 29-09-2009

CANTIERE: PSC

QUOTA: 29,0 m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 6

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

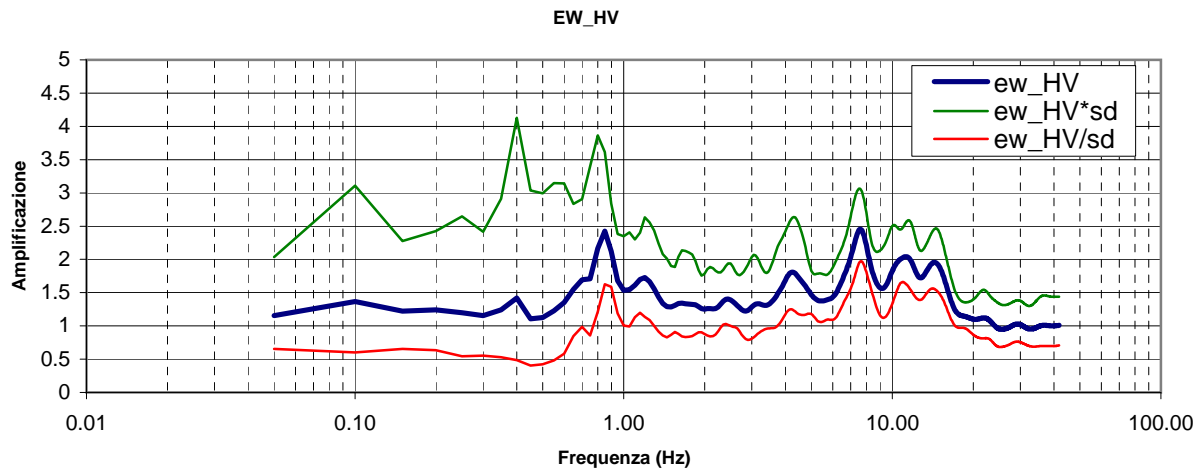
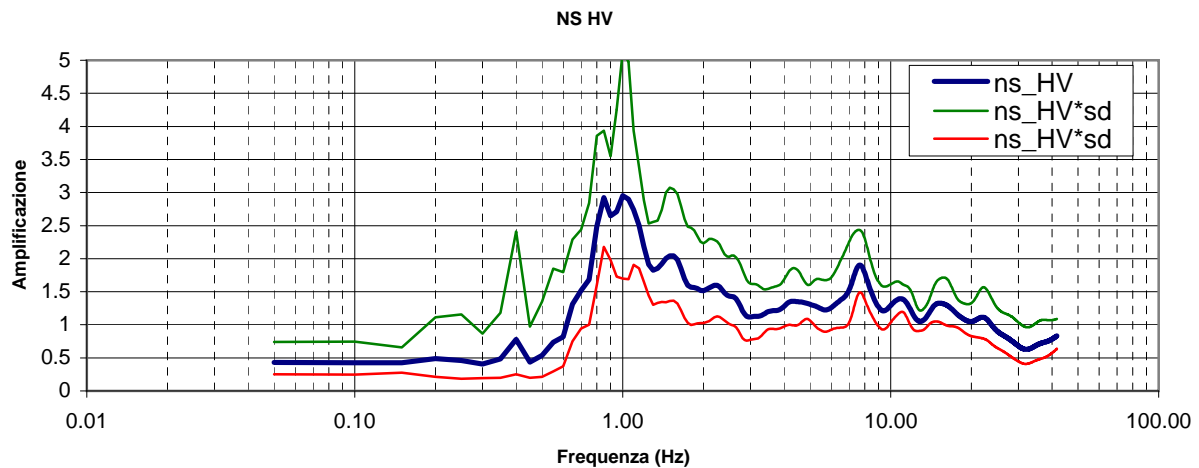
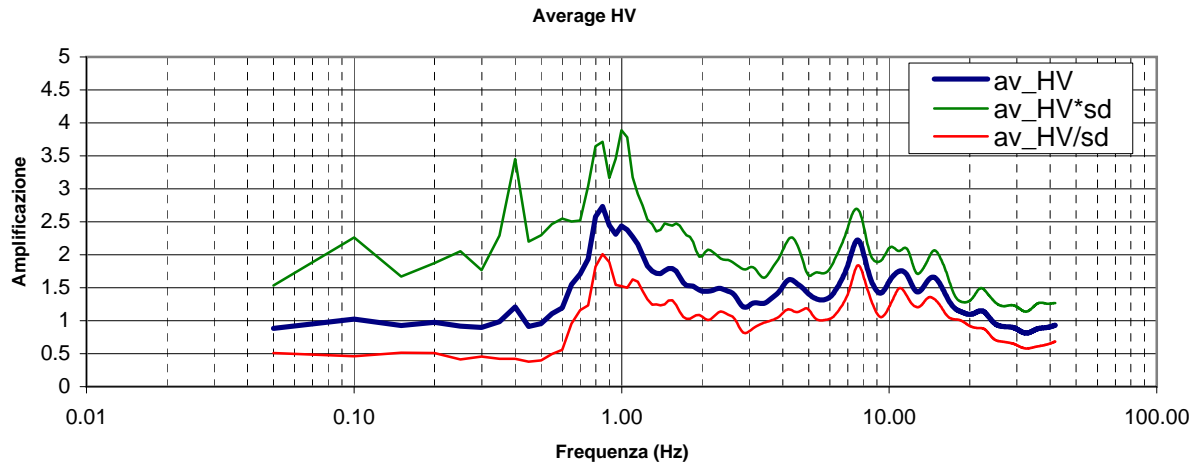
DATA: 29-09-2009

CANTIERE: PSC

QUOTA: 22,2 m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 7

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

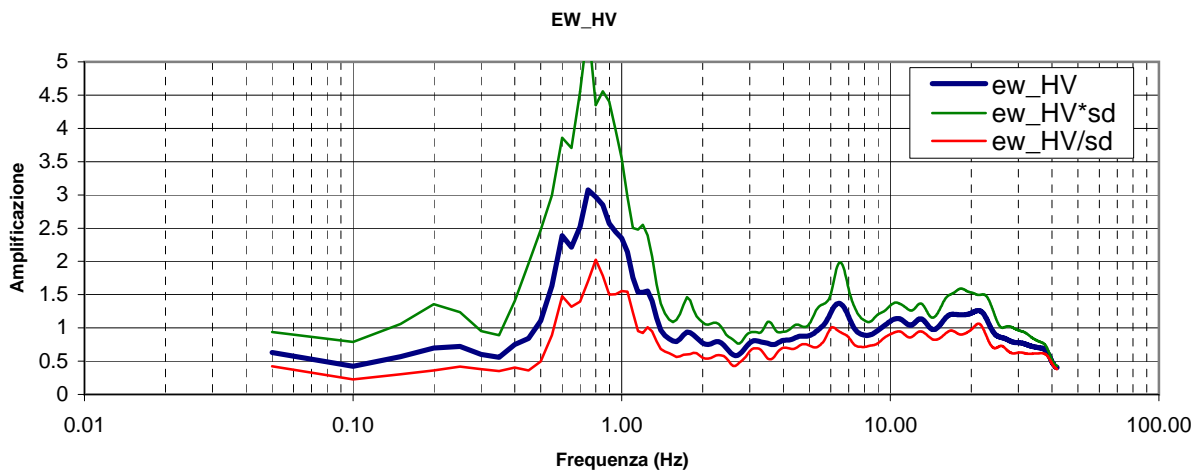
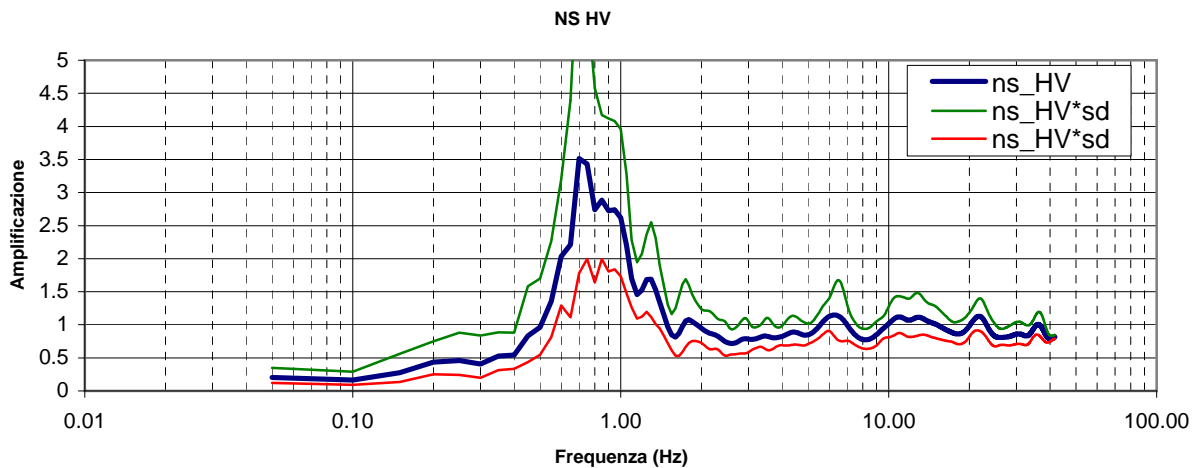
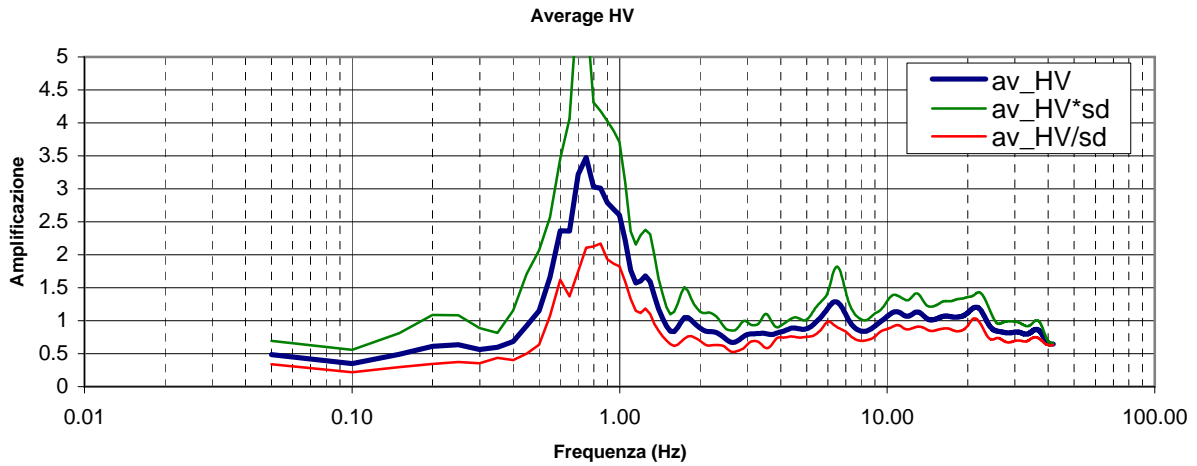
DATA: 30-09-2009

CANTIERE: PSC

QUOTA: 24,4 m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 8

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

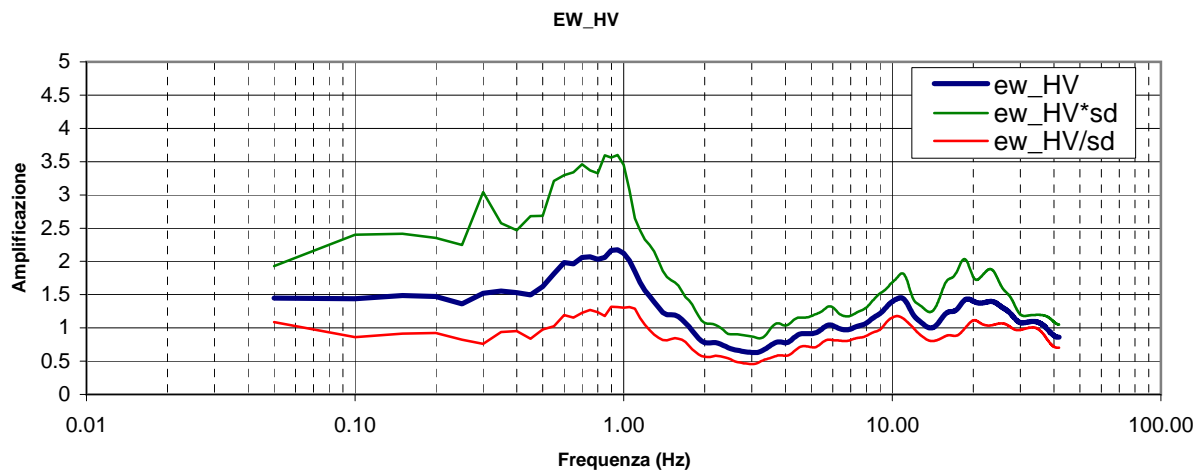
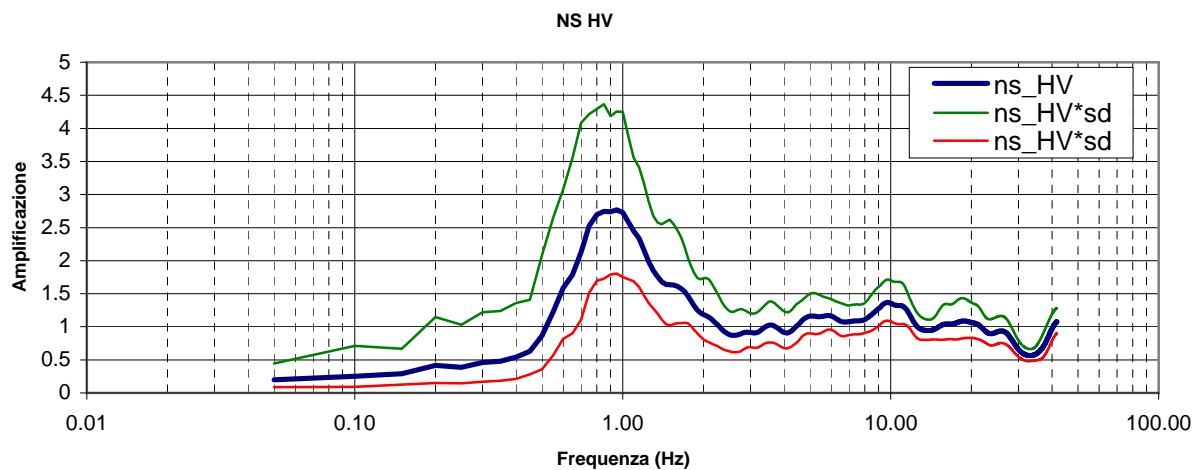
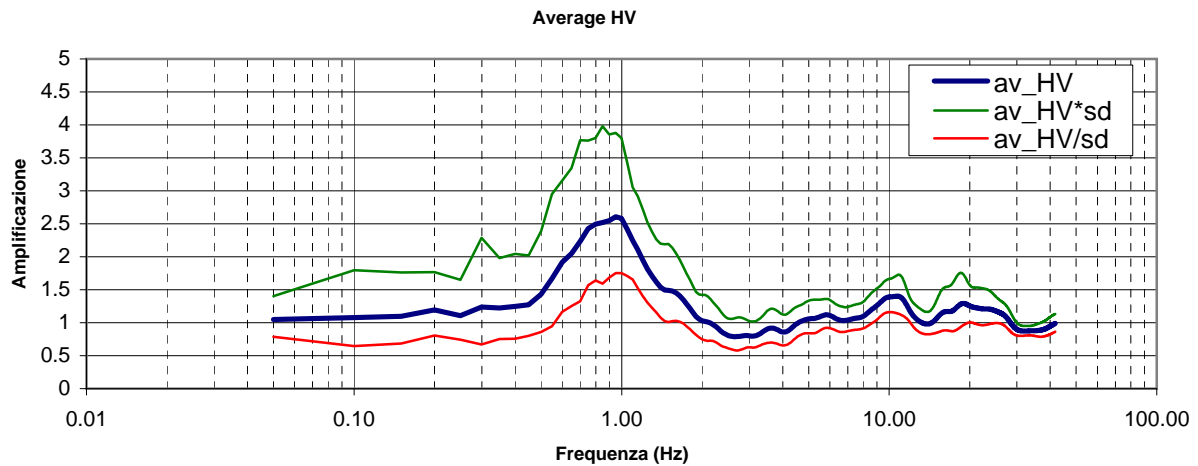
DATA: 30-09-2009

CANTIERE: PSC

QUOTA: 22,3 m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 9

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

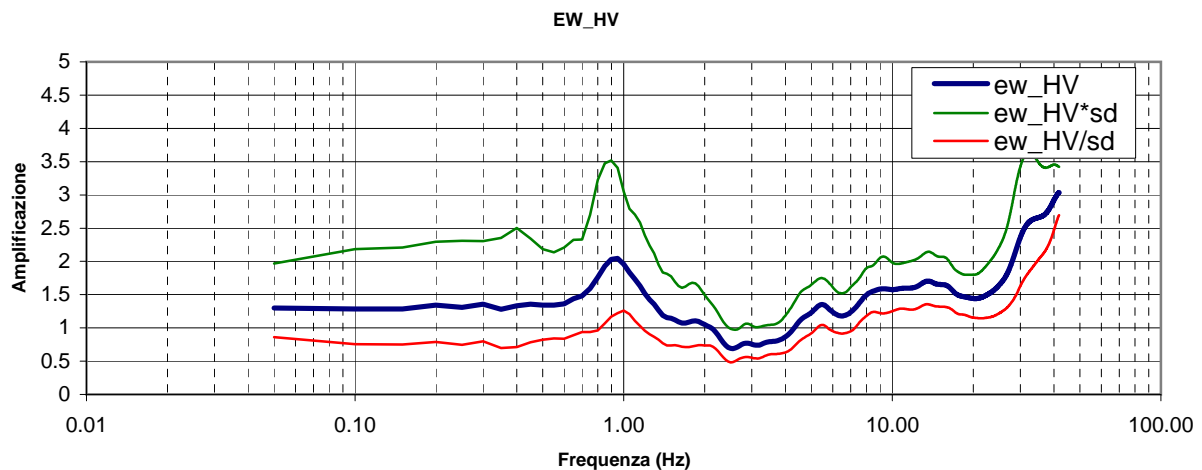
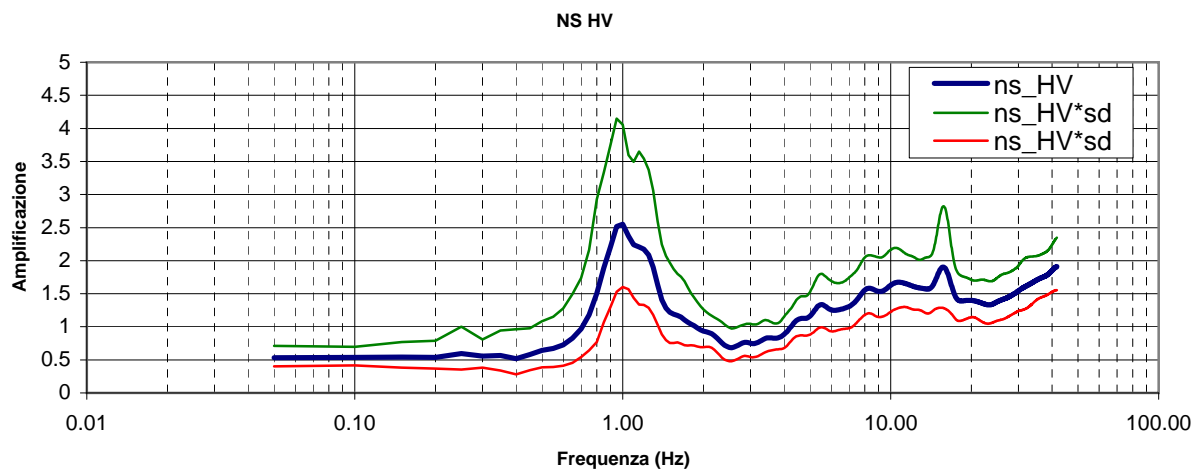
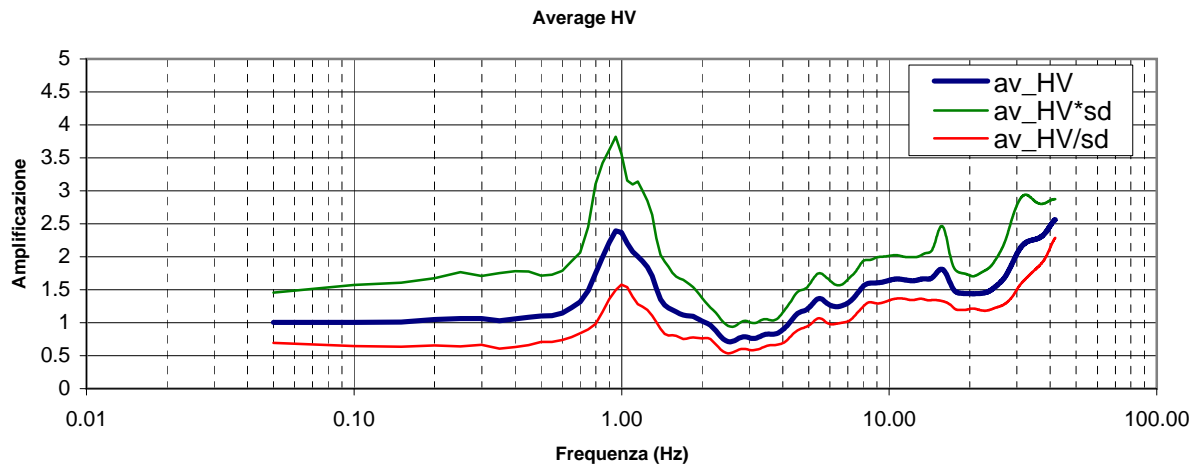
DATA: 30-09-2009

CANTIERE: PSC

QUOTA: 22,3 m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 10

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

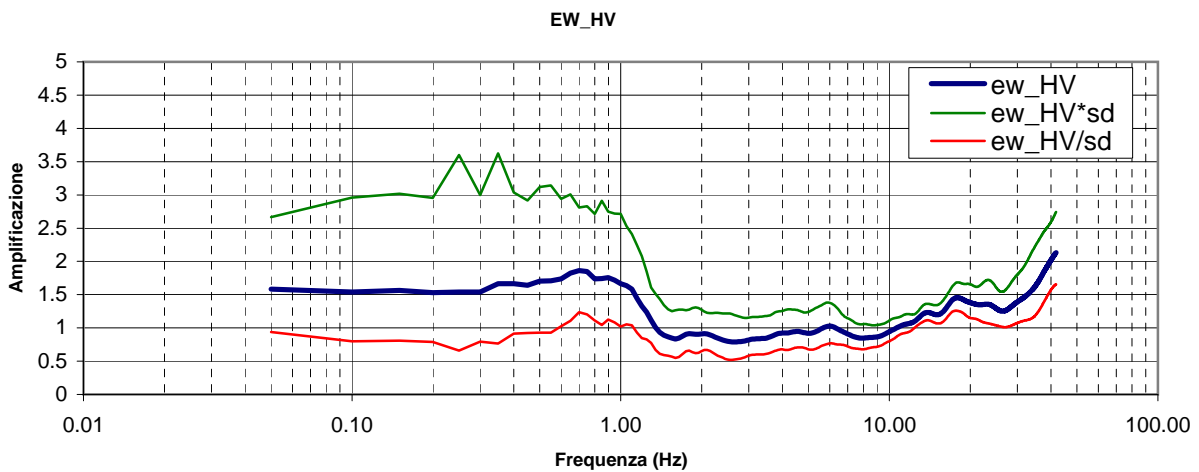
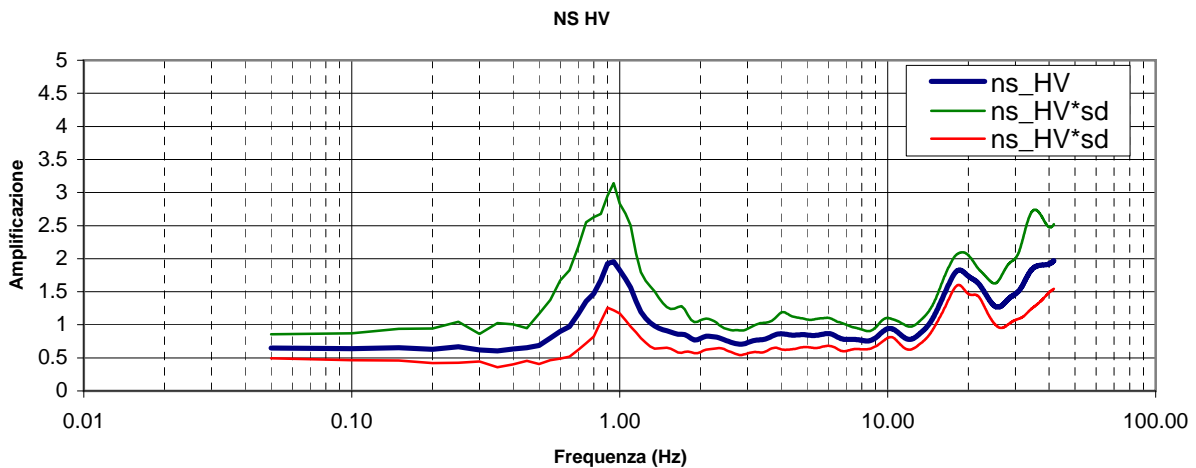
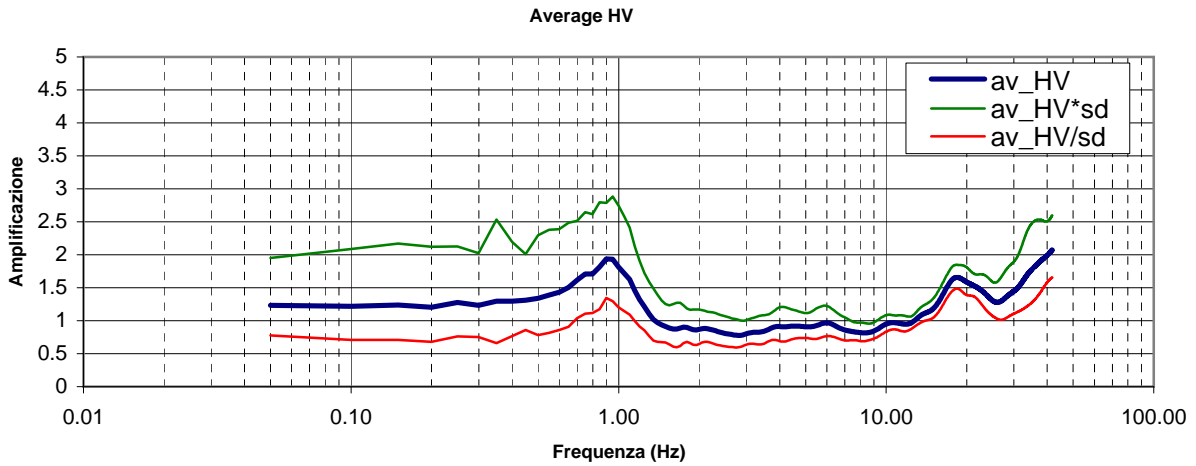
DATA: 30-09-2009

CANTIERE: PSC

QUOTA: 23,2 m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 11

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

DATA: 30-09-2009

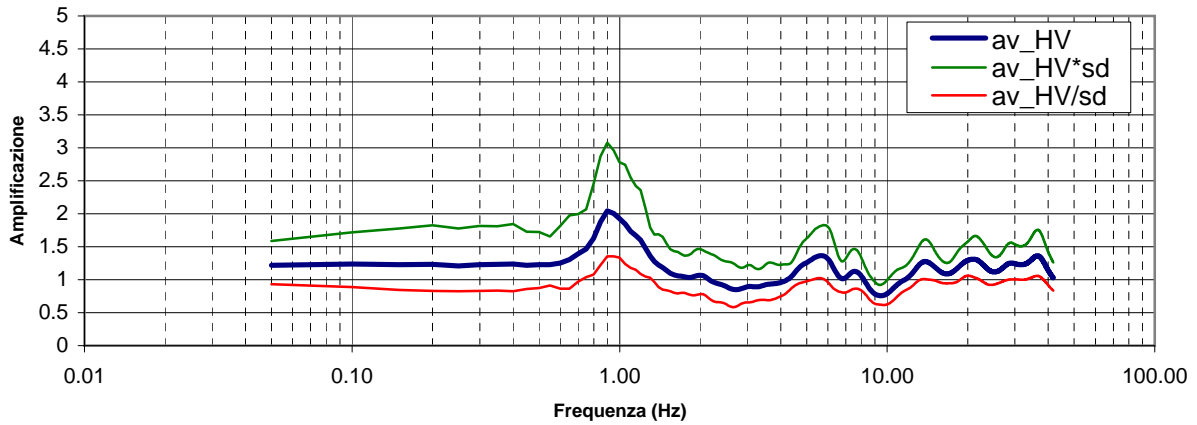
CANTIERE: PSC

QUOTA: 21,6 m. s.l.m.

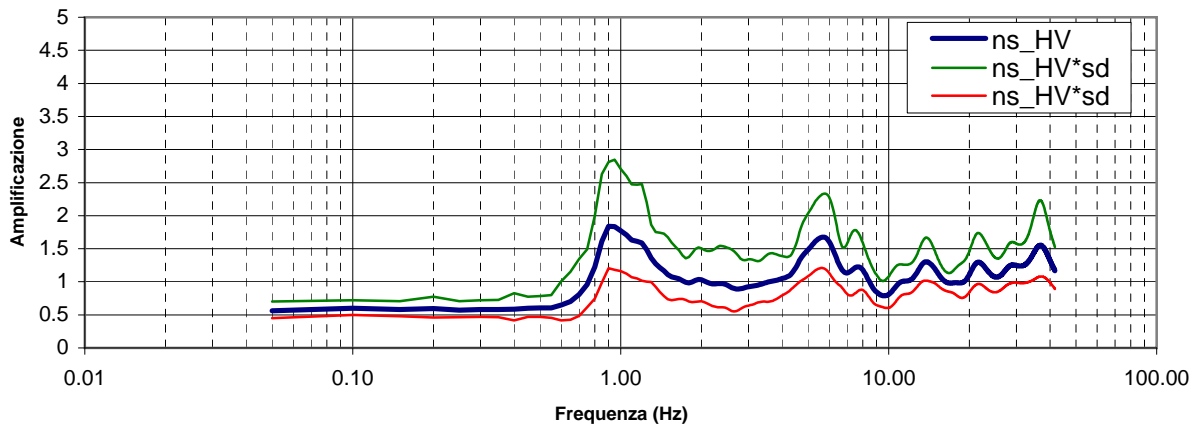
OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali

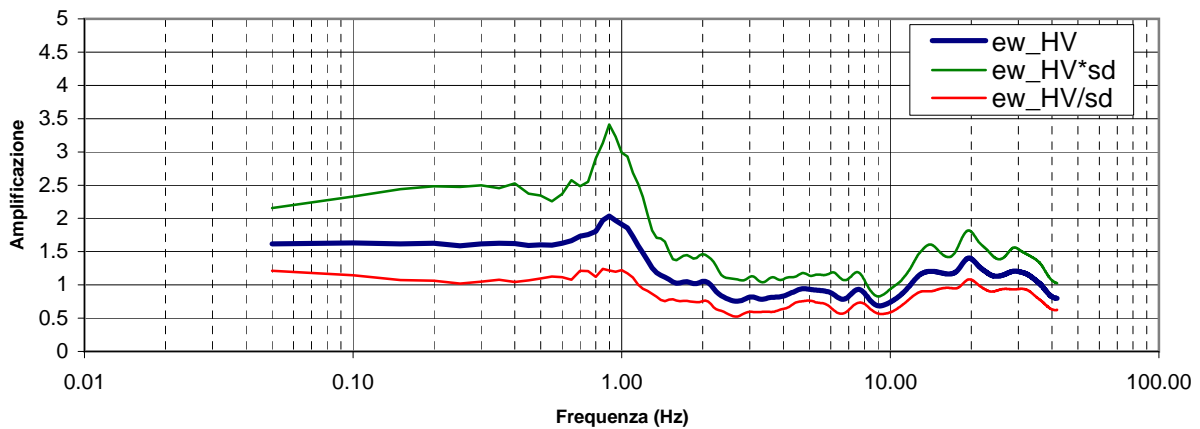
Average HV



NS HV



EW_HV



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 12-09

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

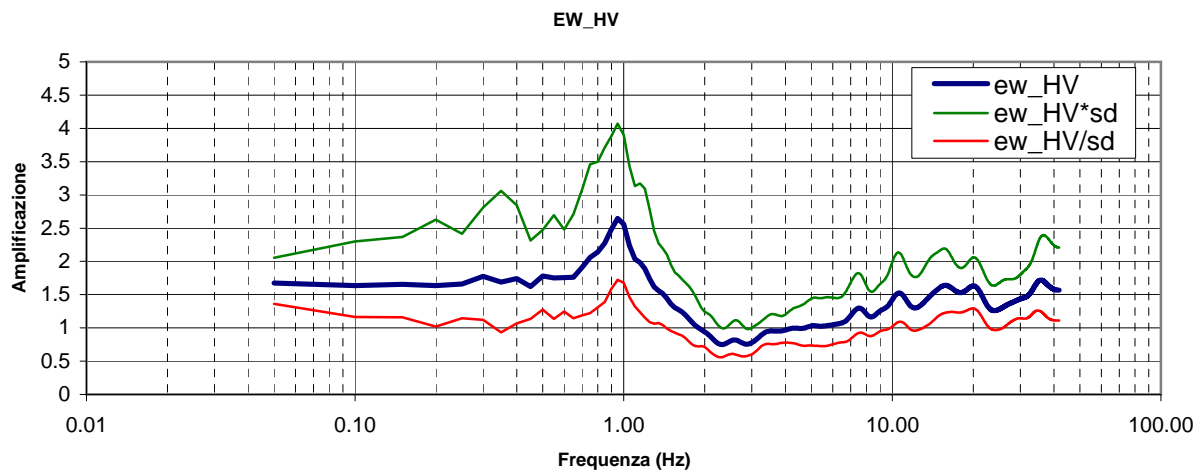
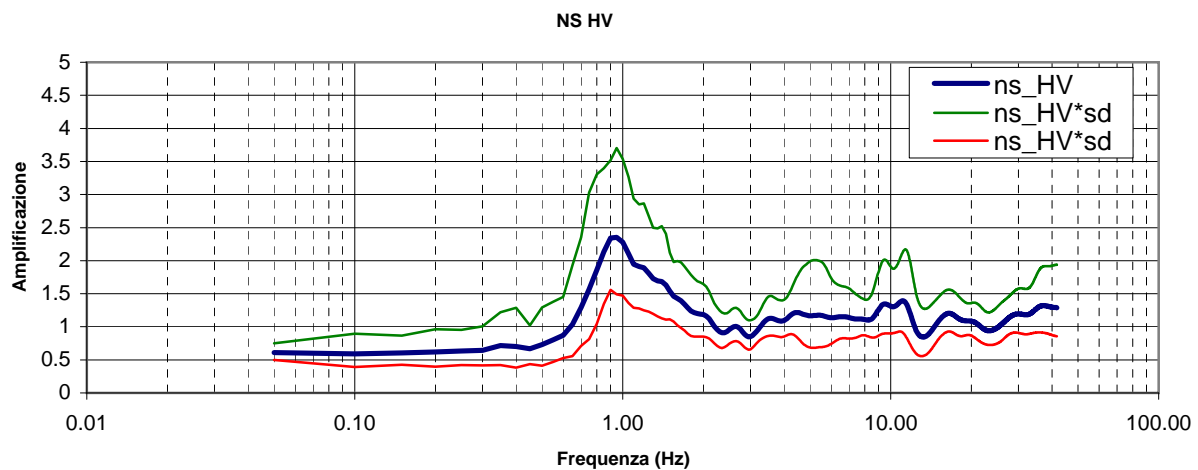
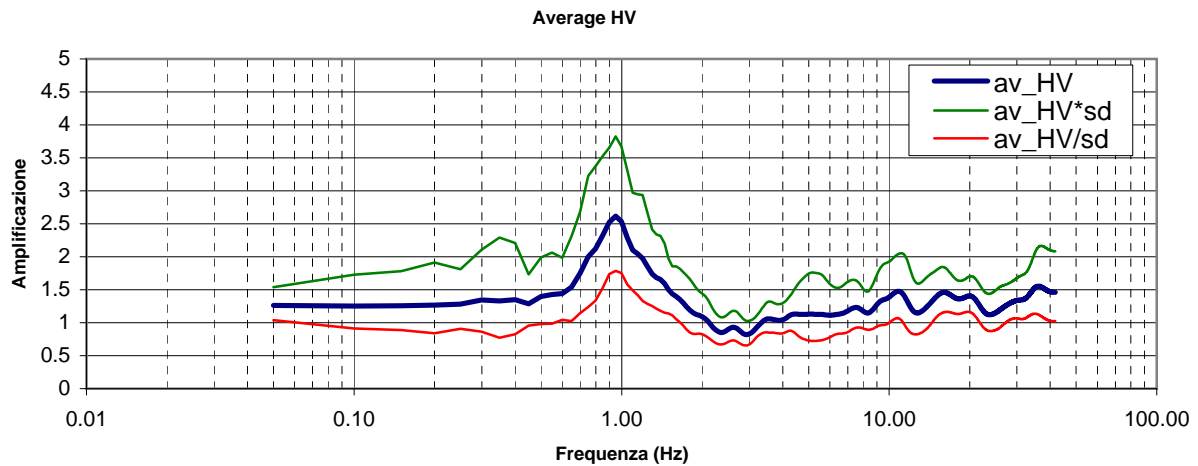
DATA: 30-09-2009

CANTIERE: PSC

QUOTA: 20,8 m. s.l.m.

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 13

LOCALITA': Nonantola (MO)

COMMITTENTE: Dr. Geol. V. Franchi

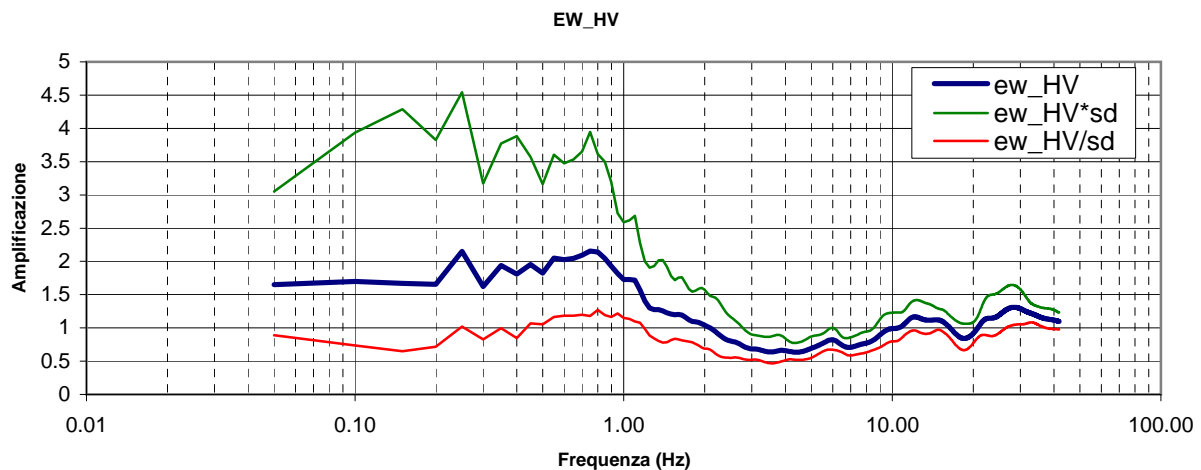
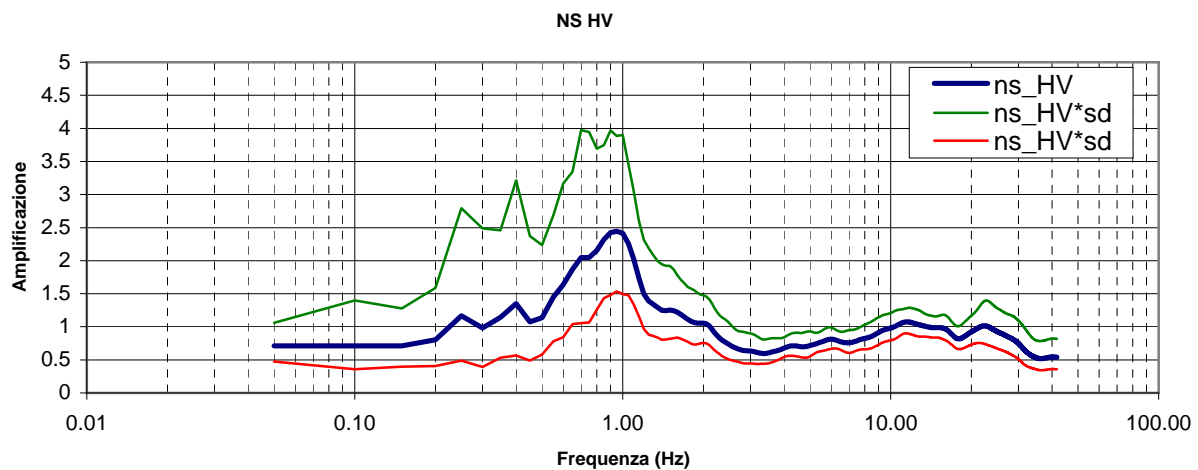
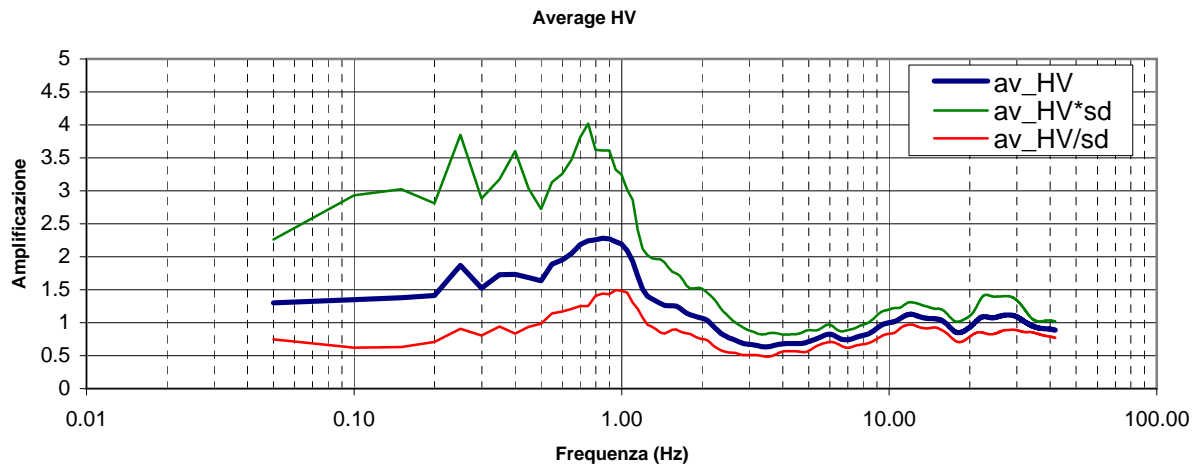
DATA: 24-03-2009

CANTIERE: Area di variante n° 1

QUOTA: 23,0 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 14

LOCALITA': Nonantola (MO)

COMMITTENTE: Dr. Geol. V. Franchi

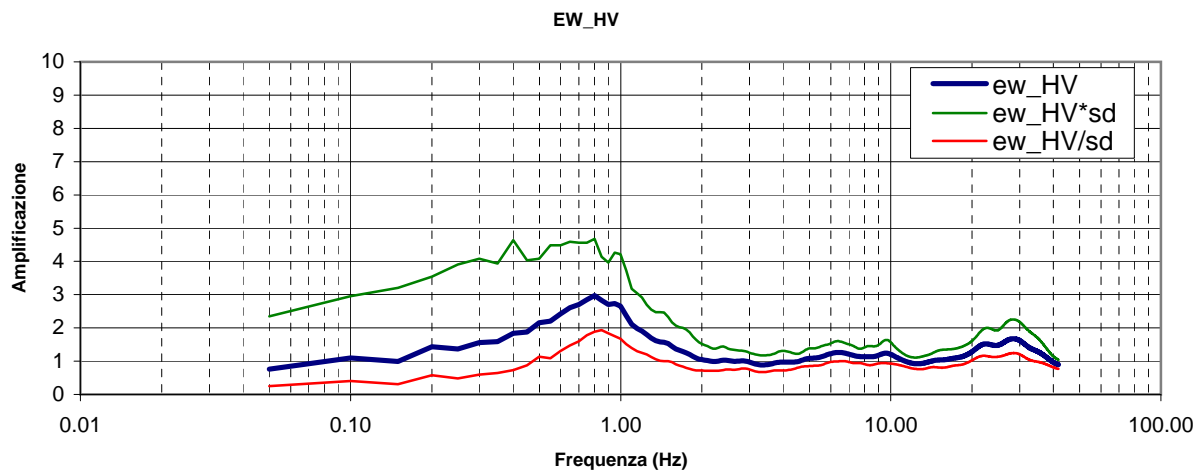
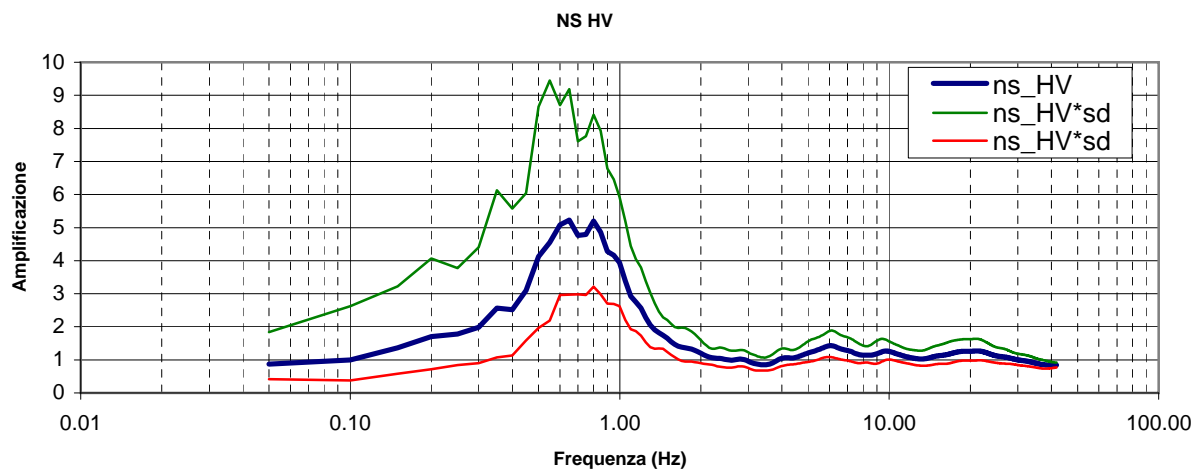
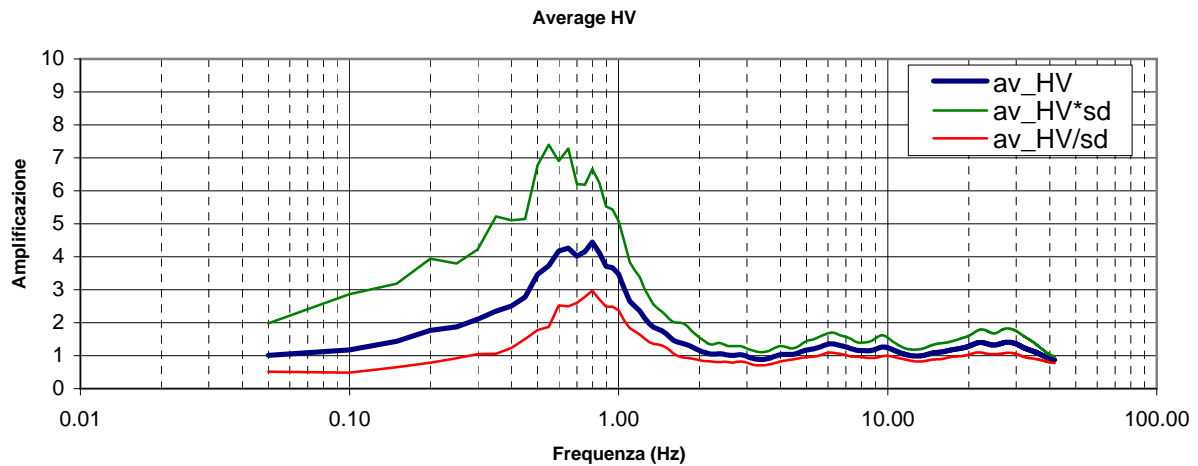
DATA: 24-03-2009

CANTIERE: Area di variante n° 2

QUOTA: 23,6 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 15

LOCALITA': Nonantola (MO)

COMMITTENTE: Dr. Geol. V. Franchi

DATA: 24-03-2009

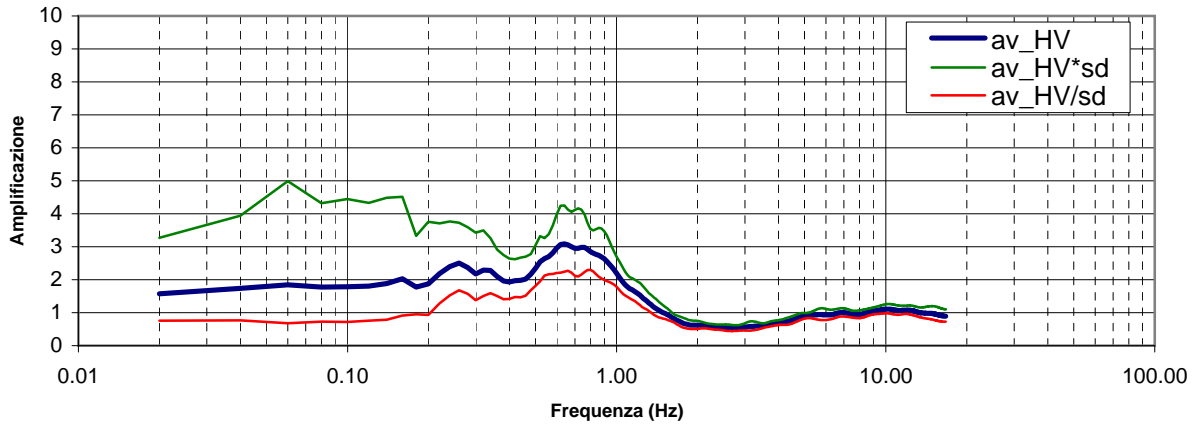
CANTIERE: Area di variante n° 3

QUOTA: 26,0 m slm

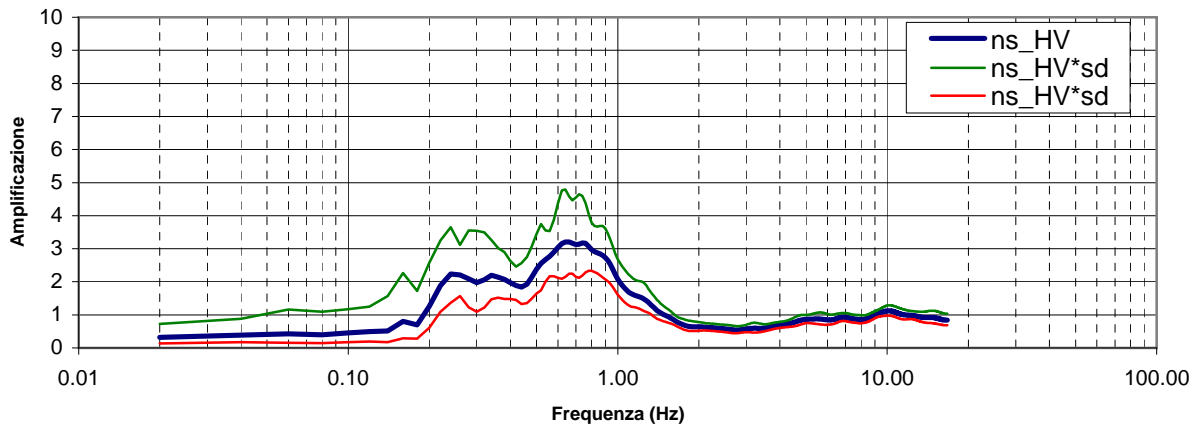
OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali

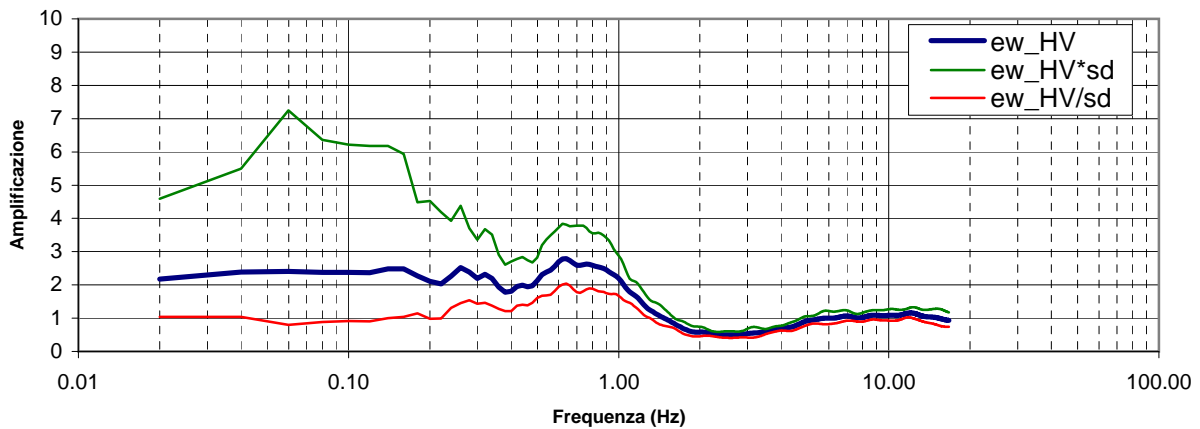
Average HV



NS HV



EW_HV



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 16

LOCALITA': Nonantola (MO)

COMMITTENTE: Dr. Geol. V. Franchi

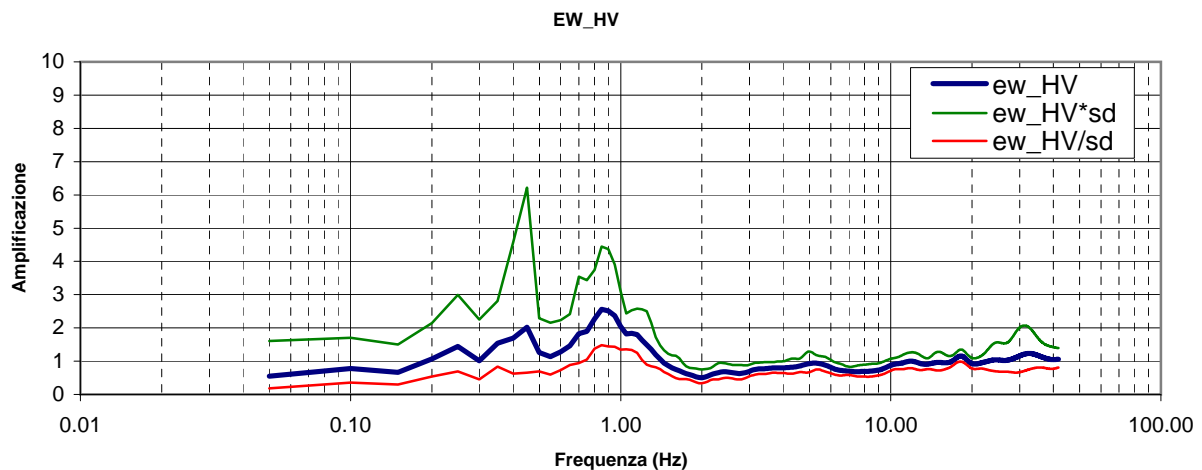
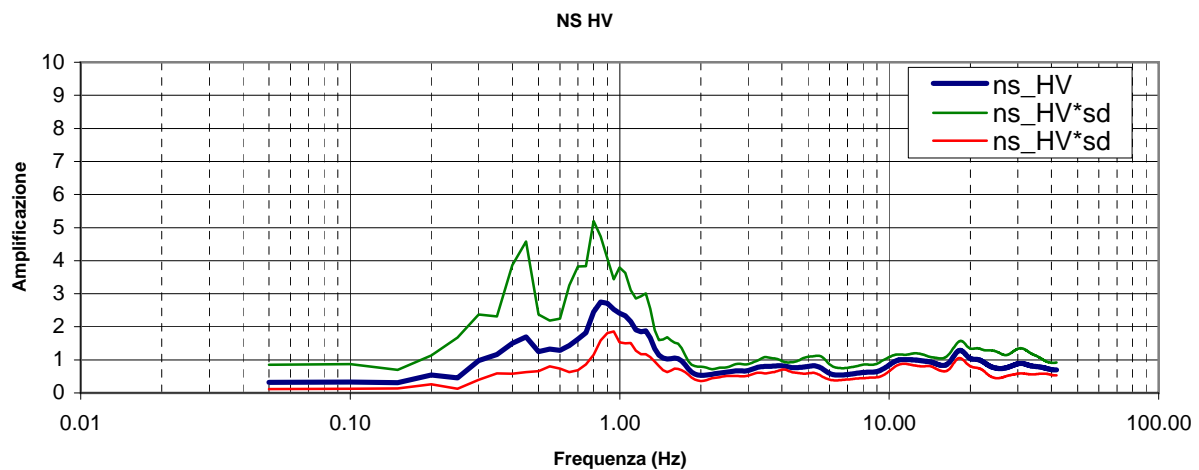
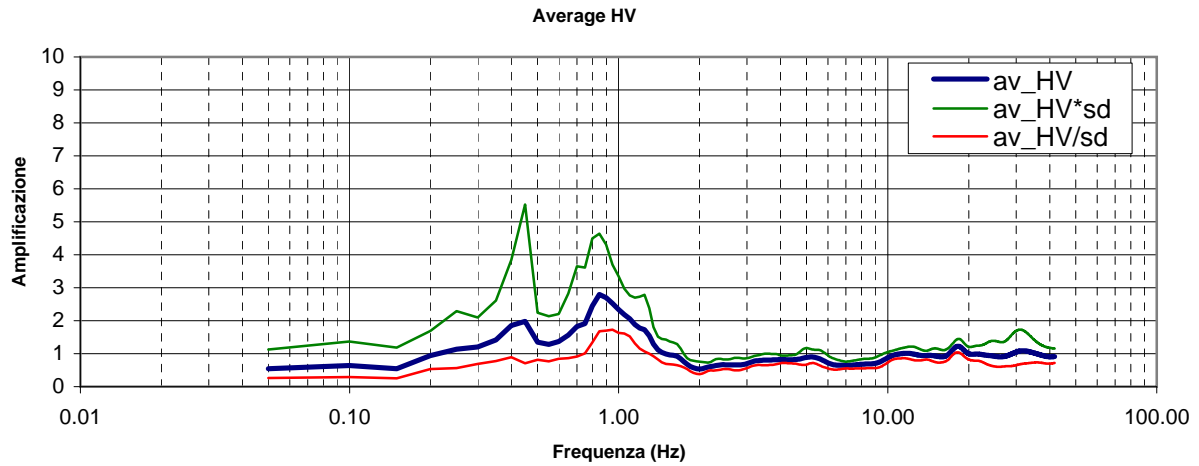
DATA: 24-03-2009

CANTIERE: Area di variante n° 4

QUOTA: 27,6 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 17

LOCALITA': Nonantola (MO)

COMMITTENTE:

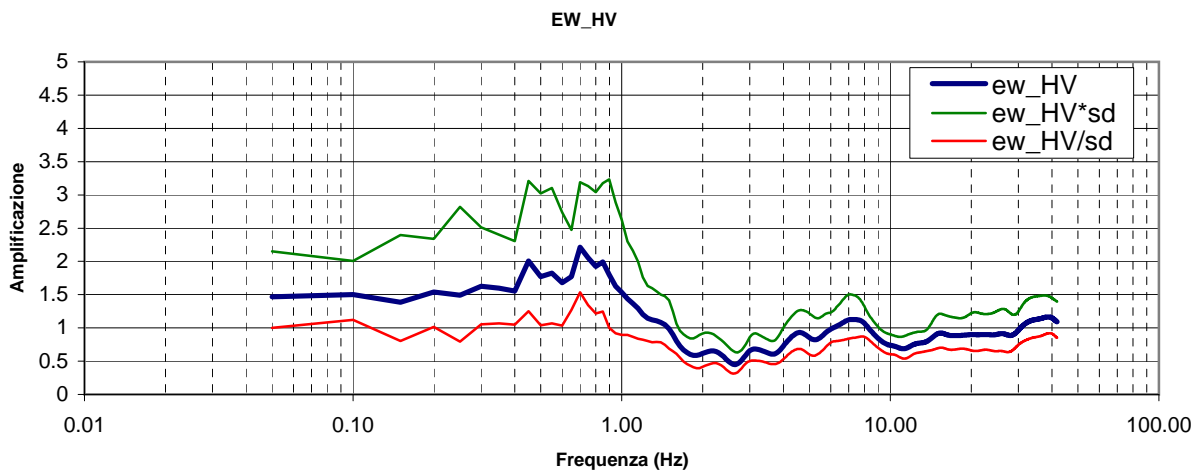
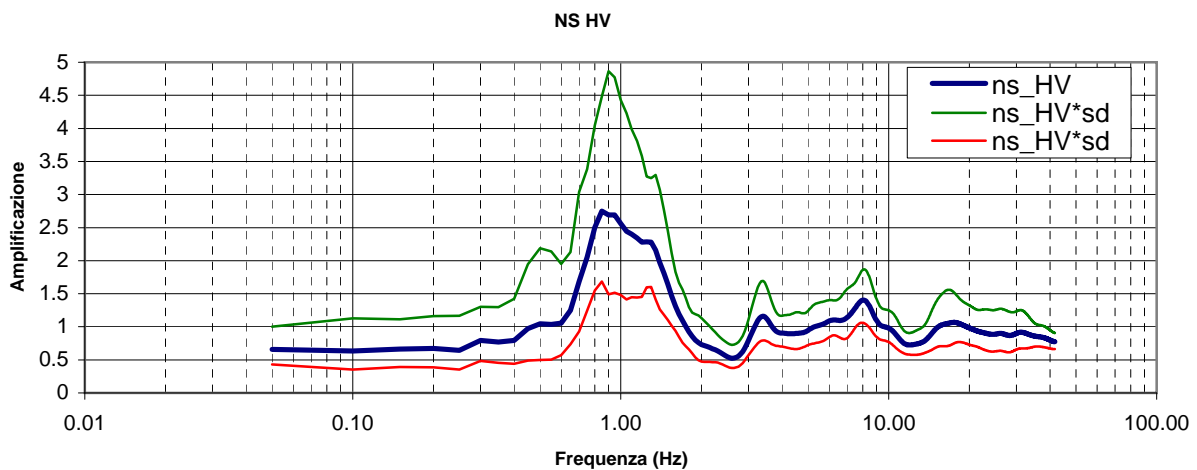
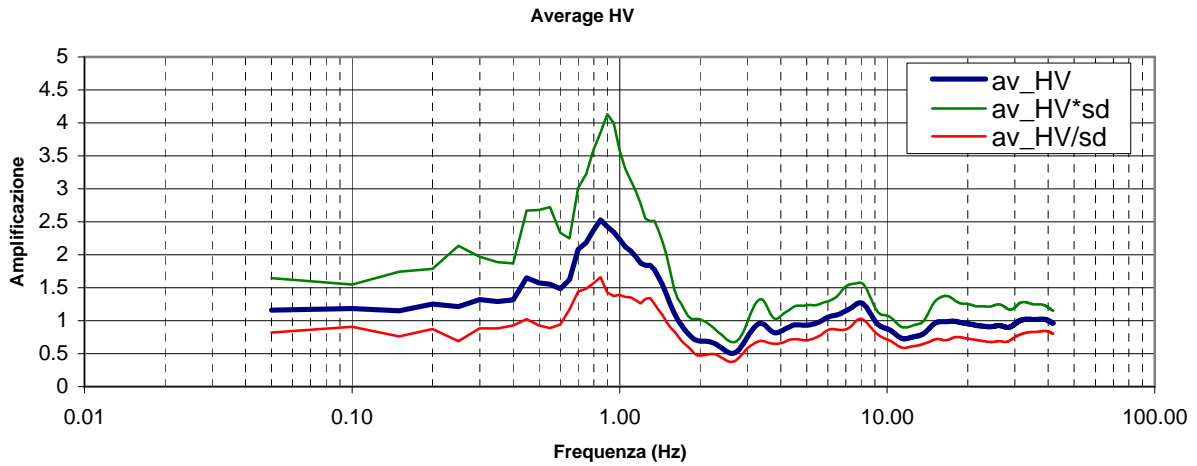
DATA:

CANTIERE: Nonantola

QUOTA:

OPERATORI: Dr. P.Beretti

Rapporti spettrali



LOCALITA': Nonantola (MO)

COMMITTENTE: NONAGINTA SRL

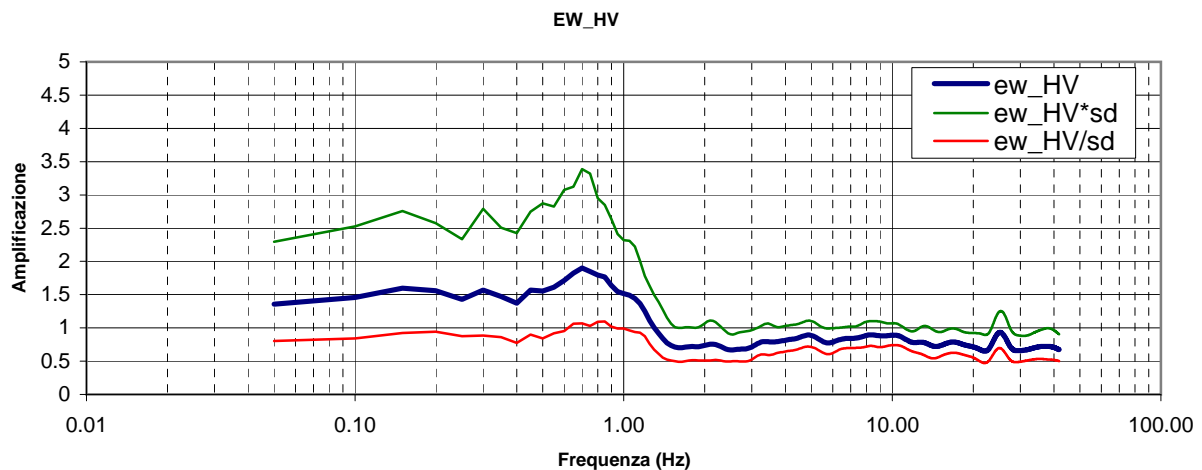
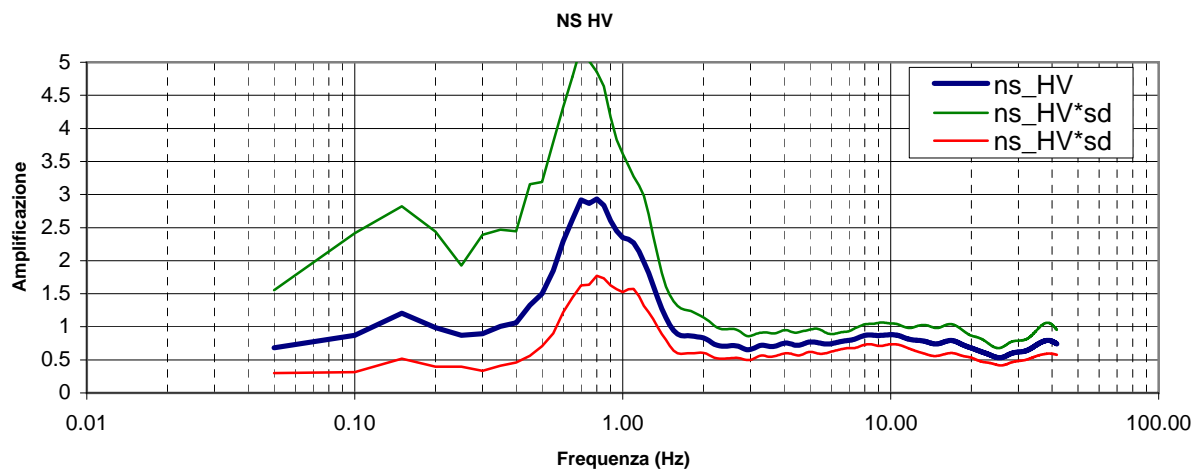
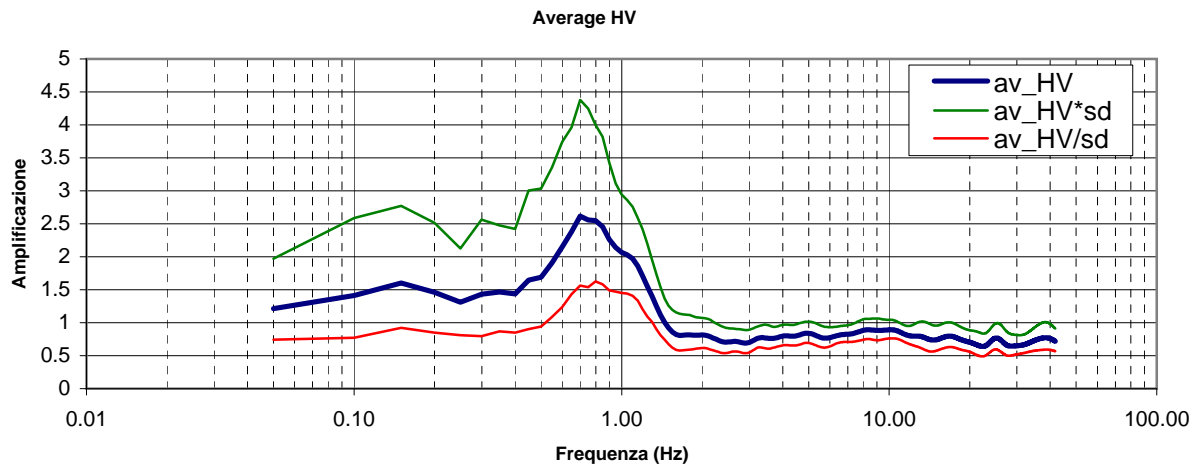
DATA: 11-04-2007

CANTIERE: Nuova Scuola

QUOTA: 24,5 m s.l.m.

OPERATORI: Dr. Arbizzi - Mazzetti M.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 19

LOCALITA': Nonantola (MO)

COMMITTENTE: NONAGINTA SRL

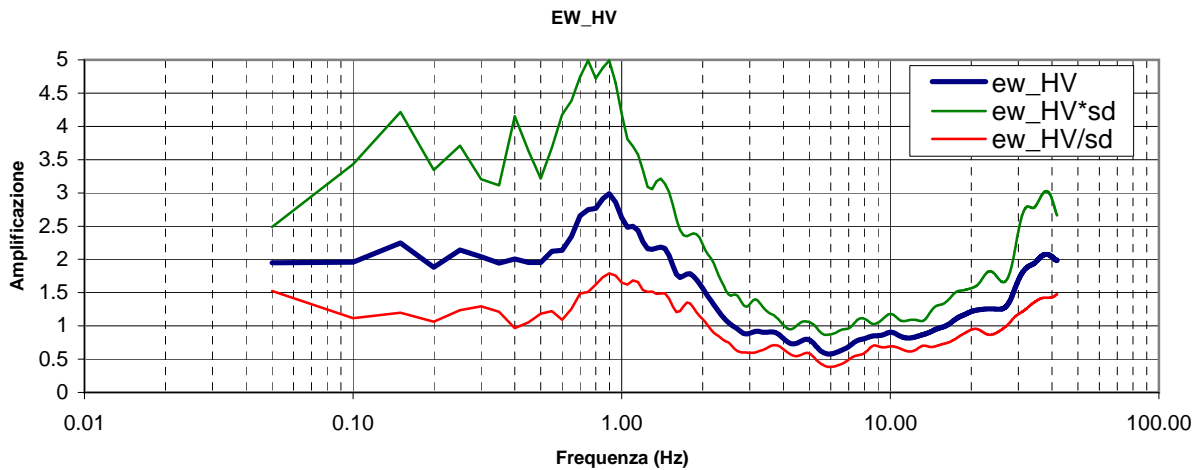
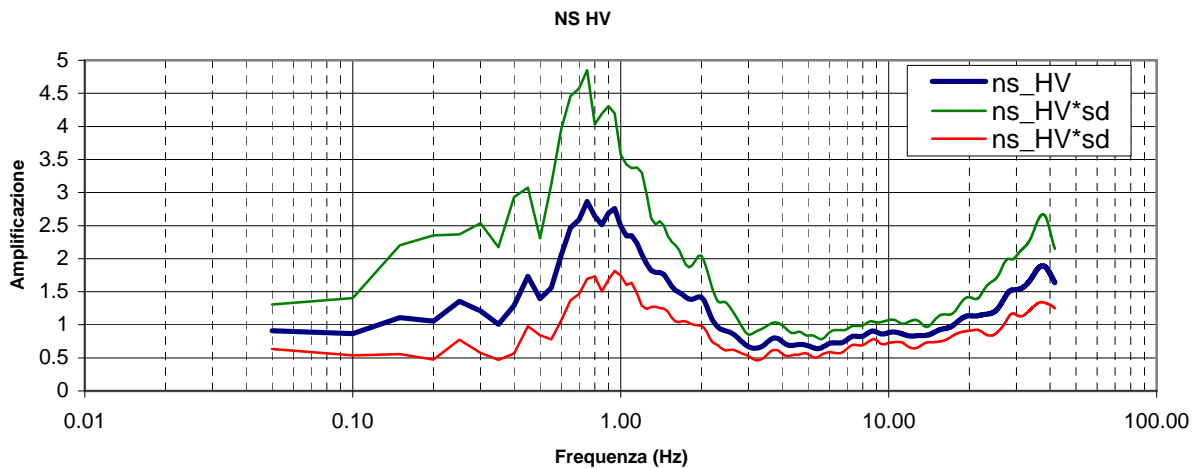
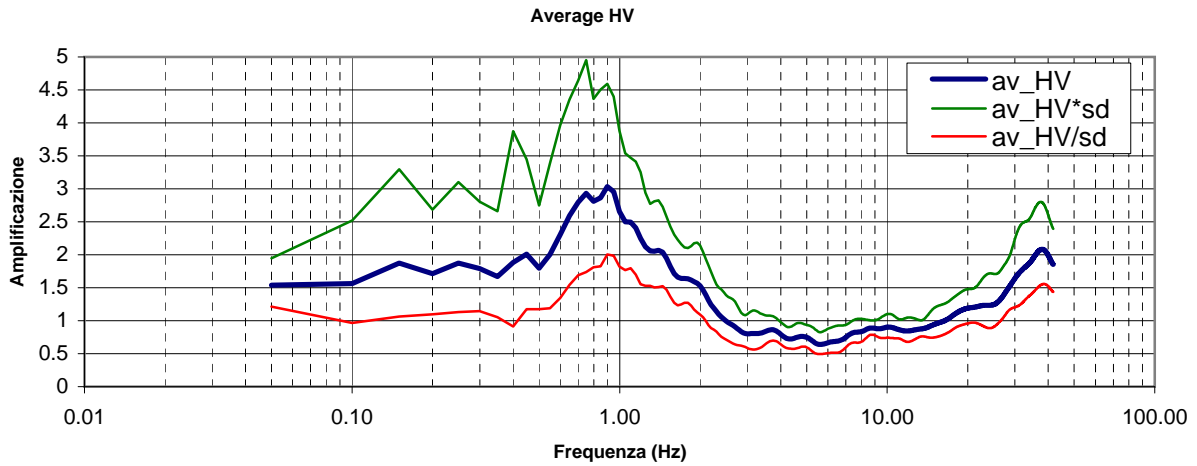
DATA: 03-03-2008

CANTIERE: Nuova Palestra

QUOTA: 25 m s.l.m.

OPERATORI: Dr. Arbizzi - Mazzetti M.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 20

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 29-01-2013

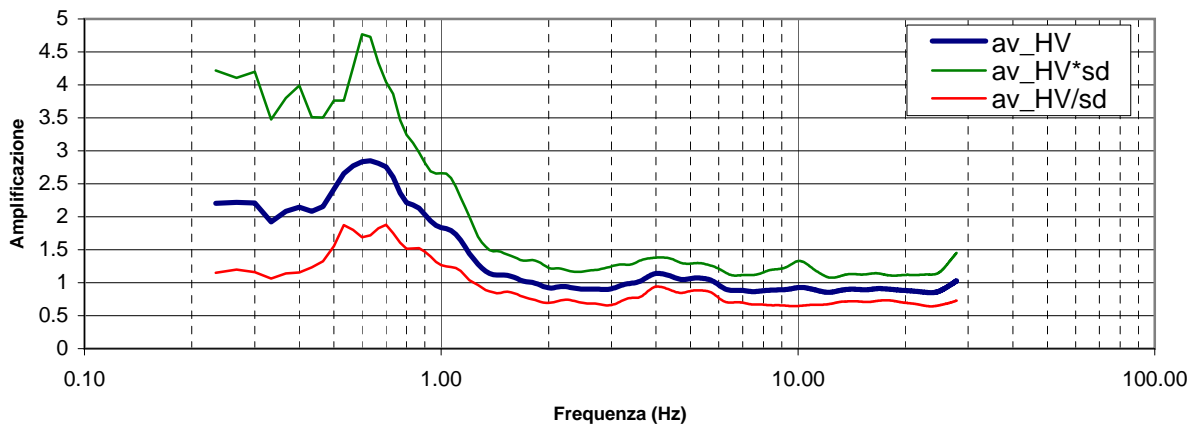
CANTIERE: PSC

QUOTA: 22 m slm

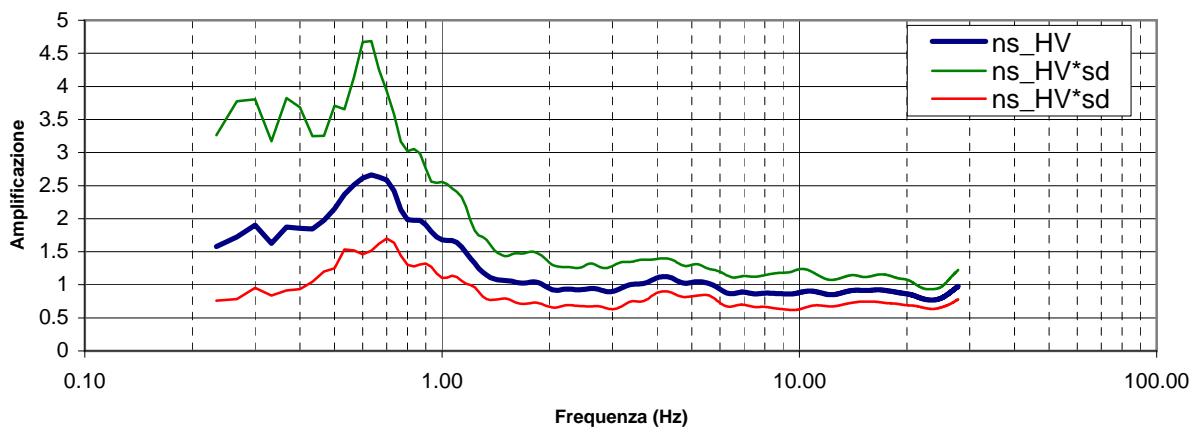
OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali

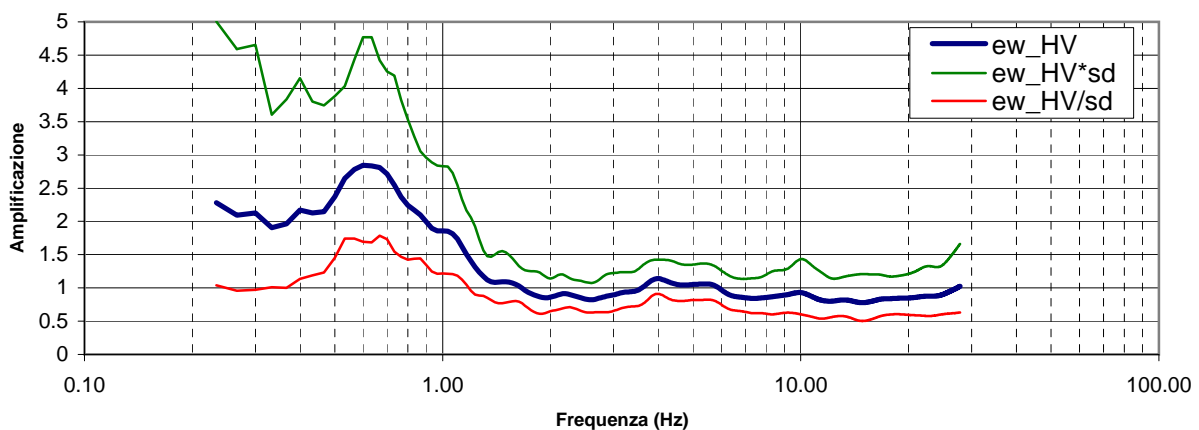
Average HV



NS HV



EW_HV



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 21

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Com. di Nonantola

DATA: 29-09-2009

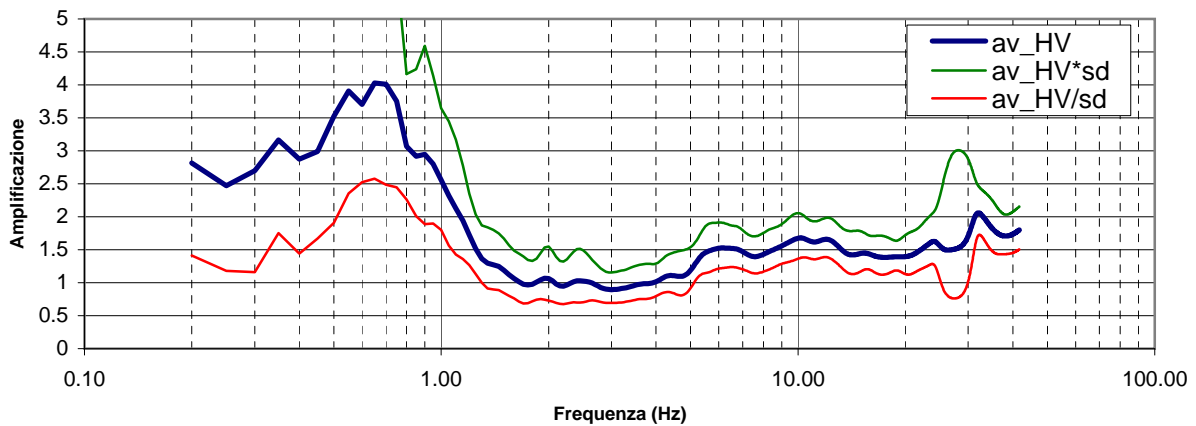
CANTIERE: PSC

QUOTA: 28,4 m. s.l.m.

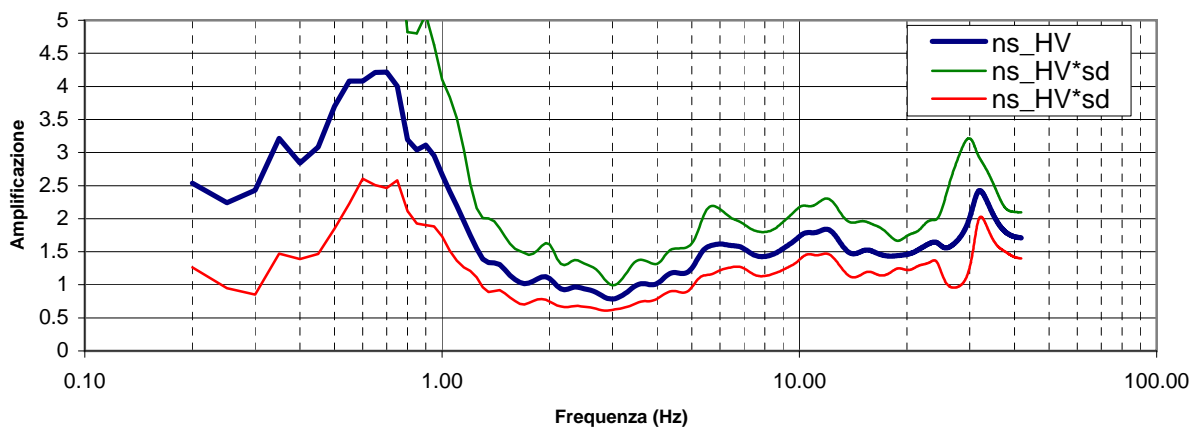
OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali

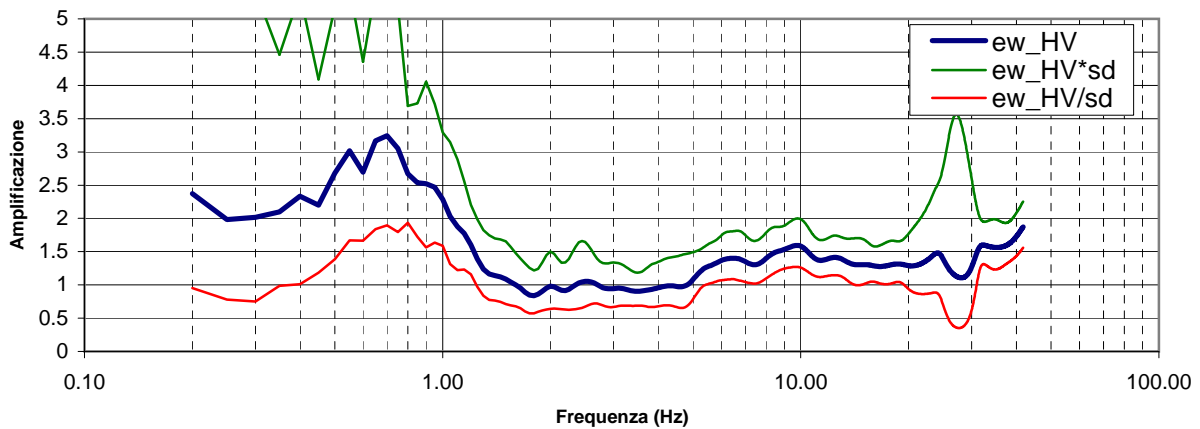
Average HV



NS HV



EW_HV



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 22

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 29-01-2013

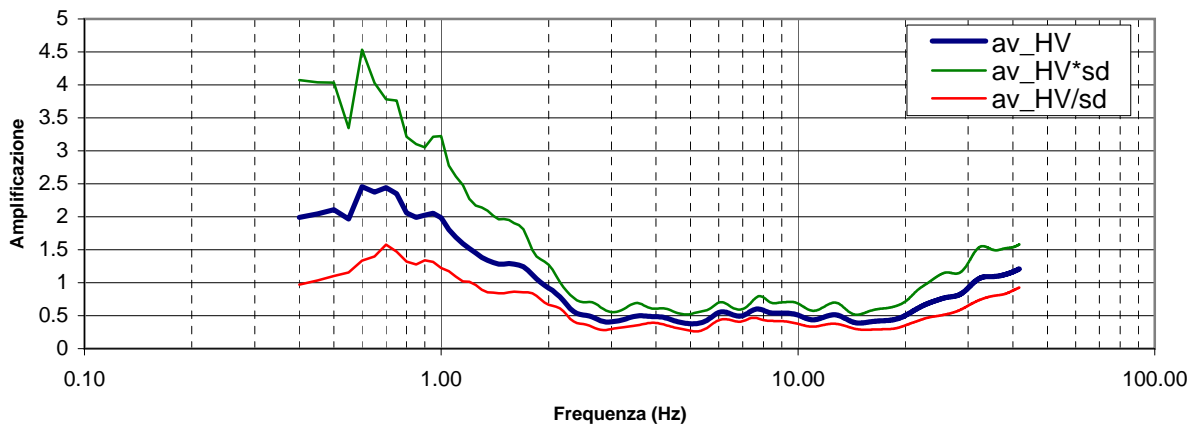
CANTIERE: PSC

QUOTA: 23 m slm

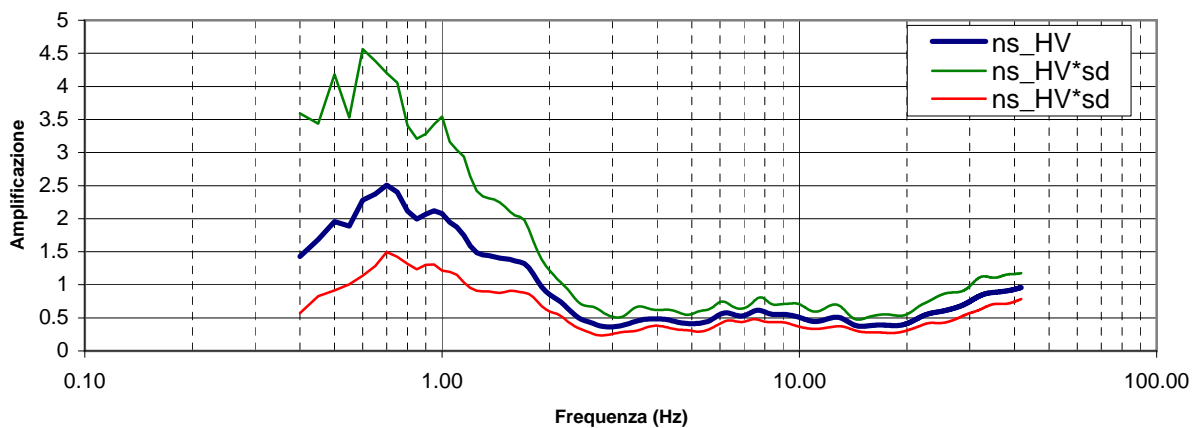
OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali

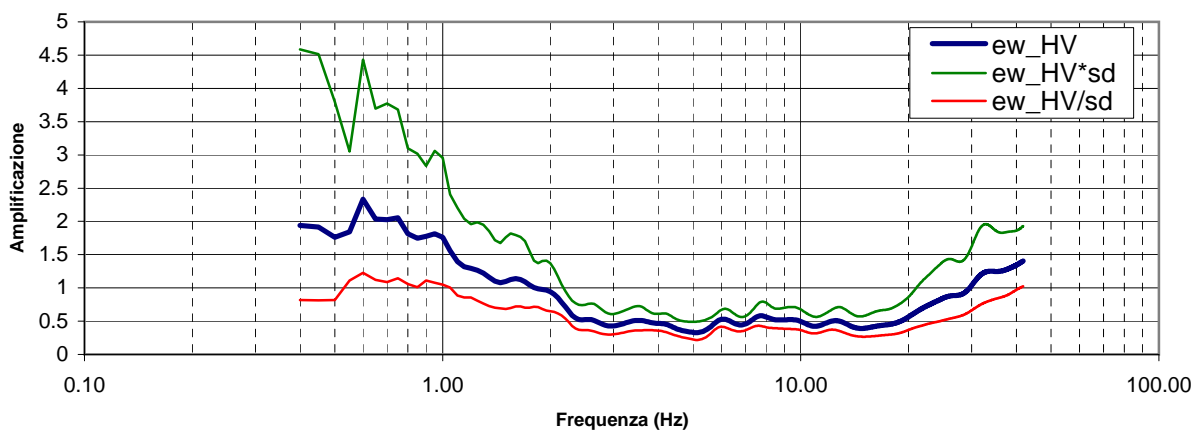
Average HV



NS HV



EW_HV



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 23

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

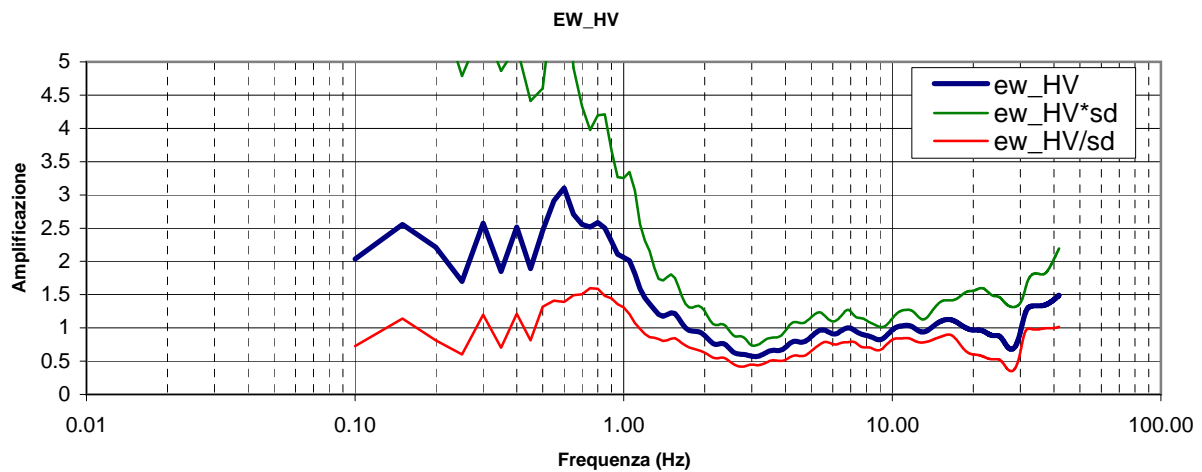
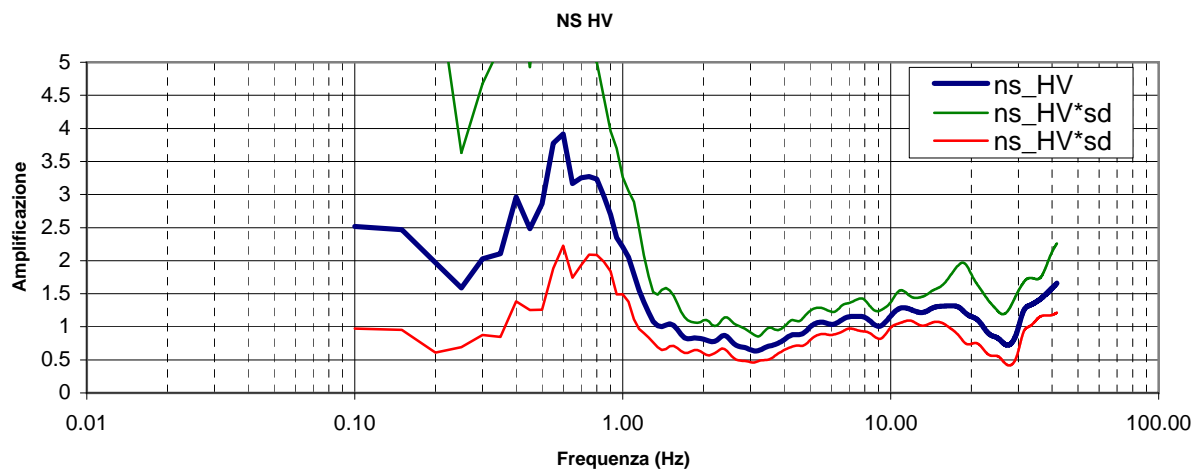
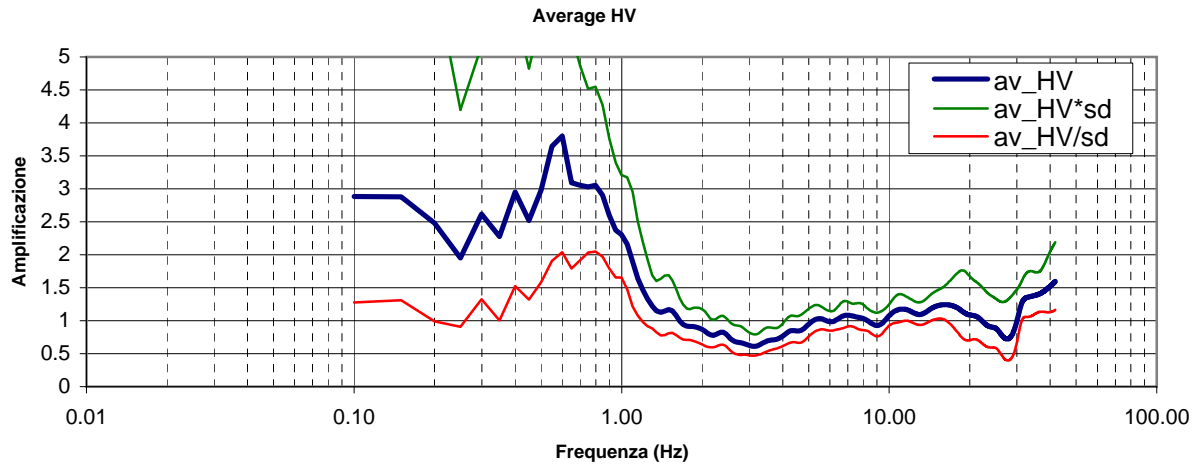
DATA: 29-01-2013

CANTIERE: PSC

QUOTA: 25 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 24

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

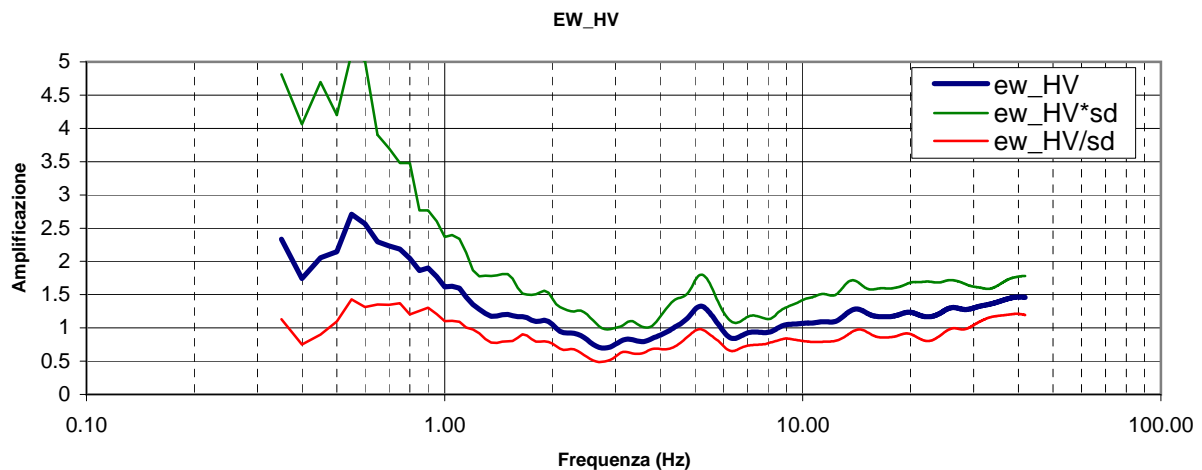
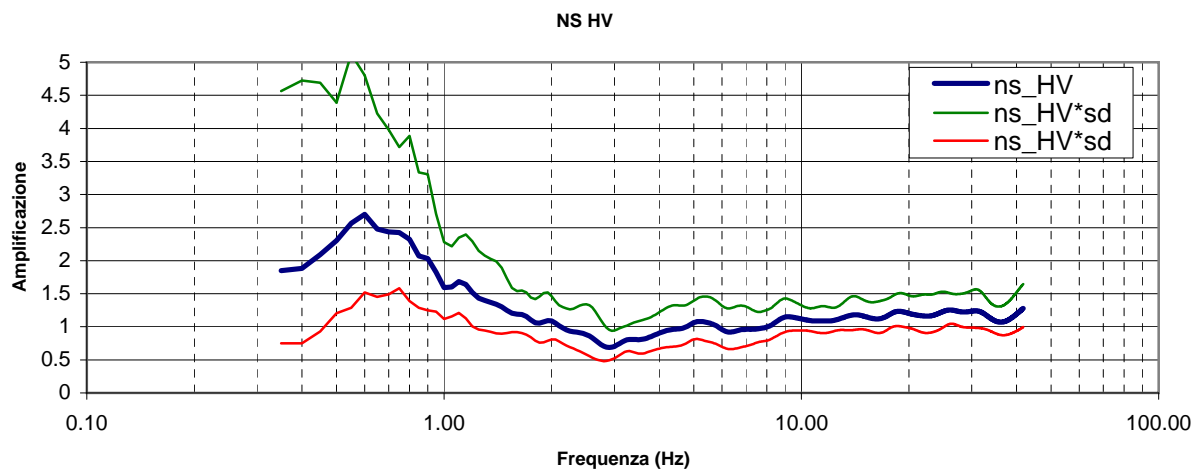
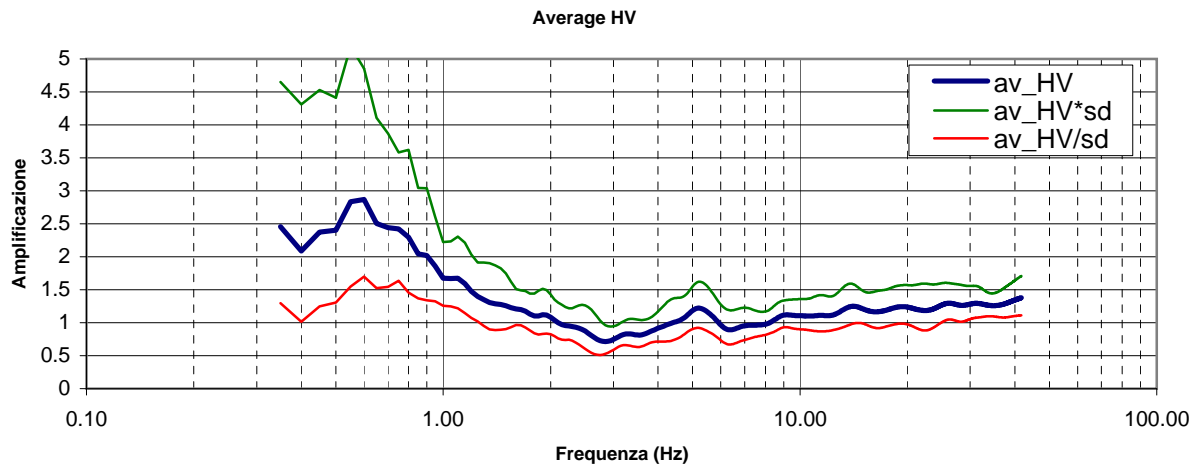
DATA: 29-01-2013

CANTIERE: PSC

QUOTA: 28 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 25

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 29-01-2013

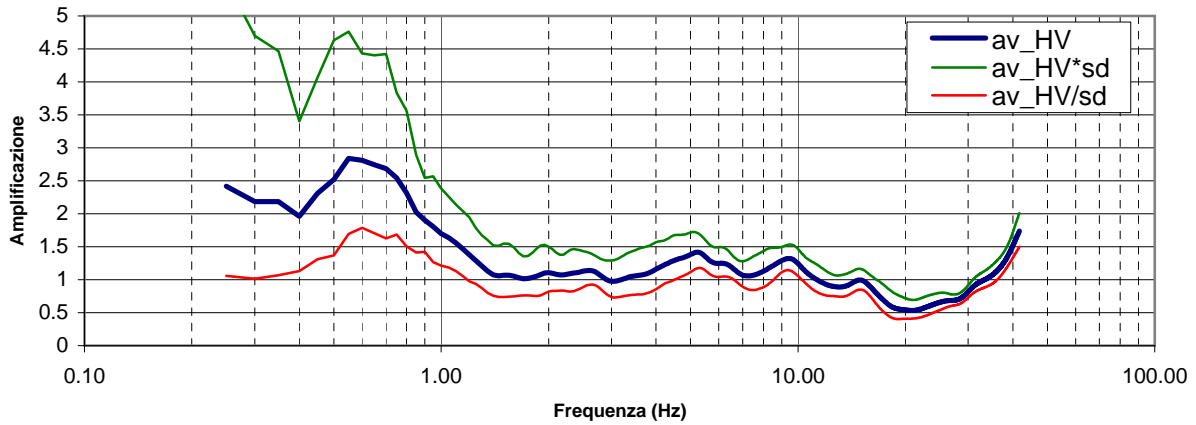
CANTIERE: PSC

QUOTA: 28 m slm

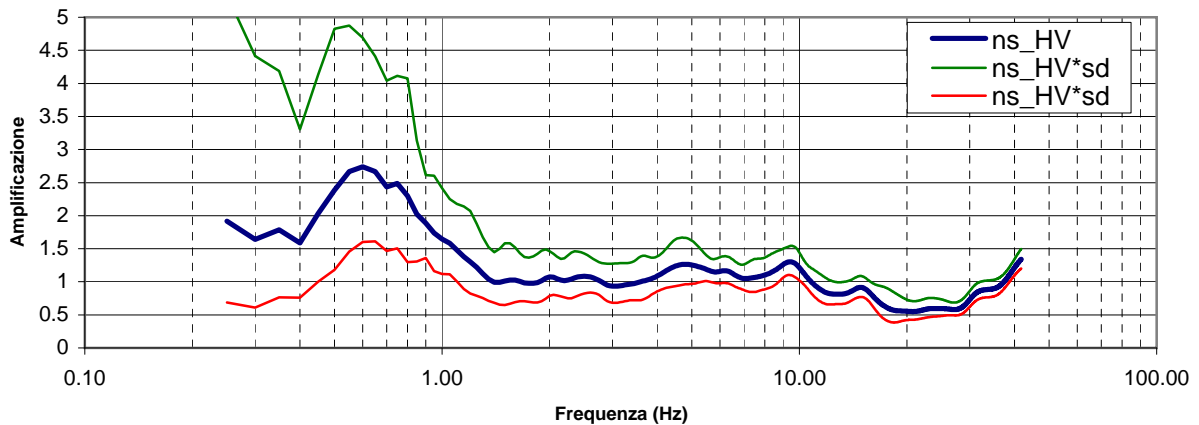
OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali

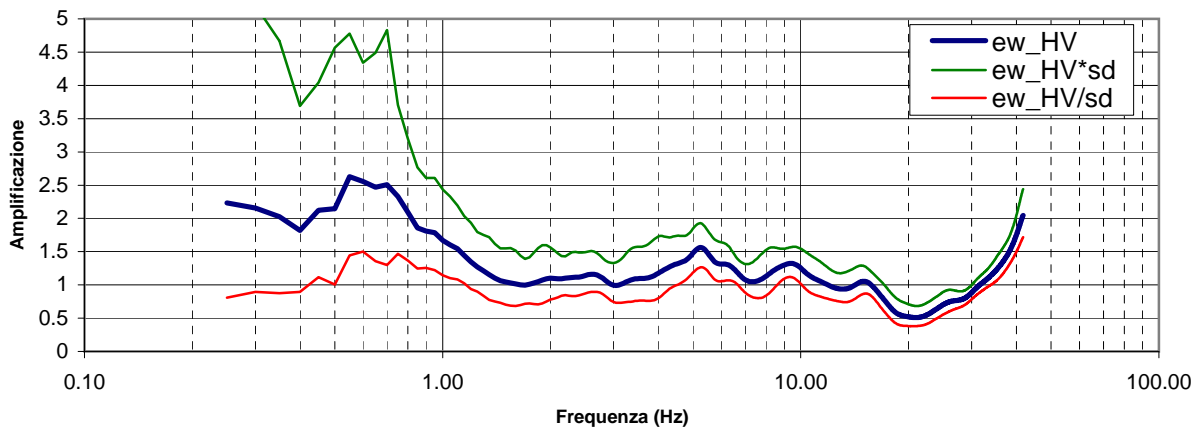
Average HV



NS HV



EW_HV



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 26

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

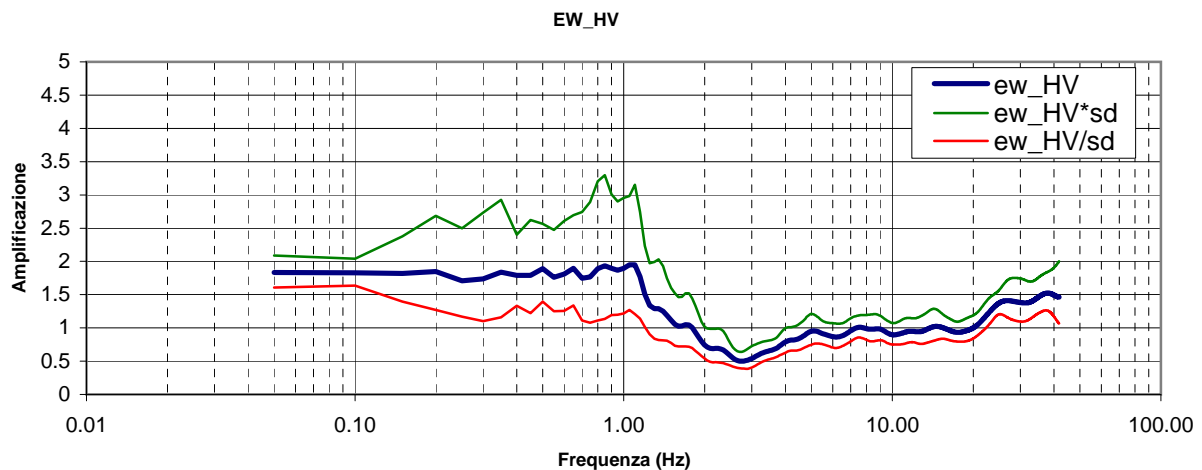
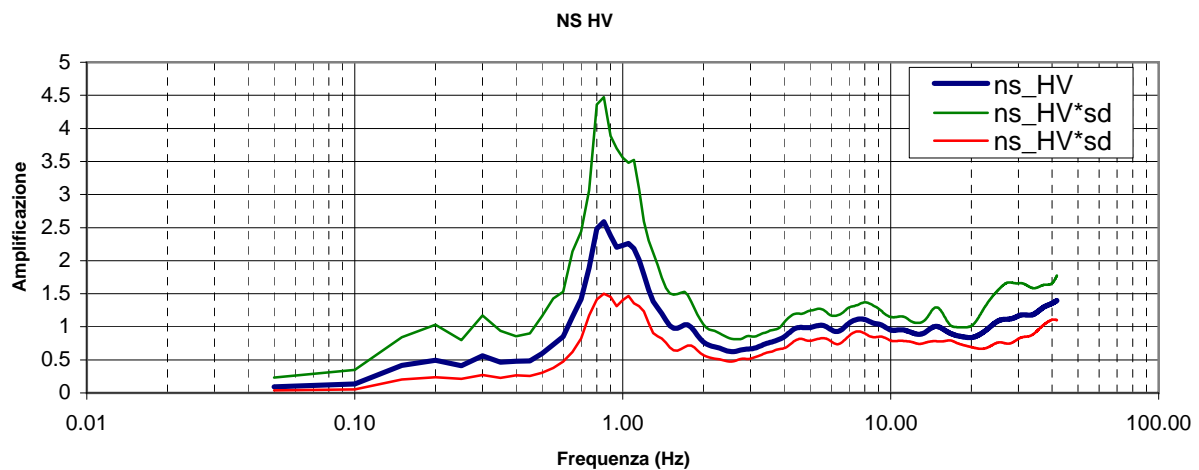
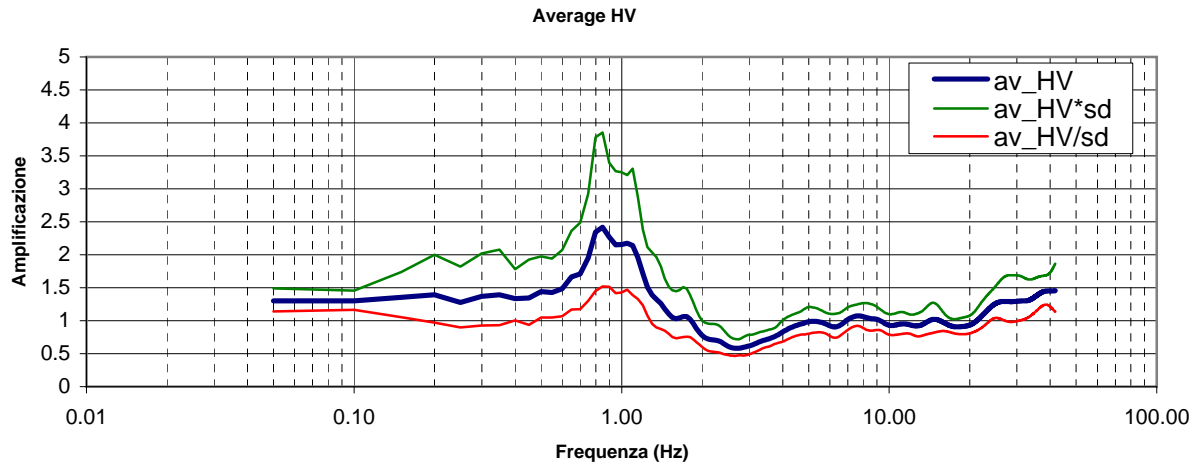
DATA: 30-01-2013

CANTIERE: PSC

QUOTA: 26 m slm

OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali



STUDIO GEOLOGICO CENTROGEO
P.zza S. Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 27

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 30-01-2013

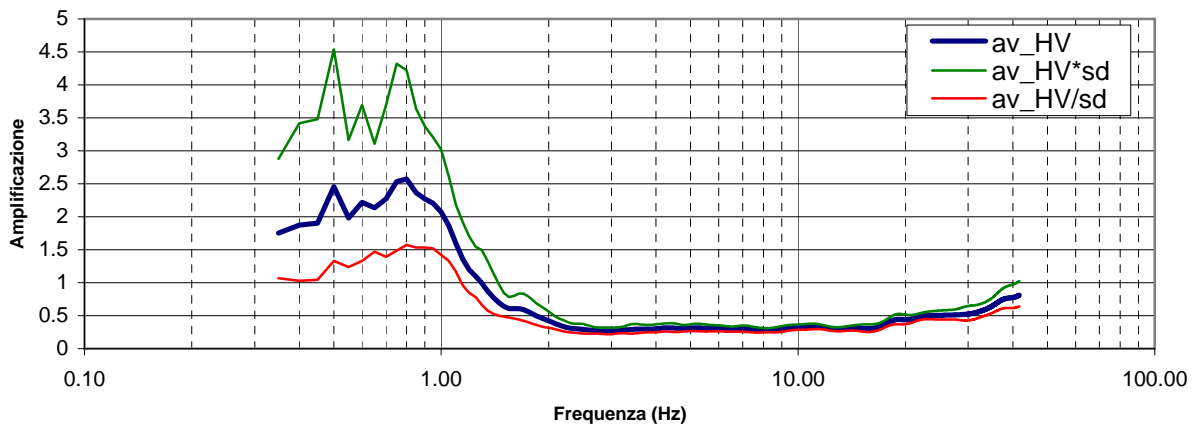
CANTIERE: PSC

QUOTA: 25 m slm

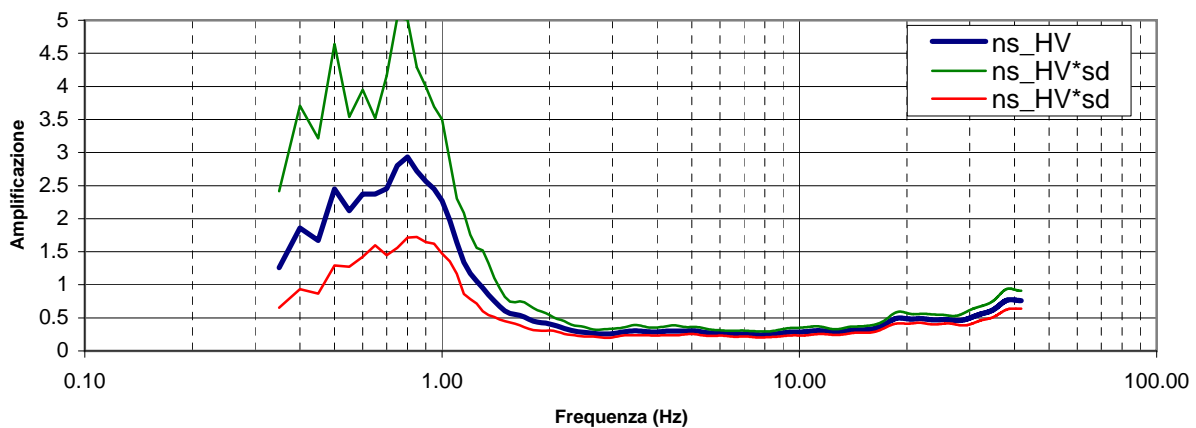
OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali

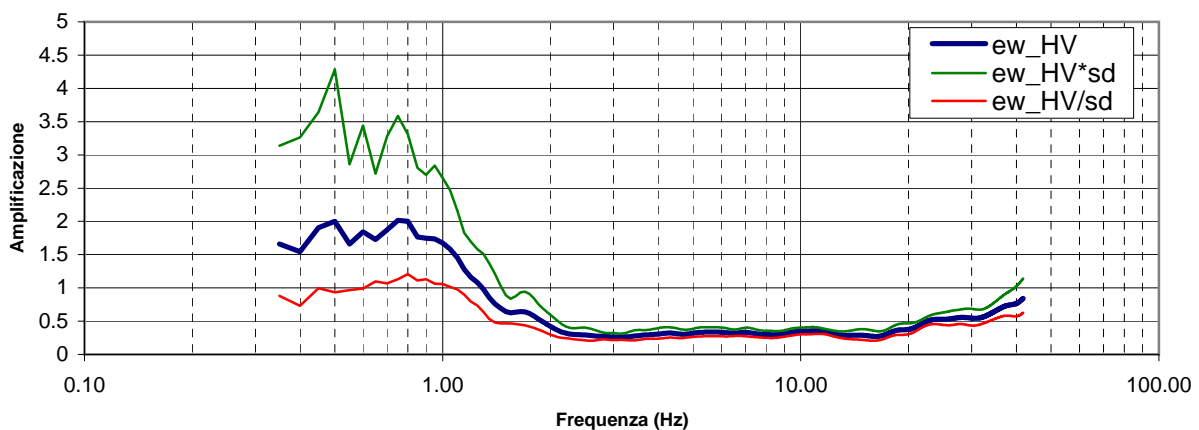
Average HV



NS HV



EW_HV



STUDIO GEOLOGICO CENTROGEO
P.zza S.Quirino, 6 - 42015 CORREGGIO

INDAGINE HVSR 28

LOCALITA': Nonantola (MO)

COMMITTENTE: Amm. Comun. Nonantola

DATA: 30-01-2013

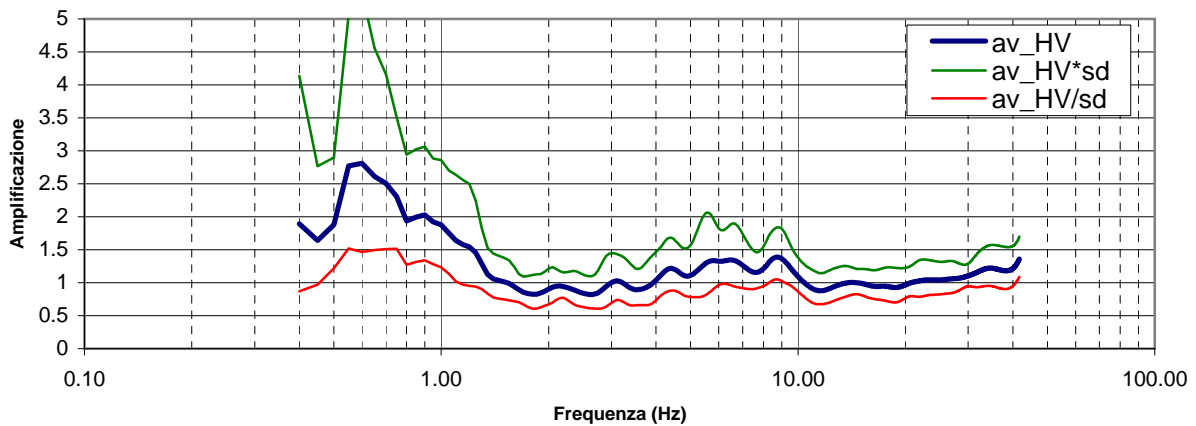
CANTIERE: PSC

QUOTA: 26 m slm

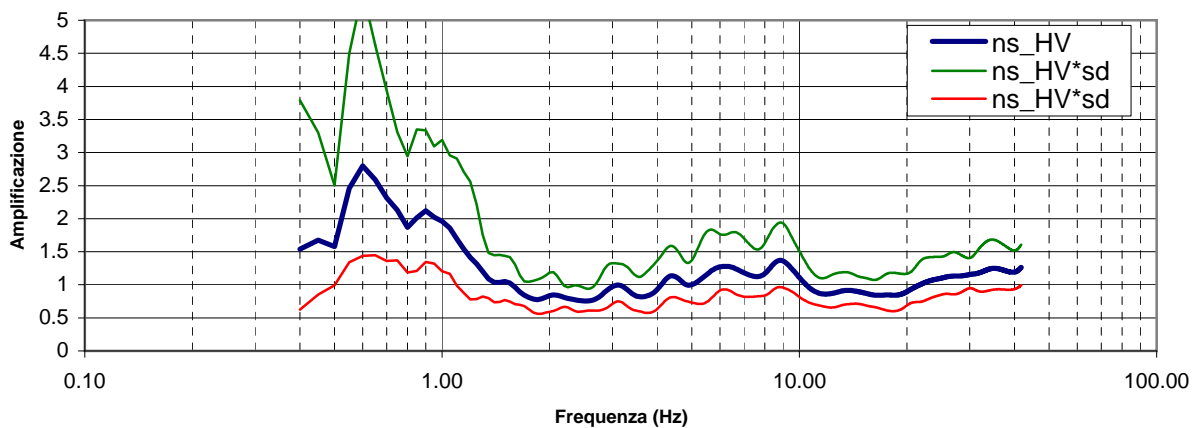
OPERATORI: Mazzetti M. - Arbizzi A.

Rapporti spettrali

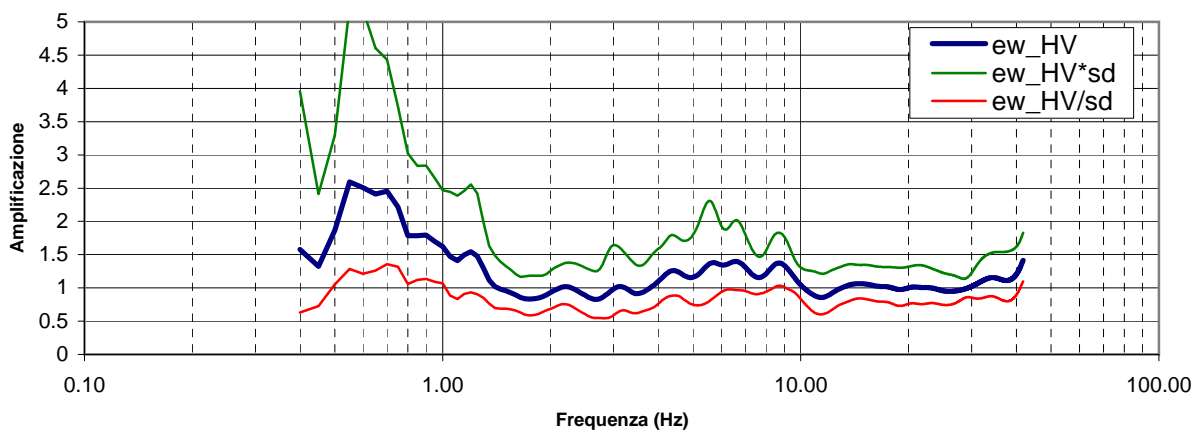
Average HV



NS HV



EW_HV



INDAGINI PREGRESSE

STUDIO GEOLOGICO CENTROGEO

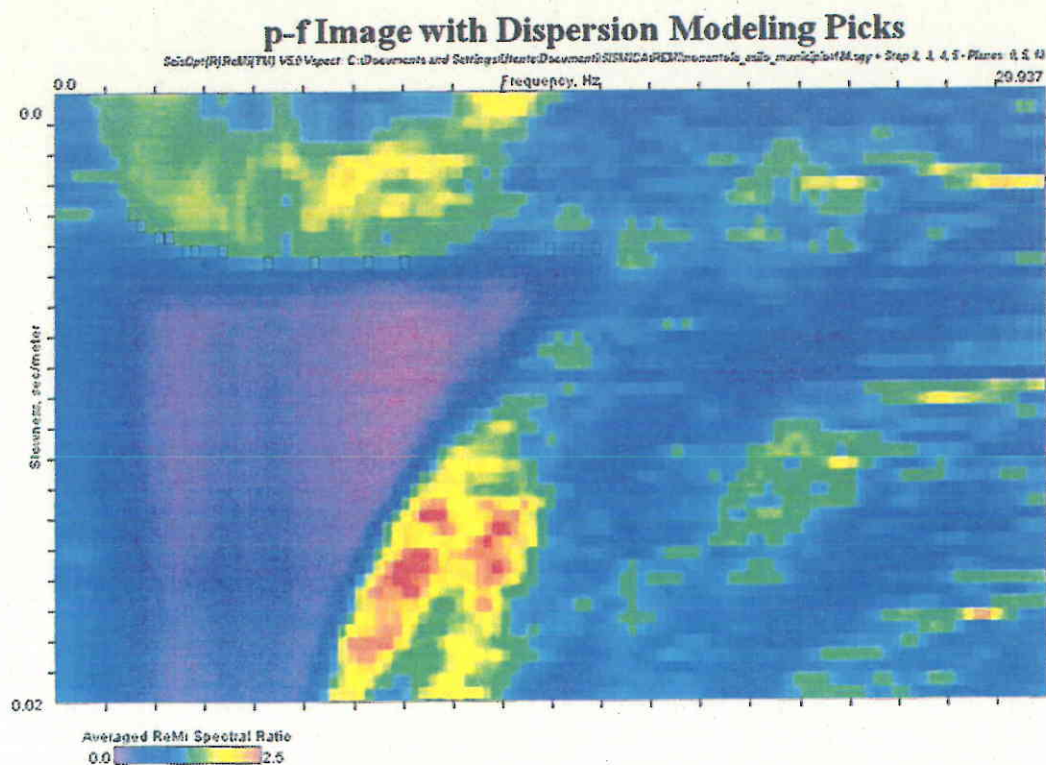
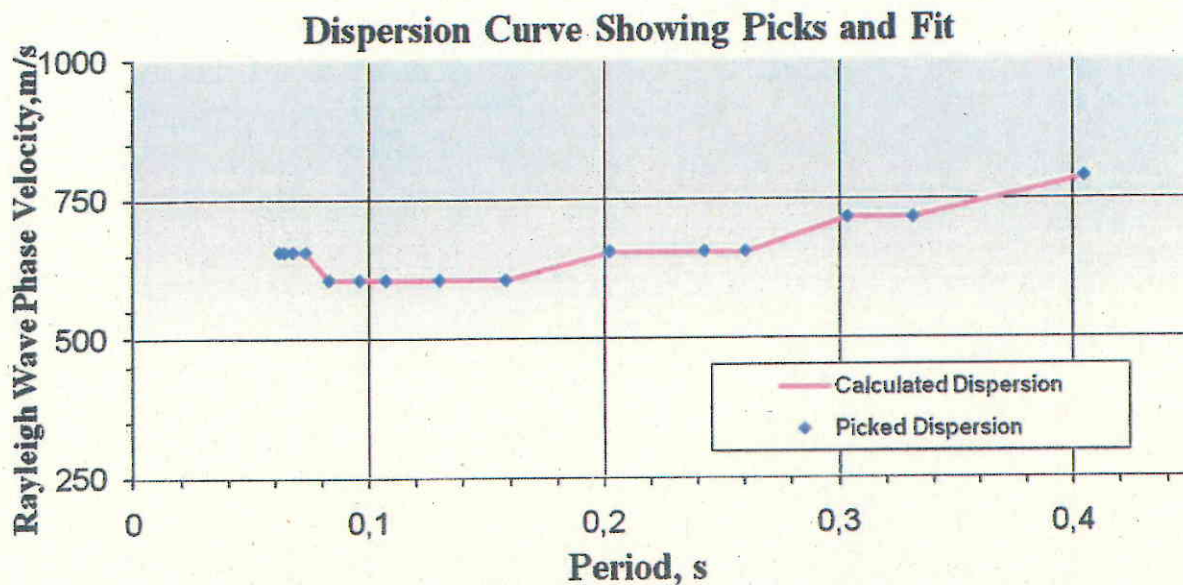
42015 Correggio (RE) - Piazza S. Quirino, 6 - tel 0522/641001 - Fax: 632162

INDAGINI RE.MI.

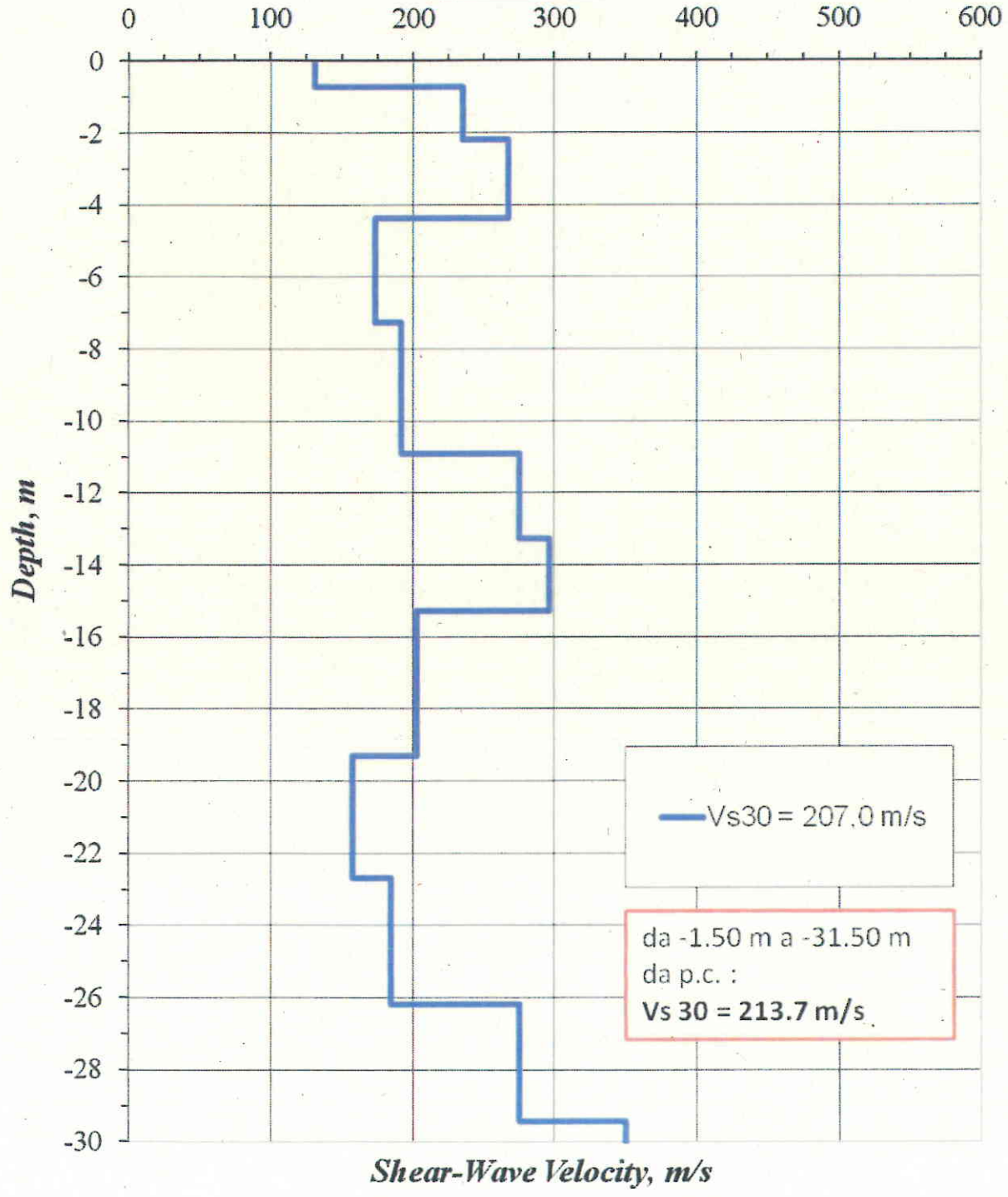
STUDIO GEOLOGICO CENTROGEO

42015 Correggio (RE) - Piazza S.Quirino, 6 - tel 0522/641001 - Fax: 632162

Comune di Nonantola (MO) - via Guglielmo Marconi - 30/07/09 -
Dispersion Model



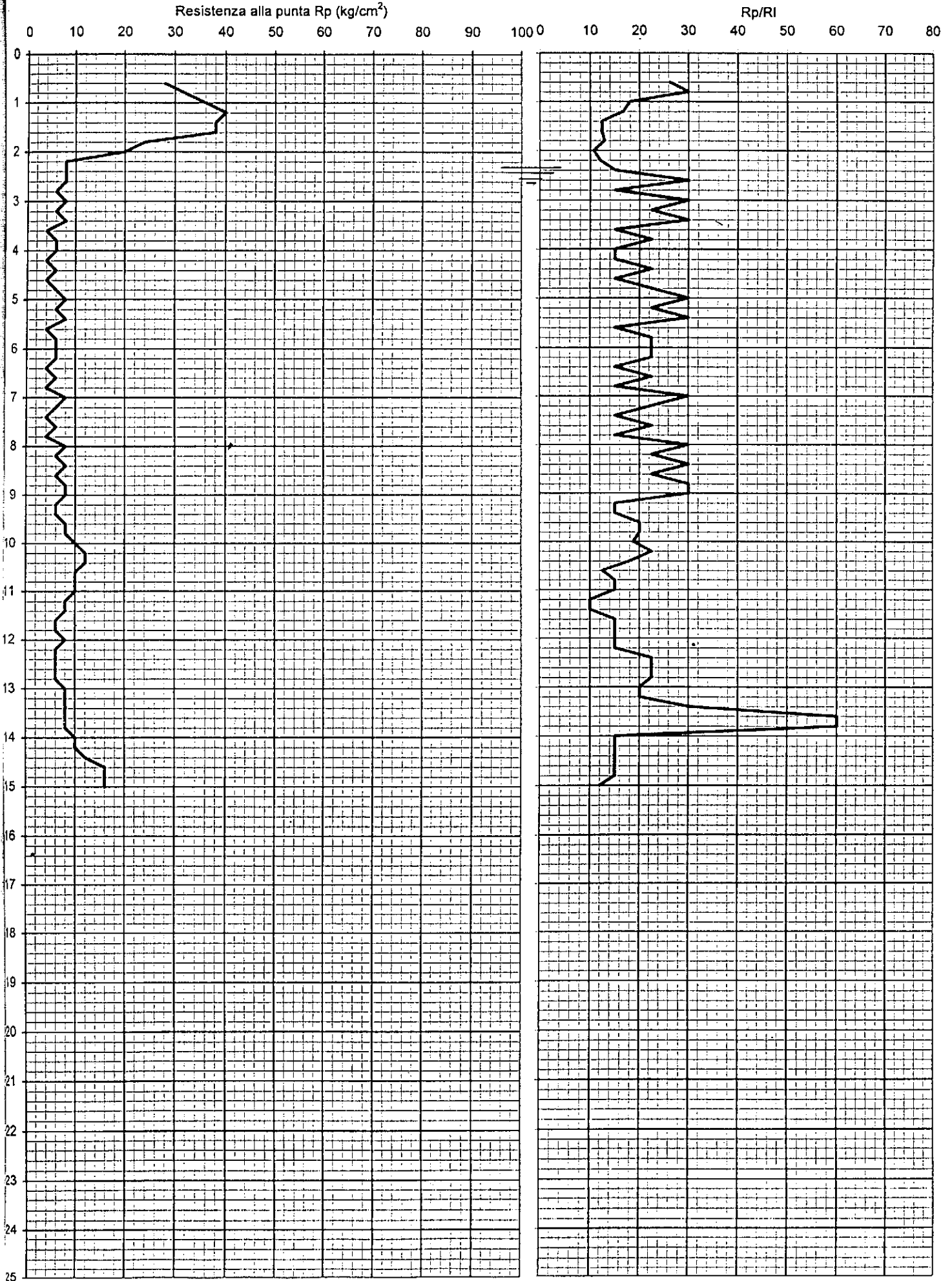
Comune di Nonantola (MO) - via Guglielmo Marconi - 30/07/09 -
Vs Model



PROVE
PENETROMETRICHE
STATICHE
CPT

STUDIO GEOLOGICO CENTROGEO

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Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

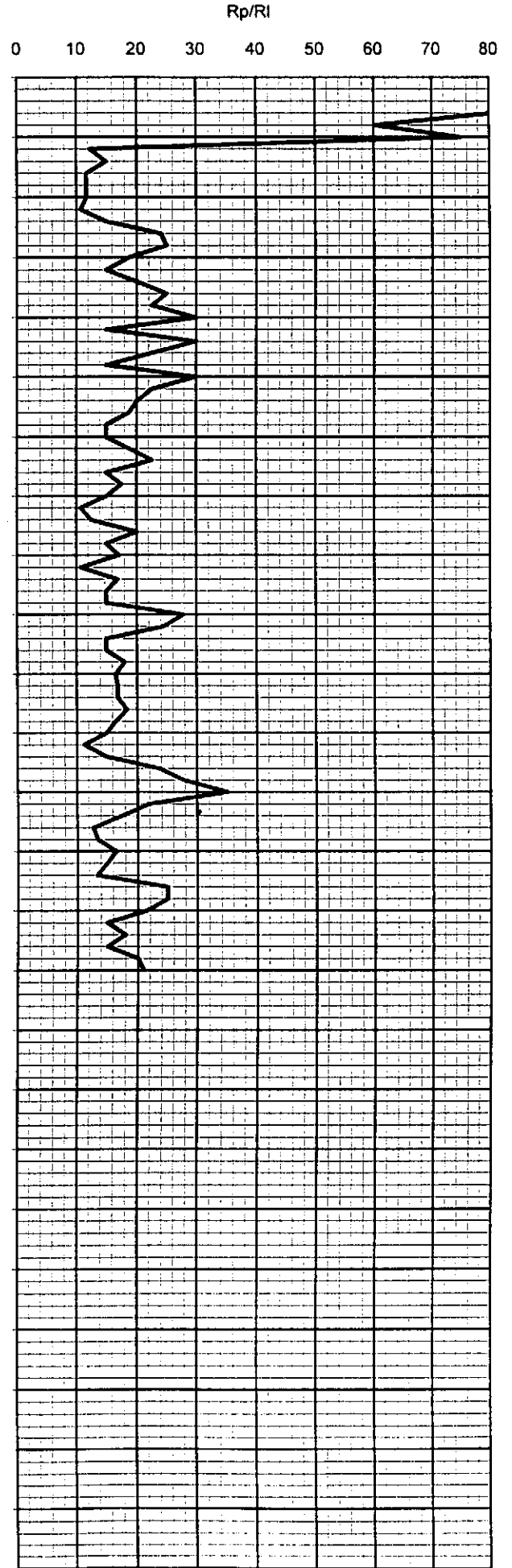
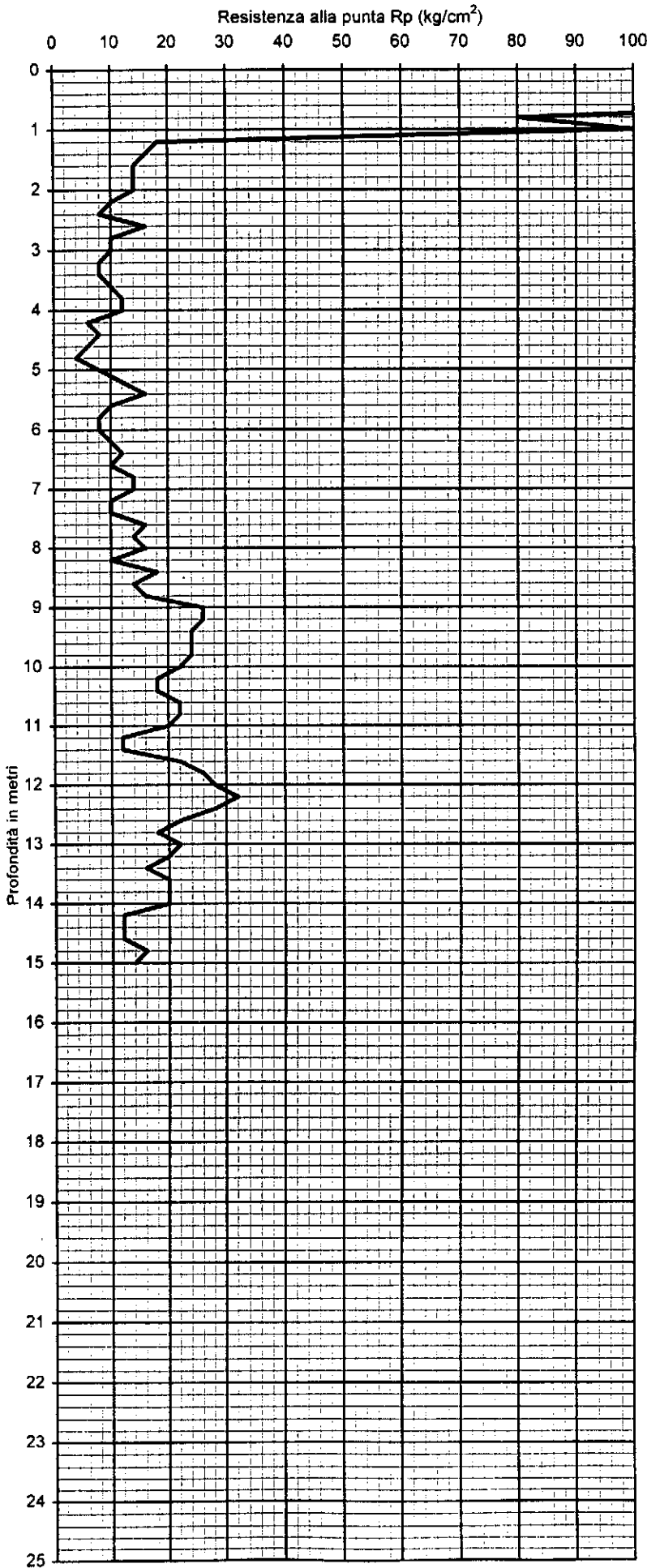
PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : SIG. BAZZANI
Località : NONANTOLA
Prova numero : 1
Data : 05/11/97
Operatore : DR. REBECCHI
Quota : P.C.

| Profundità (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-------------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 28 | 44 | 28 | 1,07 | 26,25 |
| 0,80 | 32 | 48 | 32 | 1,07 | 30,00 |
| 1,00 | 36 | 66 | 36 | 2,00 | 18,00 |
| 1,20 | 40 | 76 | 40 | 2,40 | 16,67 |
| 1,40 | 38 | 84 | 38 | 3,07 | 12,39 |
| 1,60 | 38 | 84 | 38 | 3,07 | 12,39 |
| 1,80 | 24 | 52 | 24 | 1,87 | 12,86 |
| 2,00 | 20 | 48 | 20 | 1,87 | 10,71 |
| 2,20 | 8 | 18 | 8 | 0,67 | 12,00 |
| 2,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 2,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 3,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,60 | 4 | 8 | 4 | 0,27 | 15,00 |
| 3,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 4,20 | 4 | 8 | 4 | 0,27 | 15,00 |
| 4,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,60 | 4 | 8 | 4 | 0,27 | 15,00 |
| 4,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,60 | 4 | 8 | 4 | 0,27 | 15,00 |
| 5,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,40 | 4 | 8 | 4 | 0,27 | 15,00 |
| 6,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,80 | 4 | 8 | 4 | 0,27 | 15,00 |
| 7,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,40 | 4 | 8 | 4 | 0,27 | 15,00 |
| 7,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,80 | 4 | 8 | 4 | 0,27 | 15,00 |
| 8,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 9,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 9,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 10,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 10,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 10,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,20 | 8 | 20 | 8 | 0,80 | 10,00 |
| 11,40 | 8 | 20 | 8 | 0,80 | 10,00 |
| 11,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 11,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 12,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 12,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 13,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 13,60 | 8 | 10 | 8 | 0,13 | 60,00 |
| 13,80 | 8 | 10 | 8 | 0,13 | 60,00 |
| 14,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 14,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 14,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 14,60 | 16 | 32 | 16 | 1,07 | 15,00 |
| 14,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 15,00 | 16 | 36 | 16 | 1,33 | 12,00 |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : F.LLI PRINA SNC

Località : NONANTOLA

Prova numero : 1

Data : 14/07/98

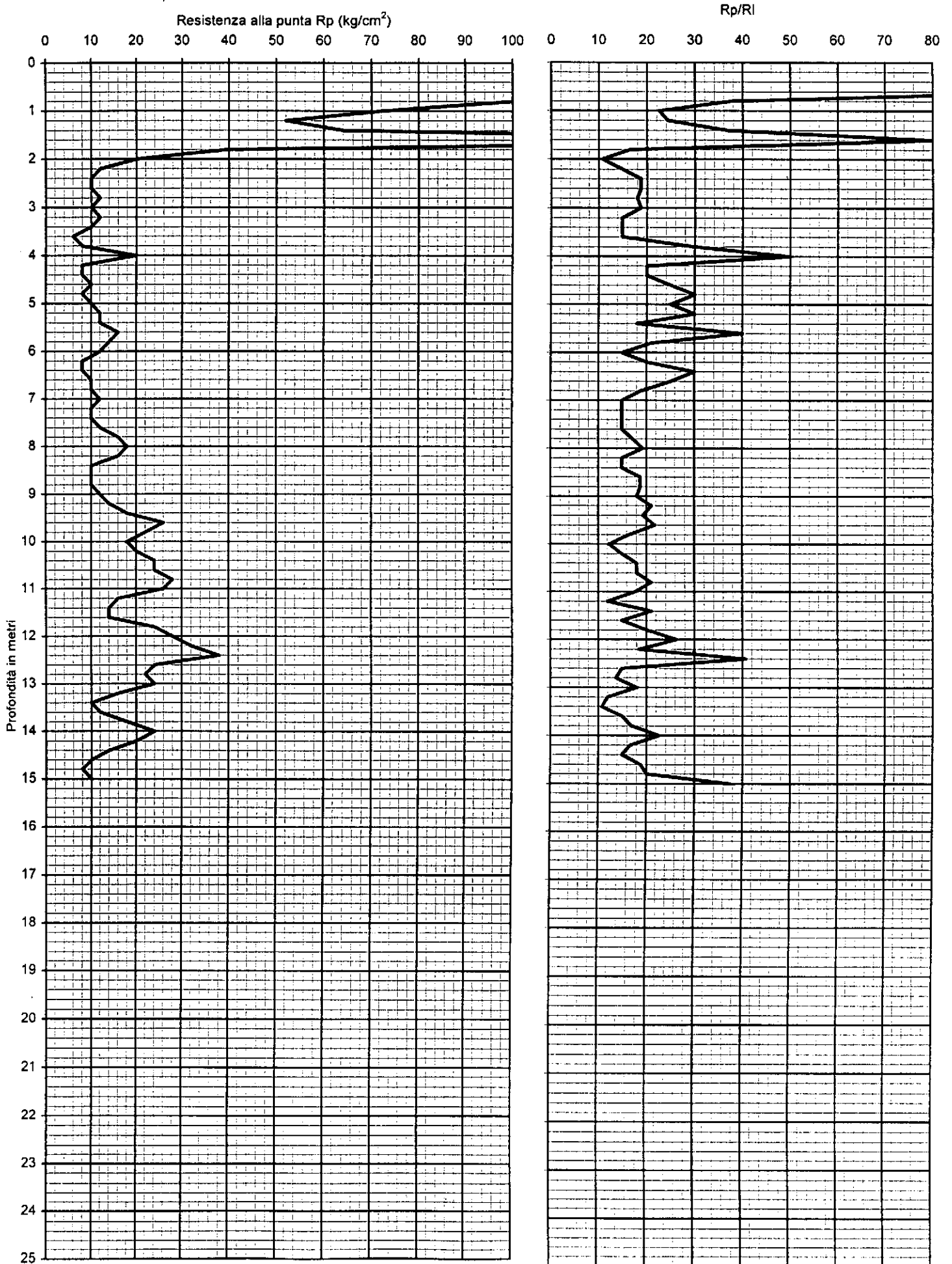
Operatore : DR. REBECCHI

Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 140 | | 140 | | |
| 0,80 | 80 | 100 | 80 | 1,33 | 60,00 |
| 1,00 | 100 | 120 | 100 | 1,33 | 75,00 |
| 1,20 | 18 | 40 | 18 | 1,47 | 12,27 |
| 1,40 | 16 | 32 | 16 | 1,07 | 15,00 |
| 1,60 | 14 | 32 | 14 | 1,20 | 11,67 |
| 1,80 | 14 | 32 | 14 | 1,20 | 11,67 |
| 2,00 | 14 | 32 | 14 | 1,20 | 11,67 |
| 2,20 | 10 | 24 | 10 | 0,93 | 10,71 |
| 2,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 2,60 | 16 | 26 | 16 | 0,67 | 24,00 |
| 2,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 3,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 4,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 4,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 4,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,80 | 4 | 8 | 4 | 0,27 | 15,00 |
| 5,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 5,40 | 16 | 28 | 16 | 0,80 | 20,00 |
| 5,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 6,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 6,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 7,00 | 14 | 28 | 14 | 0,93 | 15,00 |
| 7,20 | 10 | 24 | 10 | 0,93 | 10,71 |
| 7,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 7,60 | 16 | 28 | 16 | 0,80 | 20,00 |
| 7,80 | 14 | 28 | 14 | 0,93 | 15,00 |
| 8,00 | 16 | 30 | 16 | 0,93 | 17,14 |
| 8,20 | 10 | 24 | 10 | 0,93 | 10,71 |
| 8,40 | 18 | 34 | 18 | 1,07 | 16,88 |
| 8,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 8,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 9,00 | 26 | 40 | 26 | 0,93 | 27,86 |
| 9,20 | 26 | 42 | 26 | 1,07 | 24,38 |
| 9,40 | 24 | 48 | 24 | 1,60 | 15,00 |
| 9,60 | 24 | 48 | 24 | 1,60 | 15,00 |
| 9,80 | 24 | 44 | 24 | 1,33 | 18,00 |
| 10,00 | 22 | 42 | 22 | 1,33 | 16,50 |
| 10,20 | 18 | 34 | 18 | 1,07 | 16,88 |
| 10,40 | 18 | 34 | 18 | 1,07 | 16,88 |
| 10,60 | 22 | 40 | 22 | 1,20 | 18,33 |
| 10,80 | 22 | 42 | 22 | 1,33 | 16,50 |
| 11,00 | 20 | 40 | 20 | 1,33 | 15,00 |
| 11,20 | 12 | 28 | 12 | 1,07 | 11,25 |
| 11,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 11,60 | 22 | 36 | 22 | 0,93 | 23,57 |
| 11,80 | 26 | 40 | 26 | 0,93 | 27,86 |
| 12,00 | 28 | 40 | 28 | 0,80 | 35,00 |
| 12,20 | 32 | 54 | 32 | 1,47 | 21,82 |
| 12,40 | 28 | 52 | 28 | 1,60 | 17,50 |
| 12,60 | 22 | 48 | 22 | 1,73 | 12,69 |
| 12,80 | 18 | 38 | 18 | 1,33 | 13,50 |
| 13,00 | 22 | 42 | 22 | 1,33 | 16,50 |
| 13,20 | 20 | 40 | 20 | 1,33 | 15,00 |
| 13,40 | 16 | 34 | 16 | 1,20 | 13,33 |
| 13,60 | 20 | 32 | 20 | 0,80 | 25,00 |
| 13,80 | 20 | 32 | 20 | 0,80 | 25,00 |
| 14,00 | 20 | 34 | 20 | 0,93 | 21,43 |
| 14,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 14,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 14,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 14,80 | 16 | 28 | 16 | 0,80 | 20,00 |
| 15,00 | 14 | 24 | 14 | 0,67 | 21,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
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| 25,40 | | | | | |
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| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
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| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : F.LLI PRINA SNC

Località : NONANTOLA

Prova numero : 2

Data : 14/07/98

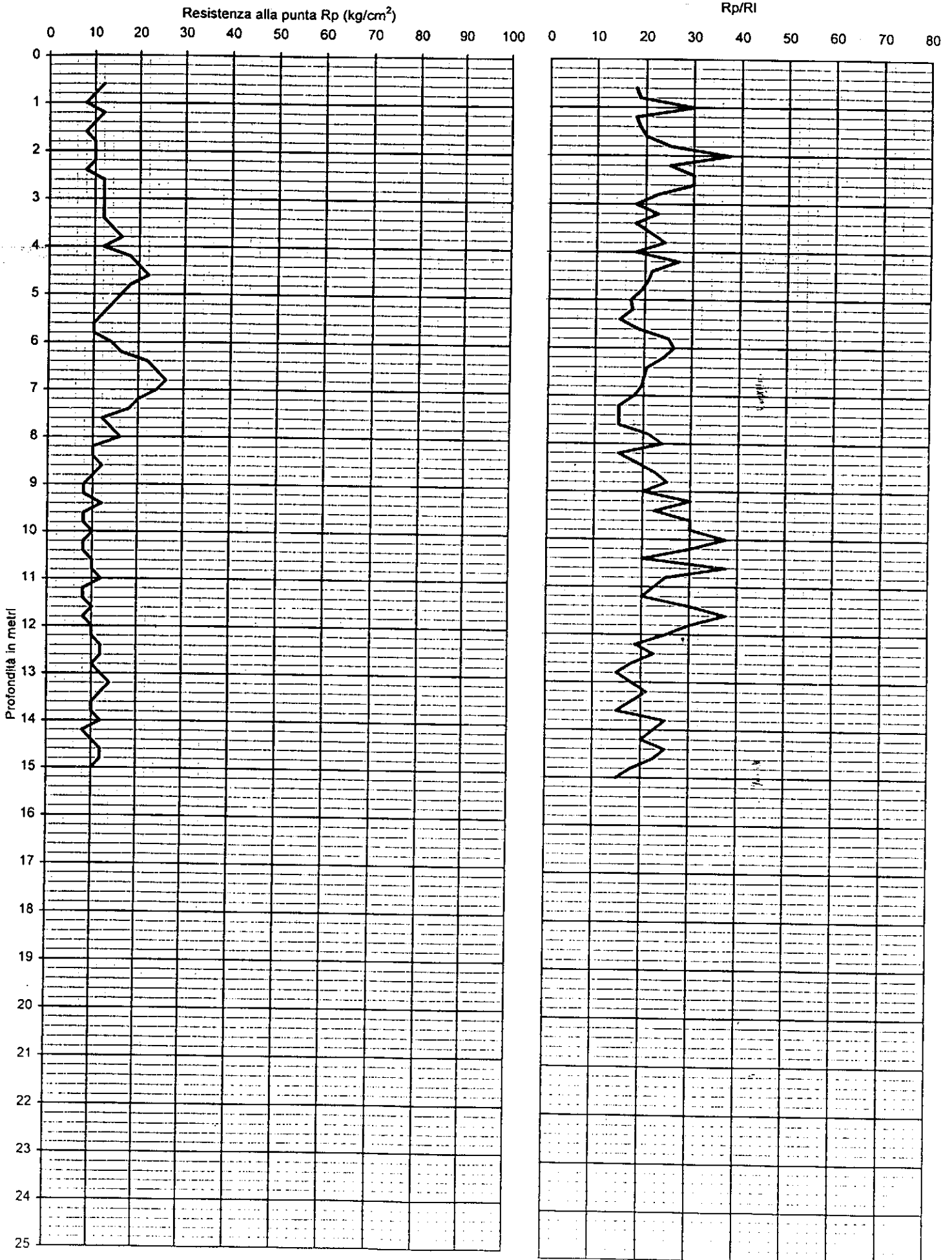
Operatore : DR. REBECCHI

Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 140 | 160 | 140 | 1,33 | 105,00 |
| 0,80 | 100 | 140 | 100 | 2,67 | 37,50 |
| 1,00 | 72 | 120 | 72 | 3,20 | 22,50 |
| 1,20 | 52 | 84 | 52 | 2,13 | 24,38 |
| 1,40 | 64 | 90 | 64 | 1,73 | 36,92 |
| 1,60 | 180 | | 180 | | |
| 1,80 | 40 | 76 | 40 | 2,40 | 16,67 |
| 2,00 | 20 | 48 | 20 | 1,87 | 10,71 |
| 2,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 2,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 3,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 3,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 3,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 3,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,00 | 20 | 26 | 20 | 0,40 | 50,00 |
| 4,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,20 | 12 | 18 | 12 | 0,40 | 30,00 |
| 5,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 5,60 | 16 | 22 | 16 | 0,40 | 40,00 |
| 5,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 6,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 6,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 7,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 7,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 7,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 7,80 | 16 | 30 | 16 | 0,93 | 17,14 |
| 8,00 | 18 | 32 | 18 | 0,93 | 19,29 |
| 8,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 8,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 8,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 8,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 9,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 9,40 | 18 | 32 | 18 | 0,93 | 19,29 |
| 9,60 | 26 | 44 | 26 | 1,20 | 21,67 |
| 9,80 | 22 | 42 | 22 | 1,33 | 16,50 |
| 10,00 | 18 | 40 | 18 | 1,47 | 12,27 |
| 10,20 | 20 | 40 | 20 | 1,33 | 15,00 |
| 10,40 | 24 | 44 | 24 | 1,33 | 18,00 |
| 10,60 | 24 | 44 | 24 | 1,33 | 18,00 |
| 10,80 | 28 | 48 | 28 | 1,33 | 21,00 |
| 11,00 | 26 | 48 | 26 | 1,47 | 17,73 |
| 11,20 | 16 | 36 | 16 | 1,33 | 12,00 |
| 11,40 | 14 | 24 | 14 | 0,67 | 21,00 |
| 11,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 11,80 | 24 | 42 | 24 | 1,20 | 20,00 |
| 12,00 | 28 | 44 | 28 | 1,07 | 26,25 |
| 12,20 | 32 | 58 | 32 | 1,73 | 18,46 |
| 12,40 | 38 | 52 | 38 | 0,93 | 40,71 |
| 12,60 | 24 | 48 | 24 | 1,60 | 15,00 |
| 12,80 | 22 | 46 | 22 | 1,60 | 13,75 |
| 13,00 | 24 | 44 | 24 | 1,33 | 18,00 |
| 13,20 | 16 | 36 | 16 | 1,33 | 12,00 |
| 13,40 | 10 | 24 | 10 | 0,93 | 10,71 |
| 13,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 13,80 | 18 | 34 | 18 | 1,07 | 16,88 |
| 14,00 | 24 | 40 | 24 | 1,07 | 22,50 |
| 14,20 | 20 | 38 | 20 | 1,20 | 16,67 |
| 14,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 14,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 14,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 15,00 | 10 | 14 | 10 | 0,27 | 37,50 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
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| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
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| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
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| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
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| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
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| 28,20 | | | | | |
| 28,40 | | | | | |
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| 29,80 | | | | | |
| 30,00 | | | | | |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

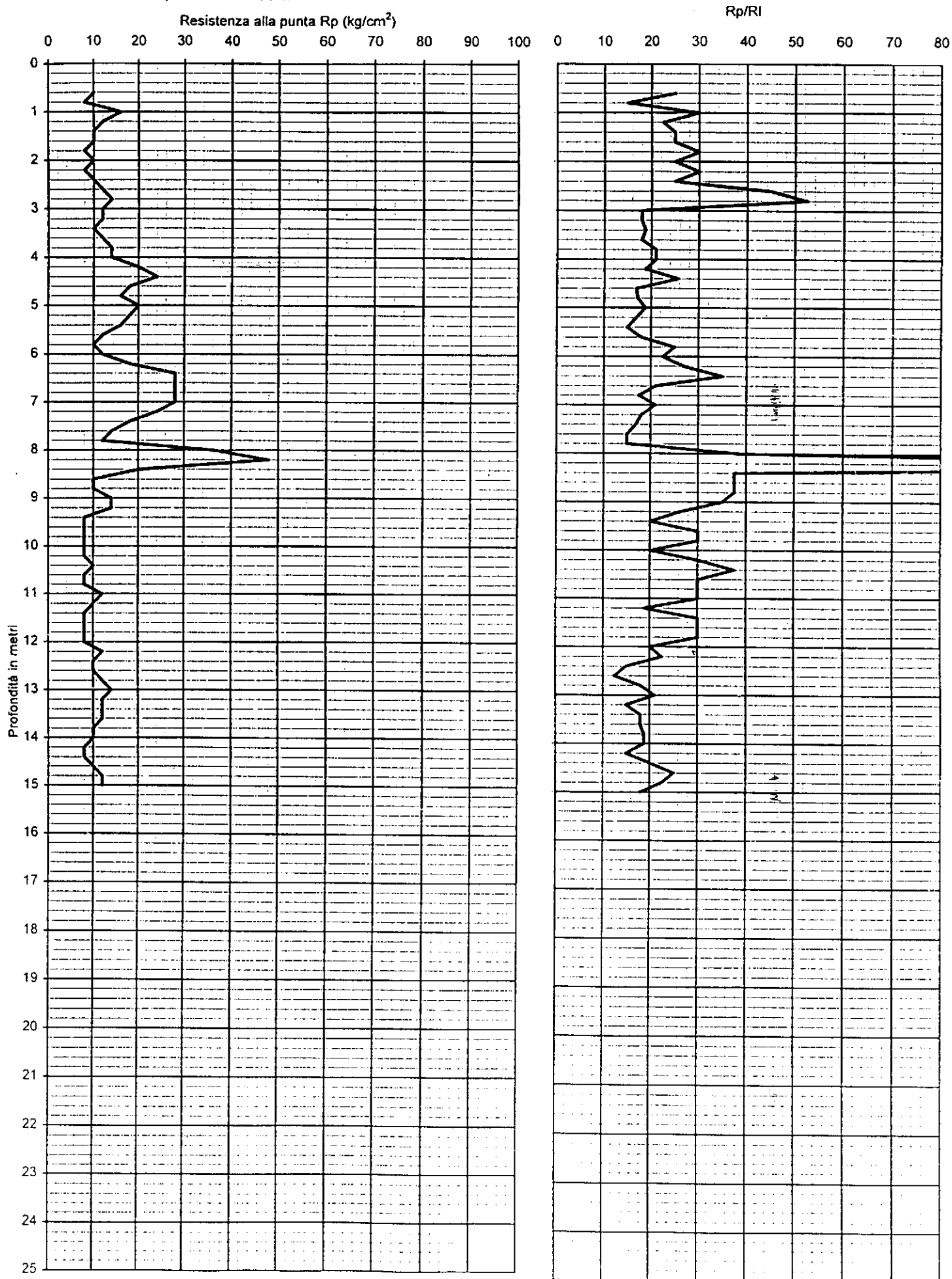
PROVA PENETROMETRICA STATICA
Penetrometro Gouda

Committente : ESSEPI
Località : CAMPAZZO-MO
Prova numero : 1
Data : 01/07/98
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 0,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 1,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 1,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 1,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 1,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 1,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 2,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,60 | 12 | 18 | 12 | 0,40 | 30,00 |
| 2,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 3,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 3,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 3,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 3,60 | 14 | 24 | 14 | 0,67 | 21,00 |
| 3,80 | 16 | 26 | 16 | 0,67 | 24,00 |
| 4,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 4,20 | 18 | 28 | 18 | 0,67 | 27,00 |
| 4,40 | 20 | 34 | 20 | 0,93 | 21,43 |
| 4,60 | 22 | 38 | 22 | 1,07 | 20,63 |
| 4,80 | 18 | 32 | 18 | 0,93 | 19,29 |
| 5,00 | 16 | 30 | 16 | 0,93 | 17,14 |
| 5,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 5,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 5,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 6,20 | 16 | 26 | 16 | 0,67 | 24,00 |
| 6,40 | 22 | 38 | 22 | 1,07 | 20,63 |
| 6,60 | 24 | 42 | 24 | 1,20 | 20,00 |
| 6,80 | 26 | 46 | 26 | 1,33 | 19,50 |
| 7,00 | 24 | 44 | 24 | 1,33 | 18,00 |
| 7,20 | 20 | 40 | 20 | 1,33 | 15,00 |
| 7,40 | 18 | 36 | 18 | 1,20 | 15,00 |
| 7,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 7,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 8,00 | 16 | 26 | 16 | 0,67 | 24,00 |
| 8,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 8,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 8,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 8,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 10,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 10,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 11,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 11,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 11,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 12,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 12,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 12,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 13,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 14,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 14,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 14,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 14,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 14,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 15,00 | 10 | 20 | 10 | 0,67 | 15,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
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| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : ESSEPI
Località : CAMPAZZO-MO
Prova numero : 2
Data : 01/07/98
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 0,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 1,00 | 16 | 24 | 16 | 0,53 | 30,00 |
| 1,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 1,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 1,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 1,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,60 | 12 | 16 | 12 | 0,27 | 45,00 |
| 2,80 | 14 | 18 | 14 | 0,27 | 52,50 |
| 3,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 3,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 3,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 3,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 4,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 4,20 | 20 | 36 | 20 | 1,07 | 18,75 |
| 4,40 | 24 | 38 | 24 | 0,93 | 25,71 |
| 4,60 | 18 | 34 | 18 | 1,07 | 16,88 |
| 4,80 | 16 | 30 | 16 | 0,93 | 17,14 |
| 5,00 | 20 | 36 | 20 | 1,07 | 18,75 |
| 5,20 | 18 | 34 | 18 | 1,07 | 16,88 |
| 5,40 | 16 | 32 | 16 | 1,07 | 15,00 |
| 5,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 5,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 6,20 | 18 | 28 | 18 | 0,67 | 27,00 |
| 6,40 | 28 | 40 | 28 | 0,80 | 35,00 |
| 6,60 | 28 | 48 | 28 | 1,33 | 21,00 |
| 6,80 | 28 | 52 | 28 | 1,60 | 17,50 |
| 7,00 | 28 | 48 | 28 | 1,33 | 21,00 |
| 7,20 | 24 | 44 | 24 | 1,33 | 18,00 |
| 7,40 | 18 | 34 | 18 | 1,07 | 16,88 |
| 7,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 7,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 8,00 | 36 | 50 | 36 | 0,93 | 38,57 |
| 8,20 | 48 | 52 | 48 | 0,27 | 180,00 |
| 8,40 | 20 | 28 | 20 | 0,53 | 37,50 |
| 8,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 9,00 | 14 | 20 | 14 | 0,40 | 35,00 |
| 9,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 9,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 10,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 11,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 12,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 12,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 12,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 12,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 13,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 13,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 14,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 14,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 14,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 14,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 14,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 15,00 | 12 | 22 | 12 | 0,67 | 18,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via A. Nardi, 35 - 41100 MODENA

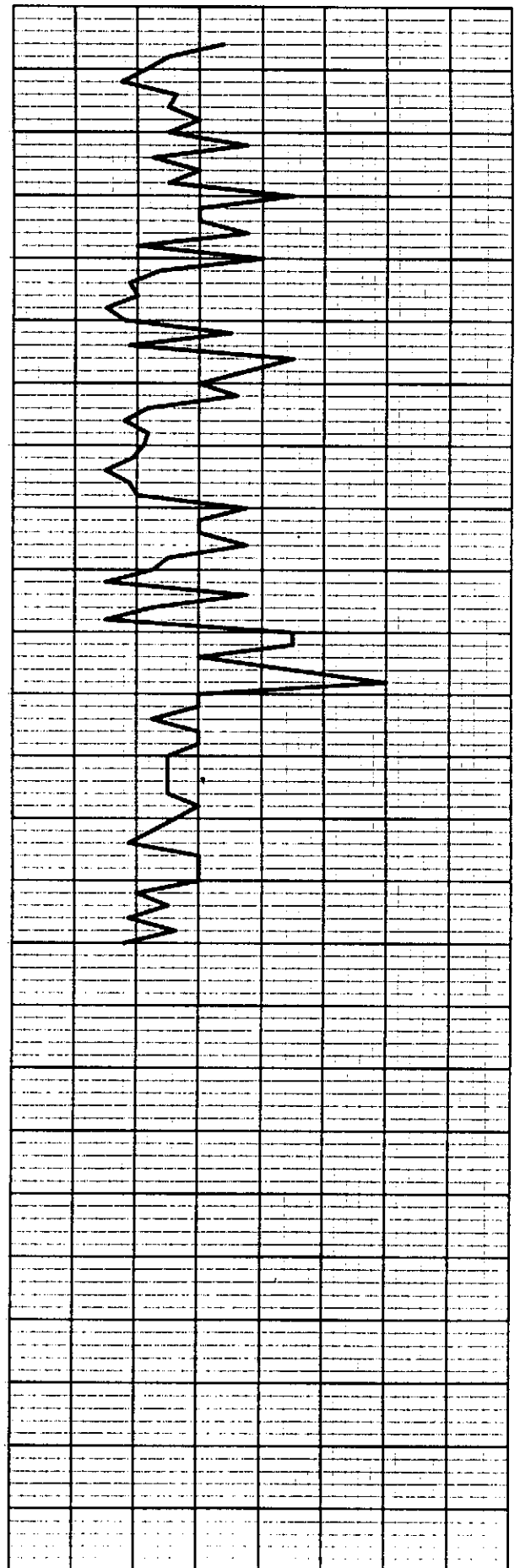
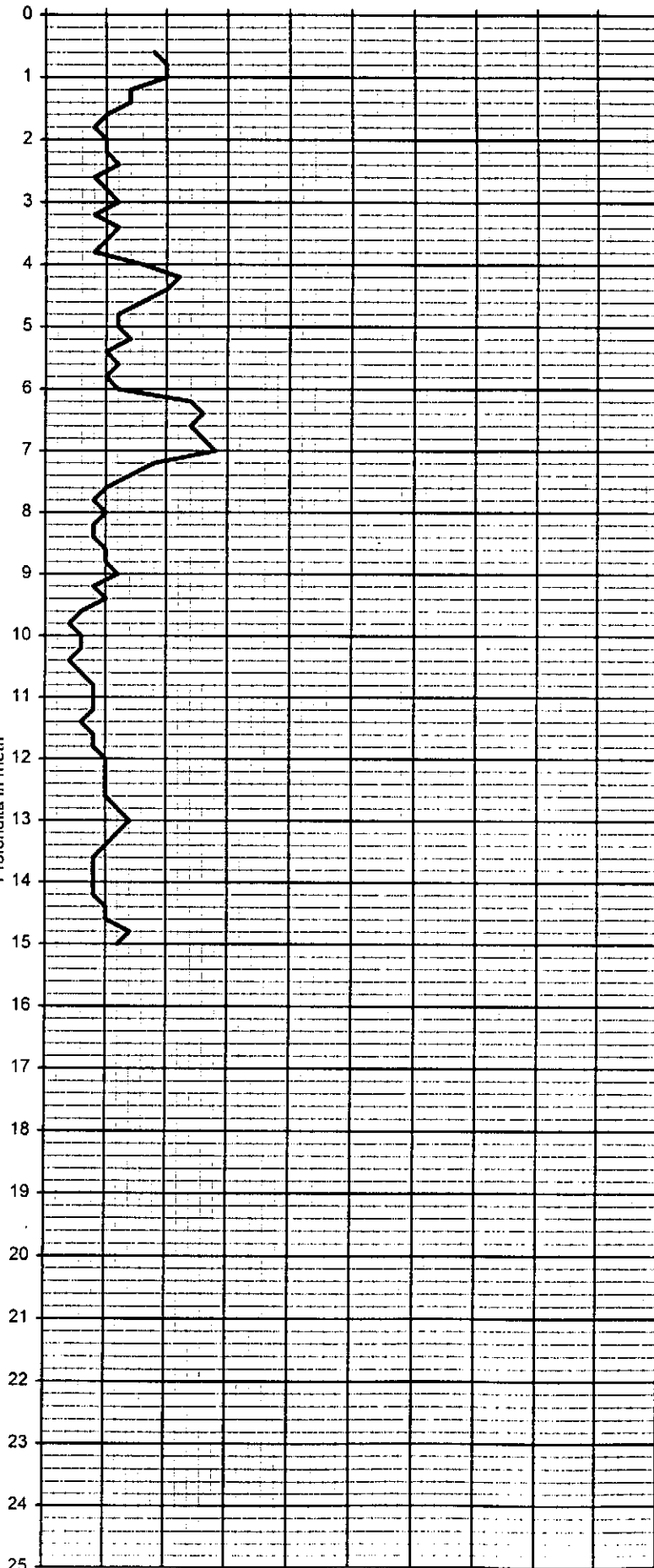
Resistenza alla punta Rp (kg/cm²)

Rp/RI

0 10 20 30 40 50 60 70 80 90 100

0 10 20 30 40 50 60 70 80

Profondità in metri





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : ESSEPI

Località : CAMPAZZO-MO

Prova numero : 2

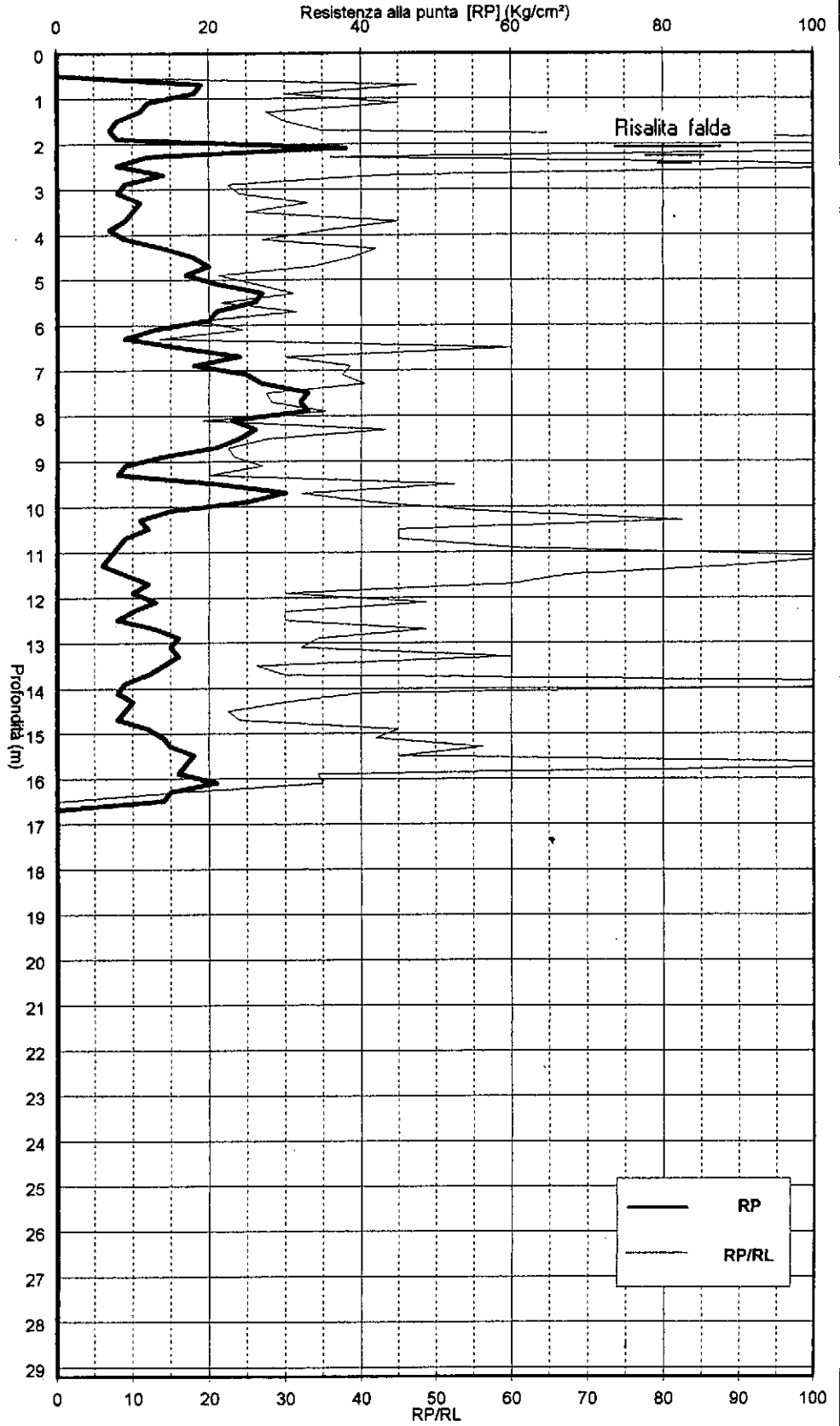
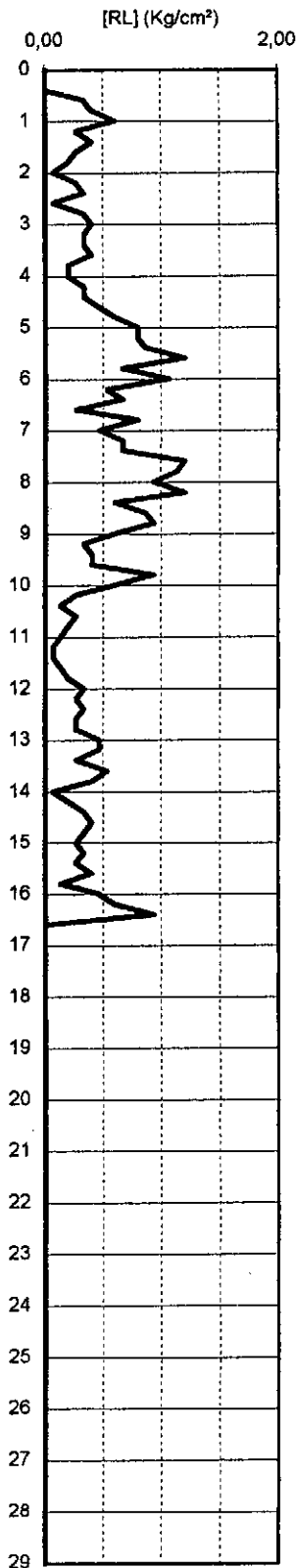
Data : 01/07/98

Operatore : DR. REBECCHI

Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 18 | 26 | 18 | 0,53 | 33,75 |
| 0,80 | 20 | 32 | 20 | 0,80 | 25,00 |
| 1,00 | 20 | 34 | 20 | 0,93 | 21,43 |
| 1,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 1,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 1,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 1,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 2,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 2,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,00 | 12 | 16 | 12 | 0,27 | 45,00 |
| 3,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 3,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,00 | 16 | 22 | 16 | 0,40 | 40,00 |
| 4,20 | 22 | 36 | 22 | 0,93 | 23,57 |
| 4,40 | 20 | 36 | 20 | 1,07 | 18,75 |
| 4,60 | 16 | 28 | 16 | 0,80 | 20,00 |
| 4,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 5,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 5,20 | 14 | 20 | 14 | 0,40 | 35,00 |
| 5,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,60 | 12 | 16 | 12 | 0,27 | 45,00 |
| 5,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 6,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 6,20 | 24 | 34 | 24 | 0,67 | 36,00 |
| 6,40 | 26 | 44 | 26 | 1,20 | 21,67 |
| 6,60 | 24 | 44 | 24 | 1,33 | 18,00 |
| 6,80 | 26 | 44 | 26 | 1,20 | 21,67 |
| 7,00 | 28 | 48 | 28 | 1,33 | 21,00 |
| 7,20 | 18 | 32 | 18 | 0,93 | 19,29 |
| 7,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 7,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 9,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,80 | 4 | 8 | 4 | 0,27 | 15,00 |
| 10,00 | 6 | 8 | 6 | 0,13 | 45,00 |
| 10,20 | 6 | 8 | 6 | 0,13 | 45,00 |
| 10,40 | 4 | 6 | 4 | 0,13 | 30,00 |
| 10,60 | 6 | 8 | 6 | 0,13 | 45,00 |
| 10,80 | 8 | 10 | 8 | 0,13 | 60,00 |
| 11,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 11,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 12,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 13,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 13,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 13,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 14,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 14,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 14,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 14,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 14,80 | 14 | 22 | 14 | 0,53 | 26,25 |
| 15,00 | 12 | 22 | 12 | 0,67 | 18,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |



Prova CPT: Cone Penetration Test
Punta meccanica Begemann e cella di
carico elettrica

LOCALITA': CAMPAZZO di NONANTOLA (MO)
COMMITTENTE : Ing. Medici
DATA : 27,01,2000

SOND.

1

Stratigrafia secondo SCHMESTRON

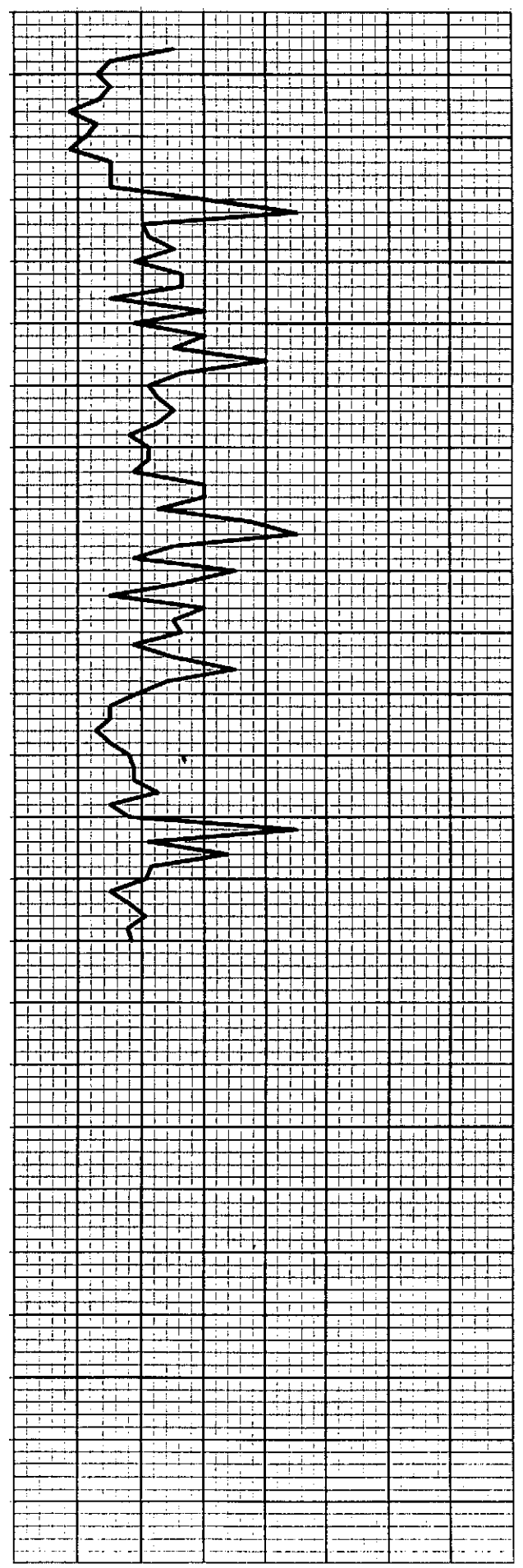
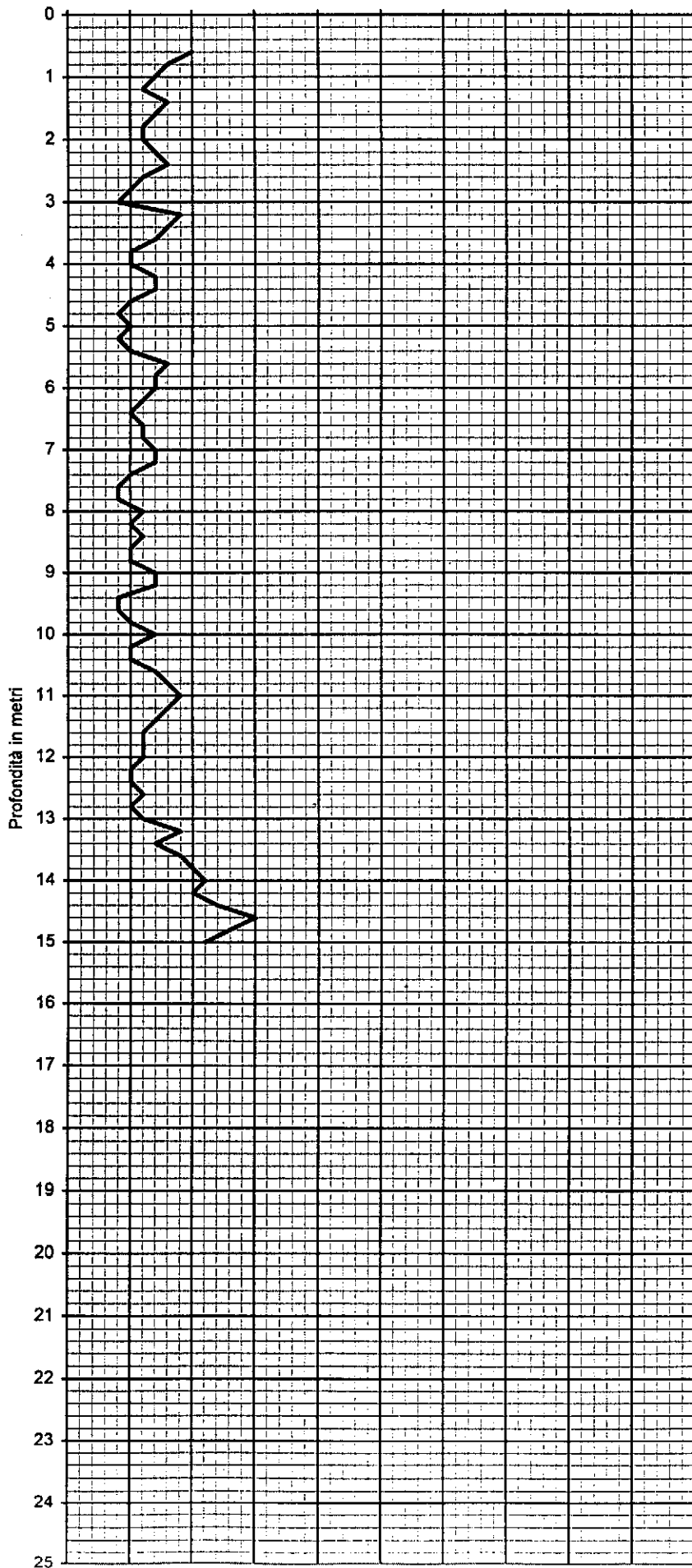
LOCALITA': Campazzo di Nonantola (MO)

COMM.TE Ing. Medici

| prof | RP | RL | Rp/RL | Profondità | Argilla organica | Argilla inorganica | Argilla media | Argilla compatta | Arg. molto compatta | Argilla limosa | Argilla sabbiosa | Sabbia Limo Argillosa | Sabbia sciolta | Sabbia | Sabbia densa | quote | note |
|------|----|------|--------|------------|------------------|--------------------|---------------|------------------|---------------------|----------------|------------------|-----------------------|----------------|--------|--------------|-------|-------|
| > 0 | | | | 0 | | | | | | | | | | | | | |
| 0,2 | | | | | | | | | | | | | | | | | |
| 0,4 | | | | | | | | | | | | | | | | | |
| 0,6 | 19 | 0,33 | 47,50 | | | | | | | | | | | | %%%%%%%%% | | |
| 0,8 | 18 | 0,40 | 30,00 | | | | | | | o | | | | | <<<<<<<<<< | 0,8 | |
| > 1 | 12 | 0,60 | 45,00 | 1 | | | | | | o | | | | | %%%%%%%%% | 1 | |
| 1,2 | 11 | 0,27 | 27,50 | | | | | | | o | | | | | <<<<<<<<<< | 1,2 | |
| 1,4 | 8 | 0,40 | 30,00 | | | | | | | o | | | | | <<<<<<<<<< | | |
| 1,6 | 7 | 0,27 | 35,00 | | | | | | | o | | | | | <<<<<<<<<< | | |
| 1,8 | 8 | 0,20 | 120,00 | | | | | | | | | | o | | SSSSSSSSSS | 1,8 | |
| > 2 | 38 | 0,07 | 142,50 | 2 | | | | | | | | | | o | SSSSSSSSSS | | |
| 2,2 | 12 | 0,27 | 36,00 | | | | | | | | | o | | | %%%%%%%%% | 2,2 | falda |
| 2,4 | 8 | 0,33 | 120,00 | | | | | | | | | o | | | SSSSSSSSSS | 2,4 | |
| 2,6 | 14 | 0,07 | 42,00 | | | | | | | | | o | | | %%%%%%%%% | 2,6 | |
| 2,8 | 9 | 0,33 | 22,50 | | | | o | | | | | | | | AAAAAAAAAAAA | 2,8 | |
| > 3 | 8 | 0,40 | 24,00 | 3 | | | o | | | | | | | | AAAAAAAAAAAA | | |
| 3,2 | 11 | 0,33 | 33,00 | | | | o | | | o | | | | | <<<<<<<<<< | 3,2 | |
| 3,4 | 10 | 0,33 | 25,00 | | | | o | | | | | | | | AAAAAAAAAAAA | 3,4 | |
| 3,6 | 9 | 0,40 | 45,00 | | | | | | | | | o | | | %%%%%%%%% | 3,6 | |
| 3,8 | 7 | 0,20 | 35,00 | | | | | | | o | | | | | <<<<<<<<<< | 3,8 | |
| > 4 | 9 | 0,20 | 27,00 | 4 | | | o | | | | | | | | AAAAAAAAAAAA | 4 | |
| 4,2 | 14 | 0,33 | 42,00 | | | | | | | | | o | | | %%%%%%%%% | 4,2 | |
| 4,4 | 18 | 0,33 | 38,57 | | | | | | | | | o | | | %%%%%%%%% | | |
| 4,6 | 20 | 0,47 | 33,33 | | | | | | | | | o | | | %%%%%%%%% | | |
| 4,8 | 17 | 0,60 | 21,25 | | | | | o | | | | | | | AAAAAAAAAAAA | 4,8 | |
| > 5 | 21 | 0,80 | 26,25 | 5 | | | | | | | o | | | | ^^^^^^^^^^ | 5 | |
| 5,2 | 27 | 0,80 | 31,15 | | | | | | | | o | | | | ^^^^^^^^^^ | | |
| 5,4 | 26 | 0,87 | 21,67 | | | | | | o | | | | | | AAAAAAAAAAAA | 5,4 | |
| 5,6 | 21 | 1,20 | 31,50 | | | | | | | | o | | | | ^^^^^^^^^^ | 5,6 | |
| 5,8 | 20 | 0,67 | 18,75 | | | | | | o | | | | | | AAAAAAAAAAAA | 5,8 | |
| > 6 | 13 | 1,07 | 24,38 | 6 | | | | o | | | | | | | AAAAAAAAAAAA | | |
| 6,2 | 9 | 0,53 | 13,50 | | o | | | | | | | | | | ##### | 6,2 | |
| 6,4 | 16 | 0,67 | 60,00 | | | | | | | | | | o | | SSSSSSSSSS | 6,4 | |
| 6,6 | 24 | 0,27 | 30,00 | | | | | | | | o | | | | ^^^^^^^^^^ | 6,6 | |
| 6,8 | 18 | 0,80 | 38,57 | | | | | | | | | o | | | %%%%%%%%% | 6,8 | |
| > 7 | 25 | 0,47 | 37,50 | 7 | | | | | | | | o | | | %%%%%%%%% | | |
| 7,2 | 27 | 0,67 | 40,50 | | | | | | | | | o | | | %%%%%%%%% | | |
| 7,4 | 33 | 0,67 | 27,50 | | | | | | | | | o | | | ^^^^^^^^^^ | 7,4 | |
| 7,6 | 32 | 1,20 | 28,24 | | | | | | | | | o | | | %%%%%%%%% | | |
| 7,8 | 33 | 1,13 | 35,38 | | | | | | | | | o | | | ^^^^^^^^^^ | 7,8 | |
| > 8 | 23 | 0,93 | 19,17 | 8 | | | | | o | | | | | | AAAAAAAAAAAA | 8 | |
| 8,2 | 26 | 1,20 | 43,33 | | | | | | | | | o | | | %%%%%%%%% | 8,2 | |
| 8,4 | 24 | 0,60 | 27,69 | | | | | | | | o | | | | ^^^^^^^^^^ | 8,4 | |
| 8,6 | 21 | 0,87 | 22,50 | | | | | | | | o | | | | AAAAAAAAAAAA | 8,6 | |
| 8,8 | 14 | 0,93 | 23,33 | | | | | | | | o | | | | AAAAAAAAAAAA | | |
| > 9 | 9 | 0,60 | 27,00 | 9 | | | o | | | | | | | | AAAAAAAAAAAA | | |
| 9,2 | 8 | 0,33 | 20,00 | | | | o | | | | | | | | AAAAAAAAAAAA | | |
| 9,4 | 21 | 0,40 | 52,50 | | | | | | | | | | o | | SSSSSSSSSS | 9,4 | |
| 9,6 | 30 | 0,40 | 32,14 | | | | | | | | | o | | | %%%%%%%%% | 9,6 | |
| 9,8 | 25 | 0,93 | 41,67 | | | | | | | | | o | | | %%%%%%%%% | | |
| > 10 | 15 | 0,60 | 56,25 | 10 | | | | | | | | | o | | SSSSSSSSSS | 10 | |
| 10,2 | 11 | 0,27 | 82,50 | | | | | | | | | | o | | SSSSSSSSSS | | |
| 10,4 | 12 | 0,13 | 45,00 | | | | | | | | | o | | | %%%%%%%%% | 10,4 | |
| 10,6 | 9 | 0,27 | 45,00 | | | | | | | | | o | | | %%%%%%%%% | | |
| 10,8 | 8 | 0,20 | 60,00 | | | | | | | | | | o | | SSSSSSSSSS | 10,8 | |
| > 11 | 7 | 0,13 | 105,00 | 11 | | | | | | | | | o | | SSSSSSSSSS | | |
| 11,2 | 6 | 0,07 | 90,00 | | | | | | | | | | o | | SSSSSSSSSS | | |
| 11,4 | 9 | 0,07 | 67,50 | | | | | | | | | | o | | SSSSSSSSSS | | |
| 11,6 | 12 | 0,13 | 60,00 | | | | | | | | | | o | | SSSSSSSSSS | | |
| 11,8 | 10 | 0,20 | 30,00 | | | | | | | o | | | | | <<<<<<<<<< | 11,8 | |
| > 12 | 13 | 0,33 | 48,75 | 12 | | | | | | | | | o | | SSSSSSSSSS | 12 | |
| 12,2 | 10 | 0,27 | 30,00 | | | | | | | o | | | | | <<<<<<<<<< | 12,2 | |
| 12,4 | 8 | 0,33 | 30,00 | | | | | | | o | | | | | <<<<<<<<<< | | |
| 12,6 | 13 | 0,27 | 48,75 | | | | | | | | | o | | | SSSSSSSSSS | 12,6 | |
| 12,8 | 16 | 0,27 | 34,29 | | | | | | | o | | | | | <<<<<<<<<< | 12,8 | |
| > 13 | 15 | 0,47 | 32,14 | 13 | | | | | | | | | o | | <<<<<<<<<< | | |
| 13,2 | 16 | 0,47 | 60,00 | | | | | | | | | | o | | SSSSSSSSSS | 13,2 | |
| 13,4 | 14 | 0,27 | 26,25 | | | | | | | o | | | | | <<<<<<<<<< | 13,4 | |
| 13,6 | 12 | 0,53 | 30,00 | | | | | | | o | | | | | <<<<<<<<<< | | |
| 13,8 | 9 | 0,40 | 135,00 | | | | | | | | | | o | | SSSSSSSSSS | 13,8 | |
| > 14 | 8 | 0,07 | 40,00 | 14 | | | | | | | | o | | | %%%%%%%%% | 14 | |
| 14,2 | 10 | 0,20 | 30,00 | | | | | | | o | | | | | <<<<<<<<<< | 14,2 | |
| 14,4 | 9 | 0,33 | 22,50 | | | | o | | | | | | | | AAAAAAAAAAAA | 14,4 | |
| 14,6 | 8 | 0,40 | 24,00 | | | | o | | | | | | | | AAAAAAAAAAAA | | |
| 14,8 | 12 | 0,33 | 45,00 | | | | | | | | | o | | | %%%%%%%%% | 14,8 | |
| > 15 | 14 | 0,27 | 42,00 | 15 | | | | | | | | o | | | %%%%%%%%% | | |

Resistenza alla punta R_p (kg/cm²)

R_p/R_l





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : DEL VILLANO SNC

Località : NONANTOLA

Prova numero : 2

Data : 24/07/97

Operatore : DR. REBECCHI

Quota : P.C.

| Profondità (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-------------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 20 | 32 | 20 | 0,80 | 25,00 |
| 0,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 1,00 | 14 | 30 | 14 | 1,07 | 13,13 |
| 1,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 1,40 | 16 | 34 | 16 | 1,20 | 13,33 |
| 1,60 | 14 | 38 | 14 | 1,60 | 8,75 |
| 1,80 | 12 | 26 | 12 | 0,93 | 12,86 |
| 2,00 | 12 | 28 | 12 | 1,07 | 11,25 |
| 2,20 | 14 | 38 | 14 | 1,60 | 8,75 |
| 2,40 | 16 | 32 | 16 | 1,07 | 15,00 |
| 2,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 2,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 3,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,20 | 18 | 24 | 18 | 0,40 | 45,00 |
| 3,40 | 16 | 28 | 16 | 0,80 | 20,00 |
| 3,60 | 14 | 24 | 14 | 0,67 | 21,00 |
| 3,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 4,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 4,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 4,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,60 | 16 | 22 | 16 | 0,40 | 40,00 |
| 5,80 | 14 | 22 | 14 | 0,53 | 26,25 |
| 6,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 6,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 6,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 6,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 7,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 7,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 7,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 8,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,40 | 12 | 16 | 12 | 0,27 | 45,00 |
| 8,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,00 | 14 | 20 | 14 | 0,40 | 35,00 |
| 9,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 9,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 10,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,60 | 14 | 20 | 14 | 0,40 | 35,00 |
| 10,80 | 16 | 26 | 16 | 0,67 | 24,00 |
| 11,00 | 18 | 32 | 18 | 0,93 | 19,29 |
| 11,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 11,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 11,60 | 12 | 26 | 12 | 0,93 | 12,86 |
| 11,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 12,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 12,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 12,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,20 | 18 | 24 | 18 | 0,40 | 45,00 |
| 13,40 | 14 | 24 | 14 | 0,67 | 21,00 |
| 13,60 | 18 | 26 | 18 | 0,53 | 33,75 |
| 13,80 | 20 | 34 | 20 | 0,93 | 21,43 |
| 14,00 | 22 | 38 | 22 | 1,07 | 20,63 |
| 14,20 | 20 | 40 | 20 | 1,33 | 15,00 |
| 14,40 | 24 | 44 | 24 | 1,33 | 18,00 |
| 14,60 | 30 | 52 | 30 | 1,47 | 20,45 |
| 14,80 | 26 | 48 | 26 | 1,47 | 17,73 |
| 15,00 | 22 | 40 | 22 | 1,20 | 18,33 |

**PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA**

CPT 1-199

2:010496-43

- committente : Impresa
- lavoro : studio del terreno di fondazione
- località : Casette-Nonantola-MO-
- note : foro di sondaggio chiuso a - 2.80 m dal p.c./assen

- data : 26/05/1998
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- pagina : 1

| Prof. m | LP kg/cm ² | LL kg/cm ² | Rp kg/cm ² | RL kg/cm ² | Rp/RI | Prof. m | LP kg/cm ² | LL kg/cm ² | Rp kg/cm ² | RL kg/cm ² | Rp/RI |
|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|
| 0,20 | --- | 1,0 | --- | 0,67 | --- | 5,40 | 16,0 | 23,0 | 16,0 | 0,60 | 27,0 |
| 0,40 | 100,0 | 110,0 | 100,0 | 2,00 | 50,0 | 5,60 | 16,0 | 25,0 | 16,0 | 0,40 | 40,0 |
| 0,60 | 50,0 | 80,0 | 50,0 | 1,33 | 37,0 | 5,80 | 12,0 | 18,0 | 12,0 | 0,33 | 36,0 |
| 0,80 | 60,0 | 80,0 | 60,0 | 1,20 | 50,0 | 6,00 | 11,0 | 16,0 | 11,0 | 0,47 | 24,0 |
| 1,00 | 28,0 | 46,0 | 28,0 | 1,40 | 20,0 | 6,20 | 12,0 | 19,0 | 12,0 | 0,40 | 30,0 |
| 1,20 | 23,0 | 44,0 | 23,0 | 1,27 | 18,0 | 6,40 | 12,0 | 18,0 | 12,0 | 0,80 | 15,0 |
| 1,40 | 21,0 | 40,0 | 21,0 | 1,33 | 16,0 | 6,60 | 14,0 | 26,0 | 14,0 | 0,53 | 26,0 |
| 1,60 | 16,0 | 36,0 | 16,0 | 1,00 | 16,0 | 6,80 | 15,0 | 23,0 | 15,0 | 0,40 | 37,0 |
| 1,80 | 21,0 | 36,0 | 21,0 | 1,07 | 20,0 | 7,00 | 20,0 | 26,0 | 20,0 | 0,53 | 37,0 |
| 2,00 | 20,0 | 36,0 | 20,0 | 1,33 | 15,0 | 7,20 | 14,0 | 22,0 | 14,0 | 0,33 | 42,0 |
| 2,20 | 16,0 | 36,0 | 16,0 | 1,27 | 13,0 | 7,40 | 11,0 | 16,0 | 11,0 | 0,40 | 27,0 |
| 2,40 | 17,0 | 36,0 | 17,0 | 1,13 | 15,0 | 7,60 | 12,0 | 18,0 | 12,0 | 0,40 | 30,0 |
| 2,60 | 18,0 | 35,0 | 18,0 | 0,93 | 19,0 | 7,80 | 9,0 | 15,0 | 9,0 | 0,40 | 22,0 |
| 2,80 | 20,0 | 34,0 | 20,0 | 0,60 | 33,0 | 8,00 | 8,0 | 14,0 | 8,0 | 0,27 | 30,0 |
| 3,00 | 12,0 | 21,0 | 12,0 | 0,47 | 26,0 | 8,20 | 12,0 | 16,0 | 12,0 | 0,53 | 22,0 |
| 3,20 | 9,0 | 16,0 | 9,0 | 0,40 | 22,0 | 8,40 | 12,0 | 20,0 | 12,0 | 0,53 | 22,0 |
| 3,40 | 10,0 | 16,0 | 10,0 | 0,40 | 25,0 | 8,60 | 15,0 | 23,0 | 15,0 | 0,53 | 28,0 |
| 3,60 | 14,0 | 20,0 | 14,0 | 0,53 | 26,0 | 8,80 | 14,0 | 22,0 | 14,0 | 0,53 | 26,0 |
| 3,80 | 20,0 | 28,0 | 20,0 | 0,60 | 33,0 | 9,00 | 13,0 | 21,0 | 13,0 | 0,47 | 28,0 |
| 4,00 | 16,0 | 25,0 | 16,0 | 0,47 | 34,0 | 9,20 | 13,0 | 20,0 | 13,0 | 0,53 | 24,0 |
| 4,20 | 14,0 | 21,0 | 14,0 | 0,60 | 23,0 | 9,40 | 16,0 | 24,0 | 16,0 | 0,67 | 24,0 |
| 4,40 | 14,0 | 23,0 | 14,0 | 0,47 | 30,0 | 9,60 | 14,0 | 24,0 | 14,0 | 0,53 | 26,0 |
| 4,60 | 18,0 | 25,0 | 18,0 | 0,87 | 21,0 | 9,80 | 16,0 | 24,0 | 16,0 | 0,53 | 30,0 |
| 4,80 | 20,0 | 33,0 | 20,0 | 0,67 | 30,0 | 10,00 | 13,0 | 21,0 | 13,0 | 0,67 | 19,0 |
| 5,00 | 15,0 | 25,0 | 15,0 | 0,60 | 25,0 | 10,20 | 16,0 | 26,0 | 16,0 | 0,80 | 20,0 |
| 5,20 | 9,0 | 18,0 | 9,0 | 0,47 | 19,0 | 10,40 | 20,0 | 32,0 | 20,0 | --- | --- |

- PENETROMETRO STATICO tipo GOUDA da 10 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann ø = 35.7 mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

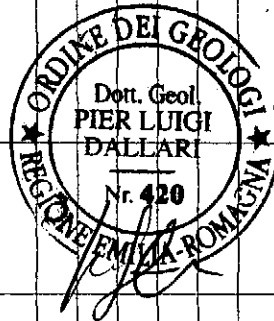
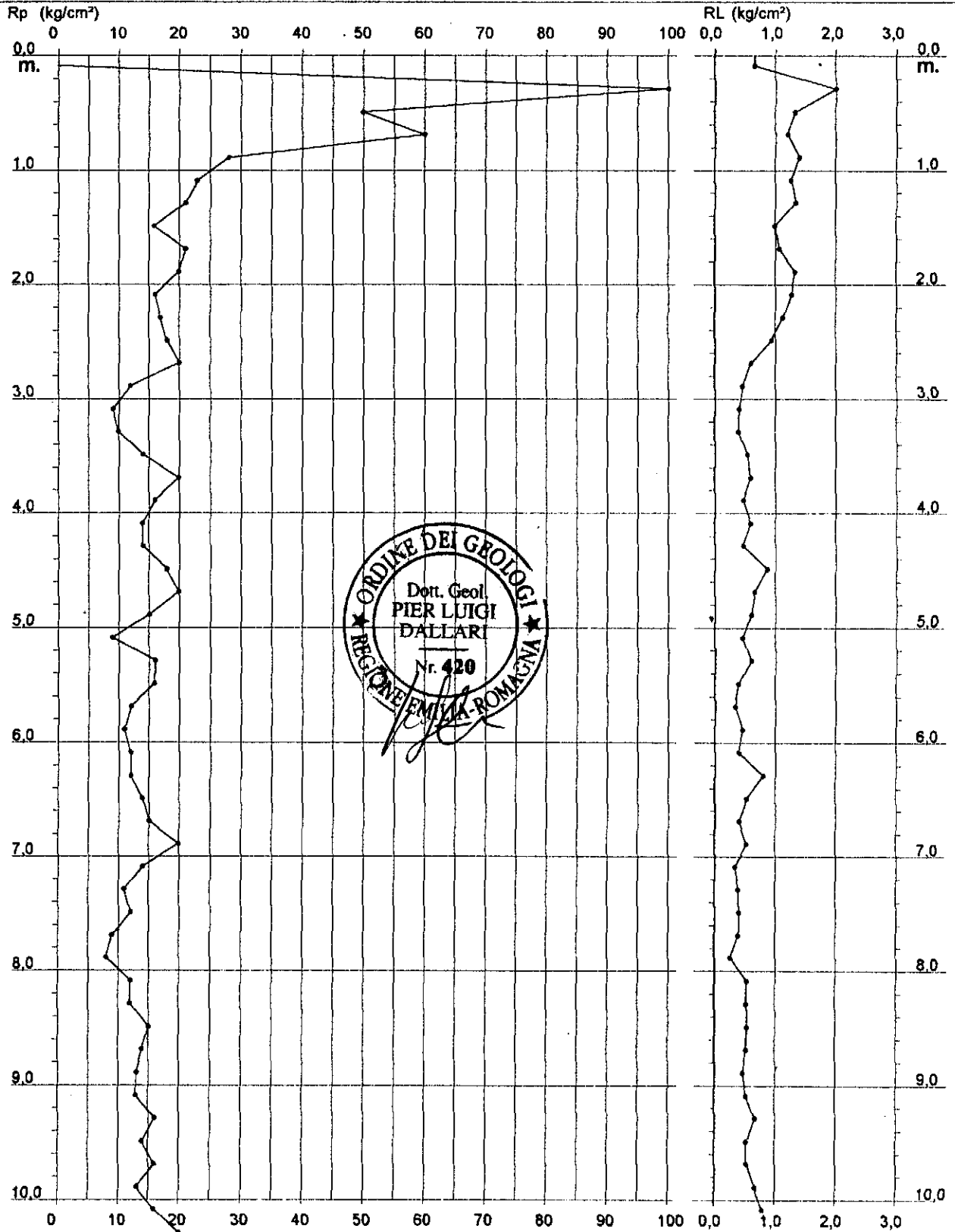
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1-199

2.010496-43

- committente : Impresa
- lavoro : studio del terreno di fondazione
- località : Casette-Nonantola-MO-
- note : foro di sondaggio chiuso a - 2.80 m dal p.c./assen

- data : 26/05/1998
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- scala vert.: 1 : 50



PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 1-199

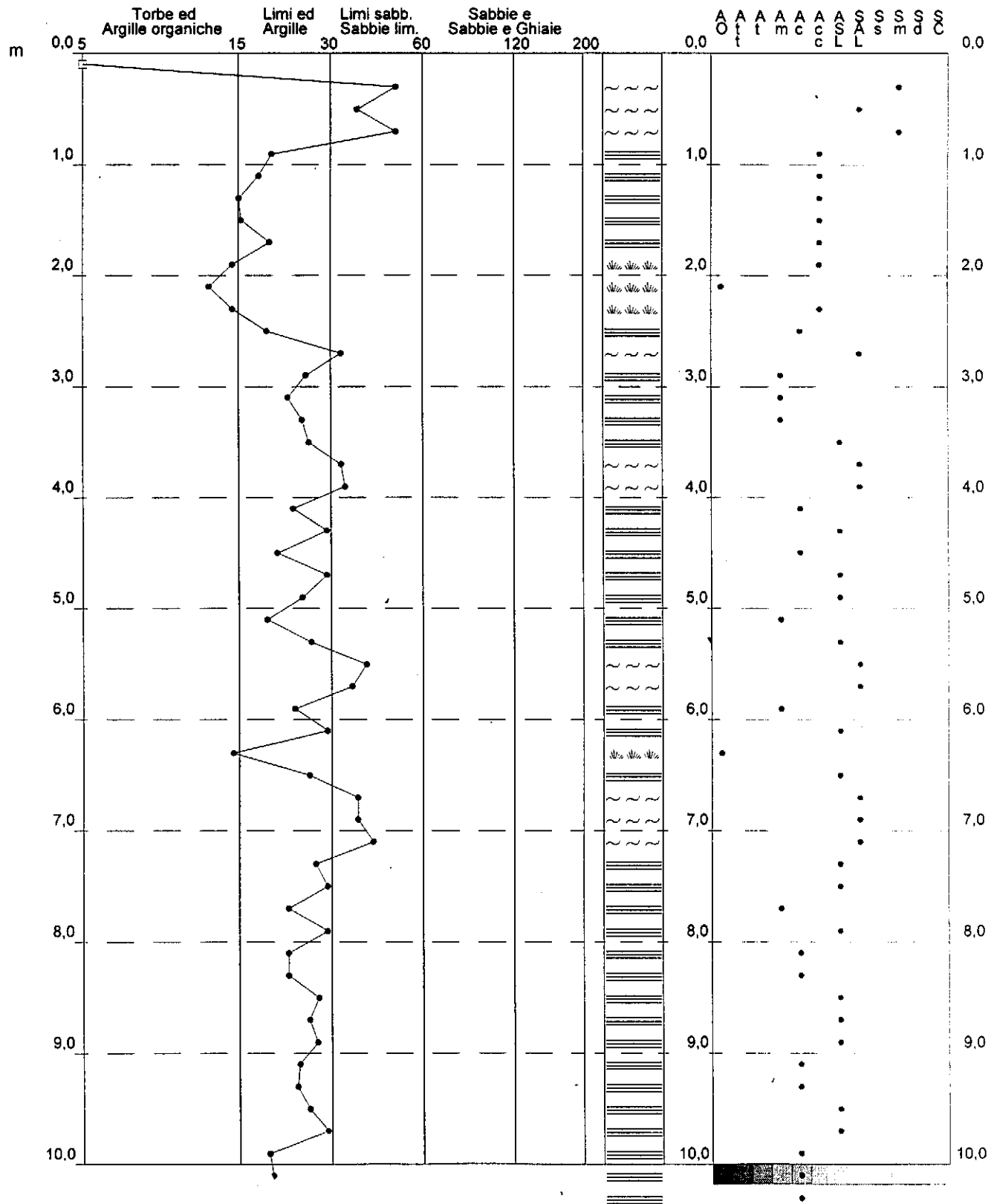
2.010496-43

- committente : Impresa
 - lavoro : studio del terreno di fondazione
 - località : Casette-Nonantola-MO-
 - note : foro di sondaggio chiuso a - 2.80 m dal p.c./assen

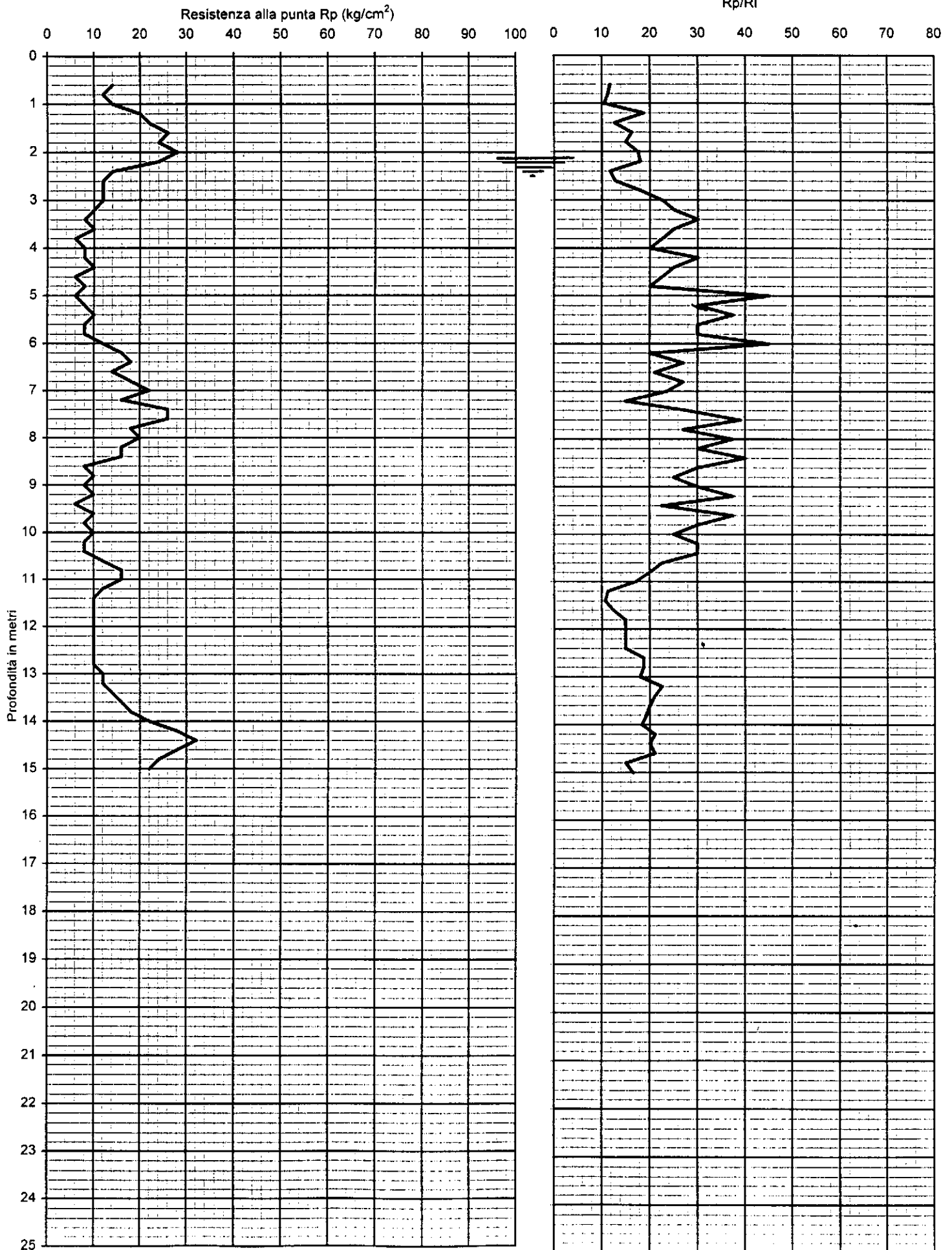
- data : 26/05/1998
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - scala vert.: 1 : 50

Rp/RL (Litologia Begemann 1965 A.G.I. 1977)

Rp - RL/Rp (Litologia Schmertmann 1978)



Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : DEL VILLANO E GALEONE

Località : CASELLE-NONANTOLA

Prova numero : 1

Data : 01/07/98

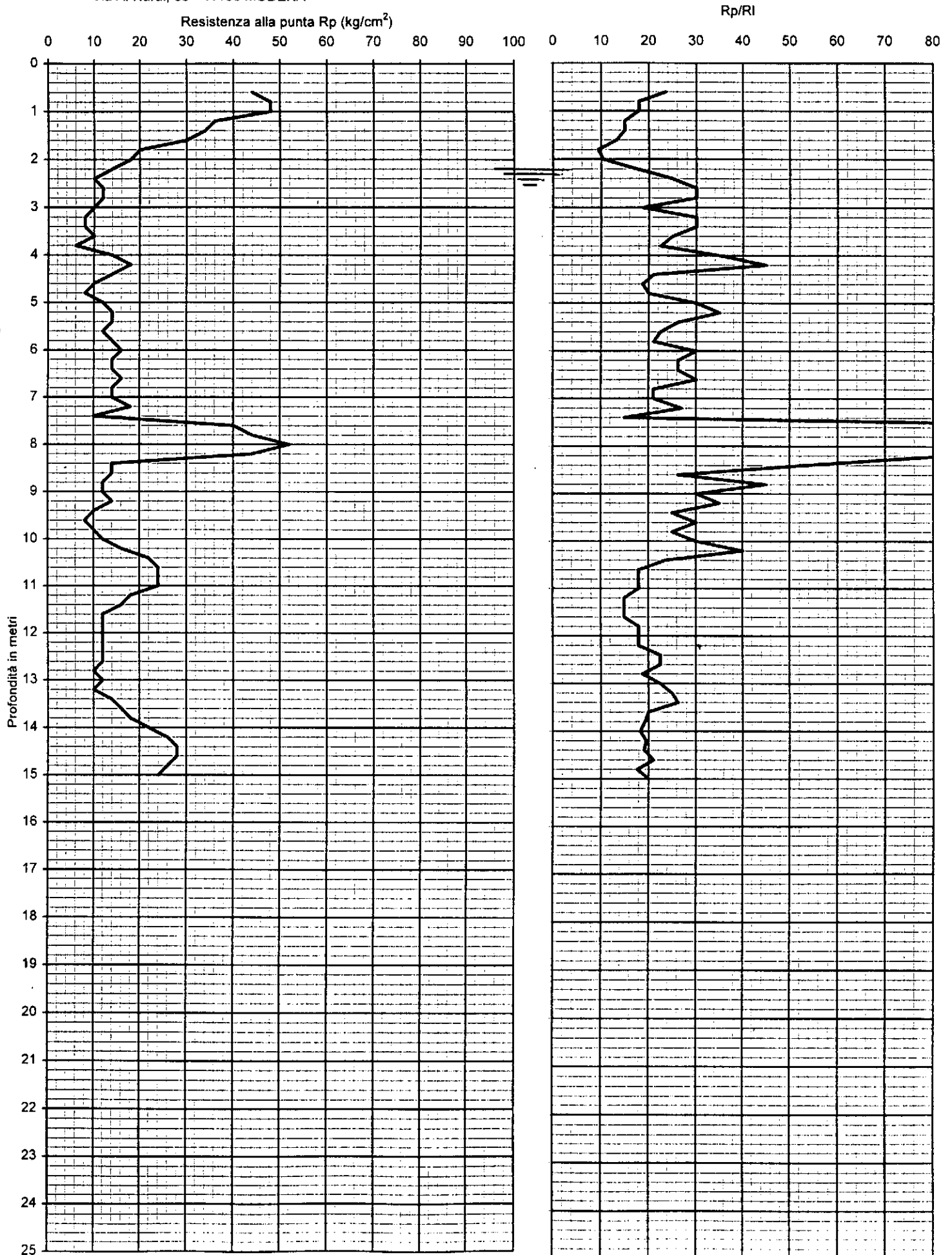
Operatore : DR. REBECCHI

Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 14 | 32 | 14 | 1,20 | 11,67 |
| 0,80 | 12 | 28 | 12 | 1,07 | 11,25 |
| 1,00 | 14 | 34 | 14 | 1,33 | 10,50 |
| 1,20 | 20 | 36 | 20 | 1,07 | 18,75 |
| 1,40 | 22 | 48 | 22 | 1,73 | 12,69 |
| 1,60 | 26 | 50 | 26 | 1,60 | 16,25 |
| 1,80 | 24 | 48 | 24 | 1,60 | 15,00 |
| 2,00 | 28 | 52 | 28 | 1,60 | 17,50 |
| 2,20 | 24 | 44 | 24 | 1,33 | 18,00 |
| 2,40 | 14 | 32 | 14 | 1,20 | 11,67 |
| 2,60 | 12 | 26 | 12 | 0,93 | 12,86 |
| 2,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 3,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 3,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,00 | 6 | 8 | 6 | 0,13 | 45,00 |
| 5,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 5,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,00 | 12 | 16 | 12 | 0,27 | 45,00 |
| 6,20 | 16 | 28 | 16 | 0,80 | 20,00 |
| 6,40 | 18 | 28 | 18 | 0,67 | 27,00 |
| 6,60 | 14 | 24 | 14 | 0,67 | 21,00 |
| 6,80 | 18 | 28 | 18 | 0,67 | 27,00 |
| 7,00 | 22 | 36 | 22 | 0,93 | 23,57 |
| 7,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 7,40 | 26 | 40 | 26 | 0,93 | 27,86 |
| 7,60 | 26 | 36 | 26 | 0,67 | 39,00 |
| 7,80 | 18 | 28 | 18 | 0,67 | 27,00 |
| 8,00 | 20 | 28 | 20 | 0,53 | 37,50 |
| 8,20 | 16 | 24 | 16 | 0,53 | 30,00 |
| 8,40 | 16 | 22 | 16 | 0,40 | 40,00 |
| 8,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 9,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 9,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 10,80 | 16 | 28 | 16 | 0,80 | 20,00 |
| 11,00 | 16 | 30 | 16 | 0,93 | 17,14 |
| 11,20 | 12 | 28 | 12 | 1,07 | 11,25 |
| 11,40 | 10 | 24 | 10 | 0,93 | 10,71 |
| 11,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 11,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 12,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 12,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 12,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 12,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,40 | 14 | 24 | 14 | 0,67 | 21,00 |
| 13,60 | 16 | 28 | 16 | 0,80 | 20,00 |
| 13,80 | 18 | 32 | 18 | 0,93 | 19,29 |
| 14,00 | 22 | 40 | 22 | 1,20 | 18,33 |
| 14,20 | 28 | 48 | 28 | 1,33 | 21,00 |
| 14,40 | 32 | 56 | 32 | 1,60 | 20,00 |
| 14,60 | 28 | 48 | 28 | 1,33 | 21,00 |
| 14,80 | 24 | 48 | 24 | 1,60 | 15,00 |
| 15,00 | 22 | 42 | 22 | 1,33 | 16,50 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : DEL VILLANO E GALEONE

Località : CASELLE-NONANTOLA

Prova numero : 3

Data : 01/07/98

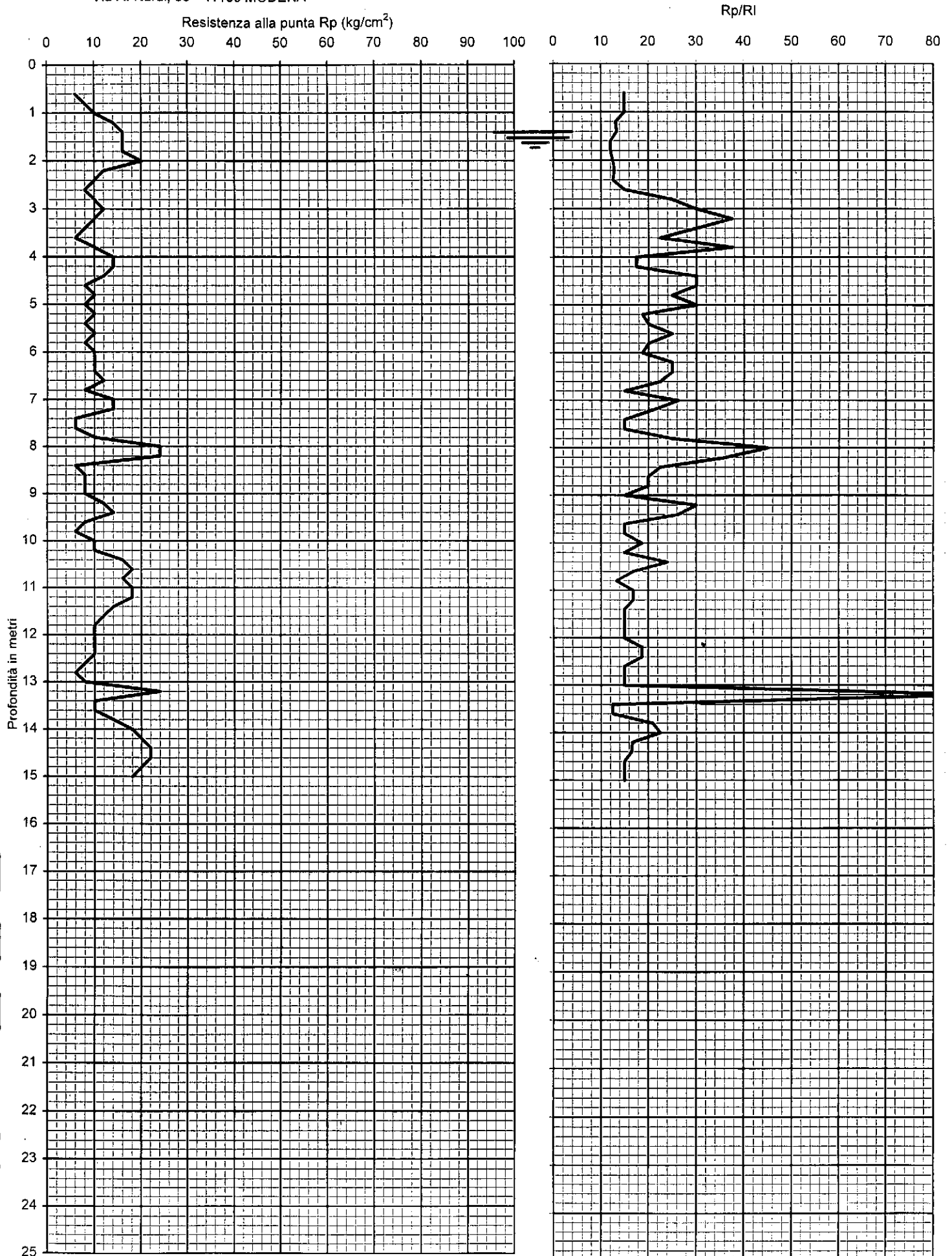
Operatore : DR. REBECCHI

Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 44 | 72 | 44 | 1,87 | 23,57 |
| 0,80 | 48 | 88 | 48 | 2,67 | 18,00 |
| 1,00 | 48 | 88 | 48 | 2,67 | 18,00 |
| 1,20 | 36 | 72 | 36 | 2,40 | 15,00 |
| 1,40 | 34 | 68 | 34 | 2,27 | 15,00 |
| 1,60 | 30 | 64 | 30 | 2,27 | 13,24 |
| 1,80 | 20 | 52 | 20 | 2,13 | 9,38 |
| 2,00 | 18 | 44 | 18 | 1,73 | 10,38 |
| 2,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 2,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,60 | 12 | 18 | 12 | 0,40 | 30,00 |
| 2,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,00 | 14 | 20 | 14 | 0,40 | 35,00 |
| 4,20 | 18 | 24 | 18 | 0,40 | 45,00 |
| 4,40 | 14 | 24 | 14 | 0,67 | 21,00 |
| 4,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 5,20 | 14 | 20 | 14 | 0,40 | 35,00 |
| 5,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 5,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 5,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 6,00 | 16 | 24 | 16 | 0,53 | 30,00 |
| 6,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 6,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 6,60 | 16 | 24 | 16 | 0,53 | 30,00 |
| 6,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 7,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 7,20 | 18 | 28 | 18 | 0,67 | 27,00 |
| 7,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 7,60 | 40 | 44 | 40 | 0,27 | 150,00 |
| 7,80 | 44 | 52 | 44 | 0,53 | 82,50 |
| 8,00 | 52 | 58 | 52 | 0,40 | 130,00 |
| 8,20 | 44 | 52 | 44 | 0,53 | 82,50 |
| 8,40 | 14 | 18 | 14 | 0,27 | 52,50 |
| 8,60 | 14 | 22 | 14 | 0,53 | 26,25 |
| 8,80 | 12 | 16 | 12 | 0,27 | 45,00 |
| 9,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 9,20 | 14 | 20 | 14 | 0,40 | 35,00 |
| 9,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 10,20 | 16 | 22 | 16 | 0,40 | 40,00 |
| 10,40 | 22 | 36 | 22 | 0,93 | 23,57 |
| 10,60 | 24 | 44 | 24 | 1,33 | 18,00 |
| 10,80 | 24 | 44 | 24 | 1,33 | 18,00 |
| 11,00 | 24 | 44 | 24 | 1,33 | 18,00 |
| 11,20 | 18 | 36 | 18 | 1,20 | 15,00 |
| 11,40 | 16 | 32 | 16 | 1,07 | 15,00 |
| 11,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 11,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 12,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 12,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 12,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 12,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 12,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 13,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 13,60 | 16 | 28 | 16 | 0,80 | 20,00 |
| 13,80 | 18 | 32 | 18 | 0,93 | 19,29 |
| 14,00 | 22 | 40 | 22 | 1,20 | 18,33 |
| 14,20 | 26 | 46 | 26 | 1,33 | 19,50 |
| 14,40 | 28 | 50 | 28 | 1,47 | 19,09 |
| 14,60 | 28 | 48 | 28 | 1,33 | 21,00 |
| 14,80 | 26 | 48 | 26 | 1,47 | 17,73 |
| 15,00 | 24 | 42 | 24 | 1,20 | 20,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

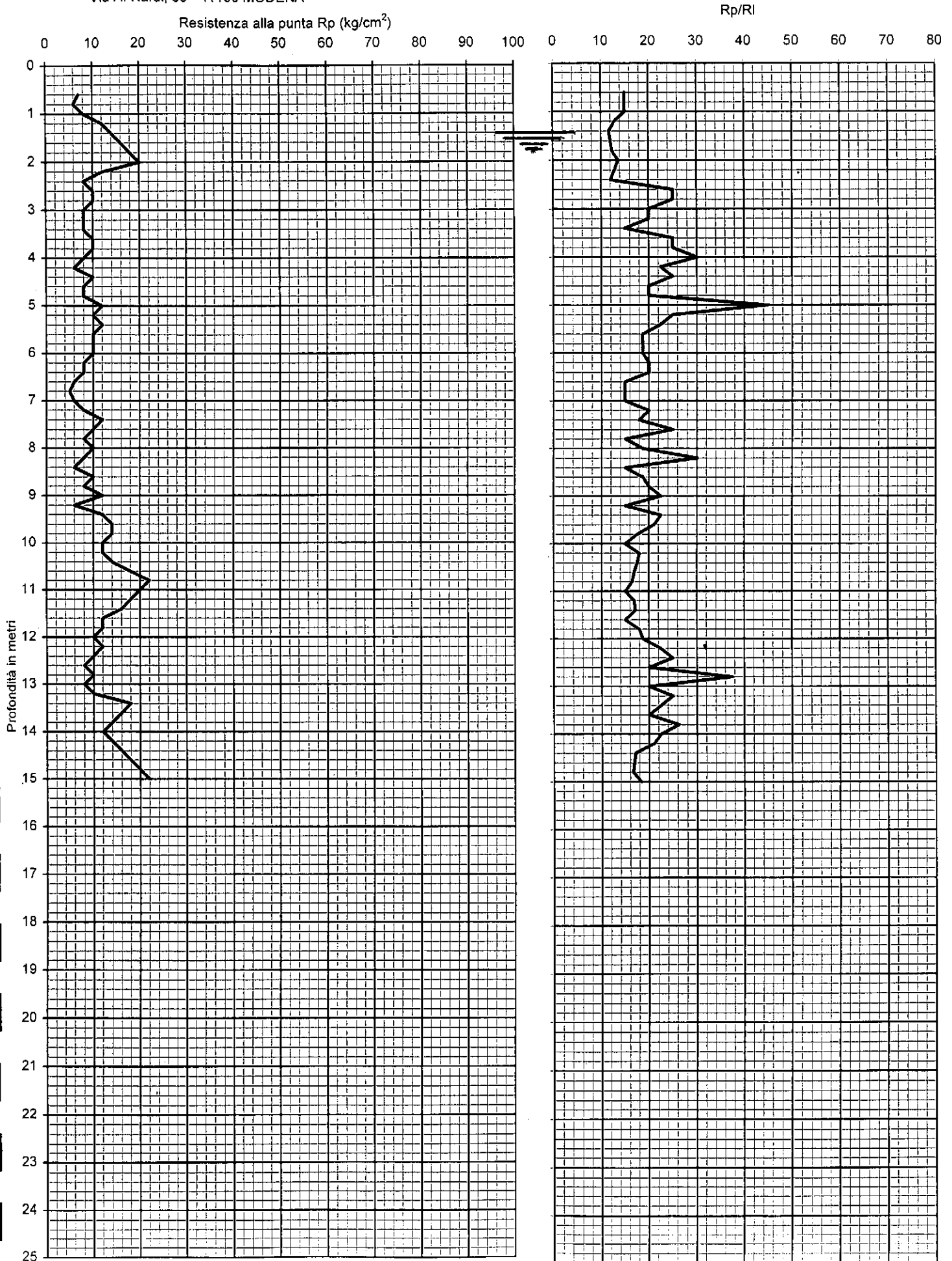
Penetrometro Gouda

Committente : C/O GEOM. ZIRONI
Località : CASSETTE-NONANTOLA
Prova numero : 1
Data : 20/03/00
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 0,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 1,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 1,20 | 14 | 30 | 14 | 1,07 | 13,13 |
| 1,40 | 16 | 34 | 16 | 1,20 | 13,33 |
| 1,60 | 16 | 36 | 16 | 1,33 | 12,00 |
| 1,80 | 16 | 36 | 16 | 1,33 | 12,00 |
| 2,00 | 20 | 44 | 20 | 1,60 | 12,50 |
| 2,20 | 12 | 26 | 12 | 0,93 | 12,86 |
| 2,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 2,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 2,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 3,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 4,00 | 14 | 26 | 14 | 0,80 | 17,50 |
| 4,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 4,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 4,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 6,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 7,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 7,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 7,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 7,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 7,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,00 | 24 | 32 | 24 | 0,53 | 45,00 |
| 8,20 | 24 | 34 | 24 | 0,67 | 36,00 |
| 8,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,20 | 12 | 18 | 12 | 0,40 | 30,00 |
| 9,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 9,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 10,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,40 | 16 | 26 | 16 | 0,67 | 24,00 |
| 10,60 | 18 | 34 | 18 | 1,07 | 16,88 |
| 10,80 | 16 | 34 | 16 | 1,20 | 13,33 |
| 11,00 | 18 | 34 | 18 | 1,07 | 16,88 |
| 11,20 | 18 | 34 | 18 | 1,07 | 16,88 |
| 11,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 11,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 11,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 12,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 12,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 13,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 13,20 | 24 | 28 | 24 | 0,27 | 90,00 |
| 13,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 13,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 13,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 14,00 | 18 | 30 | 18 | 0,80 | 22,50 |
| 14,20 | 20 | 38 | 20 | 1,20 | 16,67 |
| 14,40 | 22 | 42 | 22 | 1,33 | 16,50 |
| 14,60 | 22 | 44 | 22 | 1,47 | 15,00 |
| 14,80 | 20 | 40 | 20 | 1,33 | 15,00 |
| 15,00 | 18 | 36 | 18 | 1,20 | 15,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O GEOM. ZIRONI
Località : CASSETTE-NONANTOLA
Prova numero : 3
Data : 20/03/00
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 7 | 14 | 7 | 0,47 | 15,00 |
| 0,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 1,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 1,20 | 12 | 26 | 12 | 0,93 | 12,86 |
| 1,40 | 14 | 32 | 14 | 1,20 | 11,67 |
| 1,60 | 16 | 36 | 16 | 1,33 | 12,00 |
| 1,80 | 18 | 40 | 18 | 1,47 | 12,27 |
| 2,00 | 20 | 42 | 20 | 1,47 | 13,64 |
| 2,20 | 12 | 26 | 12 | 0,93 | 12,86 |
| 2,40 | 8 | 18 | 8 | 0,67 | 12,00 |
| 2,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 3,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,00 | 12 | 16 | 12 | 0,27 | 45,00 |
| 5,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 5,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 6,80 | 5 | 10 | 5 | 0,33 | 15,00 |
| 7,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 7,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 7,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 8,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 8,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 8,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 8,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 9,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,60 | 14 | 24 | 14 | 0,67 | 21,00 |
| 9,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 10,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 10,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 10,40 | 14 | 26 | 14 | 0,80 | 17,50 |
| 10,60 | 18 | 34 | 18 | 1,07 | 16,88 |
| 10,80 | 22 | 42 | 22 | 1,33 | 16,50 |
| 11,00 | 20 | 40 | 20 | 1,33 | 15,00 |
| 11,20 | 18 | 34 | 18 | 1,07 | 16,88 |
| 11,40 | 16 | 30 | 16 | 0,93 | 17,14 |
| 11,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 11,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 12,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 12,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 13,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 13,40 | 18 | 30 | 18 | 0,80 | 22,50 |
| 13,60 | 16 | 28 | 16 | 0,80 | 20,00 |
| 13,80 | 14 | 22 | 14 | 0,53 | 26,25 |
| 14,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 14,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 14,40 | 16 | 30 | 16 | 0,93 | 17,14 |
| 14,60 | 18 | 34 | 18 | 1,07 | 16,88 |
| 14,80 | 20 | 38 | 20 | 1,20 | 16,67 |
| 15,00 | 22 | 40 | 22 | 1,20 | 18,33 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
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| 19,20 | | | | | |
| 19,40 | | | | | |
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| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
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| 20,80 | | | | | |
| 21,00 | | | | | |
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| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
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| 24,80 | | | | | |
| 25,00 | | | | | |
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| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

CANTIERE: Nonantola Strada Provinciale per Castelfranco

OGGETTO: Costruzione di fabbricato residenziale

COMMITTENTE: C.F.A. Costruzioni s.r.l.

DATA ESECUZIONE: 11/1/2008

RISULTATI DELLA PROVA STATICA N.1

Acqua a - 1,0 m da p.c.

| Profondità (m) | Letture punta (Kg/cm ²) | Letture laterale (Kg/cm ²) | qc (Kg/cm ²) | fs (Kg/cm ²) | qc/fs Begemann | fs/qcx100 (Schmertmann) |
|-------------------|--|---|-----------------------------|-----------------------------|-------------------|----------------------------|
| 0,20 | 0,0 | 0,0 | 0,0 | 0,2667 | 0,0 | |
| 0,40 | 5,0 | 9,0 | 5,0 | 0,3333 | 15,0 | 6,67 |
| 0,60 | 6,0 | 11,0 | 6,0 | 0,5333 | 11,25 | 8,89 |
| 0,80 | 10,0 | 18,0 | 10,0 | 0,7333 | 13,64 | 7,33 |
| 1,00 | 13,0 | 24,0 | 13,0 | 0,9333 | 13,93 | 7,18 |
| 1,20 | 12,0 | 26,0 | 12,0 | 1,0667 | 11,25 | 8,89 |
| 1,40 | 14,0 | 30,0 | 14,0 | 0,9333 | 15,0 | 6,67 |
| 1,60 | 15,0 | 29,0 | 15,0 | 1,0 | 15,0 | 6,67 |
| 1,80 | 7,0 | 22,0 | 7,0 | 0,3333 | 21,0 | 4,76 |
| 2,00 | 6,0 | 11,0 | 6,0 | 0,2667 | 22,5 | 4,45 |
| 2,20 | 6,0 | 10,0 | 6,0 | 0,2 | 30,0 | 3,33 |
| 2,40 | 7,0 | 10,0 | 7,0 | 0,2667 | 26,25 | 3,81 |
| 2,60 | 6,0 | 10,0 | 6,0 | 0,1333 | 45,01 | 2,22 |
| 2,80 | 5,0 | 7,0 | 5,0 | 0,1333 | 37,51 | 2,67 |
| 3,00 | 5,0 | 7,0 | 5,0 | 0,1333 | 37,51 | 2,67 |
| 3,20 | 5,0 | 7,0 | 5,0 | 0,0667 | 74,96 | 1,33 |
| 3,40 | 6,0 | 7,0 | 6,0 | 0,1333 | 45,01 | 2,22 |
| 3,60 | 6,0 | 8,0 | 6,0 | 0,1333 | 45,01 | 2,22 |
| 3,80 | 7,0 | 9,0 | 7,0 | 0,2667 | 26,25 | 3,81 |
| 4,00 | 8,0 | 12,0 | 8,0 | 0,2667 | 30,0 | 3,33 |
| 4,20 | 7,0 | 11,0 | 7,0 | 0,3333 | 21,0 | 4,76 |
| 4,40 | 5,0 | 10,0 | 5,0 | 0,2 | 25,0 | 4,0 |
| 4,60 | 8,0 | 11,0 | 8,0 | 0,2 | 40,0 | 2,5 |
| 4,80 | 8,0 | 11,0 | 8,0 | 0,3333 | 24,0 | 4,17 |
| 5,00 | 6,0 | 11,0 | 6,0 | 0,2 | 30,0 | 3,33 |
| 5,20 | 7,0 | 10,0 | 7,0 | 0,2667 | 26,25 | 3,81 |
| 5,40 | 7,0 | 11,0 | 7,0 | 0,2667 | 26,25 | 3,81 |
| 5,60 | 8,0 | 12,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 5,80 | 5,0 | 11,0 | 5,0 | 0,3333 | 15,0 | 6,67 |
| 6,00 | 6,0 | 11,0 | 6,0 | 0,2 | 30,0 | 3,33 |
| 6,20 | 6,0 | 9,0 | 6,0 | 0,3333 | 18,0 | 5,56 |
| 6,40 | 8,0 | 13,0 | 8,0 | 0,3333 | 24,0 | 4,17 |
| 6,60 | 6,0 | 11,0 | 6,0 | 0,1333 | 45,01 | 2,22 |
| 6,80 | 5,0 | 7,0 | 5,0 | 0,2667 | 18,75 | 5,33 |
| 7,00 | 5,0 | 9,0 | 5,0 | 0,2 | 25,0 | 4,0 |
| 7,20 | 6,0 | 9,0 | 6,0 | 0,2667 | 22,5 | 4,45 |
| 7,40 | 5,0 | 9,0 | 5,0 | 0,4 | 12,5 | 8,0 |
| 7,60 | 6,0 | 12,0 | 6,0 | 0,2 | 30,0 | 3,33 |
| 7,80 | 5,0 | 8,0 | 5,0 | 0,2 | 25,0 | 4,0 |
| 8,00 | 6,0 | 9,0 | 6,0 | 0,2 | 30,0 | 3,33 |
| 8,20 | 6,0 | 9,0 | 6,0 | 0,2 | 30,0 | 3,33 |
| 8,40 | 6,0 | 9,0 | 6,0 | 0,4 | 15,0 | 6,67 |
| 8,60 | 6,0 | 12,0 | 6,0 | 0,4 | 15,0 | 6,67 |
| 8,80 | 7,0 | 13,0 | 7,0 | 0,4667 | 15,0 | 6,67 |
| 9,00 | 9,0 | 16,0 | 9,0 | 0,5333 | 16,88 | 5,93 |
| 9,20 | 10,0 | 18,0 | 10,0 | 0,5333 | 18,75 | 5,33 |
| 9,40 | 12,0 | 20,0 | 12,0 | 0,6 | 20,0 | 5,0 |

Probe CPT - Cone Penetration Nr.1
Strumento utilizzato... PAGANI 100 kN
Diagramma Resistenze qc fs

Committente : C.F.A. Costruzioni s.r.l.
 Cantiere : Costruzione di fabbricato residenziale
 Località : Nonantola Strada Provinciale per Castelfranco

Data :11/01/2008

| Profondità (m) | Letture punta (Kg/cm ²) | Letture laterale (Kg/cm ²) | qc (Kg/cm ²) | fs (Kg/cm ²) | qc/fs Begemann | fs/qc x 100 (Schmertmann) |
|----------------|-------------------------------------|--|--------------------------|--------------------------|----------------|---------------------------|
| 9,60 | 11,0 | 20,0 | 11,0 | 0,6667 | 16,5 | 6,06 |
| 9,80 | 10,0 | 20,0 | 10,0 | 0,6667 | 15,0 | 6,67 |
| 10,00 | 11,0 | 21,0 | 11,0 | 0,6 | 18,33 | 5,45 |
| 10,20 | 12,0 | 21,0 | 12,0 | 0,6667 | 18,0 | 5,56 |
| 10,40 | 11,0 | 21,0 | 11,0 | 0,6667 | 16,5 | 6,06 |
| 10,60 | 13,0 | 23,0 | 13,0 | 0,9333 | 13,93 | 7,18 |
| 10,80 | 11,0 | 25,0 | 11,0 | 0,6 | 18,33 | 5,45 |
| 11,00 | 11,0 | 20,0 | 11,0 | 0,3333 | 33,0 | 3,03 |
| 11,20 | 8,0 | 13,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 11,40 | 7,0 | 13,0 | 7,0 | 0,3333 | 21,0 | 4,76 |

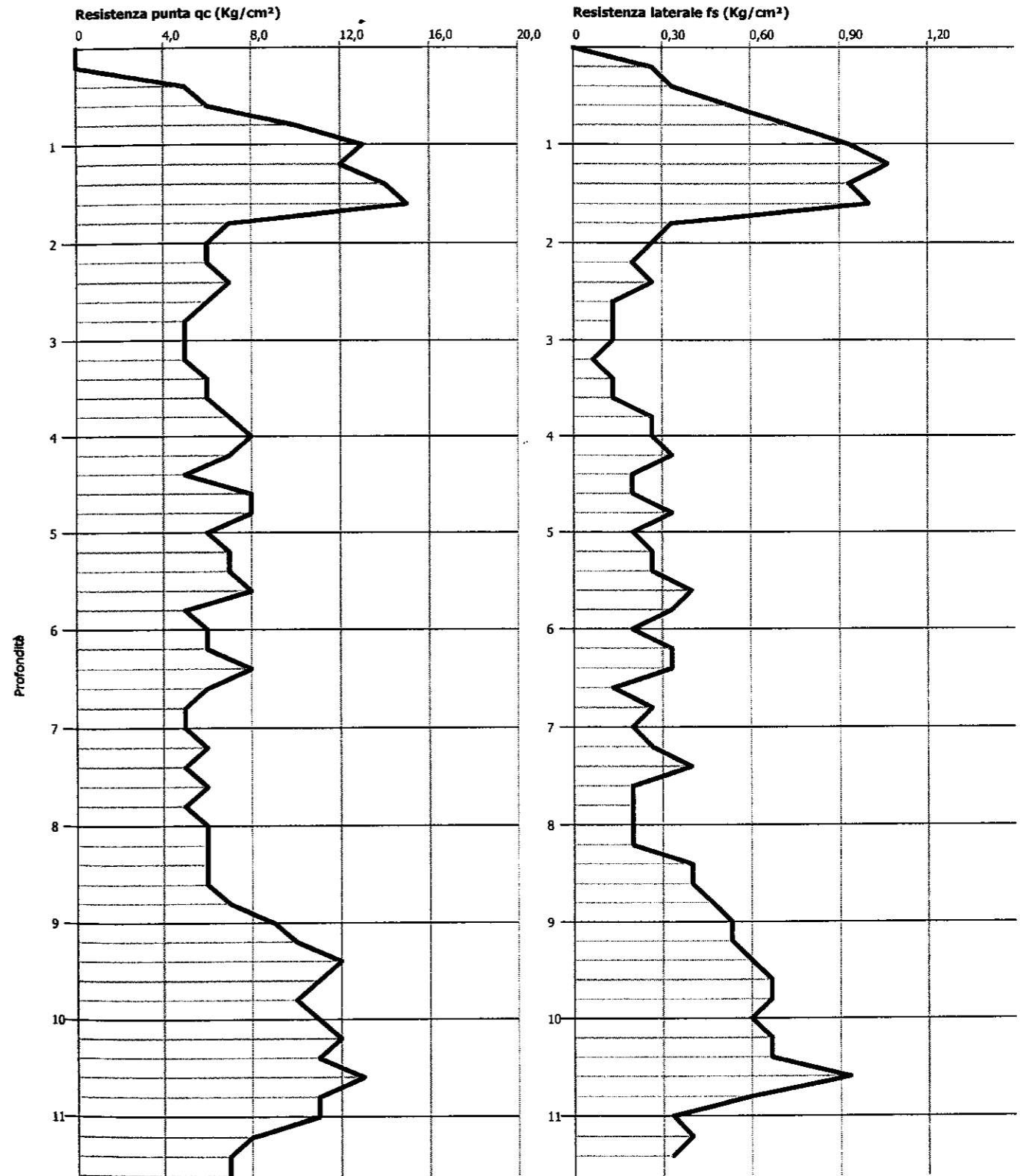
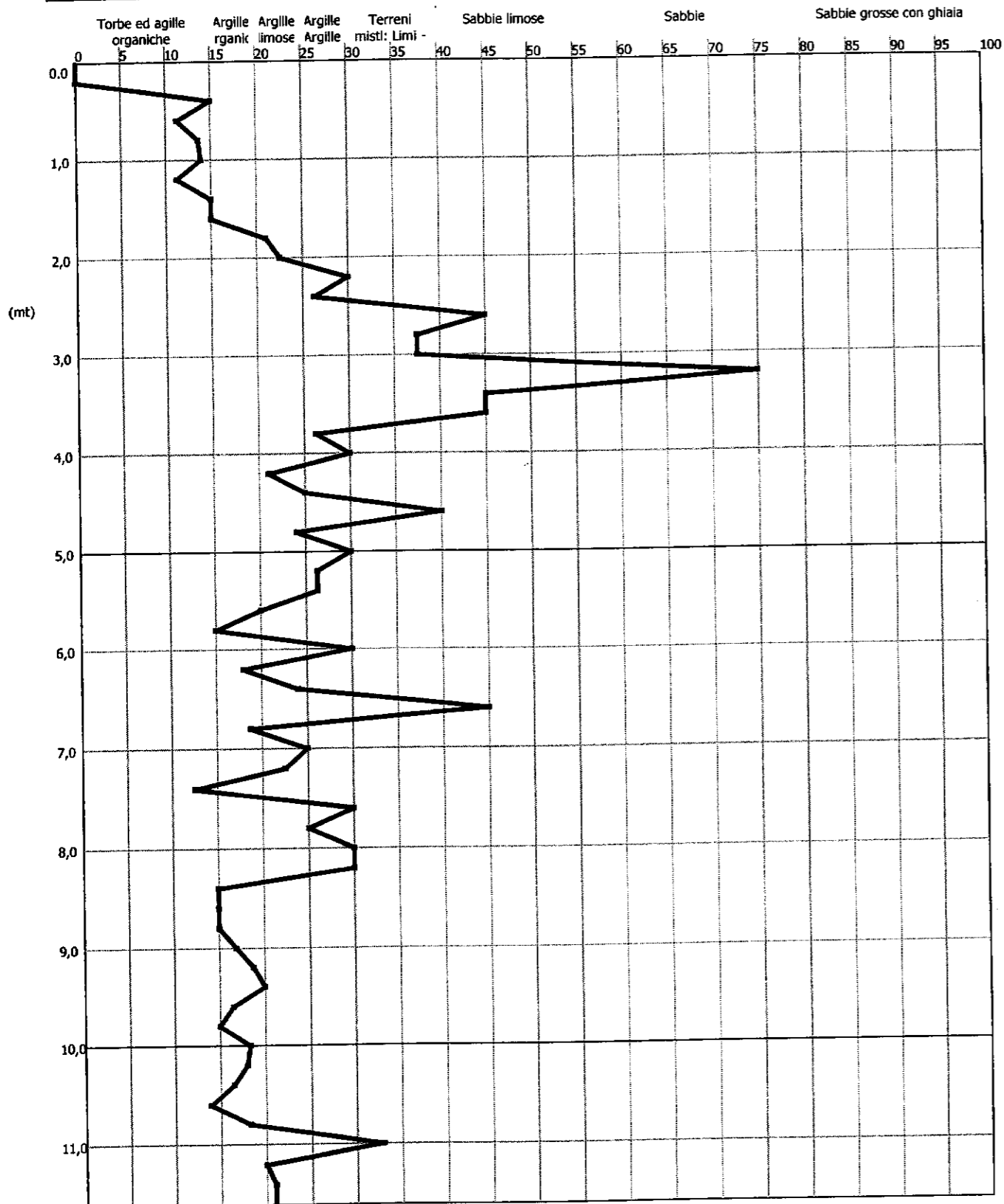


GRAFICO PROFONDITA' / VALUTAZIONI LITOLOGICHE (Begemann 1965)
PROVA: Nr.1

Committente : C.F.A. Costruzioni s.r.l.
 Cantiere : Costruzione di fabbricato residenziale
 Località : Nonantola Strada Provinciale per Castelfranco

Data : 11/01/2008



CANTIERE: Nonantola Strada Provinciale per Castelfranco
OGGETTO: Costruzione di fabbricato residenziale
COMMITTENTE: C.F.A. Costruzioni s.r.l.
DATA ESECUZIONE: 11/1/2008

STIMA DEI PARAMETRI GEOTECNICI DALLA PROVA STATICA N.1

TERRENI COESIVI

Coesione non drenata

| | Prof. Strato (m) | qc (Kg/cm ²) | fs (Kg/cm ²) | Tensione litostatica totale (Kg/cm ²) | Tensione litostatica efficace (Kg/cm ²) | Cu (Kg/cm ²) |
|----------|------------------|--------------------------|--------------------------|---|---|--------------------------|
| Strato 1 | 1,60 | 9,375 | 0,725 | 0,13 | 0,13 | 0,49 |
| Strato 2 | 4,40 | 6,1429 | 0,2048 | 0,51 | 0,51 | 0,3 |
| Strato 3 | 6,60 | 6,8182 | 0,2727 | 0,95 | 0,95 | 0,31 |
| Strato 4 | 8,80 | 5,7273 | 0,2909 | 1,33 | 1,33 | 0,23 |
| Strato 5 | 11,00 | 11,0 | 0,6182 | 1,72 | 1,72 | 0,49 |
| Strato 6 | 11,60 | 7,3333 | 0,2444 | 1,98 | 1,98 | 0,28 |

Modulo Edometrico

| | Prof. Strato (m) | qc (Kg/cm ²) | fs (Kg/cm ²) | Tensione litostatica totale (Kg/cm ²) | Tensione litostatica efficace (Kg/cm ²) | Eed (Kg/cm ²) |
|----------|------------------|--------------------------|--------------------------|---|---|---------------------------|
| Strato 1 | 1,60 | 9,375 | 0,725 | 0,13 | 0,13 | 42,14 |
| Strato 2 | 4,40 | 6,1429 | 0,2048 | 0,51 | 0,51 | 32,09 |
| Strato 3 | 6,60 | 6,8182 | 0,2727 | 0,95 | 0,95 | 34,58 |
| Strato 4 | 8,80 | 5,7273 | 0,2909 | 1,33 | 1,33 | 30,46 |
| Strato 5 | 11,00 | 11,0 | 0,6182 | 1,72 | 1,72 | 45,42 |
| Strato 6 | 11,60 | 7,3333 | 0,2444 | 1,98 | 1,98 | 36,34 |

Modulo di deformazione non drenato Eu

| | Prof. Strato (m) | qc (Kg/cm ²) | fs (Kg/cm ²) | Tensione litostatica totale (Kg/cm ²) | Tensione litostatica efficace (Kg/cm ²) | Eu (Kg/cm ²) |
|----------|------------------|--------------------------|--------------------------|---|---|--------------------------|
| Strato 1 | 1,60 | 9,375 | 0,725 | 0,13 | 0,13 | 346,7 |
| Strato 2 | 4,40 | 6,1429 | 0,2048 | 0,51 | 0,51 | 211,4 |
| Strato 3 | 6,60 | 6,8182 | 0,2727 | 0,95 | 0,95 | 220,18 |
| Strato 4 | 8,80 | 5,7273 | 0,2909 | 1,33 | 1,33 | 164,88 |
| Strato 5 | 11,00 | 11,0 | 0,6182 | 1,72 | 1,72 | 347,92 |
| Strato 6 | 11,60 | 7,3333 | 0,2444 | 1,98 | 1,98 | 200,86 |

Modulo di deformazione a taglio

| | Prof. Strato (m) | qc (Kg/cm ²) | fs (Kg/cm ²) | Tensione litostatica totale (Kg/cm ²) | Tensione litostatica efficace (Kg/cm ²) | Modulo di deformazione a taglio (Kg/cm ²) |
|----------|------------------|--------------------------|--------------------------|---|---|---|
| Strato 1 | 1,60 | 9,375 | 0,725 | 0,13 | 0,13 | 109,91 |
| Strato 2 | 4,40 | 6,1429 | 0,2048 | 0,51 | 0,51 | 84,89 |
| Strato 3 | 6,60 | 6,8182 | 0,2727 | 0,95 | 0,95 | 90,48 |
| Strato 4 | 8,80 | 5,7273 | 0,2909 | 1,33 | 1,33 | 81,33 |
| Strato 5 | 11,00 | 11,0 | 0,6182 | 1,72 | 1,72 | 121,19 |
| Strato 6 | 11,60 | 7,3333 | 0,2444 | 1,98 | 1,98 | 94,59 |

Peso unità di volume

| | Prof. Strato (m) | qc (Kg/cm ²) | fs (Kg/cm ²) | Tensione litostatica totale (Kg/cm ²) | Tensione litostatica efficace (Kg/cm ²) | Peso unità di volume (t/m ³) |
|----------|------------------|--------------------------|--------------------------|---|---|--|
| Strato 1 | 1,60 | 9,375 | 0,725 | 0,13 | 0,13 | 1,84 |
| Strato 2 | 4,40 | 6,1429 | 0,2048 | 0,51 | 0,51 | 1,76 |
| Strato 3 | 6,60 | 6,8182 | 0,2727 | 0,95 | 0,95 | 1,77 |
| Strato 4 | 8,80 | 5,7273 | 0,2909 | 1,33 | 1,33 | 1,72 |
| Strato 5 | 11,00 | 11,0 | 0,6182 | 1,72 | 1,72 | 1,84 |
| Strato 6 | 11,60 | 7,3333 | 0,2444 | 1,98 | 1,98 | 1,75 |

Peso unità di volume saturo

| | Prof. Strato (m) | qc (Kg/cm ²) | fs (Kg/cm ²) | Tensione litostatica totale (Kg/cm ²) | Tensione litostatica efficace (Kg/cm ²) | Peso unità di volume saturo (t/m ³) |
|----------|------------------|--------------------------|--------------------------|---|---|---|
| Strato 1 | 1,60 | 9,375 | 0,725 | 0,13 | 0,13 | 1,92 |
| Strato 2 | 4,40 | 6,1429 | 0,2048 | 0,51 | 0,51 | 1,84 |
| Strato 3 | 6,60 | 6,8182 | 0,2727 | 0,95 | 0,95 | 1,85 |
| Strato 4 | 8,80 | 5,7273 | 0,2909 | 1,33 | 1,33 | 1,8 |
| Strato 5 | 11,00 | 11,0 | 0,6182 | 1,72 | 1,72 | 1,92 |
| Strato 6 | 11,60 | 7,3333 | 0,2444 | 1,98 | 1,98 | 1,83 |

Permeabilità

| | Prof. Strato (m) | qc (Kg/cm ²) | fs (Kg/cm ²) | Tensione litostatica totale (Kg/cm ²) | Tensione litostatica efficace (Kg/cm ²) | K (cm/s) |
|----------|------------------|--------------------------|--------------------------|---|---|----------|
| Strato 1 | 1,60 | 9,375 | 0,725 | 0,13 | 0,13 | 1,00E-11 |
| Strato 2 | 4,40 | 6,1429 | 0,2048 | 0,51 | 0,51 | 2,71E-06 |
| Strato 3 | 6,60 | 6,8182 | 0,2727 | 0,95 | 0,95 | 1,82E-07 |
| Strato 4 | 8,80 | 5,7273 | 0,2909 | 1,33 | 1,33 | 2,23E-09 |
| Strato 5 | 11,00 | 11,0 | 0,6182 | 1,72 | 1,72 | 9,69E-11 |
| Strato 6 | 11,60 | 7,3333 | 0,2444 | 1,98 | 1,98 | 2,64E-06 |

CANTIERE: Nonantola Strada Provinciale per Castelfranco
OGGETTO: Costruzione di fabbricato residenziale
COMMITTENTE: C.F.A. Costruzioni s.r.l.
DATA ESECUZIONE: 11/1/2008

RISULTATI DELLA PROVA STATICA N. 2

Acqua a - 0,9 m da p.c.

| Profondità (m) | Lettura punta (Kg/cm ²) | Lettura laterale (Kg/cm ²) | qc (Kg/cm ²) | fs (Kg/cm ²) | qc/fs Begemann | fs/qcx100 (Schmertmann) |
|----------------|-------------------------------------|--|--------------------------|--------------------------|----------------|-------------------------|
| 0,20 | 0,0 | 0,0 | 0,0 | 0,4 | 0,0 | |
| 0,40 | 8,0 | 14,0 | 8,0 | 0,6 | 13,33 | 7,5 |
| 0,60 | 7,0 | 16,0 | 7,0 | 0,9333 | 7,5 | 13,33 |
| 0,80 | 6,0 | 20,0 | 6,0 | 0,8667 | 6,92 | 14,45 |
| 1,00 | 10,0 | 23,0 | 10,0 | 0,8 | 12,5 | 8,0 |
| 1,20 | 11,0 | 23,0 | 11,0 | 1,0 | 11,0 | 9,09 |
| 1,40 | 14,0 | 29,0 | 14,0 | 0,9333 | 15,0 | 6,67 |
| 1,60 | 9,0 | 23,0 | 9,0 | 0,3333 | 27,0 | 3,7 |
| 1,80 | 6,0 | 11,0 | 6,0 | 0,3333 | 18,0 | 5,56 |
| 2,00 | 6,0 | 11,0 | 6,0 | 0,2 | 30,0 | 3,33 |
| 2,20 | 7,0 | 10,0 | 7,0 | 0,2667 | 26,25 | 3,81 |
| 2,40 | 5,0 | 9,0 | 5,0 | 0,2667 | 18,75 | 5,33 |
| 2,60 | 5,0 | 9,0 | 5,0 | 0,2 | 25,0 | 4,0 |
| 2,80 | 7,0 | 10,0 | 7,0 | 0,3333 | 21,0 | 4,76 |
| 3,00 | 5,0 | 10,0 | 5,0 | 0,1333 | 37,51 | 2,67 |
| 3,20 | 5,0 | 7,0 | 5,0 | 0,1333 | 37,51 | 2,67 |
| 3,40 | 5,0 | 7,0 | 5,0 | 0,2667 | 18,75 | 5,33 |
| 3,60 | 5,0 | 9,0 | 5,0 | 0,2 | 25,0 | 4,0 |
| 3,80 | 10,0 | 13,0 | 10,0 | 0,4 | 25,0 | 4,0 |
| 4,00 | 8,0 | 14,0 | 8,0 | 0,2 | 40,0 | 2,5 |
| 4,20 | 7,0 | 10,0 | 7,0 | 0,6 | 11,67 | 8,57 |
| 4,40 | 7,0 | 16,0 | 7,0 | 0,5333 | 13,13 | 7,62 |
| 4,60 | 8,0 | 16,0 | 8,0 | 0,3333 | 24,0 | 4,17 |
| 4,80 | 5,0 | 10,0 | 5,0 | 0,2 | 25,0 | 4,0 |
| 5,00 | 8,0 | 11,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 5,20 | 8,0 | 14,0 | 8,0 | 0,3333 | 24,0 | 4,17 |
| 5,40 | 11,0 | 16,0 | 11,0 | 0,4667 | 23,57 | 4,24 |
| 5,60 | 10,0 | 17,0 | 10,0 | 0,5333 | 18,75 | 5,33 |
| 5,80 | 5,0 | 13,0 | 5,0 | 0,4667 | 10,71 | 9,33 |
| 6,00 | 11,0 | 18,0 | 11,0 | 0,4667 | 23,57 | 4,24 |
| 6,20 | 11,0 | 18,0 | 11,0 | 0,2 | 55,0 | 1,82 |
| 6,40 | 9,0 | 12,0 | 9,0 | 0,2667 | 33,75 | 2,96 |
| 6,60 | 7,0 | 11,0 | 7,0 | 0,2667 | 26,25 | 3,81 |
| 6,80 | 5,0 | 9,0 | 5,0 | 0,2 | 25,0 | 4,0 |
| 7,00 | 5,0 | 8,0 | 5,0 | 0,1333 | 37,51 | 2,67 |
| 7,20 | 5,0 | 7,0 | 5,0 | 0,1333 | 37,51 | 2,67 |
| 7,40 | 5,0 | 7,0 | 5,0 | 0,2 | 25,0 | 4,0 |
| 7,60 | 5,0 | 8,0 | 5,0 | 0,3333 | 15,0 | 6,67 |
| 7,80 | 5,0 | 10,0 | 5,0 | 0,2 | 25,0 | 4,0 |
| 8,00 | 4,0 | 7,0 | 4,0 | 0,2667 | 15,0 | 6,67 |
| 8,20 | 5,0 | 9,0 | 5,0 | 0,2667 | 18,75 | 5,33 |
| 8,40 | 6,0 | 10,0 | 6,0 | 0,4 | 15,0 | 6,67 |
| 8,60 | 6,0 | 12,0 | 6,0 | 0,4667 | 12,86 | 7,78 |
| 8,80 | 9,0 | 16,0 | 9,0 | 0,5333 | 16,88 | 5,93 |
| 9,00 | 11,0 | 19,0 | 11,0 | 0,5333 | 20,63 | 4,85 |
| 9,20 | 11,0 | 19,0 | 11,0 | 0,4667 | 23,57 | 4,24 |
| 9,40 | 7,0 | 14,0 | 7,0 | 0,4 | 17,5 | 5,71 |

Probe CPT - Cone Penetration Nr.2
Strumento utilizzato... PAGANI 100 kN
Diagramma Resistenze qc fs

Committente : C.F.A. Costruzioni s.r.l.
 Cantiere : Costruzione di fabbricato residenziale
 Località : Nonantola Strada Provinciale per Castelfranco

Data : 11/01/2008

| Profondità (m) | Letture punta (Kg/cm ²) | Letture laterale (Kg/cm ²) | qc (Kg/cm ²) | fs (Kg/cm ²) | qc/fs Begemann | fs/qcx100 (Schmertmann) |
|----------------|-------------------------------------|--|--------------------------|--------------------------|----------------|-------------------------|
| 9,60 | 6,0 | 12,0 | 6,0 | 0,4 | 15,0 | 6,67 |
| 9,80 | 10,0 | 16,0 | 10,0 | 0,6 | 16,67 | 6,0 |
| 10,00 | 11,0 | 20,0 | 11,0 | 0,6667 | 16,5 | 6,06 |
| 10,20 | 13,0 | 23,0 | 13,0 | 0,6667 | 19,5 | 5,13 |
| 10,40 | 13,0 | 23,0 | 13,0 | 0,8 | 16,25 | 6,15 |
| 10,60 | 13,0 | 25,0 | 13,0 | 0,8667 | 15,0 | 6,67 |
| 10,80 | 15,0 | 28,0 | 15,0 | 0,6 | 25,0 | 4,0 |
| 11,00 | 11,0 | 20,0 | 11,0 | 0,6 | 18,33 | 5,45 |
| 11,20 | 7,0 | 16,0 | 7,0 | 0,4667 | 15,0 | 6,67 |
| 11,40 | 6,0 | 13,0 | 6,0 | 0,4667 | 12,86 | 7,78 |
| 11,60 | 6,0 | 13,0 | 6,0 | 0,0 | | 0,0 |

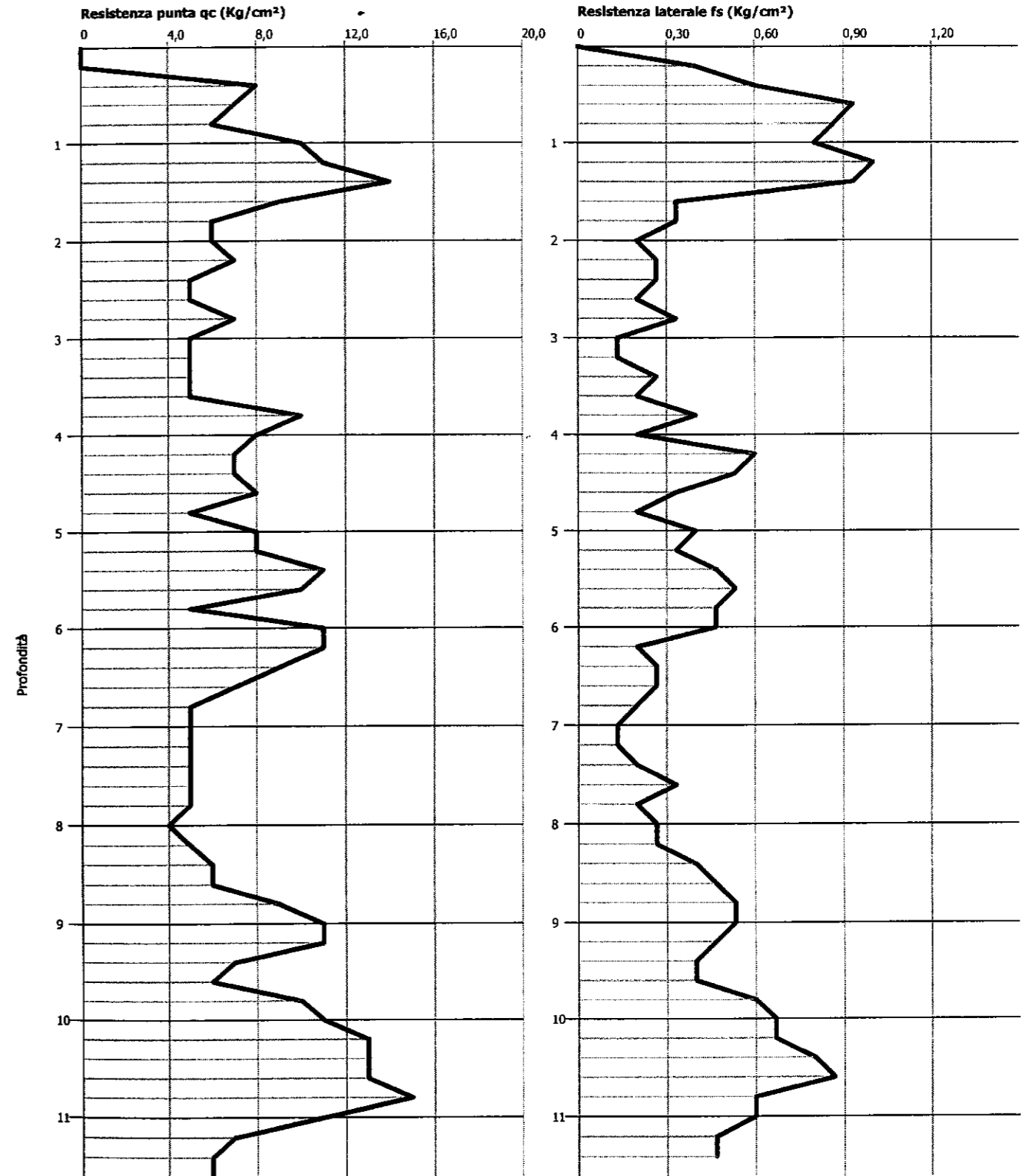
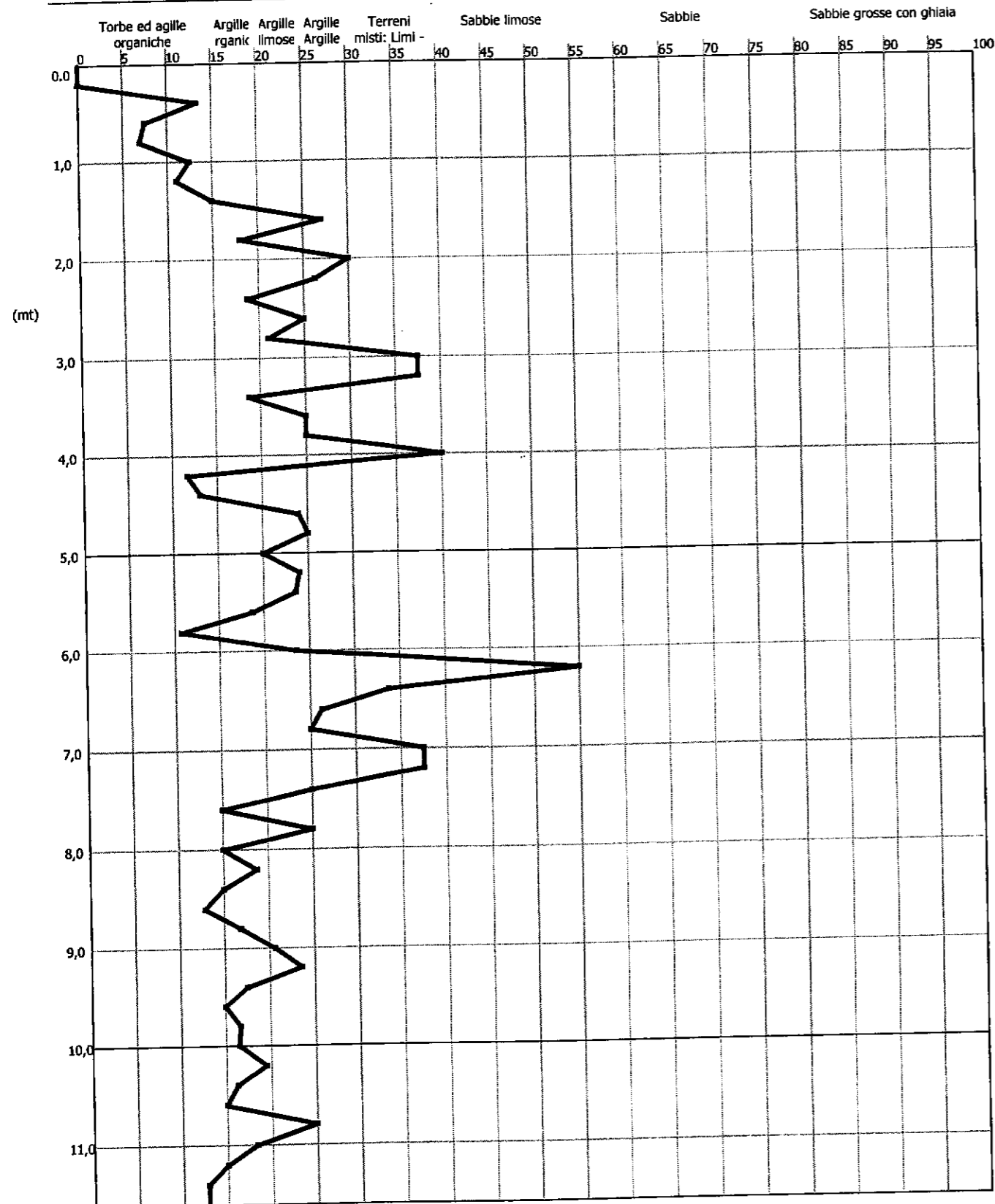


GRAFICO PROFONDITA' / VALUTAZIONI LITOLOGICHE (Begemann 1965)
PROVA: Nr.2

Committente : C.F.A. Costruzioni s.r.l.
 Cantiere : Costruzione di fabbricato residenziale
 Località : Nonantola Strada Provinciale per Castelfranco

Data : 11/01/2008



CANTIERE: Nonantola Strada Provinciale per Castelfranco
OGGETTO: Costruzione di fabbricato residenziale
COMMITTENTE: C.F.A. Costruzioni s.r.l.
DATA ESECUZIONE: 11/1/2008

STIMA DEI PARAMETRI GEOTECNICI DALLA PROVA STATICA N. 2

TERRENI COESIVI

Coesione non drenata

| | Prof. Strato (m) | qc (Kg/cm ²) | fs (Kg/cm ²) | Tensione litostatica totale (Kg/cm ²) | Tensione litostatica efficace (Kg/cm ²) | Cu (Kg/cm ²) |
|----------|------------------|--------------------------|--------------------------|---|---|--------------------------|
| Strato 1 | 1,40 | 8,0 | 0,7905 | 0,11 | 0,11 | 0,42 |
| Strato 2 | 3,60 | 5,9091 | 0,2424 | 0,41 | 0,41 | 0,29 |
| Strato 3 | 6,60 | 8,3333 | 0,3778 | 0,87 | 0,87 | 0,39 |
| Strato 4 | 8,80 | 5,4545 | 0,2848 | 1,33 | 1,33 | 0,22 |
| Strato 5 | 11,00 | 11,0 | 0,6 | 1,72 | 1,72 | 0,49 |
| Strato 6 | 11,60 | 6,3333 | 0,3111 | 1,98 | 1,98 | 0,23 |

Modulo Edometrico

| | Prof. Strato (m) | qc (Kg/cm ²) | fs (Kg/cm ²) | Tensione litostatica totale (Kg/cm ²) | Tensione litostatica efficace (Kg/cm ²) | Eed (Kg/cm ²) |
|----------|------------------|--------------------------|--------------------------|---|---|---------------------------|
| Strato 1 | 1,40 | 8,0 | 0,7905 | 0,11 | 0,11 | 38,44 |
| Strato 2 | 3,60 | 5,9091 | 0,2424 | 0,41 | 0,41 | 31,18 |
| Strato 3 | 6,60 | 8,3333 | 0,3778 | 0,87 | 0,87 | 39,42 |
| Strato 4 | 8,80 | 5,4545 | 0,2848 | 1,33 | 1,33 | 29,34 |
| Strato 5 | 11,00 | 11,0 | 0,6 | 1,72 | 1,72 | 45,42 |
| Strato 6 | 11,60 | 6,3333 | 0,3111 | 1,98 | 1,98 | 32,82 |

Modulo di deformazione non drenato Eu

| | Prof. Strato (m) | qc (Kg/cm ²) | fs (Kg/cm ²) | Tensione litostatica totale (Kg/cm ²) | Tensione litostatica efficace (Kg/cm ²) | Eu (Kg/cm ²) |
|----------|------------------|--------------------------|--------------------------|---|---|--------------------------|
| Strato 1 | 1,40 | 8,0 | 0,7905 | 0,11 | 0,11 | 295,88 |
| Strato 2 | 3,60 | 5,9091 | 0,2424 | 0,41 | 0,41 | 206,13 |
| Strato 3 | 6,60 | 8,3333 | 0,3778 | 0,87 | 0,87 | 279,69 |
| Strato 4 | 8,80 | 5,4545 | 0,2848 | 1,33 | 1,33 | 154,56 |
| Strato 5 | 11,00 | 11,0 | 0,6 | 1,72 | 1,72 | 347,87 |
| Strato 6 | 11,60 | 6,3333 | 0,3111 | 1,98 | 1,98 | 163,35 |

Modulo di deformazione a taglio

| | Prof. Strato (m) | qc (Kg/cm ²) | fs (Kg/cm ²) | Tensione litostatica totale (Kg/cm ²) | Tensione litostatica efficace (Kg/cm ²) | Modulo di deformazione a taglio (Kg/cm ²) |
|----------|------------------|--------------------------|--------------------------|---|---|---|
| Strato 1 | 1,40 | 8,0 | 0,7905 | 0,11 | 0,11 | 99,76 |
| Strato 2 | 3,60 | 5,9091 | 0,2424 | 0,41 | 0,41 | 82,9 |
| Strato 3 | 6,60 | 8,3333 | 0,3778 | 0,87 | 0,87 | 102,28 |
| Strato 4 | 8,80 | 5,4545 | 0,2848 | 1,33 | 1,33 | 78,94 |
| Strato 5 | 11,00 | 11,0 | 0,6 | 1,72 | 1,72 | 121,19 |
| Strato 6 | 11,60 | 6,3333 | 0,3111 | 1,98 | 1,98 | 86,49 |



di Paolo Cestari & C.
Sede legale: Via Genova, 1/M
Tel. 0535.52637 - Cell. 0335.6388878
41036 MEDOLLA (MO)

Diagramma prova penetrometrica statica

COMMITTENTE: Geom. FREGNI

CANTIERE : Loc. LE CASETTE - NONANTOLA

DATA PROVA : 27 - 10 - 2000

Rp resistenza di punta (Kg/cmq) ———
Ral resistenza attrito laterale (Kg/cmq)
Rp/Ral rapporto Begemann - - - - -

H20 - 1.20 m. da p.c.

C.P.T. N° 1

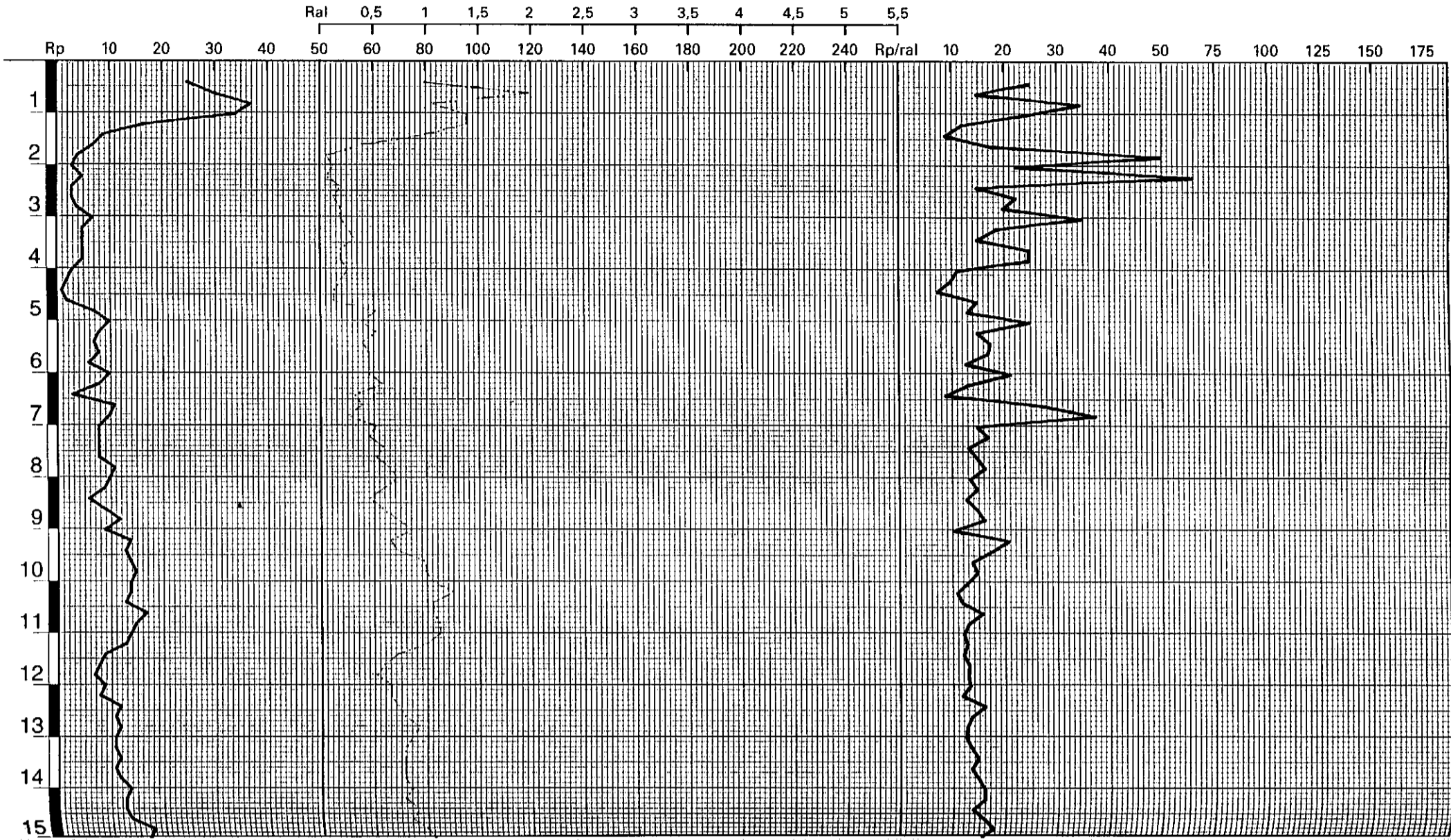


Diagramma prova penetrometrica statica

COMMITTENTE: Geom. FREGNI

CANTIERE: Loc. LE CASETTE - NONANTOLA

DATA PROVA: 27 - 10 - 2000

Rp resistenza di punta (Kg/cmq) ———
Ral resistenza attrito laterale (Kg/cmq) - - - -
Rp/Ral rapporto Begemann ———

H20 - 2.80 m. da p.c.

C.P.T. N° 2

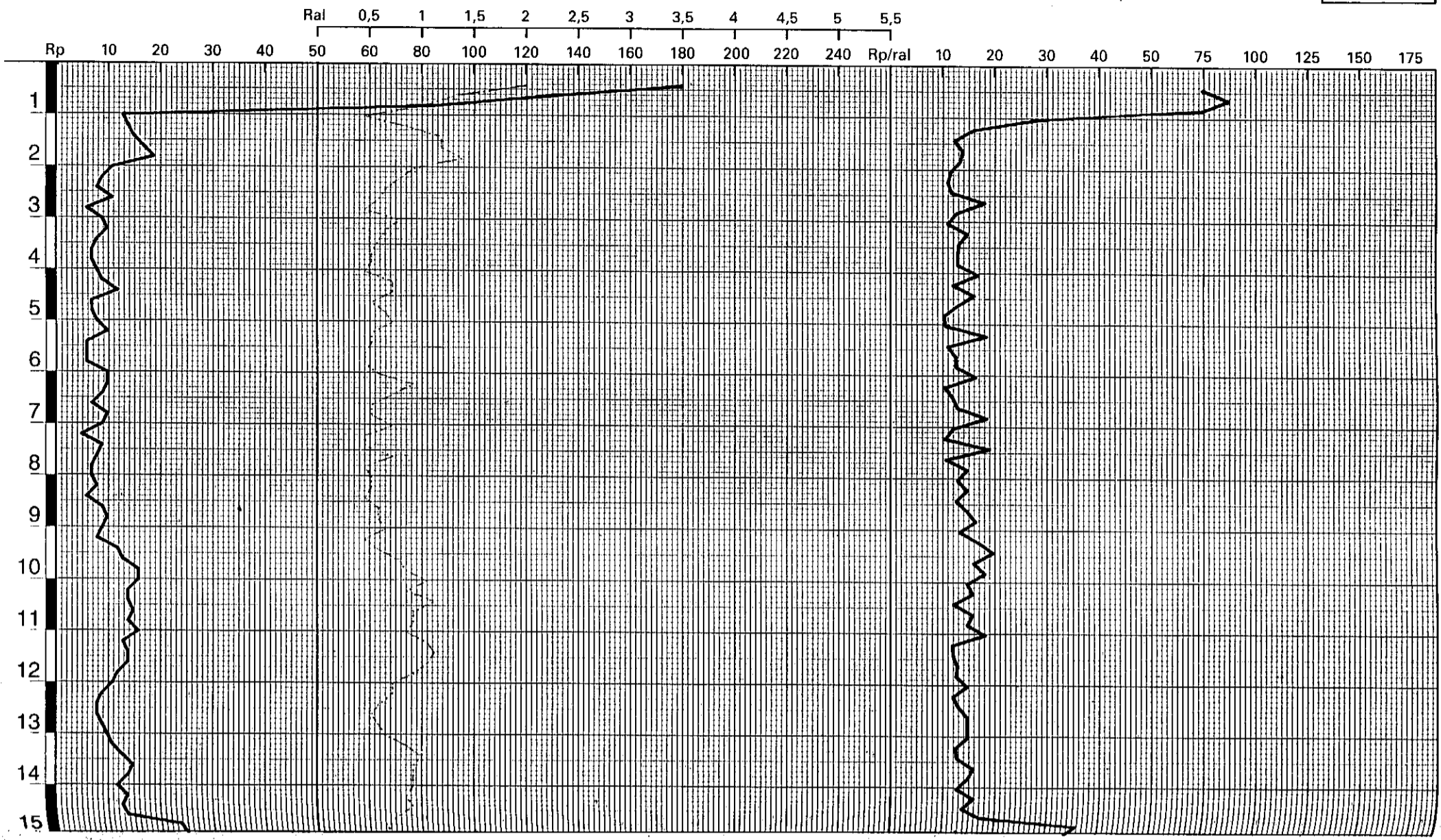


Diagramma prova penetrometrica statica

COMMITTENTE: Geom. FREGNI

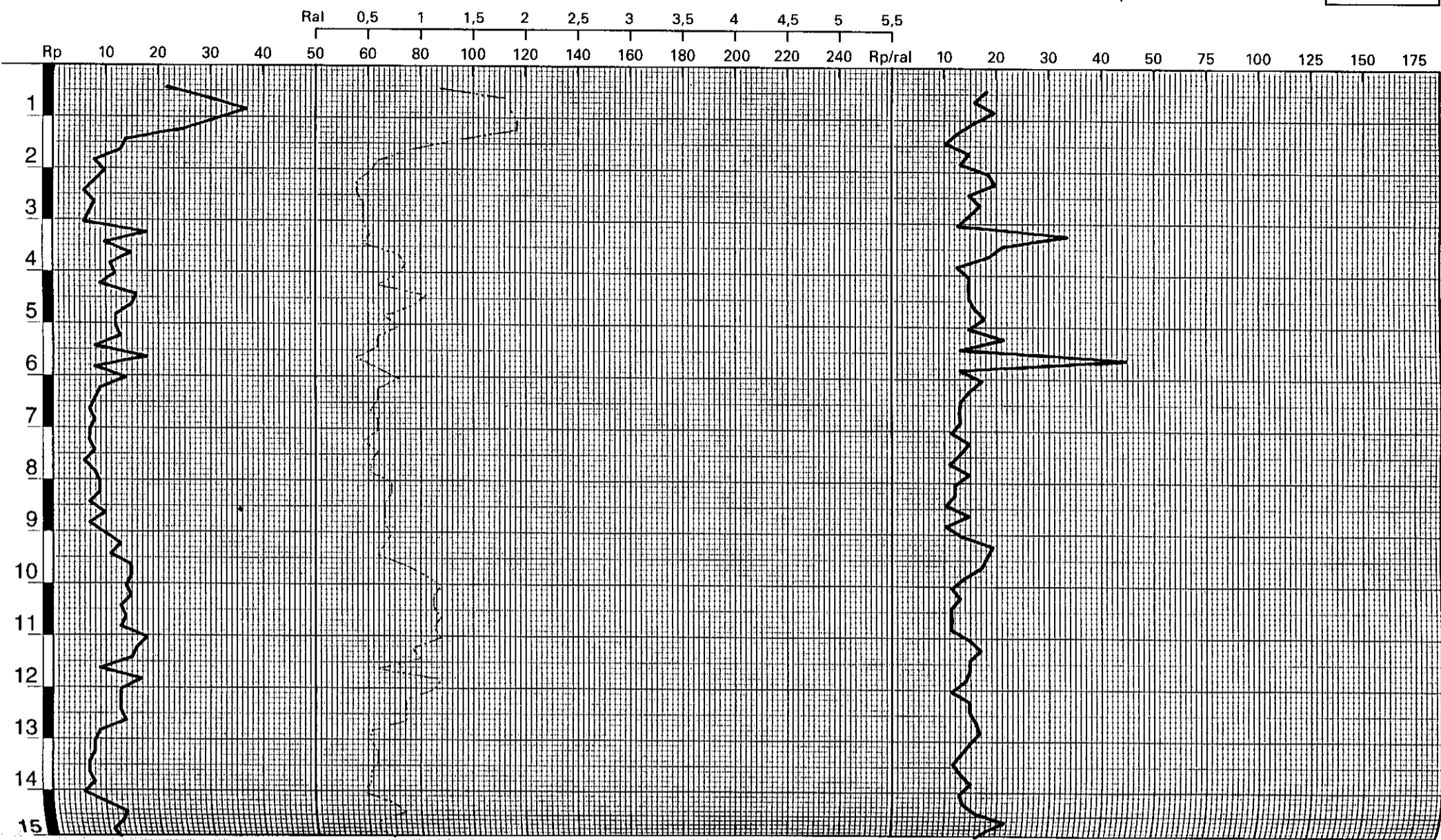
CANTIERE : Loc. LE CASETTE - NONANTOLA

DATA PROVA : 27 - 10 - 2000

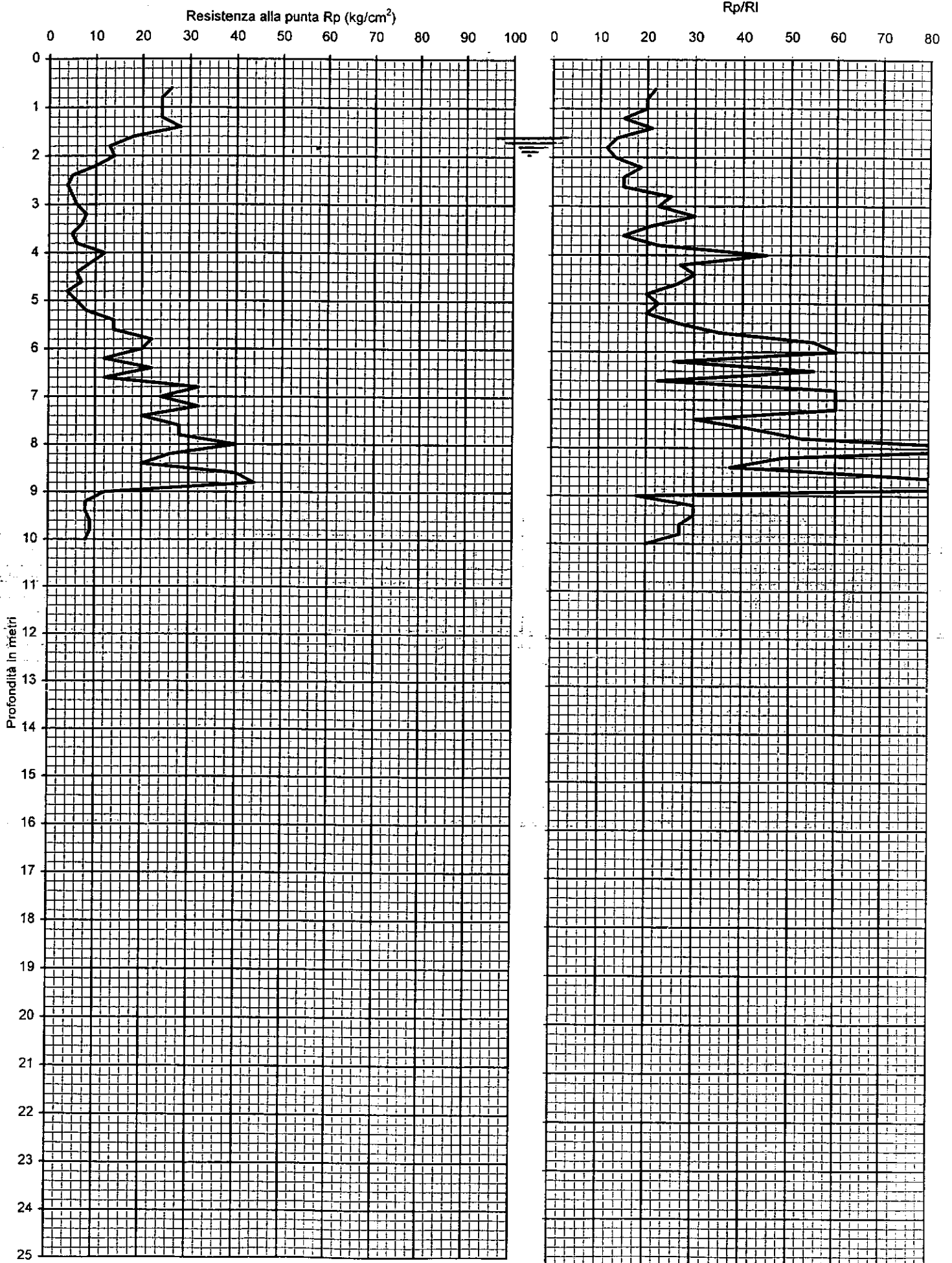
Rp resistenza di punta (Kg/cmq) ———
Ral resistenza attrito laterale (Kg/cmq)
Rp/Ral rapporto Begemann ———

H20 - 2.20 m. da p.c.

C.P.T. N° 3



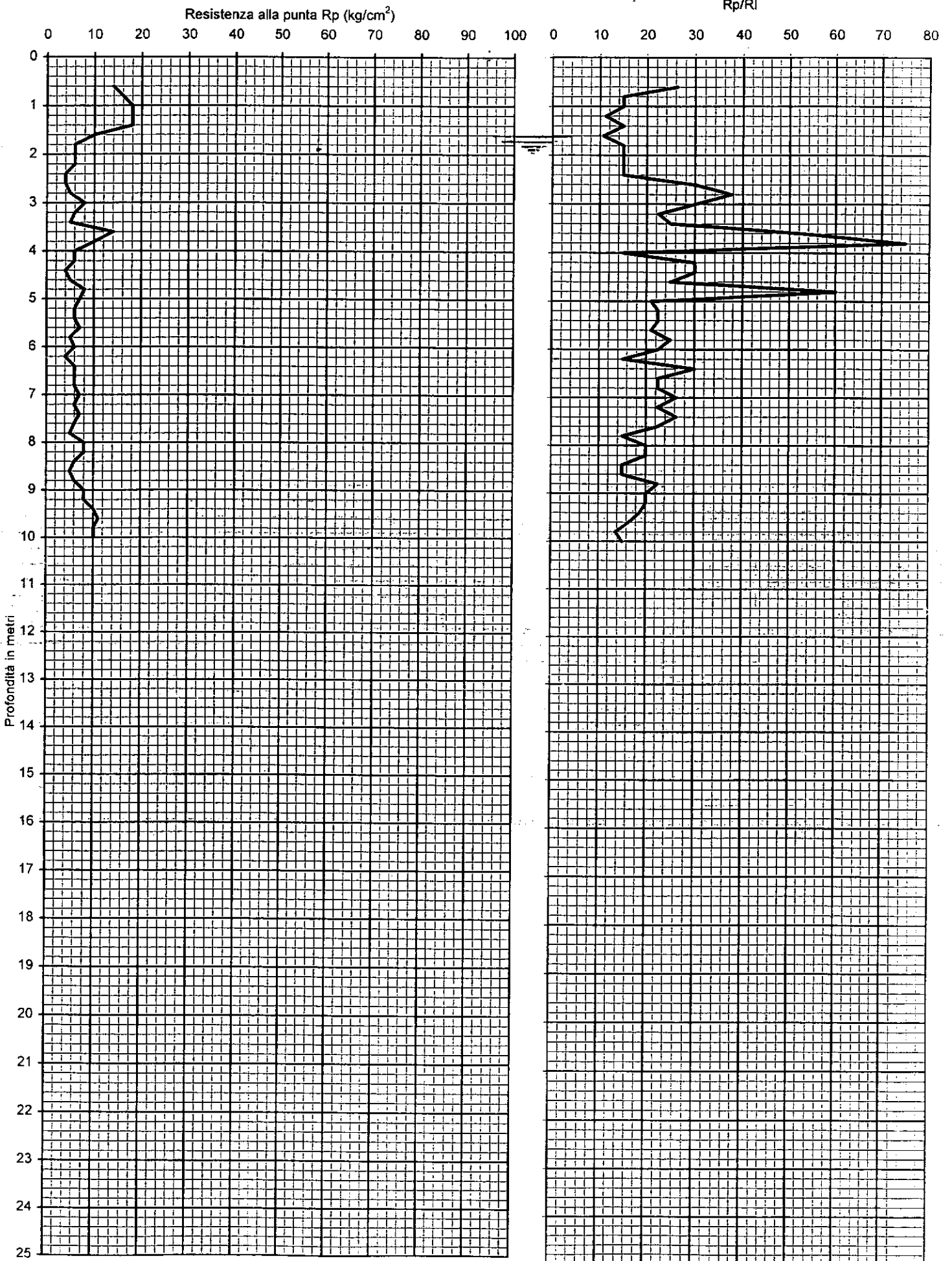
Via A. Nardi, 35 - 41100 MODENA



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 26 | 44 | 26 | 1,20 | 21,67 |
| 0,80 | 24 | 42 | 24 | 1,20 | 20,00 |
| 1,00 | 24 | 42 | 24 | 1,20 | 20,00 |
| 1,20 | 24 | 48 | 24 | 1,60 | 15,00 |
| 1,40 | 28 | 48 | 28 | 1,33 | 21,00 |
| 1,60 | 18 | 38 | 18 | 1,33 | 13,50 |
| 1,80 | 13 | 30 | 13 | 1,13 | 11,47 |
| 2,00 | 14 | 30 | 14 | 1,07 | 13,13 |
| 2,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,40 | 5 | 10 | 5 | 0,33 | 15,00 |
| 2,60 | 4 | 8 | 4 | 0,27 | 15,00 |
| 2,80 | 5 | 8 | 5 | 0,20 | 25,00 |
| 3,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,40 | 7 | 12 | 7 | 0,33 | 21,00 |
| 3,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 3,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,00 | 12 | 16 | 12 | 0,27 | 45,00 |
| 4,20 | 9 | 14 | 9 | 0,33 | 27,00 |
| 4,40 | 6 | 9 | 6 | 0,20 | 30,00 |
| 4,60 | 7 | 11 | 7 | 0,27 | 26,25 |
| 4,80 | 4 | 7 | 4 | 0,20 | 20,00 |
| 5,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 5,60 | 14 | 20 | 14 | 0,40 | 35,00 |
| 5,80 | 22 | 28 | 22 | 0,40 | 55,00 |
| 6,00 | 20 | 25 | 20 | 0,33 | 60,00 |
| 6,20 | 12 | 19 | 12 | 0,47 | 25,71 |
| 6,40 | 22 | 28 | 22 | 0,40 | 55,00 |
| 6,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 6,80 | 32 | 40 | 32 | 0,53 | 60,00 |
| 7,00 | 24 | 30 | 24 | 0,40 | 60,00 |
| 7,20 | 32 | 40 | 32 | 0,53 | 60,00 |
| 7,40 | 20 | 30 | 20 | 0,67 | 30,00 |
| 7,60 | 28 | 38 | 28 | 0,67 | 42,00 |
| 7,80 | 28 | 36 | 28 | 0,53 | 52,50 |
| 8,00 | 40 | 46 | 40 | 0,40 | 100,00 |
| 8,20 | 26 | 34 | 26 | 0,53 | 48,75 |
| 8,40 | 20 | 28 | 20 | 0,53 | 37,50 |
| 8,60 | 40 | 48 | 40 | 0,53 | 75,00 |
| 8,80 | 44 | 50 | 44 | 0,40 | 110,00 |
| 9,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 9,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,60 | 9 | 14 | 9 | 0,33 | 27,00 |
| 9,80 | 9 | 14 | 9 | 0,33 | 27,00 |
| 10,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
| 11,20 | | | | | |
| 11,40 | | | | | |
| 11,60 | | | | | |
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| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
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| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
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| 28,80 | | | | | |
| 29,00 | | | | | |
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| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

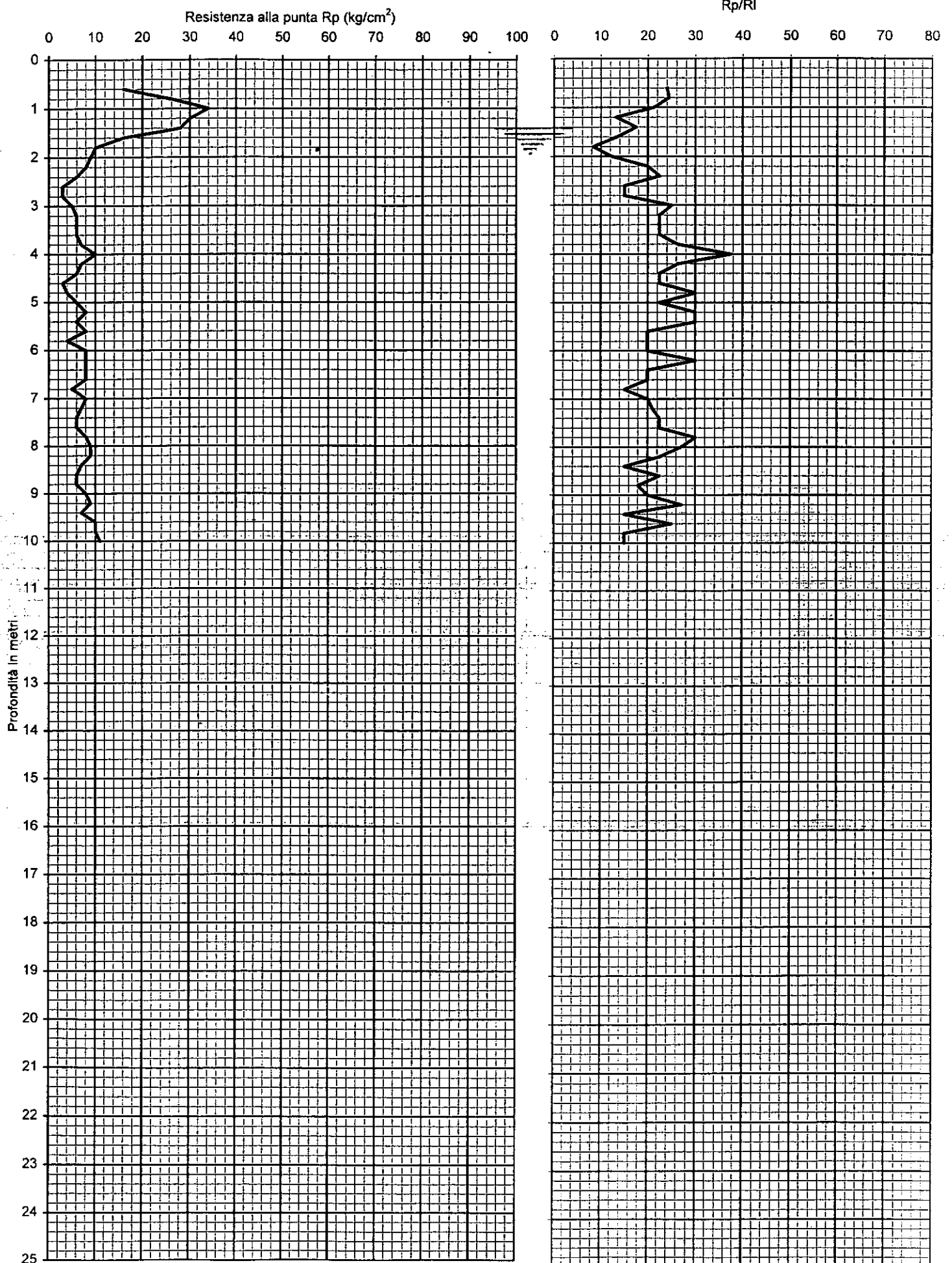
Via A. Nardi, 35 - 41100 MODENA



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 14 | 22 | 14 | 0,53 | 26,25 |
| 0,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 1,00 | 18 | 36 | 18 | 1,20 | 15,00 |
| 1,20 | 18 | 42 | 18 | 1,60 | 11,25 |
| 1,40 | 18 | 36 | 18 | 1,20 | 15,00 |
| 1,60 | 10 | 24 | 10 | 0,93 | 10,71 |
| 1,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 2,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 2,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 2,40 | 4 | 8 | 4 | 0,27 | 15,00 |
| 2,60 | 4 | 6 | 4 | 0,13 | 30,00 |
| 2,80 | 5 | 7 | 5 | 0,13 | 37,50 |
| 3,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,40 | 5 | 8 | 5 | 0,20 | 25,00 |
| 3,60 | 14 | 18 | 14 | 0,27 | 52,50 |
| 3,80 | 10 | 12 | 10 | 0,13 | 75,00 |
| 4,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 4,20 | 6 | 9 | 6 | 0,20 | 30,00 |
| 4,40 | 4 | 6 | 4 | 0,13 | 30,00 |
| 4,60 | 5 | 8 | 5 | 0,20 | 25,00 |
| 4,80 | 8 | 10 | 8 | 0,13 | 60,00 |
| 5,00 | 7 | 12 | 7 | 0,33 | 21,00 |
| 5,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,60 | 7 | 12 | 7 | 0,33 | 21,00 |
| 5,80 | 5 | 8 | 5 | 0,20 | 25,00 |
| 6,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,20 | 4 | 8 | 4 | 0,27 | 15,00 |
| 6,40 | 6 | 9 | 6 | 0,20 | 30,00 |
| 6,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,00 | 7 | 11 | 7 | 0,27 | 26,25 |
| 7,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,40 | 7 | 11 | 7 | 0,27 | 26,25 |
| 7,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,80 | 5 | 10 | 5 | 0,33 | 15,00 |
| 8,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 8,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 8,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,60 | 11 | 21 | 11 | 0,67 | 16,50 |
| 9,80 | 10 | 21 | 10 | 0,73 | 13,64 |
| 10,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
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| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
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| 15,80 | | | | | |
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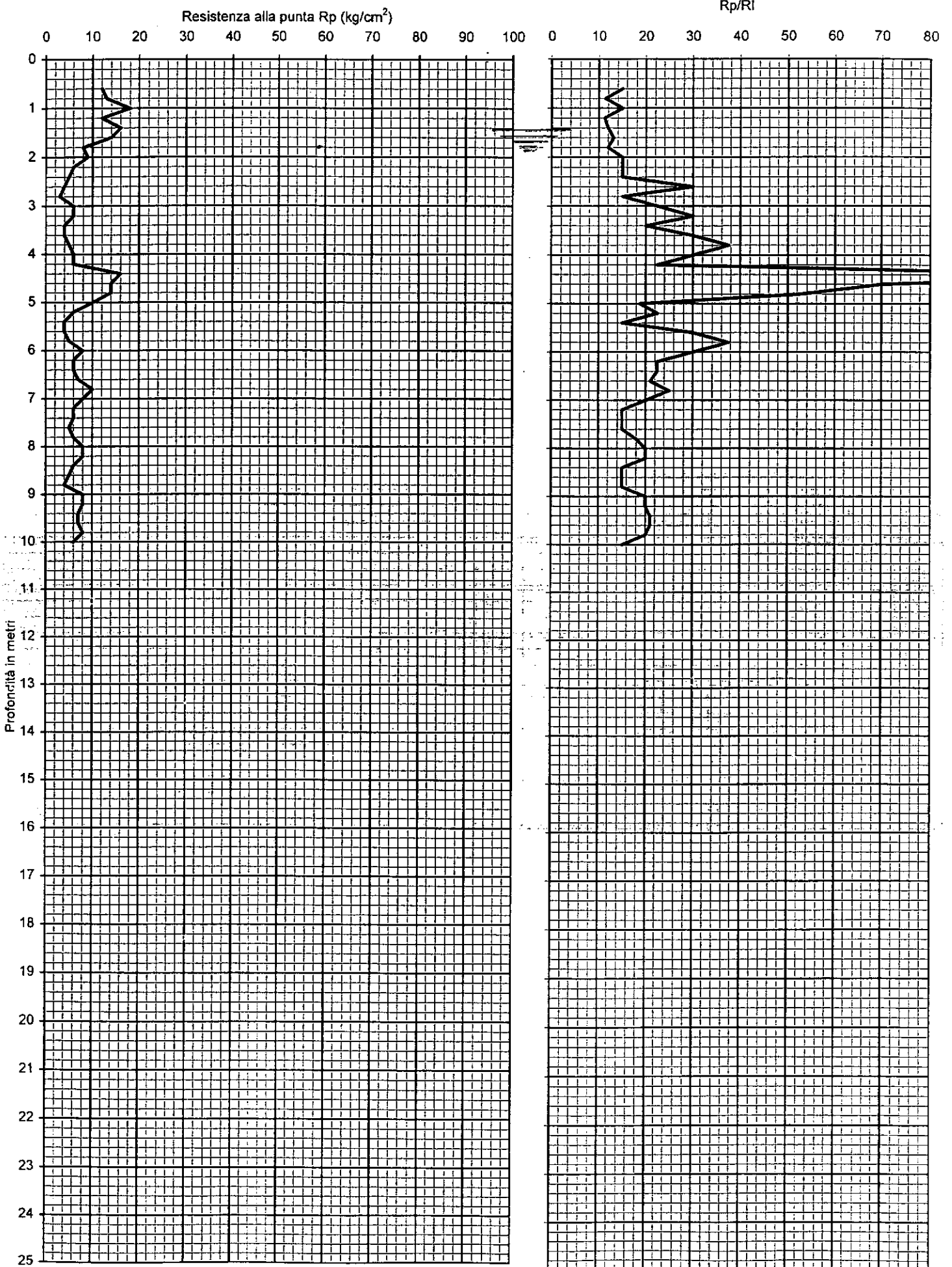
Via A. Nardi, 35 - 41100 MODENA



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 16 | 26 | 16 | 0,67 | 24,00 |
| 0,80 | 26 | 42 | 26 | 1,07 | 24,38 |
| 1,00 | 34 | 58 | 34 | 1,60 | 21,25 |
| 1,20 | 30 | 64 | 30 | 2,27 | 13,24 |
| 1,40 | 28 | 52 | 28 | 1,60 | 17,50 |
| 1,60 | 16 | 34 | 16 | 1,20 | 13,33 |
| 1,80 | 10 | 28 | 10 | 1,20 | 8,33 |
| 2,00 | 9 | 20 | 9 | 0,73 | 12,27 |
| 2,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 2,60 | 3 | 6 | 3 | 0,20 | 15,00 |
| 2,80 | 3 | 6 | 3 | 0,20 | 15,00 |
| 3,00 | 5 | 8 | 5 | 0,20 | 25,00 |
| 3,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,80 | 7 | 11 | 7 | 0,27 | 26,25 |
| 4,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 4,20 | 7 | 11 | 7 | 0,27 | 26,25 |
| 4,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,60 | 3 | 5 | 3 | 0,13 | 22,50 |
| 4,80 | 4 | 6 | 4 | 0,13 | 30,00 |
| 5,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,40 | 6 | 9 | 6 | 0,20 | 30,00 |
| 5,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,80 | 4 | 7 | 4 | 0,20 | 20,00 |
| 6,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,80 | 5 | 10 | 5 | 0,33 | 15,00 |
| 7,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,20 | 7 | 12 | 7 | 0,33 | 21,00 |
| 7,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,00 | 9 | 14 | 9 | 0,33 | 27,00 |
| 8,20 | 9 | 15 | 9 | 0,40 | 22,50 |
| 8,40 | 7 | 14 | 7 | 0,47 | 15,00 |
| 8,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,80 | 6 | 11 | 6 | 0,33 | 18,00 |
| 9,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,20 | 9 | 14 | 9 | 0,33 | 27,00 |
| 9,40 | 7 | 14 | 7 | 0,47 | 15,00 |
| 9,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,00 | 11 | 22 | 11 | 0,73 | 15,00 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
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| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
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| 29,80 | | | | | |
| 30,00 | | | | | |

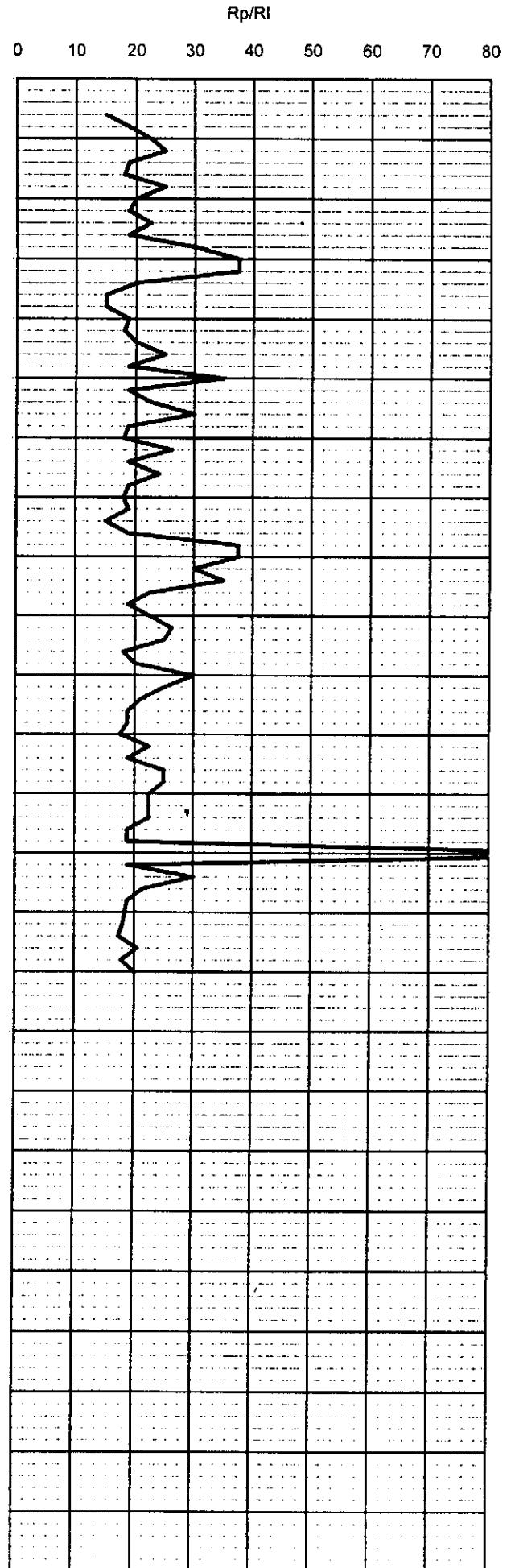
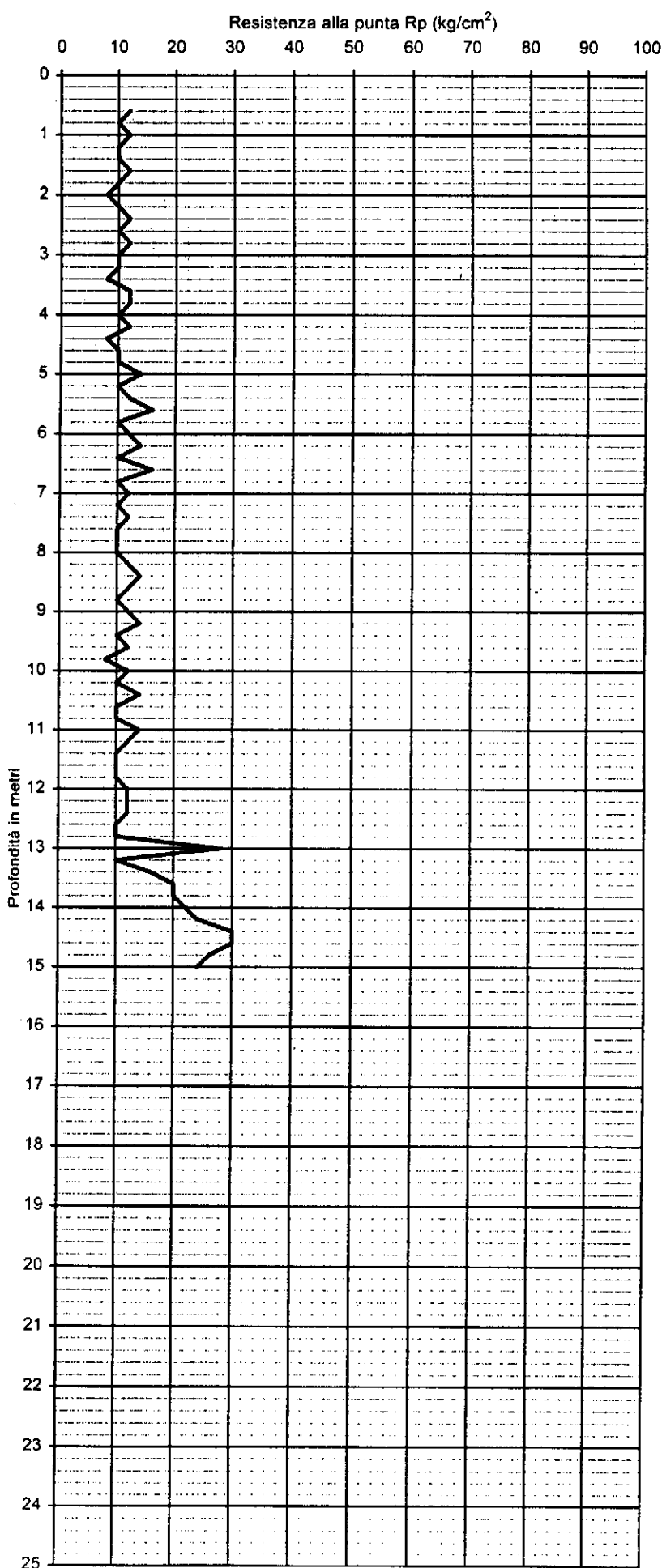
Via A. Nardi, 35 - 41100 MODENA



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 0,80 | 13 | 30 | 13 | 1,13 | 11,47 |
| 1,00 | 18 | 36 | 18 | 1,20 | 15,00 |
| 1,20 | 12 | 28 | 12 | 1,07 | 11,25 |
| 1,40 | 16 | 36 | 16 | 1,33 | 12,00 |
| 1,60 | 14 | 30 | 14 | 1,07 | 13,13 |
| 1,80 | 8 | 18 | 8 | 0,67 | 12,00 |
| 2,00 | 9 | 18 | 9 | 0,60 | 15,00 |
| 2,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 2,40 | 5 | 10 | 5 | 0,33 | 15,00 |
| 2,60 | 4 | 6 | 4 | 0,13 | 30,00 |
| 2,80 | 3 | 6 | 3 | 0,20 | 15,00 |
| 3,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,20 | 6 | 9 | 6 | 0,20 | 30,00 |
| 3,40 | 4 | 7 | 4 | 0,20 | 20,00 |
| 3,60 | 4 | 6 | 4 | 0,13 | 30,00 |
| 3,80 | 5 | 7 | 5 | 0,13 | 37,50 |
| 4,00 | 6 | 9 | 6 | 0,20 | 30,00 |
| 4,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,40 | 16 | 18 | 16 | 0,13 | 120,00 |
| 4,60 | 14 | 17 | 14 | 0,20 | 70,00 |
| 4,80 | 14 | 18 | 14 | 0,27 | 52,50 |
| 5,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,40 | 4 | 8 | 4 | 0,27 | 15,00 |
| 5,60 | 4 | 6 | 4 | 0,13 | 30,00 |
| 5,80 | 5 | 7 | 5 | 0,13 | 37,50 |
| 6,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,60 | 7 | 12 | 7 | 0,33 | 21,00 |
| 6,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 7,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 7,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 7,80 | 6 | 11 | 6 | 0,33 | 18,00 |
| 8,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 8,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 8,80 | 4 | 8 | 4 | 0,27 | 15,00 |
| 9,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,40 | 7 | 12 | 7 | 0,33 | 21,00 |
| 9,60 | 7 | 12 | 7 | 0,33 | 21,00 |
| 9,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
| 11,20 | | | | | |
| 11,40 | | | | | |
| 11,60 | | | | | |
| 11,80 | | | | | |
| 12,00 | | | | | |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
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| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

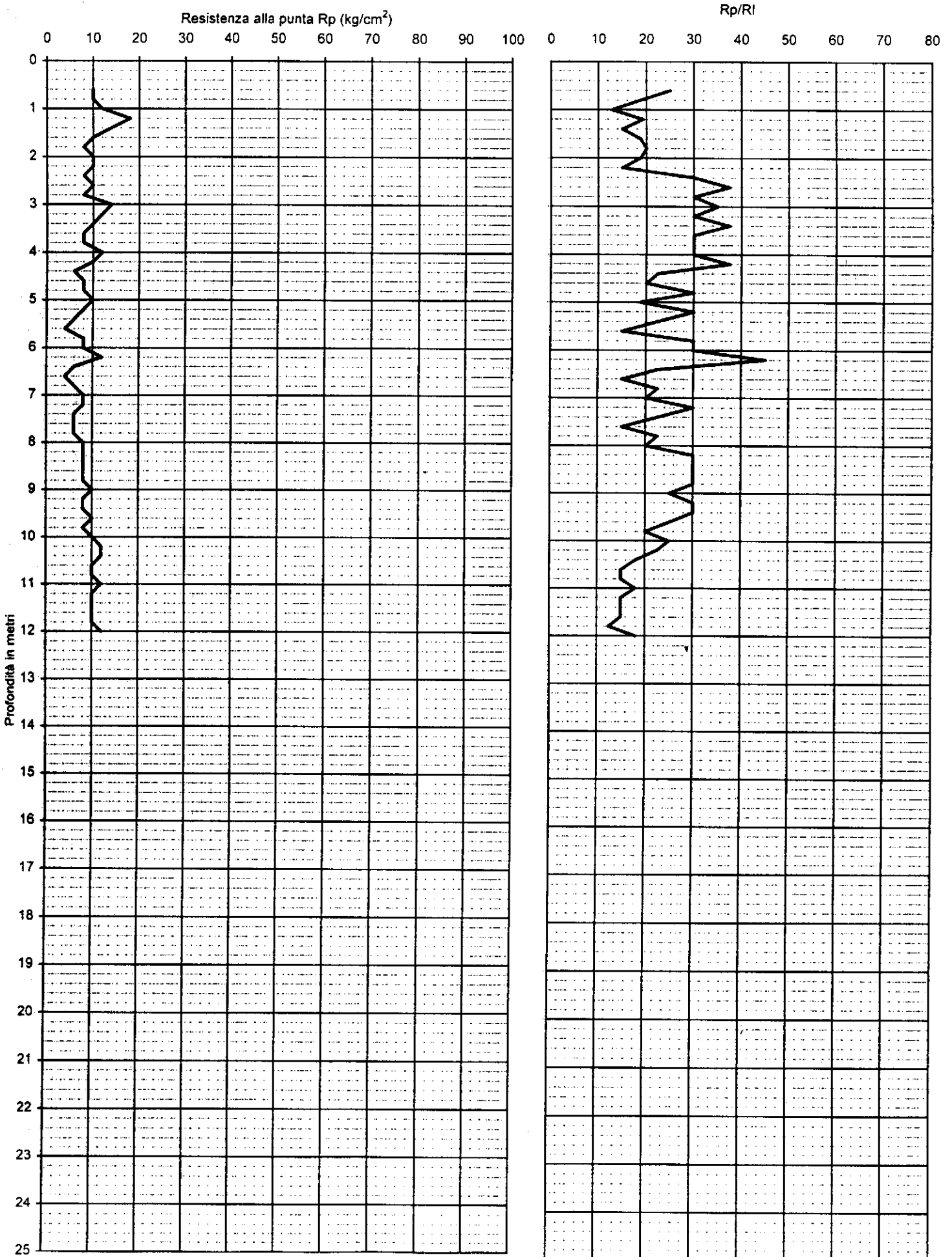
Penetrometro Gouda

Committente :
Località : NONANTOLA VIA DI MEZZO
Prova numero : 1
Data :
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 0,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 1,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 1,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 1,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 1,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 1,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 2,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 3,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 3,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 3,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 4,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 4,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,00 | 14 | 20 | 14 | 0,40 | 35,00 |
| 5,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 5,60 | 16 | 24 | 16 | 0,53 | 30,00 |
| 5,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 6,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 6,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,60 | 16 | 26 | 16 | 0,67 | 24,00 |
| 6,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 7,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 7,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,20 | 12 | 18 | 12 | 0,40 | 30,00 |
| 8,40 | 14 | 20 | 14 | 0,40 | 35,00 |
| 8,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 8,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 9,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 9,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 10,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,40 | 14 | 24 | 14 | 0,67 | 21,00 |
| 10,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,00 | 14 | 26 | 14 | 0,80 | 17,50 |
| 11,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 11,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 11,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 12,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 12,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 12,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,00 | 28 | 32 | 28 | 0,27 | 105,00 |
| 13,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,40 | 16 | 24 | 16 | 0,53 | 30,00 |
| 13,60 | 20 | 34 | 20 | 0,93 | 21,43 |
| 13,80 | 20 | 36 | 20 | 1,07 | 18,75 |
| 14,00 | 22 | 40 | 22 | 1,20 | 18,33 |
| 14,20 | 24 | 44 | 24 | 1,33 | 18,00 |
| 14,40 | 30 | 56 | 30 | 1,73 | 17,31 |
| 14,60 | 30 | 52 | 30 | 1,47 | 20,45 |
| 14,80 | 26 | 48 | 26 | 1,47 | 17,73 |
| 15,00 | 24 | 42 | 24 | 1,20 | 20,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
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| 17,40 | | | | | |
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| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
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| 19,40 | | | | | |
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| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
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| 23,60 | | | | | |
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| 29,80 | | | | | |
| 30,00 | | | | | |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O GEOM. SOLIERI

Località : NONANTOLA-MO

Prova numero : 1

Data : 20/05/99

Operatore : DR. REBECCHI

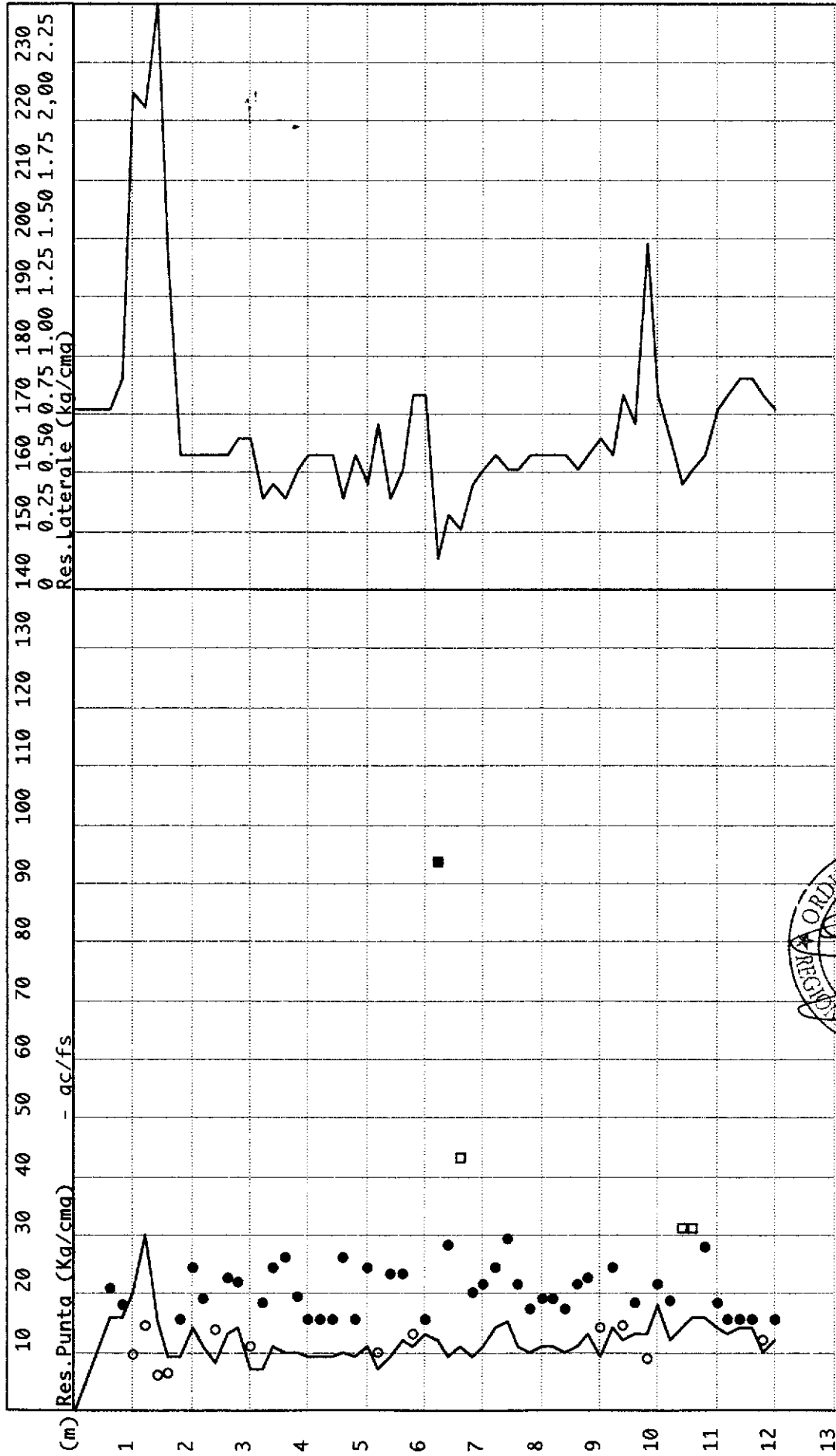
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 0,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 1,00 | 12 | 26 | 12 | 0,93 | 12,86 |
| 1,20 | 18 | 32 | 18 | 0,93 | 19,29 |
| 1,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 1,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 1,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 2,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 2,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,00 | 14 | 20 | 14 | 0,40 | 35,00 |
| 3,20 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 3,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 4,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 4,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,60 | 4 | 8 | 4 | 0,27 | 15,00 |
| 5,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,20 | 12 | 16 | 12 | 0,27 | 45,00 |
| 6,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,60 | 4 | 8 | 4 | 0,27 | 15,00 |
| 6,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 7,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 10,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 10,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 11,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,80 | 10 | 22 | 10 | 0,80 | 12,50 |
| 12,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
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| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
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| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

CPI n°1 data: 07/05/2002

Cantiere: Cà Bianca
Comune: Nonantola



qc: 1 cm = 10 Kg/cm²
fs: 1 cm = 0,25 Kg/cm²
qc/fs: 1 cm = 10

CLASSIFICAZIONE DI BEGEMANN per qc/fs
○ Torbe e argille organiche □ Sabbie e limi
● Limi ed argille ■ Sabbie e/o Ghiaie

| Prof ml | Strati | Tipologia | Gamma kg/m3 | Gamma kg/m3 | Sigma V kg/cm2 | CU kg/cmq | FI ° | DR % | Mv cm2/Kg | K oriz Kg/cm3 | Perm. cm/sec |
|------------|--------|------------------------|----------------|----------------|-------------------|--------------|---------|---------|--------------|------------------|-----------------|
| 1.20 | | Argilla molto compatta | 1849 | 1849 | 0.222 | 0.950 | 0 | 0 | 0.018797 | 1.9000 | 4.2e-5 |
| 1.80 | | Terre miste/Arg.org. | 1767 | 1767 | 0.328 | 0.550 | 0 | 0 | 0.018182 | 2.2000 | 6.3e-7 |
| 2.20 | | Argilla compatta | 1786 | 786 | 0.359 | 0.625 | 0 | 0 | 0.040000 | 1.2500 | 5.4e-4 |
| 2.40 | | Terre miste/Arg.org. | 1720 | 720 | 0.374 | 0.400 | 0 | 0 | 0.019231 | 1.6000 | 1.6e-5 |
| 2.80 | | Argilla compatta | 1798 | 798 | 0.406 | 0.675 | 0 | 0 | 0.037037 | 1.3500 | 6.4e-4 |
| 3.20 | | Terre miste/Arg.org. | 1700 | 700 | 0.434 | 0.350 | 0 | 0 | 0.020408 | 1.4000 | 1.3e-5 |
| 3.80 | | Argilla media | 1758 | 758 | 0.479 | 0.517 | 0 | 0 | 0.018145 | 1.0333 | 9.0e-4 |
| | | Argilla compatta | 1752 | 752 | 0.645 | 0.495 | 0 | 0 | 0.050459 | 0.9909 | 7.1e-5 |
| 6.00 | | | | | | | | | | | |
| 6.20 | | Sabbia sciolta | 1650 | 650 | 0.658 | 0.000 | 29 | 15 | 0.041667 | 0.6000 | 1.7e-1 |
| 6.40 | | Argilla limosa | 1737 | 737 | 0.672 | 0.450 | 0 | 0 | 0.018519 | 0.9000 | 3.0e-3 |
| 6.60 | | Limo argilloso | 1767 | 767 | 0.688 | 0.550 | 0 | 0 | 0.014782 | 0.7333 | 2.2e-2 |
| | | Argilla compatta | 1781 | 781 | 0.969 | 0.603 | 0 | 0 | 0.041475 | 1.2056 | 1.6e-4 |
| 10.20 | | | | | | | | | | | |
| 10.60 | | Argilla limosa | 1814 | 814 | 1.001 | 0.750 | 0 | 0 | 0.013333 | 1.5000 | 5.4e-3 |
| | | Argilla compatta | 1796 | 796 | 1.113 | 0.664 | 0 | 0 | 0.037634 | 1.3286 | 6.3e-5 |
| 12.00 | | | | | | | | | | | |

RELAZIONE TECNICA

CPT n°1 data: 07/05/2002

Cantiere: Cà Bianca

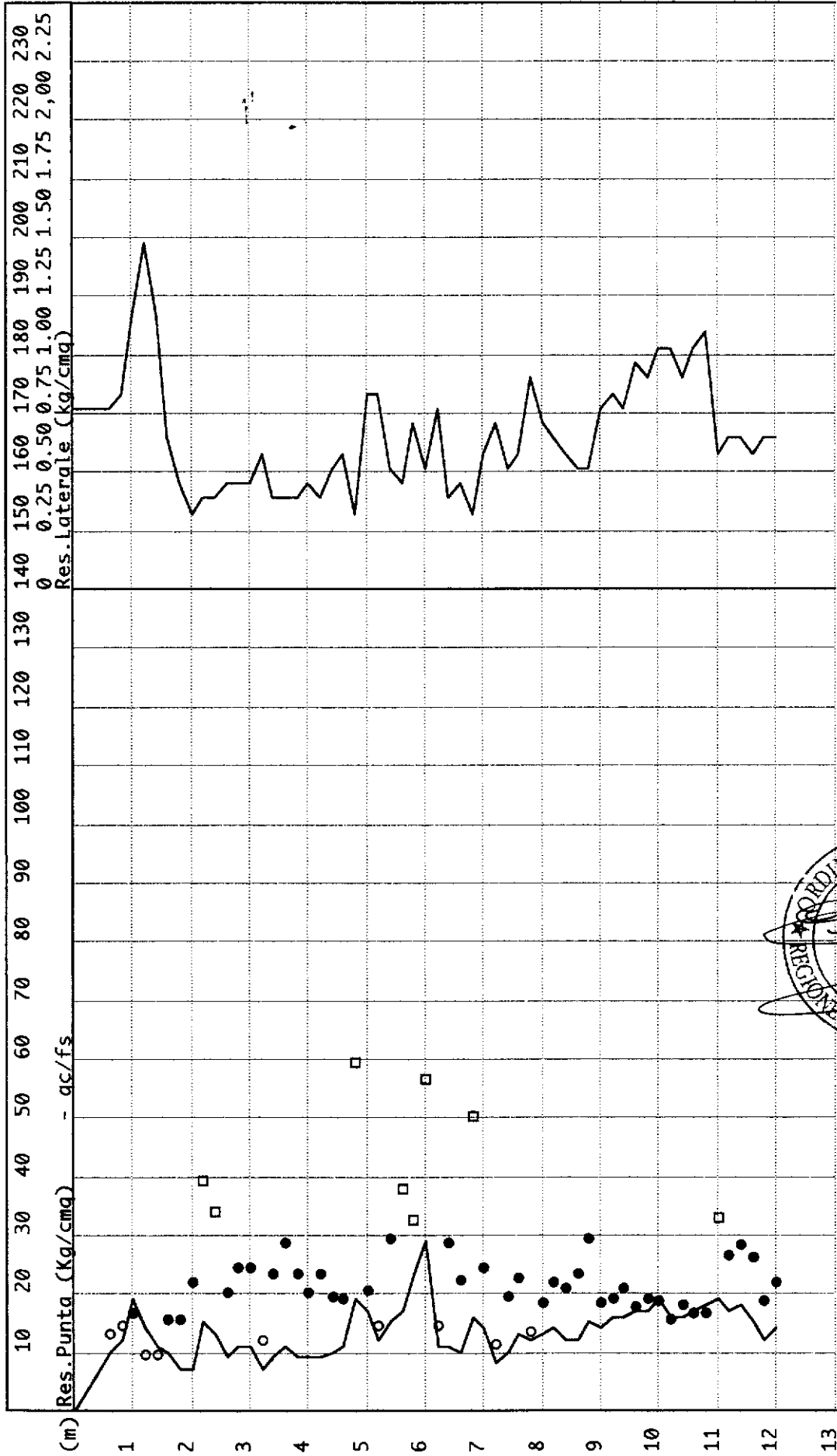
Comune: Nonantola

Quota livello di falda: 1.80

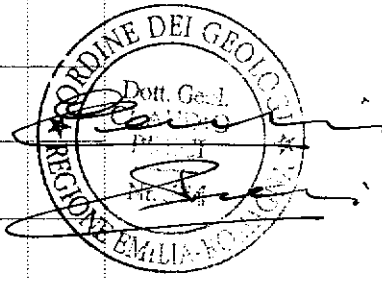
Dati prova penetrometrica statica

| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| 0.60 | 16.00 | 0.77 | 20.80 |
| 0.80 | 16.00 | 0.90 | 17.83 |
| 1.00 | 20.00 | 2.12 | 9.45 |
| 1.20 | 30.00 | 2.05 | 14.63 |
| 1.40 | 15.00 | 2.50 | 6.00 |
| 1.60 | 9.00 | 1.41 | 6.38 |
| 1.80 | 9.00 | 0.58 | 15.60 |
| 2.00 | 14.00 | 0.58 | 24.27 |
| 2.20 | 11.00 | 0.58 | 19.07 |
| 2.40 | 8.00 | 0.58 | 13.87 |
| 2.60 | 13.00 | 0.58 | 22.53 |
| 2.80 | 14.00 | 0.64 | 21.84 |
| 3.00 | 7.00 | 0.64 | 10.92 |
| 3.20 | 7.00 | 0.38 | 18.20 |
| 3.40 | 11.00 | 0.45 | 24.51 |
| 3.60 | 10.00 | 0.38 | 26.00 |
| 3.80 | 10.00 | 0.51 | 19.50 |
| 4.00 | 9.00 | 0.58 | 15.60 |
| 4.20 | 9.00 | 0.58 | 15.60 |
| 4.40 | 9.00 | 0.58 | 15.60 |
| 4.60 | 10.00 | 0.38 | 26.00 |
| 4.80 | 9.00 | 0.58 | 15.60 |
| 5.00 | 11.00 | 0.45 | 24.51 |
| 5.20 | 7.00 | 0.71 | 9.93 |
| 5.40 | 9.00 | 0.38 | 23.40 |
| 5.60 | 12.00 | 0.51 | 23.40 |
| 5.80 | 11.00 | 0.83 | 13.20 |
| 6.00 | 13.00 | 0.83 | 15.60 |
| 6.20 | 12.00 | 0.13 | 93.60 |
| 6.40 | 9.00 | 0.32 | 28.08 |
| 6.60 | 11.00 | 0.26 | 42.90 |
| 6.80 | 9.00 | 0.45 | 20.06 |
| 7.00 | 11.00 | 0.51 | 21.45 |
| 7.20 | 14.00 | 0.58 | 24.27 |
| 7.40 | 15.00 | 0.51 | 29.25 |
| 7.60 | 11.00 | 0.51 | 21.45 |
| 7.80 | 10.00 | 0.58 | 17.33 |
| 8.00 | 11.00 | 0.58 | 19.07 |
| 8.20 | 11.00 | 0.58 | 19.07 |
| 8.40 | 10.00 | 0.58 | 17.33 |
| 8.60 | 11.00 | 0.51 | 21.45 |
| 8.80 | 13.00 | 0.58 | 22.53 |
| 9.00 | 9.00 | 0.64 | 14.04 |
| 9.20 | 14.00 | 0.58 | 24.27 |
| 9.40 | 12.00 | 0.83 | 14.40 |
| 9.60 | 13.00 | 0.71 | 18.44 |
| 9.80 | 13.00 | 1.47 | 8.82 |
| 10.00 | 18.00 | 0.83 | 21.60 |
| 10.20 | 12.00 | 0.64 | 18.72 |
| 10.40 | 14.00 | 0.45 | 31.20 |
| 10.60 | 16.00 | 0.51 | 31.20 |
| 10.80 | 16.00 | 0.58 | 27.73 |
| 11.00 | 14.00 | 0.77 | 18.20 |
| 11.20 | 13.00 | 0.83 | 15.60 |
| 11.40 | 14.00 | 0.90 | 15.60 |
| 11.60 | 14.00 | 0.90 | 15.60 |
| 11.80 | 10.00 | 0.83 | 12.00 |
| 12.00 | 12.00 | 0.77 | 15.60 |

CPT n°4 data: 07/05/2002
 Cantiere: Cà Bianca
 Comune: Nonantola



CLASSIFICAZIONE DI BEGEMANN per qc/fs
 ○ Torbe e argille organiche □ Sabbie e limi
 ● Limi ed argille ■ Sabbie e/o Ghiaie



qc: 1 cm = 10 Kg/cm²
 fs: 1 cm = 0,25 Kg/cm²
 qc/fs: 1 cm = 10

| Prof ml | Strati | Tipologia | Gamma kg/m3 | Gamma kg/m3 | Sigma'V kg/cm2 | CU kg/cmq | FI ° | DR % | Mv cm2/Kg | K oriz Kg/cm3 | Perm. cm/sec |
|------------|--------|------------------------|----------------|----------------|-------------------|--------------|---------|---------|--------------|------------------|-----------------|
| 0.80 | | Terre miste/Arg.org. | 1760 | 1760 | 0.141 | 0.525 | 0 | 0 | 0.018141 | 2.1000 | 1.2e-5 |
| 1.00 | | Argilla molto compatta | 1849 | 1849 | 0.178 | 0.950 | 0 | 0 | 0.018797 | 1.9000 | 7.1e-5 |
| 1.60 | | Terre miste/Arg.org. | 1776 | 1776 | 0.284 | 0.583 | 0 | 0 | 0.017143 | 2.3333 | 2.1e-6 |
| | | Argilla media | 1751 | 751 | 0.510 | 0.493 | 0 | 0 | 0.018207 | 0.9867 | 8.0e-4 |
| 4.60 | | Sabbia sciolta | 1650 | 650 | 0.523 | 0.000 | 32 | 22 | 0.026316 | 0.9500 | 6.2e-2 |
| 4.80 | | Argilla compatta | 1810 | 810 | 0.571 | 0.733 | 0 | 0 | 0.034091 | 1.4667 | 3.2e-4 |
| 5.40 | | Limo argilloso | 1878 | 878 | 0.624 | 1.150 | 0 | 0 | 0.014493 | 1.5333 | 1.9e-2 |
| 6.00 | | Argilla compatta | 1763 | 763 | 0.670 | 0.533 | 0 | 0 | 0.046875 | 1.0667 | 2.8e-4 |
| 6.60 | | Sabbia sciolta | 1650 | 650 | 0.683 | 0.000 | 30 | 15 | 0.031250 | 0.8000 | 3.7e-2 |
| 6.80 | | Argilla compatta | 1811 | 811 | 1.105 | 0.738 | 0 | 0 | 0.033854 | 1.4769 | 2.9e-4 |
| 12.00 | | | | | | | | | | | |

RELAZIONE TECNICA

CPT n°4 data:07/05/2002

Cantiere: Cà Bianca

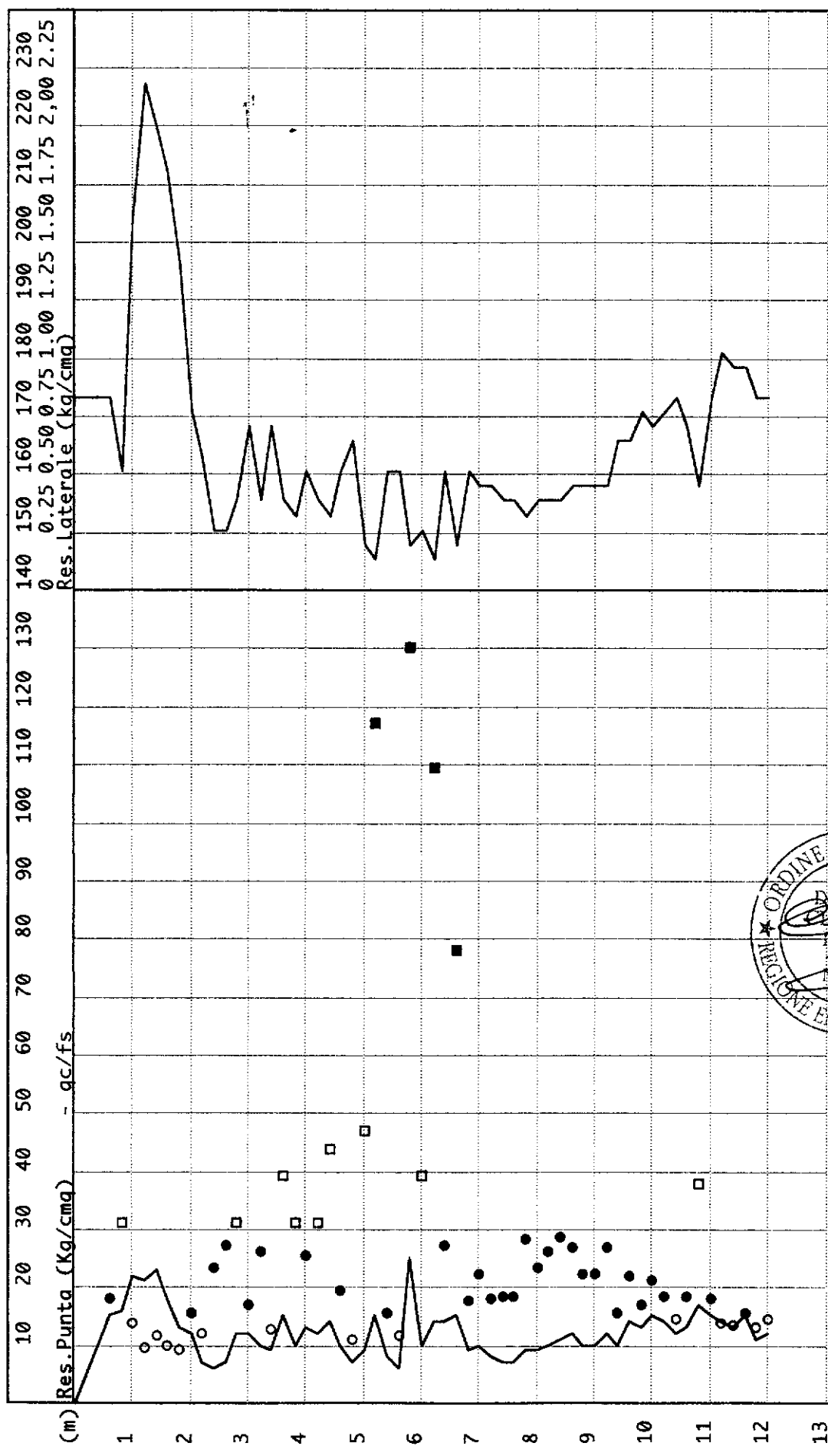
Comune: Nonantola

Quota livello di falda: 1.60

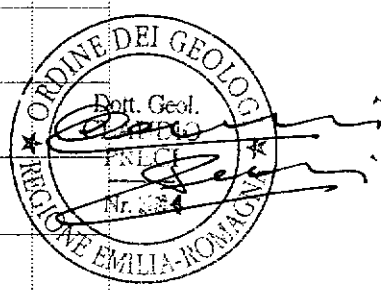
Dati prova penetrometrica statica

| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| 0.60 | 10.00 | 0.77 | 13.00 |
| 0.80 | 12.00 | 0.83 | 14.40 |
| 1.00 | 19.00 | 1.15 | 16.47 |
| 1.20 | 14.00 | 1.47 | 9.50 |
| 1.40 | 11.00 | 1.15 | 9.53 |
| 1.60 | 10.00 | 0.64 | 15.60 |
| 1.80 | 7.00 | 0.45 | 15.60 |
| 2.00 | 7.00 | 0.32 | 21.84 |
| 2.20 | 15.00 | 0.38 | 39.00 |
| 2.40 | 13.00 | 0.38 | 33.80 |
| 2.60 | 9.00 | 0.45 | 20.06 |
| 2.80 | 11.00 | 0.45 | 24.51 |
| 3.00 | 11.00 | 0.45 | 24.51 |
| 3.20 | 7.00 | 0.58 | 12.13 |
| 3.40 | 9.00 | 0.38 | 23.40 |
| 3.60 | 11.00 | 0.38 | 28.60 |
| 3.80 | 9.00 | 0.38 | 23.40 |
| 4.00 | 9.00 | 0.45 | 20.06 |
| 4.20 | 9.00 | 0.38 | 23.40 |
| 4.40 | 10.00 | 0.51 | 19.50 |
| 4.60 | 11.00 | 0.58 | 19.07 |
| 4.80 | 19.00 | 0.32 | 59.28 |
| 5.00 | 17.00 | 0.83 | 20.40 |
| 5.20 | 12.00 | 0.83 | 14.40 |
| 5.40 | 15.00 | 0.51 | 29.25 |
| 5.60 | 17.00 | 0.45 | 37.89 |
| 5.80 | 23.00 | 0.71 | 32.62 |
| 6.00 | 29.00 | 0.51 | 56.55 |
| 6.20 | 11.00 | 0.77 | 14.30 |
| 6.40 | 11.00 | 0.38 | 28.60 |
| 6.60 | 10.00 | 0.45 | 22.29 |
| 6.80 | 16.00 | 0.32 | 49.92 |
| 7.00 | 14.00 | 0.58 | 24.27 |
| 7.20 | 8.00 | 0.71 | 11.35 |
| 7.40 | 10.00 | 0.51 | 19.50 |
| 7.60 | 13.00 | 0.58 | 22.53 |
| 7.80 | 12.00 | 0.90 | 13.37 |
| 8.00 | 13.00 | 0.71 | 18.44 |
| 8.20 | 14.00 | 0.64 | 21.84 |
| 8.40 | 12.00 | 0.58 | 20.80 |
| 8.60 | 12.00 | 0.51 | 23.40 |
| 8.80 | 15.00 | 0.51 | 29.25 |
| 9.00 | 14.00 | 0.77 | 18.20 |
| 9.20 | 16.00 | 0.83 | 19.20 |
| 9.40 | 16.00 | 0.77 | 20.80 |
| 9.60 | 17.00 | 0.96 | 17.68 |
| 9.80 | 17.00 | 0.90 | 18.94 |
| 10.00 | 19.00 | 1.03 | 18.53 |
| 10.20 | 16.00 | 1.03 | 15.60 |
| 10.40 | 16.00 | 0.90 | 17.83 |
| 10.60 | 17.00 | 1.03 | 16.58 |
| 10.80 | 18.00 | 1.09 | 16.52 |
| 11.00 | 19.00 | 0.58 | 32.93 |
| 11.20 | 17.00 | 0.64 | 26.52 |
| 11.40 | 18.00 | 0.64 | 28.08 |
| 11.60 | 15.00 | 0.58 | 26.00 |
| 11.80 | 12.00 | 0.64 | 18.72 |
| 12.00 | 14.00 | 0.64 | 21.84 |

CPT n°6 data:07/05/2002
 Cantiere: Cà Bianca
 Comune: Nonantola



CLASSIFICAZIONE DI BEGEMANN per qc/fs
 ○ Torbe e argille organiche □ Sabbie e limi
 ● Limi ed argille ■ Sabbie e/o Ghiaie



qc: 1 cm = 10 Kg/cm²
 fs: 1 cm = 0,25 Kg/cm²
 qc/fs: 1 cm = 10

| Prof ml | Strati | Tipologia | Gamma kg/m3 | Gamma' kg/m3 | Sigma'V kg/cm2 | CU kg/cmq | FI ° | DR % | Mv cm2/Kg | K oriz Kg/cm3 | Perm. cm/sec |
|------------|--------|----------------------|----------------|-----------------|-------------------|--------------|---------|---------|--------------|------------------|-----------------|
| 0.80 | | Argilla compatta | 1816 | 1816 | 0.145 | 0.762 | 0 | 0 | 0.031987 | 1.5250 | 3.3e-4 |
| 2.00 | | Terre miste/Arg.org. | 1842 | 842 | 0.246 | 0.908 | 0 | 0 | 0.011009 | 3.6333 | 8.8e-6 |
| 2.60 | | Argilla media | 1693 | 693 | 0.288 | 0.333 | 0 | 0 | 0.020930 | 0.6667 | 1.7e-4 |
| 3.40 | | Argilla compatta | 1764 | 764 | 0.349 | 0.537 | 0 | 0 | 0.046512 | 1.0750 | 2.6e-4 |
| 4.40 | | Argilla limosa | 1790 | 790 | 0.428 | 0.640 | 0 | 0 | 0.015625 | 1.2800 | 7.4e-3 |
| 4.60 | | Argilla media | 1753 | 753 | 0.443 | 0.500 | 0 | 0 | 0.018182 | 1.0000 | 2.8e-4 |
| 4.80 | | Terre miste/Arg.org. | 1700 | 700 | 0.457 | 0.350 | 0 | 0 | 0.020408 | 1.4000 | 1.7e-6 |
| 5.20 | | Sabbia sciolta | 1650 | 650 | 0.483 | 0.000 | 30 | 15 | 0.041667 | 0.6000 | 1.1e-1 |
| 5.60 | | Terre miste/Arg.org. | 1700 | 700 | 0.511 | 0.350 | 0 | 0 | 0.020408 | 1.4000 | 1.3e-5 |
| 6.20 | | Sabbia sciolta | 1650 | 650 | 0.550 | 0.000 | 31 | 16 | 0.030612 | 0.8167 | 1.4e-1 |
| 6.40 | | Argilla limosa | 1803 | 803 | 0.566 | 0.700 | 0 | 0 | 0.014286 | 1.4000 | 2.6e-3 |
| 6.60 | | Sabbia sciolta | 1650 | 650 | 0.579 | 0.000 | 30 | 15 | 0.033333 | 0.7500 | 1.2e-1 |
| 12.00 | | Argilla compatta | 1775 | 775 | 0.998 | 0.578 | 0 | 0 | 0.043269 | 1.1556 | 1.9e-4 |

RELAZIONE TECNICA

CPT n°6 data:07/05/2002

Cantiere: Cà Bianca

Comune: Nonantola

Quota livello di falda: 1.20

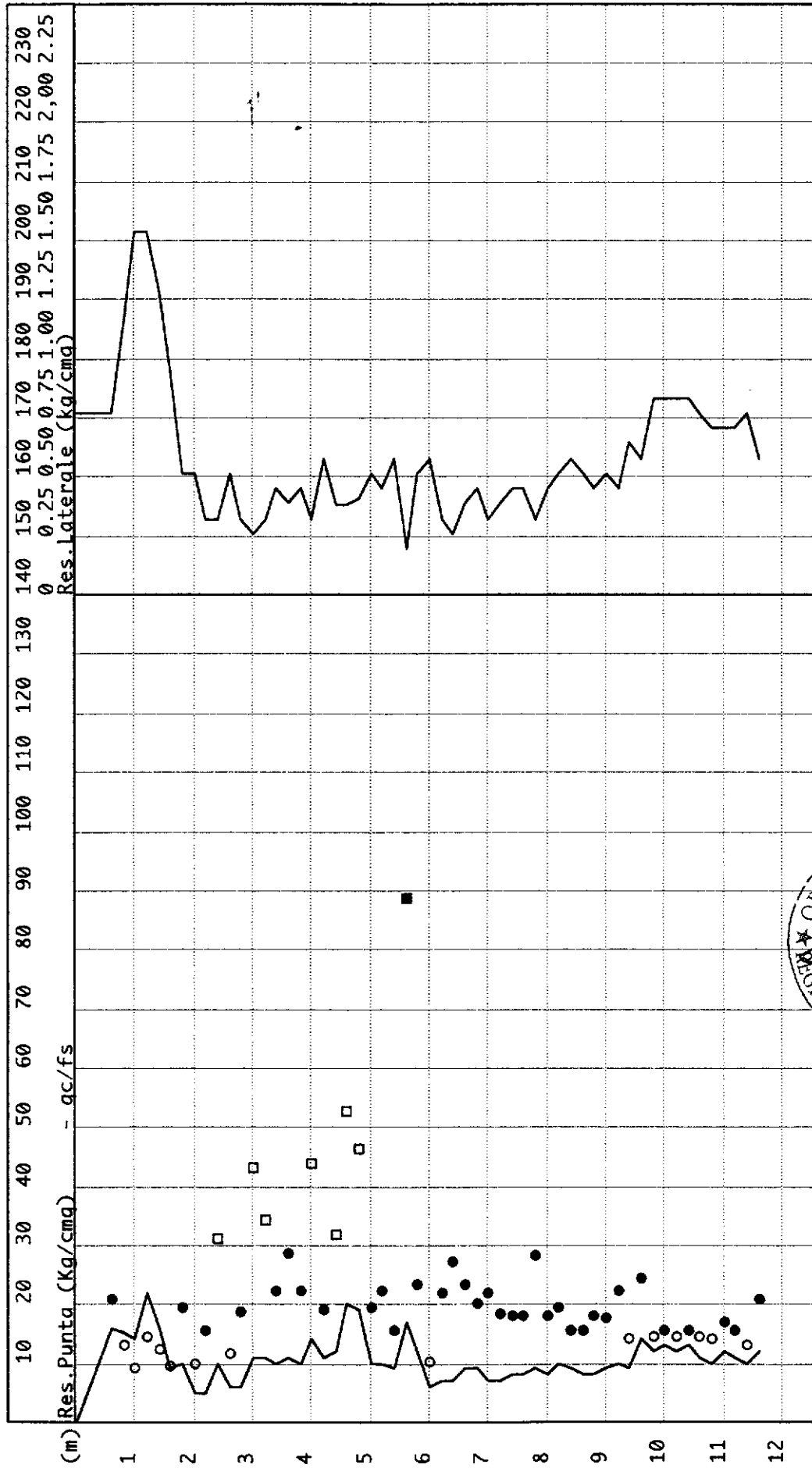
Dati prova penetrometrica statica

| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| 0.60 | 15.00 | 0.83 | 18.00 |
| 0.80 | 16.00 | 0.51 | 31.20 |
| 1.00 | 22.00 | 1.60 | 13.73 |
| 1.20 | 21.00 | 2.18 | 9.64 |
| 1.40 | 23.00 | 1.99 | 11.57 |
| 1.60 | 18.00 | 1.79 | 10.03 |
| 1.80 | 13.00 | 1.41 | 9.22 |
| 2.00 | 12.00 | 0.77 | 15.60 |
| 2.20 | 7.00 | 0.58 | 12.13 |
| 2.40 | 6.00 | 0.26 | 23.40 |
| 2.60 | 7.00 | 0.26 | 27.30 |
| 2.80 | 12.00 | 0.38 | 31.20 |
| 3.00 | 12.00 | 0.71 | 17.02 |
| 3.20 | 10.00 | 0.38 | 26.00 |
| 3.40 | 9.00 | 0.71 | 12.76 |
| 3.60 | 15.00 | 0.38 | 39.00 |
| 3.80 | 10.00 | 0.32 | 31.20 |
| 4.00 | 13.00 | 0.51 | 25.35 |
| 4.20 | 12.00 | 0.38 | 31.20 |
| 4.40 | 14.00 | 0.32 | 43.68 |
| 4.60 | 10.00 | 0.51 | 19.50 |
| 4.80 | 7.00 | 0.64 | 10.92 |
| 5.00 | 9.00 | 0.19 | 46.80 |
| 5.20 | 15.00 | 0.13 | 117.00 |
| 5.40 | 8.00 | 0.51 | 15.60 |
| 5.60 | 6.00 | 0.51 | 11.70 |
| 5.80 | 25.00 | 0.19 | 130.00 |
| 6.00 | 10.00 | 0.26 | 39.00 |
| 6.20 | 14.00 | 0.13 | 109.20 |
| 6.40 | 14.00 | 0.51 | 27.30 |
| 6.60 | 15.00 | 0.19 | 78.00 |
| 6.80 | 9.00 | 0.51 | 17.55 |
| 7.00 | 10.00 | 0.45 | 22.29 |
| 7.20 | 8.00 | 0.45 | 17.83 |
| 7.40 | 7.00 | 0.38 | 18.20 |
| 7.60 | 7.00 | 0.38 | 18.20 |
| 7.80 | 9.00 | 0.32 | 28.08 |
| 8.00 | 9.00 | 0.38 | 23.40 |
| 8.20 | 10.00 | 0.38 | 26.00 |
| 8.40 | 11.00 | 0.38 | 28.60 |
| 8.60 | 12.00 | 0.45 | 26.74 |
| 8.80 | 10.00 | 0.45 | 22.29 |
| 9.00 | 10.00 | 0.45 | 22.29 |
| 9.20 | 12.00 | 0.45 | 26.74 |
| 9.40 | 10.00 | 0.64 | 15.60 |
| 9.60 | 14.00 | 0.64 | 21.84 |
| 9.80 | 13.00 | 0.77 | 16.90 |
| 10.00 | 15.00 | 0.71 | 21.27 |
| 10.20 | 14.00 | 0.77 | 18.20 |
| 10.40 | 12.00 | 0.83 | 14.40 |
| 10.60 | 13.00 | 0.71 | 18.44 |
| 10.80 | 17.00 | 0.45 | 37.89 |
| 11.00 | 15.00 | 0.83 | 18.00 |
| 11.20 | 14.00 | 1.03 | 13.65 |
| 11.40 | 13.00 | 0.96 | 13.52 |
| 11.60 | 15.00 | 0.96 | 15.60 |
| 11.80 | 11.00 | 0.83 | 13.20 |
| 12.00 | 12.00 | 0.83 | 14.40 |

CPT n°10 data:07/05/2002

Cantiere: Cà Bianca

Comune: Nonantola



qc: 1 cm = 10 Kg/cm²
fs: 1 cm = 0,25 Kg/cm²
qc/fs: 1 cm = 10

| Prof m | Strati | Tipologia | Gamma kg/m3 | Gamma' kg/m3 | Sigma'V kg/cm2 | CU kg/cmq | FI ° | DR % | Mv cm2/Kg | K oriz Kg/cm3 | Perm. cm/sec |
|-----------|--------|----------------------|----------------|-----------------|-------------------|--------------|---------|---------|--------------|------------------|-----------------|
| 0.80 | | Argilla compatta | 1821 | 1821 | 0.146 | 0.787 | 0 | 0 | 0.029531 | 1.5750 | 1.4e-4 |
| 1.60 | | Terre miste/Arg.org. | 1816 | 816 | 0.211 | 0.762 | 0 | 0 | 0.013115 | 3.0500 | 6.1e-6 |
| 1.80 | | Argilla media | 1753 | 753 | 0.226 | 0.500 | 0 | 0 | 0.018182 | 1.0000 | 2.8e-4 |
| 2.80 | | Terre miste/Arg.org. | 1686 | 686 | 0.295 | 0.320 | 0 | 0 | 0.021404 | 1.2800 | 5.5e-5 |
| 3.20 | | Limo argilloso | 1767 | 767 | 0.325 | 0.550 | 0 | 0 | 0.014782 | 0.7333 | 1.4e-2 |
| 3.80 | | Argilla media | 1758 | 758 | 0.371 | 0.517 | 0 | 0 | 0.018145 | 1.0333 | 1.2e-3 |
| 4.00 | | Limo argilloso | 1803 | 803 | 0.387 | 0.700 | 0 | 0 | 0.014006 | 0.9333 | 2.3e-2 |
| 4.40 | | Argilla media | 1774 | 774 | 0.418 | 0.575 | 0 | 0 | 0.017391 | 1.1500 | 1.2e-3 |
| 4.80 | | Sabbia sciolta | 1650 | 650 | 0.444 | 0.000 | 33 | 26 | 0.025641 | 0.9750 | 3.6e-2 |
| 5.40 | | Argilla media | 1748 | 748 | 0.489 | 0.483 | 0 | 0 | 0.018256 | 0.9667 | 2.1e-4 |
| 5.60 | | Sabbia sciolta | 1650 | 650 | 0.502 | 0.000 | 31 | 19 | 0.029412 | 0.8500 | 1.5e-1 |
| 11.60 | | Argilla compatta | 1748 | 748 | 0.951 | 0.483 | 0 | 0 | 0.051724 | 0.9667 | 8.8e-5 |

RELAZIONE TECNICA

CPT n°10 data:07/05/2002

Cantiere: Cà Bianca

Comune: Nonantola

Quota livello di falda: 0.80

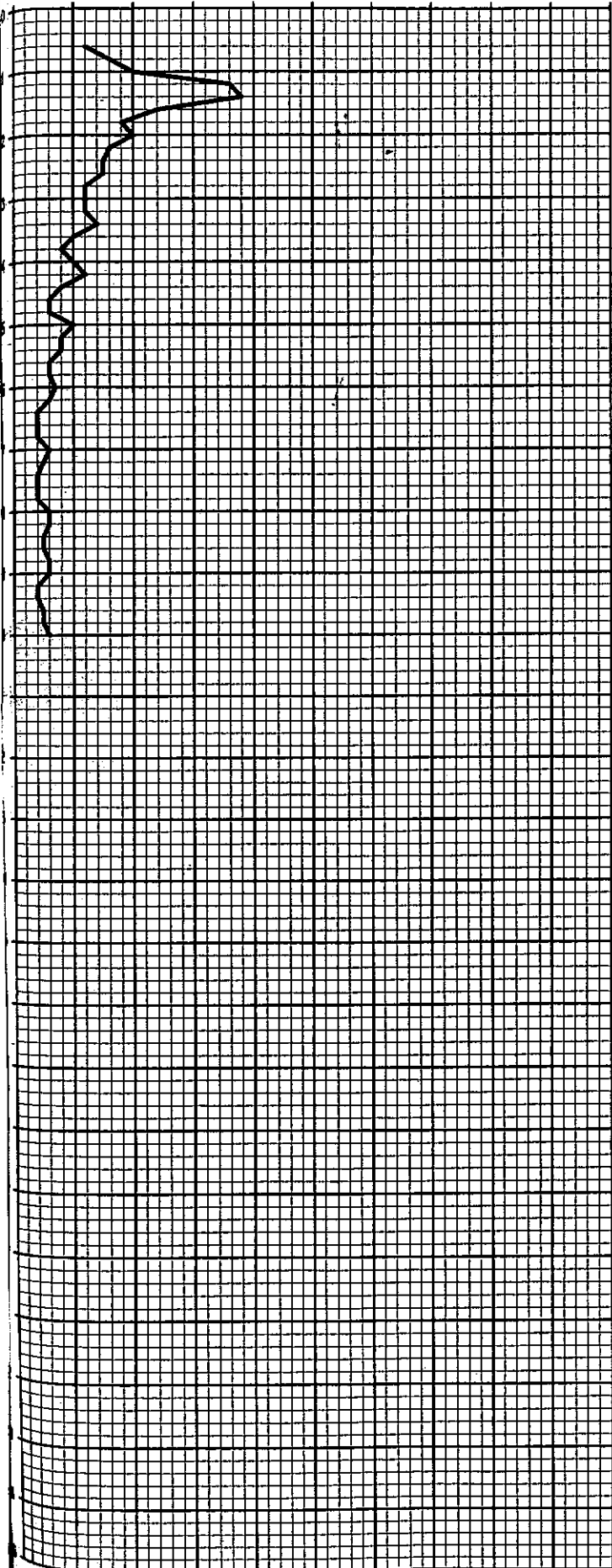
Dati prova penetrometrica statica

| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| 0.60 | 16.00 | 0.77 | 20.80 |
| 0.80 | 15.00 | 1.15 | 13.00 |
| 1.00 | 14.00 | 1.54 | 9.10 |
| 1.20 | 22.00 | 1.54 | 14.30 |
| 1.40 | 16.00 | 1.28 | 12.48 |
| 1.60 | 9.00 | 0.96 | 9.36 |
| 1.80 | 10.00 | 0.51 | 19.50 |
| 2.00 | 5.00 | 0.51 | 9.75 |
| 2.20 | 5.00 | 0.32 | 15.60 |
| 2.40 | 10.00 | 0.32 | 31.20 |
| 2.60 | 6.00 | 0.51 | 11.70 |
| 2.80 | 6.00 | 0.32 | 18.72 |
| 3.00 | 11.00 | 0.26 | 42.90 |
| 3.20 | 11.00 | 0.32 | 34.32 |
| 3.40 | 10.00 | 0.45 | 22.29 |
| 3.60 | 11.00 | 0.38 | 28.60 |
| 3.80 | 10.00 | 0.45 | 22.29 |
| 4.00 | 14.00 | 0.32 | 43.68 |
| 4.20 | 11.00 | 0.58 | 19.07 |
| 4.40 | 12.00 | 0.38 | 31.58 |
| 4.60 | 20.00 | 0.38 | 52.63 |
| 4.80 | 19.00 | 0.41 | 46.34 |
| 5.00 | 10.00 | 0.51 | 19.50 |
| 5.20 | 10.00 | 0.45 | 22.29 |
| 5.40 | 9.00 | 0.58 | 15.60 |
| 5.60 | 17.00 | 0.19 | 88.40 |
| 5.80 | 12.00 | 0.51 | 23.40 |
| 6.00 | 6.00 | 0.58 | 10.40 |
| 6.20 | 7.00 | 0.32 | 21.84 |
| 6.40 | 7.00 | 0.26 | 27.30 |
| 6.60 | 9.00 | 0.38 | 23.40 |
| 6.80 | 9.00 | 0.45 | 20.06 |
| 7.00 | 7.00 | 0.32 | 21.84 |
| 7.20 | 7.00 | 0.38 | 18.20 |
| 7.40 | 8.00 | 0.45 | 17.83 |
| 7.60 | 8.00 | 0.45 | 17.83 |
| 7.80 | 9.00 | 0.32 | 28.08 |
| 8.00 | 8.00 | 0.45 | 17.83 |
| 8.20 | 10.00 | 0.51 | 19.50 |
| 8.40 | 9.00 | 0.58 | 15.60 |
| 8.60 | 8.00 | 0.51 | 15.60 |
| 8.80 | 8.00 | 0.45 | 17.83 |
| 9.00 | 9.00 | 0.51 | 17.55 |
| 9.20 | 10.00 | 0.45 | 22.29 |
| 9.40 | 9.00 | 0.64 | 14.04 |
| 9.60 | 14.00 | 0.58 | 24.27 |
| 9.80 | 12.00 | 0.83 | 14.40 |
| 10.00 | 13.00 | 0.83 | 15.60 |
| 10.20 | 12.00 | 0.83 | 14.40 |
| 10.40 | 13.00 | 0.83 | 15.60 |
| 10.60 | 11.00 | 0.77 | 14.30 |
| 10.80 | 10.00 | 0.71 | 14.18 |
| 11.00 | 12.00 | 0.71 | 17.02 |
| 11.20 | 11.00 | 0.71 | 15.60 |
| 11.40 | 10.00 | 0.77 | 13.00 |
| 11.60 | 12.00 | 0.58 | 20.80 |

Via AUSTRIA, 24 - 41100 MODENA

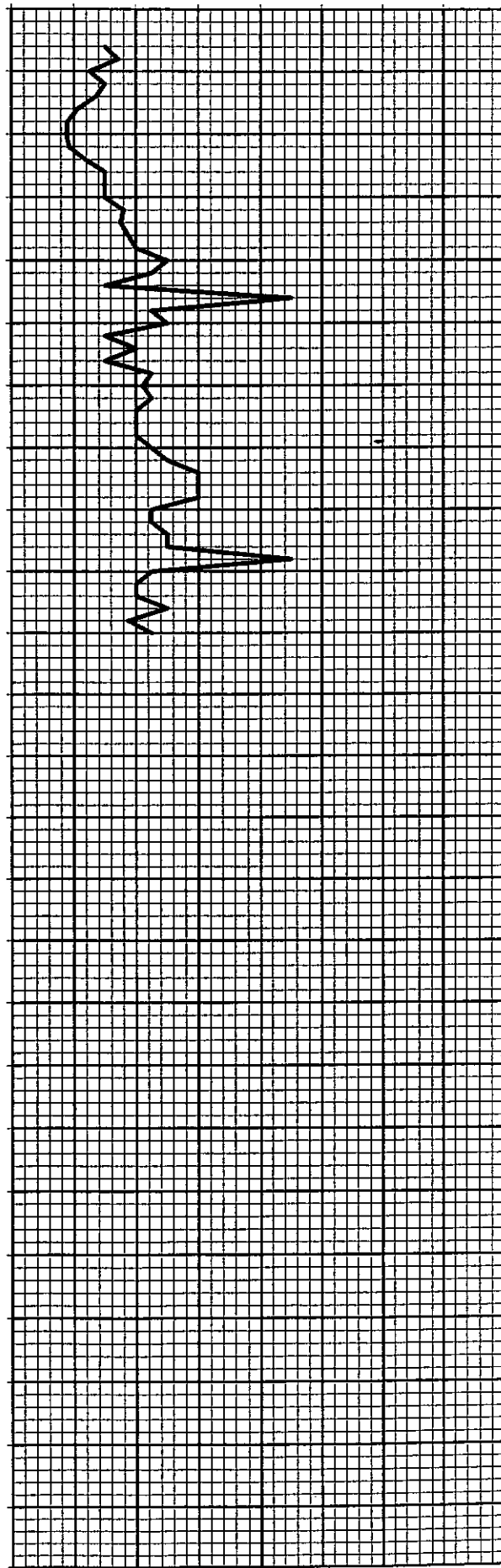
Resistenza alla punta Rp (kg/cm²)

0 10 20 30 40 50 60 70 80 90 100



Rp/RI

0 10 20 30 40 50 60 70 80





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

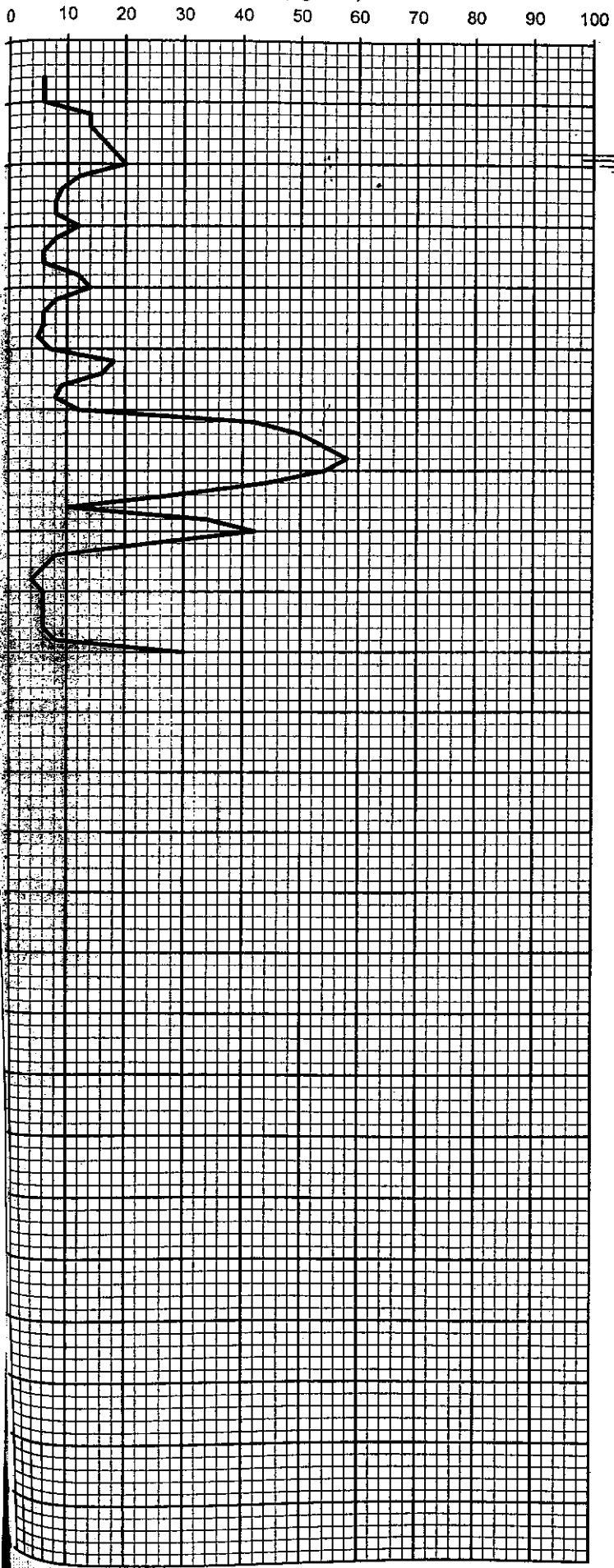
Penetrometro Gouda

Committente : C/O GEOM. ZIRONI
Località : VIA DI MEZZO CASSETTE NONANTOLA
Prova numero : 1
Data : 15/04/02
Operatore : DR. REBECCHI
Quota : P.C.

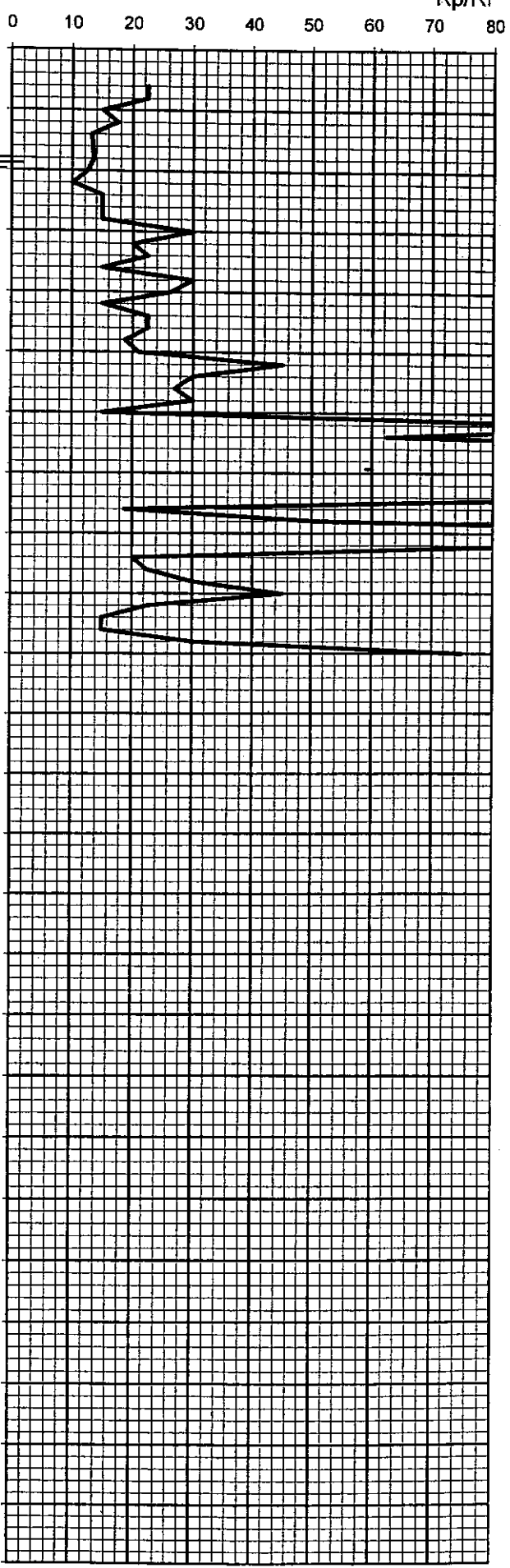
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 0,80 | 16 | 30 | 16 | 0,93 | 17,14 |
| 1,00 | 20 | 44 | 20 | 1,60 | 12,50 |
| 1,20 | 36 | 72 | 36 | 2,40 | 15,00 |
| 1,40 | 38 | 80 | 38 | 2,80 | 13,57 |
| 1,60 | 24 | 58 | 24 | 2,27 | 10,59 |
| 1,80 | 18 | 48 | 18 | 2,00 | 9,00 |
| 2,00 | 20 | 54 | 20 | 2,27 | 8,82 |
| 2,20 | 16 | 42 | 16 | 1,73 | 9,23 |
| 2,40 | 15 | 34 | 15 | 1,27 | 11,84 |
| 2,60 | 15 | 30 | 15 | 1,00 | 15,00 |
| 2,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 3,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 3,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 3,40 | 14 | 26 | 14 | 0,80 | 17,50 |
| 3,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 4,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 4,60 | 6 | 8 | 6 | 0,13 | 45,00 |
| 4,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 5,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 5,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,00 | 7 | 12 | 7 | 0,33 | 21,00 |
| 6,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,40 | 4 | 7 | 4 | 0,20 | 20,00 |
| 6,60 | 4 | 7 | 4 | 0,20 | 20,00 |
| 6,80 | 4 | 7 | 4 | 0,20 | 20,00 |
| 7,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,20 | 5 | 8 | 5 | 0,20 | 25,00 |
| 7,40 | 4 | 6 | 4 | 0,13 | 30,00 |
| 7,60 | 4 | 6 | 4 | 0,13 | 30,00 |
| 7,80 | 4 | 6 | 4 | 0,13 | 30,00 |
| 8,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,40 | 5 | 8 | 5 | 0,20 | 25,00 |
| 8,60 | 5 | 8 | 5 | 0,20 | 25,00 |
| 8,80 | 6 | 8 | 6 | 0,13 | 45,00 |
| 9,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,20 | 4 | 7 | 4 | 0,20 | 20,00 |
| 9,40 | 4 | 7 | 4 | 0,20 | 20,00 |
| 9,60 | 5 | 8 | 5 | 0,20 | 25,00 |
| 9,80 | 5 | 9 | 5 | 0,27 | 18,75 |
| 10,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
| 11,20 | | | | | |
| 11,40 | | | | | |
| 11,60 | | | | | |
| 11,80 | | | | | |
| 12,00 | | | | | |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Resistenza alla punta Rp (kg/cm²)



Rp/Rl





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999
Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O GEOM. ZIRONI
Località : VIA DI MEZZO CASSETTE NONANTOLA
Prova numero : 2
Data : 15/04/02
Operatore : DR. REBECCHI
Quota : P.C.

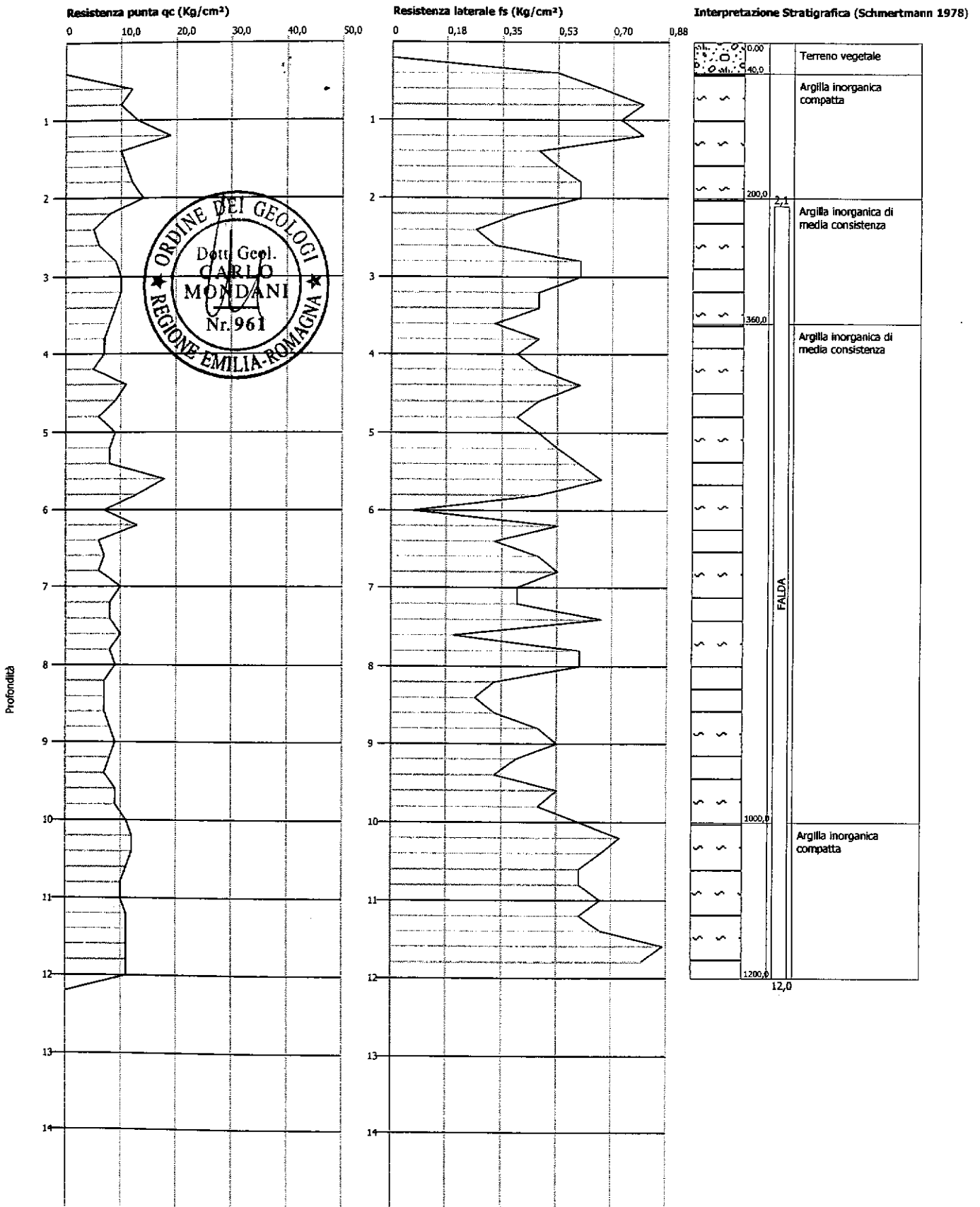
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 0,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 1,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 1,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 1,40 | 14 | 30 | 14 | 1,07 | 13,13 |
| 1,60 | 16 | 34 | 16 | 1,20 | 13,33 |
| 1,80 | 18 | 38 | 18 | 1,33 | 13,50 |
| 2,00 | 20 | 44 | 20 | 1,60 | 12,50 |
| 2,20 | 12 | 30 | 12 | 1,20 | 10,00 |
| 2,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 2,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 2,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 3,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 3,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 4,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 4,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 4,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,80 | 5 | 9 | 5 | 0,27 | 18,75 |
| 5,00 | 7 | 12 | 7 | 0,33 | 21,00 |
| 5,20 | 18 | 24 | 18 | 0,40 | 45,00 |
| 5,40 | 16 | 24 | 16 | 0,53 | 30,00 |
| 5,60 | 9 | 14 | 9 | 0,33 | 27,00 |
| 5,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 6,20 | 42 | 48 | 42 | 0,40 | 105,00 |
| 6,40 | 50 | 62 | 50 | 0,80 | 62,50 |
| 6,60 | 54 | 58 | 54 | 0,27 | 202,50 |
| 6,80 | 58 | 62 | 58 | 0,27 | 217,50 |
| 7,00 | 54 | 60 | 54 | 0,40 | 135,00 |
| 7,20 | 44 | 50 | 44 | 0,40 | 110,00 |
| 7,40 | 28 | 32 | 28 | 0,27 | 105,00 |
| 7,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,80 | 34 | 44 | 34 | 0,67 | 51,00 |
| 8,00 | 42 | 46 | 42 | 0,27 | 157,50 |
| 8,20 | 24 | 28 | 24 | 0,27 | 90,00 |
| 8,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,80 | 4 | 6 | 4 | 0,13 | 30,00 |
| 9,00 | 6 | 8 | 6 | 0,13 | 45,00 |
| 9,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 9,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 9,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,00 | 30 | 36 | 30 | 0,40 | 75,00 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
| 11,20 | | | | | |
| 11,40 | | | | | |
| 11,60 | | | | | |
| 11,80 | | | | | |
| 12,00 | | | | | |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Probe CPT - Cone Penetration CPT 2
Strumento utilizzato... GOUDA 100 kN
Diagramma Resistenze qc fs

Committente : IL TORRAZZO s.r.l.
 Cantiere : Piano particolareggiato S. Anselmo
 Località : Nonantola, via S. Francesco

Data :29/05/2007



PROVA CPT 2

Strumento utilizzato
 Prova eseguita in data
 Profondità prova
 Falda

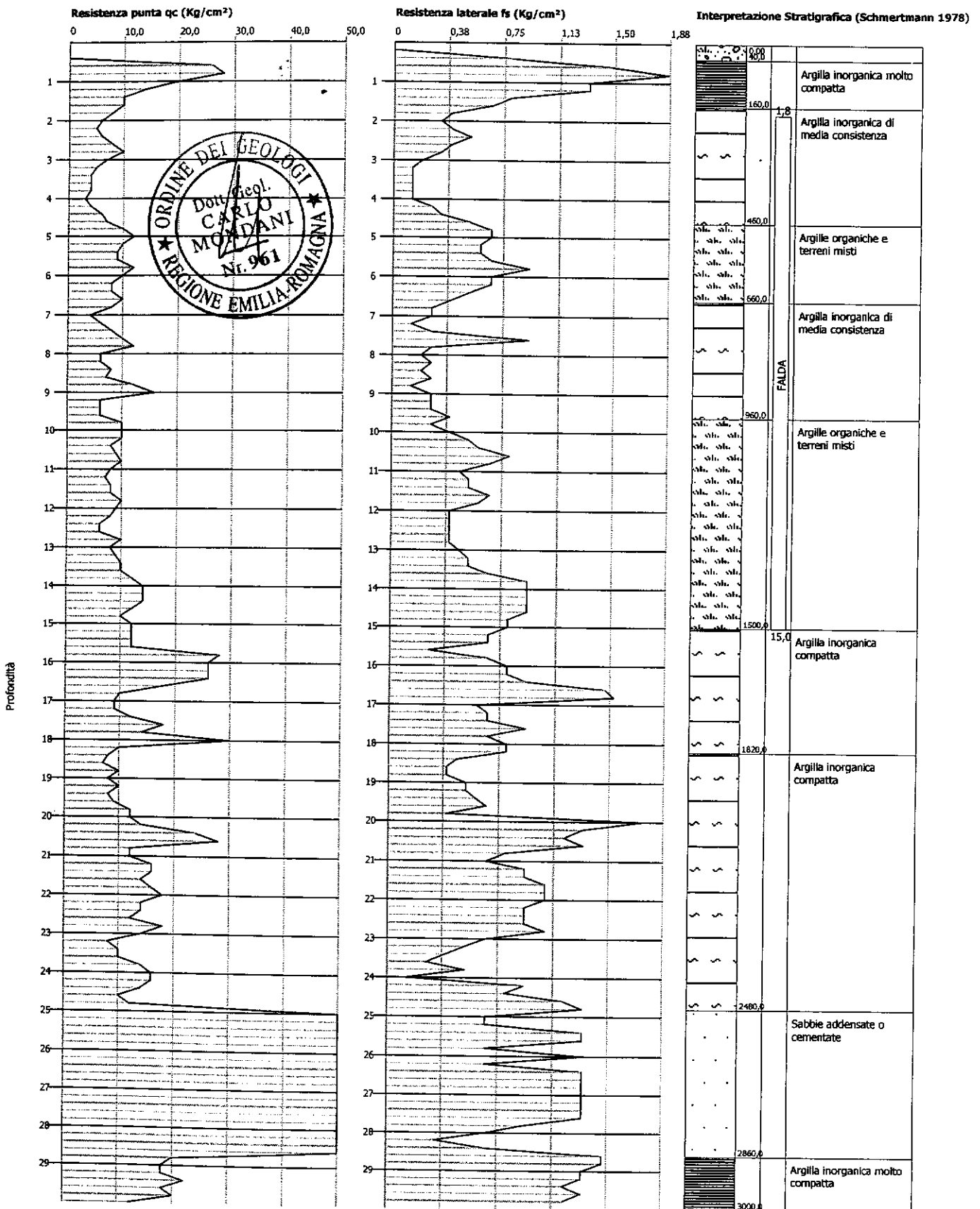
GOUDA 100 kN
 29/05/2007
 12,00 m
 2,10 m dal p.c.

| Profondità (m) | Lettura punta (Kg/cm ²) | Lettura laterale (Kg/cm ²) | qc (Kg/cm ²) | fs (Kg/cm ²) | qc/fs Begemann | fs/qcx100 (Schmertmann) |
|-------------------|--|---|-----------------------------|-----------------------------|-------------------|----------------------------|
| 0,20 | 0,0 | 0,0 | 0,0 | 0,0 | | |
| 0,40 | 0,0 | 0,0 | 0,0 | 0,53 | 0,0 | |
| 0,60 | 12,0 | 20,0 | 12,0 | 0,67 | 17,91 | 5,58 |
| 0,80 | 10,0 | 20,0 | 10,0 | 0,8 | 12,5 | 8,0 |
| 1,00 | 13,0 | 25,0 | 13,0 | 0,73 | 17,81 | 5,62 |
| 1,20 | 19,0 | 30,0 | 19,0 | 0,8 | 23,75 | 4,21 |
| 1,40 | 10,0 | 22,0 | 10,0 | 0,47 | 21,28 | 4,7 |
| 1,60 | 11,0 | 18,0 | 11,0 | 0,53 | 20,75 | 4,82 |
| 1,80 | 12,0 | 20,0 | 12,0 | 0,6 | 20,0 | 5,0 |
| 2,00 | 14,0 | 23,0 | 14,0 | 0,6 | 23,33 | 4,29 |
| 2,20 | 8,0 | 17,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 2,40 | 5,0 | 11,0 | 5,0 | 0,27 | 18,52 | 5,4 |
| 2,60 | 6,0 | 10,0 | 6,0 | 0,33 | 18,18 | 5,5 |
| 2,80 | 9,0 | 14,0 | 9,0 | 0,6 | 15,0 | 6,67 |
| 3,00 | 10,0 | 19,0 | 10,0 | 0,6 | 16,67 | 6,0 |
| 3,20 | 10,0 | 19,0 | 10,0 | 0,47 | 21,28 | 4,7 |
| 3,40 | 9,0 | 16,0 | 9,0 | 0,47 | 19,15 | 5,22 |
| 3,60 | 8,0 | 15,0 | 8,0 | 0,33 | 24,24 | 4,13 |
| 3,80 | 7,0 | 12,0 | 7,0 | 0,47 | 14,89 | 6,71 |
| 4,00 | 7,0 | 14,0 | 7,0 | 0,4 | 17,5 | 5,71 |
| 4,20 | 5,0 | 11,0 | 5,0 | 0,47 | 10,64 | 9,4 |
| 4,40 | 11,0 | 18,0 | 11,0 | 0,6 | 18,33 | 5,45 |
| 4,60 | 9,0 | 18,0 | 9,0 | 0,47 | 19,15 | 5,22 |
| 4,80 | 6,0 | 13,0 | 6,0 | 0,4 | 15,0 | 6,67 |
| 5,00 | 9,0 | 15,0 | 9,0 | 0,47 | 19,15 | 5,22 |
| 5,20 | 8,0 | 15,0 | 8,0 | 0,53 | 15,09 | 6,63 |
| 5,40 | 8,0 | 16,0 | 8,0 | 0,6 | 13,33 | 7,5 |
| 5,60 | 18,0 | 27,0 | 18,0 | 0,67 | 26,87 | 3,72 |
| 5,80 | 13,0 | 23,0 | 13,0 | 0,47 | 27,66 | 3,62 |
| 6,00 | 7,0 | 14,0 | 7,0 | 0,07 | 100,0 | 1,0 |
| 6,20 | 13,0 | 14,0 | 13,0 | 0,53 | 24,53 | 4,08 |
| 6,40 | 6,0 | 14,0 | 6,0 | 0,33 | 18,18 | 5,5 |
| 6,60 | 7,0 | 12,0 | 7,0 | 0,47 | 14,89 | 6,71 |
| 6,80 | 6,0 | 13,0 | 6,0 | 0,53 | 11,32 | 8,83 |
| 7,00 | 10,0 | 18,0 | 10,0 | 0,4 | 25,0 | 4,0 |
| 7,20 | 8,0 | 14,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 7,40 | 8,0 | 14,0 | 8,0 | 0,67 | 11,94 | 8,38 |
| 7,60 | 10,0 | 20,0 | 10,0 | 0,2 | 50,0 | 2,0 |
| 7,80 | 8,0 | 11,0 | 8,0 | 0,6 | 13,33 | 7,5 |
| 8,00 | 9,0 | 18,0 | 9,0 | 0,6 | 15,0 | 6,67 |
| 8,20 | 7,0 | 16,0 | 7,0 | 0,33 | 21,21 | 4,71 |
| 8,40 | 7,0 | 12,0 | 7,0 | 0,27 | 25,93 | 3,86 |
| 8,60 | 7,0 | 11,0 | 7,0 | 0,33 | 21,21 | 4,71 |
| 8,80 | 8,0 | 13,0 | 8,0 | 0,47 | 17,02 | 5,88 |
| 9,00 | 9,0 | 16,0 | 9,0 | 0,53 | 16,98 | 5,89 |
| 9,20 | 8,0 | 16,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 9,40 | 7,0 | 13,0 | 7,0 | 0,33 | 21,21 | 4,71 |
| 9,60 | 9,0 | 14,0 | 9,0 | 0,53 | 16,98 | 5,89 |
| 9,80 | 9,0 | 17,0 | 9,0 | 0,47 | 19,15 | 5,22 |
| 10,00 | 11,0 | 18,0 | 11,0 | 0,6 | 18,33 | 5,45 |
| 10,20 | 12,0 | 21,0 | 12,0 | 0,73 | 16,44 | 6,08 |
| 10,40 | 12,0 | 23,0 | 12,0 | 0,67 | 17,91 | 5,58 |
| 10,60 | 11,0 | 21,0 | 11,0 | 0,6 | 18,33 | 5,45 |
| 10,80 | 10,0 | 19,0 | 10,0 | 0,6 | 16,67 | 6,0 |
| 11,00 | 10,0 | 19,0 | 10,0 | 0,67 | 14,93 | 6,7 |
| 11,20 | 11,0 | 21,0 | 11,0 | 0,6 | 18,33 | 5,45 |
| 11,40 | 11,0 | 20,0 | 11,0 | 0,67 | 16,42 | 6,09 |
| 11,60 | 11,0 | 21,0 | 11,0 | 0,87 | 12,64 | 7,91 |
| 11,80 | 11,0 | 24,0 | 11,0 | 0,8 | 13,75 | 7,27 |
| 12,00 | 11,0 | 23,0 | 11,0 | 0,0 | | 0,0 |

Probe CPT - Cone Penetration CPT 9
Strumento utilizzato... GOUDA 100 kN
Diagramma Resistenze qc fs

Committente : IL TORRAZZO s.r.l.
 Cantiere : Piano particolareggiato S. Anselmo
 Località : Nonantola, via S. Francesco

Data :29/05/2007



PROVA CPT 9

Strumento utilizzato
 Prova eseguita in data
 Profondità prova
 Falda

GOUDA 100 kN
 29/05/2007
 30,00 m
 1,80 m dal p.c.

| Profondità (m) | Lettura punta (Kg/cm ²) | Lettura laterale (Kg/cm ²) | qc (Kg/cm ²) | fs (Kg/cm ²) | qc/fs Begemann | fs/qcx100 (Schmertmann) |
|----------------|-------------------------------------|--|--------------------------|--------------------------|----------------|-------------------------|
| 0,20 | 0,0 | 0,0 | 0,0 | 0,0 | | |
| 0,40 | 0,0 | 0,0 | 0,0 | 0,8 | 0,0 | |
| 0,60 | 26,0 | 38,0 | 26,0 | 1,47 | 17,69 | 5,65 |
| 0,80 | 28,0 | 50,0 | 28,0 | 1,87 | 14,97 | 6,68 |
| 1,00 | 20,0 | 48,0 | 20,0 | 1,33 | 15,04 | 6,65 |
| 1,20 | 14,0 | 34,0 | 14,0 | 1,33 | 10,53 | 9,5 |
| 1,40 | 10,0 | 30,0 | 10,0 | 0,8 | 12,5 | 8,0 |
| 1,60 | 10,0 | 22,0 | 10,0 | 0,67 | 14,93 | 6,7 |
| 1,80 | 8,0 | 18,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 2,00 | 6,0 | 12,0 | 6,0 | 0,33 | 18,18 | 5,5 |
| 2,20 | 5,0 | 10,0 | 5,0 | 0,4 | 12,5 | 8,0 |
| 2,40 | 6,0 | 12,0 | 6,0 | 0,53 | 11,32 | 8,83 |
| 2,60 | 8,0 | 16,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 2,80 | 10,0 | 16,0 | 10,0 | 0,33 | 30,3 | 3,3 |
| 3,00 | 7,0 | 12,0 | 7,0 | 0,2 | 35,0 | 2,86 |
| 3,20 | 5,0 | 8,0 | 5,0 | 0,13 | 38,46 | 2,6 |
| 3,40 | 4,0 | 6,0 | 4,0 | 0,13 | 30,77 | 3,25 |
| 3,60 | 4,0 | 6,0 | 4,0 | 0,13 | 30,77 | 3,25 |
| 3,80 | 4,0 | 6,0 | 4,0 | 0,13 | 30,77 | 3,25 |
| 4,00 | 3,0 | 5,0 | 3,0 | 0,13 | 23,08 | 4,33 |
| 4,20 | 4,0 | 6,0 | 4,0 | 0,27 | 14,81 | 6,75 |
| 4,40 | 6,0 | 10,0 | 6,0 | 0,33 | 18,18 | 5,5 |
| 4,60 | 7,0 | 12,0 | 7,0 | 0,53 | 13,21 | 7,57 |
| 4,80 | 10,0 | 18,0 | 10,0 | 0,67 | 14,93 | 6,7 |
| 5,00 | 12,0 | 22,0 | 12,0 | 0,67 | 17,91 | 5,58 |
| 5,20 | 10,0 | 20,0 | 10,0 | 0,6 | 16,67 | 6,0 |
| 5,40 | 9,0 | 18,0 | 9,0 | 0,6 | 15,0 | 6,67 |
| 5,60 | 9,0 | 18,0 | 9,0 | 0,67 | 13,43 | 7,44 |
| 5,80 | 12,0 | 22,0 | 12,0 | 0,93 | 12,9 | 7,75 |
| 6,00 | 10,0 | 24,0 | 10,0 | 0,67 | 14,93 | 6,7 |
| 6,20 | 8,0 | 18,0 | 8,0 | 0,67 | 11,94 | 8,38 |
| 6,40 | 8,0 | 18,0 | 8,0 | 0,53 | 15,09 | 6,63 |
| 6,60 | 10,0 | 18,0 | 10,0 | 0,4 | 25,0 | 4,0 |
| 6,80 | 8,0 | 14,0 | 8,0 | 0,27 | 29,63 | 3,38 |
| 7,00 | 4,0 | 8,0 | 4,0 | 0,27 | 14,81 | 6,75 |
| 7,20 | 6,0 | 10,0 | 6,0 | 0,13 | 46,15 | 2,17 |
| 7,40 | 8,0 | 10,0 | 8,0 | 0,27 | 29,63 | 3,38 |
| 7,60 | 10,0 | 14,0 | 10,0 | 0,93 | 10,75 | 9,3 |
| 7,80 | 12,0 | 26,0 | 12,0 | 0,27 | 44,44 | 2,25 |
| 8,00 | 6,0 | 10,0 | 6,0 | 0,2 | 30,0 | 3,33 |
| 8,20 | 6,0 | 9,0 | 6,0 | 0,27 | 22,22 | 4,5 |
| 8,40 | 8,0 | 12,0 | 8,0 | 0,2 | 40,0 | 2,5 |
| 8,60 | 7,0 | 10,0 | 7,0 | 0,27 | 25,93 | 3,86 |
| 8,80 | 12,0 | 16,0 | 12,0 | 0,13 | 92,31 | 1,08 |
| 9,00 | 16,0 | 18,0 | 16,0 | 0,27 | 59,26 | 1,69 |
| 9,20 | 6,0 | 10,0 | 6,0 | 0,27 | 22,22 | 4,5 |
| 9,40 | 6,0 | 10,0 | 6,0 | 0,27 | 22,22 | 4,5 |
| 9,60 | 6,0 | 10,0 | 6,0 | 0,4 | 15,0 | 6,67 |
| 9,80 | 10,0 | 16,0 | 10,0 | 0,27 | 37,04 | 2,7 |
| 10,00 | 10,0 | 14,0 | 10,0 | 0,4 | 25,0 | 4,0 |
| 10,20 | 10,0 | 16,0 | 10,0 | 0,53 | 18,87 | 5,3 |
| 10,40 | 8,0 | 16,0 | 8,0 | 0,6 | 13,33 | 7,5 |
| 10,60 | 9,0 | 18,0 | 9,0 | 0,8 | 11,25 | 8,89 |
| 10,80 | 10,0 | 22,0 | 10,0 | 0,67 | 14,93 | 6,7 |
| 11,00 | 8,0 | 18,0 | 8,0 | 0,47 | 17,02 | 5,88 |
| 11,20 | 7,0 | 14,0 | 7,0 | 0,53 | 13,21 | 7,57 |
| 11,40 | 8,0 | 16,0 | 8,0 | 0,53 | 15,09 | 6,63 |
| 11,60 | 8,0 | 16,0 | 8,0 | 0,67 | 11,94 | 8,38 |
| 11,80 | 10,0 | 20,0 | 10,0 | 0,6 | 16,67 | 6,0 |
| 12,00 | 9,0 | 18,0 | 9,0 | 0,4 | 22,5 | 4,44 |
| 12,20 | 8,0 | 14,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 12,40 | 6,0 | 12,0 | 6,0 | 0,4 | 15,0 | 6,67 |
| 12,60 | 6,0 | 12,0 | 6,0 | 0,4 | 15,0 | 6,67 |
| 12,80 | 10,0 | 16,0 | 10,0 | 0,4 | 25,0 | 4,0 |
| 13,00 | 8,0 | 14,0 | 8,0 | 0,47 | 17,02 | 5,88 |
| 13,20 | 9,0 | 16,0 | 9,0 | 0,53 | 16,98 | 5,89 |
| 13,40 | 10,0 | 18,0 | 10,0 | 0,53 | 18,87 | 5,3 |
| 13,60 | 10,0 | 18,0 | 10,0 | 0,67 | 14,93 | 6,7 |
| 13,80 | 12,0 | 22,0 | 12,0 | 0,93 | 12,9 | 7,75 |
| 14,00 | 14,0 | 26,0 | 14,0 | 0,93 | 15,05 | 6,64 |
| 14,20 | 14,0 | 28,0 | 14,0 | 0,93 | 15,05 | 6,64 |
| 14,40 | 14,0 | 28,0 | 14,0 | 0,93 | 15,05 | 6,64 |
| 14,60 | 12,0 | 26,0 | 12,0 | 0,93 | 12,9 | 7,75 |
| 14,80 | 10,0 | 24,0 | 10,0 | 0,8 | 12,5 | 8,0 |

| | | | | | | |
|-------|-------|-------|-------|------|--------|-------|
| 15,00 | 12,0 | 24,0 | 12,0 | 0,8 | 15,0 | 6,67 |
| 15,20 | 12,0 | 24,0 | 12,0 | 0,67 | 17,91 | 5,58 |
| 15,40 | 12,0 | 22,0 | 12,0 | 0,67 | 17,91 | 5,58 |
| 15,60 | 12,0 | 22,0 | 12,0 | 0,27 | 44,44 | 2,25 |
| 15,80 | 28,0 | 24,0 | 28,0 | 0,67 | 41,79 | 2,39 |
| 16,00 | 26,0 | 32,0 | 26,0 | 0,8 | 32,5 | 3,08 |
| 16,20 | 26,0 | 36,0 | 26,0 | 0,8 | 32,5 | 3,08 |
| 16,40 | 26,0 | 38,0 | 26,0 | 0,93 | 27,96 | 3,58 |
| 16,60 | 18,0 | 38,0 | 18,0 | 1,47 | 12,24 | 8,17 |
| 16,80 | 10,0 | 32,0 | 10,0 | 1,53 | 6,54 | 15,3 |
| 17,00 | 9,0 | 32,0 | 9,0 | 0,6 | 15,0 | 6,67 |
| 17,20 | 9,0 | 24,0 | 9,0 | 0,67 | 13,43 | 7,44 |
| 17,40 | 12,0 | 18,0 | 12,0 | 0,67 | 17,91 | 5,58 |
| 17,60 | 18,0 | 22,0 | 18,0 | 0,93 | 19,35 | 5,17 |
| 17,80 | 14,0 | 28,0 | 14,0 | 0,67 | 20,9 | 4,79 |
| 18,00 | 30,0 | 28,0 | 30,0 | 0,8 | 37,5 | 2,67 |
| 18,20 | 10,0 | 40,0 | 10,0 | 0,8 | 12,5 | 8,0 |
| 18,40 | 8,0 | 22,0 | 8,0 | 0,47 | 17,02 | 5,88 |
| 18,60 | 7,0 | 20,0 | 7,0 | 0,4 | 17,5 | 5,71 |
| 18,80 | 10,0 | 14,0 | 10,0 | 0,4 | 25,0 | 4,0 |
| 19,00 | 8,0 | 16,0 | 8,0 | 0,53 | 15,09 | 6,63 |
| 19,20 | 10,0 | 14,0 | 10,0 | 0,53 | 18,87 | 5,3 |
| 19,40 | 8,0 | 18,0 | 8,0 | 0,6 | 13,33 | 7,5 |
| 19,60 | 9,0 | 16,0 | 9,0 | 0,67 | 13,43 | 7,44 |
| 19,80 | 12,0 | 18,0 | 12,0 | 0,4 | 30,0 | 3,33 |
| 20,00 | 12,0 | 18,0 | 12,0 | 1,73 | 6,94 | 14,42 |
| 20,20 | 14,0 | 40,0 | 14,0 | 1,33 | 10,53 | 9,5 |
| 20,40 | 24,0 | 34,0 | 24,0 | 1,2 | 20,0 | 5,0 |
| 20,60 | 28,0 | 44,0 | 28,0 | 1,33 | 21,05 | 4,75 |
| 20,80 | 12,0 | 32,0 | 12,0 | 0,8 | 15,0 | 6,67 |
| 21,00 | 12,0 | 32,0 | 12,0 | 0,67 | 17,91 | 5,58 |
| 21,20 | 16,0 | 24,0 | 16,0 | 0,93 | 17,2 | 5,81 |
| 21,40 | 16,0 | 26,0 | 16,0 | 0,93 | 17,2 | 5,81 |
| 21,60 | 14,0 | 30,0 | 14,0 | 1,07 | 13,08 | 7,64 |
| 21,80 | 16,0 | 28,0 | 16,0 | 1,07 | 14,95 | 6,69 |
| 22,00 | 18,0 | 32,0 | 18,0 | 1,07 | 16,82 | 5,94 |
| 22,20 | 14,0 | 34,0 | 14,0 | 0,93 | 15,05 | 6,64 |
| 22,40 | 14,0 | 30,0 | 14,0 | 0,93 | 15,05 | 6,64 |
| 22,60 | 12,0 | 28,0 | 12,0 | 0,93 | 12,9 | 7,75 |
| 22,80 | 18,0 | 26,0 | 18,0 | 1,07 | 16,82 | 5,94 |
| 23,00 | 14,0 | 32,0 | 14,0 | 0,67 | 20,9 | 4,79 |
| 23,20 | 8,0 | 30,0 | 8,0 | 0,53 | 15,09 | 6,63 |
| 23,40 | 10,0 | 18,0 | 10,0 | 0,4 | 25,0 | 4,0 |
| 23,60 | 10,0 | 18,0 | 10,0 | 0,27 | 37,04 | 2,7 |
| 23,80 | 14,0 | 16,0 | 14,0 | 0,53 | 26,42 | 3,79 |
| 24,00 | 16,0 | 18,0 | 16,0 | 0,13 | 123,08 | 0,81 |
| 24,20 | 16,0 | 18,0 | 16,0 | 0,93 | 17,2 | 5,81 |
| 24,40 | 14,0 | 34,0 | 14,0 | 0,8 | 17,5 | 5,71 |
| 24,60 | 10,0 | 28,0 | 10,0 | 1,2 | 8,33 | 12,0 |
| 24,80 | 12,0 | 30,0 | 12,0 | 1,33 | 9,02 | 11,08 |
| 25,00 | 100,0 | 80,0 | 100,0 | 0,67 | 149,25 | 0,67 |
| 25,20 | 150,0 | 120,0 | 150,0 | 0,67 | 223,88 | 0,45 |
| 25,40 | 170,0 | 160,0 | 170,0 | 1,33 | 127,82 | 0,78 |
| 25,60 | 110,0 | 180,0 | 110,0 | 1,33 | 82,71 | 1,21 |
| 25,80 | 100,0 | 130,0 | 100,0 | 0,67 | 149,25 | 0,67 |
| 26,00 | 120,0 | 120,0 | 120,0 | 1,33 | 90,23 | 1,11 |
| 26,20 | 80,0 | 130,0 | 80,0 | 0,67 | 119,4 | 0,84 |
| 26,40 | 110,0 | 100,0 | 110,0 | 1,33 | 82,71 | 1,21 |
| 26,60 | 120,0 | 120,0 | 120,0 | 1,33 | 90,23 | 1,11 |
| 26,80 | 90,0 | 140,0 | 90,0 | 1,33 | 67,67 | 1,48 |
| 27,00 | 100,0 | 110,0 | 100,0 | 1,33 | 75,19 | 1,33 |
| 27,20 | 120,0 | 120,0 | 120,0 | 1,33 | 90,23 | 1,11 |
| 27,40 | 100,0 | 140,0 | 100,0 | 1,33 | 75,19 | 1,33 |
| 27,60 | 130,0 | 120,0 | 130,0 | 1,33 | 97,74 | 1,02 |
| 27,80 | 120,0 | 150,0 | 120,0 | 0,93 | 129,03 | 0,78 |
| 28,00 | 74,0 | 140,0 | 74,0 | 0,67 | 110,45 | 0,91 |
| 28,20 | 90,0 | 100,0 | 90,0 | 0,33 | 272,73 | 0,37 |
| 28,40 | 95,0 | 100,0 | 95,0 | 0,67 | 141,79 | 0,71 |
| 28,60 | 90,0 | 100,0 | 90,0 | 1,47 | 61,22 | 1,63 |
| 28,80 | 20,0 | 160,0 | 20,0 | 1,47 | 13,61 | 7,35 |
| 29,00 | 18,0 | 42,0 | 18,0 | 1,33 | 13,53 | 7,39 |
| 29,20 | 18,0 | 40,0 | 18,0 | 1,33 | 13,53 | 7,39 |
| 29,40 | 22,0 | 38,0 | 22,0 | 1,2 | 18,33 | 5,45 |
| 29,60 | 18,0 | 42,0 | 18,0 | 1,33 | 13,53 | 7,39 |
| 29,80 | 20,0 | 36,0 | 20,0 | 1,2 | 16,67 | 6,0 |
| 30,00 | 22,0 | 40,0 | 12,0 | 0,0 | | 0,0 |



41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. 57-98

PROVA PENETROMETRICA STATICA LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 1

2.010496-43

- committente : GEOM SERAFINI
- lavoro : LOTTIZZAZIONE "CAROLINA"
- località : NONANTOLA-VIA DI MEZZO
- note :

- data : 16/12/1998
- quota inizio : Piano Campagna
- prof. falda : 1,90 m da quota inizio
- pagina : 1

| Prof. m | LP kg/cm ² | LL kg/cm ² | Rp kg/cm ² | RL kg/cm ² | Rp/RI | Prof. m | LP kg/cm ² | LL kg/cm ² | Rp kg/cm ² | RL kg/cm ² | Rp/RI |
|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|
| 0,20 | --- | 1,0 | -- | 0,60 | --- | 7,80 | 7,0 | 15,0 | 7,0 | 0,27 | 26,0 |
| 0,40 | 11,0 | 20,0 | 11,0 | 0,73 | 15,0 | 8,00 | 4,0 | 8,0 | 4,0 | 0,20 | 20,0 |
| 0,60 | 12,0 | 23,0 | 12,0 | 0,93 | 13,0 | 8,20 | 8,0 | 11,0 | 8,0 | 0,33 | 24,0 |
| 0,80 | 14,0 | 28,0 | 14,0 | 0,93 | 15,0 | 8,40 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 |
| 1,00 | 34,0 | 48,0 | 34,0 | 1,27 | 27,0 | 8,60 | 11,0 | 17,0 | 11,0 | 0,47 | 24,0 |
| 1,20 | 36,0 | 55,0 | 36,0 | 1,60 | 22,0 | 8,80 | 10,0 | 17,0 | 10,0 | 0,27 | 37,0 |
| 1,40 | 21,0 | 45,0 | 21,0 | 1,07 | 20,0 | 9,00 | 10,0 | 14,0 | 10,0 | 0,47 | 21,0 |
| 1,60 | 16,0 | 32,0 | 16,0 | 0,60 | 27,0 | 9,20 | 9,0 | 16,0 | 9,0 | 0,40 | 22,0 |
| 1,80 | 9,0 | 18,0 | 9,0 | 0,47 | 19,0 | 9,40 | 9,0 | 15,0 | 9,0 | 0,53 | 17,0 |
| 2,00 | 11,0 | 18,0 | 11,0 | 0,60 | 18,0 | 9,60 | 12,0 | 20,0 | 12,0 | 0,53 | 22,0 |
| 2,20 | 17,0 | 26,0 | 17,0 | 0,80 | 21,0 | 9,80 | 8,0 | 16,0 | 8,0 | 0,40 | 20,0 |
| 2,40 | 9,0 | 21,0 | 9,0 | 0,67 | 13,0 | 10,00 | 8,0 | 14,0 | 8,0 | 0,33 | 24,0 |
| 2,60 | 9,0 | 19,0 | 9,0 | 0,47 | 19,0 | 10,20 | 13,0 | 18,0 | 13,0 | 0,47 | 28,0 |
| 2,80 | 13,0 | 20,0 | 13,0 | 0,47 | 28,0 | 10,40 | 13,0 | 20,0 | 13,0 | 0,67 | 19,0 |
| 3,00 | 9,0 | 16,0 | 9,0 | 0,47 | 19,0 | 10,60 | 11,0 | 21,0 | 11,0 | 0,53 | 21,0 |
| 3,20 | 11,0 | 18,0 | 11,0 | 0,60 | 18,0 | 10,80 | 12,0 | 20,0 | 12,0 | 0,67 | 18,0 |
| 3,40 | 15,0 | 24,0 | 15,0 | 0,60 | 25,0 | 11,00 | 11,0 | 21,0 | 11,0 | 0,67 | 16,0 |
| 3,60 | 15,0 | 24,0 | 15,0 | 0,53 | 28,0 | 11,20 | 13,0 | 23,0 | 13,0 | 0,67 | 19,0 |
| 3,80 | 12,0 | 20,0 | 12,0 | 0,60 | 20,0 | 11,40 | 13,0 | 23,0 | 13,0 | 0,73 | 18,0 |
| 4,00 | 11,0 | 20,0 | 11,0 | 0,60 | 18,0 | 11,60 | 13,0 | 24,0 | 13,0 | 0,87 | 15,0 |
| 4,20 | 9,0 | 18,0 | 9,0 | 0,27 | 34,0 | 11,80 | 14,0 | 27,0 | 14,0 | 0,87 | 16,0 |
| 4,40 | 10,0 | 14,0 | 10,0 | 0,33 | 30,0 | 12,00 | 14,0 | 27,0 | 14,0 | 1,00 | 14,0 |
| 4,60 | 9,0 | 14,0 | 9,0 | 0,27 | 34,0 | 12,20 | 15,0 | 30,0 | 15,0 | 0,93 | 16,0 |
| 4,80 | 7,0 | 11,0 | 7,0 | 0,20 | 35,0 | 12,40 | 14,0 | 28,0 | 14,0 | 0,93 | 15,0 |
| 5,00 | 7,0 | 10,0 | 7,0 | 0,40 | 17,0 | 12,60 | 13,0 | 27,0 | 13,0 | 0,67 | 19,0 |
| 5,20 | 8,0 | 14,0 | 8,0 | 0,33 | 24,0 | 12,80 | 10,0 | 20,0 | 10,0 | 0,60 | 17,0 |
| 5,40 | 8,0 | 13,0 | 8,0 | 0,27 | 30,0 | 13,00 | 8,0 | 17,0 | 8,0 | 0,60 | 13,0 |
| 5,60 | 8,0 | 12,0 | 8,0 | 0,27 | 30,0 | 13,20 | 9,0 | 18,0 | 9,0 | 0,53 | 17,0 |
| 5,80 | 10,0 | 14,0 | 10,0 | 0,27 | 37,0 | 13,40 | 10,0 | 18,0 | 10,0 | 0,73 | 14,0 |
| 6,00 | 5,0 | 9,0 | 5,0 | 0,07 | 75,0 | 13,60 | 10,0 | 21,0 | 10,0 | 0,67 | 15,0 |
| 6,20 | 14,0 | 15,0 | 14,0 | 0,47 | 30,0 | 13,80 | 10,0 | 20,0 | 10,0 | 0,67 | 15,0 |
| 6,40 | 7,0 | 14,0 | 7,0 | 0,47 | 15,0 | 14,00 | 9,0 | 19,0 | 9,0 | 0,67 | 13,0 |
| 6,60 | 9,0 | 16,0 | 9,0 | 0,27 | 34,0 | 14,20 | 11,0 | 21,0 | 11,0 | 0,60 | 18,0 |
| 6,80 | 17,0 | 21,0 | 17,0 | 0,60 | 28,0 | 14,40 | 10,0 | 19,0 | 10,0 | 0,67 | 15,0 |
| 7,00 | 8,0 | 17,0 | 8,0 | 0,40 | 20,0 | 14,60 | 10,0 | 20,0 | 10,0 | 0,67 | 15,0 |
| 7,20 | 9,0 | 15,0 | 9,0 | 0,27 | 34,0 | 14,80 | 8,0 | 18,0 | 8,0 | 0,67 | 12,0 |
| 7,40 | 11,0 | 15,0 | 11,0 | 0,40 | 27,0 | 15,00 | 40,0 | 50,0 | 40,0 | --- | --- |
| 7,60 | 12,0 | 18,0 | 12,0 | 0,53 | 22,0 | | | | | | |

- PENETROMETRO STATICO tipo GOUDA da 10 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)



41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. 57-98

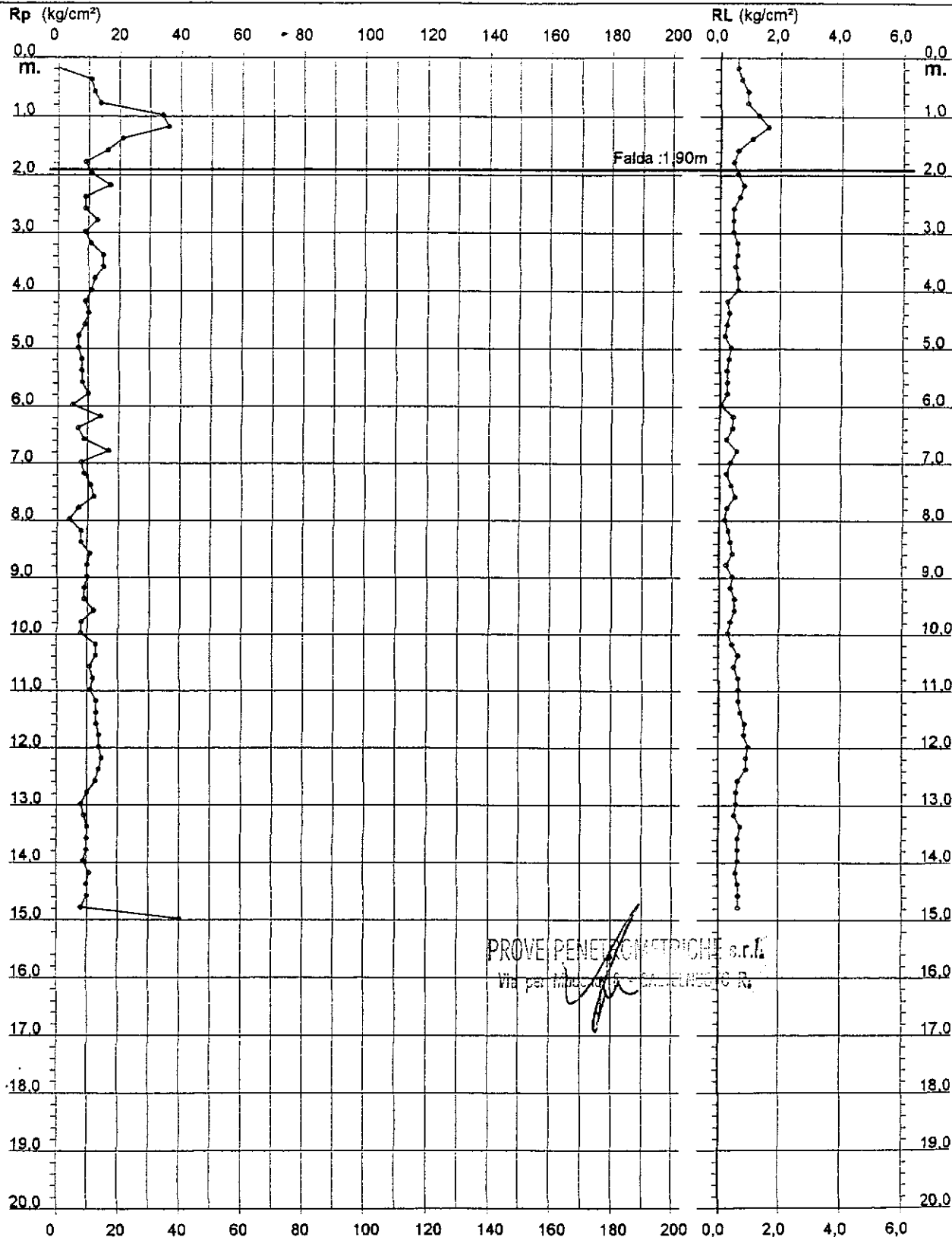
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

2.010496-43

- committente : GEOM SERAFINI
- lavoro : LOTTIZZAZIONE "CAROLINA"
- località : NONANTOLA-VIA DI MEZZO

- data : 16/12/1998
- quota inizio : Piano Campagna
- prof. falda : 1,90 m da quota inizio
- scala vert. : 1 : 100



PROVE PENETROMETRICHE s.r.l.
Via per Modena, 8 - CASTELNUOVO R.



41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. 57-98

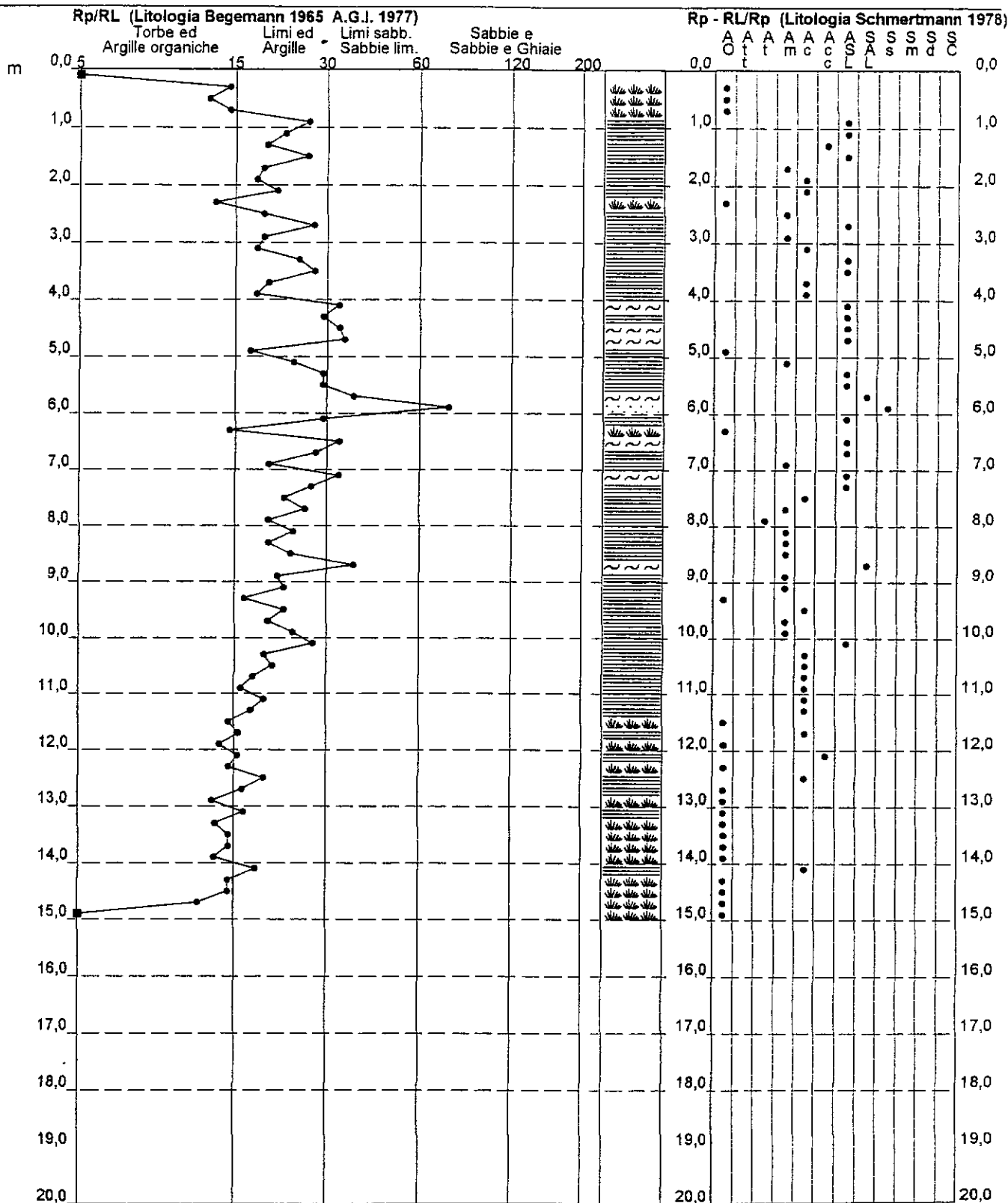
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 1

2.010496-43

- committente : GEOM SERAFINI
 - lavoro : LOTTIZZAZIONE "CAROLINA"
 - località : NONANTOLA-VIA DI MEZZO
 - note :

- data : 16/12/1998
 - quota inizio : Piano Campagna
 - prof. falda : 1,90 m da quota inizio
 - scala vert. : 1 : 100





di Paolo Crestani & C.
Sede legale: Via Degli Artigiani n. 4
Tel. 0535/52637 - Tel. auto 0337/562805
41036 MEDOLLA (MO)

Diagramma prova penetrometrica statica

COMMITTENTE: **F.lli BARALDI IMCAM**

CANTIERE: **Via di Mezzo - NONANTOLA - MO**

DATA PROVA: **31 - 10 - 1998**

Rp: resistenza di punta (Kg/cmq)
Rai: resistenza giroto laterale (Kg/cmq)
Rp/Rai rapporto Begemann

H20 - 3 m. da p.c.

C.P.T. N° **1**

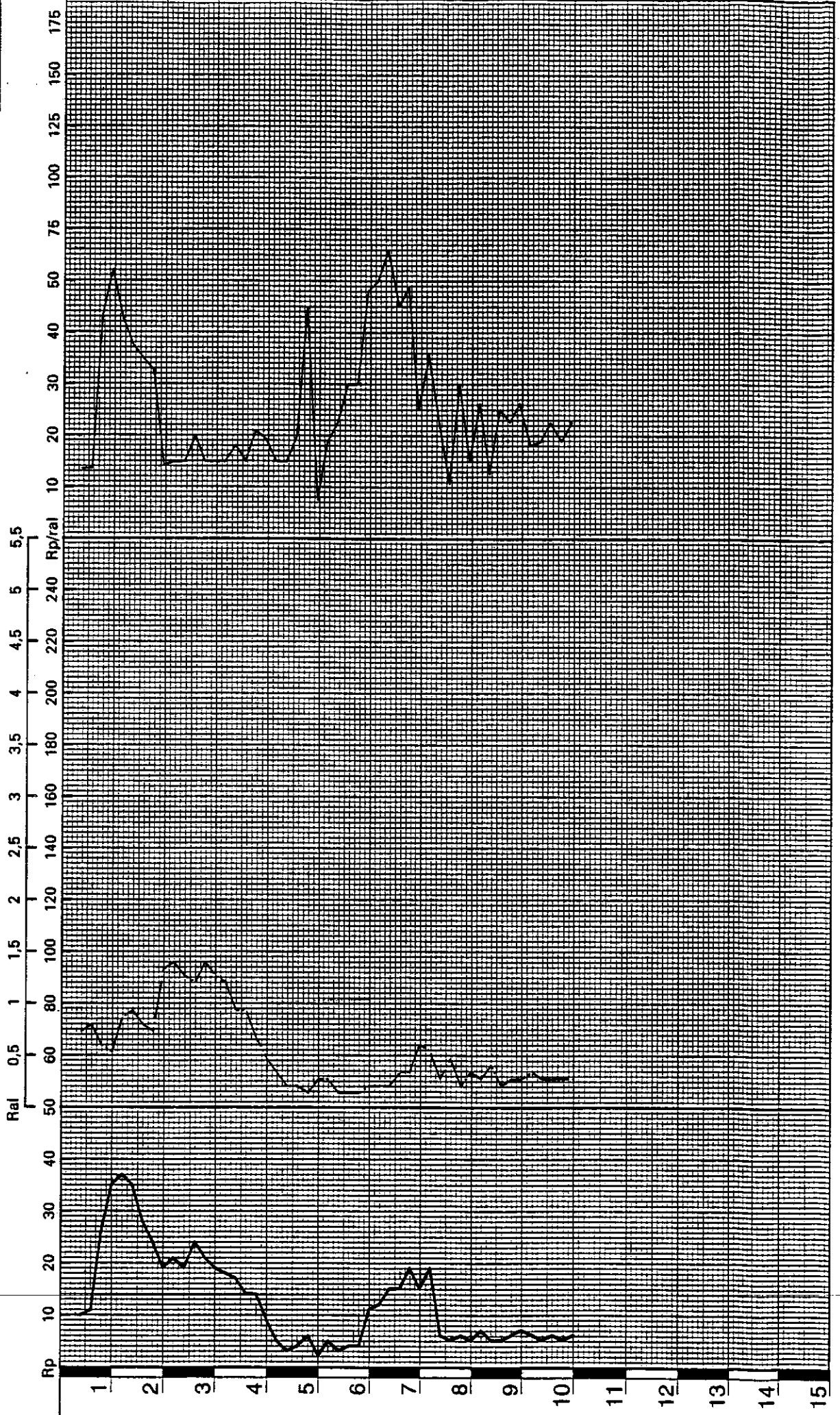


Diagramma prova penetrometrica statica

COMMITTENTE: **F.lli BARALDI IMCAM**

CANTIERE : **Vib di Mezzo - NONANTOLA -MO**

DATA PROVA : **31 - 10 - 1998**

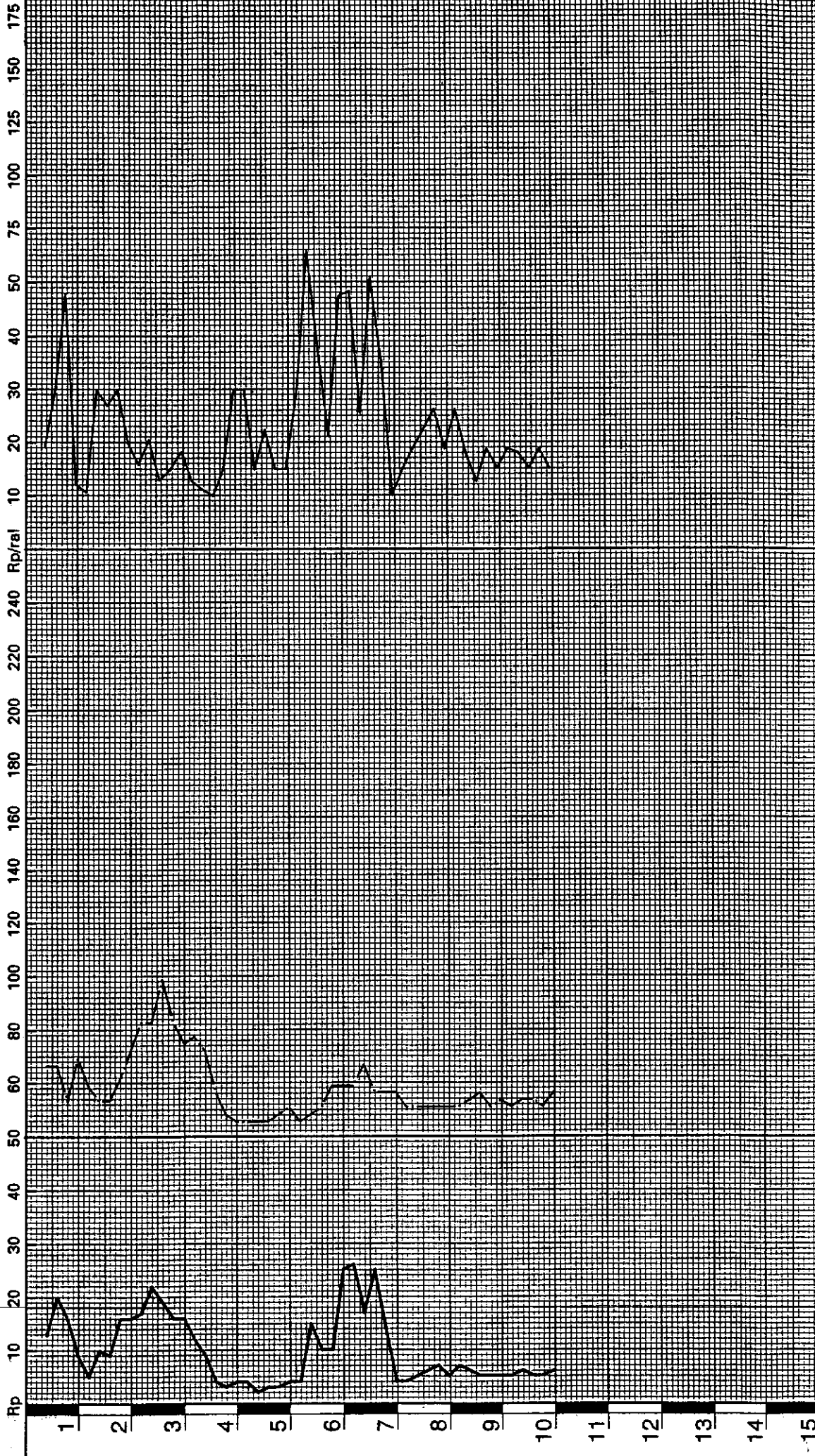
Rp resistenza di punta (Kg/cm²)
 Ral resistenza attrito laterale (Kg/cm²)
 Rp/Ral rapporto Begemann

H20 - 3 m. da p.c.

C.P.T.

N° **3**

Ral 0,5 1 1,5 2 2,5 3 3,5 4 4,5 5 5,5
 Rp/ral 10 20 30 40 50 60 80 100 120 140 160 180 200 220 240



TABULATO DI CALCOLO PROVA PENETROMETRICA STATICA (C.P.T.)

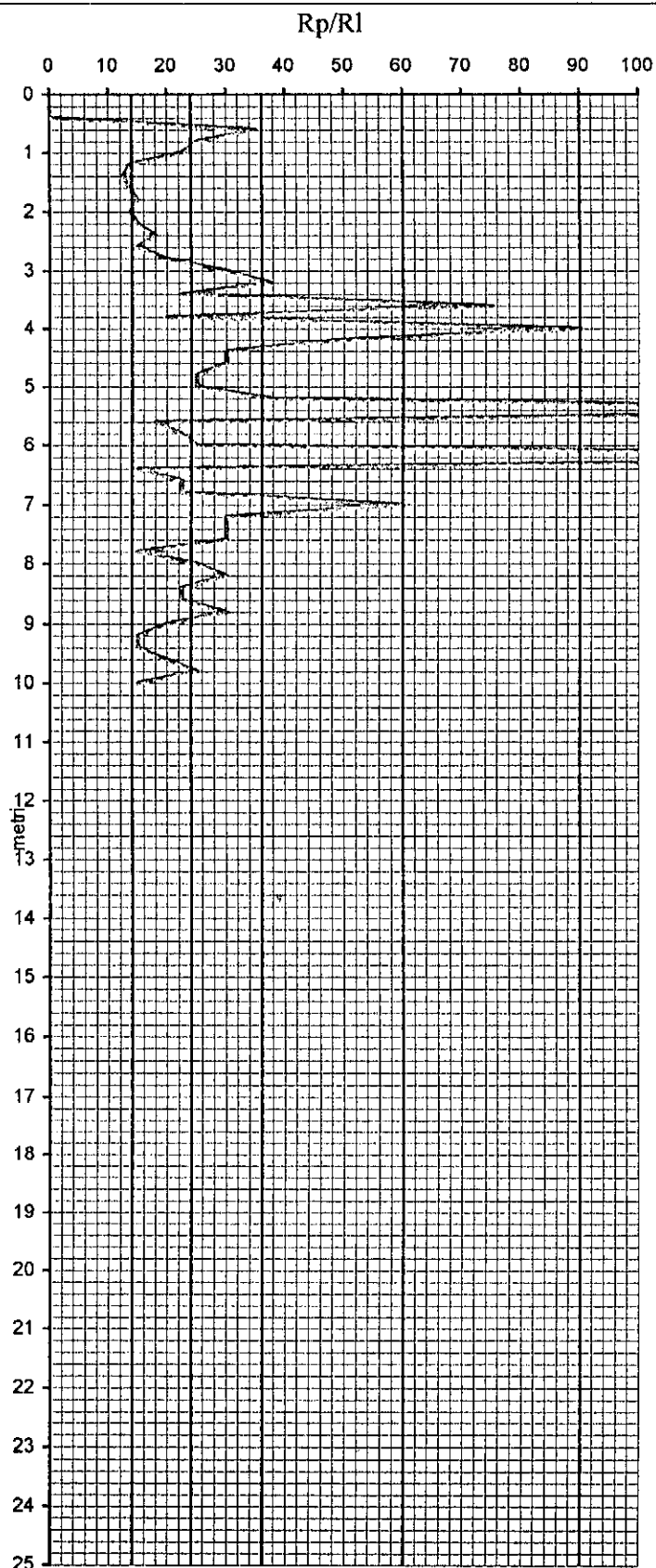
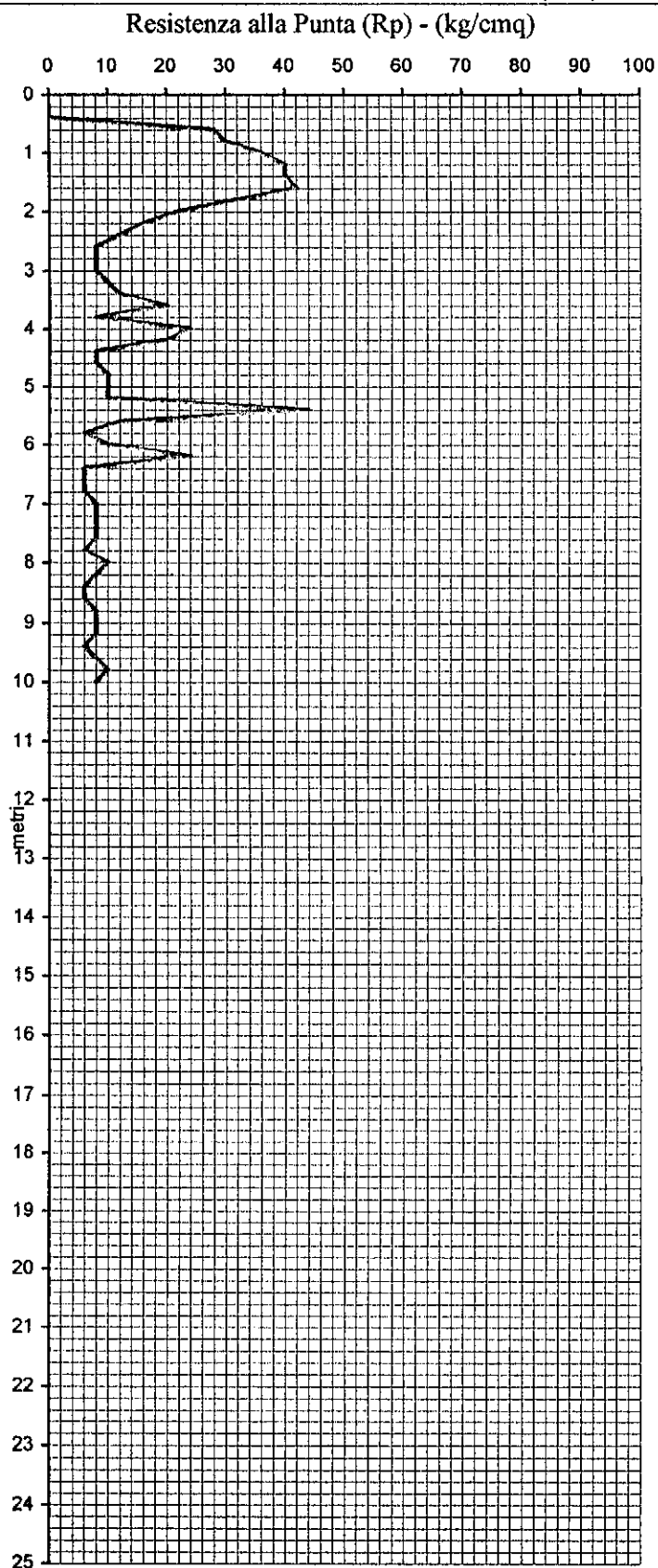
Prova n°: **1** Quota (m): **25.0** Data: **04/09/98**
 Proprietà: **Isabella di Cavallo Ombretta e C. s.n.c.**
 Località: **Strada S. Lorenzo - Nonantola (MO)**

| Prof. | P | P+L | Rp | RI | Rp/RI | FR% | Falda |
|--------------|-----------------|-----------------|-----------------|-----------------|--------------|--------------------|--------------|
| (m) | (kg/cmq) | (kg/cmq) | (kg/cmq) | (kg/cmq) | | (RI/Rp*100) | (m) |
| 0.2 | 0.00 | 0.00 | 0.00 | - | - | - | - |
| 0.4 | 0.00 | 0.00 | 0.00 | - | - | - | - |
| 0.6 | 28.00 | 40.00 | 28.00 | 0.80 | 35 | 2.9 | - |
| 0.8 | 30.00 | 48.00 | 30.00 | 1.20 | 25 | 4.0 | - |
| 1.0 | 36.00 | 60.00 | 36.00 | 1.60 | 23 | 4.4 | - |
| 1.2 | 40.00 | 84.00 | 40.00 | 2.93 | 14 | 7.3 | - |
| 1.4 | 40.00 | 88.00 | 40.00 | 3.20 | 13 | 8.0 | - |
| 1.6 | 42.00 | 88.00 | 42.00 | 3.07 | 14 | 7.3 | - |
| 1.8 | 32.00 | 64.00 | 32.00 | 2.13 | 15 | 6.7 | - |
| 2.0 | 22.00 | 46.00 | 22.00 | 1.60 | 14 | 7.3 | - |
| 2.2 | 16.00 | 32.00 | 16.00 | 1.07 | 15 | 6.7 | - |
| 2.4 | 12.00 | 22.00 | 12.00 | 0.67 | 18 | 5.6 | - |
| 2.6 | 8.00 | 16.00 | 8.00 | 0.53 | 15 | 6.7 | - |
| 2.8 | 8.00 | 14.00 | 8.00 | 0.40 | 20 | 5.0 | - |
| 3.0 | 8.00 | 12.00 | 8.00 | 0.27 | 30 | 3.3 | ~~~~~ |
| 3.2 | 10.00 | 14.00 | 10.00 | 0.27 | 38 | 2.7 | ~~~~~ |
| 3.4 | 12.00 | 20.00 | 12.00 | 0.53 | 23 | 4.4 | ~~~~~ |
| 3.6 | 20.00 | 24.00 | 20.00 | 0.27 | 75 | 1.3 | ~~~~~ |
| 3.8 | 8.00 | 14.00 | 8.00 | 0.40 | 20 | 5.0 | ~~~~~ |
| 4.0 | 24.00 | 28.00 | 24.00 | 0.27 | 90 | 1.1 | ~~~~~ |
| 4.2 | 20.00 | 26.00 | 20.00 | 0.40 | 50 | 2.0 | ~~~~~ |
| 4.4 | 8.00 | 12.00 | 8.00 | 0.27 | 30 | 3.3 | ~~~~~ |
| 4.6 | 8.00 | 12.00 | 8.00 | 0.27 | 30 | 3.3 | ~~~~~ |
| 4.8 | 10.00 | 16.00 | 10.00 | 0.40 | 25 | 4.0 | ~~~~~ |
| 5.0 | 10.00 | 16.00 | 10.00 | 0.40 | 25 | 4.0 | ~~~~~ |
| 5.2 | 10.00 | 14.00 | 10.00 | 0.27 | 38 | 2.7 | ~~~~~ |
| 5.4 | 44.00 | 48.00 | 44.00 | 0.27 | 165 | 0.6 | ~~~~~ |
| 5.6 | 12.00 | 22.00 | 12.00 | 0.67 | 18 | 5.6 | ~~~~~ |
| 5.8 | 6.00 | 10.00 | 6.00 | 0.27 | 23 | 4.4 | ~~~~~ |
| 6.0 | 10.00 | 16.00 | 10.00 | 0.40 | 25 | 4.0 | ~~~~~ |
| 6.2 | 24.00 | 26.00 | 24.00 | 0.13 | 180 | 0.6 | ~~~~~ |
| 6.4 | 6.00 | 12.00 | 6.00 | 0.40 | 15 | 6.7 | ~~~~~ |
| 6.6 | 6.00 | 10.00 | 6.00 | 0.27 | 23 | 4.4 | ~~~~~ |
| 6.8 | 6.00 | 10.00 | 6.00 | 0.27 | 23 | 4.4 | ~~~~~ |
| 7.0 | 8.00 | 10.00 | 8.00 | 0.13 | 60 | 1.7 | ~~~~~ |
| 7.2 | 8.00 | 12.00 | 8.00 | 0.27 | 30 | 3.3 | ~~~~~ |
| 7.4 | 8.00 | 12.00 | 8.00 | 0.27 | 30 | 3.3 | ~~~~~ |
| 7.6 | 8.00 | 12.00 | 8.00 | 0.27 | 30 | 3.3 | ~~~~~ |
| 7.8 | 6.00 | 12.00 | 6.00 | 0.40 | 15 | 6.7 | ~~~~~ |
| 8.0 | 10.00 | 16.00 | 10.00 | 0.40 | 25 | 4.0 | ~~~~~ |
| 8.2 | 8.00 | 12.00 | 8.00 | 0.27 | 30 | 3.3 | ~~~~~ |
| 8.4 | 6.00 | 10.00 | 6.00 | 0.27 | 23 | 4.4 | ~~~~~ |
| 8.6 | 6.00 | 10.00 | 6.00 | 0.27 | 23 | 4.4 | ~~~~~ |
| 8.8 | 8.00 | 12.00 | 8.00 | 0.27 | 30 | 3.3 | ~~~~~ |
| 9.0 | 8.00 | 14.00 | 8.00 | 0.40 | 20 | 5.0 | ~~~~~ |
| 9.2 | 8.00 | 16.00 | 8.00 | 0.53 | 15 | 6.7 | ~~~~~ |
| 9.4 | 6.00 | 12.00 | 6.00 | 0.40 | 15 | 6.7 | ~~~~~ |
| 9.6 | 8.00 | 14.00 | 8.00 | 0.40 | 20 | 5.0 | ~~~~~ |
| 9.8 | 10.00 | 16.00 | 10.00 | 0.40 | 25 | 4.0 | ~~~~~ |
| 10.0 | 8.00 | 16.00 | 8.00 | 0.53 | 15 | 6.7 | ~~~~~ |

PROVA PENETROMETRICA STATICA (C.P.T.)

Prova n°: 1 Quota (m): 25.0
 Proprietà: Isabella di Cavallo Ombretta e C. s.n.c.
 Località: Strada S. Lorenzo - Nonantola (MO)

Data: 04/09/98



Legenda: Ao argille organiche; A argille; Al argille limose; La-L limi argillosi - limi; Ls-S limi sabbiosi-sabbie; S sabbie

TABULATO DI CALCOLO PROVA PENETROMETRICA STATICA (C.P.T.)

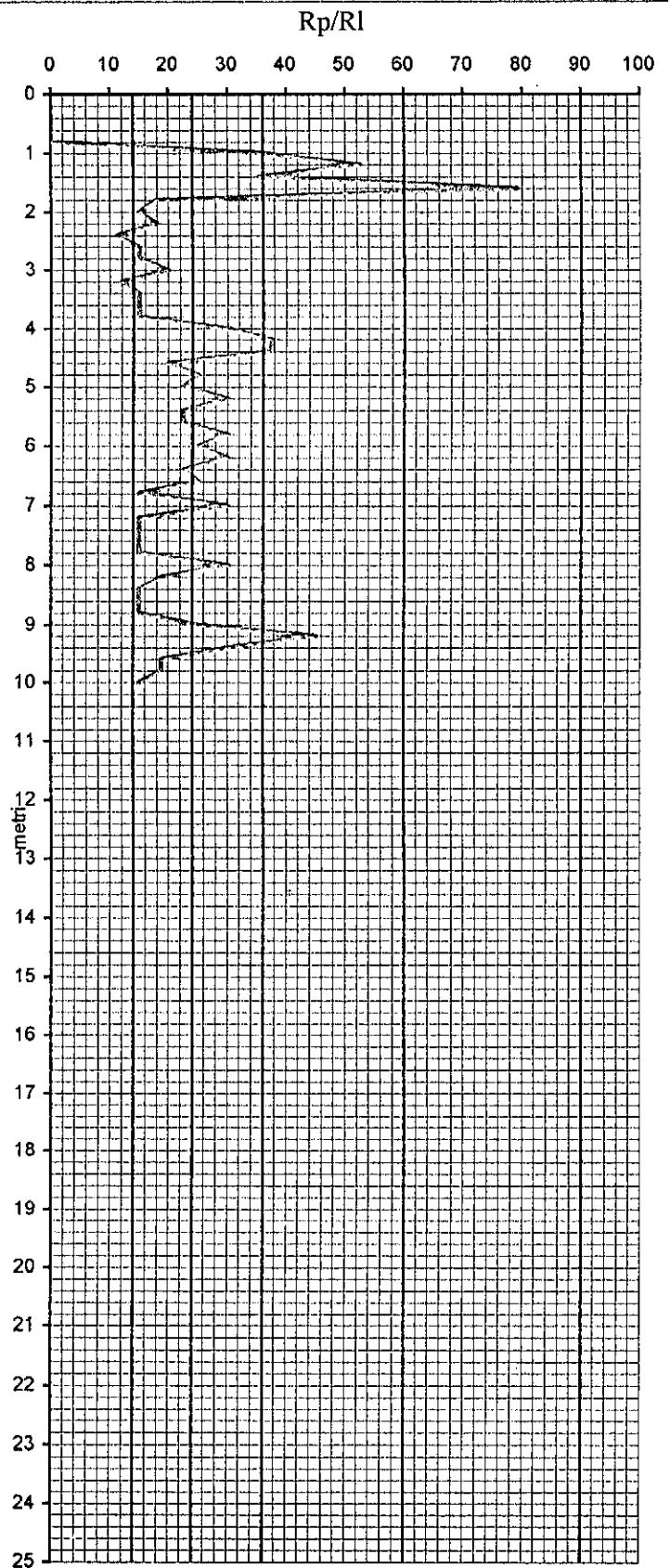
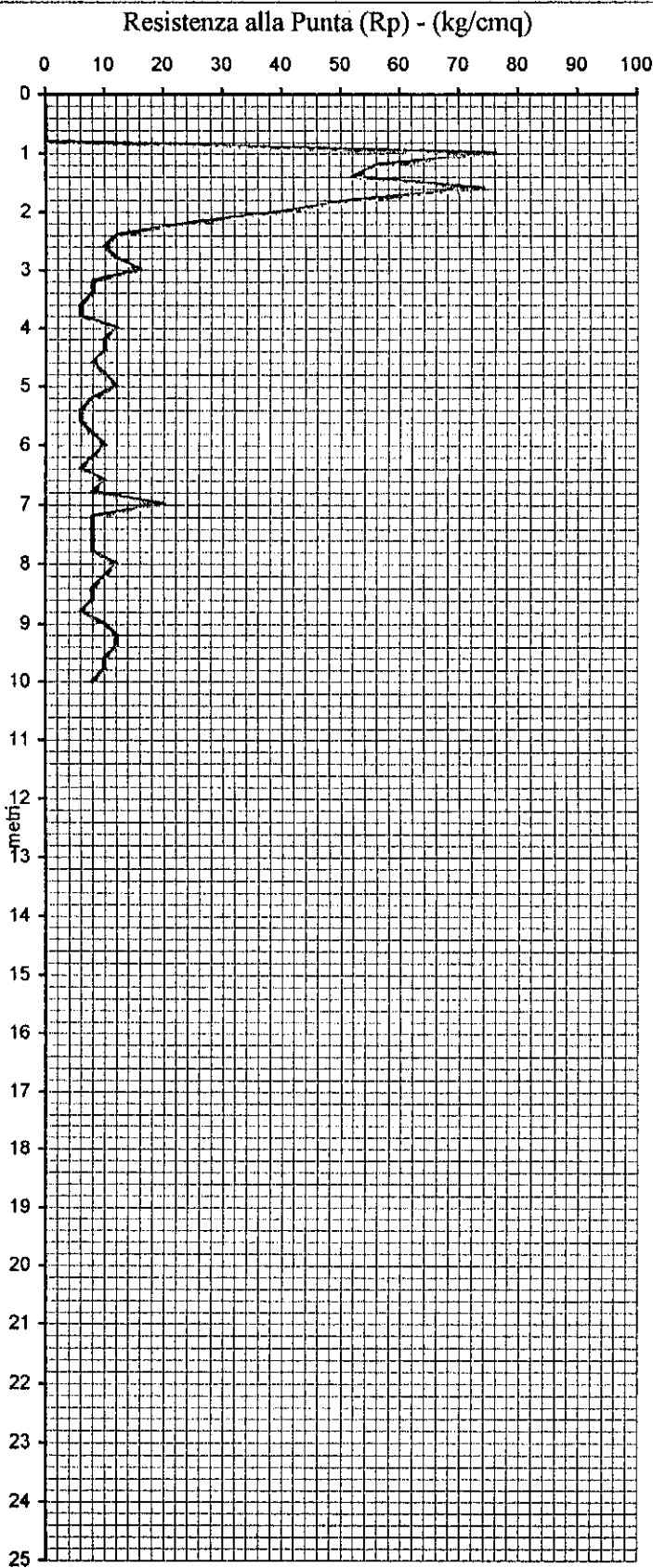
Prova n°: **3** Quota (m): **25.0** Data: **04/09/98**
 Proprietà: **Isabella di Cavallo Ombretta e C. s.n.c.**
 Località: **Strada S. Lorenzo - Nonantola (MO)**

| Prof. (m) | P (kg/cmq) | P+L (kg/cmq) | Rp (kg/cmq) | Rl (kg/cmq) | Rp/Rl | FR% (Rl/Rp*100) | Falda (m) |
|--------------|---------------|-----------------|----------------|----------------|-------|--------------------|--------------|
| 0.2 | 0.00 | 0.00 | 0.00 | - | - | - | - |
| 0.4 | 0.00 | 0.00 | 0.00 | - | - | - | - |
| 0.6 | 0.00 | 0.00 | 0.00 | - | - | - | - |
| 0.8 | 0.00 | 0.00 | 0.00 | - | - | - | - |
| 1.0 | 76.00 | 108.00 | 76.00 | 2.13 | 36 | 2.8 | - |
| 1.2 | 56.00 | 72.00 | 56.00 | 1.07 | 53 | 1.9 | - |
| 1.4 | 52.00 | 74.00 | 52.00 | 1.47 | 35 | 2.8 | - |
| 1.6 | 74.00 | 88.00 | 74.00 | 0.93 | 79 | 1.3 | - |
| 1.8 | 52.00 | 96.00 | 52.00 | 2.93 | 18 | 5.6 | - |
| 2.0 | 40.00 | 80.00 | 40.00 | 2.67 | 15 | 6.7 | - |
| 2.2 | 24.00 | 44.00 | 24.00 | 1.33 | 18 | 5.6 | - |
| 2.4 | 12.00 | 28.00 | 12.00 | 1.07 | 11 | 8.9 | - |
| 2.6 | 10.00 | 20.00 | 10.00 | 0.67 | 15 | 6.7 | - |
| 2.8 | 12.00 | 24.00 | 12.00 | 0.80 | 15 | 6.7 | - |
| 3.0 | 16.00 | 28.00 | 16.00 | 0.80 | 20 | 5.0 | ~~~~~ |
| 3.2 | 8.00 | 18.00 | 8.00 | 0.67 | 12 | 8.3 | ~~~~~ |
| 3.4 | 8.00 | 16.00 | 8.00 | 0.53 | 15 | 6.7 | ~~~~~ |
| 3.6 | 6.00 | 12.00 | 6.00 | 0.40 | 15 | 6.7 | ~~~~~ |
| 3.8 | 6.00 | 12.00 | 6.00 | 0.40 | 15 | 6.7 | ~~~~~ |
| 4.0 | 12.00 | 18.00 | 12.00 | 0.40 | 30 | 3.3 | ~~~~~ |
| 4.2 | 10.00 | 14.00 | 10.00 | 0.27 | 38 | 2.7 | ~~~~~ |
| 4.4 | 10.00 | 14.00 | 10.00 | 0.27 | 38 | 2.7 | ~~~~~ |
| 4.6 | 8.00 | 14.00 | 8.00 | 0.40 | 20 | 5.0 | ~~~~~ |
| 4.8 | 10.00 | 16.00 | 10.00 | 0.40 | 25 | 4.0 | ~~~~~ |
| 5.0 | 12.00 | 20.00 | 12.00 | 0.53 | 23 | 4.4 | ~~~~~ |
| 5.2 | 8.00 | 12.00 | 8.00 | 0.27 | 30 | 3.3 | ~~~~~ |
| 5.4 | 6.00 | 10.00 | 6.00 | 0.27 | 23 | 4.4 | ~~~~~ |
| 5.6 | 6.00 | 10.00 | 6.00 | 0.27 | 23 | 4.4 | ~~~~~ |
| 5.8 | 8.00 | 12.00 | 8.00 | 0.27 | 30 | 3.3 | ~~~~~ |
| 6.0 | 10.00 | 16.00 | 10.00 | 0.40 | 25 | 4.0 | ~~~~~ |
| 6.2 | 8.00 | 12.00 | 8.00 | 0.27 | 30 | 3.3 | ~~~~~ |
| 6.4 | 6.00 | 10.00 | 6.00 | 0.27 | 23 | 4.4 | ~~~~~ |
| 6.6 | 10.00 | 16.00 | 10.00 | 0.40 | 25 | 4.0 | ~~~~~ |
| 6.8 | 8.00 | 16.00 | 8.00 | 0.53 | 15 | 6.7 | ~~~~~ |
| 7.0 | 20.00 | 30.00 | 20.00 | 0.67 | 30 | 3.3 | ~~~~~ |
| 7.2 | 8.00 | 16.00 | 8.00 | 0.53 | 15 | 6.7 | ~~~~~ |
| 7.4 | 8.00 | 16.00 | 8.00 | 0.53 | 15 | 6.7 | ~~~~~ |
| 7.6 | 8.00 | 16.00 | 8.00 | 0.53 | 15 | 6.7 | ~~~~~ |
| 7.8 | 8.00 | 16.00 | 8.00 | 0.53 | 15 | 6.7 | ~~~~~ |
| 8.0 | 12.00 | 18.00 | 12.00 | 0.40 | 30 | 3.3 | ~~~~~ |
| 8.2 | 10.00 | 18.00 | 10.00 | 0.53 | 19 | 5.3 | ~~~~~ |
| 8.4 | 8.00 | 16.00 | 8.00 | 0.53 | 15 | 6.7 | ~~~~~ |
| 8.6 | 8.00 | 16.00 | 8.00 | 0.53 | 15 | 6.7 | ~~~~~ |
| 8.8 | 6.00 | 12.00 | 6.00 | 0.40 | 15 | 6.7 | ~~~~~ |
| 9.0 | 10.00 | 16.00 | 10.00 | 0.40 | 25 | 4.0 | ~~~~~ |
| 9.2 | 12.00 | 16.00 | 12.00 | 0.27 | 45 | 2.2 | ~~~~~ |
| 9.4 | 12.00 | 18.00 | 12.00 | 0.40 | 30 | 3.3 | ~~~~~ |
| 9.6 | 10.00 | 18.00 | 10.00 | 0.53 | 19 | 5.3 | ~~~~~ |
| 9.8 | 10.00 | 18.00 | 10.00 | 0.53 | 19 | 5.3 | ~~~~~ |
| 10.0 | 8.00 | 16.00 | 8.00 | 0.53 | 15 | 6.7 | ~~~~~ |

PROVA PENETROMETRICA STATICA (C.P.T.)

Prova n°: 3 Quota (m): 25.0
 Proprietà: Isabella di Cavallo Ombretta e C. s.n.c.
 Località: Strada S. Lorenzo - Nonantola (MO)

Data: 04/09/98



Legenda: Ao argille organiche; A argille; Al argille limose; La-L limi argillosi - limi; Ls-S limi sabbiosi-sabbie; S sabbie

**PROVA PENETROMETRICA STATICA****CPT 4****LETTURE DI CAMPAGNA / VALORI DI RESISTENZA**

2.010496-43

- committente : GEOM SERAFINI
 - lavoro : LOTTIZZAZIONE "CAROLINA"-LOTTO "B"
 - località : NONANTOLA-VIA DI MEZZO
 - note :

- data : 16/12/1998
 - quota inizio : Piano Campagna
 - prof. falda : 0,50 m da quota inizio
 - pagina : 1

| Prof. m | LP kg/cm ² | LL kg/cm ² | Rp kg/cm ² | RL kg/cm ² | Rp/RI | Prof. m | LP kg/cm ² | LL kg/cm ² | Rp kg/cm ² | RL kg/cm ² | Rp/RI |
|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|
| 0,20 | — | 1,0 | — | 0,67 | — | 5,20 | 7,0 | 10,0 | 7,0 | 0,13 | 52,0 |
| 0,40 | 110,0 | 120,0 | 110,0 | 0,93 | 118,0 | 5,40 | 6,0 | 8,0 | 6,0 | 0,20 | 30,0 |
| 0,60 | 90,0 | 104,0 | 90,0 | 0,40 | 225,0 | 5,60 | 8,0 | 11,0 | 8,0 | 0,20 | 40,0 |
| 0,80 | 52,0 | 58,0 | 52,0 | 1,27 | 41,0 | 5,80 | 7,0 | 10,0 | 7,0 | 0,07 | 105,0 |
| 1,00 | 6,0 | 25,0 | 6,0 | 0,47 | 13,0 | 6,00 | 17,0 | 18,0 | 17,0 | 0,47 | 36,0 |
| 1,20 | 8,0 | 15,0 | 8,0 | 0,40 | 20,0 | 6,20 | 7,0 | 14,0 | 7,0 | 0,33 | 21,0 |
| 1,40 | 22,0 | 28,0 | 22,0 | 0,80 | 27,0 | 6,40 | 14,0 | 19,0 | 14,0 | 0,53 | 26,0 |
| 1,60 | 20,0 | 32,0 | 20,0 | 0,80 | 25,0 | 6,60 | 18,0 | 26,0 | 18,0 | 0,33 | 54,0 |
| 1,80 | 11,0 | 23,0 | 11,0 | 0,40 | 27,0 | 6,80 | 14,0 | 19,0 | 14,0 | 0,47 | 30,0 |
| 2,00 | 13,0 | 19,0 | 13,0 | 0,40 | 32,0 | 7,00 | 7,0 | 14,0 | 7,0 | 0,33 | 21,0 |
| 2,20 | 12,0 | 18,0 | 12,0 | 0,40 | 30,0 | 7,20 | 7,0 | 12,0 | 7,0 | 0,27 | 26,0 |
| 2,40 | 8,0 | 14,0 | 8,0 | 0,20 | 40,0 | 7,40 | 8,0 | 12,0 | 8,0 | 0,33 | 24,0 |
| 2,60 | 10,0 | 13,0 | 10,0 | 0,33 | 30,0 | 7,60 | 9,0 | 14,0 | 9,0 | 0,27 | 34,0 |
| 2,80 | 8,0 | 13,0 | 8,0 | 0,33 | 24,0 | 7,80 | 16,0 | 20,0 | 16,0 | 0,47 | 34,0 |
| 3,00 | 13,0 | 18,0 | 13,0 | 0,53 | 24,0 | 8,00 | 19,0 | 26,0 | 19,0 | 0,27 | 71,0 |
| 3,20 | 11,0 | 19,0 | 11,0 | 0,67 | 16,0 | 8,20 | 9,0 | 13,0 | 9,0 | 0,33 | 27,0 |
| 3,40 | 15,0 | 25,0 | 15,0 | 0,60 | 25,0 | 8,40 | 9,0 | 14,0 | 9,0 | 0,47 | 19,0 |
| 3,60 | 16,0 | 25,0 | 16,0 | 0,47 | 34,0 | 8,60 | 11,0 | 18,0 | 11,0 | 0,33 | 33,0 |
| 3,80 | 11,0 | 18,0 | 11,0 | 0,47 | 24,0 | 8,80 | 8,0 | 13,0 | 8,0 | 0,33 | 24,0 |
| 4,00 | 12,0 | 19,0 | 12,0 | 0,33 | 36,0 | 9,00 | 8,0 | 13,0 | 8,0 | 0,13 | 60,0 |
| 4,20 | 12,0 | 17,0 | 12,0 | 0,40 | 30,0 | 9,20 | 22,0 | 24,0 | 22,0 | 0,47 | 47,0 |
| 4,40 | 15,0 | 21,0 | 15,0 | 0,87 | 17,0 | 9,40 | 18,0 | 25,0 | 18,0 | 0,07 | 270,0 |
| 4,60 | 12,0 | 25,0 | 12,0 | 0,33 | 36,0 | 9,60 | 22,0 | 23,0 | 22,0 | 0,40 | 55,0 |
| 4,80 | 11,0 | 16,0 | 11,0 | 0,33 | 33,0 | 9,80 | 25,0 | 31,0 | 25,0 | 0,27 | 94,0 |
| 5,00 | 5,0 | 10,0 | 5,0 | 0,20 | 25,0 | 10,00 | 18,0 | 22,0 | 18,0 | — | — |

- PENETROMETRO STATICO tipo GOUDA da 10 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann ø = 35,7 mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)



41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. 57-98

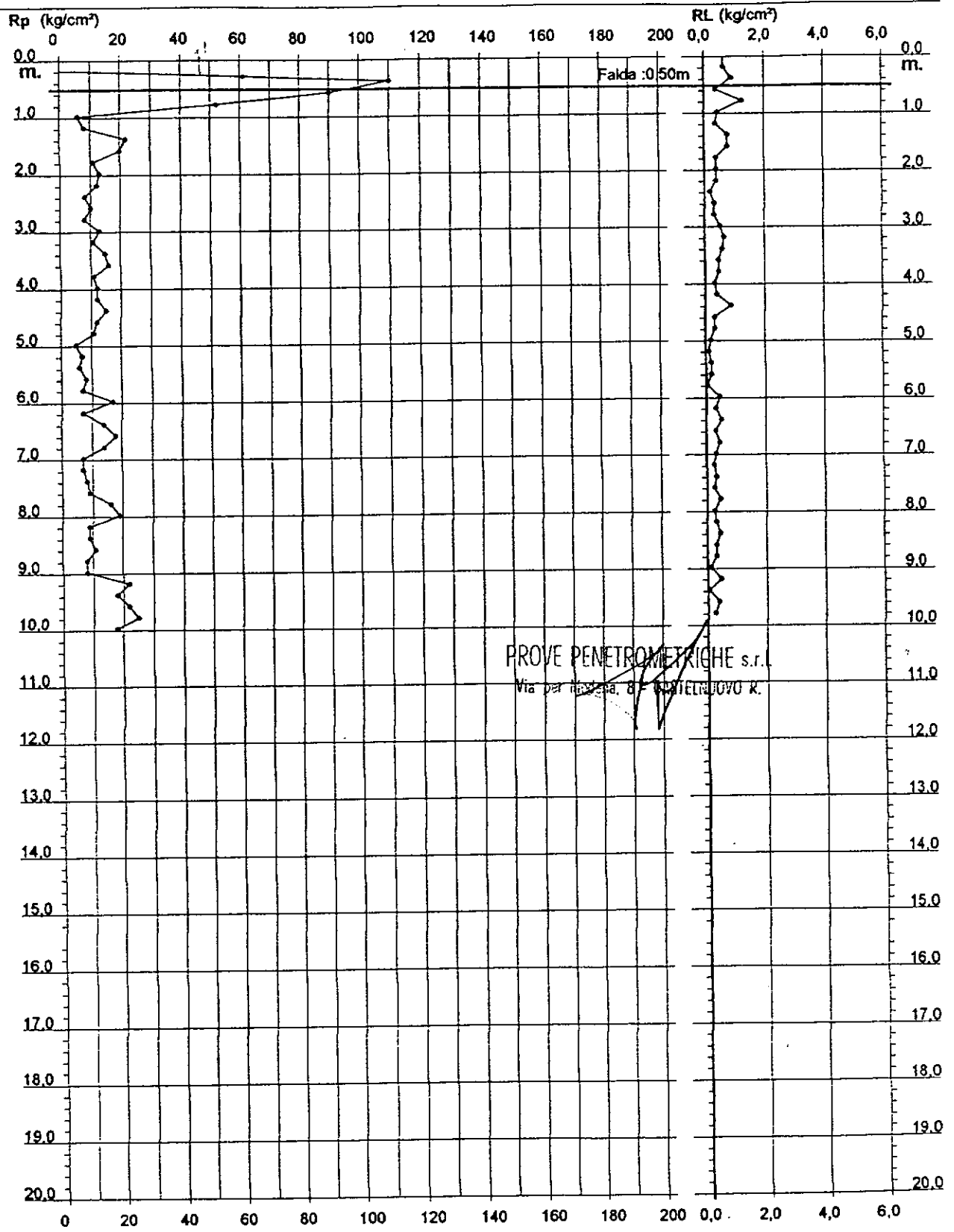
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 4

2.010496-43

- committente : GEOM SERAFINI
- lavoro : LOTTIZZAZIONE "CAROLINA"-LOTTO "B"
- località : NONANTOLA-VIA DI MEZZO

- data : 16/12/1998
- quota inizio : Piano Campagna
- prof. falda : 0,50 m da quota inizio
- scala vert.: 1 : 100



Software by: Dr.D.Merlin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi e carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

PROVE PENETROMETRICHEVia per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00105S02

**PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA****CPT 2**

3.010496-043

- committente: Studio Geologico Dallari
 - lavoro: Studio terreno
 - località: Nonantola (MO) - Lotto 20
 - resp. cantiere: Dott. Pier Luigi Dallari
 - assist. cantiere: Dott. Francesco Dettori

- data prova : 10/01/2005
 - quota inizio : Piano Campagna
 - prof. falda : 1,05 m da quota inizio
 - data emiss. : 11/01/2005
 - pagina n°: 1/4

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | --- | 0,33 | --- | 7,80 | 7,0 | 11,0 | 7,0 | 0,27 | 26,0 |
| 0,40 | 8,0 | 13,0 | 8,0 | 0,60 | 13,0 | 8,00 | 8,0 | 12,0 | 8,0 | 0,33 | 24,0 |
| 0,60 | 9,0 | 18,0 | 9,0 | 0,60 | 15,0 | 8,20 | 8,0 | 13,0 | 8,0 | 0,33 | 24,0 |
| 0,80 | 9,0 | 18,0 | 9,0 | 0,67 | 13,0 | 8,40 | 10,0 | 15,0 | 10,0 | 0,40 | 25,0 |
| 1,00 | 12,0 | 22,0 | 12,0 | 0,60 | 20,0 | 8,60 | 12,0 | 18,0 | 12,0 | 0,40 | 30,0 |
| 1,20 | 13,0 | 22,0 | 13,0 | 0,73 | 18,0 | 8,80 | 12,0 | 18,0 | 12,0 | 0,53 | 22,0 |
| 1,40 | 15,0 | 26,0 | 15,0 | 0,87 | 17,0 | 9,00 | 10,0 | 18,0 | 10,0 | 0,53 | 19,0 |
| 1,60 | 16,0 | 29,0 | 16,0 | 0,73 | 22,0 | 9,20 | 12,0 | 20,0 | 12,0 | 0,53 | 22,0 |
| 1,80 | 17,0 | 28,0 | 17,0 | 0,67 | 25,0 | 9,40 | 12,0 | 20,0 | 12,0 | 0,60 | 20,0 |
| 2,00 | 17,0 | 27,0 | 17,0 | 0,67 | 25,0 | 9,60 | 13,0 | 22,0 | 13,0 | 0,67 | 19,0 |
| 2,20 | 16,0 | 26,0 | 16,0 | 0,93 | 17,0 | 9,80 | 12,0 | 22,0 | 12,0 | 0,67 | 18,0 |
| 2,40 | 18,0 | 32,0 | 18,0 | 0,93 | 19,0 | 10,00 | 10,0 | 20,0 | 10,0 | 0,60 | 17,0 |
| 2,60 | 16,0 | 30,0 | 16,0 | 0,80 | 20,0 | 10,20 | 10,0 | 19,0 | 10,0 | 0,47 | 21,0 |
| 2,80 | 13,0 | 25,0 | 13,0 | 0,53 | 24,0 | 10,40 | 9,0 | 16,0 | 9,0 | 0,47 | 19,0 |
| 3,00 | 11,0 | 19,0 | 11,0 | 0,47 | 24,0 | 10,60 | 9,0 | 16,0 | 9,0 | 0,47 | 19,0 |
| 3,20 | 8,0 | 15,0 | 8,0 | 0,47 | 17,0 | 10,80 | 9,0 | 16,0 | 9,0 | 0,47 | 19,0 |
| 3,40 | 8,0 | 15,0 | 8,0 | 0,40 | 20,0 | 11,00 | 9,0 | 16,0 | 9,0 | 0,47 | 19,0 |
| 3,60 | 13,0 | 19,0 | 13,0 | 0,40 | 32,0 | 11,20 | 9,0 | 16,0 | 9,0 | 0,47 | 19,0 |
| 3,80 | 10,0 | 16,0 | 10,0 | 0,40 | 25,0 | 11,40 | 8,0 | 15,0 | 8,0 | 0,40 | 20,0 |
| 4,00 | 10,0 | 16,0 | 10,0 | 0,33 | 30,0 | 11,60 | 9,0 | 15,0 | 9,0 | 0,40 | 22,0 |
| 4,20 | 8,0 | 13,0 | 8,0 | 0,33 | 24,0 | 11,80 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 |
| 4,40 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 | 12,00 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 |
| 4,60 | 7,0 | 13,0 | 7,0 | 0,20 | 35,0 | 12,20 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 |
| 4,80 | 6,0 | 9,0 | 6,0 | 0,13 | 45,0 | 12,40 | 7,0 | 12,0 | 7,0 | 0,40 | 17,0 |
| 5,00 | 2,0 | 4,0 | 2,0 | 0,13 | 15,0 | 12,60 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 |
| 5,20 | 5,0 | 7,0 | 5,0 | 0,20 | 25,0 | 12,80 | 8,0 | 13,0 | 8,0 | 0,53 | 15,0 |
| 5,40 | 5,0 | 8,0 | 5,0 | 0,33 | 15,0 | 13,00 | 11,0 | 19,0 | 11,0 | 0,60 | 18,0 |
| 5,60 | 6,0 | 11,0 | 6,0 | 0,27 | 22,0 | 13,20 | 14,0 | 23,0 | 14,0 | 0,73 | 19,0 |
| 5,80 | 6,0 | 10,0 | 6,0 | 0,27 | 22,0 | 13,40 | 13,0 | 24,0 | 13,0 | 0,67 | 19,0 |
| 6,00 | 5,0 | 9,0 | 5,0 | 0,27 | 19,0 | 13,60 | 14,0 | 24,0 | 14,0 | 0,73 | 19,0 |
| 6,20 | 6,0 | 10,0 | 6,0 | 0,33 | 18,0 | 13,80 | 14,0 | 25,0 | 14,0 | 0,87 | 16,0 |
| 6,40 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 | 14,00 | 15,0 | 28,0 | 15,0 | 0,93 | 16,0 |
| 6,60 | 7,0 | 13,0 | 7,0 | 0,40 | 17,0 | 14,20 | 14,0 | 28,0 | 14,0 | 0,80 | 17,0 |
| 6,80 | 9,0 | 15,0 | 9,0 | 0,27 | 34,0 | 14,40 | 20,0 | 32,0 | 20,0 | 1,07 | 19,0 |
| 7,00 | 9,0 | 13,0 | 9,0 | 0,40 | 22,0 | 14,60 | 20,0 | 36,0 | 20,0 | 1,07 | 19,0 |
| 7,20 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 | 14,80 | 22,0 | 38,0 | 22,0 | 1,47 | 15,0 |
| 7,40 | 7,0 | 12,0 | 7,0 | 0,40 | 17,0 | 15,00 | 24,0 | 46,0 | 24,0 | --- | --- |
| 7,60 | 9,0 | 15,0 | 9,0 | 0,27 | 34,0 | | | | | | |

DIRETTORE DI LABORATORIO
 PER PROVE IN SITO
 Dott. geol. Pierluigi Dallari

RESPONSABILE DI
 CANTIERE
 Dott. geol. Pierluigi Dallari

ELABORAZIONE
 DATI
 Dott. Gianni Lorici

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\sigma = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00105S02

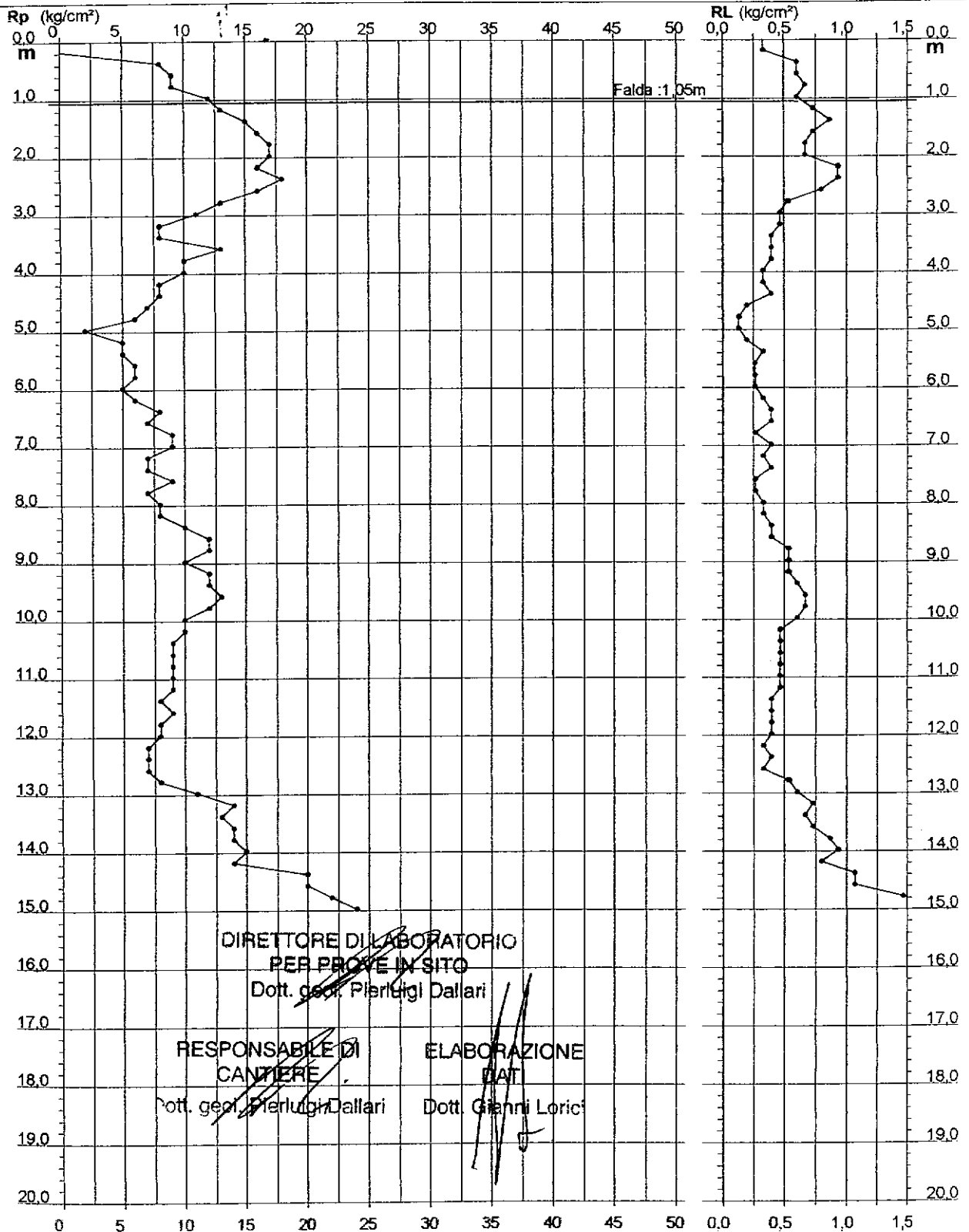
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 2

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Studio terreno
- località: Nonantola (MO) - Lotto 20
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Francesco Dettori

- data prova: 10/01/2005
- quota inizio: Piano Campagna
- prof. falda: 1,05 m da quota inizio
- scala vert.: 1 : 100
- data emiss.: 11/01/2005
- pagina n°: 2/4



DIRETTORE DI LABORATORIO
PER PROVE IN SITO
Dott. geol. Pierluigi Dallari

RESPONSABILE DI
CANTIERE
Dott. geol. Pierluigi Dallari

ELABORAZIONE
DATI
Dott. Gianni Loricci

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00105S02

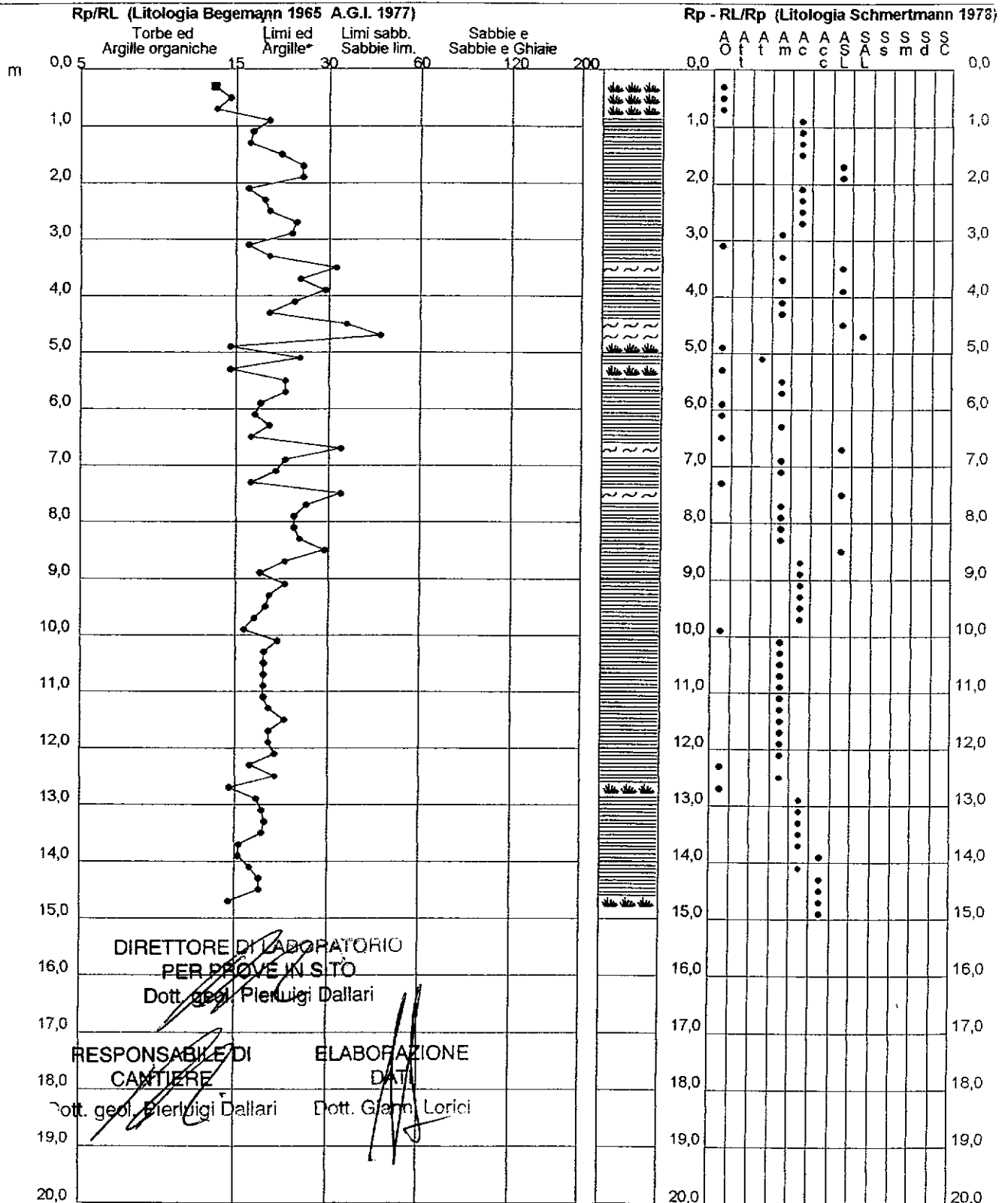
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 2

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Studio terreno
- località: Nonantola (MO) - Lotto 20
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Francesco Dettori

- data prova : 10/01/2005
- quota inizio : Piano Campagna
- prof. falda : 1,05 m da quota inizio
- scala vert. : 1 : 100
- data emiss. : 11/01/2005
- pagina n°: 3/4



PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00105S02

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 2

3:010496-043

| | |
|---|---------------------------------------|
| - committente: Studio Geologico Dallari | - data prova: 10/01/2005 |
| - lavoro: Studio terreno | - quota inizio: Piano Campagna |
| - località: Nonantola (MO) - Lotto 20 | - prof. falda: 1,05 m da quota inizio |
| - resp. cantiere: Dott. Pier Luigi Dallari | - data emiss.: 11/01/2005 |
| - assist. cantiere: Dott. Francesco Dettori | - pagina n°: 4/4 |

| Prof. m | Rp kg/cm ² | Rp/Rt (-) | Natura Litol. | Y' t/m ³ | pVo kg/cm ² | Cu ^e kg/cm ² | OCR (-) | Eu50 kg/cm ² | Eu25 kg/cm ² | Mo kg/cm ² | Dr % | NATURA COESIVA | | | | NATURA GRANULARE | | | | E50 kg/cm ² | E'25 kg/cm ² | Mo kg/cm ² | | | |
|---------|-----------------------|-----------|---------------|---------------------|------------------------|------------------------------------|---------|-------------------------|-------------------------|-----------------------|------|----------------|---------|---------|---------|------------------|---------|------------|------------------------|------------------------|-------------------------|-----------------------|-------------------------|-----------------------|----|
| | | | | | | | | | | | | α1s (°) | α2s (°) | α3s (°) | α4s (°) | αdm (°) | αmy (°) | Amax/g (-) | E50 kg/cm ² | | | | E'25 kg/cm ² | Mo kg/cm ² | |
| 0,20 | -- | -- | ??? | 1,85 | 0,04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,40 | 8 | 13 | 2/III | 1,85 | 0,07 | 0,40 | 51,7 | 68 | 102 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,60 | 9 | 15 | 2/III | 1,85 | 0,11 | 0,45 | 36,1 | 77 | 115 | 28 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,80 | 9 | 13 | 2/III | 1,85 | 0,15 | 0,45 | 25,2 | 77 | 115 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,00 | 12 | 20 | 2/III | 1,85 | 0,19 | 0,57 | 25,7 | 97 | 146 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,20 | 13 | 18 | 2/III | 0,93 | 0,20 | 0,60 | 24,5 | 103 | 154 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,40 | 15 | 17 | 2/III | 0,95 | 0,22 | 0,67 | 24,7 | 113 | 170 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,60 | 16 | 22 | 2/III | 0,96 | 0,24 | 0,70 | 23,5 | 118 | 177 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,80 | 17 | 25 | 2/III | 0,97 | 0,26 | 0,72 | 22,4 | 123 | 184 | 54 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,00 | 17 | 25 | 2/III | 0,97 | 0,28 | 0,70 | 20,5 | 123 | 184 | 54 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,20 | 16 | 17 | 2/III | 0,96 | 0,30 | 0,70 | 18,0 | 118 | 177 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,40 | 18 | 19 | 2/III | 0,98 | 0,32 | 0,75 | 18,2 | 128 | 191 | 56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,60 | 16 | 20 | 2/III | 0,98 | 0,34 | 0,70 | 15,4 | 118 | 177 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,80 | 13 | 24 | 2/III | 0,93 | 0,36 | 0,60 | 12,1 | 103 | 154 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,00 | 11 | 24 | 2/III | 0,91 | 0,38 | 0,54 | 9,8 | 92 | 137 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,20 | 8 | 17 | 2/III | 0,86 | 0,39 | 0,40 | 6,4 | 102 | 152 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,40 | 8 | 20 | 2/III | 0,86 | 0,41 | 0,40 | 6,1 | 108 | 162 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,60 | 13 | 32 | 4/F | 0,86 | 0,43 | 0,60 | 9,7 | 103 | 155 | 47 | 23 | 31 | 34 | 37 | 40 | 30 | 26 | 0,043 | 22 | 33 | 39 | -- | -- | -- | -- |
| 3,80 | 10 | 25 | 2/III | 0,90 | 0,45 | 0,50 | 7,3 | 110 | 165 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,00 | 10 | 30 | 4/F | 0,86 | 0,46 | 0,50 | 6,9 | 117 | 175 | 40 | 12 | 30 | 33 | 36 | 39 | 28 | 26 | 0,023 | 17 | 25 | 30 | -- | -- | -- | -- |
| 4,20 | 8 | 24 | 2/III | 0,86 | 0,48 | 0,40 | 5,0 | 132 | 199 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,40 | 8 | 20 | 2/III | 0,86 | 0,50 | 0,40 | 4,8 | 138 | 207 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,60 | 7 | 35 | 4/F | 0,83 | 0,51 | 0,35 | 3,9 | 144 | 216 | 32 | -- | 28 | 31 | 35 | 38 | 26 | 26 | -- | 12 | 18 | 21 | -- | -- | -- | -- |
| 4,80 | 6 | 45 | 4/F | 0,82 | 0,53 | 0,30 | 3,1 | 146 | 219 | 29 | -- | 26 | 31 | 35 | 38 | 25 | 26 | -- | 10 | 15 | 18 | -- | -- | -- | -- |
| 5,00 | 2 | 15 | 1*** | 0,46 | 0,54 | 0,10 | 0,8 | 13 | 20 | 3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,20 | 5 | 25 | 2/III | 0,80 | 0,56 | 0,25 | 2,3 | 135 | 203 | 25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,40 | 5 | 15 | 1*** | 0,46 | 0,56 | 0,25 | 2,3 | 29 | 43 | 8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,60 | 6 | 22 | 2/III | 0,82 | 0,58 | 0,30 | 2,7 | 154 | 231 | 29 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,80 | 6 | 22 | 2/III | 0,82 | 0,60 | 0,30 | 2,7 | 156 | 234 | 29 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,00 | 5 | 19 | 2/III | 0,80 | 0,61 | 0,25 | 2,0 | 139 | 209 | 25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,20 | 8 | 18 | 2/III | 0,82 | 0,63 | 0,30 | 2,5 | 159 | 239 | 29 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,40 | 8 | 20 | 2/III | 0,86 | 0,65 | 0,40 | 3,4 | 182 | 273 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,60 | 7 | 17 | 2/III | 0,84 | 0,66 | 0,35 | 2,8 | 178 | 266 | 32 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,80 | 9 | 34 | 4/F | 0,85 | 0,68 | 0,45 | 3,7 | 192 | 288 | 38 | -- | 28 | 31 | 35 | 38 | 26 | 26 | -- | 15 | 23 | 27 | -- | -- | -- | -- |
| 7,00 | 9 | 22 | 2/III | 0,88 | 0,70 | 0,45 | 3,6 | 197 | 296 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,20 | 7 | 21 | 2/III | 0,84 | 0,72 | 0,35 | 2,6 | 184 | 276 | 32 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,40 | 7 | 17 | 2/III | 0,84 | 0,73 | 0,35 | 2,5 | 186 | 278 | 32 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,60 | 9 | 34 | 4/F | 0,85 | 0,75 | 0,45 | 3,3 | 210 | 315 | 38 | -- | 28 | 31 | 35 | 38 | 25 | 26 | -- | 15 | 23 | 27 | -- | -- | -- | -- |
| 7,80 | 7 | 26 | 2/III | 0,84 | 0,77 | 0,35 | 2,4 | 189 | 283 | 32 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,00 | 8 | 24 | 2/III | 0,86 | 0,78 | 0,40 | 2,7 | 206 | 309 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,20 | 8 | 24 | 2/III | 0,86 | 0,80 | 0,40 | 2,6 | 208 | 312 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,40 | 10 | 25 | 2/III | 0,90 | 0,82 | 0,50 | 3,4 | 230 | 345 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,60 | 12 | 30 | 4/F | 0,88 | 0,84 | 0,57 | 3,9 | 234 | 351 | 45 | 4 | 28 | 32 | 35 | 38 | 26 | 26 | 0,009 | 20 | 30 | 36 | -- | -- | -- | -- |
| 8,80 | 12 | 22 | 2/III | 0,92 | 0,85 | 0,57 | 3,8 | 240 | 361 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,00 | 10 | 19 | 2/III | 0,90 | 0,87 | 0,50 | 3,1 | 241 | 362 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,20 | 12 | 22 | 2/III | 0,92 | 0,89 | 0,57 | 3,6 | 251 | 377 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,40 | 12 | 20 | 2/III | 0,92 | 0,91 | 0,57 | 3,5 | 256 | 384 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,60 | 13 | 19 | 2/III | 0,93 | 0,93 | 0,60 | 3,7 | 262 | 393 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,80 | 12 | 18 | 2/III | 0,92 | 0,95 | 0,57 | 3,3 | 265 | 398 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,00 | 10 | 17 | 2/III | 0,90 | 0,96 | 0,50 | 2,8 | 256 | 384 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,20 | 10 | 21 | 2/III | 0,90 | 0,98 | 0,50 | 2,7 | 258 | 387 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,40 | 9 | 19 | 2/III | 0,88 | 1,00 | 0,45 | 2,3 | 244 | 368 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,60 | 9 | 19 | 2/III | 0,88 | 1,02 | 0,45 | 2,2 | 245 | 368 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,80 | 9 | 19 | 2/III | 0,88 | 1,03 | 0,45 | 2,2 | 246 | 370 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,00 | 9 | 19 | 2/III | 0,88 | 1,05 | 0,45 | 2,2 | 248 | 372 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,20 | 9 | 19 | 2/III | 0,88 | 1,07 | 0,45 | 2,1 | 249 | 373 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,40 | 8 | 20 | 2/III | 0,86 | 1,09 | 0,40 | 1,8 | 228 | 342 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,60 | 9 | 22 | 2/III | 0,89 | 1,10 | 0,45 | 2,0 | 251 | 376 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,80 | 8 | 20 | 2/III | 0,86 | 1,12 | 0,40 | 1,7 | 229 | 344 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12,00 | 8 | 20 | 2/III | 0,86 | 1,14 | 0,40 | 1,7 | 230 | 345 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12,20 | 7 | 21 | 2/III | 0,84 | 1,16 | 0,35 | 1,4 | 205 | 308 | 32 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12,40 | 7 | 17 | 2/III | 0,84 | 1,17 | 0,35 | 1,4 | 206 | 309 | 32 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12,60 | 7 | 21 | 2/III | 0,84 | 1,19 | 0,35 | 1,4 | 206 | 309 | 32 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12,80 | 8 | 15 | 2/III | 0,86 | 1,21 | 0,40 | 1,6 | 232 | 348 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13,00 | 11 | 18 | 2/III | 0,91 | 1,22 | 0,54 | 2,2 | 293 | 440 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13,20 | 14 | 19 | 2/III | 0,94 | 1,24 | 0,64 | 2,7 | 328 | 491 | 48 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 13,40 | 13 | 19 | 2/III | 0,93 | 1,26 | 0,60 | 2,5 | 320 | 481 | 47 | -- | | | | | | | | | | | | | | |

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00105S11

PROVA PENETROMETRICA STATICA LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 11

3.010496-043

| | | | |
|---------------------|---------------------------|------------------|--------------------|
| - committente: | Studio Geologico Dallari | - data prova : | 11/01/2005 |
| - lavoro: | Studio terreno | - quota inizio : | Piano Campagna |
| - località: | Nonantola (MO) - Lotto 15 | - prof. falda : | Falda non rilevata |
| - resp. cantiere: | Dott. Pier Luigi Dallari | - data emiss. : | 12/01/2005 |
| - assist. cantiere: | Dott. Francesco Dettori | - pagina n°: | 1/4 |
| - note: | Foro chiuso a -1.70 m | | |

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | --- | 0,20 | --- | 6,40 | 7,0 | 10,0 | 7,0 | 0,27 | 26,0 |
| 0,40 | 9,0 | 12,0 | 9,0 | 0,73 | 12,0 | 6,60 | 8,0 | 12,0 | 8,0 | 0,27 | 30,0 |
| 0,60 | 9,0 | 20,0 | 9,0 | 0,73 | 12,0 | 6,80 | 7,0 | 11,0 | 7,0 | 0,20 | 35,0 |
| 0,80 | 13,0 | 24,0 | 13,0 | 1,13 | 11,0 | 7,00 | 9,0 | 12,0 | 9,0 | 0,33 | 27,0 |
| 1,00 | 15,0 | 32,0 | 15,0 | 1,13 | 13,0 | 7,20 | 18,0 | 23,0 | 18,0 | 0,40 | 45,0 |
| 1,20 | 15,0 | 32,0 | 15,0 | 1,00 | 15,0 | 7,40 | 13,0 | 19,0 | 13,0 | 0,47 | 28,0 |
| 1,40 | 17,0 | 32,0 | 17,0 | 1,13 | 15,0 | 7,60 | 10,0 | 17,0 | 10,0 | 0,27 | 37,0 |
| 1,60 | 15,0 | 32,0 | 15,0 | 0,93 | 16,0 | 7,80 | 9,0 | 13,0 | 9,0 | 0,27 | 34,0 |
| 1,80 | 15,0 | 29,0 | 15,0 | 0,80 | 19,0 | 8,00 | 9,0 | 13,0 | 9,0 | 0,27 | 34,0 |
| 2,00 | 10,0 | 22,0 | 10,0 | 0,47 | 21,0 | 8,20 | 7,0 | 11,0 | 7,0 | 0,27 | 26,0 |
| 2,20 | 9,0 | 16,0 | 9,0 | 0,40 | 22,0 | 8,40 | 9,0 | 13,0 | 9,0 | 0,40 | 22,0 |
| 2,40 | 10,0 | 16,0 | 10,0 | 0,40 | 25,0 | 8,60 | 11,0 | 17,0 | 11,0 | 0,47 | 24,0 |
| 2,60 | 9,0 | 15,0 | 9,0 | 0,33 | 27,0 | 8,80 | 11,0 | 18,0 | 11,0 | 0,40 | 27,0 |
| 2,80 | 7,0 | 12,0 | 7,0 | 0,33 | 21,0 | 9,00 | 11,0 | 17,0 | 11,0 | 0,47 | 24,0 |
| 3,00 | 8,0 | 13,0 | 8,0 | 0,27 | 30,0 | 9,20 | 11,0 | 18,0 | 11,0 | 0,40 | 27,0 |
| 3,20 | 10,0 | 14,0 | 10,0 | 0,27 | 37,0 | 9,40 | 10,0 | 16,0 | 10,0 | 0,53 | 19,0 |
| 3,40 | 9,0 | 13,0 | 9,0 | 0,40 | 22,0 | 9,60 | 12,0 | 20,0 | 12,0 | 0,60 | 20,0 |
| 3,60 | 12,0 | 18,0 | 12,0 | 0,33 | 36,0 | 9,80 | 12,0 | 21,0 | 12,0 | 0,53 | 22,0 |
| 3,80 | 10,0 | 15,0 | 10,0 | 0,47 | 21,0 | 10,00 | 10,0 | 18,0 | 10,0 | 0,47 | 21,0 |
| 4,00 | 20,0 | 27,0 | 20,0 | 0,33 | 60,0 | 10,20 | 10,0 | 17,0 | 10,0 | 0,40 | 25,0 |
| 4,20 | 9,0 | 14,0 | 9,0 | 0,33 | 27,0 | 10,40 | 11,0 | 17,0 | 11,0 | 0,47 | 24,0 |
| 4,40 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 | 10,60 | 9,0 | 16,0 | 9,0 | 0,40 | 22,0 |
| 4,60 | 10,0 | 16,0 | 10,0 | 0,13 | 75,0 | 10,80 | 9,0 | 15,0 | 9,0 | 0,33 | 27,0 |
| 4,80 | 8,0 | 10,0 | 8,0 | 0,27 | 30,0 | 11,00 | 8,0 | 13,0 | 8,0 | 0,33 | 24,0 |
| 5,00 | 7,0 | 11,0 | 7,0 | 0,20 | 35,0 | 11,20 | 9,0 | 14,0 | 9,0 | 0,33 | 27,0 |
| 5,20 | 7,0 | 10,0 | 7,0 | 0,13 | 52,0 | 11,40 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 |
| 5,40 | 7,0 | 9,0 | 7,0 | 0,40 | 17,0 | 11,60 | 9,0 | 15,0 | 9,0 | 0,33 | 27,0 |
| 5,60 | 8,0 | 14,0 | 8,0 | 0,27 | 30,0 | 11,80 | 9,0 | 14,0 | 9,0 | 0,33 | 27,0 |
| 5,80 | 9,0 | 13,0 | 9,0 | 0,33 | 27,0 | 12,00 | 9,0 | 14,0 | 9,0 | 0,40 | 22,0 |
| 6,00 | 6,0 | 11,0 | 6,0 | 0,33 | 18,0 | 12,20 | 9,0 | 15,0 | 9,0 | 0,40 | 22,0 |
| 6,20 | 7,0 | 12,0 | 7,0 | 0,20 | 35,0 | 12,40 | 11,0 | 17,0 | 11,0 | --- | --- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00105S11

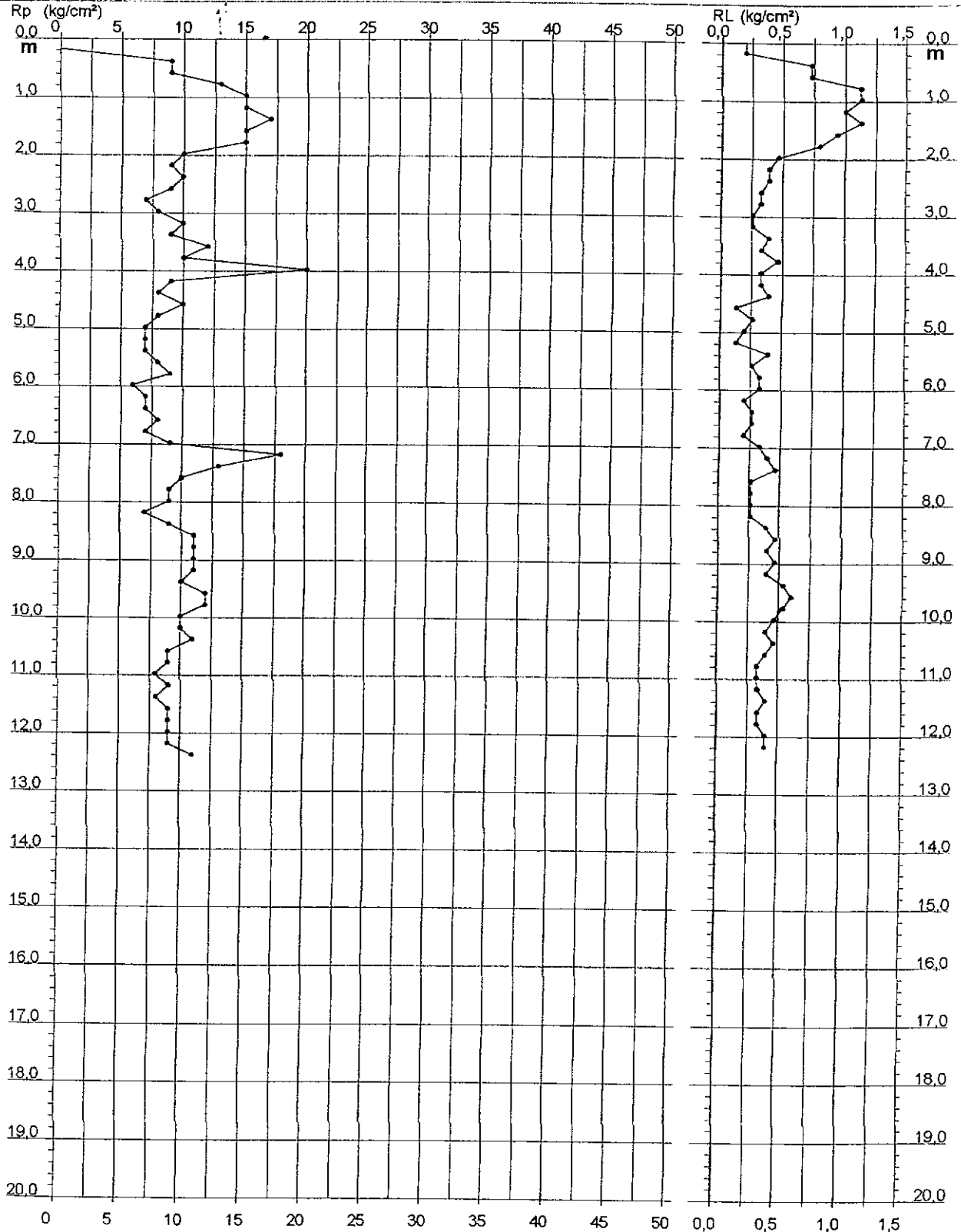
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 11

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Studio terreno
- località: Nonantola (MO) - Lotto 15
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Francesco Dettori
- note: Foro chiuso a -1.70 m

- data prova : 11/01/2005
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- scala vert. : 1 : 100
- data emiss. : 12/01/2005
- pagina n°: 2/4



PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
 p.IVA e C.F. 00812530368

Certificato 00105S11

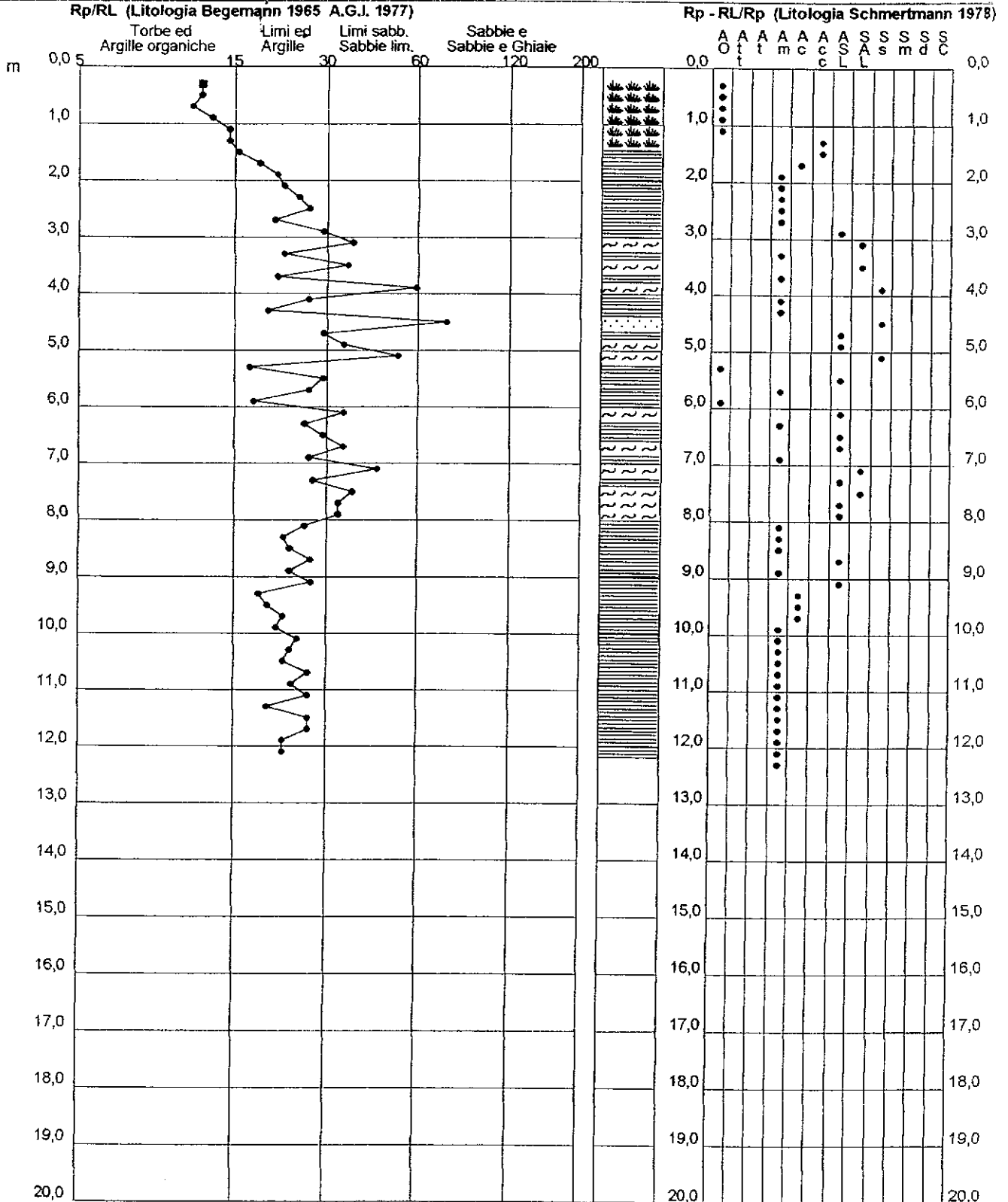
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 11

3.010496-043

- committente: Studio Geologico Dallari
 - lavoro: Studio terreno
 - località: Nonantola (MO) - Lotto 15
 - resp. cantiere: Dott. Pier Luigi Dallari
 - assist. cantiere: Dott. Francesco Dettori
 - note: Foro chiuso a -1.70 m

- data prova : 11/01/2005
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - scala vert. : 1 : 100
 - data emiss. : 12/01/2005
 - pagina n° : 3/4



PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00105S11

PROVA PENETROMETRICA STATICA
TABELLA PARAMETRI GEOTECNICI

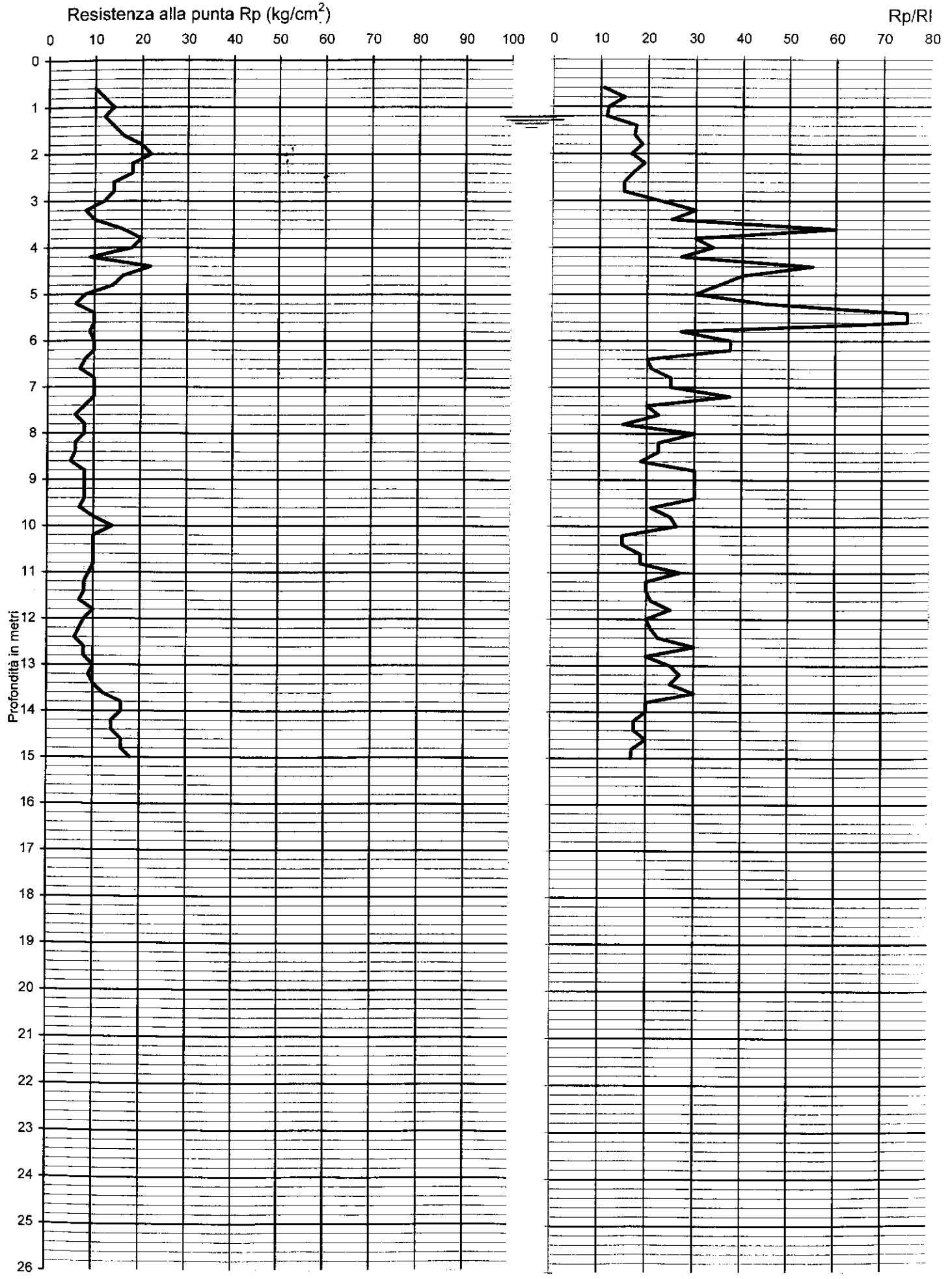
CPT 11

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Studio terreno
- localita': Nonantola (MO) - Lotto 15
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Francesco Dettori
- note: Foro chiuso a -1.70 m

- data prova: 11/01/2005
- quota inizio: Piano Campagna
- prof. falda: Falda non rilevata
- data emiss.: 12/01/2005
- pagina n°: 4/4

Table with columns: Prof. m, Rp kg/cm², Rp/Rl (-), Natura Litol., Y t/m³, p'vo kg/cm², C* kg/cm², OCR (-), Eu50 kg/cm², Eu25 kg/cm², Mo kg/cm², Dr %, ø1s (°), ø2s (°), ø3s (°), ø4s (°), ødm (°), ømy (°), Amax/g (-), E50 kg/cm², E'25 kg/cm², Mo kg/cm². The table contains two main sections: NATURA COESIVA and NATURA GRANULARE, with rows of data for various depths and parameters.





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Telefono 059/313999

Telefax 059/454827

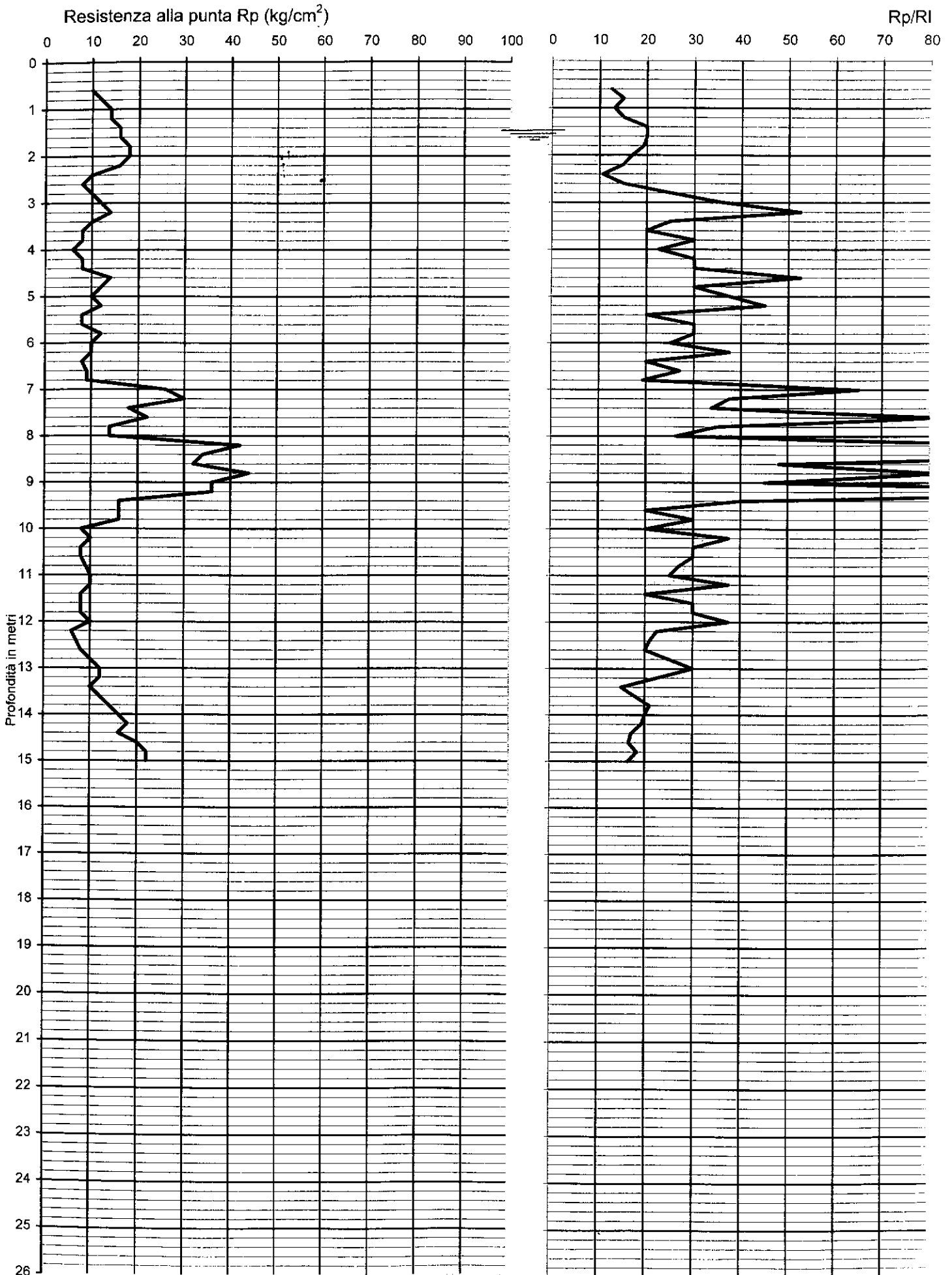
PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : EMME COSTRUZIONI SRL
Località : LOTTO 21 NONANTOLA-LOTT.NE S. FRANCESCO
Prova numero : 1
Data : 02/05/2005
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 10 | 24 | 10 | 0.93 | 10.71 |
| 0.80 | 12 | 24 | 12 | 0.80 | 15.00 |
| 1.00 | 14 | 32 | 14 | 1.20 | 11.67 |
| 1.20 | 12 | 28 | 12 | 1.07 | 11.25 |
| 1.40 | 14 | 26 | 14 | 0.80 | 17.50 |
| 1.60 | 16 | 30 | 16 | 0.93 | 17.14 |
| 1.80 | 20 | 36 | 20 | 1.07 | 18.75 |
| 2.00 | 22 | 42 | 22 | 1.33 | 16.50 |
| 2.20 | 18 | 32 | 18 | 0.93 | 19.29 |
| 2.40 | 18 | 34 | 18 | 1.07 | 16.88 |
| 2.60 | 14 | 28 | 14 | 0.93 | 15.00 |
| 2.80 | 14 | 28 | 14 | 0.93 | 15.00 |
| 3.00 | 12 | 20 | 12 | 0.53 | 22.50 |
| 3.20 | 8 | 12 | 8 | 0.27 | 30.00 |
| 3.40 | 10 | 16 | 10 | 0.40 | 25.00 |
| 3.60 | 16 | 20 | 16 | 0.27 | 60.00 |
| 3.80 | 20 | 30 | 20 | 0.67 | 30.00 |
| 4.00 | 18 | 26 | 18 | 0.53 | 33.75 |
| 4.20 | 9 | 14 | 9 | 0.33 | 27.00 |
| 4.40 | 22 | 28 | 22 | 0.40 | 55.00 |
| 4.60 | 16 | 22 | 16 | 0.40 | 40.00 |
| 4.80 | 14 | 20 | 14 | 0.40 | 35.00 |
| 5.00 | 8 | 12 | 8 | 0.27 | 30.00 |
| 5.20 | 6 | 8 | 6 | 0.13 | 45.00 |
| 5.40 | 10 | 12 | 10 | 0.13 | 75.00 |
| 5.60 | 10 | 12 | 10 | 0.13 | 75.00 |
| 5.80 | 9 | 14 | 9 | 0.33 | 27.00 |
| 6.00 | 10 | 14 | 10 | 0.27 | 37.50 |
| 6.20 | 10 | 14 | 10 | 0.27 | 37.50 |
| 6.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 6.60 | 7 | 12 | 7 | 0.33 | 21.00 |
| 6.80 | 10 | 16 | 10 | 0.40 | 25.00 |
| 7.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 7.20 | 10 | 14 | 10 | 0.27 | 37.50 |
| 7.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 7.60 | 6 | 10 | 6 | 0.27 | 22.50 |
| 7.80 | 8 | 16 | 8 | 0.53 | 15.00 |
| 8.00 | 8 | 12 | 8 | 0.27 | 30.00 |
| 8.20 | 6 | 10 | 6 | 0.27 | 22.50 |
| 8.40 | 6 | 10 | 6 | 0.27 | 22.50 |
| 8.60 | 5 | 9 | 5 | 0.27 | 18.75 |
| 8.80 | 8 | 12 | 8 | 0.27 | 30.00 |
| 9.00 | 8 | 12 | 8 | 0.27 | 30.00 |
| 9.20 | 8 | 12 | 8 | 0.27 | 30.00 |
| 9.40 | 8 | 12 | 8 | 0.27 | 30.00 |
| 9.60 | 7 | 12 | 7 | 0.33 | 21.00 |
| 9.80 | 10 | 16 | 10 | 0.40 | 25.00 |
| 10.00 | 14 | 22 | 14 | 0.53 | 26.25 |
| 10.20 | 10 | 20 | 10 | 0.67 | 15.00 |
| 10.40 | 10 | 20 | 10 | 0.67 | 15.00 |
| 10.60 | 10 | 18 | 10 | 0.53 | 18.75 |
| 10.80 | 10 | 18 | 10 | 0.53 | 18.75 |
| 11.00 | 9 | 14 | 9 | 0.33 | 27.00 |
| 11.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 11.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 11.60 | 7 | 12 | 7 | 0.33 | 21.00 |
| 11.80 | 10 | 16 | 10 | 0.40 | 25.00 |
| 12.00 | 8 | 14 | 8 | 0.40 | 20.00 |
| 12.20 | 7 | 12 | 7 | 0.33 | 21.00 |
| 12.40 | 6 | 10 | 6 | 0.27 | 22.50 |
| 12.60 | 8 | 12 | 8 | 0.27 | 30.00 |
| 12.80 | 8 | 14 | 8 | 0.40 | 20.00 |
| 13.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 13.20 | 9 | 14 | 9 | 0.33 | 27.00 |
| 13.40 | 10 | 16 | 10 | 0.40 | 25.00 |
| 13.60 | 12 | 18 | 12 | 0.40 | 30.00 |
| 13.80 | 16 | 28 | 16 | 0.80 | 20.00 |
| 14.00 | 16 | 28 | 16 | 0.80 | 20.00 |
| 14.20 | 14 | 26 | 14 | 0.80 | 17.50 |
| 14.40 | 14 | 26 | 14 | 0.80 | 17.50 |
| 14.60 | 16 | 28 | 16 | 0.80 | 20.00 |
| 14.80 | 16 | 30 | 16 | 0.93 | 17.14 |
| 15.00 | 18 | 34 | 18 | 1.07 | 16.88 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15.20 | | | | | |
| 15.40 | | | | | |
| 15.60 | | | | | |
| 15.80 | | | | | |
| 16.00 | | | | | |
| 16.20 | | | | | |
| 16.40 | | | | | |
| 16.60 | | | | | |
| 16.80 | | | | | |
| 17.00 | | | | | |
| 17.20 | | | | | |
| 17.40 | | | | | |
| 17.60 | | | | | |
| 17.80 | | | | | |
| 18.00 | | | | | |
| 18.20 | | | | | |
| 18.40 | | | | | |
| 18.60 | | | | | |
| 18.80 | | | | | |
| 19.00 | | | | | |
| 19.20 | | | | | |
| 19.40 | | | | | |
| 19.60 | | | | | |
| 19.80 | | | | | |
| 20.00 | | | | | |
| 20.20 | | | | | |
| 20.40 | | | | | |
| 20.60 | | | | | |
| 20.80 | | | | | |
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| 21.40 | | | | | |
| 21.60 | | | | | |
| 21.80 | | | | | |
| 22.00 | | | | | |
| 22.20 | | | | | |
| 22.40 | | | | | |
| 22.60 | | | | | |
| 22.80 | | | | | |
| 23.00 | | | | | |
| 23.20 | | | | | |
| 23.40 | | | | | |
| 23.60 | | | | | |
| 23.80 | | | | | |
| 24.00 | | | | | |
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| 24.80 | | | | | |
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| 27.40 | | | | | |
| 27.60 | | | | | |
| 27.80 | | | | | |
| 28.00 | | | | | |
| 28.20 | | | | | |
| 28.40 | | | | | |
| 28.60 | | | | | |
| 28.80 | | | | | |
| 29.00 | | | | | |
| 29.20 | | | | | |
| 29.40 | | | | | |
| 29.60 | | | | | |
| 29.80 | | | | | |
| 30.00 | | | | | |





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Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : EMME COSTRUZIONI SRL
Località : LOTTO 22 NONANTOLA-LOTT.NE S. FRANCESCO
Prova numero : 4
Data : 02/05/2005
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 10 | 22 | 10 | 0.80 | 12.50 |
| 0.80 | 12 | 24 | 12 | 0.80 | 15.00 |
| 1.00 | 14 | 30 | 14 | 1.07 | 13.13 |
| 1.20 | 14 | 28 | 14 | 0.93 | 15.00 |
| 1.40 | 16 | 28 | 16 | 0.80 | 20.00 |
| 1.60 | 16 | 28 | 16 | 0.80 | 20.00 |
| 1.80 | 18 | 32 | 18 | 0.93 | 19.29 |
| 2.00 | 18 | 34 | 18 | 1.07 | 16.88 |
| 2.20 | 16 | 32 | 16 | 1.07 | 15.00 |
| 2.40 | 10 | 24 | 10 | 0.93 | 10.71 |
| 2.60 | 8 | 16 | 8 | 0.53 | 15.00 |
| 2.80 | 10 | 16 | 10 | 0.40 | 25.00 |
| 3.00 | 12 | 17 | 12 | 0.33 | 36.00 |
| 3.20 | 14 | 18 | 14 | 0.27 | 52.50 |
| 3.40 | 10 | 16 | 10 | 0.40 | 25.00 |
| 3.60 | 8 | 14 | 8 | 0.40 | 20.00 |
| 3.80 | 8 | 12 | 8 | 0.27 | 30.00 |
| 4.00 | 6 | 10 | 6 | 0.27 | 22.50 |
| 4.20 | 8 | 12 | 8 | 0.27 | 30.00 |
| 4.40 | 8 | 12 | 8 | 0.27 | 30.00 |
| 4.60 | 14 | 18 | 14 | 0.27 | 52.50 |
| 4.80 | 12 | 18 | 12 | 0.40 | 30.00 |
| 5.00 | 10 | 14 | 10 | 0.27 | 37.50 |
| 5.20 | 12 | 16 | 12 | 0.27 | 45.00 |
| 5.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 5.60 | 8 | 12 | 8 | 0.27 | 30.00 |
| 5.80 | 12 | 18 | 12 | 0.40 | 30.00 |
| 6.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 6.20 | 10 | 14 | 10 | 0.27 | 37.50 |
| 6.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 6.60 | 9 | 14 | 9 | 0.33 | 27.00 |
| 6.80 | 9 | 16 | 9 | 0.47 | 19.29 |
| 7.00 | 26 | 32 | 26 | 0.40 | 65.00 |
| 7.20 | 30 | 42 | 30 | 0.80 | 37.50 |
| 7.40 | 18 | 26 | 18 | 0.53 | 33.75 |
| 7.60 | 22 | 26 | 22 | 0.27 | 82.50 |
| 7.80 | 14 | 20 | 14 | 0.40 | 35.00 |
| 8.00 | 14 | 22 | 14 | 0.53 | 26.25 |
| 8.20 | 42 | 48 | 42 | 0.40 | 105.00 |
| 8.40 | 34 | 38 | 34 | 0.27 | 127.50 |
| 8.60 | 32 | 42 | 32 | 0.67 | 48.00 |
| 8.80 | 44 | 52 | 44 | 0.53 | 82.50 |
| 9.00 | 36 | 48 | 36 | 0.80 | 45.00 |
| 9.20 | 36 | 40 | 36 | 0.27 | 135.00 |
| 9.40 | 16 | 22 | 16 | 0.40 | 40.00 |
| 9.60 | 16 | 28 | 16 | 0.80 | 20.00 |
| 9.80 | 16 | 24 | 16 | 0.53 | 30.00 |
| 10.00 | 8 | 14 | 8 | 0.40 | 20.00 |
| 10.20 | 10 | 14 | 10 | 0.27 | 37.50 |
| 10.40 | 8 | 12 | 8 | 0.27 | 30.00 |
| 10.60 | 8 | 12 | 8 | 0.27 | 30.00 |
| 10.80 | 9 | 14 | 9 | 0.33 | 27.00 |
| 11.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 11.20 | 10 | 14 | 10 | 0.27 | 37.50 |
| 11.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 11.60 | 8 | 12 | 8 | 0.27 | 30.00 |
| 11.80 | 8 | 12 | 8 | 0.27 | 30.00 |
| 12.00 | 10 | 14 | 10 | 0.27 | 37.50 |
| 12.20 | 6 | 10 | 6 | 0.27 | 22.50 |
| 12.40 | 7 | 12 | 7 | 0.33 | 21.00 |
| 12.60 | 8 | 14 | 8 | 0.40 | 20.00 |
| 12.80 | 10 | 16 | 10 | 0.40 | 25.00 |
| 13.00 | 12 | 18 | 12 | 0.40 | 30.00 |
| 13.20 | 12 | 20 | 12 | 0.53 | 22.50 |
| 13.40 | 10 | 20 | 10 | 0.67 | 15.00 |
| 13.60 | 12 | 22 | 12 | 0.67 | 18.00 |
| 13.80 | 14 | 24 | 14 | 0.67 | 21.00 |
| 14.00 | 16 | 28 | 16 | 0.80 | 20.00 |
| 14.20 | 18 | 32 | 18 | 0.93 | 19.29 |
| 14.40 | 16 | 30 | 16 | 0.93 | 17.14 |
| 14.60 | 20 | 38 | 20 | 1.20 | 16.67 |
| 14.80 | 22 | 40 | 22 | 1.20 | 18.33 |
| 15.00 | 22 | 42 | 22 | 1.33 | 16.50 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15.20 | | | | | |
| 15.40 | | | | | |
| 15.60 | | | | | |
| 15.80 | | | | | |
| 16.00 | | | | | |
| 16.20 | | | | | |
| 16.40 | | | | | |
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| 18.60 | | | | | |
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| 19.00 | | | | | |
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| 21.40 | | | | | |
| 21.60 | | | | | |
| 21.80 | | | | | |
| 22.00 | | | | | |
| 22.20 | | | | | |
| 22.40 | | | | | |
| 22.60 | | | | | |
| 22.80 | | | | | |
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| 23.20 | | | | | |
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| 24.80 | | | | | |
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| 28.40 | | | | | |
| 28.60 | | | | | |
| 28.80 | | | | | |
| 29.00 | | | | | |
| 29.20 | | | | | |
| 29.40 | | | | | |
| 29.60 | | | | | |
| 29.80 | | | | | |
| 30.00 | | | | | |

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00105S06

PROVA PENETROMETRICA STATICA LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 6

3.010496-043

| | | | |
|---------------------|---------------------------|------------------|------------------------|
| - committente: | Studio Geologico Dallari | - data prova : | 10/01/2005 |
| - lavoro: | Studio terreno | - quota inizio : | Piano Campagna |
| - località: | Nonantola (MO) - Lotto 16 | - prof. falda : | 0,65 m da quota inizio |
| - resp. cantiere: | Dott. Pier Luigi Dallari | - data emiss. : | 11/01/2005 |
| - assist. cantiere: | Dott. Francesco Dettori | - pagina n°: | 1/4 |

| prf m | LP Kg/cm ² | LL Kg/cm ² | Rp Kg/cm ² | RL Kg/cm ² | Rp/RI - | prf m | LP Kg/cm ² | LL Kg/cm ² | Rp Kg/cm ² | RL Kg/cm ² | Rp/RI - |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|------------|----------|--------------------------|--------------------------|--------------------------|--------------------------|------------|
| 0,20 | --- | 1,0 | --- | 0,47 | --- | 6,40 | 8,0 | 15,0 | 8,0 | 0,47 | 17,0 |
| 0,40 | 9,0 | 16,0 | 9,0 | 0,60 | 15,0 | 6,60 | 10,0 | 17,0 | 10,0 | 0,40 | 25,0 |
| 0,60 | 9,0 | 18,0 | 9,0 | 0,67 | 13,0 | 6,80 | 6,0 | 12,0 | 6,0 | 0,33 | 18,0 |
| 0,80 | 11,0 | 21,0 | 11,0 | 1,00 | 11,0 | 7,00 | 12,0 | 17,0 | 12,0 | 0,40 | 30,0 |
| 1,00 | 13,0 | 28,0 | 13,0 | 0,87 | 15,0 | 7,20 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 |
| 1,20 | 13,0 | 26,0 | 13,0 | 0,73 | 18,0 | 7,40 | 7,0 | 12,0 | 7,0 | 0,47 | 15,0 |
| 1,40 | 13,0 | 24,0 | 13,0 | 1,40 | 9,0 | 7,60 | 8,0 | 15,0 | 8,0 | 0,47 | 17,0 |
| 1,60 | 15,0 | 36,0 | 15,0 | 1,00 | 15,0 | 7,80 | 8,0 | 15,0 | 8,0 | 0,40 | 20,0 |
| 1,80 | 16,0 | 31,0 | 16,0 | 0,80 | 20,0 | 8,00 | 10,0 | 16,0 | 10,0 | 0,47 | 21,0 |
| 2,00 | 15,0 | 27,0 | 15,0 | 0,67 | 22,0 | 8,20 | 5,0 | 12,0 | 5,0 | 0,27 | 19,0 |
| 2,20 | 12,0 | 22,0 | 12,0 | 0,53 | 22,0 | 8,40 | 7,0 | 11,0 | 7,0 | 0,33 | 21,0 |
| 2,40 | 7,0 | 15,0 | 7,0 | 0,40 | 17,0 | 8,60 | 7,0 | 12,0 | 7,0 | 0,40 | 17,0 |
| 2,60 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 | 8,80 | 9,0 | 15,0 | 9,0 | 0,47 | 19,0 |
| 2,80 | 10,0 | 15,0 | 10,0 | 0,53 | 19,0 | 9,00 | 9,0 | 16,0 | 9,0 | 0,53 | 17,0 |
| 3,00 | 13,0 | 21,0 | 13,0 | 0,60 | 22,0 | 9,20 | 10,0 | 18,0 | 10,0 | 0,60 | 17,0 |
| 3,20 | 11,0 | 20,0 | 11,0 | 0,47 | 24,0 | 9,40 | 11,0 | 20,0 | 11,0 | 0,67 | 16,0 |
| 3,40 | 8,0 | 15,0 | 8,0 | 0,40 | 20,0 | 9,60 | 13,0 | 23,0 | 13,0 | 0,53 | 24,0 |
| 3,60 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 | 9,80 | 12,0 | 20,0 | 12,0 | 0,67 | 18,0 |
| 3,80 | 6,0 | 11,0 | 6,0 | 0,53 | 11,0 | 10,00 | 13,0 | 23,0 | 13,0 | 0,80 | 16,0 |
| 4,00 | 10,0 | 18,0 | 10,0 | 0,27 | 37,0 | 10,20 | 11,0 | 23,0 | 11,0 | 0,67 | 16,0 |
| 4,20 | 9,0 | 13,0 | 9,0 | 0,40 | 22,0 | 10,40 | 9,0 | 19,0 | 9,0 | 0,60 | 15,0 |
| 4,40 | 9,0 | 15,0 | 9,0 | 0,47 | 19,0 | 10,60 | 10,0 | 19,0 | 10,0 | 0,60 | 17,0 |
| 4,60 | 12,0 | 19,0 | 12,0 | 0,47 | 26,0 | 10,80 | 9,0 | 18,0 | 9,0 | 0,67 | 13,0 |
| 4,80 | 8,0 | 15,0 | 8,0 | 0,27 | 30,0 | 11,00 | 9,0 | 19,0 | 9,0 | 0,53 | 17,0 |
| 5,00 | 7,0 | 11,0 | 7,0 | 0,27 | 26,0 | 11,20 | 8,0 | 16,0 | 8,0 | 0,47 | 17,0 |
| 5,20 | 9,0 | 13,0 | 9,0 | 0,40 | 22,0 | 11,40 | 8,0 | 15,0 | 8,0 | 0,47 | 17,0 |
| 5,40 | 5,0 | 11,0 | 5,0 | 0,40 | 12,0 | 11,60 | 8,0 | 15,0 | 8,0 | 0,47 | 17,0 |
| 5,60 | 7,0 | 13,0 | 7,0 | 0,40 | 17,0 | 11,80 | 8,0 | 15,0 | 8,0 | 0,47 | 17,0 |
| 5,80 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 | 12,00 | 8,0 | 15,0 | 8,0 | 0,53 | 15,0 |
| 6,00 | 5,0 | 11,0 | 5,0 | 0,40 | 12,0 | 12,20 | 8,0 | 16,0 | 8,0 | 0,53 | 15,0 |
| 6,20 | 8,0 | 14,0 | 8,0 | 0,47 | 17,0 | 12,40 | 8,0 | 16,0 | 8,0 | --- | --- |

DIRETTORE DI LABORATORIO
PER PROVE IN SITO
Dott. geol. Pierluigi Dallari

RESPONSABILE DI
CANTIERE
Dott. geol. Pierluigi Dallari

ELABORAZIONE
DATI
Dott. Gianni Lorici

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00105S06

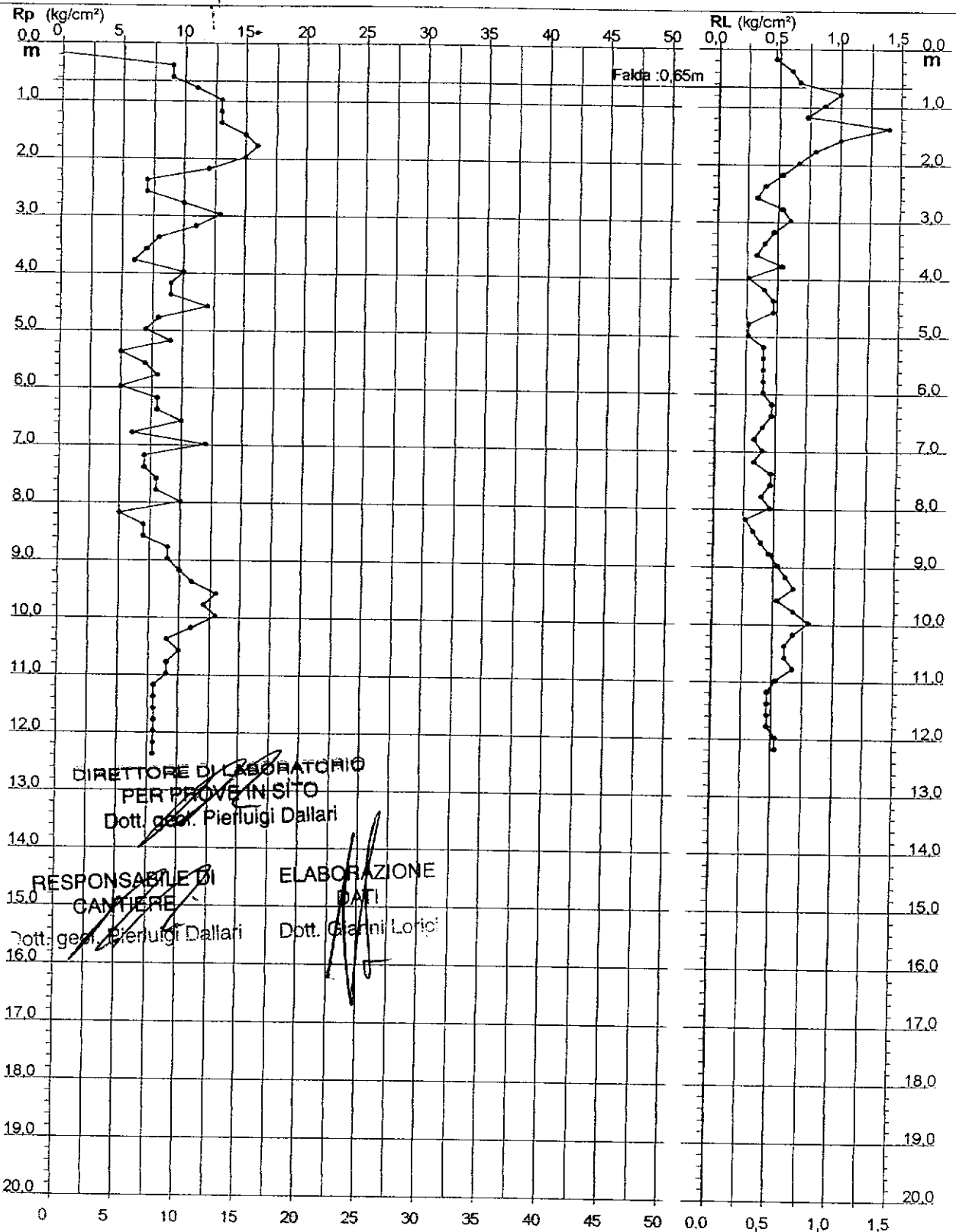
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 6

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Studio terreno
- località: Nonantola (MO) - Lotto 16
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Francesco Dettori

- data prova : 10/01/2005
- quota inizio : Piano Campagna
- prof. falda : 0,65 m da quota inizio
- scala vert. : 1 : 100
- data emiss. : 11/01/2005
- pagina n°: 2/4



DIRETTORE DI LABORATORIO
PER PROVE IN SITO
Dott. geol. Pierluigi Dallari

RESPONSABILE DI
CANTIERE
Dott. geol. Pierluigi Dallari

ELABORAZIONE
DATI
Dott. Gianni Loricci

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
 p.IVA e C.F. 00812530368

Certificato 00105S06

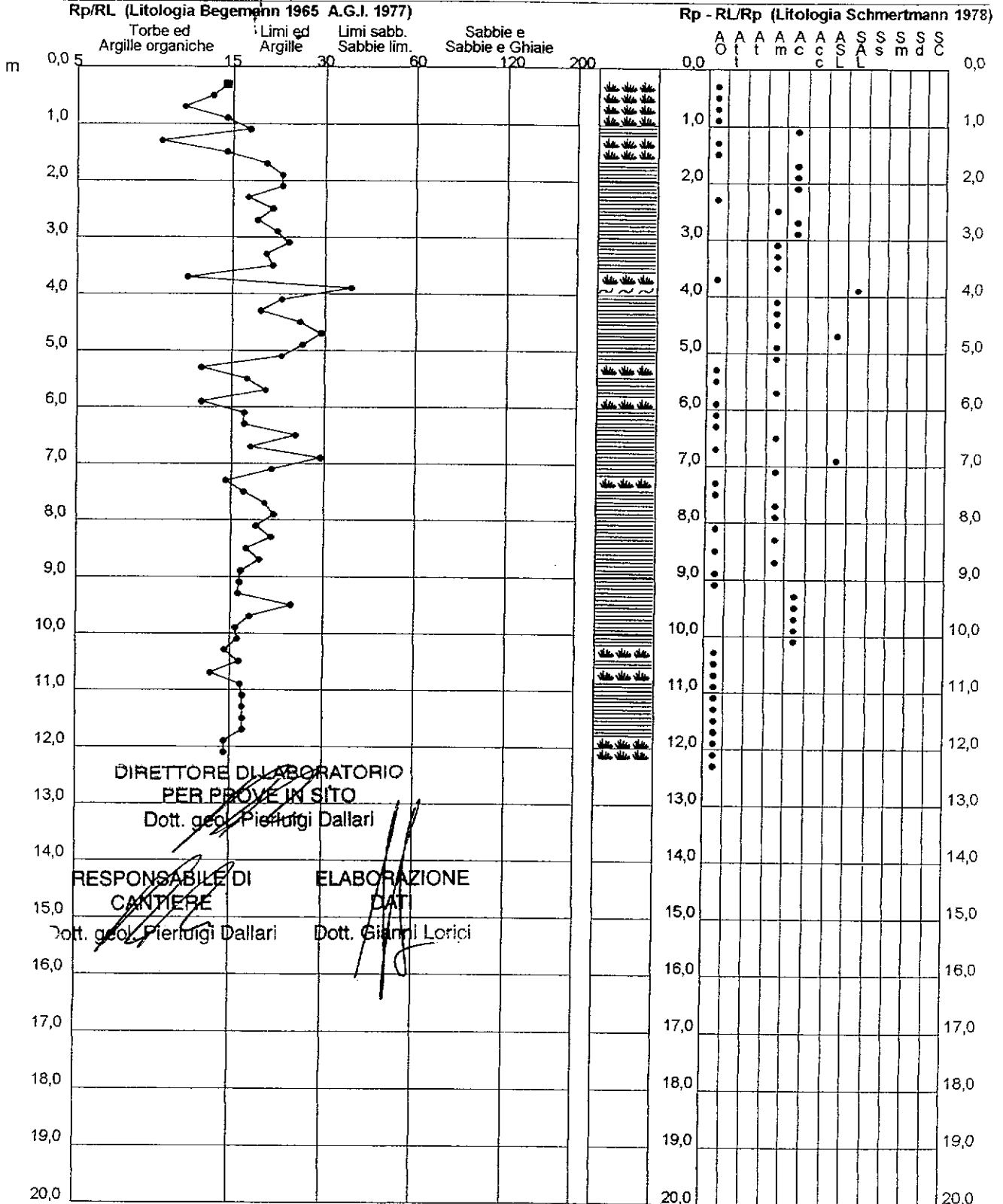
**PROVA PENETROMETRICA STATICA
 VALUTAZIONI LITOLOGICHE**

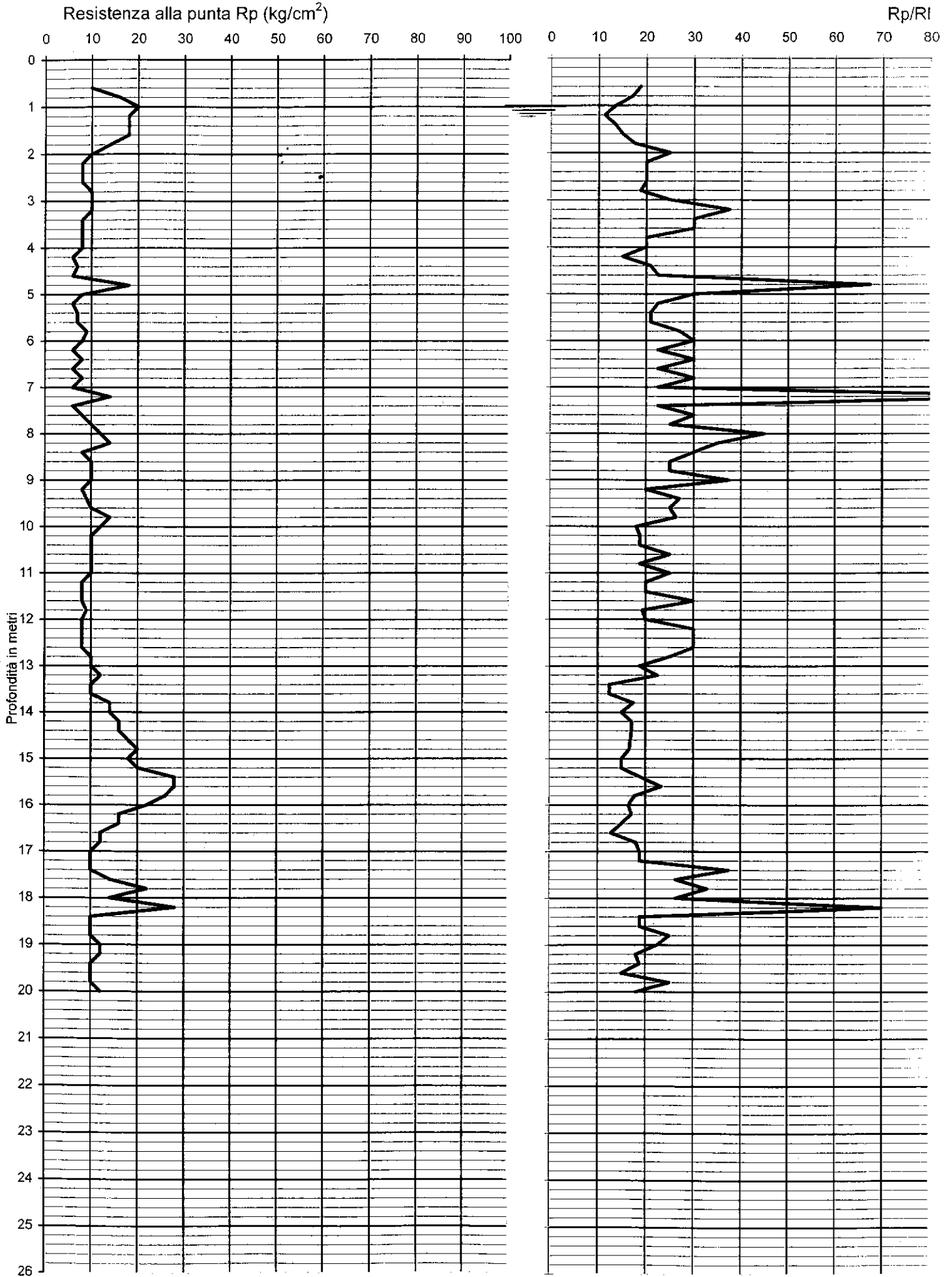
CPT 6

3.010496-043

- committente: Studio Geologico Dallari
 - lavoro: Studio terreno
 - località: Nonantola (MO) - Lotto 16
 - resp. cantiere: Dott. Pier Luigi Dallari
 - assist. cantiere: Dott. Francesco Dettori

- data prova : 10/01/2005
 - quota inizio : Piano Campagna
 - prof. falda : 0,65 m da quota inizio
 - scala vert.: 1 : 100
 - data emiss. : 11/01/2005
 - pagina n°: 3/4







Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999
Telefax 059/454827

PROVA PENETROMETRICA STATICA
Penetrometro Gouda

Committente : IMM.RE CALCARA
Località : NONANTOLA
Prova numero : 2
Data : 16/03/2005
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 0,80 | 16 | 30 | 16 | 0,93 | 17,14 |
| 1,00 | 20 | 42 | 20 | 1,47 | 13,64 |
| 1,20 | 18 | 42 | 18 | 1,60 | 11,25 |
| 1,40 | 18 | 38 | 18 | 1,33 | 13,50 |
| 1,60 | 18 | 36 | 18 | 1,20 | 15,00 |
| 1,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 2,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 3,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 4,40 | 7 | 12 | 7 | 0,33 | 21,00 |
| 4,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,80 | 18 | 22 | 18 | 0,27 | 67,50 |
| 5,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,40 | 7 | 12 | 7 | 0,33 | 21,00 |
| 5,60 | 7 | 12 | 7 | 0,33 | 21,00 |
| 5,80 | 9 | 14 | 9 | 0,33 | 27,00 |
| 6,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,20 | 14 | 16 | 14 | 0,13 | 105,00 |
| 7,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,00 | 12 | 16 | 12 | 0,27 | 45,00 |
| 8,20 | 14 | 20 | 14 | 0,40 | 35,00 |
| 8,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 9,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,40 | 9 | 14 | 9 | 0,33 | 27,00 |
| 9,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,80 | 14 | 22 | 14 | 0,53 | 26,25 |
| 10,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 10,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 11,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,80 | 9 | 16 | 9 | 0,47 | 19,29 |
| 12,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 12,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 12,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 12,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 13,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 13,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 13,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 14,00 | 14 | 28 | 14 | 0,93 | 15,00 |
| 14,20 | 16 | 30 | 16 | 0,93 | 17,14 |
| 14,40 | 16 | 30 | 16 | 0,93 | 17,14 |
| 14,60 | 18 | 34 | 18 | 1,07 | 16,88 |
| 14,80 | 20 | 38 | 20 | 1,20 | 16,67 |
| 15,00 | 18 | 36 | 18 | 1,20 | 15,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | 20 | 40 | 20 | 1,33 | 15,00 |
| 15,40 | 28 | 50 | 28 | 1,47 | 19,09 |
| 15,60 | 28 | 46 | 28 | 1,20 | 23,33 |
| 15,80 | 26 | 48 | 26 | 1,47 | 17,73 |
| 16,00 | 22 | 42 | 22 | 1,33 | 16,50 |
| 16,20 | 16 | 30 | 16 | 0,93 | 17,14 |
| 16,40 | 16 | 32 | 16 | 1,07 | 15,00 |
| 16,60 | 12 | 26 | 12 | 0,93 | 12,86 |
| 16,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 17,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 17,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 17,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 17,60 | 14 | 22 | 14 | 0,53 | 26,25 |
| 17,80 | 22 | 32 | 22 | 0,67 | 33,00 |
| 18,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 18,20 | 28 | 34 | 28 | 0,40 | 70,00 |
| 18,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 18,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 18,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 19,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 19,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 19,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 19,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 19,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 20,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |



PROVE PENETROMETRICHE SRL

Tel. 059-535046 - Fax 059-539166

Decreto di Concessione Ministero Infrastrutture e Trasporti n. 54953 del 29/05/2006 - Settore C - Prove in Sito

PROVA PENETROMETRICA STATICA MECCANICA
VALORI DI CAMPAGNA, PUNTA E LATERALE

| | |
|----|-------------|
| n° | CPT1 |
| | |
| | |

| | | |
|---|------------------|------------------------------------|
| Committente: Geo group srl | U.M.: MPa | Data esecuzione: 29/06/2006 |
| Cantiere: Studio terreno di fondazione | Scala: | Preforo: |
| Località: Nonantola (Mo) | | Falda: -1,20 m |

| H m | L1 | L2 | Lt | qc MPa | fs kPa | F | Fr % | H m | L1 | L2 | Lt | qc MPa | fs kPa | F | Fr % |
|--------|------|------|----|-----------|-----------|----|---------|--------|-------|-------|----|-----------|-----------|-----|---------|
| 0,20 | 50,0 | 53,0 | | 4,9 | 200,00 | 25 | 4,0 | 15,20 | 27,0 | 40,0 | | 2,6 | 53,00 | 51 | 2,0 |
| 0,40 | 48,0 | 78,0 | | 4,7 | 167,00 | 29 | 3,5 | 15,40 | 22,0 | 30,0 | | 2,2 | 87,00 | 25 | 4,0 |
| 0,60 | 58,0 | 83,0 | | 5,7 | 340,00 | 17 | 5,9 | 15,60 | 20,0 | 33,0 | | 2,0 | 67,00 | 30 | 3,4 |
| 0,80 | 48,0 | 99,0 | | 4,7 | 307,00 | 16 | 6,4 | 15,80 | 15,0 | 25,0 | | 1,5 | 73,00 | 21 | 4,9 |
| 1,00 | 24,0 | 70,0 | | 2,4 | 253,00 | 9 | 10,5 | 16,00 | 15,0 | 26,0 | | 1,5 | 73,00 | 21 | 4,9 |
| 1,20 | 22,0 | 60,0 | | 2,2 | 140,00 | 16 | 6,4 | 16,20 | 15,0 | 26,0 | | 1,5 | 87,00 | 17 | 5,8 |
| 1,40 | 22,0 | 43,0 | | 2,2 | 133,00 | 17 | 6,0 | 16,40 | 16,0 | 29,0 | | 1,6 | 53,00 | 30 | 3,3 |
| 1,60 | 20,0 | 40,0 | | 2,0 | 120,00 | 17 | 6,0 | 16,60 | 14,0 | 22,0 | | 1,4 | 60,00 | 23 | 4,3 |
| 1,80 | 16,0 | 34,0 | | 1,6 | 120,00 | 13 | 7,5 | 16,80 | 15,0 | 24,0 | | 1,5 | 53,00 | 28 | 3,5 |
| 2,00 | 15,0 | 33,0 | | 1,5 | 100,00 | 15 | 6,7 | 17,00 | 19,0 | 27,0 | | 1,9 | 60,00 | 32 | 3,2 |
| 2,20 | 12,0 | 27,0 | | 1,2 | 67,00 | 18 | 5,6 | 17,20 | 17,0 | 26,0 | | 1,7 | 73,00 | 23 | 4,3 |
| 2,40 | 12,0 | 22,0 | | 1,2 | 47,00 | 26 | 3,9 | 17,40 | 19,0 | 30,0 | | 1,9 | 73,00 | 26 | 3,8 |
| 2,60 | 8,0 | 15,0 | | 0,8 | 47,00 | 17 | 5,9 | 17,60 | 18,0 | 29,0 | | 1,8 | 53,00 | 34 | 2,9 |
| 2,80 | 9,0 | 16,0 | | 0,9 | 40,00 | 23 | 4,4 | 17,80 | 17,0 | 25,0 | | 1,7 | 67,00 | 25 | 3,9 |
| 3,00 | 9,0 | 15,0 | | 0,9 | 40,00 | 23 | 4,4 | 18,00 | 21,0 | 31,0 | | 2,1 | 67,00 | 31 | 3,2 |
| 3,20 | 14,0 | 20,0 | | 1,4 | 60,00 | 23 | 4,3 | 18,20 | 20,0 | 30,0 | | 2,0 | 87,00 | 23 | 4,4 |
| 3,40 | 14,0 | 23,0 | | 1,4 | 53,00 | 26 | 3,8 | 18,40 | 17,0 | 30,0 | | 1,7 | 67,00 | 25 | 3,9 |
| 3,60 | 19,0 | 27,0 | | 1,9 | 20,00 | 95 | 1,1 | 18,60 | 14,0 | 24,0 | | 1,4 | 73,00 | 19 | 5,2 |
| 3,80 | 21,0 | 24,0 | | 2,1 | 27,00 | 78 | 1,3 | 18,80 | 17,0 | 28,0 | | 1,7 | 107,00 | 16 | 6,3 |
| 4,00 | 20,0 | 24,0 | | 2,0 | 53,00 | 38 | 2,7 | 19,00 | 20,0 | 36,0 | | 2,0 | 93,00 | 22 | 4,7 |
| 4,20 | 14,0 | 22,0 | | 1,4 | 47,00 | 30 | 3,4 | 19,20 | 20,0 | 34,0 | | 2,0 | 93,00 | 22 | 4,7 |
| 4,40 | 14,0 | 21,0 | | 1,4 | 93,00 | 15 | 6,6 | 19,40 | 21,0 | 35,0 | | 2,1 | 100,00 | 21 | 4,8 |
| 4,60 | 19,0 | 33,0 | | 1,9 | 113,00 | 17 | 5,9 | 19,60 | 18,0 | 33,0 | | 1,8 | 93,00 | 19 | 5,2 |
| 4,80 | 15,0 | 32,0 | | 1,5 | 80,00 | 19 | 5,3 | 19,80 | 16,0 | 30,0 | | 1,6 | 80,00 | 20 | 5,0 |
| 5,00 | 12,0 | 24,0 | | 1,2 | 107,00 | 11 | 8,9 | 20,00 | 20,0 | 32,0 | | 2,0 | 113,00 | 18 | 5,7 |
| 5,20 | 18,0 | 34,0 | | 1,8 | 60,00 | 30 | 3,3 | 20,20 | 26,0 | 43,0 | | 2,5 | 113,00 | 23 | 4,3 |
| 5,40 | 18,0 | 27,0 | | 1,8 | 53,00 | 34 | 2,9 | 20,40 | 29,0 | 46,0 | | 2,8 | 140,00 | 21 | 4,8 |
| 5,60 | 10,0 | 18,0 | | 1,0 | 47,00 | 21 | 4,7 | 20,60 | 27,0 | 48,0 | | 2,6 | 147,00 | 18 | 5,4 |
| 5,80 | 9,0 | 16,0 | | 0,9 | 60,00 | 15 | 6,7 | 20,80 | 29,0 | 51,0 | | 2,8 | 153,00 | 19 | 5,3 |
| 6,00 | 10,0 | 19,0 | | 1,0 | 60,00 | 17 | 6,0 | 21,00 | 31,0 | 54,0 | | 3,0 | 160,00 | 19 | 5,2 |
| 6,20 | 12,0 | 21,0 | | 1,2 | 67,00 | 18 | 5,6 | 21,20 | 32,0 | 56,0 | | 3,1 | 167,00 | 19 | 5,2 |
| 6,40 | 13,0 | 23,0 | | 1,3 | 80,00 | 16 | 6,2 | 21,40 | 32,0 | 57,0 | | 3,1 | 167,00 | 19 | 5,2 |
| 6,60 | 14,0 | 26,0 | | 1,4 | 73,00 | 19 | 5,2 | 21,60 | 34,0 | 59,0 | | 3,3 | 187,00 | 18 | 5,5 |
| 6,80 | 14,0 | 25,0 | | 1,4 | 60,00 | 23 | 4,3 | 21,80 | 35,0 | 63,0 | | 3,4 | 180,00 | 19 | 5,1 |
| 7,00 | 13,0 | 22,0 | | 1,3 | 80,00 | 16 | 6,2 | 22,00 | 40,0 | 67,0 | | 3,9 | 193,00 | 21 | 4,8 |
| 7,20 | 18,0 | 30,0 | | 1,8 | 113,00 | 16 | 6,3 | 22,20 | 45,0 | 74,0 | | 4,4 | 207,00 | 22 | 4,6 |
| 7,40 | 21,0 | 38,0 | | 2,1 | 107,00 | 20 | 5,1 | 22,40 | 43,0 | 74,0 | | 4,2 | 153,00 | 28 | 3,6 |
| 7,60 | 15,0 | 31,0 | | 1,5 | 67,00 | 22 | 4,5 | 22,60 | 25,0 | 48,0 | | 2,5 | 107,00 | 23 | 4,3 |
| 7,80 | 11,0 | 21,0 | | 1,1 | 60,00 | 18 | 5,5 | 22,80 | 27,0 | 43,0 | | 2,6 | 80,00 | 34 | 3,0 |
| 8,00 | 12,0 | 21,0 | | 1,2 | 73,00 | 16 | 6,1 | 23,00 | 61,0 | 73,0 | | 6,0 | 73,00 | 84 | 1,2 |
| 8,20 | 11,0 | 22,0 | | 1,1 | 47,00 | 23 | 4,3 | 23,20 | 45,0 | 56,0 | | 4,4 | 113,00 | 40 | 2,5 |
| 8,40 | 12,0 | 19,0 | | 1,2 | 47,00 | 26 | 3,9 | 23,40 | 139,0 | 156,0 | | 13,6 | 180,00 | 77 | 1,3 |
| 8,60 | 8,0 | 15,0 | | 0,8 | 67,00 | 12 | 8,4 | 23,60 | 136,0 | 163,0 | | 13,3 | 40,00 | 340 | 0,3 |
| 8,80 | 10,0 | 20,0 | | 1,0 | 40,00 | 25 | 4,0 | 23,80 | 119,0 | 125,0 | | 11,7 | 120,00 | 99 | 1,0 |
| 9,00 | 10,0 | 16,0 | | 1,0 | 60,00 | 17 | 6,0 | 24,00 | 133,0 | 151,0 | | 13,0 | 40,00 | 333 | 0,3 |
| 9,20 | 11,0 | 20,0 | | 1,1 | 47,00 | 23 | 4,3 | 24,20 | 90,0 | 96,0 | | 8,8 | 73,00 | 123 | 0,8 |
| 9,40 | 12,0 | 19,0 | | 1,2 | 53,00 | 23 | 4,4 | 24,40 | 99,0 | 110,0 | | 9,7 | 13,00 | 762 | 0,1 |
| 9,60 | 16,0 | 24,0 | | 1,6 | 53,00 | 30 | 3,3 | 24,60 | 78,0 | 80,0 | | 7,6 | 47,00 | 166 | 0,6 |
| 9,80 | 13,0 | 21,0 | | 1,3 | 53,00 | 25 | 4,1 | 24,80 | 55,0 | 62,0 | | 5,4 | 153,00 | 36 | 2,8 |
| 10,00 | 10,0 | 18,0 | | 1,0 | 47,00 | 21 | 4,7 | 25,00 | 68,0 | 91,0 | | 6,7 | 307,00 | 22 | 4,5 |
| 10,20 | 11,0 | 18,0 | | 1,1 | 60,00 | 18 | 5,5 | 25,20 | 148,0 | 194,0 | | 14,5 | 140,00 | 106 | 0,9 |
| 10,40 | 14,0 | 23,0 | | 1,4 | 73,00 | 19 | 5,2 | 25,40 | 125,0 | 146,0 | | 12,3 | 480,00 | 26 | 3,8 |
| 10,60 | 16,0 | 27,0 | | 1,6 | 67,00 | 24 | 4,2 | 25,60 | 132,0 | 204,0 | | 12,9 | 153,00 | 86 | 1,2 |
| 10,80 | 17,0 | 27,0 | | 1,7 | 80,00 | 21 | 4,7 | 25,80 | 163,0 | 186,0 | | 16,0 | 107,00 | 152 | 0,7 |
| 11,00 | 18,0 | 30,0 | | 1,8 | 120,00 | 15 | 6,7 | 26,00 | 198,0 | 214,0 | | 19,4 | 253,00 | 78 | 1,3 |
| 11,20 | 22,0 | 40,0 | | 2,2 | 120,00 | 18 | 5,5 | 26,20 | 178,0 | 216,0 | | 17,4 | 120,00 | 148 | 0,7 |
| 11,40 | 28,0 | 46,0 | | 2,7 | 180,00 | 16 | 6,4 | 26,40 | 163,0 | 181,0 | | 16,0 | 227,00 | 72 | 1,4 |
| 11,60 | 33,0 | 60,0 | | 3,2 | 187,00 | 18 | 5,7 | 26,60 | 166,0 | 200,0 | | 16,3 | 147,00 | 113 | 0,9 |
| 11,80 | 35,0 | 63,0 | | 3,4 | 180,00 | 19 | 5,1 | 26,80 | 127,0 | 149,0 | | 12,4 | 80,00 | 159 | 0,6 |
| 12,00 | 37,0 | 64,0 | | 3,6 | 153,00 | 24 | 4,1 | 27,00 | 108,0 | 120,0 | | 10,6 | 160,00 | 68 | 1,5 |
| 12,20 | 37,0 | 60,0 | | 3,6 | 193,00 | 19 | 5,2 | 27,20 | 28,0 | 52,0 | | 2,7 | 160,00 | 18 | 5,7 |
| 12,40 | 36,0 | 65,0 | | 3,5 | 213,00 | 17 | 5,9 | 27,40 | 26,0 | 50,0 | | 2,5 | 153,00 | 17 | 5,9 |
| 12,60 | 39,0 | 71,0 | | 3,8 | 153,00 | 25 | 3,9 | 27,60 | 26,0 | 49,0 | | 2,5 | 100,00 | 26 | 3,8 |
| 12,80 | 37,0 | 60,0 | | 3,6 | 147,00 | 25 | 4,0 | 27,80 | 24,0 | 39,0 | | 2,4 | 53,00 | 45 | 2,2 |
| 13,00 | 29,0 | 51,0 | | 2,8 | 153,00 | 19 | 5,3 | 28,00 | 21,0 | 29,0 | | 2,1 | 93,00 | 23 | 4,4 |
| 13,20 | 27,0 | 50,0 | | 2,6 | 113,00 | 24 | 4,2 | 28,20 | 22,0 | 36,0 | | 2,2 | 113,00 | 19 | 5,1 |
| 13,40 | 26,0 | 43,0 | | 2,5 | 173,00 | 15 | 6,7 | 28,40 | 19,0 | 36,0 | | 1,9 | 93,00 | 20 | 4,9 |
| 13,60 | 29,0 | 55,0 | | 2,8 | 133,00 | 22 | 4,6 | 28,60 | 24,0 | 38,0 | | 2,4 | 93,00 | 26 | 3,9 |
| 13,80 | 24,0 | 44,0 | | 2,4 | 107,00 | 22 | 4,5 | 28,80 | 26,0 | 40,0 | | 2,5 | 107,00 | 24 | 4,1 |
| 14,00 | 16,0 | 32,0 | | 1,6 | 87,00 | 18 | 5,4 | 29,00 | 24,0 | 40,0 | | 2,4 | 107,00 | 22 | 4,5 |
| 14,20 | 15,0 | 28,0 | | 1,5 | 67,00 | 22 | 4,5 | 29,20 | 30,0 | 46,0 | | 2,9 | 173,00 | 17 | 5,8 |
| 14,40 | 16,0 | 26,0 | | 1,6 | 40,00 | 40 | 2,5 | 29,40 | 36,0 | 62,0 | | 3,5 | 153,00 | 24 | 4,3 |
| 14,60 | 33,0 | 39,0 | | 3,2 | 67,00 | 49 | 2,0 | 29,60 | 28,0 | 51,0 | | 2,7 | 133,00 | 21 | 4,8 |
| 14,80 | 16,0 | 26,0 | | 1,6 | 93,00 | 17 | 5,8 | 29,80 | 22,0 | 42,0 | | 2,2 | 113,00 | 19 | 5,1 |
| 15,00 | 18,0 | 32,0 | | 1,8 | 87,00 | 21 | 4,8 | 30,00 | 21,0 | 38,0 | | 2,1 | | | |

H = profondità
 L1 = prima lettura (punta)
 L2 = seconda lettura (punta + laterale)
 Lt = terza lettura (totale)
 qc = resistenza di punta
 fs = resistenza laterale
 F = rapporto di Begemann (qc / fs)
 Fr = rapporto di Schmertmann (fs / qc)%

PROVA PENETROMETRICA STATICA MECCANICA

DIAGRAMMA DI RESISTENZA

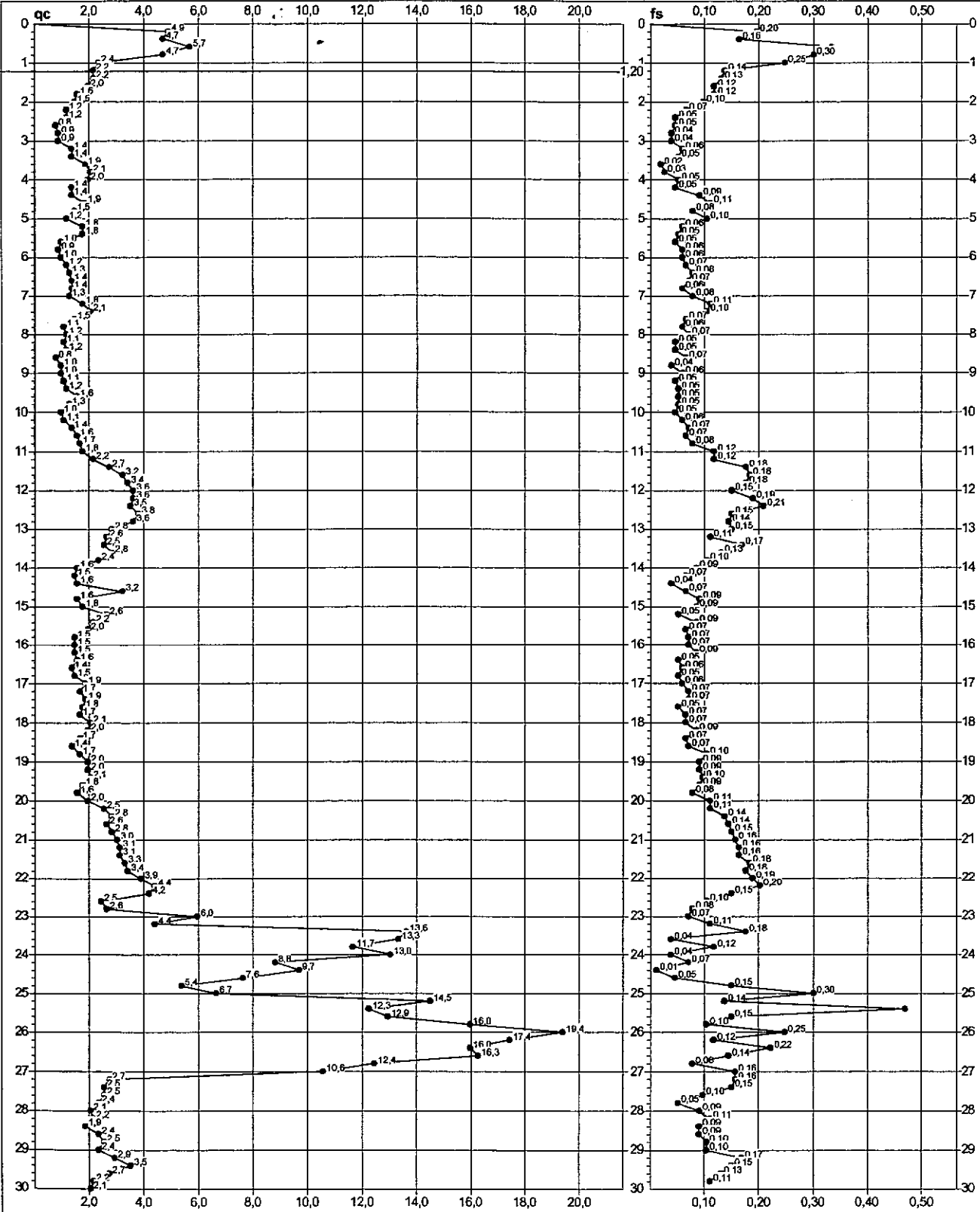
n° **CPT1**

Committente: **Geo group srl**
 Cantiere: **Studio terreno di fondazione**
 Località: **Nonantola (Mo)**

U.M.: **MPa**
 Scala: **1:150**

Data esecuzione: **29/06/2006**

Preforo:
 Falda: **-1,20 m**



Coord. Relative
 Xr: m
 Yr: m
 Zr: m

Coord. Geografiche
 Xg:
 Yg:
 Zg:

Penetrometro: **Pagani TG63-100**
 Responsabile: **Dott. Fabrizio Anderini**
 Assistente: **Dott. Fabrizio Vecchi**

Quota ass.:
 Corr.astine: **KN/ml**
 Cod.ISTAT:

PROVA PENETROMETRICA STATICA MECCANICA

INTERPRETAZIONE LITOLOGICA

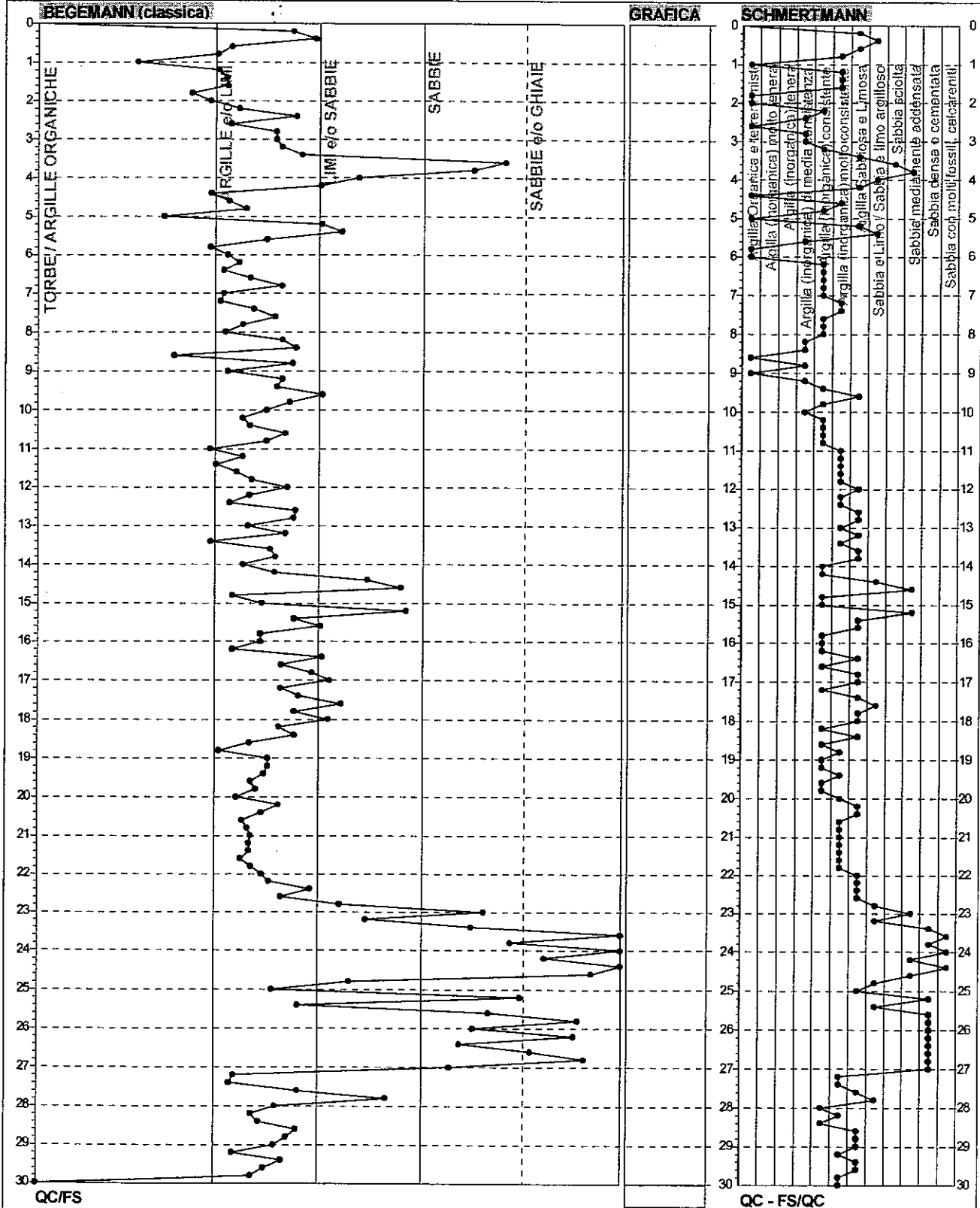
| | |
|----|-------------|
| n° | CPT1 |
| | |
| | |

Committente: **Geo group srl**
 Cantiere: **Studio terreno di fondazione**
 Località: **Nonantola (Mo)**

U.M.: **MPa**
 Scala: **1:150**

Data esecuzione: **29/06/2006**

Preforo:
 Falda: **-1,20 m**



| | | |
|--|--|--|
| Torbe / Argille organiche : 8 punti, 5,33% | Argilla Organica e terreni misti: 10 letture, 6,67% | Argilla Sabbiosa e Limosa: 34 punti, 22,67% |
| Argille e/o Limi : 109 punti, 72,67% | Argilla (inorganica) molto tenera: 0 punti, 0,00% | Sabbia e Limo / Sabbia e limo argilloso: 10 punti, 6,67% |
| Limi e/o Sabbie : 14 punti, 9,33% | Argilla (inorganica) tenera: 0 punti, 0,00% | Sabbia sciolta: 1 punto, 0,67% |
| Sabbie: 11 punti, 7,33% | Argilla (inorganica) media consistenza : 9 punti, 6,00% | Sabbia mediamente addensata: 6 punti, 4,00% |
| Sabbie e/o Ghiaie : 8 punti, 5,33% | Argilla (inorganica) consistente: 34 punti, 22,67% | Sabbia densa o cementata: 11 punti, 7,33% |
| | Argilla (inorganica) molto consistente: 31 punti, 20,67% | Sabbia con molti fossili, calcareniti: 3 punti, 2,00% |



PROVE PENETROMETRICHE SRL

Tel. 059-535046 - Fax: 059-539166

Decreto di Concessione Ministero Infrastrutture e Trasporti n. 54953 del 29/05/2006 - Settore C - Prove in Sito

PROVA PENETROMETRICA STATICA MECCANICA
PARAMETRI GEOTECNICI

Table with 2 columns: n°, CPT1

Committente: Geo group srl
Cantiere: Studio terreno di fondazione
Località: Nonantola (Mo)

U.M.: MPa
Scala: 1
Data esecuzione: 29/06/2006
Preforo:
Falda: -1,20 m

Main data table with columns: Prof. m, Qc MPa, Qc/Fs, Zone, gamma kN/m^3, sigma_vo kPa, Vs m/s, Cu kPa, OCR, Eu50 MPa, Eu25 MPa, Mo MPa, Dr %, odr, alphaCa, alphaKo, alphaDB, alphaDM, alphaMe, F.L., E'50 MPa, E'25 MPa, Mo MPa



PROVA PENETROMETRICA STATICA MECCANICA

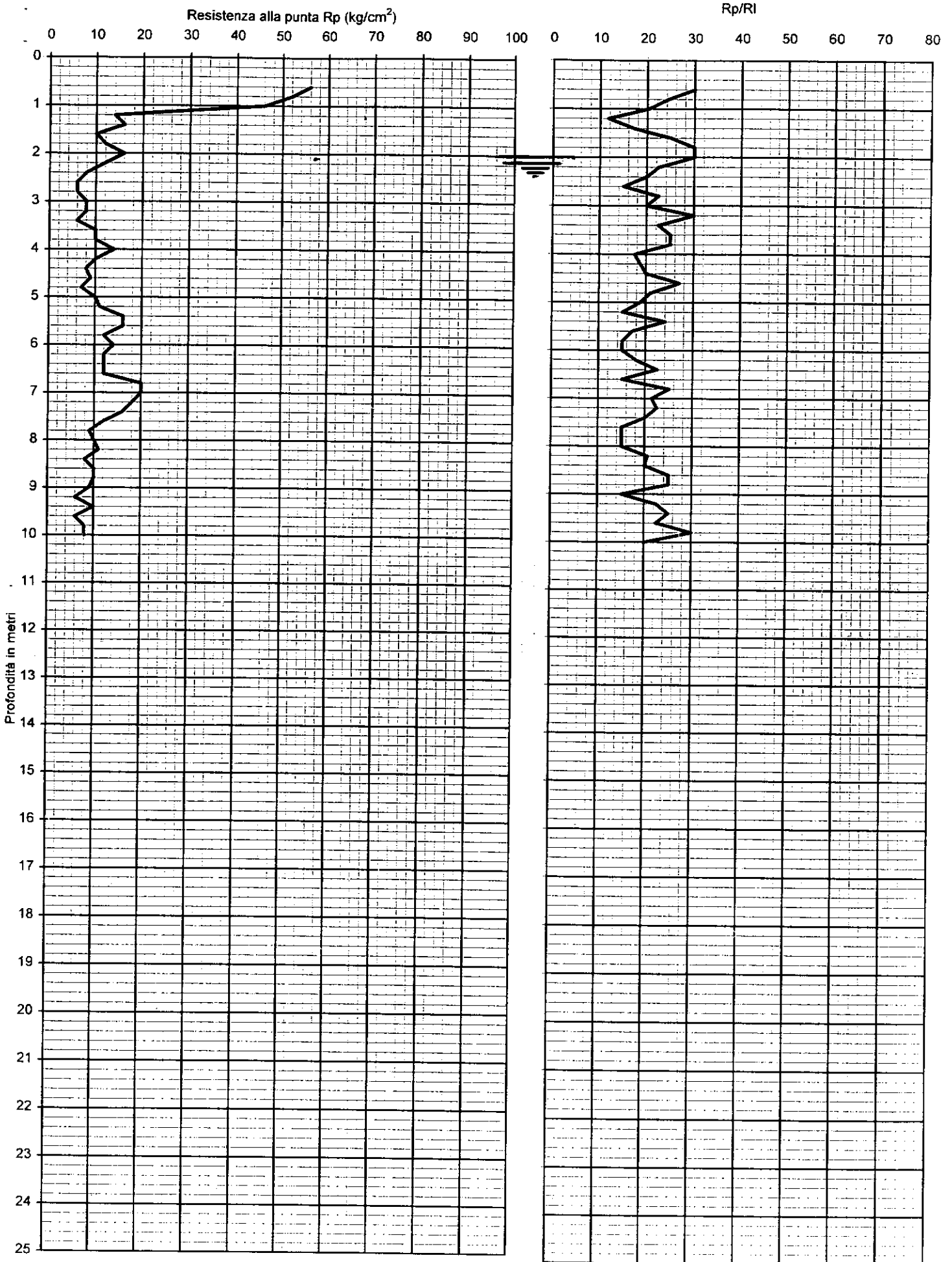
PARAMETRI GEOTECNICI

| | |
|----|------|
| n° | CPT1 |
| | |
| | |

| | | |
|---|------------------|------------------------------------|
| Committente: Geo group srl | U.M.: MPa | Data esecuzione: 29/06/2006 |
| Cantiere: Studio terreno di fondazione | Scala: 2 | Preforo: -1,20 m |
| Località: Nonantola (Mo) | | |

| Prof. m | Qc MPa | Qc/Fs | Zone | γ kN/m³ | σvo kPa | Vs m/s | NATURA COESIVA | | | | | NATURA GRANULARE | | | | | | | | | | |
|---------|--------|-------|---------|---------|---------|--------|----------------|---------|----------|----------|--------|------------------|---------|---------|---------|---------|---------|---------|------|---------|---------|--------|
| | | | | | | | Cu kPa | OCR kPa | Eu50 MPa | Eu25 MPa | Mo MPa | Dr % | σdr (°) | σCa (°) | σKo (°) | σDB (°) | σDM (°) | σMe (°) | F.L. | E50 MPa | E25 MPa | Mo MPa |
| 20,0 | 2,0 | 17,7 | 4 III | 81 | 195 | 171 | 78 | 2,0 | 43,88 | 65,82 | 5,88 | - | 38 | 21 | 18 | 17 | 25 | 27 | - | 3,27 | 4,90 | 5,88 |
| 20,2 | 2,5 | 23,0 | 4 III | 93 | 197 | 189 | 91 | 2,4 | 48,90 | 73,35 | 7,64 | 9 | 39 | 22 | 19 | 18 | 26 | 28 | - | 4,25 | 6,37 | 7,64 |
| 20,4 | 2,8 | 20,7 | 4 III | 94 | 199 | 197 | 96 | 2,5 | 50,84 | 76,26 | 8,53 | 12 | 39 | 23 | 20 | 19 | 26 | 29 | - | 4,74 | 7,11 | 8,53 |
| 20,6 | 2,6 | 18,4 | 4 III | 93 | 201 | 192 | 93 | 2,4 | 49,87 | 74,80 | 7,94 | 9 | 39 | 23 | 19 | 18 | 26 | 28 | - | 4,41 | 6,62 | 7,94 |
| 20,8 | 2,8 | 19,0 | 4 III | 94 | 203 | 197 | 96 | 2,5 | 51,22 | 76,83 | 8,53 | 12 | 39 | 23 | 20 | 18 | 26 | 29 | - | 4,74 | 7,11 | 8,53 |
| 21,0 | 3,0 | 19,4 | 4 III | 95 | 205 | 202 | 101 | 2,6 | 52,95 | 79,43 | 9,11 | 14 | 39 | 23 | 20 | 19 | 26 | 29 | - | 5,06 | 7,60 | 9,11 |
| 21,2 | 3,1 | 19,2 | 4 III | 95 | 207 | 204 | 105 | 2,7 | 54,11 | 81,17 | 9,41 | 15 | 39 | 23 | 20 | 19 | 26 | 29 | - | 5,23 | 7,84 | 9,41 |
| 21,4 | 3,1 | 19,2 | 4 III | 95 | 209 | 204 | 105 | 2,6 | 54,34 | 81,51 | 9,41 | 14 | 39 | 23 | 20 | 19 | 26 | 29 | - | 5,23 | 7,84 | 9,41 |
| 21,6 | 3,3 | 18,2 | 4 III | 96 | 210 | 209 | 111 | 2,8 | 56,31 | 84,47 | 10,00 | 16 | 39 | 23 | 20 | 19 | 27 | 29 | - | 5,55 | 8,33 | 10,00 |
| 21,8 | 3,4 | 19,4 | 4 III | 96 | 212 | 211 | 114 | 2,9 | 57,35 | 86,02 | 10,29 | 17 | 39 | 24 | 20 | 19 | 27 | 29 | - | 5,72 | 8,58 | 10,29 |
| 22,0 | 3,9 | 20,7 | 4 III | 98 | 214 | 222 | 131 | 3,4 | 60,22 | 90,33 | 11,76 | 21 | 40 | 24 | 21 | 20 | 27 | 30 | - | 6,53 | 9,80 | 11,76 |
| 22,2 | 4,4 | 21,7 | 4 III | 98 | 216 | 232 | 147 | 3,9 | 60,75 | 91,12 | 13,23 | 25 | 40 | 25 | 21 | 20 | 28 | 31 | - | 7,35 | 11,03 | 13,23 |
| 22,4 | 4,2 | 28,1 | 4 III | 98 | 218 | 228 | 140 | 3,6 | 61,63 | 92,44 | 12,64 | 23 | 40 | 24 | 21 | 20 | 28 | 30 | - | 7,02 | 10,54 | 12,64 |
| 22,6 | 2,5 | 23,4 | 4 III | 92 | 220 | 186 | 89 | 2,0 | 49,76 | 74,64 | 7,35 | 5 | 38 | 22 | 18 | 17 | 25 | 28 | - | 4,08 | 6,13 | 7,35 |
| 22,8 | 2,6 | 33,8 | 3 | 85 | 222 | 192 | - | - | - | - | - | 7 | 39 | 22 | 19 | 18 | 25 | 28 | 2,00 | 4,41 | 6,62 | 7,94 |
| 23,0 | 6,0 | 83,6 | 3 | 92 | 224 | 260 | - | - | - | - | - | 35 | 41 | 26 | 23 | 22 | 30 | 32 | 2,00 | 9,96 | 14,95 | 17,93 |
| 23,2 | 4,4 | 36,8 | 3 | 89 | 225 | 232 | - | - | - | - | - | 24 | 40 | 25 | 21 | 20 | 28 | 31 | 2,00 | 7,35 | 11,03 | 13,23 |
| 23,4 | 13,6 | 77,2 | 3 | 104 | 228 | 355 | - | - | - | - | - | 63 | 43 | 30 | 27 | 25 | 34 | 36 | 2,00 | 22,70 | 34,06 | 40,87 |
| 23,6 | 13,3 | 340,0 | 3 | 103 | 230 | 352 | - | - | - | - | - | 62 | 43 | 30 | 27 | 25 | 34 | 35 | 2,00 | 22,21 | 33,32 | 39,98 |
| 23,8 | 11,7 | 99,2 | 3 | 101 | 232 | 335 | - | - | - | - | - | 57 | 43 | 29 | 26 | 25 | 33 | 35 | 2,00 | 19,44 | 29,16 | 34,99 |
| 24,0 | 13,0 | 332,5 | 3 | 103 | 234 | 349 | - | - | - | - | - | 61 | 43 | 30 | 27 | 25 | 34 | 35 | 2,00 | 21,72 | 32,59 | 39,10 |
| 24,2 | 8,8 | 123,3 | 3 | 96 | 236 | 302 | - | - | - | - | - | 47 | 42 | 28 | 25 | 23 | 31 | 33 | 2,00 | 14,70 | 22,05 | 26,46 |
| 24,4 | 9,7 | 761,5 | 3 | 98 | 238 | 313 | - | - | - | - | - | 50 | 42 | 28 | 25 | 24 | 32 | 34 | 2,00 | 16,17 | 24,26 | 29,11 |
| 24,6 | 7,6 | 166,0 | 3 | 94 | 239 | 286 | - | - | - | - | - | 42 | 41 | 27 | 24 | 22 | 31 | 33 | 2,00 | 12,74 | 19,11 | 22,93 |
| 24,8 | 5,4 | 35,9 | 3 | 91 | 241 | 251 | - | - | - | - | - | 29 | 40 | 25 | 22 | 21 | 29 | 31 | 2,00 | 8,96 | 13,48 | 16,17 |
| 25,0 | 6,7 | 22,1 | 4 III | 100 | 243 | 271 | 222 | 5,6 | 65,62 | 98,43 | 19,99 | 37 | 41 | 26 | 23 | 22 | 30 | 32 | 2,00 | 11,11 | 16,66 | 19,99 |
| 25,2 | 14,5 | 105,7 | 3 | 105 | 245 | 364 | - | - | - | - | - | 63 | 43 | 30 | 27 | 25 | 34 | 36 | 2,00 | 24,17 | 36,26 | 43,51 |
| 25,4 | 12,3 | 26,0 | 4 III | 105 | 247 | 341 | 408 | 11,7 | 69,42 | 104,13 | 36,75 | 57 | 43 | 29 | 26 | 24 | 33 | 35 | 2,00 | 20,42 | 30,53 | 36,75 |
| 25,6 | 12,9 | 86,3 | 3 | 103 | 250 | 348 | - | - | - | - | - | 59 | 43 | 29 | 26 | 25 | 33 | 35 | 2,00 | 21,56 | 32,34 | 38,81 |
| 25,8 | 16,0 | 152,3 | 3 | 107 | 252 | 377 | - | - | - | - | - | 66 | 43 | 30 | 27 | 26 | 34 | 36 | 2,00 | 26,62 | 39,94 | 47,92 |
| 26,0 | 19,4 | 78,3 | 3 | 112 | 254 | 406 | - | - | - | - | - | 72 | 44 | 31 | 28 | 27 | 35 | 38 | 2,00 | 32,34 | 48,51 | 58,21 |
| 26,2 | 17,4 | 148,3 | 3 | 109 | 256 | 390 | - | - | - | - | - | 68 | 43 | 31 | 28 | 26 | 35 | 37 | 2,00 | 29,07 | 43,61 | 52,33 |
| 26,4 | 16,0 | 71,8 | 3 | 107 | 258 | 377 | - | - | - | - | - | 65 | 43 | 30 | 27 | 26 | 34 | 36 | 2,00 | 26,62 | 39,94 | 47,92 |
| 26,6 | 16,3 | 112,9 | 3 | 108 | 260 | 380 | - | - | - | - | - | 66 | 43 | 30 | 27 | 26 | 34 | 37 | 2,00 | 27,11 | 40,67 | 48,80 |
| 26,8 | 12,4 | 158,8 | 3 | 102 | 262 | 343 | - | - | - | - | - | 56 | 42 | 29 | 26 | 24 | 33 | 35 | 2,00 | 20,74 | 31,12 | 37,34 |
| 27,0 | 10,6 | 67,5 | 3 | 99 | 264 | 323 | - | - | - | - | - | 50 | 42 | 28 | 25 | 23 | 32 | 34 | 2,00 | 17,64 | 26,46 | 31,75 |
| 27,2 | 2,7 | 17,5 | 4 III | 94 | 266 | 194 | 95 | 1,7 | 54,29 | 81,44 | 8,23 | 4 | 38 | 21 | 18 | 17 | 25 | 28 | 2,00 | 4,57 | 6,86 | 8,23 |
| 27,4 | 2,5 | 17,0 | 4 III | 93 | 268 | 189 | 91 | 1,6 | 52,60 | 78,91 | 7,64 | 1 | 38 | 21 | 18 | 17 | 25 | 28 | 2,00 | 4,25 | 6,37 | 7,64 |
| 27,6 | 2,5 | 26,0 | 4 III | 93 | 270 | 189 | 91 | 1,6 | 52,66 | 78,99 | 7,64 | 1 | 38 | 21 | 17 | 17 | 25 | 28 | 2,00 | 4,25 | 6,37 | 7,64 |
| 27,8 | 2,4 | 45,3 | 3 | 84 | 272 | 183 | - | - | - | - | - | - | 38 | 21 | 17 | 16 | 25 | 28 | 2,00 | 3,92 | 5,88 | 7,06 |
| 28,0 | 2,1 | 22,6 | 4 III | 91 | 274 | 174 | 81 | 1,4 | 47,49 | 71,24 | 6,17 | - | 38 | 20 | 16 | 16 | 25 | 27 | 2,00 | 3,43 | 5,15 | 6,17 |
| 28,2 | 2,2 | 19,5 | 4 III | 91 | 275 | 177 | 83 | 1,4 | 48,69 | 73,04 | 6,47 | - | 38 | 20 | 16 | 16 | 25 | 28 | 2,00 | 3,59 | 5,39 | 6,47 |
| 28,4 | 1,9 | 20,4 | 2 IIIII | 97 | 277 | 168 | 76 | 1,2 | 45,04 | 67,56 | 5,70 | - | - | - | - | - | - | - | - | - | - | - |
| 28,6 | 2,4 | 25,8 | 4 III | 92 | 279 | 183 | 87 | 1,5 | 50,94 | 76,41 | 7,06 | - | 38 | 20 | 17 | 16 | 25 | 28 | - | 3,92 | 5,88 | 7,06 |
| 28,8 | 2,5 | 24,3 | 4 III | 93 | 281 | 189 | 91 | 1,5 | 52,96 | 79,44 | 7,64 | - | 38 | 21 | 17 | 16 | 25 | 28 | - | 4,25 | 6,37 | 7,64 |
| 29,0 | 2,4 | 22,4 | 4 III | 92 | 283 | 183 | 87 | 1,4 | 51,02 | 76,53 | 7,06 | - | 38 | 20 | 17 | 16 | 25 | 28 | - | 3,92 | 5,88 | 7,06 |
| 29,2 | 2,9 | 17,3 | 4 III | 94 | 285 | 199 | 98 | 1,7 | 56,53 | 84,79 | 8,82 | 5 | 38 | 21 | 18 | 17 | 25 | 29 | - | 4,90 | 7,35 | 8,82 |
| 29,4 | 3,5 | 23,5 | 4 III | 97 | 287 | 214 | 118 | 2,1 | 65,47 | 98,20 | 10,58 | 11 | 39 | 22 | 19 | 18 | 25 | 30 | - | 5,88 | 8,82 | 10,58 |
| 29,6 | 2,7 | 21,1 | 4 III | 94 | 289 | 194 | 95 | 1,6 | 54,97 | 82,46 | 8,23 | 2 | 38 | 21 | 18 | 17 | 25 | 28 | - | 4,57 | 6,86 | 8,23 |
| 29,8 | 2,2 | 19,5 | 4 III | 91 | 290 | 177 | 83 | 1,3 | 48,96 | 73,44 | 6,47 | - | 38 | 20 | 16 | 15 | 25 | 28 | - | 3,59 | 5,39 | 6,47 |
| 30,0 | 2,1 | - | 3 | 84 | 292 | 174 | - | - | - | - | - | - | 38 | 19 | 16 | 15 | 25 | 27 | 2,00 | 3,43 | 5,15 | 6,17 |

Via A. Nardi, 35 - 41100 MODENA



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 56 | 84 | 56 | 1,87 | 30,00 |
| 0,80 | 52 | 84 | 52 | 2,13 | 24,38 |
| 1,00 | 46 | 80 | 46 | 2,27 | 20,29 |
| 1,20 | 14 | 32 | 14 | 1,20 | 11,67 |
| 1,40 | 16 | 30 | 16 | 0,93 | 17,14 |
| 1,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 1,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 2,00 | 16 | 24 | 16 | 0,53 | 30,00 |
| 2,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 2,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 2,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,00 | 14 | 26 | 14 | 0,80 | 17,50 |
| 4,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,60 | 9 | 14 | 9 | 0,33 | 27,00 |
| 4,80 | 7 | 12 | 7 | 0,33 | 21,00 |
| 5,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,20 | 11 | 22 | 11 | 0,73 | 15,00 |
| 5,40 | 16 | 26 | 16 | 0,67 | 24,00 |
| 5,60 | 16 | 30 | 16 | 0,93 | 17,14 |
| 5,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 6,00 | 14 | 28 | 14 | 0,93 | 15,00 |
| 6,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 6,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 6,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 6,80 | 20 | 32 | 20 | 0,80 | 25,00 |
| 7,00 | 20 | 34 | 20 | 0,93 | 21,43 |
| 7,20 | 18 | 30 | 18 | 0,80 | 22,50 |
| 7,40 | 16 | 28 | 16 | 0,80 | 20,00 |
| 7,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 7,80 | 9 | 18 | 9 | 0,60 | 15,00 |
| 8,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 8,20 | 11 | 19 | 11 | 0,53 | 20,63 |
| 8,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,00 | 9 | 18 | 9 | 0,60 | 15,00 |
| 9,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
| 11,20 | | | | | |
| 11,40 | | | | | |
| 11,60 | | | | | |
| 11,80 | | | | | |
| 12,00 | | | | | |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |



PROVA PENETROMETRICA STATICA MECCANICA
LETTURE CAMPAGNA: PUNTA, LATERALE, TOTALE

| | |
|----------------|----------|
| n° | 5 |
| riferimento | 025-08 |
| certificato n° | 4004 |

| | | |
|---|-------------|------------------------------|
| Committente: studio tecnico | U.M.: MPa | Data exec.: 22/02/2008 |
| Cantiere: studio terreno di fondazione villette | Pagina: 1/4 | Data certificato: 25/02/2008 |
| Località: Redù-Nonantola | Elaborato: | Preforo: m |
| | | Falda: 1,80 m piano campagna |

| H m | L1 - | L2 - | Lt - | qc MPa | fs kPa | F - | Fr % | H m | L1 - | L2 - | Lt - | qc MPa | fs kPa | F - | Fr % |
|--------|---------|---------|---------|-----------|-----------|--------|---------|--------|---------|---------|---------|-----------|-----------|--------|---------|
| 0,20 | 10,00 | 14,00 | | 0,98 | 71,54 | 14 | 7,3 | | | | | | | | |
| 0,40 | 12,00 | 23,00 | | 1,18 | 78,40 | 15 | 6,7 | | | | | | | | |
| 0,60 | 16,00 | 28,00 | | 1,57 | 124,46 | 13 | 7,9 | | | | | | | | |
| 0,80 | 20,00 | 39,00 | | 1,96 | 137,20 | 14 | 7,0 | | | | | | | | |
| 1,00 | 19,00 | 40,00 | | 1,86 | 156,80 | 12 | 8,4 | | | | | | | | |
| 1,20 | 19,00 | 43,00 | | 1,86 | 137,20 | 14 | 7,4 | | | | | | | | |
| 1,40 | 19,00 | 40,00 | | 1,86 | 104,86 | 18 | 5,6 | | | | | | | | |
| 1,60 | 22,00 | 38,00 | | 2,16 | 98,00 | 22 | 4,5 | | | | | | | | |
| 1,80 | 19,00 | 34,00 | | 1,86 | 65,66 | 28 | 3,5 | | | | | | | | |
| 2,00 | 11,00 | 21,00 | | 1,08 | 58,80 | 18 | 5,5 | | | | | | | | |
| 2,20 | 7,00 | 16,00 | | 0,69 | 26,46 | 26 | 3,9 | | | | | | | | |
| 2,40 | 7,00 | 11,00 | | 0,69 | 26,46 | 26 | 3,9 | | | | | | | | |
| 2,60 | 8,00 | 12,00 | | 0,78 | 32,34 | 24 | 4,1 | | | | | | | | |
| 2,80 | 7,00 | 12,00 | | 0,69 | 26,46 | 26 | 3,9 | | | | | | | | |
| 3,00 | 9,00 | 13,00 | | 0,88 | 32,34 | 27 | 3,7 | | | | | | | | |
| 3,20 | 8,00 | 13,00 | | 0,78 | 39,20 | 20 | 5,0 | | | | | | | | |
| 3,40 | 13,00 | 19,00 | | 1,27 | 46,06 | 28 | 3,6 | | | | | | | | |
| 3,60 | 12,00 | 19,00 | | 1,18 | 32,34 | 36 | 2,8 | | | | | | | | |
| 3,80 | 15,00 | 20,00 | | 1,47 | 46,06 | 32 | 3,1 | | | | | | | | |
| 4,00 | 13,00 | 20,00 | | 1,27 | 65,66 | 19 | 5,2 | | | | | | | | |
| 4,20 | 14,00 | 24,00 | | 1,37 | 71,54 | 19 | 5,2 | | | | | | | | |
| 4,40 | 15,00 | 26,00 | | 1,47 | 58,80 | 25 | 4,0 | | | | | | | | |
| 4,60 | 15,00 | 24,00 | | 1,47 | 58,80 | 25 | 4,0 | | | | | | | | |
| 4,80 | 14,00 | 23,00 | | 1,37 | 46,06 | 30 | 3,4 | | | | | | | | |
| 5,00 | 15,00 | 22,00 | | 1,47 | 46,06 | 32 | 3,1 | | | | | | | | |
| 5,20 | 9,00 | 16,00 | | 0,88 | 46,06 | 19 | 5,2 | | | | | | | | |
| 5,40 | 9,00 | 16,00 | | 0,88 | 39,20 | 23 | 4,4 | | | | | | | | |
| 5,60 | 13,00 | 19,00 | | 1,27 | 46,06 | 28 | 3,6 | | | | | | | | |
| 5,80 | 9,00 | 16,00 | | 0,88 | 39,20 | 23 | 4,4 | | | | | | | | |
| 6,00 | 10,00 | 16,00 | | 0,98 | 51,94 | 19 | 5,3 | | | | | | | | |
| 6,20 | 17,00 | 25,00 | | 1,67 | 58,80 | 28 | 3,5 | | | | | | | | |
| 6,40 | 14,00 | 23,00 | | 1,37 | 32,34 | 42 | 2,4 | | | | | | | | |
| 6,60 | 14,00 | 19,00 | | 1,37 | 51,94 | 26 | 3,8 | | | | | | | | |
| 6,80 | 14,00 | 22,00 | | 1,37 | 58,80 | 23 | 4,3 | | | | | | | | |
| 7,00 | 14,00 | 23,00 | | 1,37 | 58,80 | 23 | 4,3 | | | | | | | | |
| 7,20 | 15,00 | 24,00 | | 1,47 | 65,66 | 22 | 4,5 | | | | | | | | |
| 7,40 | 15,00 | 25,00 | | 1,47 | 78,40 | 19 | 5,3 | | | | | | | | |
| 7,60 | 16,00 | 28,00 | | 1,57 | 58,80 | 27 | 3,8 | | | | | | | | |
| 7,80 | 15,00 | 24,00 | | 1,47 | 65,66 | 22 | 4,5 | | | | | | | | |
| 8,00 | 16,00 | 26,00 | | 1,57 | 58,80 | 27 | 3,8 | | | | | | | | |
| 8,20 | 20,00 | 29,00 | | 1,96 | 51,94 | 38 | 2,7 | | | | | | | | |
| 8,40 | 11,00 | 19,00 | | 1,08 | 51,94 | 21 | 4,8 | | | | | | | | |
| 8,60 | 12,00 | 20,00 | | 1,18 | 39,20 | 30 | 3,3 | | | | | | | | |
| 8,80 | 14,00 | 20,00 | | 1,37 | 58,80 | 23 | 4,3 | | | | | | | | |
| 9,00 | 10,00 | 19,00 | | 0,98 | 39,20 | 25 | 4,0 | | | | | | | | |
| 9,20 | 7,00 | 13,00 | | 0,69 | 32,34 | 21 | 4,7 | | | | | | | | |
| 9,40 | 10,00 | 15,00 | | 0,88 | 26,46 | 37 | 2,7 | | | | | | | | |
| 9,60 | 8,00 | 12,00 | | 0,78 | 26,46 | 30 | 3,4 | | | | | | | | |
| 9,80 | 9,00 | 13,00 | | 0,88 | 26,46 | 33 | 3,0 | | | | | | | | |
| 10,00 | 11,00 | 15,00 | | 1,08 | 26,46 | 41 | 2,5 | | | | | | | | |
| 10,20 | 8,00 | 12,00 | | 0,78 | 46,06 | 17 | 5,9 | | | | | | | | |
| 10,40 | 14,00 | 21,00 | | 1,37 | 19,60 | 70 | 1,4 | | | | | | | | |
| 10,60 | 15,00 | 18,00 | | 1,47 | 71,54 | 21 | 4,9 | | | | | | | | |
| 10,80 | 18,00 | 29,00 | | 1,76 | 46,06 | 38 | 2,6 | | | | | | | | |
| 11,00 | 14,00 | 21,00 | | 1,37 | 39,20 | 35 | 2,9 | | | | | | | | |
| 11,20 | 16,00 | 22,00 | | 1,57 | 39,20 | 40 | 2,5 | | | | | | | | |
| 11,40 | 12,00 | 18,00 | | 1,18 | 39,20 | 30 | 3,3 | | | | | | | | |
| 11,60 | 9,00 | 15,00 | | 0,88 | 32,34 | 27 | 3,7 | | | | | | | | |
| 11,80 | 12,00 | 17,00 | | 1,18 | 32,34 | 36 | 2,8 | | | | | | | | |
| 12,00 | 10,00 | 15,00 | | 0,98 | 46,06 | 21 | 4,7 | | | | | | | | |
| 12,20 | 13,00 | 20,00 | | 1,27 | 58,80 | 22 | 4,6 | | | | | | | | |
| 12,40 | 15,00 | 24,00 | | 1,47 | 51,94 | 28 | 3,5 | | | | | | | | |
| 12,60 | 9,00 | 17,00 | | 0,88 | 46,06 | 19 | 5,2 | | | | | | | | |
| 12,80 | 10,00 | 17,00 | | 0,98 | 51,94 | 19 | 5,3 | | | | | | | | |
| 13,00 | 10,00 | 18,00 | | 0,98 | 46,06 | 21 | 4,7 | | | | | | | | |
| 13,20 | 13,00 | 20,00 | | 1,27 | 58,80 | 22 | 4,6 | | | | | | | | |
| 13,40 | 15,00 | 24,00 | | 1,47 | 71,54 | 21 | 4,9 | | | | | | | | |
| 13,60 | 14,00 | 25,00 | | 1,37 | 65,66 | 21 | 4,8 | | | | | | | | |
| 13,80 | 13,00 | 23,00 | | 1,27 | 46,06 | 28 | 3,6 | | | | | | | | |
| 14,00 | 11,00 | 18,00 | | 1,08 | 51,94 | 21 | 4,8 | | | | | | | | |
| 14,20 | 12,00 | 20,00 | | 1,18 | 51,94 | 23 | 4,4 | | | | | | | | |
| 14,40 | 13,00 | 21,00 | | 1,27 | 46,06 | 28 | 3,6 | | | | | | | | |
| 14,60 | 11,00 | 18,00 | | 1,08 | 71,54 | 15 | 5,6 | | | | | | | | |
| 14,80 | 14,00 | 25,00 | | 1,37 | 65,66 | 21 | 4,8 | | | | | | | | |
| 15,00 | 14,00 | 24,00 | | 1,37 | | | | | | | | | | | |

H = profondità
L1 = prima lettura (punta)
L2 = seconda lettura (punta + laterale)
Lt = terza lettura (totale)
qc = resistenza di punta
fs = resistenza laterale calcolata
0.20 m sopra quota di qc
F = rapporto di Begemann (qc / fs)
Fr = rapporto di Schmetmann (fs / qc)%



PROVA PENETROMETRICA STATICA MECCANICA

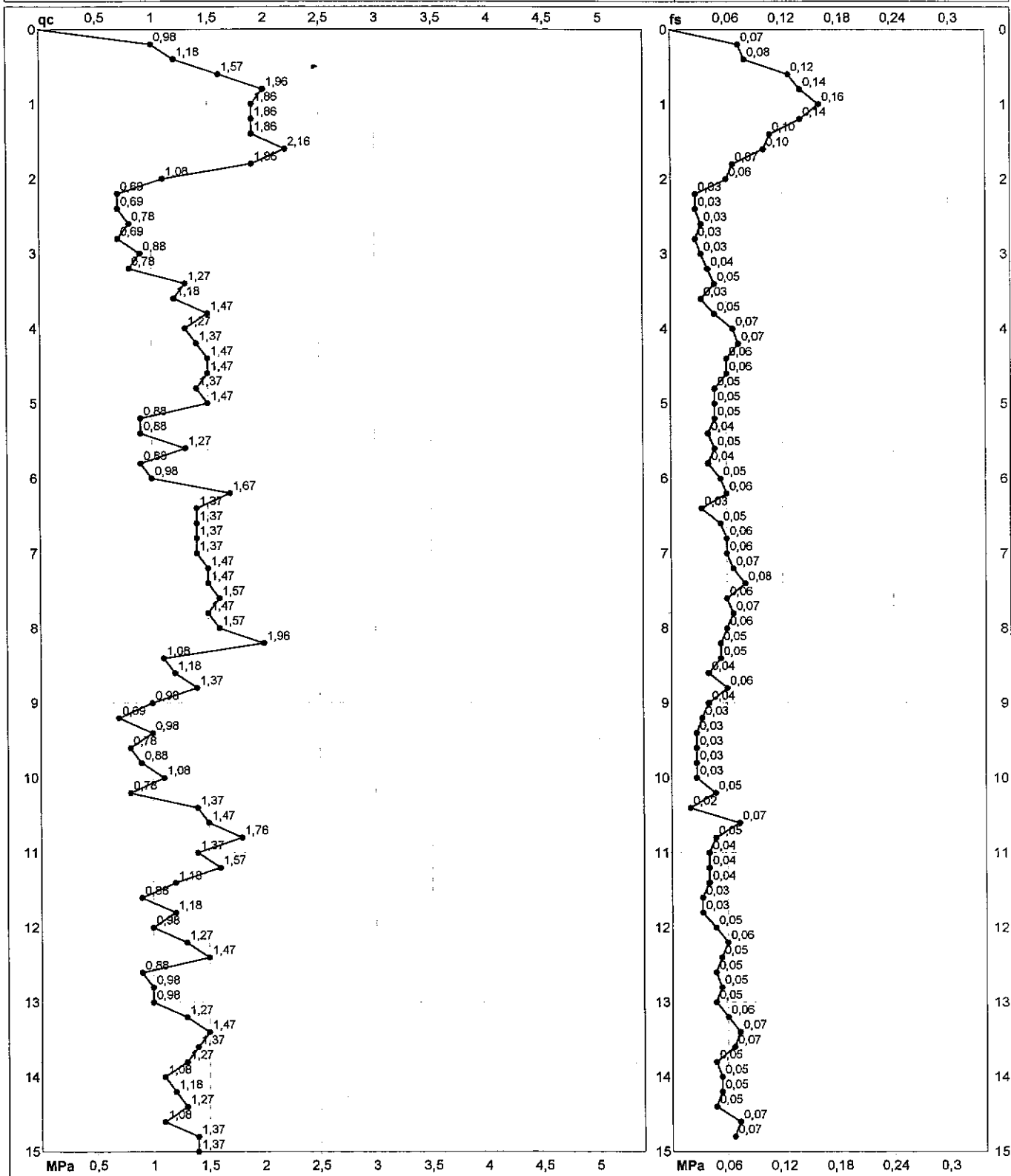
DIAGRAMMI DI RESISTENZA

1,80

| | |
|----------------|----------|
| n° | 5 |
| referimento | 025-08 |
| certificato n° | 4004 |

Committente: **studio tecnico**
 Cantiere: **studio terreno di fondazione villette**
 Località: **Redù-Nonantola**

U.M.: **MPa** Data exec.: **22/02/2008**
 Scala: **1:75** Data certificato: **25/02/2008**
 Pagina: **2/4** Preforo: **m**
 Elaborato: Falda: **1,80 m piano campagna**



| | | | |
|------------------------|---------------------------|-------------------------------|--------------------|
| Coord. Relative | Coord. Geografiche | Penetrometro: Pagani TG63-100 | Quota ass.: |
| Xr: m | Xg: | Responsabile: | Corr.astine: kN/ml |
| Yr: m | Yg: | Assistente: | |
| Zr: m | Zg: | | |

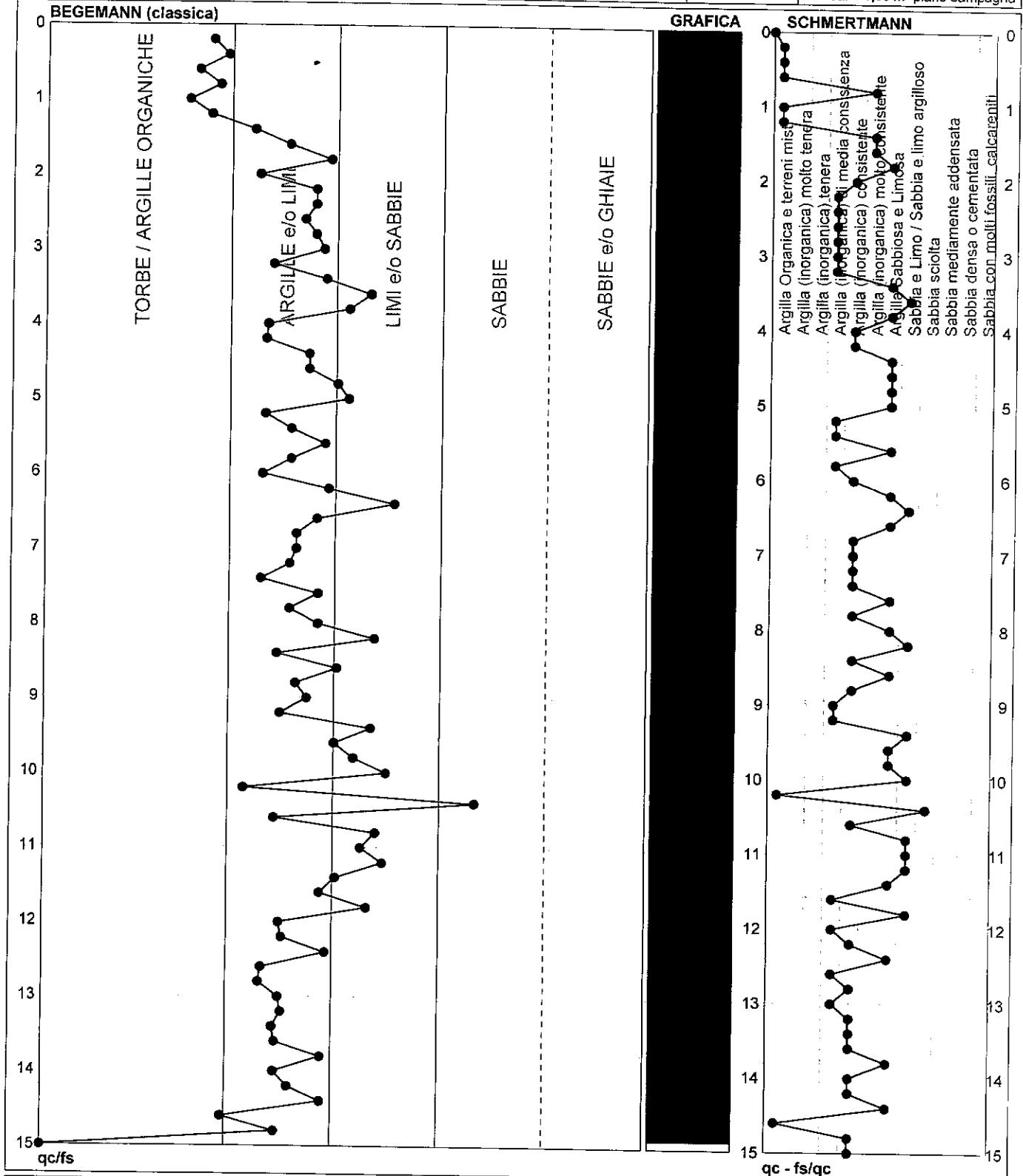


PROVA PENETROMETRICA STATICA MECCANICA
DIAGRAMMI LITOLOGIA

| | |
|----------------|----------|
| n° | 5 |
| riferimento | 025-08 |
| certificato n° | 4004 |

Committente: studio tecnico
Cantiere: studio terreno di fondazione villette
Località: Redù-Nonantola

U.M.: MPa Data esec.: 22/02/2008
Scala: 1:75 Data certificato: 25/02/2008
Pagina: 3/4 Preforo: m
Elaborato: Falda: 1,80 m piano campagna



| | | |
|--------------------------------------|---|--|
| Torbe / Argille organiche : 7 punti, | Argilla Organica e terreni misti: 7 punti, | Argilla Sabbiosa e Limosa: 19 punti, |
| Argille e/o Limi : 55 punti, | Argilla (inorganica) molto tenera: 0 punti, | Sabbia e Limo / Sabbia e limo argilli.: 9 punti, |
| Limi e/o Sabbie : 12 punti, | Argilla (inorganica) tenera: 0 punti, | Sabbia sciolta: 1 punti, |
| Sabbie: 1 punti, | Argilla (inorganica) media consistenza: 15 punti, | Sabbia mediamente addensata: 0 punti, |
| Sabbie e/o Ghiaie : 0 punti, | Argilla (inorganica) consistente: 20 punti, | Sabbia densa o cementata: 0 punti, |
| | Argilla (inorganica) molto consistente: 3 punti, | Sabbia con molti fossili, calcareniti: 0 punti, |



PROVA PENETROMETRICA STATICA MECCANICA

LETTURE CAMPAGNA: PUNTA, LATERALE, TOTALE

| | |
|----------------|----------|
| n° | 9 |
| riferimento | 027-08 |
| certificato n° | 7899 |

Committente: **Studio tecnico**
Cantiere: **Studio terreno di fondazione villette**
Località: **Redù, Nonantola (MO)**

U.M.: **MPa**
Pagina: **1/4**
Elaborato:
Data eseg.: **25/02/2008**
Data certificato: **26/02/2008**
Preforo: **m**
Falda: **-2.50 m da p.c.**

| H m | L1 - | L2 - | Lt - | qc MPa | fs kPa | F - | Fr % | H m | L1 - | L2 - | Lt - | qc MPa | fs kPa | F - | Fr % |
|--------|---------|---------|---------|-----------|-----------|--------|---------|--------|---------|---------|---------|-----------|-----------|--------|---------|
| 0,20 | 11,00 | 14,00 | | 1,08 | 32,34 | 33 | 3,0 | | | | | | | | |
| 0,40 | 13,00 | 18,00 | | 1,27 | 51,94 | 25 | 4,1 | | | | | | | | |
| 0,60 | 21,00 | 29,00 | | 2,06 | 117,60 | 18 | 5,7 | | | | | | | | |
| 0,80 | 23,00 | 41,00 | | 2,25 | 149,94 | 15 | 6,7 | | | | | | | | |
| 1,00 | 21,00 | 44,00 | | 2,06 | 124,46 | 17 | 6,0 | | | | | | | | |
| 1,20 | 26,00 | 45,00 | | 2,55 | 124,46 | 20 | 4,9 | | | | | | | | |
| 1,40 | 18,00 | 37,00 | | 1,76 | 71,54 | 25 | 4,1 | | | | | | | | |
| 1,60 | 22,00 | 33,00 | | 2,16 | 51,94 | 42 | 2,4 | | | | | | | | |
| 1,80 | 16,00 | 24,00 | | 1,57 | 58,80 | 27 | 3,8 | | | | | | | | |
| 2,00 | 21,00 | 30,00 | | 2,06 | 91,14 | 23 | 4,4 | | | | | | | | |
| 2,20 | 16,00 | 30,00 | | 1,57 | 65,66 | 24 | 4,2 | | | | | | | | |
| 2,40 | 11,00 | 21,00 | | 1,08 | 46,06 | 23 | 4,3 | | | | | | | | |
| 2,60 | 10,00 | 17,00 | | 0,98 | 39,20 | 25 | 4,0 | | | | | | | | |
| 2,80 | 11,00 | 17,00 | | 1,08 | 39,20 | 28 | 3,6 | | | | | | | | |
| 3,00 | 9,00 | 15,00 | | 0,88 | 46,06 | 19 | 5,2 | | | | | | | | |
| 3,20 | 9,00 | 16,00 | | 0,88 | 39,20 | 23 | 4,4 | | | | | | | | |
| 3,40 | 10,00 | 16,00 | | 0,98 | 32,34 | 30 | 3,3 | | | | | | | | |
| 3,60 | 13,00 | 18,00 | | 1,27 | 51,94 | 25 | 4,1 | | | | | | | | |
| 3,80 | 20,00 | 28,00 | | 1,96 | 46,06 | 43 | 2,4 | | | | | | | | |
| 4,00 | 17,00 | 24,00 | | 1,67 | 71,54 | 23 | 4,3 | | | | | | | | |
| 4,20 | 17,00 | 28,00 | | 1,67 | 78,40 | 21 | 4,7 | | | | | | | | |
| 4,40 | 20,00 | 32,00 | | 1,96 | 78,40 | 25 | 4,0 | | | | | | | | |
| 4,60 | 19,00 | 31,00 | | 1,86 | 91,14 | 20 | 4,9 | | | | | | | | |
| 4,80 | 18,00 | 32,00 | | 1,76 | 78,40 | 23 | 4,4 | | | | | | | | |
| 5,00 | 19,00 | 31,00 | | 1,86 | 58,80 | 32 | 3,2 | | | | | | | | |
| 5,20 | 17,00 | 26,00 | | 1,67 | 58,80 | 28 | 3,5 | | | | | | | | |
| 5,40 | 17,00 | 26,00 | | 1,67 | 58,80 | 28 | 3,5 | | | | | | | | |
| 5,60 | 14,00 | 23,00 | | 1,37 | 58,80 | 23 | 4,3 | | | | | | | | |
| 5,80 | 15,00 | 24,00 | | 1,47 | 46,06 | 32 | 3,1 | | | | | | | | |
| 6,00 | 20,00 | 27,00 | | 1,96 | 65,66 | 30 | 3,4 | | | | | | | | |
| 6,20 | 14,00 | 24,00 | | 1,37 | 32,34 | 42 | 2,4 | | | | | | | | |
| 6,40 | 10,00 | 15,00 | | 0,98 | 39,20 | 25 | 4,0 | | | | | | | | |
| 6,60 | 12,00 | 18,00 | | 1,18 | 32,34 | 36 | 2,8 | | | | | | | | |
| 6,80 | 12,00 | 17,00 | | 1,18 | 65,66 | 18 | 5,6 | | | | | | | | |
| 7,00 | 19,00 | 29,00 | | 1,86 | 58,80 | 32 | 3,2 | | | | | | | | |
| 7,20 | 24,00 | 33,00 | | 2,35 | 71,54 | 33 | 3,0 | | | | | | | | |
| 7,40 | 15,00 | 26,00 | | 1,47 | 65,66 | 22 | 4,5 | | | | | | | | |
| 7,60 | 16,00 | 26,00 | | 1,57 | 51,94 | 30 | 3,3 | | | | | | | | |
| 7,80 | 16,00 | 24,00 | | 1,57 | 26,46 | 59 | 1,7 | | | | | | | | |
| 8,00 | 10,00 | 14,00 | | 0,98 | 32,34 | 30 | 3,3 | | | | | | | | |
| 8,20 | 10,00 | 15,00 | | 0,98 | 58,80 | 17 | 6,0 | | | | | | | | |
| 8,40 | 13,00 | 22,00 | | 1,27 | 58,80 | 22 | 4,6 | | | | | | | | |
| 8,60 | 14,00 | 23,00 | | 1,37 | 39,20 | 35 | 2,9 | | | | | | | | |
| 8,80 | 10,00 | 16,00 | | 0,98 | 26,46 | 37 | 2,7 | | | | | | | | |
| 9,00 | 8,00 | 12,00 | | 0,78 | 19,60 | 40 | 2,5 | | | | | | | | |
| 9,20 | 7,00 | 10,00 | | 0,69 | 19,60 | 35 | 2,9 | | | | | | | | |
| 9,40 | 11,00 | 14,00 | | 1,08 | 32,34 | 33 | 3,0 | | | | | | | | |
| 9,60 | 9,00 | 14,00 | | 0,88 | 32,34 | 27 | 3,7 | | | | | | | | |
| 9,80 | 15,00 | 20,00 | | 1,47 | 32,34 | 45 | 2,2 | | | | | | | | |
| 10,00 | 10,00 | 15,00 | | 0,98 | 46,06 | 21 | 4,7 | | | | | | | | |
| 10,20 | 13,00 | 20,00 | | 1,27 | 46,06 | 28 | 3,6 | | | | | | | | |
| 10,40 | 24,00 | 31,00 | | 2,35 | 71,54 | 33 | 3,0 | | | | | | | | |
| 10,60 | 35,00 | 46,00 | | 3,43 | 39,20 | 88 | 1,1 | | | | | | | | |
| 10,80 | 19,00 | 25,00 | | 1,86 | 51,94 | 36 | 2,8 | | | | | | | | |
| 11,00 | 17,00 | 25,00 | | 1,67 | 46,06 | 36 | 2,8 | | | | | | | | |
| 11,20 | 13,00 | 20,00 | | 1,27 | 26,46 | 48 | 2,1 | | | | | | | | |
| 11,40 | 11,00 | 15,00 | | 1,08 | 19,60 | 55 | 1,8 | | | | | | | | |
| 11,60 | 9,00 | 12,00 | | 0,88 | 32,34 | 27 | 3,7 | | | | | | | | |
| 11,80 | 10,00 | 15,00 | | 0,98 | 39,20 | 25 | 4,0 | | | | | | | | |
| 12,00 | 10,00 | 16,00 | | 0,98 | 46,06 | 21 | 4,7 | | | | | | | | |
| 12,20 | 12,00 | 19,00 | | 1,18 | 46,06 | 26 | 3,9 | | | | | | | | |
| 12,40 | 12,00 | 19,00 | | 1,18 | 32,34 | 36 | 2,8 | | | | | | | | |
| 12,60 | 7,00 | 12,00 | | 0,69 | 32,34 | 21 | 4,7 | | | | | | | | |
| 12,80 | 11,00 | 16,00 | | 1,08 | 32,34 | 33 | 3,0 | | | | | | | | |
| 13,00 | 9,00 | 14,00 | | 0,88 | 39,20 | 23 | 4,4 | | | | | | | | |
| 13,20 | 10,00 | 16,00 | | 0,98 | 32,34 | 30 | 3,3 | | | | | | | | |
| 13,40 | 10,00 | 15,00 | | 0,98 | 39,20 | 25 | 4,0 | | | | | | | | |
| 13,60 | 11,00 | 17,00 | | 1,08 | 51,94 | 21 | 4,8 | | | | | | | | |
| 13,80 | 11,00 | 19,00 | | 1,08 | 46,06 | 23 | 4,3 | | | | | | | | |
| 14,00 | 12,00 | 19,00 | | 1,18 | 39,20 | 30 | 3,3 | | | | | | | | |
| 14,20 | 11,00 | 17,00 | | 1,08 | 32,34 | 33 | 3,0 | | | | | | | | |
| 14,40 | 13,00 | 18,00 | | 1,27 | 39,20 | 33 | 3,1 | | | | | | | | |
| 14,60 | 12,00 | 18,00 | | 1,18 | 39,20 | 30 | 3,3 | | | | | | | | |
| 14,80 | 14,00 | 20,00 | | 1,37 | 46,06 | 30 | 3,4 | | | | | | | | |
| 15,00 | 14,00 | 21,00 | | 1,37 | | | | | | | | | | | |

H = profondità
L1 = prima lettura (punta)
L2 = seconda lettura (punta + laterale)
Lt = terza lettura (totale)
qc = resistenza di punta
fs = resistenza laterale calcolata
0,20 m sopra quota di qc
F = rapporto di Begemann (qc / fs)
Fr = rapporto di Schmertmann (fs / qc)%



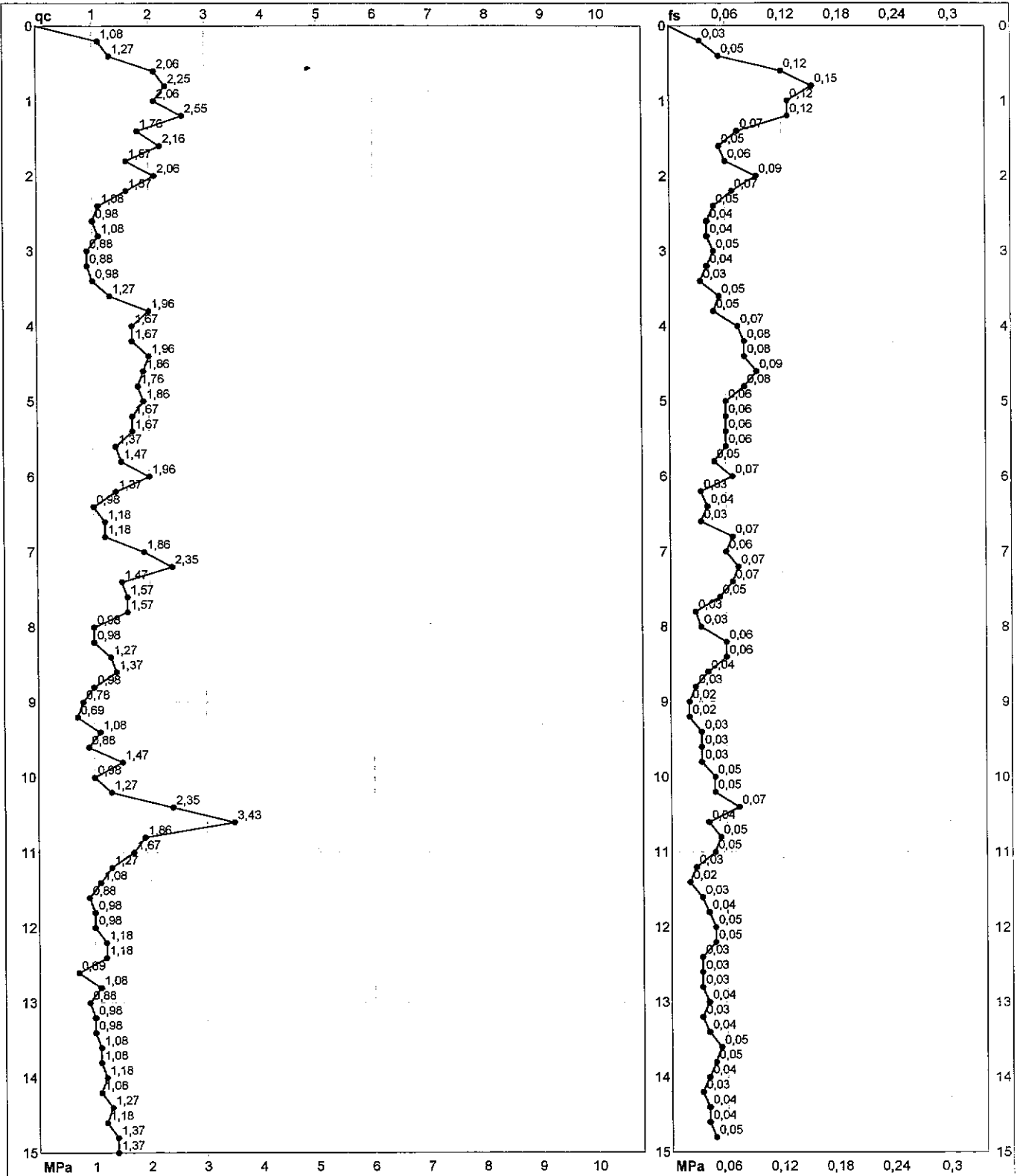
PROVA PENETROMETRICA STATICA MECCANICA

DIAGRAMMI DI RESISTENZA

| | |
|----------------|----------|
| n° | 9 |
| referimento | 027-08 |
| certificato n° | 7899 |

Committente: **Studio tecnico**
 Cantiere: **Studio terreno di fondazione villette**
 Località: **Redù, Nonantola (MO)**

U.M.: **MPa** Data esec.: **25/02/2008**
 Scala: **1:75** Data certificato: **26/02/2008**
 Pagina: **2/4** Preforo: **m**
 Elaborato: Falda: **-2.50 m da p.c.**



| | | | |
|------------------------|---------------------------|--------------------------------------|---------------------------|
| Coord. Relative | Coord. Geografiche | Penetrometro: Pagani TG63-100 | Quota ass.: |
| Xr: m | Xg: | Responsabile: | Corr.astine: kN/ml |
| Yr: m | Yg: | Assistente: | |
| Zr: m | Zg: | | |



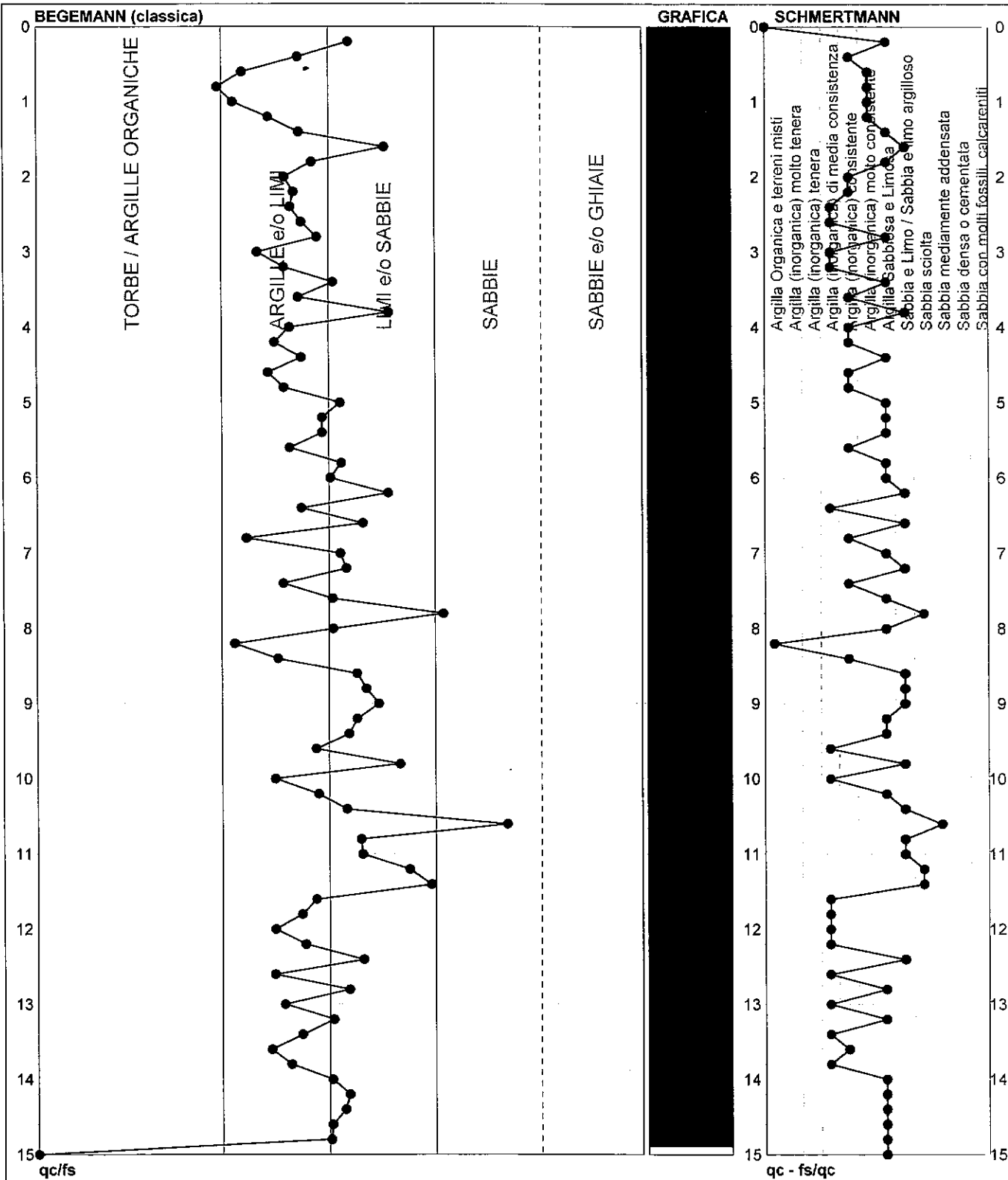
PROVA PENETROMETRICA STATICA MECCANICA

DIAGRAMMI LITOLOGIA

| | |
|----------------|----------|
| n° | 9 |
| referimento | 027-08 |
| certificato n° | 7899 |

Committente: **Studio tecnico**
 Cantiere: **Studio terreno di fondazione villette**
 Località: **Redù, Nonantola (MO)**

U.M.: **MPa** Data exec.: **25/02/2008**
 Scala: **1:75** Data certificato: **26/02/2008**
 Pagina: **3/4** Preforo: **m**
 Elaborato: Falda: **-2.50 m da p.c.**



| | | |
|--------------------------------------|---|--|
| Torbe / Argille organiche : 1 punti, | Argilla Organica e terreni misti: 1 punti, | Argilla Sabbiosa e Limosa: 24 punti, |
| Argille e/o Limi : 44 punti, | Argilla (inorganica) molto tenera: 0 punti, | Sabbia e Limo / Sabbia e limo argill.: 13 punti, |
| Limi e/o Sabbie : 29 punti, | Argilla (inorganica) tenera: 0 punti, | Sabbia sciolta: 3 punti, |
| Sabbie: 1 punti, | Argilla (inorganica) media consistenza: 15 punti, | Sabbia mediamente addensata: 1 punti, |
| Sabbie e/o Ghiaie : 0 punti, | Argilla (inorganica) consistente: 13 punti, | Sabbia densa o cementata: 0 punti, |
| | Argilla (inorganica) molto consistente: 4 punti, | Sabbia con molti fossili, calcareniti: 0 punti, |



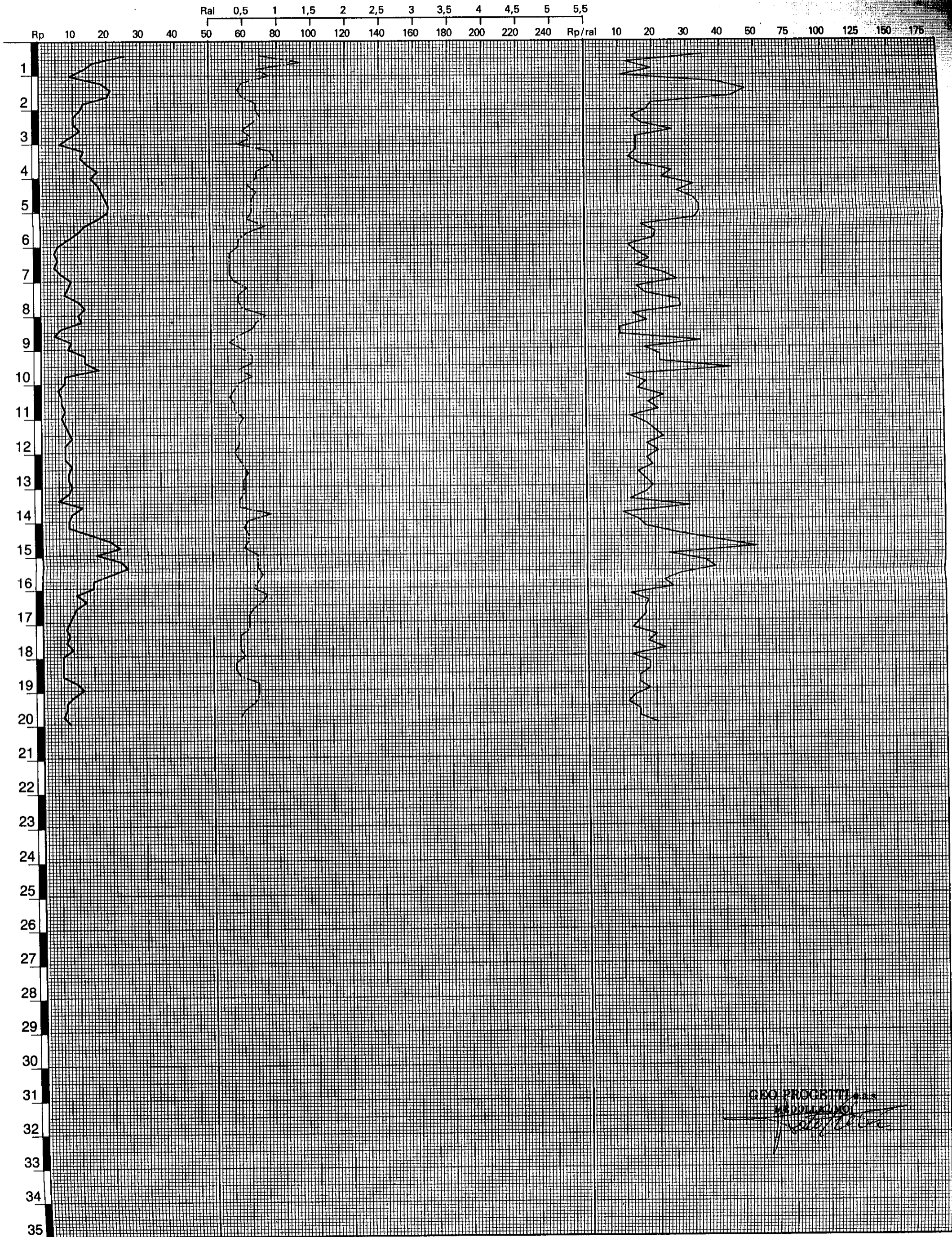
PROVA PENETROMETRICA STATICA MECCANICA

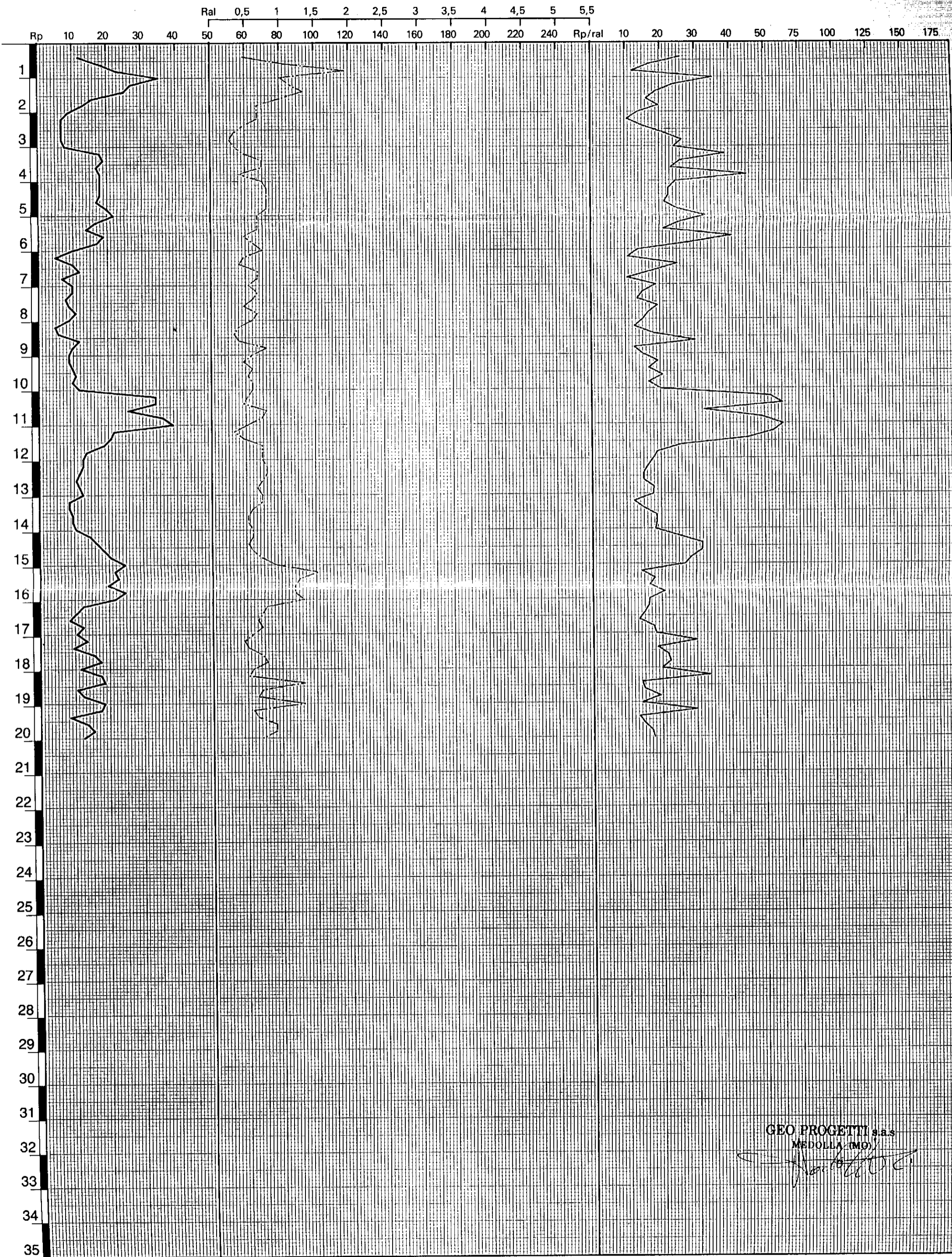
PARAMETRI GEOTECNICI

| | |
|----------------|----------|
| n° | 9 |
| riferimento | 027-08 |
| certificato n° | 7899 |

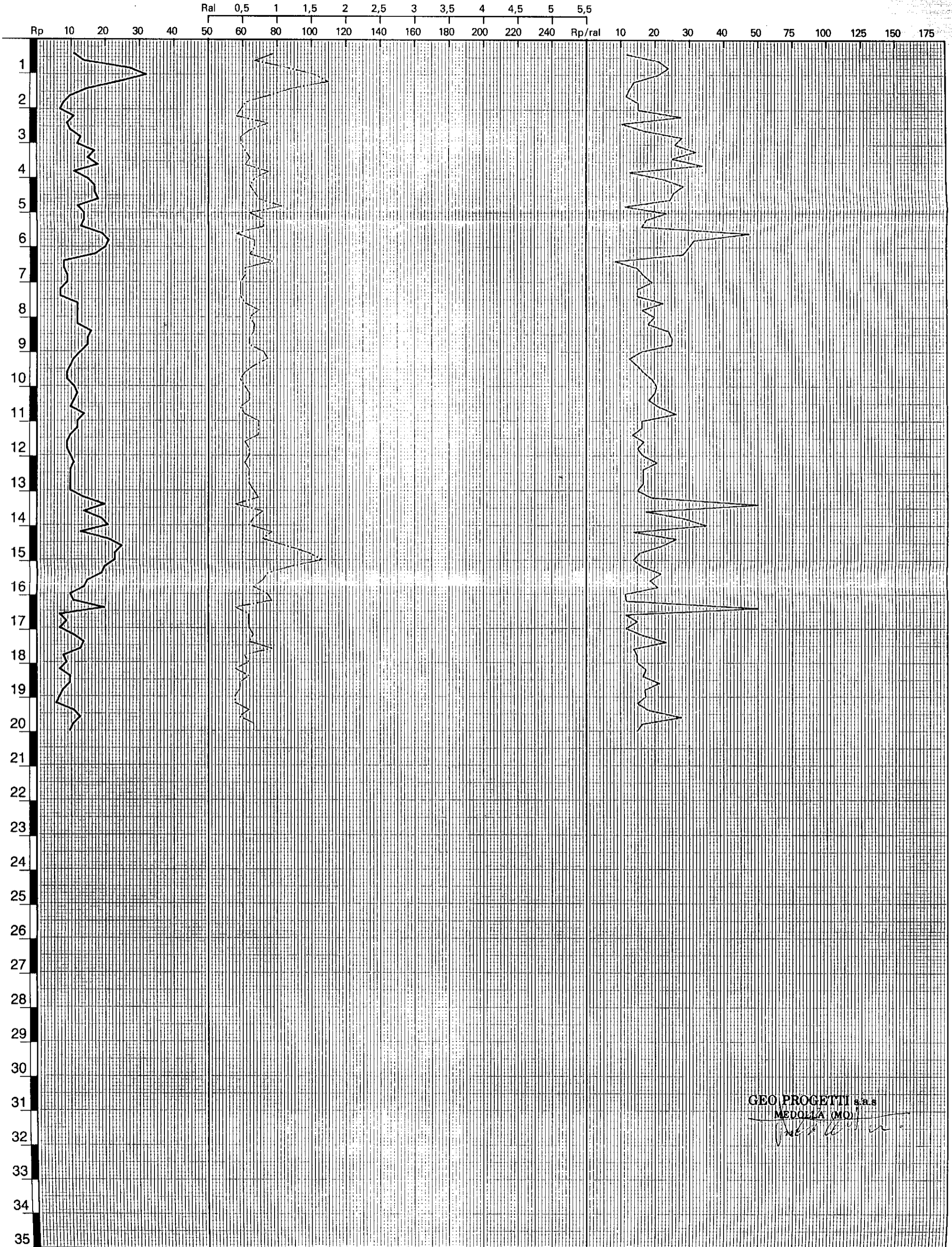
| | | |
|--|--------------------|-------------------------------------|
| Committente: Studio tecnico | U.M.: MPa | Data exec.: 25/02/2008 |
| Cantiere: Studio terreno di fondazione villette | Pagina: 4/4 | Data certificato: 26/02/2008 |
| Località: Redù, Nonantola (MO) | Elaborato: | Preforo: m |
| | | Falda: -2.50 m da p.c. |

| Prof. m | qc MPa | qc/fs | zone | γ kN/m ³ | σ_{vo} kPa | Vs m/s | NATURA COESIVA | | | | | NATURA GRANULARE | | | | | | | E ₂₅ MPa | E ₅₀ MPa | Mo MPa | | | | | | | | | | | |
|------------|-----------|-------|------|-------------------------------|----------------------|-----------|----------------|----------|-------------|-------------|-----------|------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|------------------------|------------------------|-----------|-------|----|----|----|----|----|----|----|----|----|----|
| | | | | | | | Cu kPa | OCR % | Eu50 MPa | Eu25 MPa | Mo MPa | Dr % | σ_{Sc} (°) | σ_{Ca} (°) | σ_{Ko} (°) | σ_{DB} (°) | σ_{DM} (°) | σ_{Me} (°) | | | | F.L. | | | | | | | | | | |
| 0,20 | 1,08 | 33,33 | | 183 | 4 | 137 | 53 | 99,9 | 8,94 | 13,41 | 4,16 | 76 | 44 | 38 | 35 | 33 | 42 | 26 | -- | 1,80 | 2,70 | 3,23 | | | | | | | | | | |
| 0,40 | 1,27 | 24,53 | | 189 | 7 | 145 | 59 | 83,9 | 10,07 | 15,11 | 4,56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 0,60 | 2,06 | 17,50 | | 189 | 11 | 174 | 81 | 73,9 | 13,72 | 20,58 | 6,17 | 71 | 44 | 36 | 33 | 31 | 40 | 27 | -- | 3,43 | 5,15 | 6,17 | | | | | | | | | | |
| 0,80 | 2,25 | 15,03 | | 190 | 15 | 180 | 85 | 54,8 | 14,46 | 21,69 | 6,76 | 67 | 43 | 35 | 32 | 30 | 39 | 28 | -- | 3,76 | 5,64 | 6,76 | | | | | | | | | | |
| 1,00 | 2,06 | 16,54 | | 189 | 19 | 174 | 81 | 38,8 | 13,72 | 20,58 | 6,17 | 59 | 43 | 33 | 30 | 28 | 37 | 27 | -- | 3,43 | 5,15 | 6,17 | | | | | | | | | | |
| 1,20 | 2,55 | 20,47 | | 191 | 23 | 189 | 91 | 35,8 | 15,47 | 23,21 | 7,64 | 61 | 43 | 33 | 30 | 28 | 38 | 28 | -- | 4,25 | 6,37 | 7,64 | | | | | | | | | | |
| 1,40 | 1,76 | 24,66 | | 194 | 26 | 164 | 74 | 22,5 | 12,50 | 18,74 | 5,50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 1,60 | 2,16 | 41,51 | | 182 | 30 | 177 | -- | -- | -- | -- | -- | 49 | 42 | 31 | 28 | 26 | 35 | 28 | -- | 3,59 | 5,39 | 6,47 | | | | | | | | | | |
| 1,80 | 1,57 | 26,67 | | 192 | 34 | 157 | 68 | 15,0 | 11,59 | 17,38 | 5,08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 2,00 | 2,06 | 22,58 | | 189 | 38 | 174 | 81 | 16,2 | 13,72 | 20,58 | 6,17 | 42 | 41 | 30 | 27 | 25 | 34 | 27 | -- | 3,43 | 5,15 | 6,17 | | | | | | | | | | |
| 2,20 | 1,57 | 23,88 | | 192 | 42 | 157 | 68 | 11,6 | 11,59 | 17,38 | 5,08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 2,40 | 1,08 | 23,40 | | 187 | 45 | 137 | 53 | 7,6 | 11,07 | 16,61 | 4,16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 2,60 | 0,98 | 25,00 | | 186 | 49 | 132 | 49 | 6,3 | 12,81 | 19,21 | 3,92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 2,80 | 1,08 | 27,50 | | 187 | 53 | 137 | 53 | 6,2 | 13,80 | 20,70 | 4,16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 3,00 | 0,88 | 19,15 | | 184 | 56 | 127 | 44 | 4,6 | 15,73 | 23,60 | 3,70 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 3,20 | 0,88 | 22,50 | | 184 | 60 | 127 | 44 | 4,3 | 16,81 | 25,21 | 3,70 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 3,40 | 0,98 | 30,30 | | 183 | 64 | 132 | 49 | 4,5 | 17,80 | 26,70 | 3,92 | 3 | 38 | 23 | 20 | 19 | 27 | 26 | -- | 1,63 | 2,45 | 2,94 | | | | | | | | | | |
| 3,60 | 1,27 | 24,53 | | 189 | 68 | 145 | 59 | 5,3 | 18,45 | 27,68 | 4,56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 3,80 | 1,96 | 42,55 | | 189 | 71 | 171 | 78 | 7,1 | 17,86 | 26,78 | 5,88 | 24 | 40 | 26 | 23 | 22 | 30 | 27 | -- | 3,27 | 4,90 | 5,88 | | | | | | | | | | |
| 4,00 | 1,67 | 23,29 | | 193 | 75 | 161 | 71 | 5,8 | 20,09 | 30,13 | 5,30 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4,20 | 1,67 | 21,25 | | 193 | 79 | 161 | 71 | 5,5 | 21,46 | 32,19 | 5,30 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4,40 | 1,96 | 25,00 | | 189 | 83 | 171 | 78 | 5,9 | 22,09 | 33,14 | 5,88 | 21 | 40 | 25 | 22 | 21 | 29 | 27 | -- | 3,27 | 4,90 | 5,88 | | | | | | | | | | |
| 4,60 | 1,86 | 20,43 | | 195 | 87 | 168 | 76 | 5,3 | 23,69 | 35,53 | 5,70 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4,80 | 1,76 | 22,50 | | 194 | 91 | 164 | 74 | 4,8 | 25,13 | 37,70 | 5,50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 5,00 | 1,86 | 31,67 | | 188 | 94 | 168 | 76 | 4,8 | 26,20 | 39,31 | 5,70 | 16 | 39 | 25 | 21 | 20 | 28 | 27 | -- | 3,10 | 4,66 | 5,59 | | | | | | | | | | |
| 5,20 | 1,67 | 28,33 | | 193 | 98 | 161 | 71 | 4,2 | 27,45 | 41,17 | 5,30 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 5,40 | 1,67 | 28,33 | | 193 | 102 | 161 | 71 | 4,0 | 28,53 | 42,79 | 5,30 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 5,60 | 1,37 | 23,33 | | 190 | 106 | 150 | 62 | 3,2 | 29,54 | 44,31 | 4,72 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 5,80 | 1,47 | 31,91 | | 186 | 110 | 154 | 65 | 3,3 | 30,66 | 46,00 | 4,85 | 4 | 38 | 23 | 19 | 18 | 26 | 27 | -- | 2,45 | 3,68 | 4,41 | | | | | | | | | | |
| 6,00 | 1,96 | 29,85 | | 189 | 113 | 171 | 78 | 4,0 | 31,72 | 47,58 | 5,88 | 13 | 39 | 24 | 21 | 19 | 27 | 27 | -- | 3,27 | 4,90 | 5,88 | | | | | | | | | | |
| 6,20 | 1,37 | 42,42 | | 185 | 117 | 150 | 62 | 2,9 | 31,47 | 47,20 | 4,72 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6,40 | 0,98 | 25,00 | | 186 | 121 | 132 | 49 | 2,0 | 27,36 | 41,04 | 3,92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6,60 | 1,18 | 36,36 | | 184 | 125 | 141 | 56 | 2,3 | 30,36 | 45,53 | 4,37 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6,80 | 1,18 | 17,91 | | 188 | 128 | 141 | 56 | 2,2 | 30,64 | 45,96 | 4,37 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 7,00 | 1,86 | 31,67 | | 188 | 132 | 168 | 76 | 3,1 | 36,58 | 54,87 | 5,70 | 8 | 39 | 23 | 20 | 18 | 26 | 27 | -- | 3,10 | 4,66 | 5,59 | | | | | | | | | | |
| 7,20 | 2,35 | 32,88 | | 182 | 136 | 183 | -- | -- | -- | -- | -- | 15 | 39 | 24 | 21 | 19 | 27 | 28 | -- | 3,92 | 5,88 | 7,06 | | | | | | | | | | |
| 7,40 | 1,47 | 22,39 | | 191 | 140 | 154 | 65 | 2,4 | 34,92 | 52,38 | 4,85 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 7,60 | 1,57 | 30,19 | | 186 | 143 | 157 | 68 | 2,5 | 36,21 | 54,32 | 5,08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 7,80 | 1,57 | 59,26 | | 186 | 147 | 157 | 68 | 2,4 | 36,56 | 54,84 | 5,08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8,00 | 0,98 | 30,30 | | 183 | 151 | 132 | 49 | 1,5 | 28,50 | 42,75 | 3,92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8,20 | 0,98 | 16,67 | | 186 | 154 | 132 | 49 | 1,5 | 28,59 | 42,89 | 3,92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,40 | 1,27 | 21,67 | | 189 | 158 | 145 | 59 | 1,8 | 33,67 | 50,50 | 4,56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,60 | 1,37 | 35,00 | | 185 | 162 | 150 | 62 | 1,9 | 35,23 | 52,84 | 4,72 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,80 | 0,98 | 37,04 | | 183 | 165 | 132 | 49 | 1,4 | 28,82 | 43,24 | 3,92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,00 | 0,78 | 40,00 | | 180 | 169 | 121 | 39 | 1,0 | 23,51 | 35,26 | 3,45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,20 | 0,69 | 35,00 | | 179 | 173 | 115 | 34 | 0,8 | 20,58 | 30,87 | 3,16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,40 | 1,08 | 33,33 | | 183 | 176 | 137 | 53 | 1,4 | 30,91 | 46,36 | 4,16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,60 | 0,88 | 27,27 | | 184 | 180 | 127 | 44 | 1,1 | 26,36 | 39,54 | 3,70 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,80 | 1,47 | 45,45 | | 186 | 184 | 154 | 65 | 1,2 | 37,48 | 56,22 | 4,85 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,00 | 0,98 | 21,28 | | 186 | 187 | 132 | 49 | 1,2 | 29,15 | 43,73 | 3,92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,20 | 1,27 | 27,66 | | 189 | 191 | 145 | 59 | 1,5 | 34,68 | 52,02 | 4,56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,40 | 2,35 | 32,88 | | 182 | 195 | 183 | -- | -- | -- | -- | -- | 6 | 38 | 22 | 19 | 18 | 25 | 28 | -- | 3,92 | 5,88 | 7,06 | | | | | | | | | | |
| 10,60 | 3,43 | 87,50 | | 185 | 199 | 211 | -- | -- | -- | -- | -- | 19 | 39 | 24 | 21 | 19 | 27 | 29 | -- | 5,72 | 8,58 | 10,29 | | | | | | | | | | |
| 10,80 | 1,86 | 35,85 | | 188 | 202 | 168 | 76 | 1,9 | 43,16 | 64,74 | 5,70 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11,00 | 1,67 | 36,17 | | 187 | 206 | 161 | 71 | 1,7 | 40,89 | 61,34 | 5,30 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,20 | 1,27 | 48,15 | | 184 | 210 | 145 | 59 | 1,3 | 35,02 | 52,53 | 4,56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,40 | 1,08 | 55,00 | | 183 | 213 | 137 | 53 | 1,1 | 31,42 | 47,13 | 4,16 | -- | -- | --</ | | | | | | | | | | | | | | | | | | |

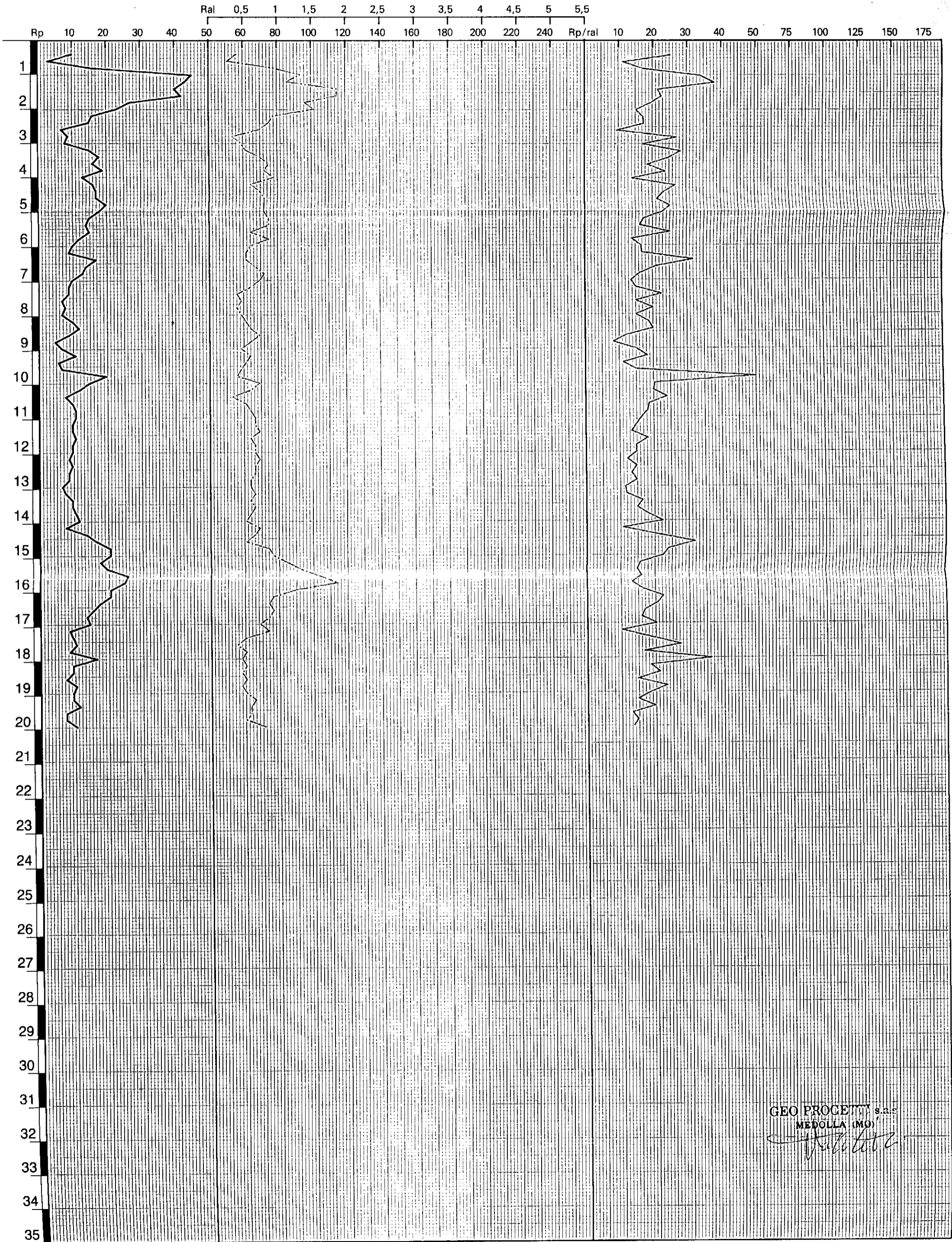


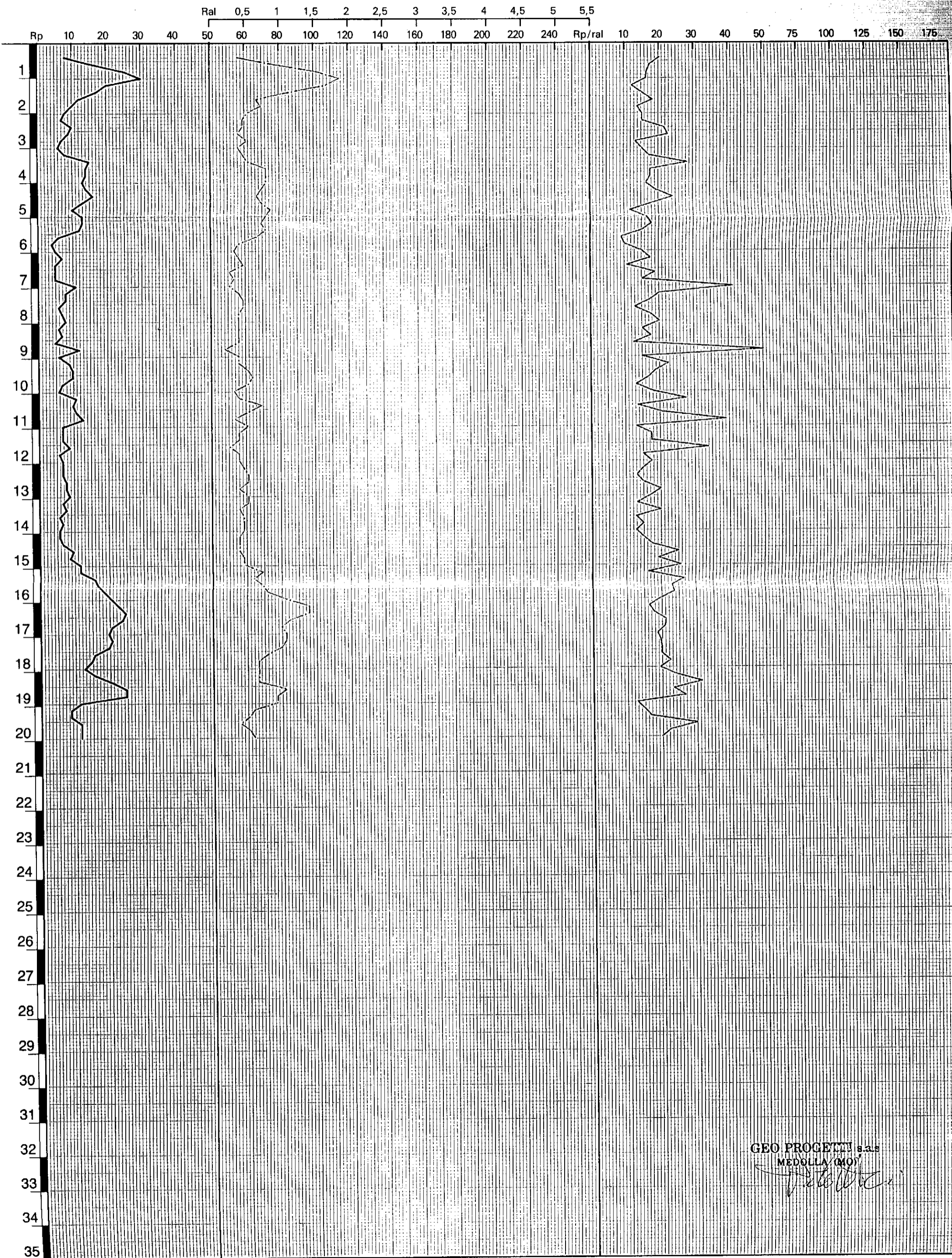


GEO PROGETTI s.a.s.
MEDOLLA (MO)



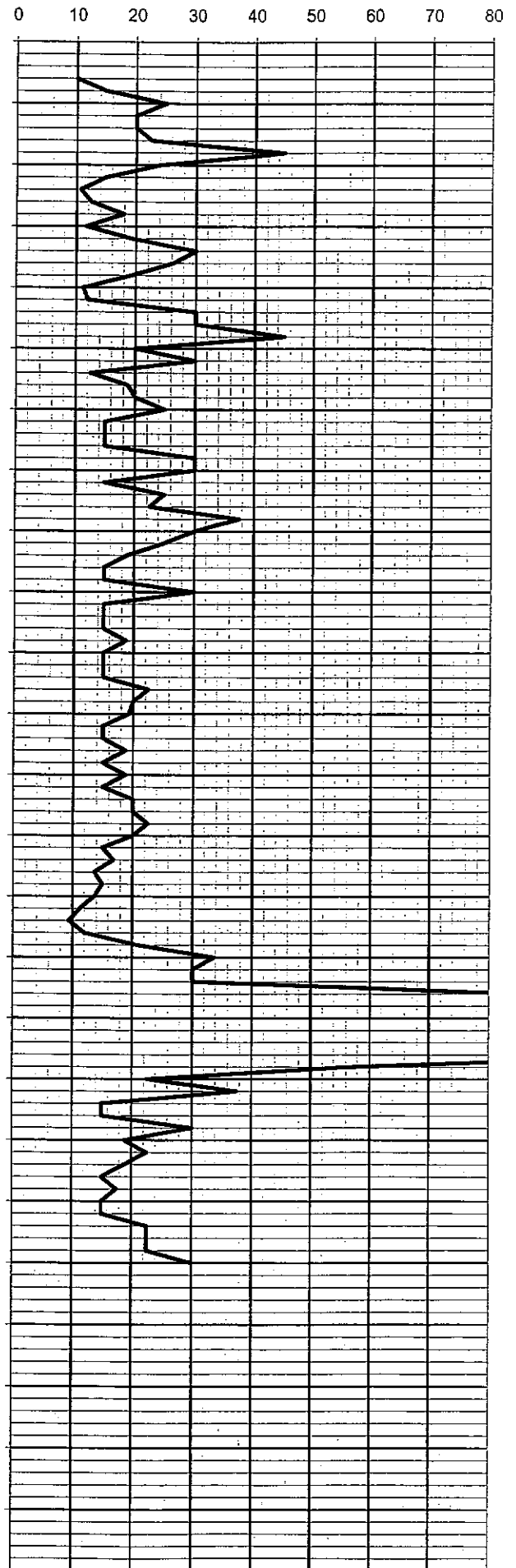
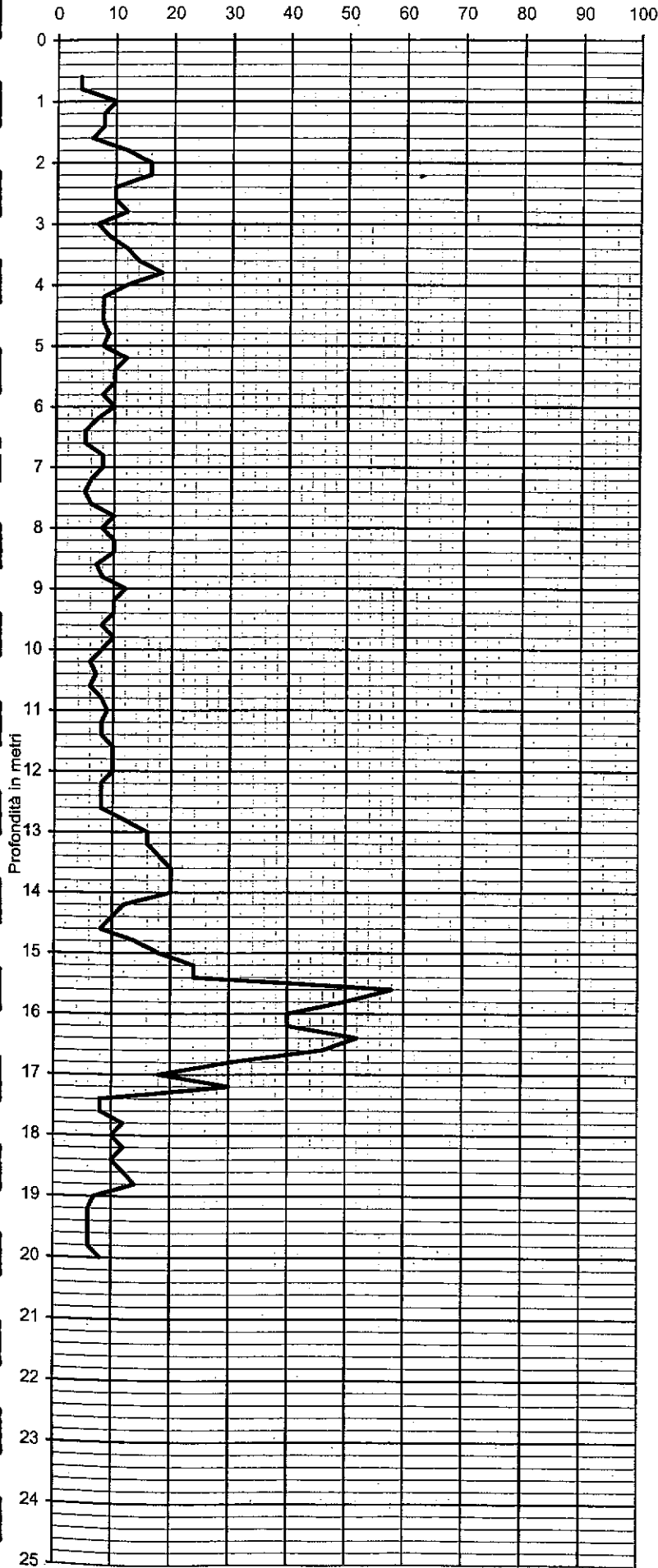
GEO PROGETTI s.r.l.
 MEDOLLA (MO)
[Signature]





Resistenza alla punta R_p (kg/cm²)

Rp/RI





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999
Telefax 059/454827

PROVA PENETROMETRICA STATICA
Penetrometro Gouda

Committente : CONSORZIO AREE PRODUTTIVE
Località : P.P. POSSESSIONE GAZZATE NONANTOLA
Prova numero : 2
Data : 07/01/2004
Operatore : DR. REBECCHI
Quota : P.C.

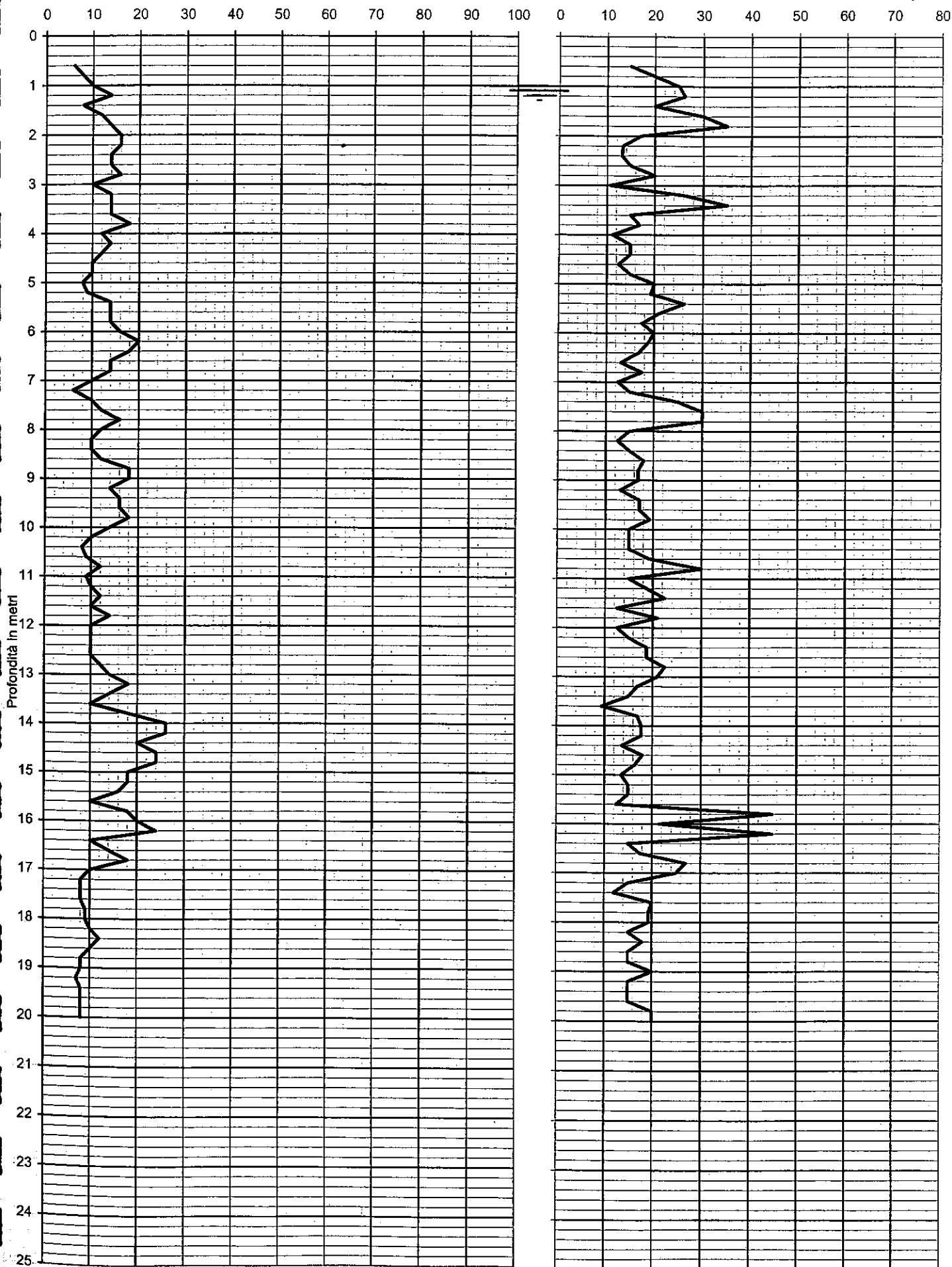
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 4 | 10 | 4 | 0,40 | 10,00 |
| 0,80 | 4 | 8 | 4 | 0,27 | 15,00 |
| 1,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 1,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 1,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 1,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 1,80 | 12 | 16 | 12 | 0,27 | 45,00 |
| 2,00 | 16 | 26 | 16 | 0,67 | 24,00 |
| 2,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 2,40 | 10 | 24 | 10 | 0,93 | 10,71 |
| 2,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 2,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 3,00 | 7 | 16 | 7 | 0,60 | 11,67 |
| 3,20 | 9 | 16 | 9 | 0,47 | 19,29 |
| 3,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,60 | 14 | 22 | 14 | 0,53 | 26,25 |
| 3,80 | 18 | 32 | 18 | 0,93 | 19,29 |
| 4,00 | 12 | 28 | 12 | 1,07 | 11,25 |
| 4,20 | 8 | 18 | 8 | 0,67 | 12,00 |
| 4,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,80 | 9 | 12 | 9 | 0,20 | 45,00 |
| 5,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,20 | 12 | 18 | 12 | 0,40 | 30,00 |
| 5,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 5,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,20 | 7 | 14 | 7 | 0,47 | 15,00 |
| 6,40 | 5 | 10 | 5 | 0,33 | 15,00 |
| 6,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 6,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 7,40 | 5 | 8 | 5 | 0,20 | 25,00 |
| 7,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 8,60 | 7 | 14 | 7 | 0,47 | 15,00 |
| 8,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 9,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 9,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 9,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 10,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 10,40 | 7 | 14 | 7 | 0,47 | 15,00 |
| 10,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 10,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,00 | 9 | 16 | 9 | 0,47 | 19,29 |
| 11,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 11,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 11,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 12,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,00 | 16 | 28 | 16 | 0,80 | 20,00 |
| 13,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 13,40 | 18 | 34 | 18 | 1,07 | 16,88 |
| 13,60 | 20 | 42 | 20 | 1,47 | 13,64 |
| 13,80 | 20 | 40 | 20 | 1,33 | 15,00 |
| 14,00 | 20 | 42 | 20 | 1,47 | 13,64 |
| 14,20 | 12 | 28 | 12 | 1,07 | 11,25 |
| 14,40 | 10 | 26 | 10 | 1,07 | 9,38 |
| 14,60 | 8 | 18 | 8 | 0,67 | 12,00 |
| 14,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 15,00 | 18 | 26 | 18 | 0,53 | 33,75 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | 24 | 36 | 24 | 0,80 | 30,00 |
| 15,40 | 24 | 36 | 24 | 0,80 | 30,00 |
| 15,60 | 58 | 68 | 58 | 0,67 | 87,00 |
| 15,80 | 50 | 58 | 50 | 0,53 | 93,75 |
| 16,00 | 40 | 46 | 40 | 0,40 | 100,00 |
| 16,20 | 40 | 46 | 40 | 0,40 | 100,00 |
| 16,40 | 52 | 56 | 52 | 0,27 | 195,00 |
| 16,60 | 46 | 52 | 46 | 0,40 | 115,00 |
| 16,80 | 30 | 38 | 30 | 0,53 | 56,25 |
| 17,00 | 18 | 30 | 18 | 0,80 | 22,50 |
| 17,20 | 30 | 42 | 30 | 0,80 | 37,50 |
| 17,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 17,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 17,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 18,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 18,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 18,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 18,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 18,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 19,00 | 7 | 14 | 7 | 0,47 | 15,00 |
| 19,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 19,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 19,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 19,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 20,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via AUSTRIA, 24 - 41100 MODENA

Resistenza alla punta Rp (kg/cm²)

Rp/RI





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999
Telefax 059/454827

PROVA PENETROMETRICA STATICA
Penetrometro Gouda

Committente : CONSORZIO AREE PRODUTTIVE
Località : P.P. POSSESSIONE GAZZATE NONANTOLA
Prova numero : 4
Data : 08/01/2004
Operatore : DR. REBECCHI
Quota : P.C.

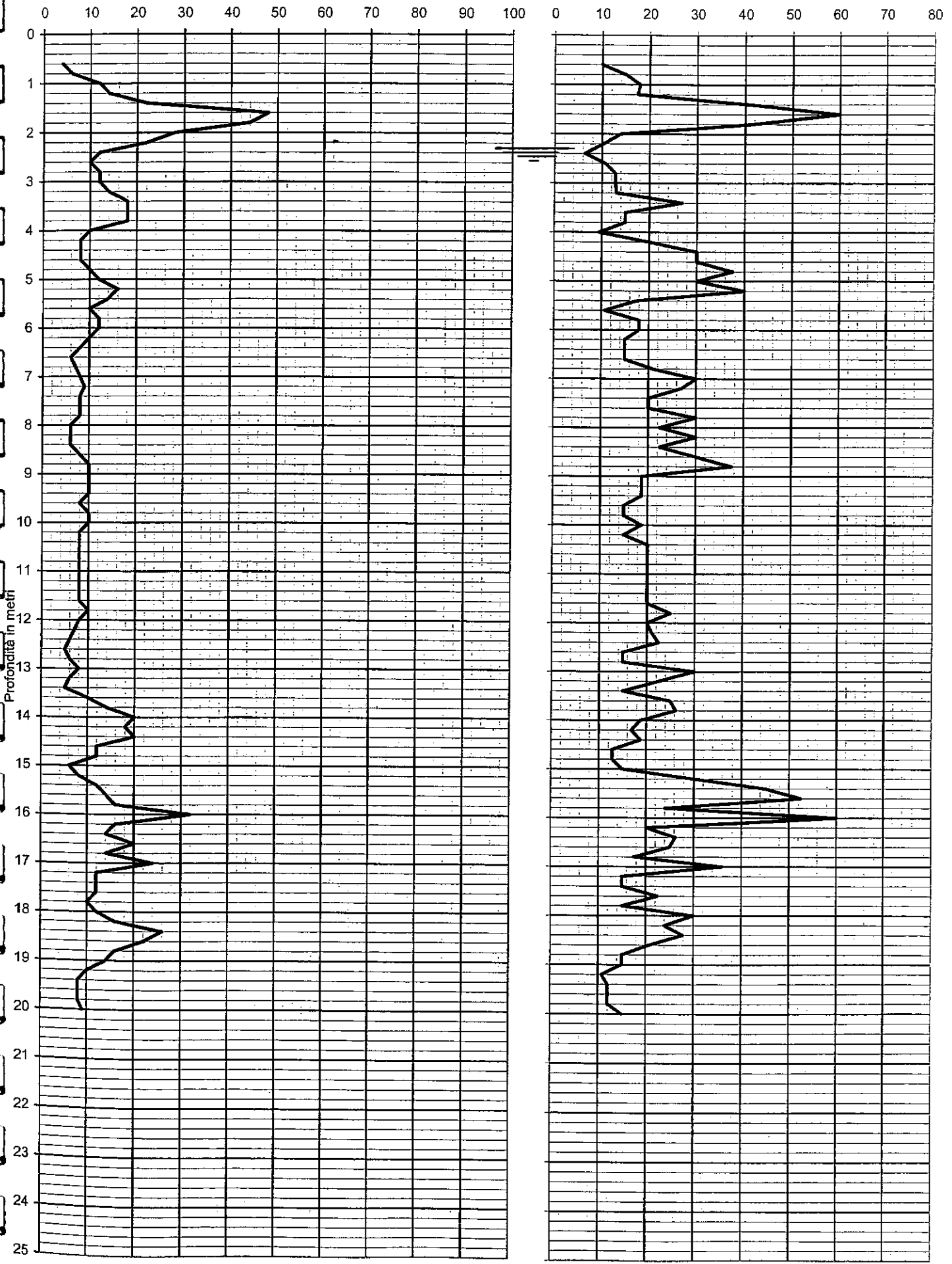
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 0,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 1,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 1,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 1,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 1,60 | 12 | 18 | 12 | 0,40 | 30,00 |
| 1,80 | 14 | 20 | 14 | 0,40 | 35,00 |
| 2,00 | 16 | 30 | 16 | 0,93 | 17,14 |
| 2,20 | 16 | 34 | 16 | 1,20 | 13,33 |
| 2,40 | 14 | 30 | 14 | 1,07 | 13,13 |
| 2,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 2,80 | 16 | 28 | 16 | 0,80 | 20,00 |
| 3,00 | 10 | 24 | 10 | 0,93 | 10,71 |
| 3,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 3,40 | 14 | 20 | 14 | 0,40 | 35,00 |
| 3,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 3,80 | 18 | 34 | 18 | 1,07 | 16,88 |
| 4,00 | 12 | 28 | 12 | 1,07 | 11,25 |
| 4,20 | 14 | 28 | 14 | 0,93 | 15,00 |
| 4,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 4,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 4,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 5,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,20 | 9 | 16 | 9 | 0,47 | 19,29 |
| 5,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 5,60 | 14 | 24 | 14 | 0,67 | 21,00 |
| 5,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 6,00 | 16 | 28 | 16 | 0,80 | 20,00 |
| 6,20 | 20 | 36 | 20 | 1,07 | 18,75 |
| 6,40 | 18 | 34 | 18 | 1,07 | 16,88 |
| 6,60 | 14 | 30 | 14 | 1,07 | 13,13 |
| 6,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 7,00 | 10 | 22 | 10 | 0,80 | 12,50 |
| 7,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 7,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,60 | 12 | 18 | 12 | 0,40 | 30,00 |
| 7,80 | 16 | 24 | 16 | 0,53 | 30,00 |
| 8,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 8,20 | 10 | 22 | 10 | 0,80 | 12,50 |
| 8,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 8,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 8,80 | 18 | 34 | 18 | 1,07 | 16,88 |
| 9,00 | 18 | 34 | 18 | 1,07 | 16,88 |
| 9,20 | 14 | 30 | 14 | 1,07 | 13,13 |
| 9,40 | 16 | 30 | 16 | 0,93 | 17,14 |
| 9,60 | 16 | 30 | 16 | 0,93 | 17,14 |
| 9,80 | 18 | 32 | 18 | 0,93 | 19,29 |
| 10,00 | 14 | 28 | 14 | 0,93 | 15,00 |
| 10,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 10,60 | 9 | 16 | 9 | 0,47 | 19,29 |
| 10,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 11,00 | 9 | 18 | 9 | 0,60 | 15,00 |
| 11,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 11,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 11,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 12,00 | 10 | 22 | 10 | 0,80 | 12,50 |
| 12,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 12,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 13,20 | 18 | 34 | 18 | 1,07 | 16,88 |
| 13,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 13,60 | 10 | 26 | 10 | 1,07 | 9,38 |
| 13,80 | 18 | 34 | 18 | 1,07 | 16,88 |
| 14,00 | 26 | 48 | 26 | 1,47 | 17,73 |
| 14,20 | 26 | 48 | 26 | 1,47 | 17,73 |
| 14,40 | 20 | 42 | 20 | 1,47 | 13,64 |
| 14,60 | 24 | 44 | 24 | 1,33 | 18,00 |
| 14,80 | 24 | 46 | 24 | 1,47 | 16,36 |
| 15,00 | 18 | 38 | 18 | 1,33 | 13,50 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | 18 | 36 | 18 | 1,20 | 15,00 |
| 15,40 | 16 | 32 | 16 | 1,07 | 15,00 |
| 15,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 15,80 | 18 | 24 | 18 | 0,40 | 45,00 |
| 16,00 | 20 | 34 | 20 | 0,93 | 21,43 |
| 16,20 | 24 | 32 | 24 | 0,53 | 45,00 |
| 16,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 16,60 | 14 | 26 | 14 | 0,80 | 17,50 |
| 16,80 | 18 | 28 | 18 | 0,67 | 27,00 |
| 17,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 17,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 17,40 | 8 | 18 | 8 | 0,67 | 12,00 |
| 17,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 17,80 | 9 | 16 | 9 | 0,47 | 19,29 |
| 18,00 | 9 | 16 | 9 | 0,47 | 19,29 |
| 18,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 18,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 18,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 18,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 19,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 19,20 | 7 | 14 | 7 | 0,47 | 15,00 |
| 19,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 19,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 19,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 20,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
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| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via AUSTRIA, 24 - 41100 MODENA

Resistenza alla punta Rp (kg/cm²)

Rp/RI





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999
Telefax 059/454827

PROVA PENETROMETRICA STATICA
Penetrometro Gouda

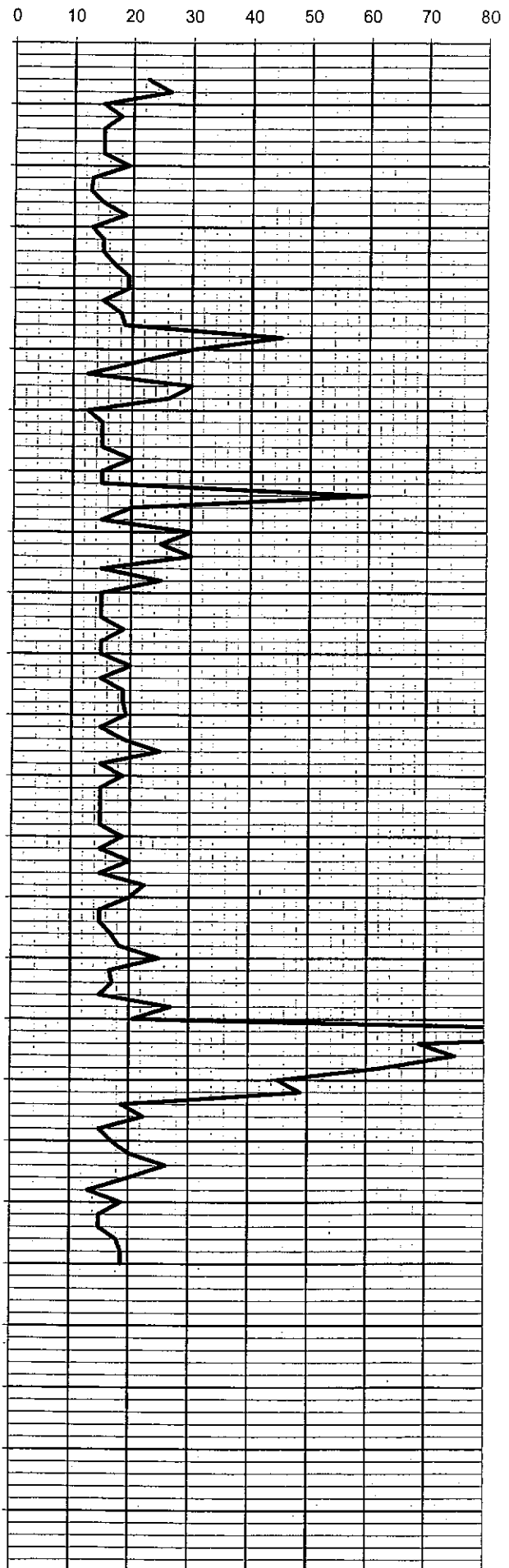
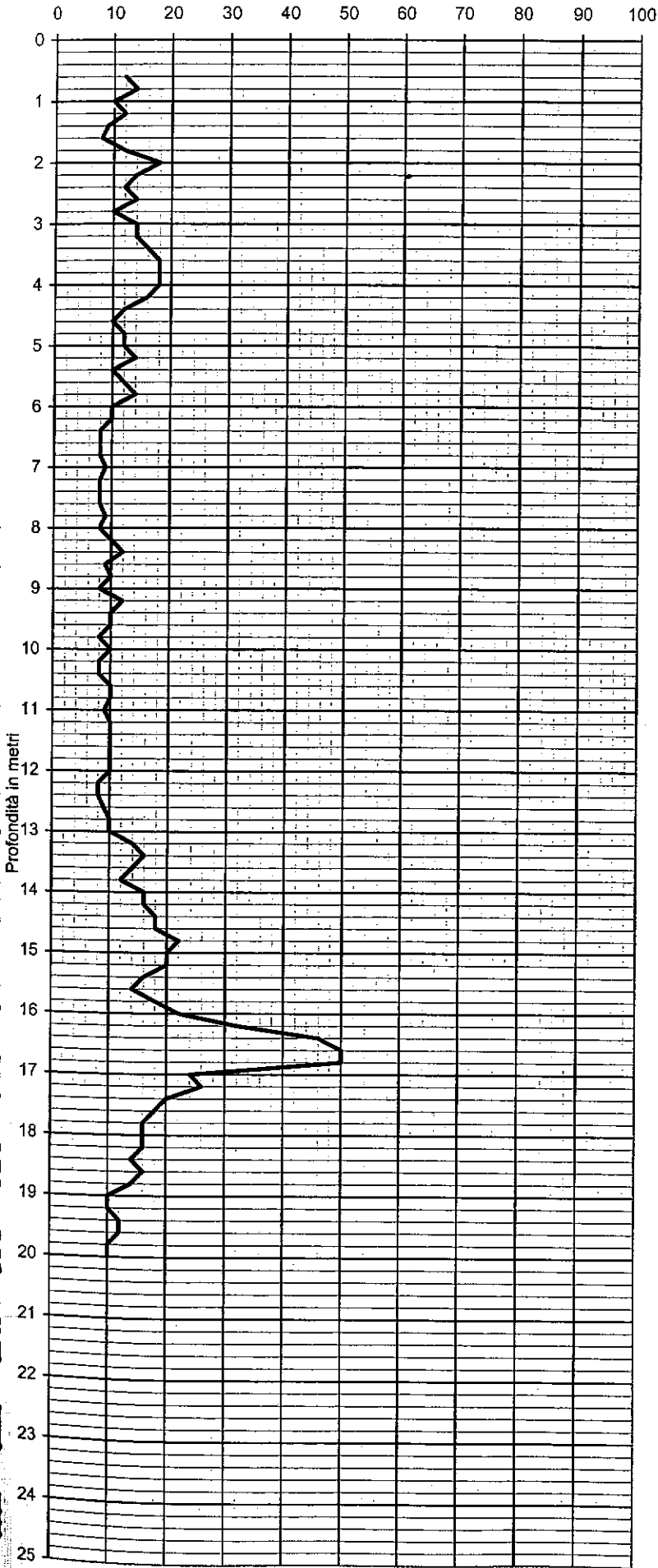
Committente : CONSORZIO AREE PRODUTTIVE
Località : P.P. POSSESSIONE GAZZATE NONANTOLA
Prova numero : 5
Data : 07/01/2004
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 4 | 10 | 4 | 0,40 | 10,00 |
| 0,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 1,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 1,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 1,40 | 22 | 30 | 22 | 0,53 | 41,25 |
| 1,60 | 48 | 60 | 48 | 0,80 | 60,00 |
| 1,80 | 44 | 60 | 44 | 1,07 | 41,25 |
| 2,00 | 28 | 58 | 28 | 2,00 | 14,00 |
| 2,20 | 22 | 54 | 22 | 2,13 | 10,31 |
| 2,40 | 12 | 40 | 12 | 1,87 | 6,43 |
| 2,60 | 10 | 24 | 10 | 0,93 | 10,71 |
| 2,80 | 12 | 26 | 12 | 0,93 | 12,86 |
| 3,00 | 12 | 26 | 12 | 0,93 | 12,86 |
| 3,20 | 14 | 30 | 14 | 1,07 | 13,13 |
| 3,40 | 18 | 28 | 18 | 0,67 | 27,00 |
| 3,60 | 18 | 36 | 18 | 1,20 | 15,00 |
| 3,80 | 18 | 36 | 18 | 1,20 | 15,00 |
| 4,00 | 10 | 26 | 10 | 1,07 | 9,38 |
| 4,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 5,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 5,20 | 16 | 22 | 16 | 0,40 | 40,00 |
| 5,40 | 14 | 26 | 14 | 0,80 | 17,50 |
| 5,60 | 10 | 24 | 10 | 0,93 | 10,71 |
| 5,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 6,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 6,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 6,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 6,80 | 7 | 12 | 7 | 0,33 | 21,00 |
| 7,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,20 | 9 | 14 | 9 | 0,33 | 27,00 |
| 7,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,20 | 6 | 9 | 6 | 0,20 | 30,00 |
| 8,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 9,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 10,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,20 | 7 | 12 | 7 | 0,33 | 21,00 |
| 12,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 12,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 12,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 13,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 13,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 13,40 | 5 | 10 | 5 | 0,33 | 15,00 |
| 13,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 13,80 | 14 | 22 | 14 | 0,53 | 26,25 |
| 14,00 | 20 | 36 | 20 | 1,07 | 18,75 |
| 14,20 | 18 | 34 | 18 | 1,07 | 16,88 |
| 14,40 | 20 | 36 | 20 | 1,07 | 18,75 |
| 14,60 | 12 | 26 | 12 | 0,93 | 12,86 |
| 14,80 | 12 | 26 | 12 | 0,93 | 12,86 |
| 15,00 | 6 | 12 | 6 | 0,40 | 15,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 15,40 | 12 | 16 | 12 | 0,27 | 45,00 |
| 15,60 | 14 | 18 | 14 | 0,27 | 52,50 |
| 15,80 | 16 | 26 | 16 | 0,67 | 24,00 |
| 16,00 | 32 | 40 | 32 | 0,53 | 60,00 |
| 16,20 | 16 | 28 | 16 | 0,80 | 20,00 |
| 16,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 16,60 | 20 | 32 | 20 | 0,80 | 25,00 |
| 16,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 17,00 | 24 | 34 | 24 | 0,67 | 36,00 |
| 17,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 17,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 17,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 17,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 18,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 18,20 | 16 | 26 | 16 | 0,67 | 24,00 |
| 18,40 | 26 | 40 | 26 | 0,93 | 27,86 |
| 18,60 | 22 | 38 | 22 | 1,07 | 20,63 |
| 18,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 19,00 | 14 | 28 | 14 | 0,93 | 15,00 |
| 19,20 | 10 | 24 | 10 | 0,93 | 10,71 |
| 19,40 | 8 | 18 | 8 | 0,67 | 12,00 |
| 19,60 | 8 | 18 | 8 | 0,67 | 12,00 |
| 19,80 | 8 | 18 | 8 | 0,67 | 12,00 |
| 20,00 | 9 | 18 | 9 | 0,60 | 15,00 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
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| 23,40 | | | | | |
| 23,60 | | | | | |
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| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Resistenza alla punta Rp (kg/cm²)

Rp/RI





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

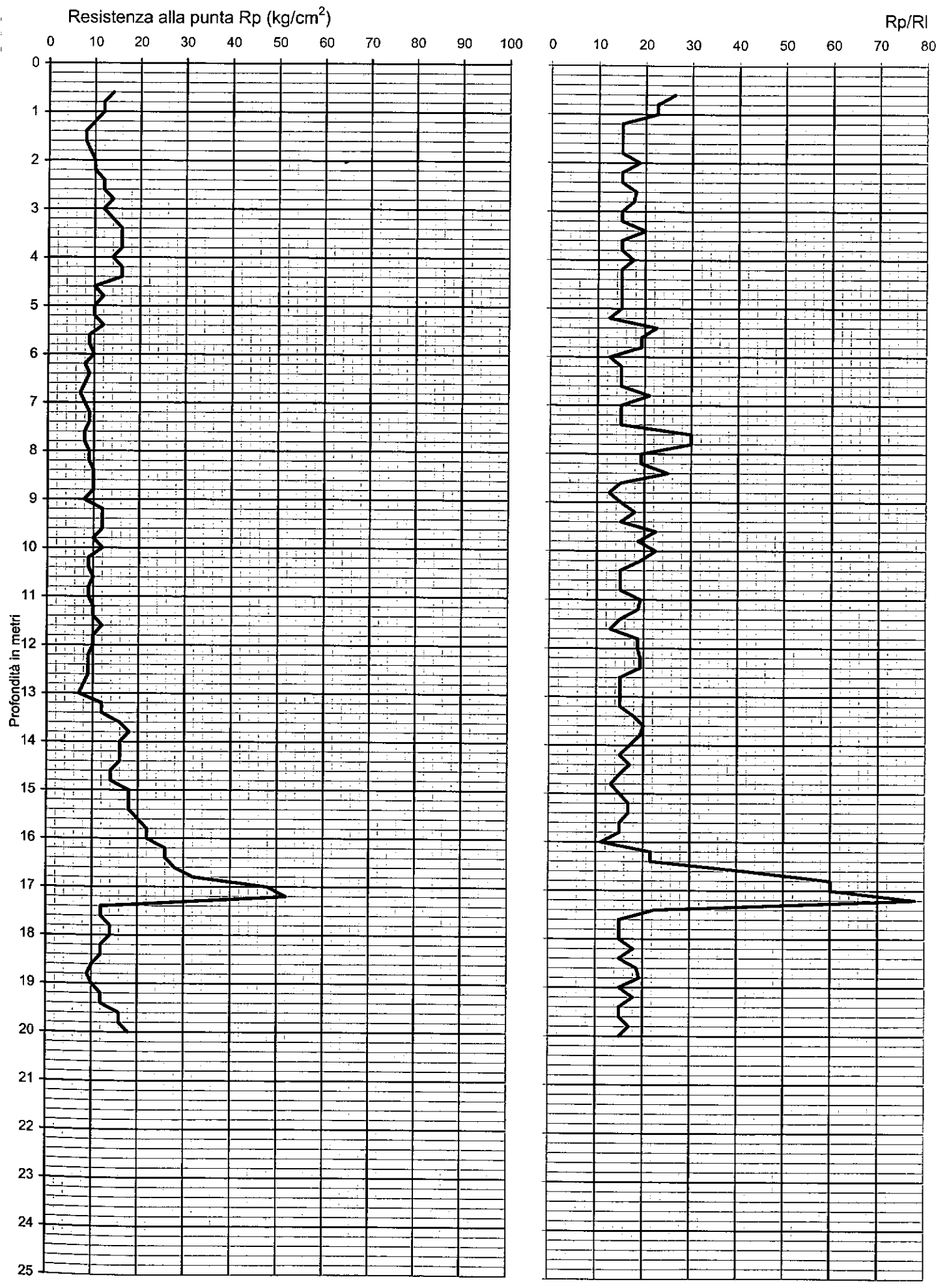
Penetrometro Gouda

Committente : CONSORZIO AREE PRODUTTIVE
Località : P.P. POSSESSIONE GAZZATE NONANTOLA
Prova numero : 7
Data : 08/01/2004
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 0,80 | 14 | 22 | 14 | 0,53 | 26,25 |
| 1,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 1,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 1,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 1,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 1,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 2,00 | 18 | 32 | 18 | 0,93 | 19,29 |
| 2,20 | 14 | 30 | 14 | 1,07 | 13,13 |
| 2,40 | 12 | 26 | 12 | 0,93 | 12,86 |
| 2,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 2,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,00 | 14 | 30 | 14 | 1,07 | 13,13 |
| 3,20 | 14 | 28 | 14 | 0,93 | 15,00 |
| 3,40 | 16 | 32 | 16 | 1,07 | 15,00 |
| 3,60 | 18 | 34 | 18 | 1,07 | 16,88 |
| 3,80 | 18 | 32 | 18 | 0,93 | 19,29 |
| 4,00 | 18 | 32 | 18 | 0,93 | 19,29 |
| 4,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 4,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 4,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,80 | 12 | 16 | 12 | 0,27 | 45,00 |
| 5,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 5,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 5,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 5,60 | 12 | 18 | 12 | 0,40 | 30,00 |
| 5,80 | 14 | 22 | 14 | 0,53 | 26,25 |
| 6,00 | 10 | 22 | 10 | 0,80 | 12,50 |
| 6,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 6,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,00 | 9 | 18 | 9 | 0,60 | 15,00 |
| 7,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 7,40 | 8 | 10 | 8 | 0,13 | 60,00 |
| 7,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,80 | 9 | 18 | 9 | 0,60 | 15,00 |
| 8,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 8,60 | 9 | 18 | 9 | 0,60 | 15,00 |
| 8,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 9,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 9,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 10,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 10,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,00 | 9 | 16 | 9 | 0,47 | 19,29 |
| 11,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 11,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 12,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,60 | 9 | 18 | 9 | 0,60 | 15,00 |
| 12,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,20 | 14 | 28 | 14 | 0,93 | 15,00 |
| 13,40 | 16 | 28 | 16 | 0,80 | 20,00 |
| 13,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 13,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 14,00 | 16 | 28 | 16 | 0,80 | 20,00 |
| 14,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 14,40 | 18 | 36 | 18 | 1,20 | 15,00 |
| 14,60 | 18 | 34 | 18 | 1,07 | 16,88 |
| 14,80 | 22 | 40 | 22 | 1,20 | 18,33 |
| 15,00 | 20 | 32 | 20 | 0,80 | 25,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | 20 | 38 | 20 | 1,20 | 16,67 |
| 15,40 | 16 | 30 | 16 | 0,93 | 17,14 |
| 15,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 15,80 | 18 | 28 | 18 | 0,67 | 27,00 |
| 16,00 | 22 | 38 | 22 | 1,07 | 20,63 |
| 16,20 | 32 | 36 | 32 | 0,27 | 120,00 |
| 16,40 | 46 | 56 | 46 | 0,67 | 69,00 |
| 16,60 | 50 | 60 | 50 | 0,67 | 75,00 |
| 16,80 | 50 | 62 | 50 | 0,80 | 62,50 |
| 17,00 | 24 | 32 | 24 | 0,53 | 45,00 |
| 17,20 | 26 | 34 | 26 | 0,53 | 48,75 |
| 17,40 | 20 | 36 | 20 | 1,07 | 18,75 |
| 17,60 | 18 | 30 | 18 | 0,80 | 22,50 |
| 17,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 18,00 | 16 | 30 | 16 | 0,93 | 17,14 |
| 18,20 | 16 | 28 | 16 | 0,80 | 20,00 |
| 18,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 18,60 | 16 | 28 | 16 | 0,80 | 20,00 |
| 18,80 | 14 | 30 | 14 | 1,07 | 13,13 |
| 19,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 19,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 19,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 19,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 19,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 20,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
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| 21,40 | | | | | |
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| 26,80 | | | | | |
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| 30,00 | | | | | |

Via AUSTRIA, 24 - 41100 MODENA





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

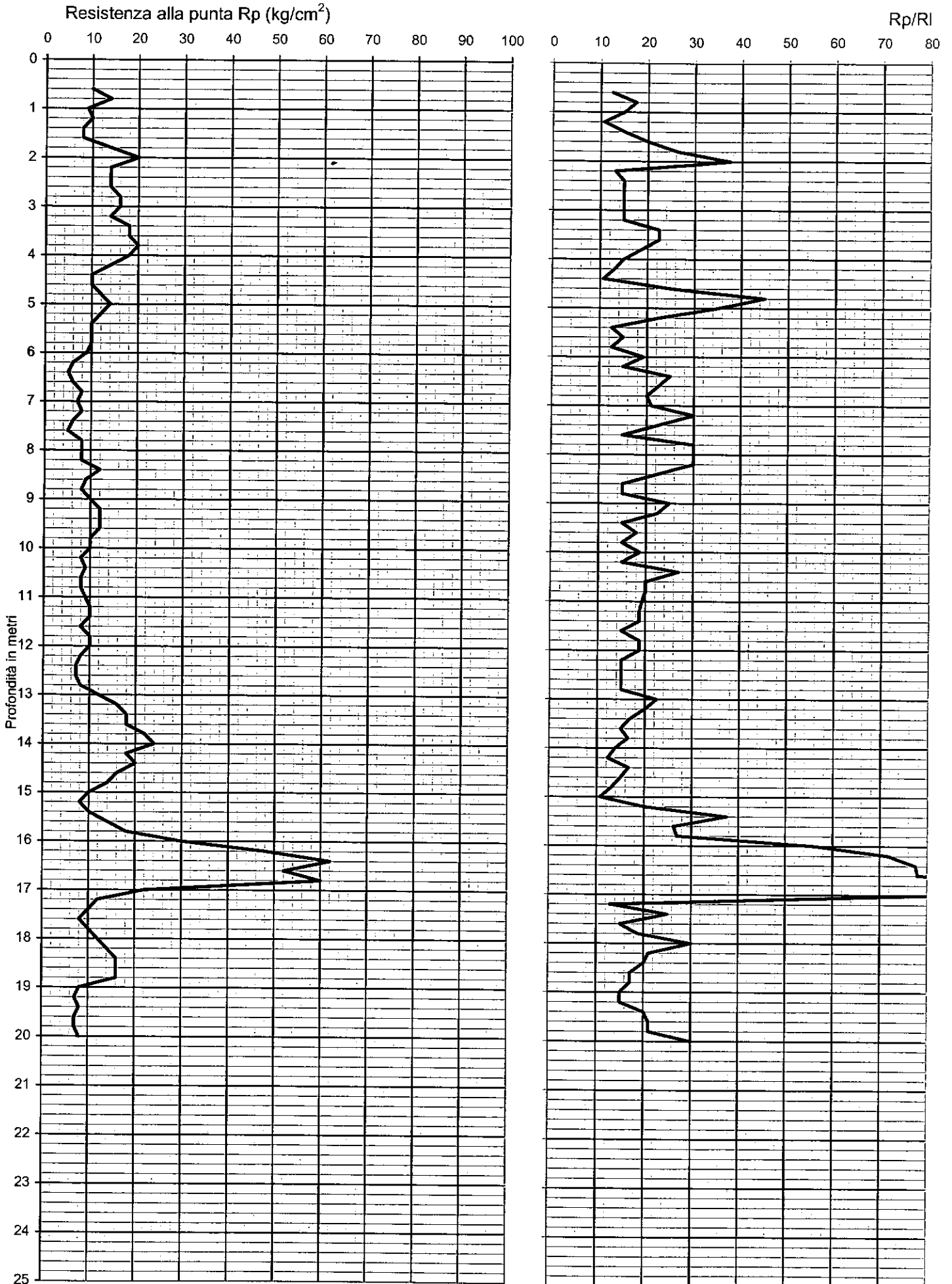
Penetrometro Gouda

Committente : CONSORZIO AREE PRODUTTIVE
Località : P.P. POSSESSIONE GAZZATE NONANTOLA
Prova numero : 8
Data : 08/01/2004
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 14 | 22 | 14 * | 0,53 | 26,25 |
| 0,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 1,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 1,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 1,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 1,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 1,80 | 9 | 18 | 9 | 0,60 | 15,00 |
| 2,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 2,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 2,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 2,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 3,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 3,20 | 14 | 28 | 14 | 0,93 | 15,00 |
| 3,40 | 16 | 28 | 16 | 0,80 | 20,00 |
| 3,60 | 16 | 32 | 16 | 1,07 | 15,00 |
| 3,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 4,00 | 14 | 26 | 14 | 0,80 | 17,50 |
| 4,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 4,40 | 16 | 32 | 16 | 1,07 | 15,00 |
| 4,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 4,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 5,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 5,20 | 10 | 22 | 10 | 0,80 | 12,50 |
| 5,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 5,60 | 9 | 16 | 9 | 0,47 | 19,29 |
| 5,80 | 9 | 16 | 9 | 0,47 | 19,29 |
| 6,00 | 10 | 22 | 10 | 0,80 | 12,50 |
| 6,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 6,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,80 | 7 | 12 | 7 | 0,33 | 21,00 |
| 7,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 7,20 | 9 | 18 | 9 | 0,60 | 15,00 |
| 7,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 7,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,00 | 9 | 16 | 9 | 0,47 | 19,29 |
| 8,20 | 9 | 16 | 9 | 0,47 | 19,29 |
| 8,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 8,80 | 10 | 22 | 10 | 0,80 | 12,50 |
| 9,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 9,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 9,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 10,20 | 9 | 16 | 9 | 0,47 | 19,29 |
| 10,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 10,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,80 | 9 | 18 | 9 | 0,60 | 15,00 |
| 11,00 | 9 | 16 | 9 | 0,47 | 19,29 |
| 11,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,60 | 12 | 26 | 12 | 0,93 | 12,86 |
| 11,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,20 | 9 | 16 | 9 | 0,47 | 19,29 |
| 12,40 | 9 | 16 | 9 | 0,47 | 19,29 |
| 12,60 | 9 | 18 | 9 | 0,60 | 15,00 |
| 12,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 13,00 | 7 | 14 | 7 | 0,47 | 15,00 |
| 13,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 13,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,60 | 16 | 28 | 16 | 0,80 | 20,00 |
| 13,80 | 18 | 32 | 18 | 0,93 | 19,29 |
| 14,00 | 16 | 30 | 16 | 0,93 | 17,14 |
| 14,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 14,40 | 16 | 30 | 16 | 0,93 | 17,14 |
| 14,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 14,80 | 14 | 30 | 14 | 1,07 | 13,13 |
| 15,00 | 18 | 36 | 18 | 1,20 | 15,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | 18 | 34 | 18 | 1,07 | 16,88 |
| 15,40 | 18 | 34 | 18 | 1,07 | 16,88 |
| 15,60 | 20 | 40 | 20 | 1,33 | 15,00 |
| 15,80 | 22 | 44 | 22 | 1,47 | 15,00 |
| 16,00 | 22 | 52 | 22 | 2,00 | 11,00 |
| 16,20 | 26 | 44 | 26 | 1,20 | 21,67 |
| 16,40 | 26 | 44 | 26 | 1,20 | 21,67 |
| 16,60 | 28 | 38 | 28 | 0,67 | 42,00 |
| 16,80 | 32 | 40 | 32 | 0,53 | 60,00 |
| 17,00 | 48 | 60 | 48 | 0,80 | 60,00 |
| 17,20 | 52 | 62 | 52 | 0,67 | 78,00 |
| 17,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 17,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 17,80 | 14 | 28 | 14 | 0,93 | 15,00 |
| 18,00 | 14 | 28 | 14 | 0,93 | 15,00 |
| 18,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 18,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 18,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 18,80 | 9 | 16 | 9 | 0,47 | 19,29 |
| 19,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 19,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 19,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 19,60 | 16 | 32 | 16 | 1,07 | 15,00 |
| 19,80 | 16 | 30 | 16 | 0,93 | 17,14 |
| 20,00 | 18 | 36 | 18 | 1,20 | 15,00 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
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| 22,40 | | | | | |
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| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via AUSTRIA, 24 - 41100 MODENA





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999
Telefax 059/454827

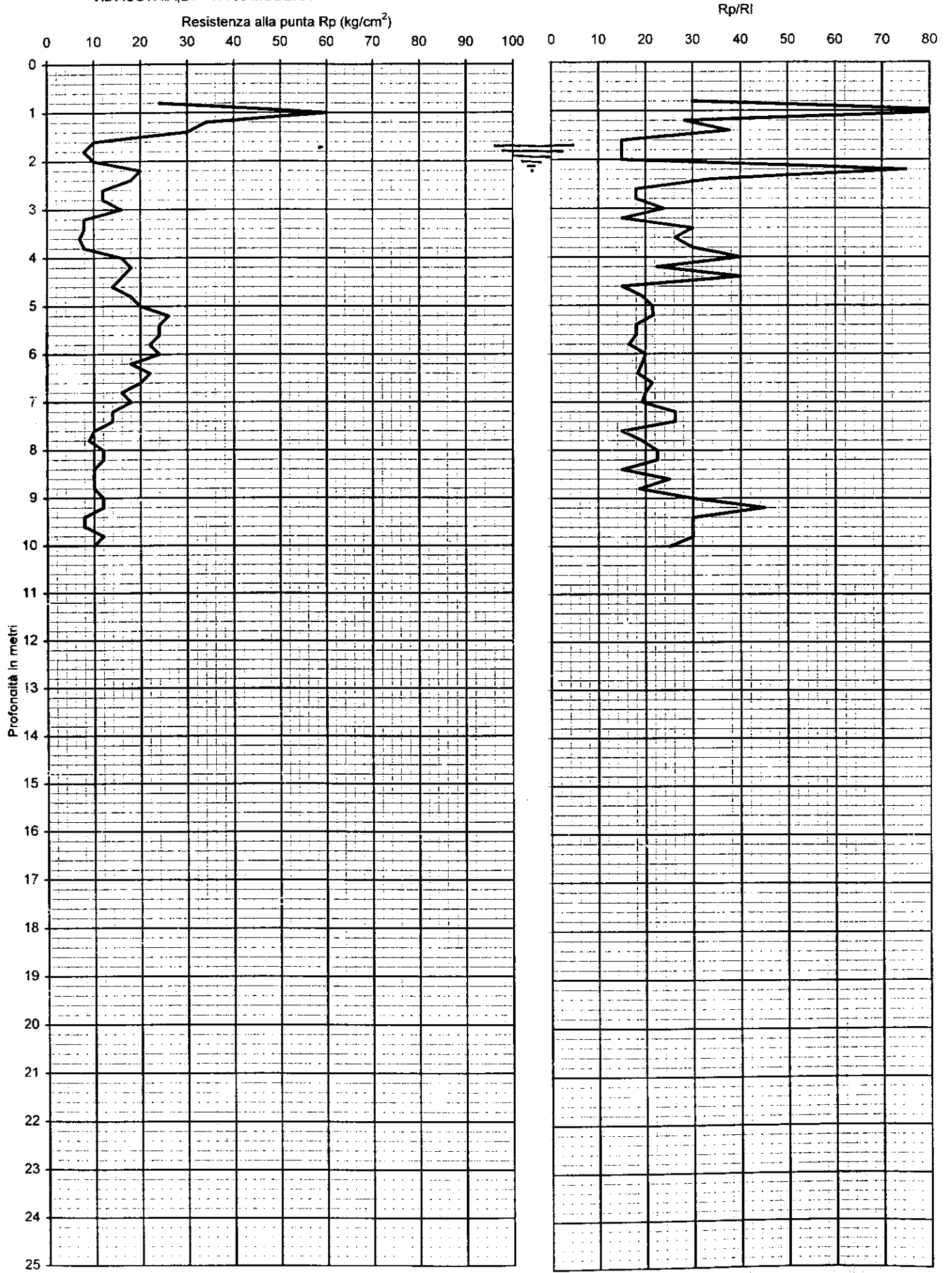
PROVA PENETROMETRICA STATICA
Penetrometro Gouda

Committente : CONSORZIO AREE PRODUTTIVE
Località : P.P. POSSESSIONE GAZZATE NONANTOLA
Prova numero : 11
Data : 08/01/2004
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 0,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 1,00 | 9 | 18 | 9 | 0,60 | 15,00 |
| 1,20 | 10 | 24 | 10 | 0,93 | 10,71 |
| 1,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 1,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 1,80 | 14 | 22 | 14 | 0,53 | 26,25 |
| 2,00 | 20 | 28 | 20 | 0,53 | 37,50 |
| 2,20 | 14 | 30 | 14 | 1,07 | 13,13 |
| 2,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 2,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 2,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 3,00 | 16 | 32 | 16 | 1,07 | 15,00 |
| 3,20 | 14 | 28 | 14 | 0,93 | 15,00 |
| 3,40 | 18 | 30 | 18 | 0,80 | 22,50 |
| 3,60 | 18 | 30 | 18 | 0,80 | 22,50 |
| 3,80 | 20 | 36 | 20 | 1,07 | 18,75 |
| 4,00 | 18 | 36 | 18 | 1,20 | 15,00 |
| 4,20 | 14 | 30 | 14 | 1,07 | 13,13 |
| 4,40 | 10 | 24 | 10 | 0,93 | 10,71 |
| 4,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,80 | 12 | 16 | 12 | 0,27 | 45,00 |
| 5,00 | 14 | 20 | 14 | 0,40 | 35,00 |
| 5,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 5,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 5,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 5,80 | 10 | 22 | 10 | 0,80 | 12,50 |
| 6,00 | 9 | 16 | 9 | 0,47 | 19,29 |
| 6,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 6,40 | 5 | 8 | 5 | 0,20 | 25,00 |
| 6,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,00 | 7 | 12 | 7 | 0,33 | 21,00 |
| 7,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 7,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 8,60 | 9 | 18 | 9 | 0,60 | 15,00 |
| 8,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 9,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 9,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 10,40 | 9 | 14 | 9 | 0,33 | 27,00 |
| 10,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,00 | 9 | 16 | 9 | 0,47 | 19,29 |
| 11,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 11,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,40 | 7 | 14 | 7 | 0,47 | 15,00 |
| 12,60 | 7 | 14 | 7 | 0,47 | 15,00 |
| 12,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 13,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,20 | 16 | 28 | 16 | 0,80 | 20,00 |
| 13,40 | 18 | 34 | 18 | 1,07 | 16,88 |
| 13,60 | 18 | 36 | 18 | 1,20 | 15,00 |
| 13,80 | 22 | 42 | 22 | 1,33 | 16,50 |
| 14,00 | 24 | 50 | 24 | 1,73 | 13,85 |
| 14,20 | 18 | 40 | 18 | 1,47 | 12,27 |
| 14,40 | 20 | 38 | 20 | 1,20 | 16,67 |
| 14,60 | 16 | 32 | 16 | 1,07 | 15,00 |
| 14,80 | 14 | 30 | 14 | 1,07 | 13,13 |
| 15,00 | 10 | 24 | 10 | 0,93 | 10,71 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 15,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 15,60 | 14 | 22 | 14 | 0,53 | 26,25 |
| 15,80 | 18 | 28 | 18 | 0,67 | 27,00 |
| 16,00 | 30 | 38 | 30 | 0,53 | 56,25 |
| 16,20 | 48 | 58 | 48 | 0,67 | 72,00 |
| 16,40 | 62 | 74 | 62 | 0,80 | 77,50 |
| 16,60 | 52 | 62 | 52 | 0,67 | 78,00 |
| 16,80 | 60 | 66 | 60 | 0,40 | 150,00 |
| 17,00 | 22 | 26 | 22 | 0,27 | 82,50 |
| 17,20 | 12 | 26 | 12 | 0,93 | 12,86 |
| 17,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 17,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 17,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 18,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 18,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 18,40 | 16 | 28 | 16 | 0,80 | 20,00 |
| 18,60 | 16 | 30 | 16 | 0,93 | 17,14 |
| 18,80 | 16 | 30 | 16 | 0,93 | 17,14 |
| 19,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 19,20 | 7 | 14 | 7 | 0,47 | 15,00 |
| 19,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 19,60 | 7 | 12 | 7 | 0,33 | 21,00 |
| 19,80 | 7 | 12 | 7 | 0,33 | 21,00 |
| 20,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
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| 30,00 | | | | | |

Via AUSTRIA,24 - 41100 MODENA



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | | | | | |
| 0.80 | 24 | 36 | 24 | 0.80 | 30.00 |
| 1.00 | 60 | 70 | 60 | 0.67 | 90.00 |
| 1.20 | 34 | 52 | 34 | 1.20 | 28.33 |
| 1.40 | 30 | 42 | 30 | 0.80 | 37.50 |
| 1.60 | 10 | 20 | 10 | 0.67 | 15.00 |
| 1.80 | 8 | 16 | 8 | 0.53 | 15.00 |
| 2.00 | 10 | 20 | 10 | 0.67 | 15.00 |
| 2.20 | 20 | 24 | 20 | 0.27 | 75.00 |
| 2.40 | 18 | 26 | 18 | 0.53 | 33.75 |
| 2.60 | 12 | 22 | 12 | 0.67 | 18.00 |
| 2.80 | 12 | 22 | 12 | 0.67 | 18.00 |
| 3.00 | 16 | 26 | 16 | 0.67 | 24.00 |
| 3.20 | 8 | 16 | 8 | 0.53 | 15.00 |
| 3.40 | 8 | 12 | 8 | 0.27 | 30.00 |
| 3.60 | 7 | 11 | 7 | 0.27 | 26.25 |
| 3.80 | 8 | 12 | 8 | 0.27 | 30.00 |
| 4.00 | 16 | 22 | 16 | 0.40 | 40.00 |
| 4.20 | 18 | 30 | 18 | 0.80 | 22.50 |
| 4.40 | 16 | 22 | 16 | 0.40 | 40.00 |
| 4.60 | 14 | 28 | 14 | 0.93 | 15.00 |
| 4.80 | 18 | 32 | 18 | 0.93 | 19.29 |
| 5.00 | 20 | 34 | 20 | 0.93 | 21.43 |
| 5.20 | 26 | 44 | 26 | 1.20 | 21.67 |
| 5.40 | 24 | 44 | 24 | 1.33 | 18.00 |
| 5.60 | 24 | 44 | 24 | 1.33 | 18.00 |
| 5.80 | 22 | 42 | 22 | 1.33 | 16.50 |
| 6.00 | 24 | 42 | 24 | 1.20 | 20.00 |
| 6.20 | 18 | 32 | 18 | 0.93 | 19.29 |
| 6.40 | 22 | 40 | 22 | 1.20 | 18.33 |
| 6.60 | 20 | 34 | 20 | 0.93 | 21.43 |
| 6.80 | 16 | 28 | 16 | 0.80 | 20.00 |
| 7.00 | 18 | 32 | 18 | 0.93 | 19.29 |
| 7.20 | 14 | 22 | 14 | 0.53 | 26.25 |
| 7.40 | 14 | 22 | 14 | 0.53 | 26.25 |
| 7.60 | 10 | 20 | 10 | 0.67 | 15.00 |
| 7.80 | 9 | 16 | 9 | 0.47 | 19.29 |
| 8.00 | 12 | 26 | 12 | 0.53 | 22.50 |
| 8.20 | 12 | 20 | 12 | 0.53 | 22.50 |
| 8.40 | 10 | 20 | 10 | 0.67 | 15.00 |
| 8.60 | 10 | 16 | 10 | 0.40 | 25.00 |
| 8.80 | 10 | 18 | 10 | 0.53 | 18.75 |
| 9.00 | 12 | 18 | 12 | 0.40 | 30.00 |
| 9.20 | 12 | 16 | 12 | 0.27 | 45.00 |
| 9.40 | 8 | 12 | 8 | 0.27 | 30.00 |
| 9.60 | 8 | 12 | 8 | 0.27 | 30.00 |
| 9.80 | 12 | 18 | 12 | 0.40 | 30.00 |
| 10.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 10.20 | | | | | |
| 10.40 | | | | | |
| 10.60 | | | | | |
| 10.80 | | | | | |
| 11.00 | | | | | |
| 11.20 | | | | | |
| 11.40 | | | | | |
| 11.60 | | | | | |
| 11.80 | | | | | |
| 12.00 | | | | | |
| 12.20 | | | | | |
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| 12.60 | | | | | |
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| 13.00 | | | | | |
| 13.20 | | | | | |
| 13.40 | | | | | |
| 13.60 | | | | | |
| 13.80 | | | | | |
| 14.00 | | | | | |
| 14.20 | | | | | |
| 14.40 | | | | | |
| 14.60 | | | | | |
| 14.80 | | | | | |
| 15.00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15.20 | | | | | |
| 15.40 | | | | | |
| 15.60 | | | | | |
| 15.80 | | | | | |
| 16.00 | | | | | |
| 16.20 | | | | | |
| 16.40 | | | | | |
| 16.60 | | | | | |
| 16.80 | | | | | |
| 17.00 | | | | | |
| 17.20 | | | | | |
| 17.40 | | | | | |
| 17.60 | | | | | |
| 17.80 | | | | | |
| 18.00 | | | | | |
| 18.20 | | | | | |
| 18.40 | | | | | |
| 18.60 | | | | | |
| 18.80 | | | | | |
| 19.00 | | | | | |
| 19.20 | | | | | |
| 19.40 | | | | | |
| 19.60 | | | | | |
| 19.80 | | | | | |
| 20.00 | | | | | |
| 20.20 | | | | | |
| 20.40 | | | | | |
| 20.60 | | | | | |
| 20.80 | | | | | |
| 21.00 | | | | | |
| 21.20 | | | | | |
| 21.40 | | | | | |
| 21.60 | | | | | |
| 21.80 | | | | | |
| 22.00 | | | | | |
| 22.20 | | | | | |
| 22.40 | | | | | |
| 22.60 | | | | | |
| 22.80 | | | | | |
| 23.00 | | | | | |
| 23.20 | | | | | |
| 23.40 | | | | | |
| 23.60 | | | | | |
| 23.80 | | | | | |
| 24.00 | | | | | |
| 24.20 | | | | | |
| 24.40 | | | | | |
| 24.60 | | | | | |
| 24.80 | | | | | |
| 25.00 | | | | | |
| 25.20 | | | | | |
| 25.40 | | | | | |
| 25.60 | | | | | |
| 25.80 | | | | | |
| 26.00 | | | | | |
| 26.20 | | | | | |
| 26.40 | | | | | |
| 26.60 | | | | | |
| 26.80 | | | | | |
| 27.00 | | | | | |
| 27.20 | | | | | |
| 27.40 | | | | | |
| 27.60 | | | | | |
| 27.80 | | | | | |
| 28.00 | | | | | |
| 28.20 | | | | | |
| 28.40 | | | | | |
| 28.60 | | | | | |
| 28.80 | | | | | |
| 29.00 | | | | | |
| 29.20 | | | | | |
| 29.40 | | | | | |
| 29.60 | | | | | |
| 29.80 | | | | | |
| 30.00 | | | | | |

PROVA PENETROMETRICA DINAMICA
TABELLE VALORI DI RESISTENZA

n° 1

- indagine : Testimoni di Geova
- cantiere : Sala del Regno
- località : Nonantola (MODENA)
- note :

- data : 14/04/1999
- quota inizio : piano campagna
- prof. falda : Falda non rilevata
- pagina : 1

| Prof.(m) | N(colpi p) | Rpd(kg/cm ²) | N(colpi r) | asta | Prof.(m) | N(colpi p) | Rpd(kg/cm ²) | N(colpi r) | asta |
|-------------|------------|--------------------------|------------|------|-------------|------------|--------------------------|------------|------|
| 0,00 - 0,10 | — | — | — | 1 | 2,00 - 2,10 | 7 | 24,3 | — | 3 |
| 0,10 - 0,20 | 1 | 3,9 | — | 1 | 2,10 - 2,20 | 8 | 27,8 | — | 3 |
| 0,20 - 0,30 | 3 | 11,8 | — | 1 | 2,20 - 2,30 | 8 | 27,8 | — | 3 |
| 0,30 - 0,40 | 2 | 7,8 | — | 1 | 2,30 - 2,40 | 8 | 27,8 | — | 3 |
| 0,40 - 0,50 | 1 | 3,9 | — | 1 | 2,40 - 2,50 | 7 | 24,3 | — | 3 |
| 0,50 - 0,60 | 1 | 3,9 | — | 1 | 2,50 - 2,60 | 7 | 24,3 | — | 3 |
| 0,60 - 0,70 | 1 | 3,9 | — | 1 | 2,60 - 2,70 | 8 | 27,8 | — | 3 |
| 0,70 - 0,80 | 2 | 7,8 | — | 1 | 2,70 - 2,80 | 14 | 48,7 | — | 3 |
| 0,80 - 0,90 | 2 | 7,4 | — | 2 | 2,80 - 2,90 | 22 | 72,4 | — | 4 |
| 0,90 - 1,00 | 2 | 7,4 | — | 2 | 2,90 - 3,00 | 19 | 62,5 | — | 4 |
| 1,00 - 1,10 | 1 | 3,7 | — | 2 | 3,00 - 3,10 | 21 | 69,1 | — | 4 |
| 1,10 - 1,20 | 1 | 3,7 | — | 2 | 3,10 - 3,20 | 19 | 62,5 | — | 4 |
| 1,20 - 1,30 | 2 | 7,4 | — | 2 | 3,20 - 3,30 | 23 | 75,7 | — | 4 |
| 1,30 - 1,40 | 4 | 14,7 | — | 2 | 3,30 - 3,40 | 26 | 85,5 | — | 4 |
| 1,40 - 1,50 | 2 | 7,4 | — | 2 | 3,40 - 3,50 | 30 | 98,7 | — | 4 |
| 1,50 - 1,60 | 2 | 7,4 | — | 2 | 3,50 - 3,60 | 31 | 102,0 | — | 4 |
| 1,60 - 1,70 | 5 | 18,4 | — | 2 | 3,60 - 3,70 | 32 | 105,3 | — | 4 |
| 1,70 - 1,80 | 5 | 18,4 | — | 2 | 3,70 - 3,80 | 28 | 92,1 | — | 4 |
| 1,80 - 1,90 | 5 | 17,4 | — | 3 | 3,80 - 3,90 | 33 | 103,0 | — | 5 |
| 1,90 - 2,00 | 5 | 17,4 | — | 3 | 3,90 - 4,00 | 34 | 106,2 | — | 5 |

- PENETROMETRO DINAMICO tipo : DL-30 (60°)

- M (massa battente)= 30,00 kg - H (altezza caduta)= 0,20 m - A (area punta)= 10,00 cm² - D (diam. punta)= 35,70 mm

- Numero Colpi Punta N = N(10) [$\delta = 10$ cm]

- Uso rivestimento / fanghi iniezione : NO

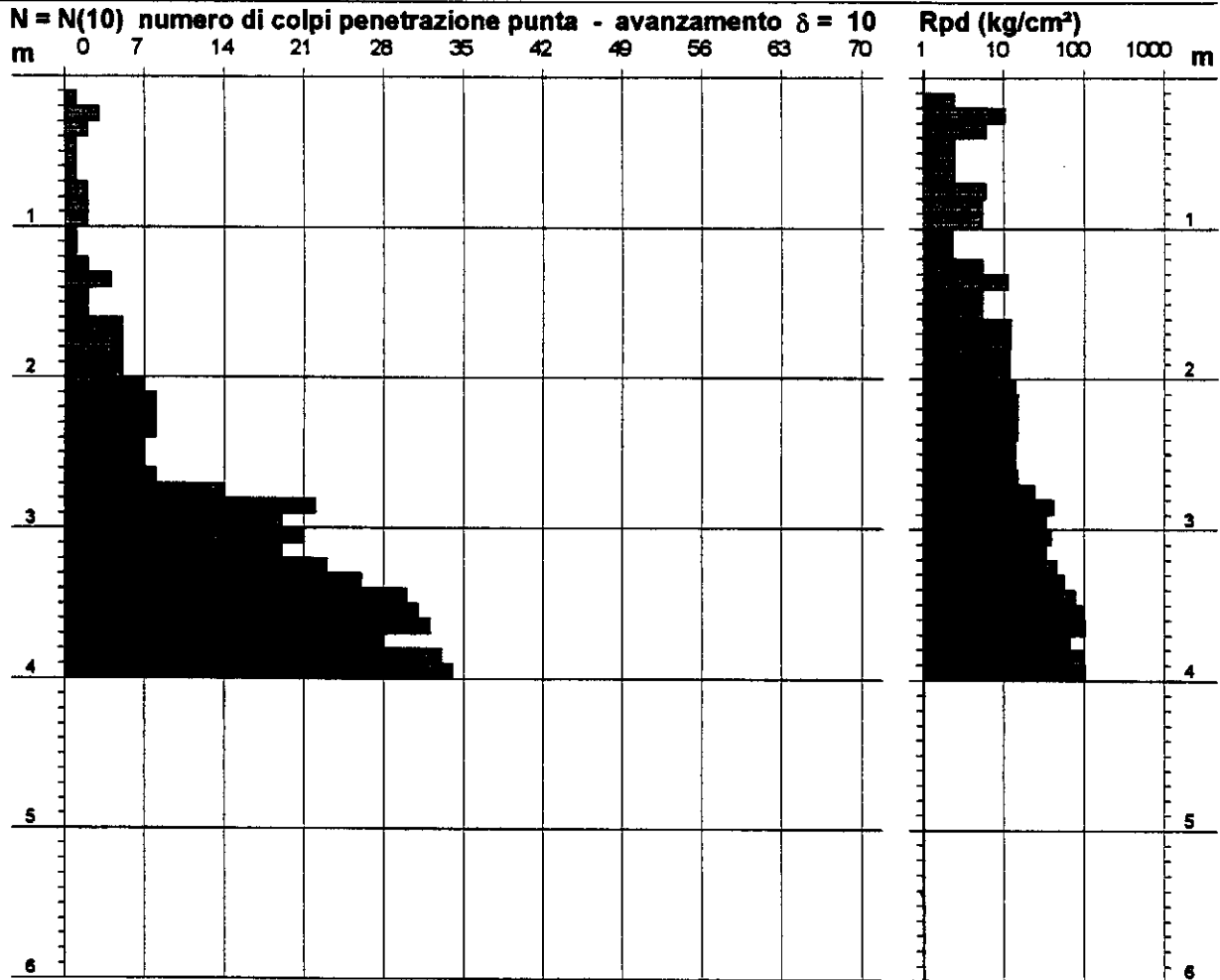
PROVA PENETROMETRICA DINAMICA
DIAGRAMMA NUMERO COLPI PUNTA - Rpd

n° 1

Scala 1: 50

- indagine : Testimoni di Geova
 - cantiere : Sala del Regno
 - località : Nonantola (MODENA)

- data : 14/04/1999
 - quota inizio : piano campagna
 - prof. falda : Falda non rilevata



- PENETROMETRO DINAMICO tipo : DL-30 (60°)
 - M (massa battente)= 30,00 kg - H (altezza caduta)= 0,20 m - A (area punta)= 10,00 cm² - D (diam. punta)= 35,70 mm
 - Numero Colpi Punta N = N(10) [$\delta = 10$ cm] - Uso rivestimento / fanghi iniezione : NO

PROVA PENETROMETRICA STATICA

CPT 1

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

3.010496-043

| | | | |
|---------------------|---------------------------------------|------------------|--------------------|
| - committente: | Studio Geologico Dallari | - data prova : | 25/06/2003 |
| - lavoro: | Ampliamento capannoni | - quota inizio : | Piano Campagna |
| - località: | Via L. da Vinci - Nonantola (MO) | - prof. falda : | Falda non rilevata |
| - resp. cantiere: | Dott. Pierluigi Dallari | - data emiss. : | 27/06/2003 |
| - assist. cantiere: | Dott. Salvatore Mucci | - pagina n°: | 1/4 |
| - note: | Foro chiuso a -1.30 m - Aste asciutte | | |

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | -- | 0,80 | --- | 5,40 | 25,0 | 39,0 | 25,0 | 1,00 | 25,0 |
| 0,40 | 43,0 | 55,0 | 43,0 | 1,80 | 24,0 | 5,60 | 27,0 | 42,0 | 27,0 | 1,07 | 25,0 |
| 0,60 | 41,0 | 68,0 | 41,0 | 1,47 | 28,0 | 5,80 | 22,0 | 38,0 | 22,0 | 0,93 | 24,0 |
| 0,80 | 33,0 | 55,0 | 33,0 | 2,00 | 16,0 | 6,00 | 20,0 | 34,0 | 20,0 | 0,73 | 27,0 |
| 1,00 | 82,0 | 112,0 | 82,0 | 0,73 | 112,0 | 6,20 | 14,0 | 25,0 | 14,0 | 0,60 | 23,0 |
| 1,20 | 99,0 | 110,0 | 99,0 | 4,87 | 20,0 | 6,40 | 12,0 | 21,0 | 12,0 | 0,60 | 20,0 |
| 1,40 | 32,0 | 105,0 | 32,0 | 1,93 | 17,0 | 6,60 | 15,0 | 24,0 | 15,0 | 0,87 | 17,0 |
| 1,60 | 22,0 | 51,0 | 22,0 | 1,53 | 14,0 | 6,80 | 14,0 | 27,0 | 14,0 | 0,53 | 26,0 |
| 1,80 | 10,0 | 33,0 | 10,0 | 0,60 | 17,0 | 7,00 | 15,0 | 23,0 | 15,0 | 0,53 | 28,0 |
| 2,00 | 6,0 | 15,0 | 6,0 | 0,33 | 18,0 | 7,20 | 9,0 | 17,0 | 9,0 | 0,47 | 19,0 |
| 2,20 | 7,0 | 12,0 | 7,0 | 0,47 | 15,0 | 7,40 | 6,0 | 13,0 | 6,0 | 0,27 | 22,0 |
| 2,40 | 16,0 | 23,0 | 16,0 | 0,80 | 20,0 | 7,60 | 13,0 | 17,0 | 13,0 | 0,67 | 19,0 |
| 2,60 | 22,0 | 34,0 | 22,0 | 0,87 | 25,0 | 7,80 | 12,0 | 22,0 | 12,0 | 0,53 | 22,0 |
| 2,80 | 20,0 | 33,0 | 20,0 | 0,67 | 30,0 | 8,00 | 9,0 | 17,0 | 9,0 | 0,47 | 19,0 |
| 3,00 | 18,0 | 28,0 | 18,0 | 0,60 | 30,0 | 8,20 | 9,0 | 16,0 | 9,0 | 0,33 | 27,0 |
| 3,20 | 18,0 | 27,0 | 18,0 | 0,87 | 21,0 | 8,40 | 16,0 | 21,0 | 16,0 | 0,80 | 20,0 |
| 3,40 | 10,0 | 23,0 | 10,0 | 0,47 | 21,0 | 8,60 | 10,0 | 22,0 | 10,0 | 0,53 | 19,0 |
| 3,60 | 9,0 | 16,0 | 9,0 | 0,33 | 27,0 | 8,80 | 11,0 | 19,0 | 11,0 | 0,60 | 18,0 |
| 3,80 | 11,0 | 16,0 | 11,0 | 0,53 | 21,0 | 9,00 | 11,0 | 20,0 | 11,0 | 0,53 | 21,0 |
| 4,00 | 14,0 | 22,0 | 14,0 | 0,53 | 26,0 | 9,20 | 14,0 | 22,0 | 14,0 | 0,73 | 19,0 |
| 4,20 | 22,0 | 30,0 | 22,0 | 0,93 | 24,0 | 9,40 | 10,0 | 21,0 | 10,0 | 0,53 | 19,0 |
| 4,40 | 19,0 | 33,0 | 19,0 | 0,80 | 24,0 | 9,60 | 7,0 | 15,0 | 7,0 | 0,53 | 13,0 |
| 4,60 | 22,0 | 34,0 | 22,0 | 1,07 | 21,0 | 9,80 | 11,0 | 19,0 | 11,0 | 0,53 | 21,0 |
| 4,80 | 19,0 | 35,0 | 19,0 | 0,73 | 26,0 | 10,00 | 18,0 | 26,0 | 18,0 | 1,00 | 18,0 |
| 5,00 | 20,0 | 31,0 | 20,0 | 0,87 | 23,0 | 10,20 | 13,0 | 28,0 | 13,0 | 0,67 | 19,0 |
| 5,20 | 22,0 | 35,0 | 22,0 | 0,93 | 24,0 | 10,40 | 16,0 | 26,0 | 16,0 | --- | --- |

DIRETTORE DI LABORATORIO
PER PROVE IN SITO
Dott. geol. Pierluigi Dallari

RESPONSABILE DI
CANTIERE
Dott. geol. Pierluigi Dallari

ELABORAZIONE
DATI
Dott. Gianni Lorici

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

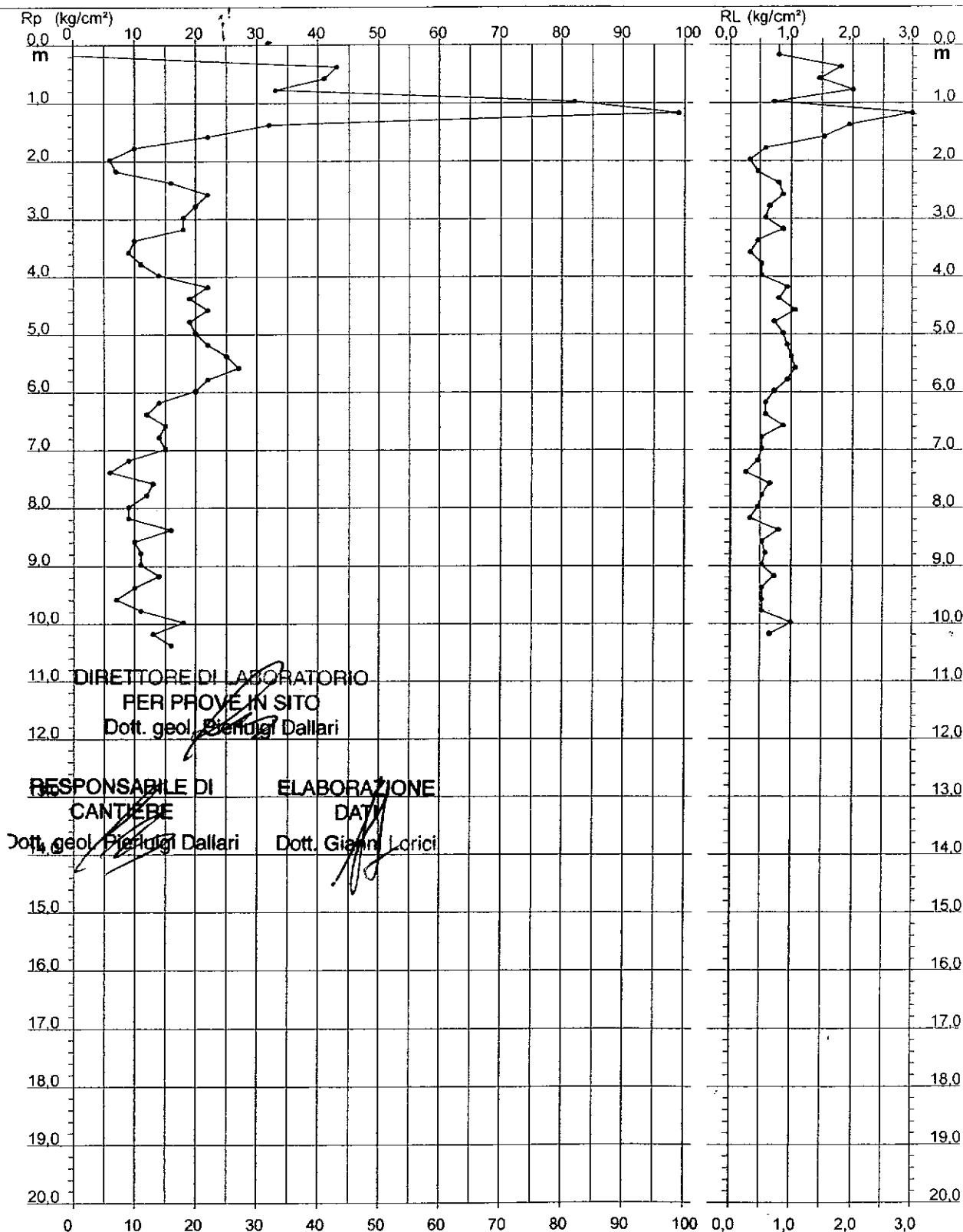
**PROVA PENETROMETRICA STATICA
DIAGRAMMA DI RESISTENZA**

CPT 1

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Ampliamento capannoni
- località: Via L. da Vinci - Nonantola (MO)
- resp. cantiere: Dott. Pielugi Dallari
- assist. cantiere: Dott. Salvatore Mucci
- note: Foro chiuso a -1.30 m - Aste asciutte

- data prova : 25/06/2003
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- scala vert.: 1 : 100
- data emiss. : 27/06/2003
- pagina n°: 2/4



DIRETTORE DI LABORATORIO
PER PROVE IN SITO
Dott. geol. Pielugi Dallari

RESPONSABILE DI ELABORAZIONE
CANTIERE DATI
Dott. geol. Pielugi Dallari Dott. Gianni Loricci



PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato: 09103S01

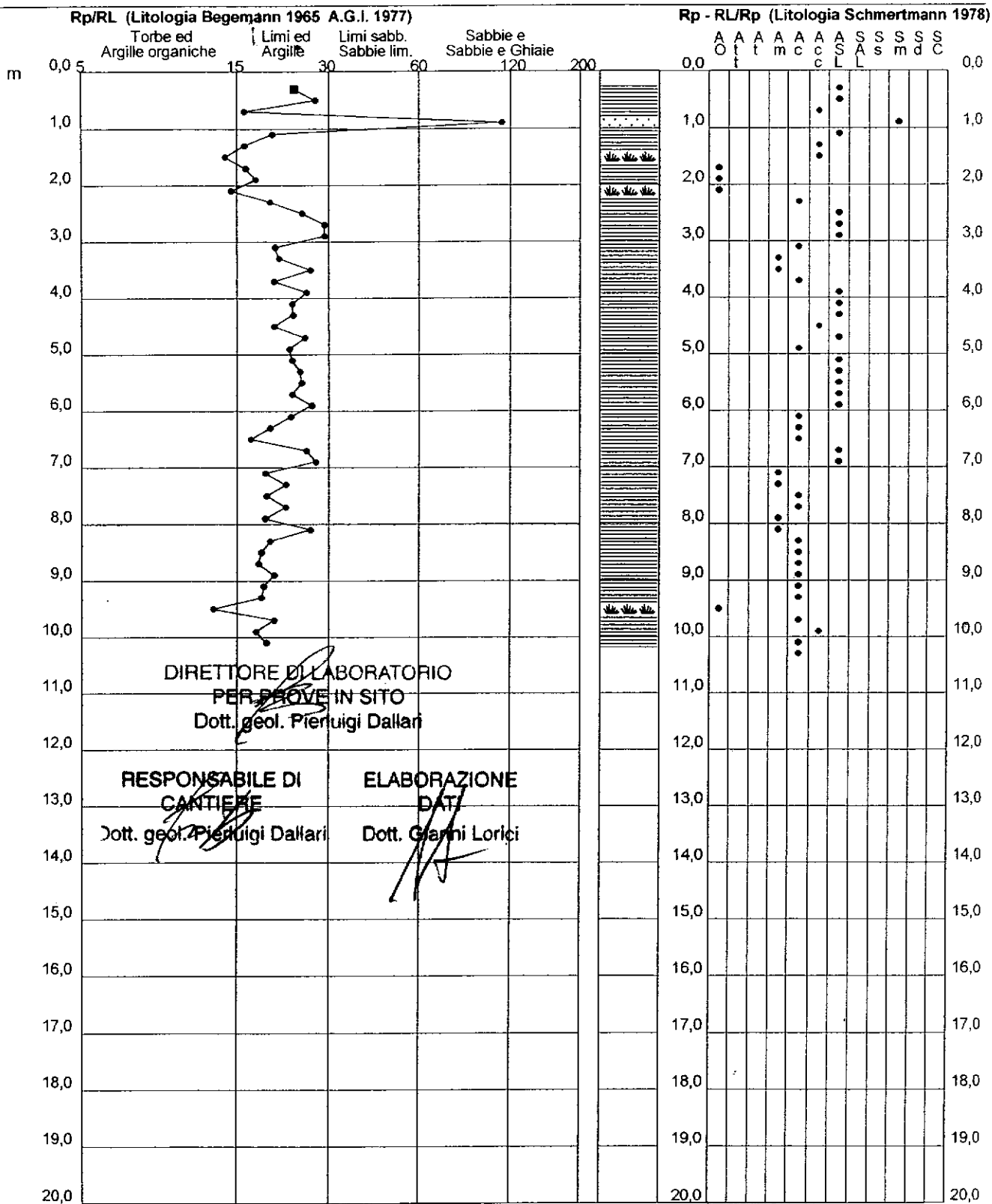
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 1

3.010496-043

- committente: Studio Geologico Dallari
 - lavoro: Ampliamento capannoni
 - località: Via L. da Vinci - Nonantola (MO)
 - resp. cantiere: Dott. Pieluigi Dallari
 - assist. cantiere: Dott. Salvatore Mucci
 - note: Foro chiuso a -1.30 m - Aste asciutte

- data prova: 25/06/2003
 - quota inizio: Piano Campagna
 - prof. falda: Falda non rilevata
 - scala vert.: 1 : 100
 - data emiss.: 27/06/2003
 - pagina n°: 3/4





PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato: 09103S01

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 1

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Ampliamento capannoni
- località: Via L. da Vinci - Nonantola (MO)
- resp. cantiere: Dott. Pierluigi Dallari
- assist. cantiere: Dott. Salvatore Mucci
- note: Foro chiuso a -1.30 m - Aste asciutte
- data prova : 25/06/2003
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- data emiss. : 27/06/2003
- pagina n° : 4/4

| Prof. m | Rp kg/cm ² | Rp/Rl (-) | Natura Litol. | Y t/m ³ | NATURA COESIVA | | | | | NATURA GRANULARE | | | | | | | | E'50 kg/cm ² | E'25 kg/cm ² | Mo kg/cm ² | | | | | | | |
|------------|--------------------------|--------------|------------------|-----------------------|---------------------------------------|--------------------------|------------|----------------------------|----------------------------|--------------------------|---------|------------|------------|------------|------------|------------|------------|----------------------------|----------------------------|--------------------------|---------------|---|---|---|---|---|---|
| | | | | | I _{pv} kg/cm ² | Qu kg/cm ² | OCR (-) | Eu50 kg/cm ² | Eu25 kg/cm ² | Mo kg/cm ² | Dr % | ø1s (°) | ø2s (°) | ø3s (°) | ø4s (°) | ødm (°) | emy (°) | | | | Amax/g (-) | | | | | | |
| 0,20 | - | - | ??? | 1,85 | 0,04 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,40 | 43 | 24 | 4f.f. | 1,85 | 0,07 | 1,43 | 99,9 | 244 | 366 | 129 | 100 | 42 | 43 | 45 | 46 | 45 | 30 | 0,258 | 72 | 108 | 129 | - | - | - | - | - | |
| 0,60 | 41 | 28 | 4f.f. | 1,85 | 0,11 | 1,37 | 99,9 | 232 | 349 | 123 | 95 | 41 | 43 | 44 | 46 | 43 | 30 | 0,240 | 66 | 103 | 123 | - | - | - | - | - | |
| 0,80 | 33 | 16 | 4f.f. | 1,85 | 0,15 | 1,10 | 77,0 | 187 | 281 | 99 | 81 | 39 | 41 | 43 | 44 | 41 | 29 | 0,192 | 55 | 83 | 99 | - | - | - | - | - | |
| 1,00 | 82 | 112 | 3:... | 1,85 | 0,19 | - | - | - | - | - | 100 | 42 | 43 | 45 | 46 | 43 | 33 | 0,258 | 137 | 205 | 246 | - | - | - | - | - | |
| 1,20 | 99 | 20 | 4f.f. | 1,85 | 0,22 | 3,30 | 99,9 | 561 | 842 | 297 | 100 | 42 | 43 | 45 | 46 | 43 | 34 | 0,258 | 165 | 248 | 297 | - | - | - | - | - | |
| 1,40 | 32 | 17 | 4f.f. | 1,85 | 0,26 | 1,07 | 36,8 | 181 | 272 | 96 | 66 | 37 | 39 | 41 | 43 | 38 | 29 | 0,147 | 53 | 80 | 96 | - | - | - | - | - | |
| 1,60 | 22 | 14 | 4f.f. | 1,85 | 0,30 | 0,85 | 23,3 | 144 | 216 | 66 | 50 | 35 | 37 | 40 | 42 | 35 | 28 | 0,103 | 37 | 55 | 66 | - | - | - | - | - | |
| 1,80 | 10 | 17 | 2:III | 1,85 | 0,33 | 0,50 | 10,4 | 85 | 128 | 40 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 2,00 | 6 | 18 | 2:III | 1,85 | 0,37 | 0,30 | 4,8 | 103 | 154 | 29 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 2,20 | 7 | 15 | 1*** | 1,85 | 0,41 | 0,35 | 5,2 | 21 | 32 | 11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 2,40 | 16 | 20 | 2:III | 1,85 | 0,44 | 0,70 | 11,0 | 118 | 177 | 52 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 2,60 | 22 | 25 | 4f.f. | 1,85 | 0,48 | 0,85 | 12,7 | 144 | 216 | 66 | 38 | 33 | 36 | 38 | 41 | 33 | 28 | 0,075 | 37 | 55 | 66 | - | - | - | - | - | |
| 2,80 | 20 | 30 | 4f.f. | 1,85 | 0,52 | 0,80 | 10,8 | 136 | 204 | 60 | 33 | 33 | 35 | 38 | 41 | 32 | 27 | 0,064 | 33 | 50 | 60 | - | - | - | - | - | |
| 3,00 | 18 | 30 | 4f.f. | 1,85 | 0,55 | 0,75 | 9,1 | 132 | 198 | 56 | 27 | 32 | 35 | 37 | 40 | 31 | 27 | 0,052 | 30 | 45 | 54 | - | - | - | - | - | |
| 3,20 | 18 | 21 | 2:III | 1,85 | 0,59 | 0,75 | 8,4 | 141 | 211 | 56 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 3,40 | 10 | 21 | 2:III | 1,85 | 0,63 | 0,50 | 4,7 | 175 | 262 | 40 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 3,60 | 9 | 27 | 2:III | 1,85 | 0,67 | 0,45 | 3,8 | 187 | 281 | 38 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 3,80 | 11 | 21 | 2:III | 1,85 | 0,70 | 0,54 | 4,5 | 196 | 294 | 42 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 4,00 | 14 | 26 | 2:III | 1,85 | 0,74 | 0,64 | 5,2 | 203 | 304 | 48 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 4,20 | 22 | 24 | 4f.f. | 1,85 | 0,78 | 0,85 | 7,0 | 195 | 293 | 66 | 26 | 32 | 34 | 37 | 40 | 30 | 28 | 0,050 | 37 | 55 | 66 | - | - | - | - | - | |
| 4,40 | 19 | 24 | 2:III | 1,85 | 0,81 | 0,78 | 5,9 | 216 | 325 | 58 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 4,60 | 22 | 21 | 4f.f. | 1,85 | 0,85 | 0,85 | 6,2 | 223 | 334 | 66 | 24 | 31 | 34 | 37 | 40 | 29 | 28 | 0,045 | 37 | 55 | 66 | - | - | - | - | - | |
| 4,80 | 19 | 26 | 2:III | 1,85 | 0,89 | 0,78 | 5,3 | 243 | 364 | 58 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 5,00 | 20 | 23 | 4f.f. | 1,85 | 0,93 | 0,80 | 5,2 | 253 | 380 | 60 | 19 | 31 | 33 | 36 | 39 | 26 | 27 | 0,035 | 33 | 50 | 60 | - | - | - | - | - | |
| 5,20 | 22 | 24 | 4f.f. | 1,85 | 0,96 | 0,85 | 5,3 | 262 | 393 | 66 | 21 | 31 | 34 | 37 | 40 | 29 | 28 | 0,040 | 37 | 55 | 66 | - | - | - | - | - | |
| 5,40 | 25 | 25 | 4f.f. | 1,85 | 1,00 | 0,91 | 5,6 | 270 | 405 | 75 | 24 | 31 | 34 | 37 | 40 | 29 | 28 | 0,046 | 42 | 63 | 75 | - | - | - | - | - | |
| 5,60 | 27 | 25 | 4f.f. | 1,85 | 1,04 | 0,95 | 5,6 | 279 | 419 | 81 | 26 | 32 | 34 | 37 | 40 | 29 | 28 | 0,050 | 45 | 68 | 81 | - | - | - | - | - | |
| 5,80 | 22 | 24 | 4f.f. | 1,85 | 1,07 | 0,85 | 4,7 | 299 | 448 | 66 | 18 | 31 | 33 | 36 | 39 | 28 | 28 | 0,035 | 37 | 55 | 66 | - | - | - | - | - | |
| 6,00 | 20 | 27 | 4f.f. | 1,85 | 1,11 | 0,80 | 4,2 | 310 | 465 | 60 | 14 | 30 | 33 | 36 | 39 | 27 | 27 | 0,027 | 33 | 50 | 60 | - | - | - | - | - | |
| 6,20 | 14 | 23 | 2:III | 1,85 | 1,15 | 0,84 | 3,0 | 314 | 470 | 48 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 6,40 | 12 | 20 | 2:III | 1,85 | 1,18 | 0,57 | 2,5 | 302 | 453 | 45 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 6,60 | 15 | 17 | 2:III | 1,85 | 1,22 | 0,67 | 2,9 | 332 | 498 | 50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 6,80 | 14 | 26 | 2:III | 1,85 | 1,26 | 0,64 | 2,7 | 329 | 494 | 48 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 7,00 | 15 | 28 | 2:III | 1,85 | 1,30 | 0,67 | 2,7 | 342 | 513 | 50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 7,20 | 9 | 19 | 2:III | 1,85 | 1,33 | 0,45 | 1,6 | 260 | 390 | 38 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 7,40 | 6 | 22 | 2:III | 1,85 | 1,37 | 0,30 | 0,9 | 180 | 270 | 29 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 7,60 | 13 | 19 | 2:III | 1,85 | 1,41 | 0,60 | 2,2 | 332 | 498 | 47 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 7,80 | 12 | 22 | 2:III | 1,85 | 1,44 | 0,57 | 2,0 | 321 | 481 | 45 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 8,00 | 9 | 19 | 2:III | 1,85 | 1,48 | 0,45 | 1,4 | 264 | 396 | 38 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 8,20 | 9 | 27 | 2:III | 1,85 | 1,52 | 0,45 | 1,4 | 265 | 397 | 38 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 8,40 | 16 | 20 | 2:III | 1,85 | 1,55 | 0,70 | 2,3 | 378 | 566 | 52 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 8,60 | 10 | 19 | 2:III | 1,85 | 1,59 | 0,50 | 1,5 | 292 | 438 | 40 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 8,80 | 11 | 18 | 2:III | 1,85 | 1,63 | 0,54 | 1,6 | 312 | 467 | 42 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 9,00 | 11 | 21 | 2:III | 1,85 | 1,66 | 0,54 | 1,5 | 312 | 469 | 42 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 9,20 | 14 | 19 | 2:III | 1,85 | 1,70 | 0,64 | 1,8 | 362 | 543 | 48 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 9,40 | 10 | 19 | 2:III | 1,85 | 1,74 | 0,50 | 1,3 | 295 | 443 | 40 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 9,60 | 7 | 13 | 1*** | 1,85 | 1,78 | 0,35 | 0,8 | 46 | 68 | 11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 9,80 | 11 | 21 | 2:III | 1,85 | 1,81 | 0,54 | 1,4 | 316 | 474 | 42 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 10,00 | 18 | 18 | 2:III | 1,85 | 1,85 | 0,75 | 2,0 | 419 | 628 | 56 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 10,20 | 13 | 19 | 2:III | 1,85 | 1,89 | 0,60 | 1,5 | 352 | 529 | 47 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 10,40 | 16 | - | 4f.f. | 1,85 | 1,92 | 0,70 | 1,8 | 398 | 597 | 52 | - | 28 | 31 | 35 | 38 | 25 | 27 | - | 27 | 40 | 48 | - | - | - | - | - | |

DIRETTORE DI LABORATORIO
PER PROVE IN SITO

Dott. geol. Pierluigi Dallari

RESPONSABILE DI
CANTIERE

Dott. geol. Pierluigi Dallari

ELABORAZIONE
DATI

Dott. Gianni Lorici

**PROVA PENETROMETRICA STATICA
 LETTURE DI CAMPAGNA / VALORI DI RESISTENZA**
CPT 3

3.010496-043

- committente: Studio Geologico Dallari
 - lavoro: Ampliamento capannoni
 - località: Via L. da Vinci - Nonantola (MO)
 - resp. cantiere: Dott. Pierluigi Dallari
 - assist. cantiere: Dott. Salvatore Mucci

- data prova : 25/06/2003
 - quota inizio : Piano Campagna
 - prof. falda : 1,20 m da quota inizio
 - data emiss. : 27/06/2003
 - pagina n°: 1/4

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | --- | 0,07 | --- | 6,40 | 18,0 | 31,0 | 18,0 | 0,80 | 22,0 |
| 0,40 | --- | 1,0 | --- | 0,07 | --- | 6,60 | 16,0 | 28,0 | 16,0 | 0,67 | 24,0 |
| 0,60 | --- | 1,0 | --- | 3,27 | --- | 6,80 | 22,0 | 32,0 | 22,0 | 0,67 | 33,0 |
| 0,80 | 88,0 | 137,0 | 88,0 | 1,73 | 51,0 | 7,00 | 20,0 | 30,0 | 20,0 | 0,67 | 30,0 |
| 1,00 | 148,0 | 174,0 | 148,0 | 3,67 | 40,0 | 7,20 | 14,0 | 24,0 | 14,0 | 0,60 | 23,0 |
| 1,20 | 50,0 | 105,0 | 50,0 | 4,53 | 11,0 | 7,40 | 11,0 | 20,0 | 11,0 | 0,47 | 24,0 |
| 1,40 | 32,0 | 100,0 | 32,0 | 2,73 | 12,0 | 7,60 | 16,0 | 23,0 | 16,0 | 0,73 | 22,0 |
| 1,60 | 21,0 | 62,0 | 21,0 | 1,53 | 14,0 | 7,80 | 15,0 | 26,0 | 15,0 | 0,80 | 19,0 |
| 1,80 | 16,0 | 39,0 | 16,0 | 0,67 | 24,0 | 8,00 | 15,0 | 27,0 | 15,0 | 0,80 | 19,0 |
| 2,00 | 12,0 | 22,0 | 12,0 | 0,73 | 16,0 | 8,20 | 10,0 | 22,0 | 10,0 | 0,60 | 17,0 |
| 2,20 | 9,0 | 20,0 | 9,0 | 0,40 | 22,0 | 8,40 | 11,0 | 20,0 | 11,0 | 0,53 | 21,0 |
| 2,40 | 20,0 | 26,0 | 20,0 | 1,00 | 20,0 | 8,60 | 15,0 | 23,0 | 15,0 | 0,73 | 20,0 |
| 2,60 | 21,0 | 36,0 | 21,0 | 0,73 | 29,0 | 8,80 | 13,0 | 24,0 | 13,0 | 0,60 | 22,0 |
| 2,80 | 19,0 | 30,0 | 19,0 | 0,80 | 24,0 | 9,00 | 10,0 | 19,0 | 10,0 | 0,40 | 25,0 |
| 3,00 | 20,0 | 32,0 | 20,0 | 0,87 | 23,0 | 9,20 | 13,0 | 19,0 | 13,0 | 0,67 | 19,0 |
| 3,20 | 13,0 | 26,0 | 13,0 | 0,93 | 14,0 | 9,40 | 16,0 | 26,0 | 16,0 | 1,00 | 16,0 |
| 3,40 | 9,0 | 23,0 | 9,0 | 0,33 | 27,0 | 9,60 | 16,0 | 31,0 | 16,0 | 1,00 | 16,0 |
| 3,60 | 11,0 | 16,0 | 11,0 | 0,33 | 33,0 | 9,80 | 15,0 | 30,0 | 15,0 | 0,93 | 16,0 |
| 3,80 | 10,0 | 15,0 | 10,0 | 0,27 | 37,0 | 10,00 | 18,0 | 32,0 | 18,0 | 1,20 | 15,0 |
| 4,00 | 14,0 | 18,0 | 14,0 | 0,47 | 30,0 | 10,20 | 18,0 | 36,0 | 18,0 | 1,00 | 18,0 |
| 4,20 | 14,0 | 21,0 | 14,0 | 0,67 | 21,0 | 10,40 | 16,0 | 31,0 | 16,0 | 0,87 | 18,0 |
| 4,40 | 23,0 | 33,0 | 23,0 | 0,93 | 25,0 | 10,60 | 18,0 | 31,0 | 18,0 | 0,87 | 21,0 |
| 4,60 | 28,0 | 42,0 | 28,0 | 1,13 | 25,0 | 10,80 | 12,0 | 25,0 | 12,0 | 0,67 | 18,0 |
| 4,80 | 53,0 | 70,0 | 53,0 | 0,33 | 159,0 | 11,00 | 13,0 | 23,0 | 13,0 | 0,47 | 28,0 |
| 5,00 | 48,0 | 53,0 | 48,0 | 0,87 | 55,0 | 11,20 | 10,0 | 17,0 | 10,0 | 0,47 | 21,0 |
| 5,20 | 58,0 | 71,0 | 58,0 | 0,27 | 217,0 | 11,40 | 11,0 | 18,0 | 11,0 | 1,07 | 10,0 |
| 5,40 | 58,0 | 62,0 | 58,0 | 1,47 | 40,0 | 11,60 | 13,0 | 29,0 | 13,0 | 0,73 | 18,0 |
| 5,60 | 35,0 | 57,0 | 35,0 | 0,73 | 48,0 | 11,80 | 12,0 | 23,0 | 12,0 | 0,87 | 14,0 |
| 5,80 | 48,0 | 59,0 | 48,0 | 0,93 | 51,0 | 12,00 | 13,0 | 26,0 | 13,0 | 0,67 | 19,0 |
| 6,00 | 67,0 | 81,0 | 67,0 | 1,33 | 50,0 | 12,20 | 14,0 | 24,0 | 14,0 | 0,87 | 16,0 |
| 6,20 | 22,0 | 42,0 | 22,0 | 0,87 | 25,0 | 12,40 | 15,0 | 28,0 | 15,0 | --- | --- |

DIRETTORE DI LABORATORIO
 PER PROVE IN SITO
 Dott. geol. Pierluigi Dallari

RESPONSABILE DI
 CANTIERE
 Dott. geol. Pierluigi Dallari

ELABORAZIONE
 DATI
 Dott. Gianni Loricci

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35,7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

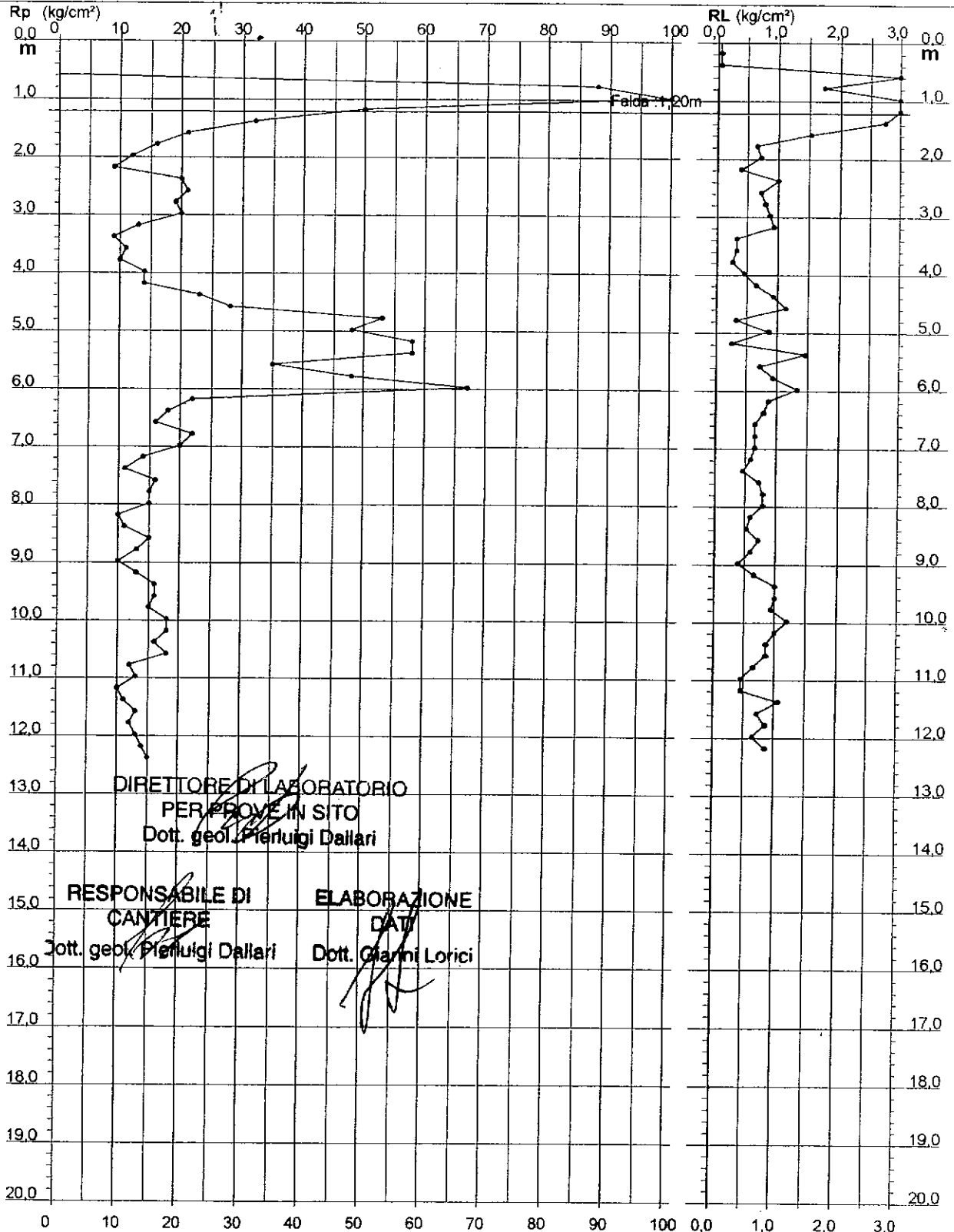
**PROVA PENETROMETRICA STATICA
DIAGRAMMA DI RESISTENZA**

CPT 3

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Ampliamento capannoni
- località: Via L. da Vinci - Nonantola (MO)
- resp. cantiere: Dott. Pierluigi Dallari
- assist. cantiere: Dott. Salvatore Mucci

- data prova : 25/06/2003
- quota inizio : Piano Campagna
- prof. falda : 1,20 m da quota inizio
- scala vert.: 1 : 100
- data emiss. : 27/06/2003
- pagina n°: 2/4



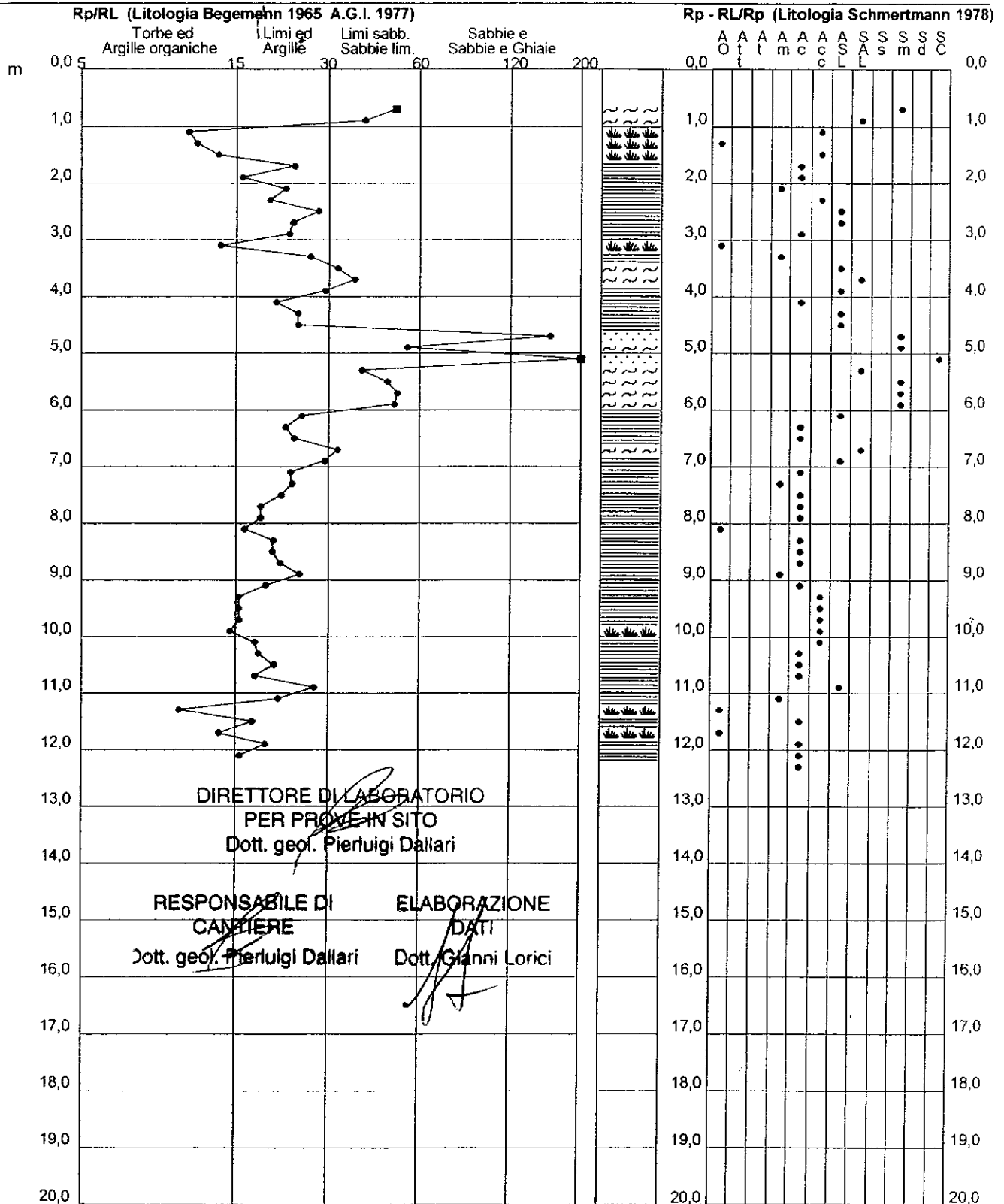
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 3

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Ampliamento capannoni
- località: Via L. da Vinci - Nonantola (MO)
- resp. cantiere: Dott. Pierluigi Dallari
- assist. cantiere: Dott. Salvatore Mucci

- data prova: 25/06/2003
- quota inizio: Piano Campagna
- prof. falda: 1,20 m da quota inizio
- scala vert.: 1 : 100
- data emiss.: 27/06/2003
- pagina n°: 3/4



PROVA PENETROMETRICA STATICA
TABELLA PARAMETRI GEOTECNICI

CPT 3

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Ampliamento capannoni
- località: Via L. da Vinci - Nonantola (MO)
- resp. cantiere: Dott. Pierluigi Dallari
- assist. cantiere: Dott. Salvatore Mucci

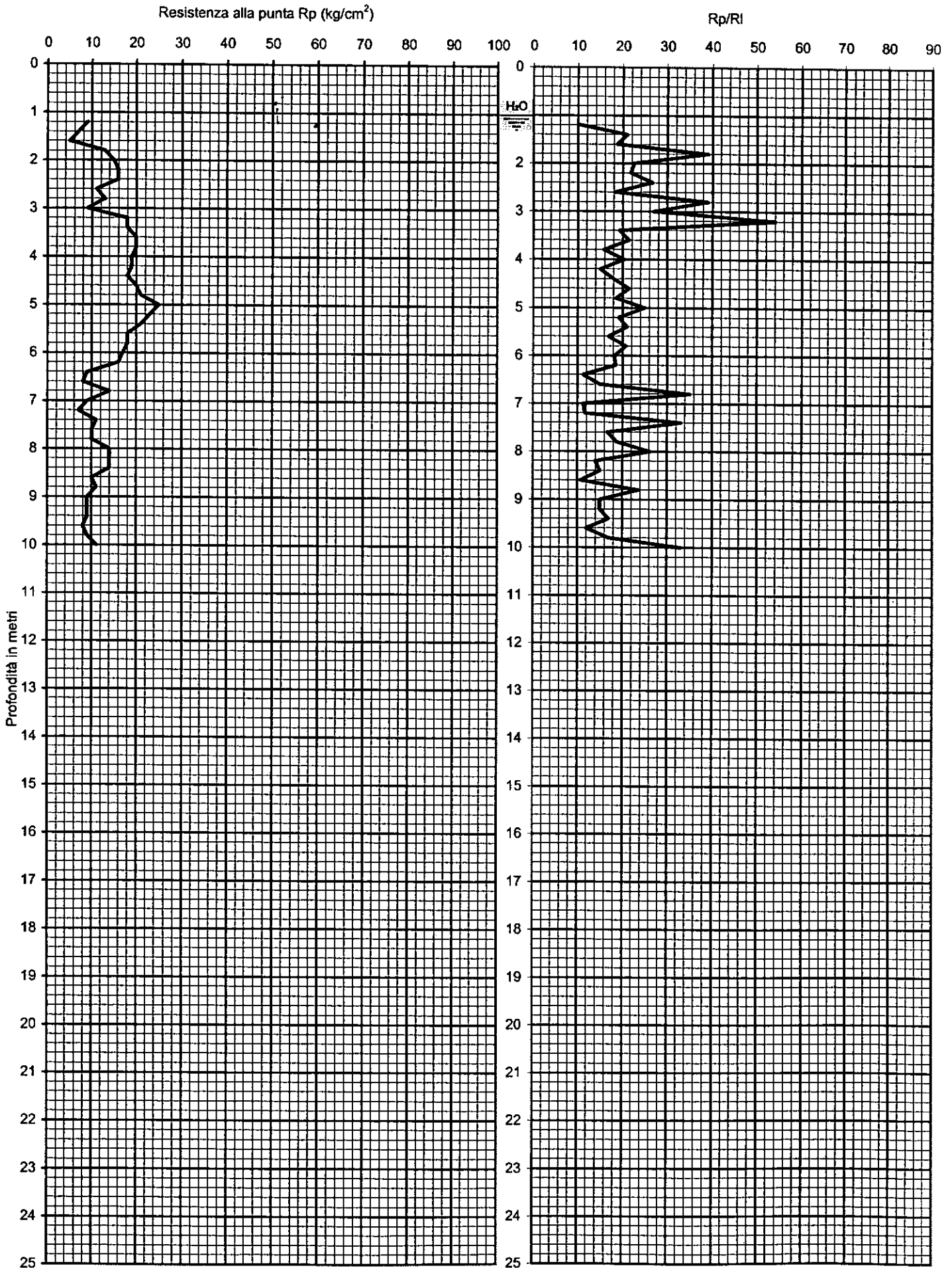
- data prova : 25/06/2003
- quota inizio : Piano Campagna
- prof. falda : 1,20 m da quota inizio
- data emiss. : 27/06/2003
- pagina n°: 4/4

| NATURA COESIVA | | | | | | | | | | | NATURA GRANULARE | | | | | | | | | | | |
|----------------|-----------|-----------|---------------|--------|-------------|-----------|---------|-------------|-------------|-----------|------------------|---------|---------|---------|---------|---------|---------|------------|-------------|-------------|-----------|---|
| Prof. m | Rp kg/cm² | Rp/RI (-) | Natura Litol. | Y U/m³ | p'vo kg/cm² | Cu kg/cm² | OCR (-) | Eu50 kg/cm² | Eu25 kg/cm² | Mo kg/cm² | Dr % | σ1s (°) | σ2s (°) | σ3s (°) | σ4s (°) | σdm (°) | σmy (°) | Amax/g (-) | E'50 kg/cm² | E'25 kg/cm² | Mo kg/cm² | |
| 0,20 | - | - | ??? | 1,85 | 0,04 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,40 | - | - | ??? | 1,85 | 0,07 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,60 | - | - | ??? | 1,85 | 0,11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,80 | 88 | 51 | 3:... | 1,85 | 0,15 | - | - | - | - | - | 100 | 42 | 43 | 45 | 46 | 45 | 33 | 0,258 | 147 | 220 | 264 | - |
| 1,00 | 148 | 40 | 3:... | 1,85 | 0,19 | - | - | - | - | - | 100 | 42 | 43 | 45 | 46 | 45 | 36 | 0,258 | 247 | 370 | 444 | - |
| 1,20 | 50 | 11 | 4:... | 1,01 | 0,21 | 1,67 | 86,1 | 283 | 425 | 150 | 87 | 40 | 42 | 43 | 45 | 41 | 31 | 0,212 | 83 | 125 | 150 | - |
| 1,40 | 32 | 12 | 4:... | 0,97 | 0,22 | 1,07 | 44,0 | 181 | 272 | 96 | 69 | 38 | 40 | 41 | 44 | 39 | 29 | 0,157 | 53 | 80 | 96 | - |
| 1,60 | 21 | 14 | 4:... | 0,93 | 0,24 | 0,82 | 28,8 | 140 | 210 | 63 | 53 | 35 | 38 | 40 | 42 | 36 | 27 | 0,111 | 35 | 53 | 63 | - |
| 1,80 | 16 | 24 | 2:III | 0,96 | 0,26 | 0,70 | 21,2 | 118 | 177 | 52 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2,00 | 12 | 16 | 2:III | 0,92 | 0,28 | 0,57 | 15,3 | 97 | 146 | 45 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2,20 | 9 | 22 | 2:III | 0,88 | 0,30 | 0,45 | 10,5 | 77 | 115 | 38 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2,40 | 20 | 20 | 4:... | 0,93 | 0,32 | 0,80 | 20,0 | 136 | 204 | 60 | 45 | 34 | 37 | 39 | 42 | 34 | 27 | 0,091 | 33 | 50 | 60 | - |
| 2,60 | 21 | 29 | 4:... | 0,93 | 0,34 | 0,82 | 19,3 | 140 | 210 | 63 | 45 | 34 | 37 | 39 | 42 | 34 | 27 | 0,092 | 35 | 53 | 63 | - |
| 2,80 | 19 | 24 | 2:III | 0,99 | 0,36 | 0,78 | 16,7 | 132 | 198 | 58 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3,00 | 20 | 23 | 4:... | 0,93 | 0,37 | 0,80 | 16,3 | 136 | 204 | 60 | 41 | 34 | 36 | 39 | 41 | 33 | 27 | 0,081 | 33 | 50 | 60 | - |
| 3,20 | 13 | 14 | 2:III | 0,93 | 0,39 | 0,60 | 10,8 | 103 | 154 | 47 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3,40 | 9 | 27 | 2:III | 0,88 | 0,41 | 0,45 | 7,1 | 103 | 154 | 38 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3,60 | 11 | 33 | 4:... | 0,87 | 0,43 | 0,54 | 8,3 | 102 | 153 | 42 | 17 | 30 | 33 | 36 | 39 | 29 | 26 | 0,032 | 18 | 28 | 33 | - |
| 3,80 | 10 | 37 | 4:... | 0,86 | 0,44 | 0,50 | 7,3 | 110 | 165 | 40 | 13 | 30 | 33 | 36 | 39 | 29 | 26 | 0,025 | 17 | 25 | 30 | - |
| 4,00 | 14 | 30 | 4:... | 0,89 | 0,46 | 0,64 | 9,4 | 110 | 166 | 48 | 23 | 31 | 34 | 37 | 40 | 30 | 26 | 0,044 | 23 | 35 | 42 | - |
| 4,20 | 14 | 21 | 2:III | 0,94 | 0,48 | 0,64 | 8,9 | 114 | 171 | 46 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4,40 | 23 | 25 | 4:... | 0,94 | 0,50 | 0,87 | 12,5 | 148 | 221 | 69 | 38 | 33 | 36 | 38 | 41 | 33 | 28 | 0,076 | 38 | 58 | 69 | - |
| 4,60 | 28 | 25 | 4:... | 0,96 | 0,52 | 0,97 | 13,6 | 164 | 246 | 84 | 44 | 34 | 37 | 39 | 42 | 34 | 28 | 0,090 | 47 | 70 | 84 | - |
| 4,80 | 53 | 159 | 3:... | 0,92 | 0,54 | - | - | - | - | - | 65 | 37 | 39 | 41 | 43 | 37 | 31 | 0,145 | 88 | 133 | 159 | - |
| 5,00 | 48 | 55 | 3:... | 0,91 | 0,56 | - | - | - | - | - | 61 | 37 | 39 | 41 | 43 | 36 | 31 | 0,133 | 80 | 120 | 144 | - |
| 5,20 | 58 | 217 | 3:... | 0,93 | 0,57 | - | - | - | - | - | 67 | 37 | 39 | 41 | 43 | 37 | 31 | 0,150 | 97 | 145 | 174 | - |
| 5,40 | 58 | 40 | 3:... | 0,93 | 0,59 | - | - | - | - | - | 66 | 37 | 39 | 41 | 43 | 37 | 31 | 0,147 | 97 | 145 | 174 | - |
| 5,60 | 35 | 48 | 3:... | 0,89 | 0,61 | - | - | - | - | - | 48 | 35 | 37 | 39 | 42 | 34 | 29 | 0,099 | 58 | 88 | 105 | - |
| 5,80 | 48 | 51 | 3:... | 0,91 | 0,63 | - | - | - | - | - | 58 | 36 | 38 | 40 | 43 | 35 | 31 | 0,125 | 80 | 120 | 144 | - |
| 6,00 | 67 | 50 | 3:... | 0,95 | 0,65 | - | - | - | - | - | 69 | 38 | 40 | 41 | 44 | 37 | 32 | 0,156 | 112 | 168 | 201 | - |
| 6,20 | 22 | 25 | 4:... | 0,93 | 0,67 | 0,85 | 8,5 | 158 | 237 | 66 | 30 | 32 | 35 | 38 | 40 | 31 | 28 | 0,057 | 37 | 55 | 66 | - |
| 6,40 | 18 | 22 | 2:III | 0,98 | 0,69 | 0,75 | 7,0 | 172 | 258 | 56 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6,60 | 16 | 24 | 2:III | 0,96 | 0,71 | 0,70 | 6,2 | 185 | 277 | 52 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6,80 | 22 | 33 | 3:... | 0,86 | 0,72 | - | - | - | - | - | 28 | 32 | 35 | 37 | 40 | 30 | 28 | 0,053 | 37 | 55 | 66 | - |
| 7,00 | 20 | 30 | 4:... | 0,93 | 0,74 | 0,80 | 6,9 | 187 | 280 | 60 | 24 | 31 | 34 | 37 | 40 | 30 | 27 | 0,046 | 33 | 50 | 60 | - |
| 7,20 | 14 | 23 | 2:III | 0,94 | 0,76 | 0,64 | 5,0 | 209 | 314 | 48 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7,40 | 11 | 24 | 2:III | 0,91 | 0,78 | 0,54 | 3,9 | 218 | 326 | 42 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7,60 | 16 | 22 | 2:III | 0,96 | 0,80 | 0,70 | 5,3 | 218 | 327 | 52 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7,80 | 15 | 19 | 2:III | 0,95 | 0,82 | 0,67 | 4,9 | 226 | 339 | 50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8,00 | 15 | 19 | 2:III | 0,95 | 0,83 | 0,67 | 4,7 | 232 | 348 | 50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8,20 | 10 | 17 | 2:III | 0,90 | 0,85 | 0,50 | 3,2 | 238 | 356 | 40 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8,40 | 11 | 21 | 2:III | 0,91 | 0,87 | 0,54 | 3,4 | 245 | 368 | 42 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8,60 | 15 | 20 | 2:III | 0,95 | 0,89 | 0,67 | 4,4 | 249 | 373 | 50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8,80 | 13 | 22 | 2:III | 0,93 | 0,91 | 0,60 | 3,8 | 256 | 384 | 47 | - | - | - | - | - | - | - | - | - | - | - | - |
| 9,00 | 10 | 25 | 2:III | 0,90 | 0,93 | 0,50 | 2,9 | 250 | 376 | 40 | - | - | - | - | - | - | - | - | - | - | - | - |
| 9,20 | 13 | 19 | 2:III | 0,93 | 0,95 | 0,60 | 3,6 | 267 | 400 | 47 | - | - | - | - | - | - | - | - | - | - | - | - |
| 9,40 | 16 | 16 | 2:III | 0,96 | 0,96 | 0,70 | 4,2 | 269 | 404 | 52 | - | - | - | - | - | - | - | - | - | - | - | - |
| 9,60 | 16 | 16 | 2:III | 0,96 | 0,98 | 0,70 | 4,1 | 275 | 412 | 52 | - | - | - | - | - | - | - | - | - | - | - | - |
| 9,80 | 15 | 16 | 2:III | 0,95 | 1,00 | 0,67 | 3,8 | 283 | 424 | 50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10,00 | 18 | 15 | 2:III | 0,98 | 1,02 | 0,75 | 4,3 | 286 | 428 | 56 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10,20 | 18 | 18 | 2:III | 0,98 | 1,04 | 0,75 | 4,2 | 291 | 436 | 56 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10,40 | 16 | 18 | 2:III | 0,96 | 1,06 | 0,70 | 3,7 | 299 | 449 | 52 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10,60 | 18 | 21 | 2:III | 0,98 | 1,08 | 0,75 | 4,0 | 302 | 453 | 56 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10,80 | 12 | 18 | 2:III | 0,92 | 1,10 | 0,57 | 2,8 | 292 | 438 | 45 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11,00 | 13 | 28 | 2:III | 0,93 | 1,12 | 0,60 | 2,9 | 302 | 454 | 47 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11,20 | 10 | 21 | 2:III | 0,90 | 1,14 | 0,50 | 2,3 | 273 | 409 | 40 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11,40 | 11 | 10 | 2:III | 0,91 | 1,15 | 0,54 | 2,4 | 288 | 431 | 42 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11,60 | 13 | 18 | 2:III | 0,93 | 1,17 | 0,60 | 2,7 | 310 | 465 | 47 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11,80 | 12 | 14 | 2:III | 0,92 | 1,19 | 0,57 | 2,5 | 303 | 454 | 45 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12,00 | 13 | 19 | 2:III | 0,93 | 1,21 | 0,60 | 2,6 | 315 | 472 | 47 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12,20 | 14 | 16 | 2:III | 0,94 | 1,23 | 0,64 | 2,8 | 326 | 489 | 48 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12,40 | 15 | - | 2:III | 0,95 | 1,25 | 0,67 | 2,9 | 336 | 504 | 50 | - | - | - | - | - | - | - | - | - | - | - | - |

DIRETTORE DI LABORATORIO
PER PROVE IN SITO
Dott. geol. Pierluigi Dallari

RESPONSABILE DI
CANTIERE
Dott. geol. Pierluigi Dallari

ELABORAZIONE
DATI
Dott. Gianni Lerici



| PROF. (M) | P (KG/CM2) | P + L (KG/CM2) | RP (KG/CM2) | RL (KG/CM2) | RP/RL [-] |
|--------------|---------------|-------------------|----------------|----------------|----------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | | | | | |
| 0,80 | | | | | |
| 1,00 | | | | | |
| 1,20 | 9 | 22 | 9 | 0,87 | 10,38 |
| 1,40 | 7 | 12 | 7 | 0,33 | 21,00 |
| 1,60 | 5 | 9 | 5 | 0,27 | 18,75 |
| 1,80 | 13 | 18 | 13 | 0,33 | 39,00 |
| 2,00 | 15 | 25 | 15 | 0,67 | 22,50 |
| 2,20 | 16 | 27 | 16 | 0,73 | 21,82 |
| 2,40 | 16 | 25 | 16 | 0,60 | 26,67 |
| 2,60 | 11 | 20 | 11 | 0,60 | 18,33 |
| 2,80 | 13 | 18 | 13 | 0,33 | 39,00 |
| 3,00 | 9 | 14 | 9 | 0,33 | 27,00 |
| 3,20 | 18 | 23 | 18 | 0,33 | 54,00 |
| 3,40 | 18 | 32 | 18 | 0,93 | 19,29 |
| 3,60 | 20 | 34 | 20 | 0,93 | 21,43 |
| 3,80 | 20 | 39 | 20 | 1,27 | 15,79 |
| 4,00 | 19 | 33 | 19 | 0,93 | 20,36 |
| 4,20 | 19 | 38 | 19 | 1,27 | 15,00 |
| 4,40 | 18 | 33 | 18 | 1,00 | 18,00 |
| 4,60 | 20 | 34 | 20 | 0,93 | 21,43 |
| 4,80 | 21 | 38 | 21 | 1,13 | 18,53 |
| 5,00 | 25 | 40 | 25 | 1,00 | 25,00 |
| 5,20 | 23 | 41 | 23 | 1,20 | 19,17 |
| 5,40 | 21 | 36 | 21 | 1,00 | 21,00 |
| 5,60 | 18 | 34 | 18 | 1,07 | 16,88 |
| 5,80 | 18 | 31 | 18 | 0,87 | 20,77 |
| 6,00 | 17 | 31 | 17 | 0,93 | 18,21 |
| 6,20 | 16 | 29 | 16 | 0,87 | 18,46 |
| 6,40 | 9 | 21 | 9 | 0,80 | 11,25 |
| 6,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,80 | 14 | 20 | 14 | 0,40 | 35,00 |
| 7,00 | 9 | 21 | 9 | 0,80 | 11,25 |
| 7,20 | 7 | 16 | 7 | 0,60 | 11,67 |
| 7,40 | 11 | 16 | 11 | 0,33 | 33,00 |
| 7,60 | 10 | 19 | 10 | 0,60 | 16,67 |
| 7,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 8,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 8,20 | 14 | 29 | 14 | 1,00 | 14,00 |
| 8,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 8,60 | 10 | 24 | 10 | 0,93 | 10,71 |
| 8,80 | 11 | 18 | 11 | 0,47 | 23,57 |
| 9,00 | 9 | 18 | 9 | 0,60 | 15,00 |
| 9,20 | 9 | 18 | 9 | 0,60 | 15,00 |
| 9,40 | 9 | 17 | 9 | 0,53 | 16,88 |
| 9,60 | 8 | 18 | 8 | 0,67 | 12,00 |
| 9,80 | 9 | 17 | 9 | 0,53 | 16,88 |
| 10,00 | 11 | 16 | 11 | 0,33 | 33,00 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
| 11,20 | | | | | |
| 11,40 | | | | | |
| 11,60 | | | | | |
| 11,80 | | | | | |
| 12,00 | | | | | |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| PROF. (M) | P (KG/CM2) | P + L (KG/CM2) | RP (KG/CM2) | RL (KG/CM2) | RP/RL [-] |
|--------------|---------------|-------------------|----------------|----------------|----------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |

P Resistenza specifica della punta
P+L Resistenza punta più manicotto
Rp Resistenza alla punta
RI Resistenza laterale
Rp/RI Friction Ratio (fs)

PENETROMETRO PAGANI TIPO TG63-100 KN

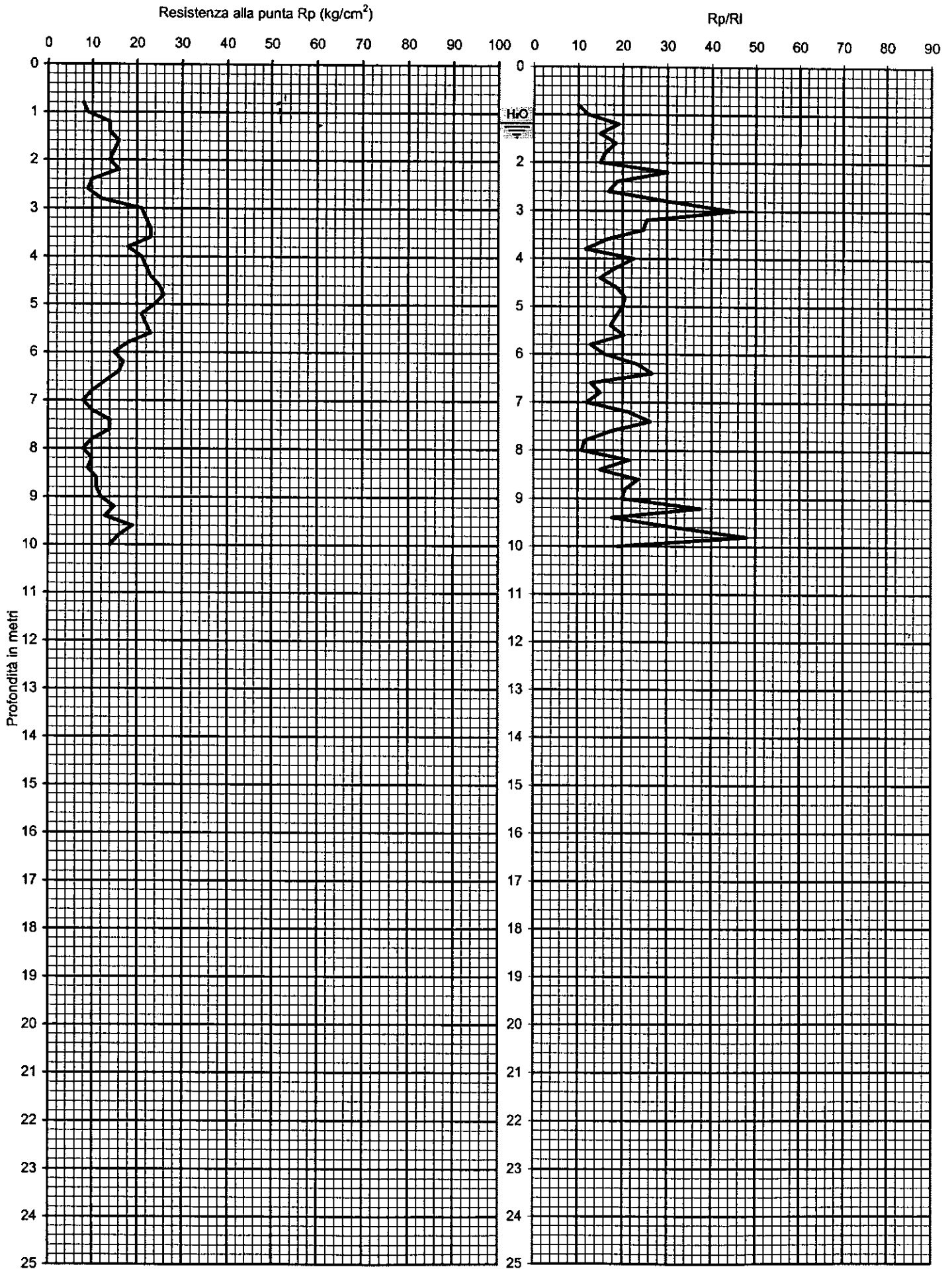
Punta Begemann

diametro 36 mm

conicità 60°

area 10 cmq

superficie laterale 150 cmq



| PROF. (M) | P (KG/CM ²) | P + L (KG/CM ²) | RP (KG/CM ²) | RL (KG/CM ²) | RP/RL [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|----------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | | | | | |
| 0,80 | 8 | 20 | 8 | 0,80 | 10,00 |
| 1,00 | 9 | 20 | 9 | 0,73 | 12,27 |
| 1,20 | 14 | 25 | 14 | 0,73 | 19,09 |
| 1,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 1,60 | 16 | 29 | 16 | 0,87 | 18,46 |
| 1,80 | 15 | 29 | 15 | 0,93 | 16,07 |
| 2,00 | 14 | 28 | 14 | 0,93 | 15,00 |
| 2,20 | 16 | 24 | 16 | 0,53 | 30,00 |
| 2,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,60 | 9 | 17 | 9 | 0,53 | 16,88 |
| 2,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,00 | 21 | 28 | 21 | 0,47 | 45,00 |
| 3,20 | 22 | 35 | 22 | 0,87 | 25,38 |
| 3,40 | 23 | 37 | 23 | 0,93 | 24,64 |
| 3,60 | 23 | 44 | 23 | 1,40 | 16,43 |
| 3,80 | 18 | 41 | 18 | 1,53 | 11,74 |
| 4,00 | 21 | 35 | 21 | 0,93 | 22,50 |
| 4,20 | 22 | 40 | 22 | 1,20 | 18,33 |
| 4,40 | 23 | 46 | 23 | 1,53 | 15,00 |
| 4,60 | 25 | 45 | 25 | 1,33 | 18,75 |
| 4,80 | 26 | 45 | 26 | 1,27 | 20,53 |
| 5,00 | 24 | 42 | 24 | 1,20 | 20,00 |
| 5,20 | 21 | 38 | 21 | 1,13 | 18,53 |
| 5,40 | 22 | 41 | 22 | 1,27 | 17,37 |
| 5,60 | 23 | 40 | 23 | 1,13 | 20,29 |
| 5,80 | 18 | 39 | 18 | 1,40 | 12,86 |
| 6,00 | 15 | 29 | 15 | 0,93 | 16,07 |
| 6,20 | 17 | 28 | 17 | 0,73 | 23,18 |
| 6,40 | 16 | 25 | 16 | 0,60 | 26,67 |
| 6,60 | 13 | 28 | 13 | 1,00 | 13,00 |
| 6,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 7,00 | 8 | 18 | 8 | 0,67 | 12,00 |
| 7,20 | 10 | 17 | 10 | 0,47 | 21,43 |
| 7,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 7,60 | 14 | 26 | 14 | 0,80 | 17,50 |
| 7,80 | 10 | 23 | 10 | 0,87 | 11,54 |
| 8,00 | 8 | 19 | 8 | 0,73 | 10,91 |
| 8,20 | 10 | 17 | 10 | 0,47 | 21,43 |
| 8,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 8,60 | 11 | 18 | 11 | 0,47 | 23,57 |
| 8,80 | 11 | 19 | 11 | 0,53 | 20,63 |
| 9,00 | 12 | 21 | 12 | 0,60 | 20,00 |
| 9,20 | 15 | 21 | 15 | 0,40 | 37,50 |
| 9,40 | 13 | 24 | 13 | 0,73 | 17,73 |
| 9,60 | 19 | 28 | 19 | 0,60 | 31,67 |
| 9,80 | 16 | 21 | 16 | 0,33 | 48,00 |
| 10,00 | 14 | 25 | 14 | 0,73 | 19,09 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
| 11,20 | | | | | |
| 11,40 | | | | | |
| 11,60 | | | | | |
| 11,80 | | | | | |
| 12,00 | | | | | |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| PROF. (M) | P (KG/CM ²) | P + L (KG/CM ²) | RP (KG/CM ²) | RL (KG/CM ²) | RP/RL [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|----------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |

| | |
|--------------|----------------------------------|
| P | Resistenza specifica della punta |
| P+L | Resistenza punta più manicotto |
| Rp | Resistenza alla punta |
| RI | Resistenza laterale |
| Rp/RI | Friction Ratio (fs) |

PENETROMETRO PAGANI TIPO TG63-100 KN

Punta Begemann

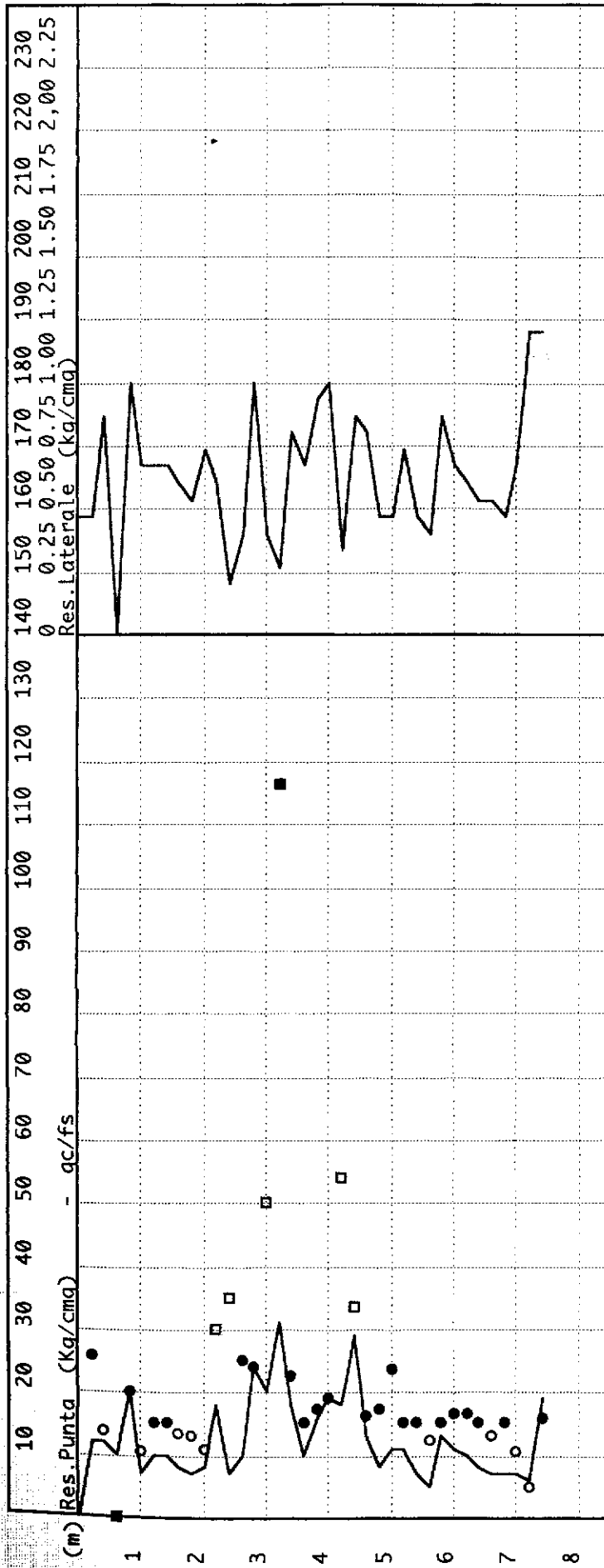
diametro 36 mm

conicità 60°

area 10 cmq

superficie laterale 150 cmq

Comune di Nonantola Data 25/5/1999
 Committente: INSIDE S.n.C.
 Località: Nonantola Via Galilei PROVA N.1



qc: 1 cm = 10 Kg/cm²
 fs: 1 cm = 0,25 Kg/cm²
 qc/fs: 1 cm = 10

CLASSIFICAZIONE DI BEGEMANN per qc/fs

- Torbe e argille organiche
- Torbe e argille
- Sabbie e limi
- Sabbie e/o Ghiaie

Dott. Aldo Faccini
- Geologo -
Via Gianella, 16 Fiorano (Mo)
Tel./Fax 0536/844233

DATA: 25/5/99
COMMITTENTE: INSIDE S.n.c.
LOCALITA': Nonantola Via Keplero ang. Via Galilei
PROVA PENETROMETRICA UNO

Parametri di calcolo:

| | | | |
|---------------------------------|------|--------------------------|------|
| Lunghezza fondazione (A) metri: | 3,50 | Carico unitario Kg/cmq: | 0,70 |
| Larghezza fondazione (B) metri: | 3,50 | Densità media Kg/dmc: | 1,90 |
| Profondità fondazione metri: | 1,00 | Rapporto A/B fondazione: | 1,00 |

LEGENDA

Qc: Resistenza specifica alla punta
Fs: Resistenza specifica al manicotto
Ri: Resistenza laterale locale
Qc/Fs: rapporto di Begemann

ELABORAZIONE S.C.P.L. CONPENETROMETRO TIPO GONDA da 10.

Falda m 1,0

| PROF. METRI | Rp Kg/cmq | DIAGRAMMA Rp | Qamm Kg/cmq | mv emq/Kg | Tensioni indotte | Cedim. parziali | Cedim. totali | Qamm > tens. ind. | Falda | PROF.TA Metri | Qc Kg/cmq | Ri Kg/cmq | ql Kg/cmq | Fs Kg/cmq | Qc/Fs (Begemann) |
|-------------|-----------|--------------|-------------|-----------|------------------|-----------------|---------------|-------------------|-------|---------------|-----------|-----------|-----------|-----------|------------------|
| 0,20 | 0,00 | | | | | | | | | 0,20 | 0 | 1 | 0,02 | 0,07 | 0,00 |
| 0,40 | 12,14 | █ | 1,21 | 0,021 | 0,70 | 0,318 | | SI | | 0,40 | 12 | 19 | 0,38 | 0,47 | 25,71 |
| 0,60 | 10,14 | █ | 1,01 | 0,025 | 0,70 | 0,249 | | SI | | 0,60 | 10 | 23 | 0,46 | 0,87 | 11,54 |
| 0,80 | 20,14 | █ | 2,01 | 0,012 | 0,70 | 0,258 | | SI | | 0,80 | 20 | 20 | 0,40 | 0,00 | #DIV/0! |
| 1,00 | 7,14 | █ | 0,71 | 0,035 | 0,70 | 0,257 | | SI | | 1,00 | 7 | 22 | 0,44 | 1,00 | 7,00 |
| 1,20 | 10,14 | █ | 1,01 | 0,025 | 0,70 | 0,172 | 1,254 | SI | | 1,20 | 10 | 20 | 0,40 | 0,67 | 15,00 |
| 1,40 | 10,14 | █ | 1,01 | 0,025 | 0,70 | 0,153 | | SI | | 1,40 | 10 | 20 | 0,40 | 0,67 | 15,00 |
| 1,60 | 8,28 | █ | 0,83 | 0,030 | 0,70 | 0,096 | | SI | | 1,60 | 8 | 18 | 0,36 | 0,67 | 12,00 |
| 1,80 | 7,28 | █ | 0,73 | 0,034 | 0,70 | 0,037 | | SI | | 1,80 | 7 | 16 | 0,32 | 0,60 | 11,67 |
| 2,00 | 8,28 | █ | 0,83 | 0,030 | 0,52 | 0,027 | | SI | | 2,00 | 8 | 16 | 0,32 | 0,73 | 15,00 |
| 2,20 | 18,28 | █ | 1,83 | 0,014 | 0,50 | 0,069 | | SI | | 2,20 | 18 | 29 | 0,58 | 0,53 | 24,55 |
| 2,40 | 7,28 | █ | 0,73 | 0,034 | 0,48 | 0,153 | | SI | | 2,40 | 7 | 16 | 0,32 | 0,60 | 11,67 |
| 2,60 | 10,41 | █ | 1,04 | 0,024 | 0,46 | 0,096 | | SI | | 2,60 | 10 | 13 | 0,26 | 0,20 | 50,00 |
| 2,80 | 24,41 | █ | 2,44 | 0,010 | 0,44 | 0,037 | 1,648 | SI | | 2,80 | 24 | 30 | 0,60 | 0,40 | 60,00 |
| 3,00 | 20,41 | █ | 2,04 | 0,012 | 0,42 | 0,040 | | SI | | 3,00 | 20 | 35 | 0,70 | 1,00 | 20,00 |
| 3,20 | 31,41 | █ | 3,14 | 0,008 | 0,41 | 0,024 | | SI | | 3,20 | 31 | 37 | 0,74 | 0,40 | 77,50 |
| 3,40 | 18,41 | █ | 1,84 | 0,014 | 0,39 | 0,037 | | SI | | 3,40 | 18 | 22 | 0,44 | 0,27 | 67,50 |
| 3,60 | 10,55 | █ | 1,06 | 0,024 | 0,38 | 0,059 | | SI | | 3,60 | 10 | 22 | 0,44 | 0,80 | 12,50 |
| 3,80 | 16,55 | █ | 1,66 | 0,015 | 0,37 | 0,035 | | SI | | 3,80 | 16 | 26 | 0,52 | 0,67 | 24,00 |
| 4,00 | 19,55 | █ | 1,96 | 0,013 | 0,36 | 0,027 | 1,828 | SI | | 4,00 | 19 | 33 | 0,66 | 0,93 | 20,36 |
| 4,20 | 18,55 | █ | 1,86 | 0,013 | 0,35 | 0,026 | | SI | | 4,20 | 18 | 33 | 0,66 | 1,00 | 18,00 |
| 4,40 | 29,55 | █ | 2,96 | 0,008 | 0,34 | 0,015 | | SI | | 4,40 | 29 | 34 | 0,68 | 0,33 | 87,00 |
| 4,60 | 13,69 | █ | 1,37 | 0,018 | 0,33 | 0,031 | | SI | | 4,60 | 13 | 26 | 0,52 | 0,87 | 15,00 |
| 4,80 | 8,69 | █ | 0,87 | 0,029 | 0,32 | 0,046 | | SI | | 4,80 | 8 | 20 | 0,40 | 0,80 | 10,00 |
| 5,00 | 11,69 | █ | 1,17 | 0,021 | 0,31 | 0,032 | 1,979 | SI | | 5,00 | 11 | 18 | 0,36 | 0,47 | 23,57 |
| 5,20 | 11,69 | █ | 1,17 | 0,021 | 0,30 | 0,030 | | SI | | 5,20 | 11 | 18 | 0,36 | 0,47 | 23,57 |
| 5,40 | 7,69 | █ | 0,77 | 0,033 | 0,29 | 0,043 | | SI | | 5,40 | 7 | 18 | 0,36 | 0,73 | 9,55 |
| 5,60 | 5,83 | █ | 0,58 | 0,043 | 0,29 | 0,053 | | SI | | 5,60 | 5 | 12 | 0,24 | 0,47 | 10,71 |
| 5,80 | 13,83 | █ | 1,38 | 0,018 | 0,28 | 0,021 | | SI | | 5,80 | 13 | 19 | 0,38 | 0,40 | 32,50 |
| 6,00 | 11,83 | █ | 1,18 | 0,021 | 0,27 | 0,023 | 2,149 | SI | | 6,00 | 11 | 24 | 0,48 | 0,87 | 12,69 |
| 6,20 | 10,83 | █ | 1,08 | 0,023 | 0,27 | 0,024 | | SI | | 6,20 | 10 | 20 | 0,40 | 0,67 | 15,00 |
| 6,40 | 8,83 | █ | 0,88 | 0,028 | 0,26 | 0,028 | | SI | | 6,40 | 8 | 17 | 0,34 | 0,60 | 13,33 |
| 6,60 | 7,97 | █ | 0,80 | 0,031 | 0,26 | 0,029 | | SI | | 6,60 | 7 | 15 | 0,30 | 0,53 | 13,13 |
| 6,80 | 7,97 | █ | 0,80 | 0,031 | 0,25 | 0,028 | | SI | | 6,80 | 7 | 15 | 0,30 | 0,53 | 13,13 |
| 7,00 | 7,97 | █ | 0,80 | 0,031 | 0,25 | 0,027 | 2,284 | SI | | 7,00 | 7 | 14 | 0,28 | 0,47 | 15,00 |
| 7,20 | 6,97 | █ | 0,70 | 0,036 | 0,24 | 0,029 | | SI | | 7,20 | 6 | 16 | 0,32 | 0,67 | 9,00 |
| 7,40 | 19,97 | █ | 2,00 | 0,013 | 0,24 | 0,010 | | SI | | 7,40 | 19 | 37 | 0,74 | 1,20 | 15,83 |



di Paolo Casari & C.
Sede Legale: Via Genova, 1/M
Tel. 0435.52637 - Cell. 0335.638878
41036 MEDOLLA (MO)

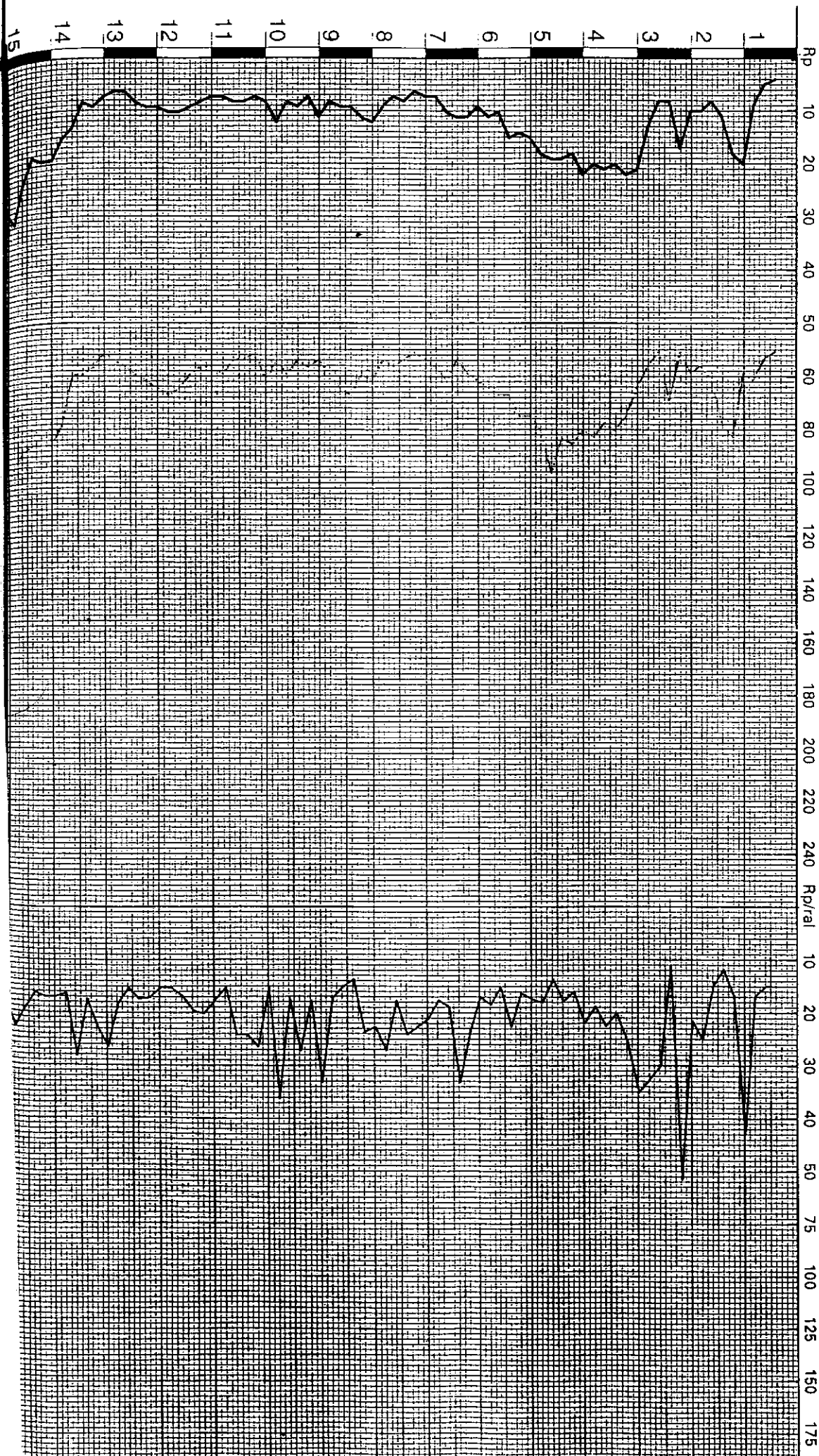
Diagramma prova penetrometrica statica
COMITENTE: PIERLI COPERTURE
CANTIERE: V. Galliet - NONANTOLA
DATA PROVA: 16 - 03 - 2000

Rp resistenza di punta (kg/cm²)
Ral resistenza attrito laterale (kg/cm²)
Rp/Ral rapporto Begemann

H20 - 2.6 m. da p.c.

C.P.T.

N° 1



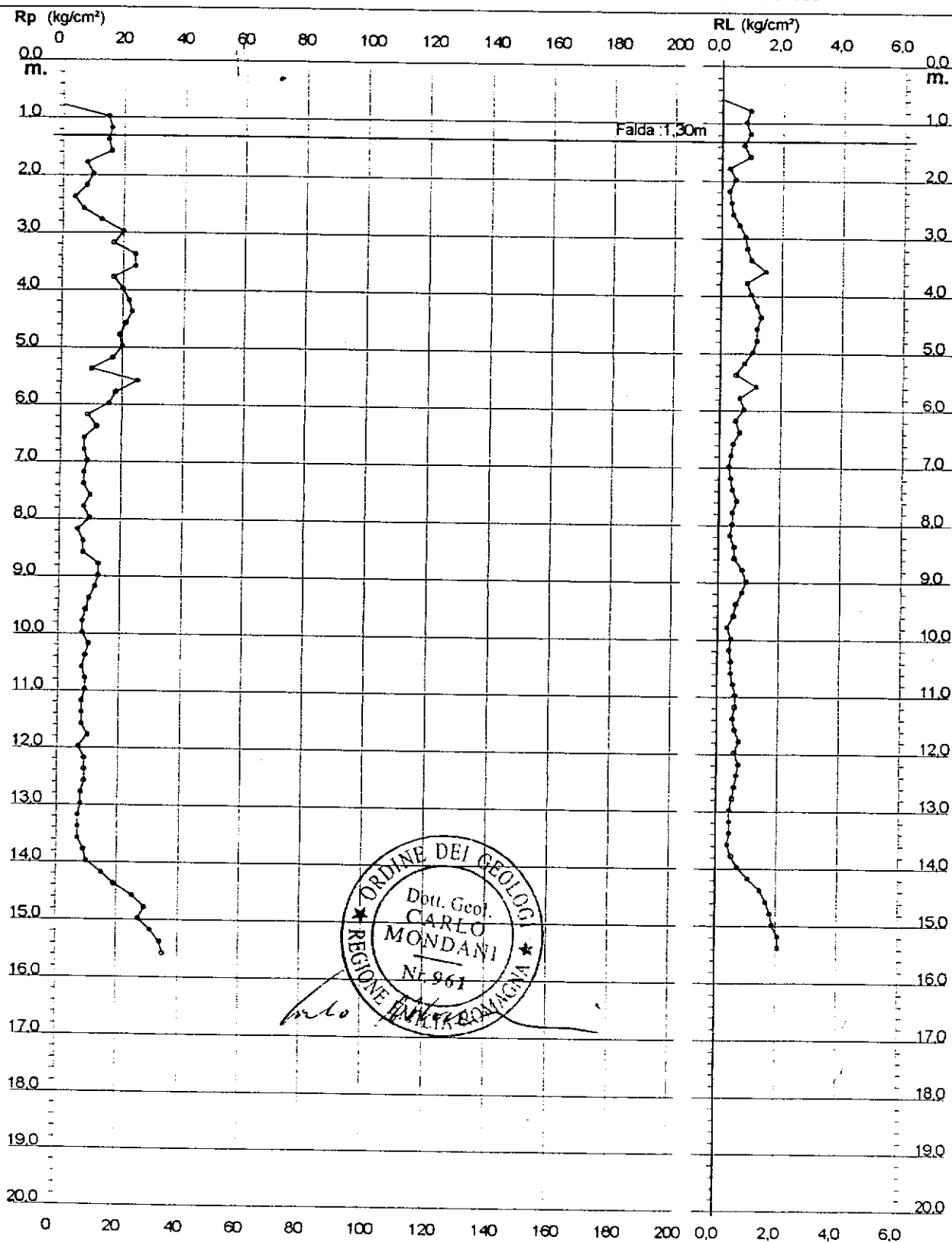
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

2.010496-20

- committente : Immobiliare La Rovere s.r.l.
- lavoro : Costruzione centro commerciale
- località : Nonantola

- data : 08.03.2002
- quota inizio : Piano Campagna
- prof. falda : 1,30 m da quota inizio
- scala vert. : 1 : 100



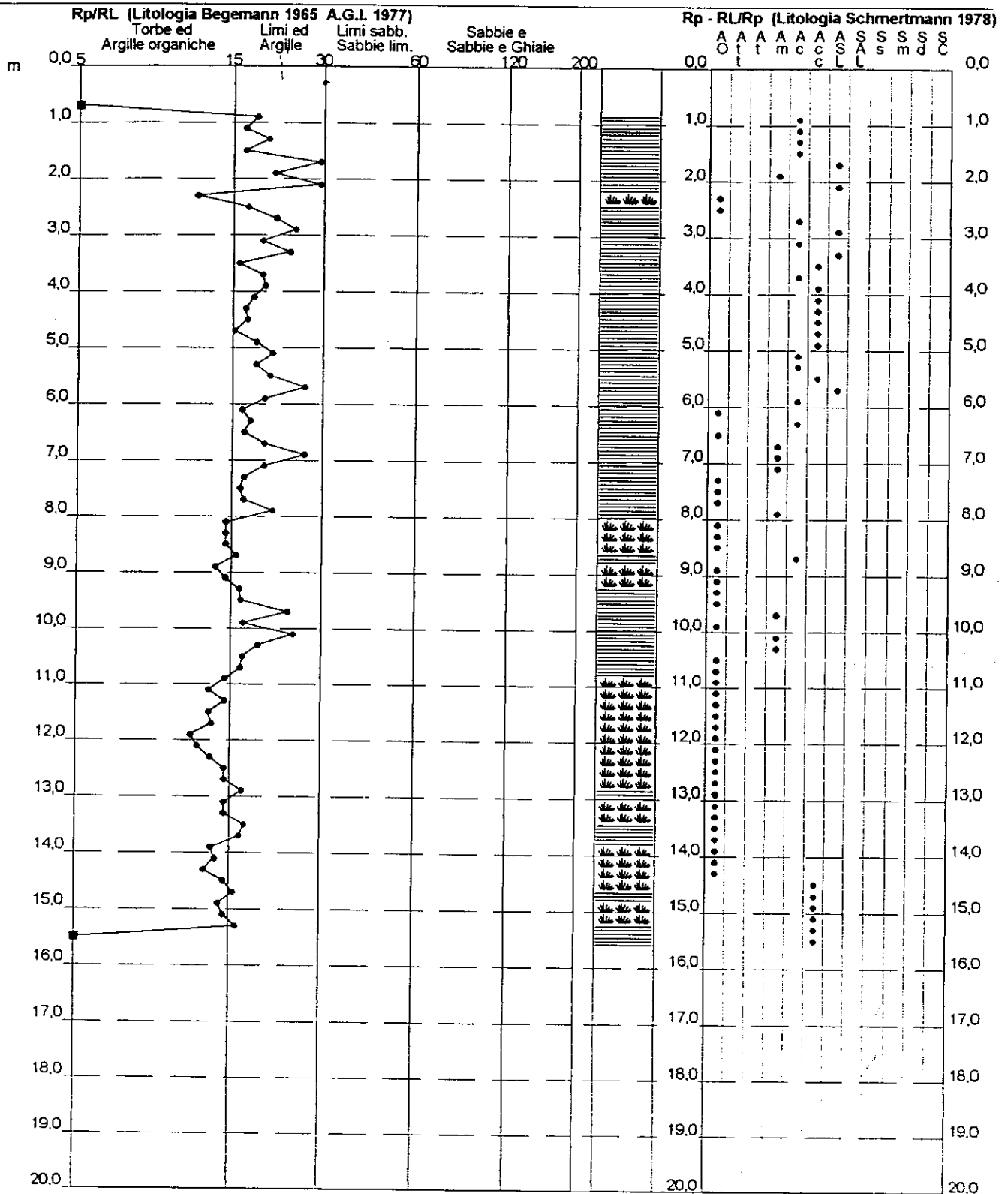
**PROVA PENETROMETRICA STATICA
 VALUTAZIONI LITOLOGICHE**

CPT 1

2.010496-20

- committente : Immobiliare La Rovere s.r.l.
 - lavoro : Costruzione centro commerciale
 - località : Nonantola
 - note :

- data : 08.03.2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,30 m da quota inizio
 - scala vert.: 1 : 100



PROVA PENETROMETRICA STATICA
TABELLA PARAMETRI GEOTECNICI

CPT 1

2.010496-20

- committente : Immobiliare La Rovere s.r.l.
 - lavoro : Costruzione centro commerciale
 - località : Nonantola
 - note :
 - data : 08.03.2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,30 m da quota inizio
 - pagina : 1

| | | | NATURA COESIVA | | | | | | NATURA GRANULARE | | | | | | | | | | | | | |
|---------|-----------------------|-----------|----------------|--------------------|-------------------------|-----------------------|---------|-------------------------|-------------------------|-----------------------|------|---------|---------|---------|---------|---------|---------|------------|------------------------|------------------------|-----------------------|---|
| Prof. m | Rp kg/cm ² | Rp/Rl (-) | Natura Litol. | Y t/m ³ | d'vo kg/cm ³ | Cu kg/cm ² | OCR (-) | Eu50 kg/cm ² | Eu25 kg/cm ² | Mo kg/cm ² | Dr % | σ1s (°) | σ2s (°) | σ3s (°) | σ4s (°) | σdm (°) | σmy (°) | Amav/g (-) | E50 kg/cm ² | E25 kg/cm ² | Mo kg/cm ² | |
| 0,20 | - | - | ??? | 1,85 | 0,04 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,40 | - | - | ??? | 1,85 | 0,07 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,60 | - | - | ??? | 1,85 | 0,11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,80 | - | - | ??? | 1,85 | 0,15 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,00 | 15 | 19 | 2III | 1,85 | 0,19 | 0,67 | 31,2 | 113 | 170 | 50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,20 | 16 | 17 | 2III | 1,85 | 0,22 | 0,70 | 26,2 | 118 | 177 | 52 | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,40 | 15 | 20 | 2III | 0,95 | 0,24 | 0,67 | 22,4 | 113 | 170 | 50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,60 | 16 | 17 | 2III | 0,96 | 0,26 | 0,70 | 21,5 | 118 | 177 | 52 | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,80 | 8 | 30 | 4I | 0,84 | 0,28 | 0,40 | 9,9 | 68 | 102 | 35 | 17 | 30 | 33 | 36 | 39 | 30 | 28 | 0,032 | 13 | 20 | 24 | - |
| 2,00 | 10 | 21 | 2III | 0,90 | 0,30 | 0,50 | 12,1 | 85 | 128 | 40 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2,20 | 8 | 30 | 4I | 0,84 | 0,31 | 0,40 | 8,6 | 74 | 111 | 35 | 14 | 30 | 33 | 36 | 39 | 29 | 26 | 0,027 | 13 | 20 | 24 | - |
| 2,40 | 4 | 12 | 1*** | 0,46 | 0,32 | 0,20 | 3,5 | 17 | 26 | 6 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2,60 | 7 | 17 | 2III | 0,84 | 0,34 | 0,35 | 6,8 | 87 | 130 | 32 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2,80 | 13 | 21 | 2III | 0,93 | 0,36 | 0,60 | 12,2 | 103 | 154 | 47 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3,00 | 20 | 25 | 4I | 0,93 | 0,37 | 0,60 | 15,4 | 136 | 204 | 60 | 41 | 34 | 36 | 39 | 41 | 33 | 27 | 0,081 | 33 | 50 | 60 | - |
| 3,20 | 17 | 20 | 2III | 0,97 | 0,39 | 0,72 | 13,4 | 123 | 184 | 54 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3,40 | 24 | 24 | 4I | 0,94 | 0,41 | 0,89 | 18,4 | 151 | 227 | 72 | 45 | 34 | 37 | 39 | 42 | 34 | 28 | 0,090 | 40 | 60 | 72 | - |
| 3,60 | 24 | 16 | 4I | 0,94 | 0,43 | 0,89 | 15,5 | 151 | 227 | 72 | 43 | 34 | 36 | 39 | 41 | 34 | 28 | 0,088 | 40 | 60 | 72 | - |
| 3,80 | 17 | 20 | 2III | 0,97 | 0,45 | 0,72 | 11,3 | 123 | 184 | 54 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4,00 | 20 | 20 | 4I | 0,93 | 0,47 | 0,80 | 12,2 | 138 | 204 | 60 | 35 | 33 | 35 | 38 | 41 | 32 | 27 | 0,069 | 33 | 50 | 60 | - |
| 4,20 | 22 | 18 | 4I | 0,93 | 0,49 | 0,85 | 12,5 | 144 | 218 | 66 | 37 | 33 | 36 | 38 | 41 | 33 | 28 | 0,074 | 37 | 55 | 66 | - |
| 4,40 | 23 | 17 | 4I | 0,94 | 0,51 | 0,87 | 12,3 | 148 | 221 | 69 | 38 | 33 | 36 | 38 | 41 | 33 | 28 | 0,075 | 36 | 56 | 69 | - |
| 4,60 | 21 | 17 | 4I | 0,93 | 0,53 | 0,82 | 11,0 | 140 | 210 | 63 | 34 | 33 | 35 | 38 | 41 | 32 | 27 | 0,066 | 35 | 53 | 63 | - |
| 4,80 | 19 | 18 | 2III | 0,99 | 0,55 | 0,78 | 9,7 | 132 | 199 | 58 | - | - | - | - | - | - | - | - | - | - | - | - |
| 5,00 | 20 | 19 | 4I | 0,93 | 0,56 | 0,80 | 9,7 | 137 | 205 | 60 | 31 | 32 | 35 | 38 | 40 | 31 | 27 | 0,059 | 33 | 50 | 60 | - |
| 5,20 | 17 | 21 | 2III | 0,97 | 0,58 | 0,72 | 8,2 | 139 | 209 | 54 | - | - | - | - | - | - | - | - | - | - | - | - |
| 5,40 | 10 | 19 | 2III | 0,90 | 0,60 | 0,50 | 5,0 | 188 | 249 | 40 | - | - | - | - | - | - | - | - | - | - | - | - |
| 5,60 | 25 | 21 | 4I | 0,94 | 0,62 | 0,91 | 10,1 | 155 | 232 | 75 | 36 | 33 | 36 | 38 | 41 | 32 | 28 | 0,071 | 42 | 63 | 75 | - |
| 5,80 | 18 | 27 | 2III | 0,98 | 0,64 | 0,75 | 7,7 | 156 | 233 | 56 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6,00 | 16 | 20 | 2III | 0,96 | 0,66 | 0,70 | 6,7 | 168 | 252 | 52 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6,20 | 9 | 17 | 2III | 0,88 | 0,68 | 0,45 | 3,8 | 191 | 286 | 38 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6,40 | 12 | 18 | 2III | 0,92 | 0,70 | 0,57 | 4,9 | 192 | 288 | 45 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6,60 | 8 | 17 | 2III | 0,86 | 0,71 | 0,40 | 3,1 | 196 | 293 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6,80 | 8 | 20 | 2III | 0,86 | 0,73 | 0,40 | 3,0 | 199 | 298 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7,00 | 9 | 27 | 2III | 0,88 | 0,75 | 0,45 | 3,3 | 209 | 314 | 38 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7,20 | 8 | 20 | 2III | 0,86 | 0,76 | 0,40 | 2,8 | 204 | 306 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7,40 | 8 | 17 | 2III | 0,86 | 0,78 | 0,40 | 2,7 | 206 | 308 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7,60 | 10 | 17 | 2III | 0,90 | 0,80 | 0,50 | 3,5 | 225 | 338 | 40 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7,80 | 8 | 17 | 2III | 0,86 | 0,82 | 0,40 | 2,6 | 210 | 315 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8,00 | 10 | 21 | 2III | 0,90 | 0,83 | 0,50 | 3,3 | 234 | 351 | 40 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8,20 | 6 | 15 | 1*** | 0,46 | 0,84 | 0,30 | 1,7 | 37 | 56 | 9 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8,40 | 8 | 15 | 2III | 0,86 | 0,86 | 0,40 | 2,4 | 214 | 322 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8,60 | 8 | 15 | 2III | 0,86 | 0,88 | 0,40 | 2,3 | 216 | 324 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8,80 | 13 | 16 | 2III | 0,93 | 0,90 | 0,60 | 3,8 | 252 | 378 | 47 | - | - | - | - | - | - | - | - | - | - | - | - |
| 9,00 | 13 | 14 | 2III | 0,93 | 0,92 | 0,60 | 3,7 | 258 | 387 | 47 | - | - | - | - | - | - | - | - | - | - | - | - |
| 9,20 | 12 | 15 | 2III | 0,92 | 0,93 | 0,57 | 3,4 | 263 | 394 | 45 | - | - | - | - | - | - | - | - | - | - | - | - |
| 9,40 | 10 | 17 | 2III | 0,90 | 0,95 | 0,50 | 2,8 | 254 | 381 | 40 | - | - | - | - | - | - | - | - | - | - | - | - |
| 9,60 | 9 | 17 | 2III | 0,88 | 0,97 | 0,45 | 2,4 | 241 | 362 | 38 | - | - | - | - | - | - | - | - | - | - | - | - |
| 9,80 | 8 | 24 | 2III | 0,86 | 0,99 | 0,40 | 2,0 | 223 | 335 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10,00 | 8 | 17 | 2III | 0,86 | 1,00 | 0,40 | 2,0 | 224 | 336 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10,20 | 10 | 25 | 2III | 0,90 | 1,02 | 0,50 | 2,6 | 263 | 394 | 40 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10,40 | 9 | 19 | 2III | 0,88 | 1,04 | 0,45 | 2,2 | 247 | 370 | 38 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10,60 | 8 | 17 | 2III | 0,86 | 1,06 | 0,40 | 1,9 | 227 | 340 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10,80 | 9 | 17 | 2III | 0,88 | 1,07 | 0,45 | 2,1 | 249 | 374 | 38 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11,00 | 9 | 15 | 2III | 0,88 | 1,09 | 0,45 | 2,1 | 250 | 375 | 38 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11,20 | 8 | 13 | 2III | 0,86 | 1,11 | 0,40 | 1,8 | 229 | 343 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11,40 | 8 | 15 | 2III | 0,86 | 1,13 | 0,40 | 1,7 | 230 | 344 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11,60 | 8 | 13 | 2III | 0,86 | 1,14 | 0,40 | 1,7 | 230 | 345 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11,80 | 10 | 14 | 2III | 0,90 | 1,16 | 0,50 | 2,2 | 275 | 412 | 40 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12,00 | 7 | 12 | 1*** | 0,46 | 1,17 | 0,35 | 1,4 | 45 | 67 | 11 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12,20 | 9 | 12 | 2III | 0,88 | 1,19 | 0,45 | 1,9 | 255 | 383 | 38 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12,40 | 9 | 13 | 2III | 0,88 | 1,21 | 0,45 | 1,8 | 258 | 384 | 38 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12,60 | 9 | 15 | 2III | 0,88 | 1,22 | 0,45 | 1,8 | 257 | 385 | 38 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12,80 | 8 | 15 | 2III | 0,86 | 1,24 | 0,40 | 1,5 | 233 | 349 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 13,00 | 8 | 17 | 2III | 0,86 | 1,26 | 0,40 | 1,5 | 233 | 350 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| 13,20 | 7 | 15 | 1*** | 0,46 | 1,27 | 0,35 | 1,3 | 45 | 67 | 11 | - | - | - | - | - | - | - | - | - | - | - | - |
| 13,40 | 7 | 15 | 1*** | 0,46 | 1,28 | 0,35 | 1,2 | 45 | 67 | 11 | - | - | - | - | - | - | - | - | - | - | - | - |
| 13,60 | 7 | 17 | 2III | 0,84 | 1,29 | 0,35 | 1,2 | 208 | 311 | 32 | - | - | - | - | - | - | - | - | - | - | - | - |
| 13,80 | 9 | 17 | 2III | 0,88 | 1,31 | 0,45 | 1,6 | 260 | 389 | 38 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14,00 | 10 | 14 | 2III | 0,90 | 1,33 | 0,50 | 1,9 | 284 | 426 | 40 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14,20 | 15 | 14 | 2III | 0,95 | 1,35 | 0,67 | 2,6 | 349 | 523 | 50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14,40 | 19 | 13 | 2III | 0,99 | 1,37 | 0,78 | 3,1 | 377 | 565 | 58 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14,60 | 25 | 15 | 4I | 0,94 | 1,39 | 0,91 | 3,7 | 391 | 587 | 75 | 16 | 30 | 33 | 36 | 39 | 27 | 28 | 0,031 | 42 | 63 | 75 | - |
| 14,80 | 29 | 16 | 4I | 0,98 | 1,41 | 0,98 | 4,0 | 382 | 588 | 87 | 21 | 31 | 34 | 37 | 40 | 25 | 29 | 0,040 | 48 | 73 | 87 | - |

PROVA PENETROMETRICA STATICA

CPT 1

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

2.010496-20

- committente : Immobiliare La Rovere s.r.l.
 - lavoro : Costruzione centro commerciale
 - località : Nonantola
 - note :

- data : 08.03.2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,30 m da quota inizio
 - pagina : 1

| Prof. m | Letture di campagna | | Rp | RL | Rp/RL | Prof. m | Letture di campagna | | Rp | RL | Rp/RL |
|---------|---------------------|----------|--------------------|------|-------|---------|---------------------|----------|--------------------|------|-------|
| | punta | laterale | kg/cm ² | | | | punta | laterale | kg/cm ² | | |
| 0,20 | — | — | — | — | — | 8,00 | 10,0 | 17,0 | 10,0 | 0,47 | 21,0 |
| 0,40 | — | — | — | — | — | 8,20 | 6,0 | 13,0 | 6,0 | 0,40 | 15,0 |
| 0,60 | — | — | — | — | — | 8,40 | 8,0 | 14,0 | 8,0 | 0,53 | 15,0 |
| 0,80 | — | — | — | 0,93 | — | 8,60 | 8,0 | 16,0 | 8,0 | 0,53 | 15,0 |
| 1,00 | 15,0 | 29,0 | 15,0 | 0,80 | 19,0 | 8,80 | 13,0 | 21,0 | 13,0 | 0,80 | 16,0 |
| 1,20 | 16,0 | 28,0 | 16,0 | 0,93 | 17,0 | 9,00 | 13,0 | 25,0 | 13,0 | 0,93 | 14,0 |
| 1,40 | 15,0 | 29,0 | 15,0 | 0,73 | 20,0 | 9,20 | 12,0 | 26,0 | 12,0 | 0,80 | 15,0 |
| 1,60 | 16,0 | 27,0 | 16,0 | 0,93 | 17,0 | 9,40 | 10,0 | 22,0 | 10,0 | 0,60 | 17,0 |
| 1,80 | 8,0 | 22,0 | 8,0 | 0,27 | 30,0 | 9,60 | 9,0 | 18,0 | 9,0 | 0,53 | 17,0 |
| 2,00 | 10,0 | 14,0 | 10,0 | 0,47 | 21,0 | 9,80 | 8,0 | 16,0 | 8,0 | 0,33 | 24,0 |
| 2,20 | 8,0 | 15,0 | 8,0 | 0,27 | 30,0 | 10,00 | 8,0 | 13,0 | 8,0 | 0,47 | 17,0 |
| 2,40 | 4,0 | 8,0 | 4,0 | 0,33 | 12,0 | 10,20 | 10,0 | 17,0 | 10,0 | 0,40 | 25,0 |
| 2,60 | 7,0 | 12,0 | 7,0 | 0,40 | 17,0 | 10,40 | 9,0 | 15,0 | 9,0 | 0,47 | 19,0 |
| 2,80 | 13,0 | 19,0 | 13,0 | 0,60 | 22,0 | 10,60 | 8,0 | 15,0 | 8,0 | 0,47 | 17,0 |
| 3,00 | 20,0 | 29,0 | 20,0 | 0,80 | 25,0 | 10,80 | 9,0 | 16,0 | 9,0 | 0,53 | 17,0 |
| 3,20 | 17,0 | 29,0 | 17,0 | 0,87 | 20,0 | 11,00 | 9,0 | 17,0 | 9,0 | 0,60 | 15,0 |
| 3,40 | 24,0 | 37,0 | 24,0 | 1,00 | 24,0 | 11,20 | 8,0 | 17,0 | 8,0 | 0,60 | 13,0 |
| 3,60 | 24,0 | 39,0 | 24,0 | 1,47 | 16,0 | 11,40 | 8,0 | 17,0 | 8,0 | 0,53 | 15,0 |
| 3,80 | 17,0 | 39,0 | 17,0 | 0,87 | 20,0 | 11,60 | 8,0 | 16,0 | 8,0 | 0,60 | 13,0 |
| 4,00 | 20,0 | 33,0 | 20,0 | 1,00 | 20,0 | 11,80 | 10,0 | 19,0 | 10,0 | 0,73 | 14,0 |
| 4,20 | 22,0 | 37,0 | 22,0 | 1,20 | 18,0 | 12,00 | 7,0 | 18,0 | 7,0 | 0,60 | 12,0 |
| 4,40 | 23,0 | 41,0 | 23,0 | 1,33 | 17,0 | 12,20 | 9,0 | 18,0 | 9,0 | 0,73 | 12,0 |
| 4,60 | 21,0 | 41,0 | 21,0 | 1,20 | 17,0 | 12,40 | 9,0 | 20,0 | 9,0 | 0,67 | 13,0 |
| 4,80 | 19,0 | 37,0 | 19,0 | 1,20 | 16,0 | 12,60 | 9,0 | 19,0 | 9,0 | 0,60 | 15,0 |
| 5,00 | 20,0 | 38,0 | 20,0 | 1,07 | 19,0 | 12,80 | 8,0 | 17,0 | 8,0 | 0,53 | 15,0 |
| 5,20 | 17,0 | 33,0 | 17,0 | 0,80 | 21,0 | 13,00 | 8,0 | 16,0 | 8,0 | 0,47 | 17,0 |
| 5,40 | 10,0 | 22,0 | 10,0 | 0,53 | 19,0 | 13,20 | 7,0 | 14,0 | 7,0 | 0,47 | 15,0 |
| 5,60 | 25,0 | 33,0 | 25,0 | 1,20 | 21,0 | 13,40 | 7,0 | 14,0 | 7,0 | 0,47 | 15,0 |
| 5,80 | 18,0 | 36,0 | 18,0 | 0,67 | 27,0 | 13,60 | 7,0 | 14,0 | 7,0 | 0,40 | 17,0 |
| 6,00 | 16,0 | 26,0 | 16,0 | 0,80 | 20,0 | 13,80 | 9,0 | 15,0 | 9,0 | 0,53 | 17,0 |
| 6,20 | 9,0 | 21,0 | 9,0 | 0,53 | 17,0 | 14,00 | 10,0 | 18,0 | 10,0 | 0,73 | 14,0 |
| 6,40 | 12,0 | 20,0 | 12,0 | 0,67 | 18,0 | 14,20 | 15,0 | 26,0 | 15,0 | 1,07 | 14,0 |
| 6,60 | 8,0 | 18,0 | 8,0 | 0,47 | 17,0 | 14,40 | 19,0 | 35,0 | 19,0 | 1,47 | 13,0 |
| 6,80 | 8,0 | 15,0 | 8,0 | 0,40 | 20,0 | 14,60 | 25,0 | 47,0 | 25,0 | 1,67 | 15,0 |
| 7,00 | 9,0 | 15,0 | 9,0 | 0,33 | 27,0 | 14,80 | 29,0 | 54,0 | 29,0 | 1,80 | 16,0 |
| 7,20 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 | 15,00 | 27,0 | 54,0 | 27,0 | 1,87 | 14,0 |
| 7,40 | 8,0 | 14,0 | 8,0 | 0,47 | 17,0 | 15,20 | 31,0 | 59,0 | 31,0 | 2,07 | 15,0 |
| 7,60 | 10,0 | 17,0 | 10,0 | 0,60 | 17,0 | 15,40 | 34,0 | 65,0 | 34,0 | 2,07 | 16,0 |
| 7,80 | 8,0 | 17,0 | 8,0 | 0,47 | 17,0 | 15,60 | 35,0 | 66,0 | 35,0 | — | — |

- PENETROMETRO STATICO tipo GOUDA da 10 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
 - punta meccanica tipo Begemann $\alpha = 35,7$ mm (area punta 10 cm² - apertura 60°)
 - manicotto laterale (superficie 150 cm²)

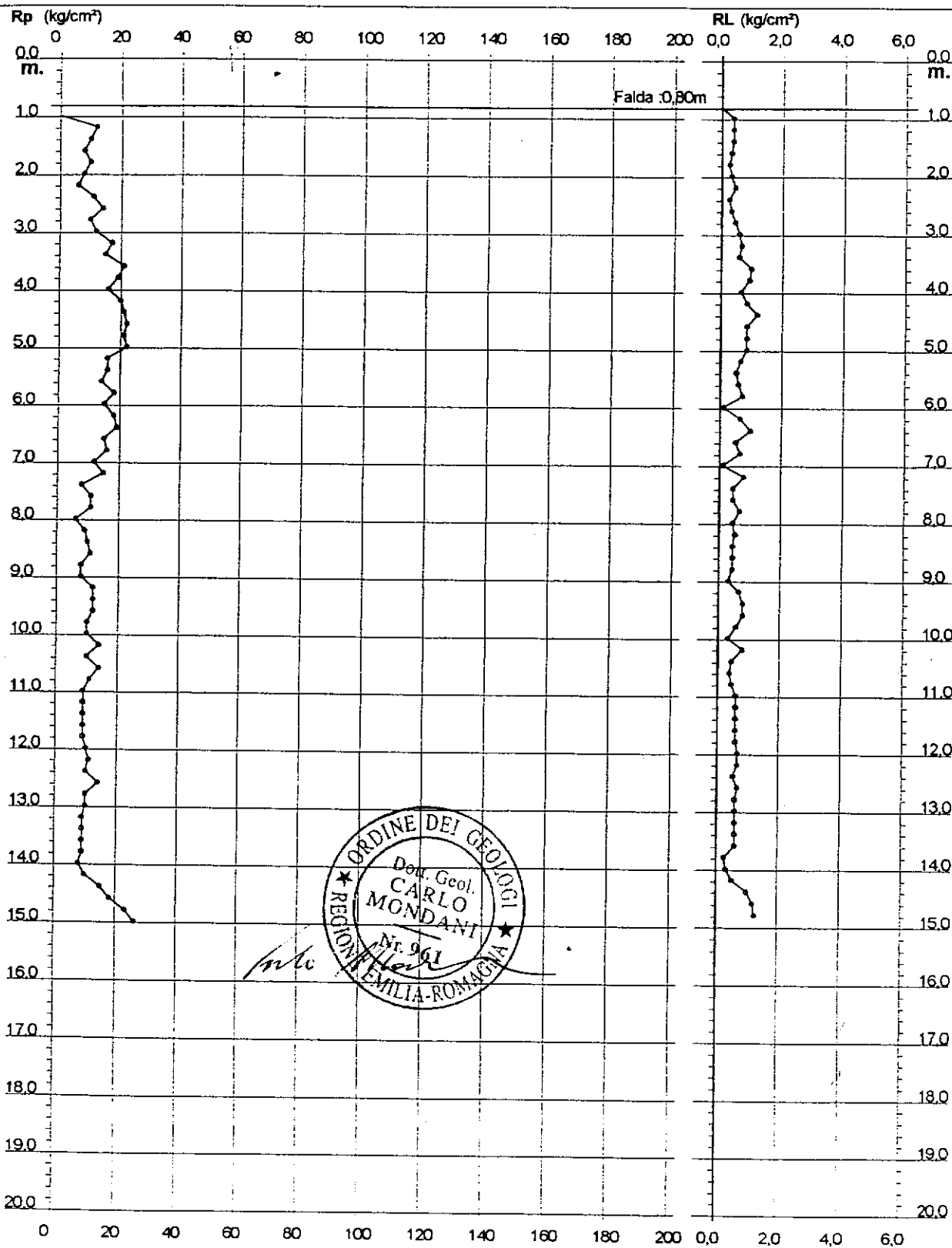
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 5

2.010496-20

- committente : Immobiliare La Rovere s.r.l.
- lavoro : Costruzione centro commerciale
- località : Nonantola

- data : 08.03.2002
- quota inizio : Piano Campagna
- prof. falda : 0,80 m da quota inizio
- scala vert. : 1 : 100



PROVA PENETROMETRICA STATICA

CPT 5

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

2.010496-20

- committente : Immobiliare La Rovere s.r.l.

- lavoro : Costruzione centro commerciale

- località : Nonantola

- note :

- data : 08.03.2002

- quota inizio : Piano Campagna

- prof. falda : 0,80 m da quota inizio

- pagina : 1

| Prof. m | Letture di campagna | | Rp | RL | Rp/RL | Prof. m | Letture di campagna | | Rp | RL | Rp/RL |
|---------|---------------------|----------|--------------------|------|-------|---------|---------------------|----------|--------------------|------|-------|
| | punta | laterale | kg/cm ² | | | | punta | laterale | kg/cm ² | | |
| 0,20 | --- | --- | --- | --- | --- | 7,80 | 11,0 | 18,0 | 11,0 | 0,67 | 16,0 |
| 0,40 | --- | --- | --- | --- | --- | 8,00 | 6,0 | 16,0 | 6,0 | 0,47 | 13,0 |
| 0,60 | --- | --- | --- | --- | --- | 8,20 | 9,0 | 16,0 | 9,0 | 0,53 | 17,0 |
| 0,80 | --- | --- | --- | --- | --- | 8,40 | 10,0 | 18,0 | 10,0 | 0,47 | 21,0 |
| 1,00 | --- | --- | --- | 0,40 | --- | 8,60 | 11,0 | 18,0 | 11,0 | 0,47 | 24,0 |
| 1,20 | 12,0 | 18,0 | 12,0 | 0,40 | 30,0 | 8,80 | 8,0 | 15,0 | 8,0 | 0,47 | 17,0 |
| 1,40 | 10,0 | 16,0 | 10,0 | 0,40 | 25,0 | 9,00 | 8,0 | 15,0 | 8,0 | 0,33 | 24,0 |
| 1,60 | 8,0 | 14,0 | 8,0 | 0,33 | 24,0 | 9,20 | 12,0 | 17,0 | 12,0 | 0,67 | 18,0 |
| 1,80 | 10,0 | 15,0 | 10,0 | 0,27 | 37,0 | 9,40 | 12,0 | 22,0 | 12,0 | 0,80 | 15,0 |
| 2,00 | 8,0 | 12,0 | 8,0 | 0,33 | 24,0 | 9,60 | 12,0 | 24,0 | 12,0 | 0,80 | 15,0 |
| 2,20 | 6,0 | 11,0 | 6,0 | 0,47 | 13,0 | 9,80 | 10,0 | 22,0 | 10,0 | 0,60 | 17,0 |
| 2,40 | 11,0 | 18,0 | 11,0 | 0,27 | 41,0 | 10,00 | 10,0 | 19,0 | 10,0 | 0,33 | 30,0 |
| 2,60 | 14,0 | 18,0 | 14,0 | 0,33 | 42,0 | 10,20 | 14,0 | 19,0 | 14,0 | 0,80 | 17,0 |
| 2,80 | 10,0 | 15,0 | 10,0 | 0,47 | 21,0 | 10,40 | 10,0 | 22,0 | 10,0 | 0,47 | 21,0 |
| 3,00 | 12,0 | 19,0 | 12,0 | 0,60 | 20,0 | 10,60 | 14,0 | 21,0 | 14,0 | 0,40 | 35,0 |
| 3,20 | 17,0 | 26,0 | 17,0 | 0,67 | 25,0 | 10,80 | 11,0 | 17,0 | 11,0 | 0,47 | 24,0 |
| 3,40 | 15,0 | 25,0 | 15,0 | 0,60 | 25,0 | 11,00 | 9,0 | 16,0 | 9,0 | 0,60 | 15,0 |
| 3,60 | 21,0 | 30,0 | 21,0 | 1,00 | 21,0 | 11,20 | 9,0 | 18,0 | 9,0 | 0,60 | 15,0 |
| 3,80 | 19,0 | 34,0 | 19,0 | 0,93 | 20,0 | 11,40 | 9,0 | 18,0 | 9,0 | 0,60 | 15,0 |
| 4,00 | 16,0 | 30,0 | 16,0 | 0,67 | 24,0 | 11,60 | 9,0 | 18,0 | 9,0 | 0,60 | 15,0 |
| 4,20 | 20,0 | 30,0 | 20,0 | 0,87 | 23,0 | 11,80 | 9,0 | 18,0 | 9,0 | 0,60 | 15,0 |
| 4,40 | 21,0 | 34,0 | 21,0 | 1,20 | 17,0 | 12,00 | 10,0 | 19,0 | 10,0 | 0,67 | 15,0 |
| 4,60 | 22,0 | 40,0 | 22,0 | 0,87 | 25,0 | 12,20 | 11,0 | 21,0 | 11,0 | 0,67 | 16,0 |
| 4,80 | 21,0 | 34,0 | 21,0 | 0,87 | 24,0 | 12,40 | 10,0 | 20,0 | 10,0 | 0,53 | 19,0 |
| 5,00 | 22,0 | 35,0 | 22,0 | 0,87 | 25,0 | 12,60 | 14,0 | 22,0 | 14,0 | 0,67 | 21,0 |
| 5,20 | 16,0 | 29,0 | 16,0 | 0,67 | 24,0 | 12,80 | 10,0 | 20,0 | 10,0 | 0,60 | 17,0 |
| 5,40 | 16,0 | 26,0 | 16,0 | 0,53 | 30,0 | 13,00 | 10,0 | 19,0 | 10,0 | 0,60 | 17,0 |
| 5,60 | 14,0 | 22,0 | 14,0 | 0,60 | 23,0 | 13,20 | 9,0 | 18,0 | 9,0 | 0,60 | 15,0 |
| 5,80 | 18,0 | 27,0 | 18,0 | 0,73 | 25,0 | 13,40 | 9,0 | 18,0 | 9,0 | 0,60 | 15,0 |
| 6,00 | 15,0 | 26,0 | 15,0 | 0,13 | 112,0 | 13,60 | 9,0 | 18,0 | 9,0 | 0,60 | 15,0 |
| 6,20 | 18,0 | 20,0 | 18,0 | 0,67 | 27,0 | 13,80 | 9,0 | 18,0 | 9,0 | 0,27 | 34,0 |
| 6,40 | 19,0 | 29,0 | 19,0 | 1,00 | 19,0 | 14,00 | 8,0 | 12,0 | 8,0 | 0,33 | 24,0 |
| 6,60 | 15,0 | 30,0 | 15,0 | 0,53 | 28,0 | 14,20 | 10,0 | 15,0 | 10,0 | 0,53 | 19,0 |
| 6,80 | 16,0 | 24,0 | 16,0 | 0,67 | 24,0 | 14,40 | 15,0 | 23,0 | 15,0 | 1,00 | 15,0 |
| 7,00 | 12,0 | 22,0 | 12,0 | 0,13 | 90,0 | 14,60 | 18,0 | 33,0 | 18,0 | 1,20 | 15,0 |
| 7,20 | 15,0 | 17,0 | 15,0 | 0,80 | 19,0 | 14,80 | 23,0 | 41,0 | 23,0 | 1,27 | 18,0 |
| 7,40 | 8,0 | 20,0 | 8,0 | 0,47 | 17,0 | 15,00 | 26,0 | 45,0 | 26,0 | --- | --- |
| 7,60 | 11,0 | 18,0 | 11,0 | 0,47 | 24,0 | | | | | | |

- PENETROMETRO STATICO tipo GOUDA da 10 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

| Prof. [m] | P [Kg/cm ²] | P+L [Kg/cm ²] | Rp [Kg/cm ²] | R1 [Kg/cm ²] | Rp/R1 |
|--------------|----------------------------|------------------------------|-----------------------------|-----------------------------|-------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 34.00 | 60.00 | 34.00 | 1.73 | 19.62 |
| 0.80 | 36.00 | 64.00 | 36.00 | 1.87 | 19.29 |
| 1.00 | 38.00 | 68.00 | 38.00 | 2.00 | 19.00 |
| 1.20 | 44.00 | 72.00 | 44.00 | 1.87 | 23.57 |
| 1.40 | 36.00 | 72.00 | 36.00 | 2.40 | 15.00 |
| 1.60 | 24.00 | 52.00 | 24.00 | 1.87 | 12.86 |
| 1.80 | 16.00 | 40.00 | 16.00 | 1.60 | 10.00 |
| 2.00 | 16.00 | 40.00 | 16.00 | 1.60 | 10.00 |
| 2.20 | 14.00 | 32.00 | 14.00 | 1.20 | 11.67 |
| 2.40 | 16.00 | 28.00 | 16.00 | 0.80 | 20.00 |
| 2.60 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 2.80 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 3.00 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 3.20 | 18.00 | 28.00 | 18.00 | 0.67 | 27.00 |
| 3.40 | 28.00 | 36.00 | 28.00 | 0.53 | 52.50 |
| 3.60 | 26.00 | 44.00 | 26.00 | 1.20 | 21.67 |
| 3.80 | 24.00 | 44.00 | 24.00 | 1.33 | 18.00 |
| 4.00 | 24.00 | 44.00 | 24.00 | 1.33 | 18.00 |
| 4.20 | 22.00 | 42.00 | 22.00 | 1.33 | 16.50 |
| 4.40 | 20.00 | 40.00 | 20.00 | 1.33 | 15.00 |
| 4.60 | 18.00 | 34.00 | 18.00 | 1.07 | 16.88 |
| 4.80 | 12.00 | 24.00 | 12.00 | 0.80 | 15.00 |
| 5.00 | 20.00 | 32.00 | 20.00 | 0.80 | 25.00 |
| 5.20 | 16.00 | 28.00 | 16.00 | 0.80 | 20.00 |
| 5.40 | 16.00 | 26.00 | 16.00 | 0.67 | 24.00 |
| 5.60 | 12.00 | 24.00 | 12.00 | 0.80 | 15.00 |
| 5.80 | 14.00 | 24.00 | 14.00 | 0.67 | 21.00 |
| 6.00 | 16.00 | 26.00 | 16.00 | 0.67 | 24.00 |
| 6.20 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 6.40 | 12.00 | 18.00 | 12.00 | 0.40 | 30.00 |
| 6.60 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 6.80 | 18.00 | 26.00 | 18.00 | 0.53 | 33.75 |
| 7.00 | 16.00 | 26.00 | 16.00 | 0.67 | 24.00 |
| 7.20 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 7.40 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 7.60 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 7.80 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 8.00 | 16.00 | 26.00 | 16.00 | 0.67 | 24.00 |
| 8.20 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 8.40 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 8.60 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 8.80 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 9.00 | 8.00 | 16.00 | 8.00 | 0.53 | 15.00 |
| 9.20 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 9.40 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 9.60 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 9.80 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 10.00 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |

| Prof. [m] | P [Kg/cm ²] | P+L [Kg/cm ²] | Rp [Kg/cm ²] | R1 [Kg/cm ²] | Rp/R1 |
|--------------|----------------------------|------------------------------|-----------------------------|-----------------------------|-------|
| 10.20 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 10.40 | 20.00 | 28.00 | 20.00 | 0.53 | 37.50 |
| 10.60 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 10.80 | 8.00 | 16.00 | 8.00 | 0.53 | 15.00 |
| 11.00 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 11.20 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 11.40 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 11.60 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 11.80 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 12.00 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 12.20 | 12.00 | 18.00 | 12.00 | 0.40 | 30.00 |
| 12.40 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 12.60 | 8.00 | 16.00 | 8.00 | 0.53 | 15.00 |
| 12.80 | 8.00 | 16.00 | 8.00 | 0.53 | 15.00 |
| 13.00 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 13.20 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 13.40 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 13.60 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 13.80 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 14.00 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 14.20 | 14.00 | 22.00 | 14.00 | 0.53 | 26.25 |
| 14.40 | 16.00 | 26.00 | 16.00 | 0.67 | 24.00 |
| 14.60 | 20.00 | 34.00 | 20.00 | 0.93 | 21.43 |
| 14.80 | 24.00 | 44.00 | 24.00 | 1.33 | 18.00 |
| 15.00 | 26.00 | 48.00 | 26.00 | 1.47 | 17.73 |

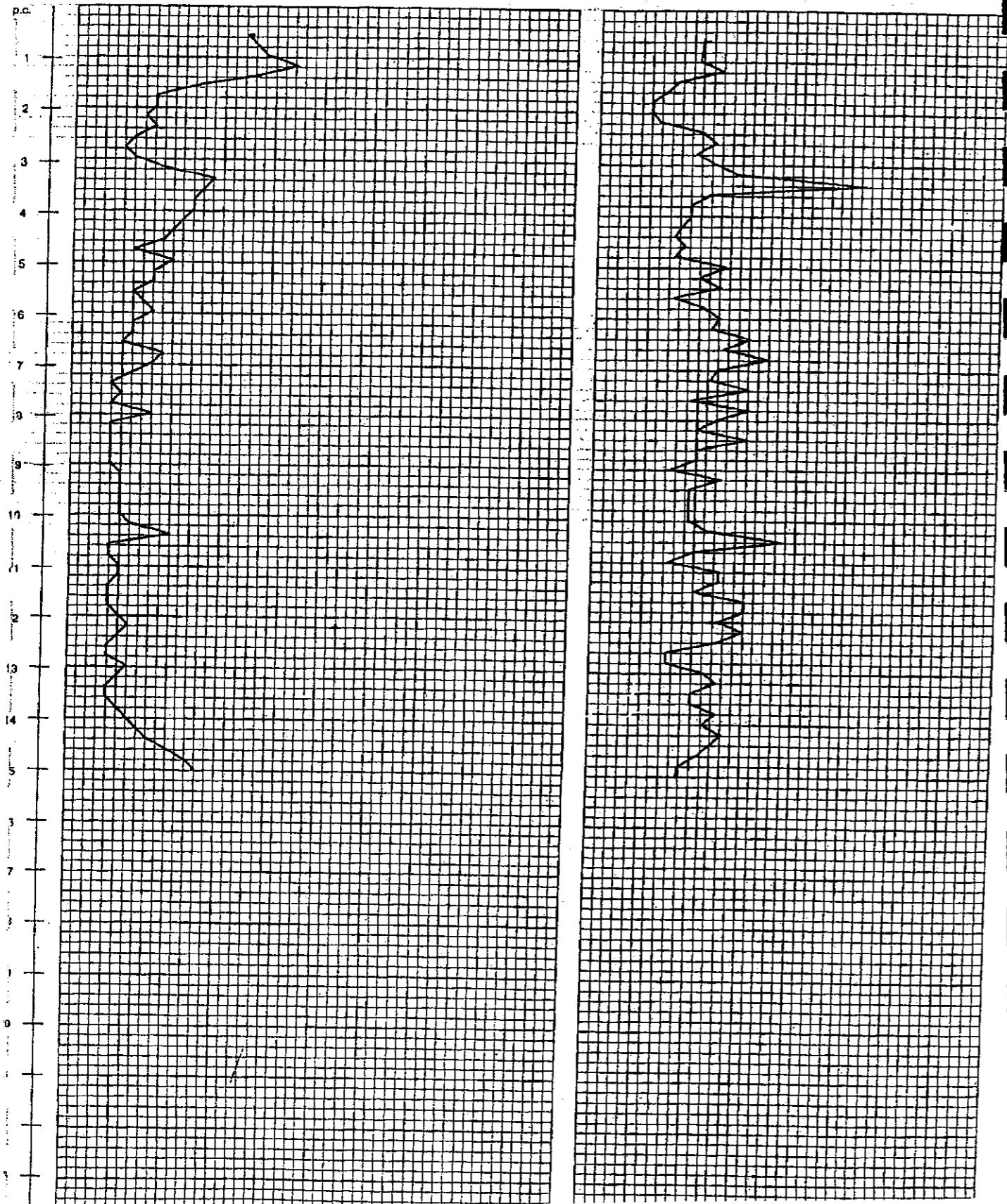
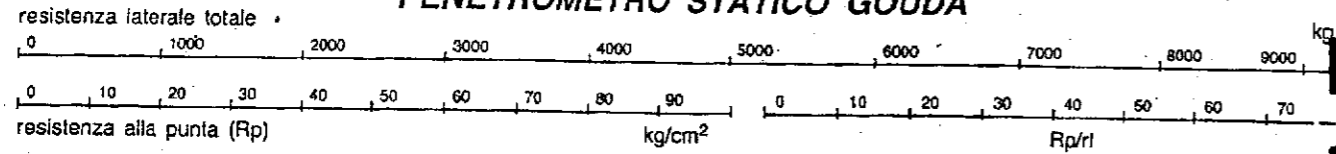


intergeo

41100 MODENA - VIA A. NARDI, 35 - TEL. (059) 225504 - FAX (059) 220738

prova n° 9 quota P.C.
località NONANTOLA
committente I.PRO.A.(ORTIGARO DUE)
data 20/10/94 operatore DR. REBECCO

PENETROMETRO STATICO GOUDA



INTERGEO SRL
 VIA ANACARSI NARDI 35
 41100 - MODENA
 TELEFONO 059-225504
 TELEFAX 059-220738

 PROVA PENETROMETRICA STATICA
 Penetrometro GOUDA

Committente : I.PRO.A.(ORTIGARO DUE)
 Località : NONANTOLA
 Prova numero : 10
 Data : 20/10/94
 Operatore : DR. REBECCHI
 Quota : P.C.

PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 1

2:010496-042

- committente : Sig. Magnoni -FERMEC-
- lavoro : Capannone
- località : Nonantola (MO)
- note :

- data : 21/02/2003
- quota inizio : Piano Campagna
- prof. falda : 1,00 m da quota inizio
- pagina : 1

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | -- | 0,20 | --- | 6,20 | 9,0 | 14,0 | 9,0 | 0,47 | 19,0 |
| 0,40 | 4,0 | 7,0 | 4,0 | 0,47 | 9,0 | 6,40 | 13,0 | 20,0 | 13,0 | 0,40 | 32,0 |
| 0,60 | 4,0 | 11,0 | 4,0 | 0,73 | 5,0 | 6,60 | 14,0 | 20,0 | 14,0 | 0,80 | 17,0 |
| 0,80 | 6,0 | 17,0 | 6,0 | 0,93 | 6,0 | 6,80 | 10,0 | 22,0 | 10,0 | 0,47 | 21,0 |
| 1,00 | 16,0 | 30,0 | 16,0 | 1,07 | 15,0 | 7,00 | 11,0 | 18,0 | 11,0 | 0,53 | 21,0 |
| 1,20 | 18,0 | 34,0 | 18,0 | 1,47 | 12,0 | 7,20 | 7,0 | 15,0 | 7,0 | 0,20 | 35,0 |
| 1,40 | 14,0 | 36,0 | 14,0 | 1,13 | 12,0 | 7,40 | 7,0 | 10,0 | 7,0 | 0,40 | 17,0 |
| 1,60 | 18,0 | 35,0 | 18,0 | 1,20 | 15,0 | 7,60 | 7,0 | 13,0 | 7,0 | 0,27 | 26,0 |
| 1,80 | 15,0 | 33,0 | 15,0 | 1,13 | 13,0 | 7,80 | 10,0 | 14,0 | 10,0 | 0,33 | 30,0 |
| 2,00 | 12,0 | 29,0 | 12,0 | 1,40 | 9,0 | 8,00 | 9,0 | 14,0 | 9,0 | 0,40 | 22,0 |
| 2,20 | 14,0 | 35,0 | 14,0 | 0,80 | 17,0 | 8,20 | 10,0 | 16,0 | 10,0 | 0,87 | 12,0 |
| 2,40 | 13,0 | 25,0 | 13,0 | 0,53 | 24,0 | 8,40 | 9,0 | 22,0 | 9,0 | 0,33 | 27,0 |
| 2,60 | 18,0 | 26,0 | 18,0 | 0,80 | 22,0 | 8,60 | 15,0 | 20,0 | 15,0 | 0,80 | 19,0 |
| 2,80 | 17,0 | 29,0 | 17,0 | 0,60 | 28,0 | 8,80 | 17,0 | 29,0 | 17,0 | 0,73 | 23,0 |
| 3,00 | 16,0 | 25,0 | 16,0 | 0,67 | 24,0 | 9,00 | 11,0 | 22,0 | 11,0 | 0,47 | 24,0 |
| 3,20 | 7,0 | 17,0 | 7,0 | 0,67 | 10,0 | 9,20 | 11,0 | 18,0 | 11,0 | 0,40 | 27,0 |
| 3,40 | 14,0 | 24,0 | 14,0 | 0,60 | 23,0 | 9,40 | 9,0 | 15,0 | 9,0 | 0,40 | 22,0 |
| 3,60 | 28,0 | 37,0 | 28,0 | 1,33 | 21,0 | 9,60 | 8,0 | 14,0 | 8,0 | 0,33 | 24,0 |
| 3,80 | 28,0 | 48,0 | 28,0 | 0,93 | 30,0 | 9,80 | 9,0 | 14,0 | 9,0 | 0,20 | 45,0 |
| 4,00 | 26,0 | 40,0 | 26,0 | 0,87 | 30,0 | 10,00 | 10,0 | 13,0 | 10,0 | 0,40 | 25,0 |
| 4,20 | 25,0 | 38,0 | 25,0 | 1,00 | 25,0 | 10,20 | 12,0 | 18,0 | 12,0 | 0,67 | 18,0 |
| 4,40 | 22,0 | 37,0 | 22,0 | 1,00 | 22,0 | 10,40 | 9,0 | 19,0 | 9,0 | 0,47 | 19,0 |
| 4,60 | 22,0 | 37,0 | 22,0 | 1,00 | 22,0 | 10,60 | 9,0 | 16,0 | 9,0 | 0,53 | 17,0 |
| 4,80 | 23,0 | 38,0 | 23,0 | 1,00 | 23,0 | 10,80 | 8,0 | 16,0 | 8,0 | 0,47 | 17,0 |
| 5,00 | 23,0 | 38,0 | 23,0 | 0,73 | 31,0 | 11,00 | 9,0 | 16,0 | 9,0 | 0,47 | 19,0 |
| 5,20 | 26,0 | 37,0 | 26,0 | 0,73 | 35,0 | 11,20 | 10,0 | 17,0 | 10,0 | 0,53 | 19,0 |
| 5,40 | 17,0 | 28,0 | 17,0 | 0,80 | 21,0 | 11,40 | 9,0 | 17,0 | 9,0 | 0,47 | 19,0 |
| 5,60 | 14,0 | 26,0 | 14,0 | 0,53 | 26,0 | 11,60 | 10,0 | 17,0 | 10,0 | 0,53 | 19,0 |
| 5,80 | 15,0 | 23,0 | 15,0 | 0,73 | 20,0 | 11,80 | 12,0 | 20,0 | 12,0 | 0,73 | 16,0 |
| 6,00 | 10,0 | 21,0 | 10,0 | 0,33 | 30,0 | 12,00 | 12,0 | 23,0 | 12,0 | ----- | ---- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann ø = 35.7 mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

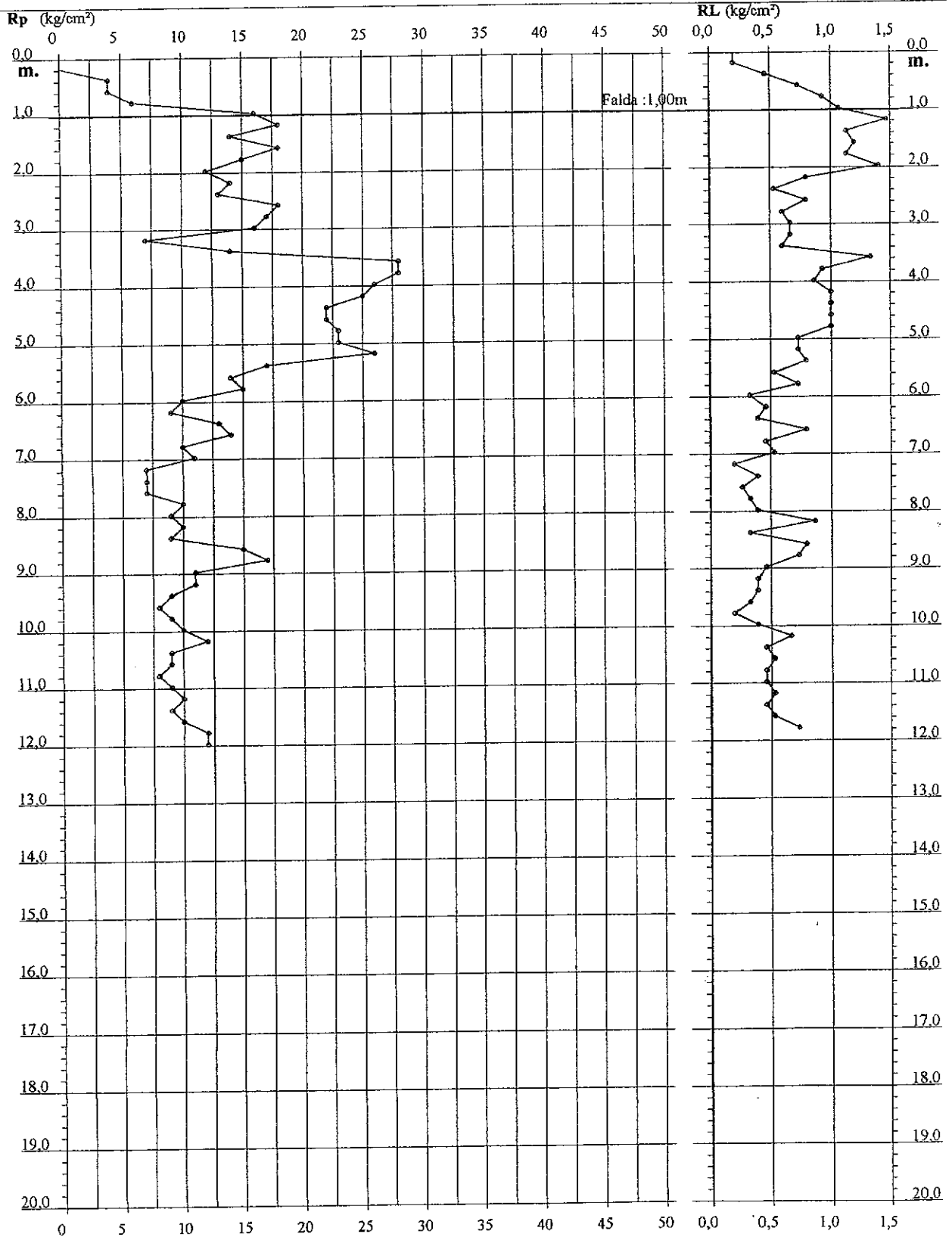
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

2:010496-042

- committente : Sig. Magnoni -FERMEC-
- lavoro : Capannone
- località : Nonantola (MO)

- data : 21/02/2003
- quota inizio : Piano Campagna
- prof. falda : 1,00 m da quota inizio
- scala vert.: 1 : 100



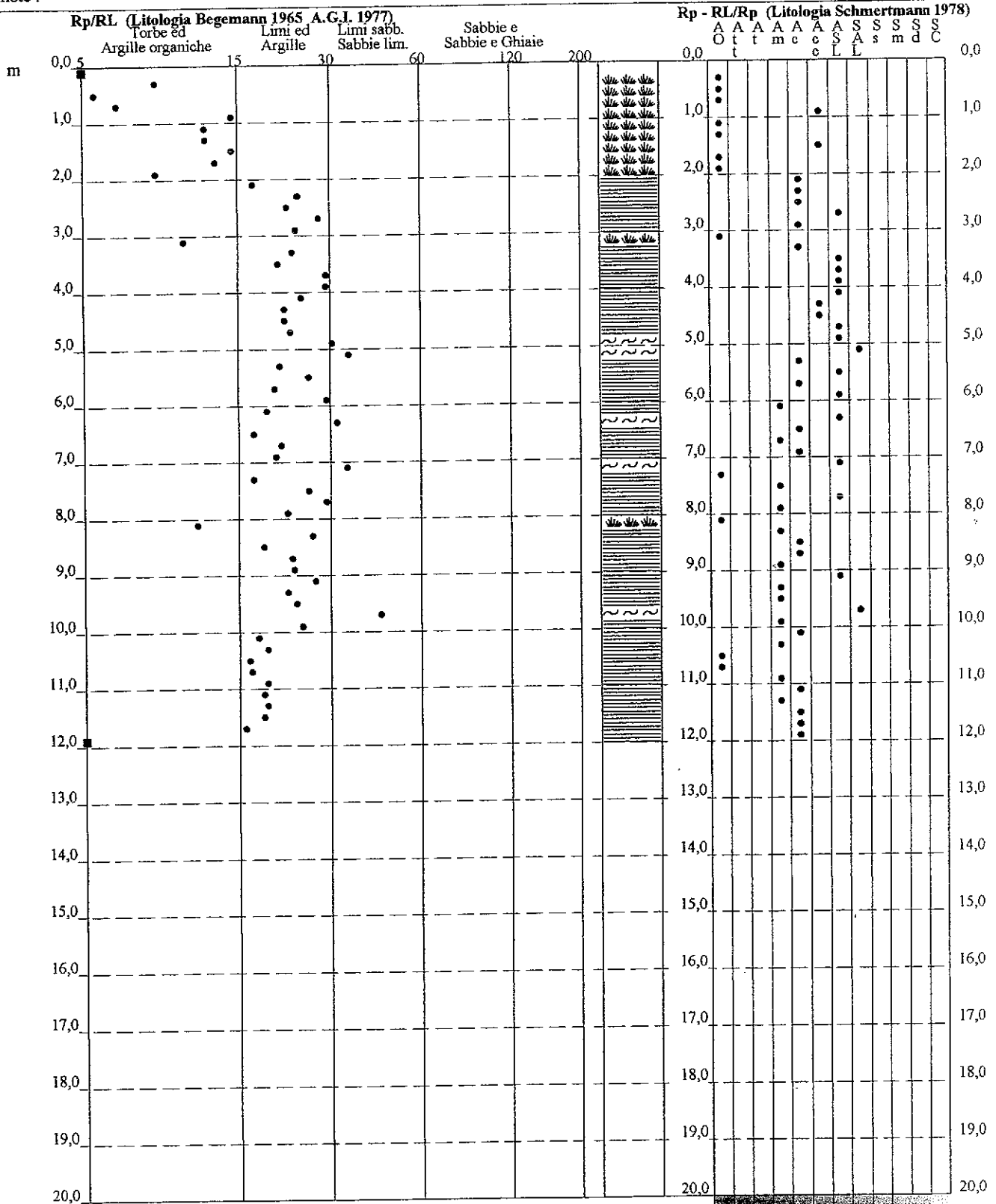
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 1

2:010496-042

- committente : Sig. Magnoni -FERMEC-
- lavoro : Capannone
- località : Nonantola (MO)
- note :

- data : 21/02/2003
- quota inizio : Piano Campagna
- prof. falda : 1,00 m da quota inizio
- scala vert. : 1 : 100



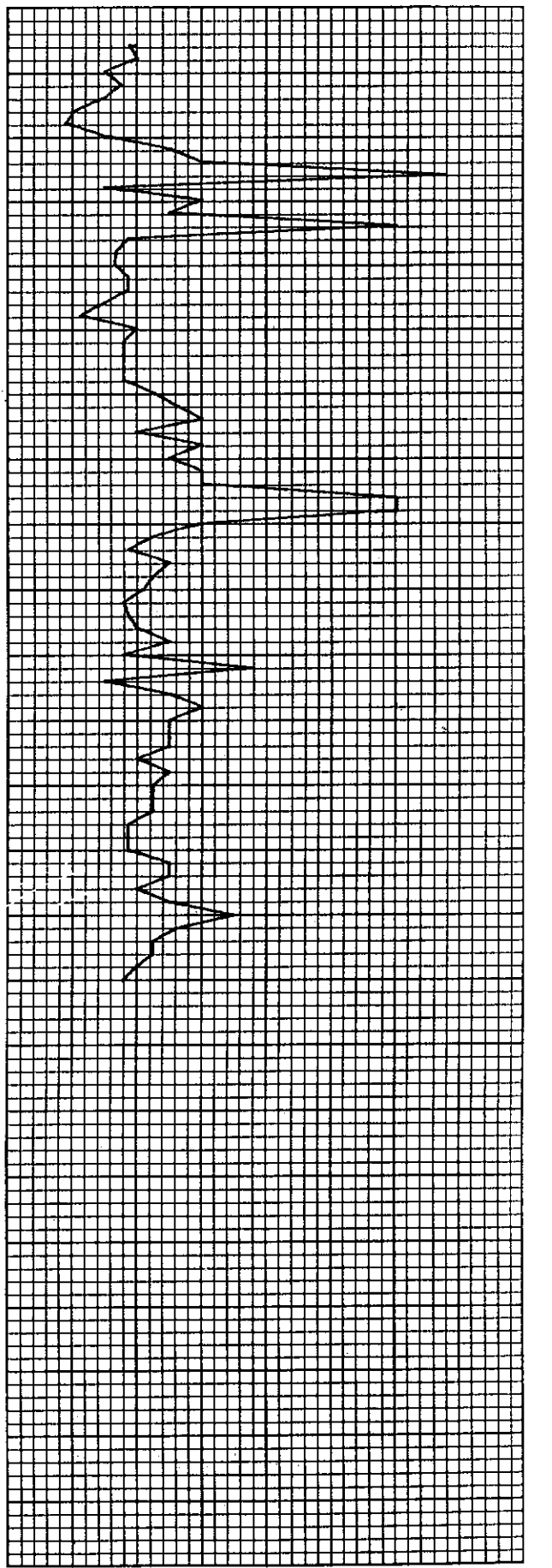
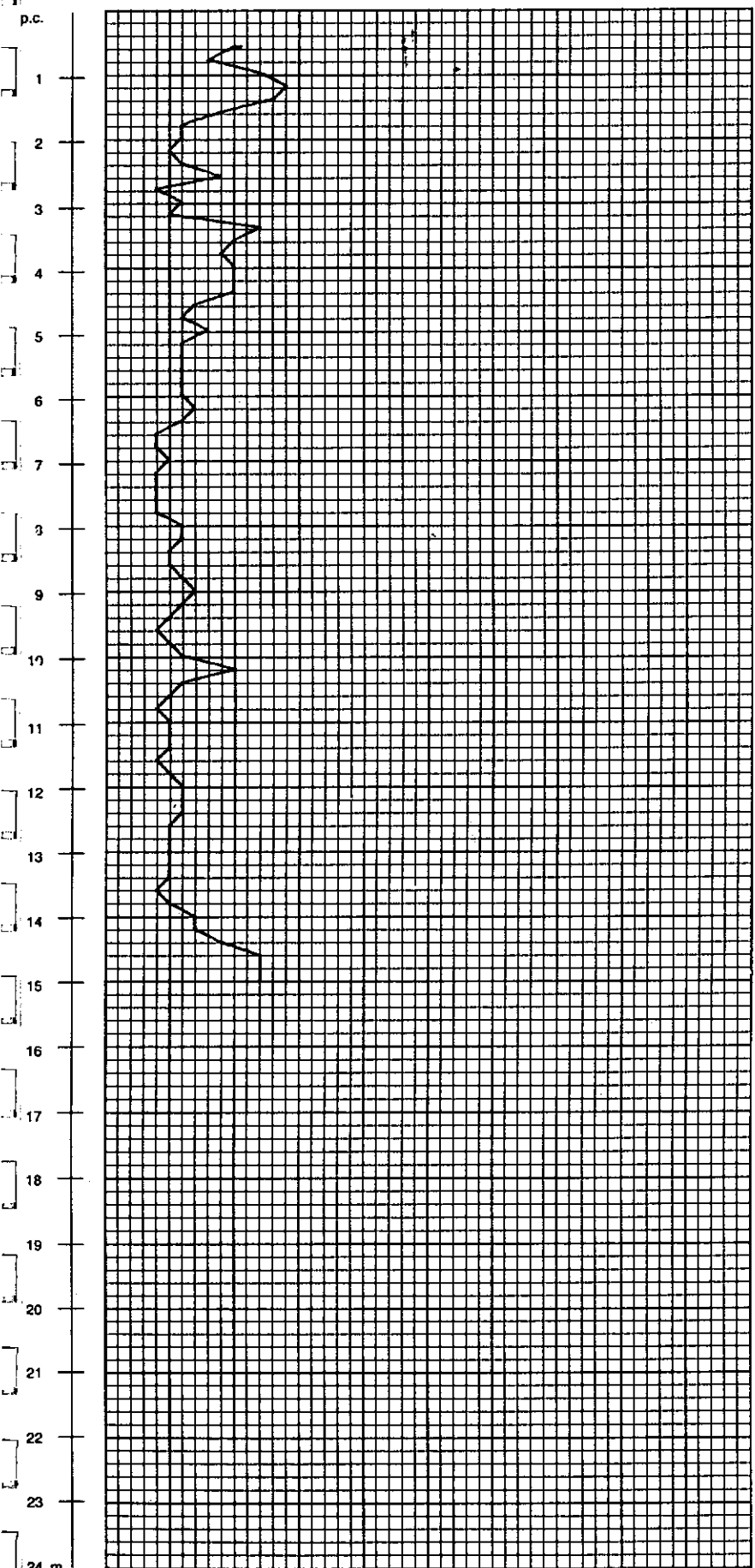
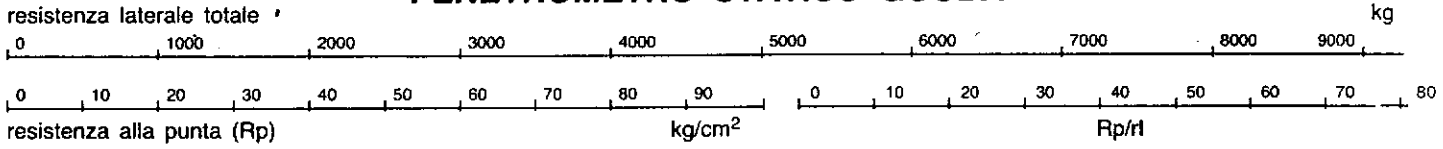


intergeo s.r.l.

41100 MODENA - VIA A. NARDI, 35 - TEL. (059) 225504 - FAX (059) 220738

prova n° 2 quota P.C.
località NONANTOLA
committente I.PRO.A.(ORTIGARO DUE)
data 20/10/94 operatore DR. REBECCHI

PENETROMETRO STATICO GOUDA



INTERGEO SRL
VIA ANACARSI NARDI 35
41100 - MODENA
TELEFONO 059-225504
TELEFAX 059-220738

PROVA PENETROMETRICA STATICA

Penetrometro GOUDA

Committente : I.PRO.A.(ORTIGARO DUE)
Localita` : NONANTOLA
Prova numero : 2
Data : 20/10/94
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. [m] | P [Kg/cm ²] | P+L [Kg/cm ²] | Rp [Kg/cm ²] | R1 [Kg/cm ²] | Rp/R1 |
|--------------|----------------------------|------------------------------|-----------------------------|-----------------------------|-------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 20.00 | 36.00 | 20.00 | 1.07 | 18.75 |
| 0.80 | 16.00 | 28.00 | 16.00 | 0.80 | 20.00 |
| 1.00 | 24.00 | 48.00 | 24.00 | 1.60 | 15.00 |
| 1.20 | 28.00 | 52.00 | 28.00 | 1.60 | 17.50 |
| 1.40 | 26.00 | 52.00 | 26.00 | 1.73 | 15.00 |
| 1.60 | 18.00 | 44.00 | 18.00 | 1.73 | 10.38 |
| 1.80 | 12.00 | 32.00 | 12.00 | 1.33 | 9.00 |
| 2.00 | 12.00 | 24.00 | 12.00 | 0.80 | 15.00 |
| 2.20 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 2.40 | 12.00 | 18.00 | 12.00 | 0.40 | 30.00 |
| 2.60 | 18.00 | 22.00 | 18.00 | 0.27 | 67.50 |
| 2.80 | 8.00 | 16.00 | 8.00 | 0.53 | 15.00 |
| 3.00 | 12.00 | 18.00 | 12.00 | 0.40 | 30.00 |
| 3.20 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 3.40 | 24.00 | 30.00 | 24.00 | 0.40 | 60.00 |
| 3.60 | 20.00 | 36.00 | 20.00 | 1.07 | 18.75 |
| 3.80 | 18.00 | 34.00 | 18.00 | 1.07 | 16.88 |
| 4.00 | 20.00 | 38.00 | 20.00 | 1.20 | 16.67 |
| 4.20 | 20.00 | 36.00 | 20.00 | 1.07 | 18.75 |
| 4.40 | 20.00 | 36.00 | 20.00 | 1.07 | 18.75 |
| 4.60 | 14.00 | 28.00 | 14.00 | 0.93 | 15.00 |
| 4.80 | 12.00 | 28.00 | 12.00 | 1.07 | 11.25 |
| 5.00 | 16.00 | 28.00 | 16.00 | 0.80 | 20.00 |
| 5.20 | 12.00 | 22.00 | 12.00 | 0.67 | 18.00 |
| 5.40 | 12.00 | 22.00 | 12.00 | 0.67 | 18.00 |
| 5.60 | 12.00 | 22.00 | 12.00 | 0.67 | 18.00 |
| 5.80 | 12.00 | 22.00 | 12.00 | 0.67 | 18.00 |
| 6.00 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 6.20 | 14.00 | 22.00 | 14.00 | 0.53 | 26.25 |
| 6.40 | 12.00 | 18.00 | 12.00 | 0.40 | 30.00 |
| 6.60 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 6.80 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 7.00 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 7.20 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 7.40 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 7.60 | 8.00 | 10.00 | 8.00 | 0.13 | 60.00 |
| 7.80 | 8.00 | 10.00 | 8.00 | 0.13 | 60.00 |
| 8.00 | 12.00 | 18.00 | 12.00 | 0.40 | 30.00 |
| 8.20 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 8.40 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 8.60 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 8.80 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 9.00 | 14.00 | 24.00 | 14.00 | 0.67 | 21.00 |
| 9.20 | 12.00 | 22.00 | 12.00 | 0.67 | 18.00 |
| 9.40 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 9.60 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 9.80 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 10.00 | 12.00 | 22.00 | 12.00 | 0.67 | 18.00 |

| Prof. [m] | P [Kg/cm ²] | P+L [Kg/cm ²] | Rp [Kg/cm ²] | R1 [Kg/cm ²] | Rp/R1 |
|--------------|----------------------------|------------------------------|-----------------------------|-----------------------------|-------|
| 10.20 | 20.00 | 28.00 | 20.00 | 0.53 | 37.50 |
| 10.40 | 12.00 | 24.00 | 12.00 | 0.80 | 15.00 |
| 10.60 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 10.80 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 11.00 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 11.20 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 11.40 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 11.60 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 11.80 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 12.00 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 12.20 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 12.40 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 12.60 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 12.80 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 13.00 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 13.20 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 13.40 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 13.60 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 13.80 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 14.00 | 14.00 | 20.00 | 14.00 | 0.40 | 35.00 |
| 14.20 | 14.00 | 22.00 | 14.00 | 0.53 | 26.25 |
| 14.40 | 18.00 | 30.00 | 18.00 | 0.80 | 22.50 |
| 14.60 | 24.00 | 40.00 | 24.00 | 1.07 | 22.50 |
| 14.80 | 24.00 | 42.00 | 24.00 | 1.20 | 20.00 |
| 15.00 | 24.00 | 44.00 | 24.00 | 1.33 | 18.00 |



intergeo s.r.l.

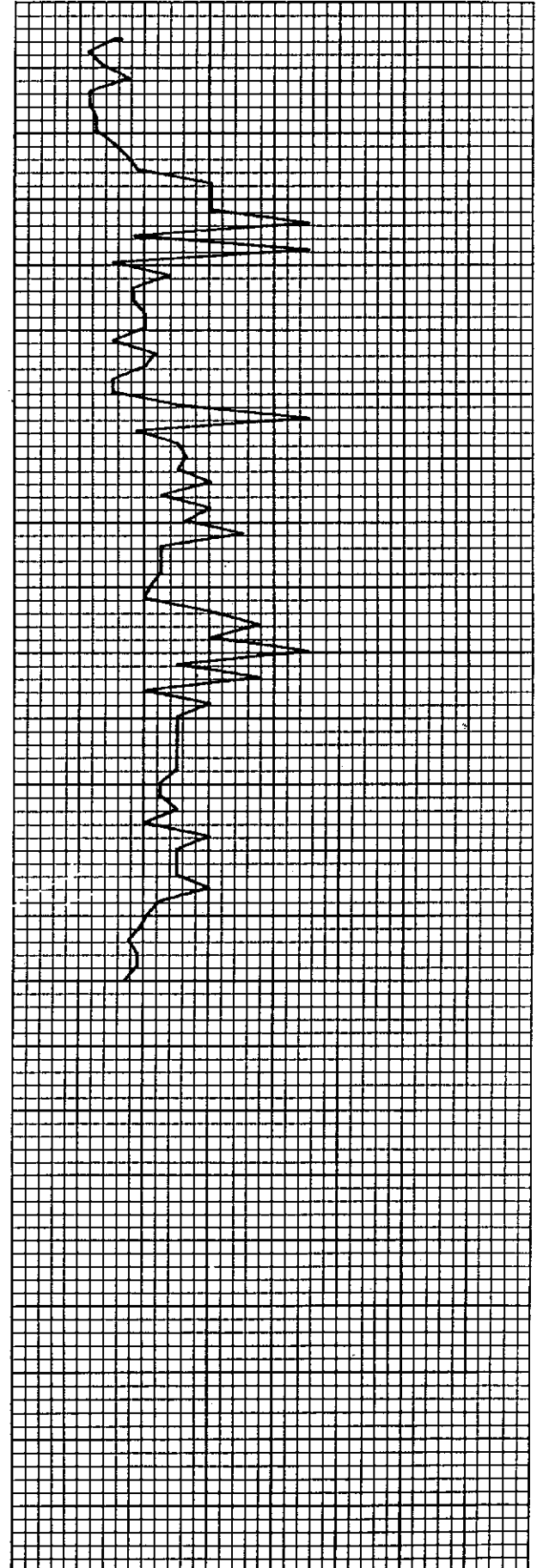
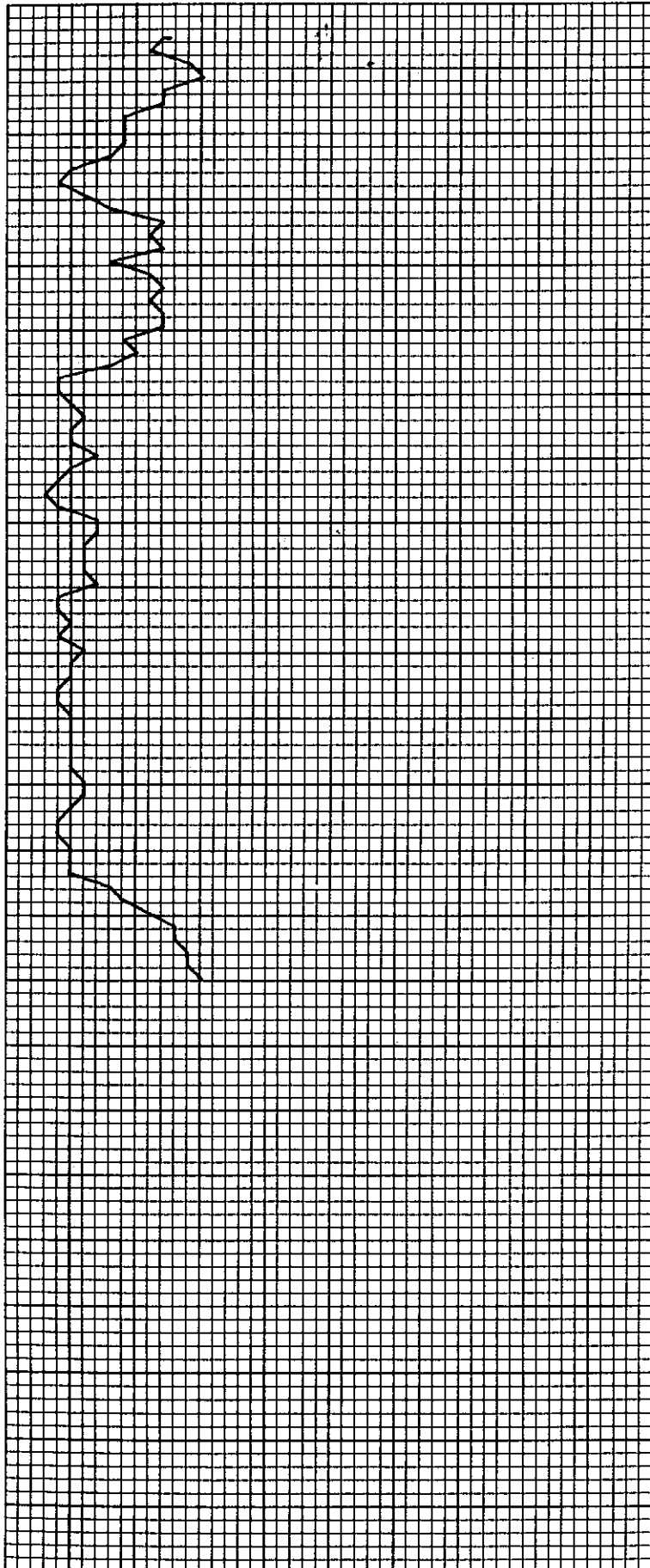
41100 MODENA - VIA A. NARDI, 35 - TEL. (059) 225504 - FAX (059) 220738

prova n° 20 quota P.C.
località NONANTOLA
committente I.PRO.A.(ORTIGIANO DUE)
data 21/10/94 operatore DR. REBECCHI

PENETROMETRO STATICO GOUDA

resistenza laterale totale ' kg
0 1000 2000 3000 4000 5000 6000 7000 8000 9000

resistenza alla punta (Rp) kg/cm² 0 10 20 30 40 50 60 70 80 90
Rp/rl 0 10 20 30 40 50 60 70 80



INTERGEO SRL
VIA ANACARSI NARDI 35
41100 - MODENA
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PROVA PENETROMETRICA STATICA

Penetrometro GOUDA

Committente : I. PRO. A. (ORTIGIANO DUE)
Localita` : NONANTOLA
Prova numero : 20
Data : 21/10/94
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. [m] | P [Kg/cm ²] | P+L [Kg/cm ²] | Rp [Kg/cm ²] | R1 [Kg/cm ²] | Rp/R1 |
|--------------|----------------------------|------------------------------|-----------------------------|-----------------------------|-------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 24.00 | 48.00 | 24.00 | 1.60 | 15.00 |
| 0.80 | 22.00 | 52.00 | 22.00 | 2.00 | 11.00 |
| 1.00 | 28.00 | 60.00 | 28.00 | 2.13 | 13.12 |
| 1.20 | 30.00 | 56.00 | 30.00 | 1.73 | 17.31 |
| 1.40 | 24.00 | 56.00 | 24.00 | 2.13 | 11.25 |
| 1.60 | 24.00 | 56.00 | 24.00 | 2.13 | 11.25 |
| 1.80 | 18.00 | 40.00 | 18.00 | 1.47 | 12.27 |
| 2.00 | 18.00 | 40.00 | 18.00 | 1.47 | 12.27 |
| 2.20 | 18.00 | 36.00 | 18.00 | 1.20 | 15.00 |
| 2.40 | 16.00 | 30.00 | 16.00 | 0.93 | 17.14 |
| 2.60 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 2.80 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 3.00 | 12.00 | 18.00 | 12.00 | 0.40 | 30.00 |
| 3.20 | 16.00 | 24.00 | 16.00 | 0.53 | 30.00 |
| 3.40 | 24.00 | 32.00 | 24.00 | 0.53 | 45.00 |
| 3.60 | 22.00 | 40.00 | 22.00 | 1.20 | 18.33 |
| 3.80 | 24.00 | 32.00 | 24.00 | 0.53 | 45.00 |
| 4.00 | 16.00 | 32.00 | 16.00 | 1.07 | 15.00 |
| 4.20 | 22.00 | 36.00 | 22.00 | 0.93 | 23.57 |
| 4.40 | 24.00 | 44.00 | 24.00 | 1.33 | 18.00 |
| 4.60 | 22.00 | 40.00 | 22.00 | 1.20 | 18.33 |
| 4.80 | 24.00 | 42.00 | 24.00 | 1.20 | 20.00 |
| 5.00 | 24.00 | 42.00 | 24.00 | 1.20 | 20.00 |
| 5.20 | 18.00 | 36.00 | 18.00 | 1.20 | 15.00 |
| 5.40 | 20.00 | 34.00 | 20.00 | 0.93 | 21.43 |
| 5.60 | 16.00 | 28.00 | 16.00 | 0.80 | 20.00 |
| 5.80 | 8.00 | 16.00 | 8.00 | 0.53 | 15.00 |
| 6.00 | 8.00 | 16.00 | 8.00 | 0.53 | 15.00 |
| 6.20 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 6.40 | 12.00 | 16.00 | 12.00 | 0.27 | 45.00 |
| 6.60 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 6.80 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 7.00 | 14.00 | 22.00 | 14.00 | 0.53 | 26.25 |
| 7.20 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 7.40 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 7.60 | 6.00 | 10.00 | 6.00 | 0.27 | 22.50 |
| 7.80 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 8.00 | 14.00 | 22.00 | 14.00 | 0.53 | 26.25 |
| 8.20 | 14.00 | 20.00 | 14.00 | 0.40 | 35.00 |
| 8.40 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 8.60 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 8.80 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 9.00 | 14.00 | 24.00 | 14.00 | 0.67 | 21.00 |
| 9.20 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 9.40 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 9.60 | 10.00 | 14.00 | 10.00 | 0.27 | 37.50 |
| 9.80 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 10.00 | 12.00 | 16.00 | 12.00 | 0.27 | 45.00 |

| Prof. [m] | P [Kg/cm ²] | P+L [Kg/cm ²] | Rp [Kg/cm ²] | R1 [Kg/cm ²] | Rp/R1 |
|--------------|----------------------------|------------------------------|-----------------------------|-----------------------------|-------|
| 10.20 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 10.40 | 10.00 | 14.00 | 10.00 | 0.27 | 37.50 |
| 10.60 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 10.80 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 11.00 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 11.20 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 11.40 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 11.60 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 11.80 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 12.00 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 12.20 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 12.40 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 12.60 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 12.80 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 13.00 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 13.20 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 13.40 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 13.60 | 16.00 | 24.00 | 16.00 | 0.53 | 30.00 |
| 13.80 | 18.00 | 30.00 | 18.00 | 0.80 | 22.50 |
| 14.00 | 22.00 | 38.00 | 22.00 | 1.07 | 20.62 |
| 14.20 | 26.00 | 46.00 | 26.00 | 1.33 | 19.50 |
| 14.40 | 26.00 | 48.00 | 26.00 | 1.47 | 17.73 |
| 14.60 | 28.00 | 50.00 | 28.00 | 1.47 | 19.09 |
| 14.80 | 28.00 | 50.00 | 28.00 | 1.47 | 19.09 |
| 15.00 | 30.00 | 56.00 | 30.00 | 1.73 | 17.31 |



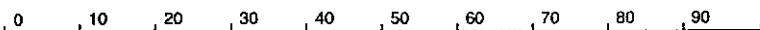
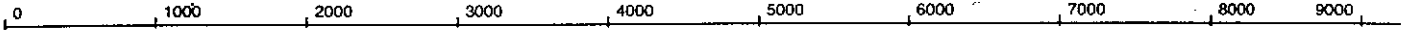
intergeo s.r.l.

41100 MODENA - VIA A. NARDI, 35 - TEL. (059) 225504 - FAX (059) 220738

prova n° 29 quota P.C.
località NONANTOLA
committente I.PRO.A.(ORTIGARO DUE)
data 21/10/94 operatore DR. REBECCHI

PENETROMETRO STATICO GOUDA

resistenza laterale totale



resistenza alla punta (Rp)

kg/cm²

Rp/rl

p.c.

1

2

3

4

5

6

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8

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14

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17

18

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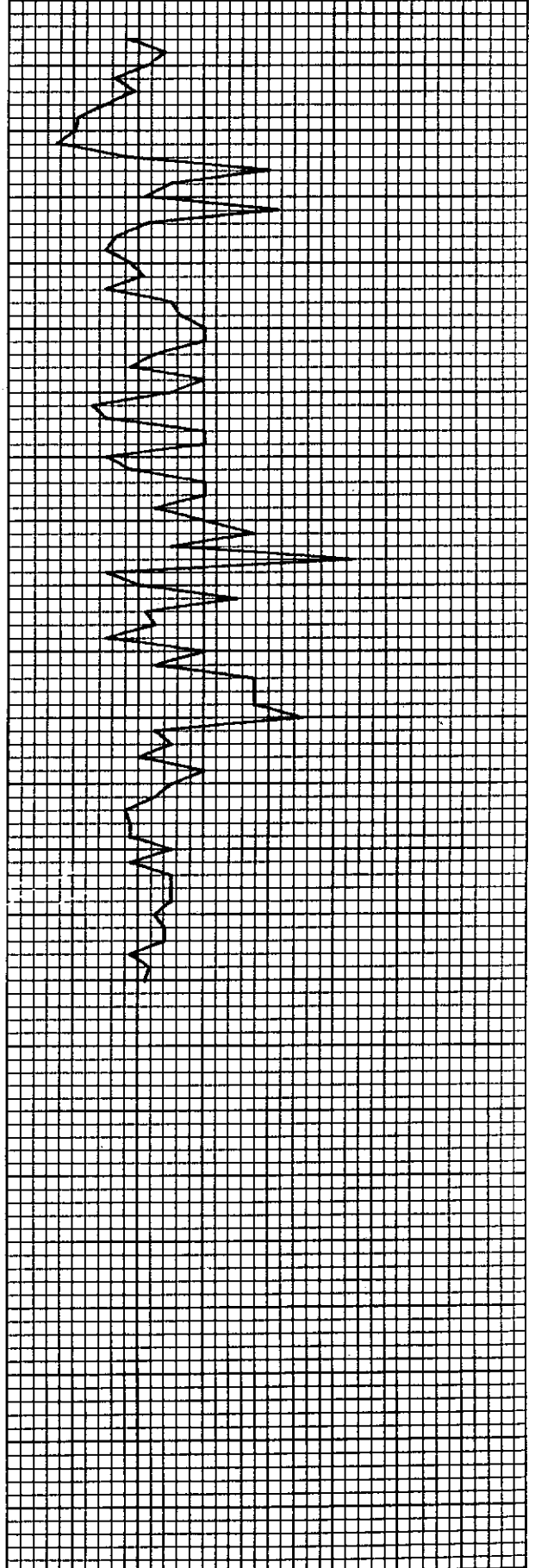
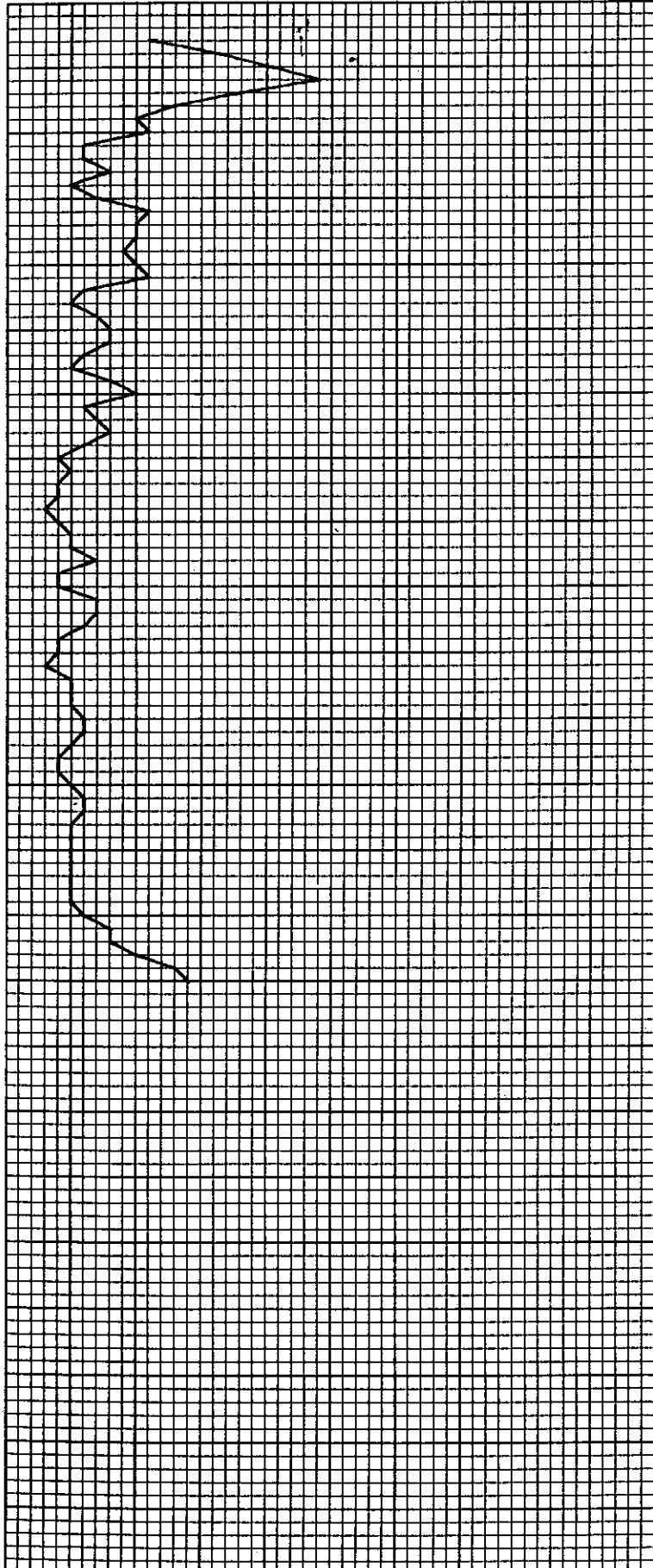
20

21

22

23

24 m



INTERGEO SRL
VIA ANACARSI NARDI 35
41100 - MODENA
TELEFONO 059-225504
TELEFAX 059-220738

PROVA PENETROMETRICA STATICA

Penetrometro GOUDA

Committente : I.PRO.A. (ORTIGARO DUE)
Localita' : NONANTOLA
Prova numero : 29
Data : 21/10/94
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. [m] | P [Kg/cm ²] | P+L [Kg/cm ²] | Rp [Kg/cm ²] | R1 [Kg/cm ²] | Rp/R1 |
|--------------|----------------------------|------------------------------|-----------------------------|-----------------------------|-------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 22.00 | 40.00 | 22.00 | 1.20 | 18.33 |
| 0.80 | 32.00 | 52.00 | 32.00 | 1.33 | 24.00 |
| 1.00 | 40.00 | 68.00 | 40.00 | 1.87 | 21.43 |
| 1.20 | 48.00 | 92.00 | 48.00 | 2.93 | 16.36 |
| 1.40 | 36.00 | 64.00 | 36.00 | 1.87 | 19.29 |
| 1.60 | 26.00 | 52.00 | 26.00 | 1.73 | 15.00 |
| 1.80 | 20.00 | 48.00 | 20.00 | 1.87 | 10.71 |
| 2.00 | 22.00 | 54.00 | 22.00 | 2.13 | 10.31 |
| 2.20 | 12.00 | 36.00 | 12.00 | 1.60 | 7.50 |
| 2.40 | 12.00 | 22.00 | 12.00 | 0.67 | 18.00 |
| 2.60 | 16.00 | 22.00 | 16.00 | 0.40 | 40.00 |
| 2.80 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 3.00 | 14.00 | 24.00 | 14.00 | 0.67 | 21.00 |
| 3.20 | 22.00 | 30.00 | 22.00 | 0.53 | 41.25 |
| 3.40 | 20.00 | 34.00 | 20.00 | 0.93 | 21.43 |
| 3.60 | 20.00 | 38.00 | 20.00 | 1.20 | 16.67 |
| 3.80 | 18.00 | 36.00 | 18.00 | 1.20 | 15.00 |
| 4.00 | 20.00 | 36.00 | 20.00 | 1.07 | 18.75 |
| 4.20 | 22.00 | 38.00 | 22.00 | 1.07 | 20.62 |
| 4.40 | 12.00 | 24.00 | 12.00 | 0.80 | 15.00 |
| 4.60 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 4.80 | 14.00 | 22.00 | 14.00 | 0.53 | 26.25 |
| 5.00 | 16.00 | 24.00 | 16.00 | 0.53 | 30.00 |
| 5.20 | 16.00 | 24.00 | 16.00 | 0.53 | 30.00 |
| 5.40 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 5.60 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 5.80 | 16.00 | 24.00 | 16.00 | 0.53 | 30.00 |
| 6.00 | 20.00 | 32.00 | 20.00 | 0.80 | 25.00 |
| 6.20 | 12.00 | 26.00 | 12.00 | 0.93 | 12.86 |
| 6.40 | 14.00 | 28.00 | 14.00 | 0.93 | 15.00 |
| 6.60 | 16.00 | 24.00 | 16.00 | 0.53 | 30.00 |
| 6.80 | 12.00 | 18.00 | 12.00 | 0.40 | 30.00 |
| 7.00 | 8.00 | 16.00 | 8.00 | 0.53 | 15.00 |
| 7.20 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 7.40 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 7.60 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 7.80 | 6.00 | 10.00 | 6.00 | 0.27 | 22.50 |
| 8.00 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 8.20 | 10.00 | 14.00 | 10.00 | 0.27 | 37.50 |
| 8.40 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 8.60 | 14.00 | 18.00 | 14.00 | 0.27 | 52.50 |
| 8.80 | 8.00 | 16.00 | 8.00 | 0.53 | 15.00 |
| 9.00 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 9.20 | 14.00 | 20.00 | 14.00 | 0.40 | 35.00 |
| 9.40 | 14.00 | 24.00 | 14.00 | 0.67 | 21.00 |
| 9.60 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 9.80 | 8.00 | 16.00 | 8.00 | 0.53 | 15.00 |
| 10.00 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |

| Prof. [m] | F [Kg/cm ²] | P+L [Kg/cm ²] | Rp [Kg/cm ²] | R1 [Kg/cm ²] | Rp/R1 |
|--------------|----------------------------|------------------------------|-----------------------------|-----------------------------|-------|
| 10.20 | 6.00 | 10.00 | 6.00 | 0.27 | 22.50 |
| 10.40 | 10.00 | 14.00 | 10.00 | 0.27 | 37.50 |
| 10.60 | 10.00 | 14.00 | 10.00 | 0.27 | 37.50 |
| 10.80 | 10.00 | 14.00 | 10.00 | 0.27 | 37.50 |
| 11.00 | 12.00 | 16.00 | 12.00 | 0.27 | 45.00 |
| 11.20 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 11.40 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 11.60 | 8.00 | 14.00 | 8.00 | 0.40 | 20.00 |
| 11.80 | 8.00 | 12.00 | 8.00 | 0.27 | 30.00 |
| 12.00 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 12.20 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 12.40 | 12.00 | 22.00 | 12.00 | 0.67 | 18.00 |
| 12.60 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 12.80 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 13.00 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 13.20 | 10.00 | 18.00 | 10.00 | 0.53 | 18.75 |
| 13.40 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 13.60 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 13.80 | 10.00 | 16.00 | 10.00 | 0.40 | 25.00 |
| 14.00 | 12.00 | 20.00 | 12.00 | 0.53 | 22.50 |
| 14.20 | 16.00 | 26.00 | 16.00 | 0.67 | 24.00 |
| 14.40 | 16.00 | 26.00 | 16.00 | 0.67 | 24.00 |
| 14.60 | 20.00 | 36.00 | 20.00 | 1.07 | 18.75 |
| 14.80 | 26.00 | 44.00 | 26.00 | 1.20 | 21.67 |
| 15.00 | 28.00 | 48.00 | 28.00 | 1.33 | 21.00 |

**PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA**

CPT 1

3.010496-043

| | | | |
|---------------------|---|------------------|------------------------|
| - committente: | Geo Group srl | - data prova : | 20/05/2005 |
| - lavoro: | Studio terreno di fondazione | - quota inizio : | Piano Campagna |
| - località: | Nonantola (MO) - Comparto S. Francesco - Lotto 26 | - prof. falda : | 1,70 m da quota inizio |
| - resp. cantiere: | Dott.ssa Arianna Casarini | - data emiss. : | 20/05/2005 |
| - assist. cantiere: | Sig. Giuseppe Colucci | - pagina n°: | 1/4 |

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | -- | 0,07 | --- | 5,20 | 12,0 | 23,0 | 12,0 | 0,67 | 18,0 |
| 0,40 | --- | 1,0 | -- | 0,93 | --- | 5,40 | 15,0 | 25,0 | 15,0 | 0,87 | 17,0 |
| 0,60 | 10,0 | 24,0 | 10,0 | 0,93 | 11,0 | 5,60 | 15,0 | 28,0 | 15,0 | 0,73 | 20,0 |
| 0,80 | 12,0 | 26,0 | 12,0 | 0,80 | 15,0 | 5,80 | 21,0 | 32,0 | 21,0 | 0,67 | 31,0 |
| 1,00 | 12,0 | 24,0 | 12,0 | 0,73 | 16,0 | 6,00 | 17,0 | 27,0 | 17,0 | 0,60 | 28,0 |
| 1,20 | 15,0 | 26,0 | 15,0 | 0,67 | 22,0 | 6,20 | 14,0 | 23,0 | 14,0 | 0,47 | 30,0 |
| 1,40 | 14,0 | 24,0 | 14,0 | 0,87 | 16,0 | 6,40 | 21,0 | 28,0 | 21,0 | 0,60 | 35,0 |
| 1,60 | 15,0 | 28,0 | 15,0 | 0,73 | 20,0 | 6,60 | 12,0 | 21,0 | 12,0 | 0,53 | 22,0 |
| 1,80 | 16,0 | 27,0 | 16,0 | 1,00 | 16,0 | 6,80 | 10,0 | 18,0 | 10,0 | 0,40 | 25,0 |
| 2,00 | 19,0 | 34,0 | 19,0 | 0,80 | 24,0 | 7,00 | 9,0 | 15,0 | 9,0 | 0,53 | 17,0 |
| 2,20 | 26,0 | 38,0 | 26,0 | 1,27 | 21,0 | 7,20 | 9,0 | 17,0 | 9,0 | 0,67 | 13,0 |
| 2,40 | 17,0 | 36,0 | 17,0 | 1,00 | 17,0 | 7,40 | 11,0 | 21,0 | 11,0 | 0,73 | 15,0 |
| 2,60 | 18,0 | 33,0 | 18,0 | 0,80 | 22,0 | 7,60 | 12,0 | 23,0 | 12,0 | 0,73 | 16,0 |
| 2,80 | 25,0 | 37,0 | 25,0 | 1,27 | 20,0 | 7,80 | 12,0 | 23,0 | 12,0 | 0,80 | 15,0 |
| 3,00 | 27,0 | 46,0 | 27,0 | 1,47 | 18,0 | 8,00 | 12,0 | 24,0 | 12,0 | 0,80 | 15,0 |
| 3,20 | 25,0 | 47,0 | 25,0 | 1,40 | 18,0 | 8,20 | 12,0 | 24,0 | 12,0 | 0,73 | 16,0 |
| 3,40 | 23,0 | 44,0 | 23,0 | 1,40 | 16,0 | 8,40 | 11,0 | 22,0 | 11,0 | 0,80 | 14,0 |
| 3,60 | 19,0 | 40,0 | 19,0 | 1,20 | 16,0 | 8,60 | 10,0 | 22,0 | 10,0 | 0,67 | 15,0 |
| 3,80 | 19,0 | 37,0 | 19,0 | 1,00 | 19,0 | 8,80 | 13,0 | 23,0 | 13,0 | 0,60 | 22,0 |
| 4,00 | 12,0 | 27,0 | 12,0 | 0,80 | 15,0 | 9,00 | 10,0 | 19,0 | 10,0 | 0,67 | 15,0 |
| 4,20 | 13,0 | 25,0 | 13,0 | 0,73 | 18,0 | 9,20 | 12,0 | 22,0 | 12,0 | 0,60 | 20,0 |
| 4,40 | 18,0 | 29,0 | 18,0 | 0,93 | 19,0 | 9,40 | 13,0 | 22,0 | 13,0 | 0,80 | 16,0 |
| 4,60 | 15,0 | 29,0 | 15,0 | 0,87 | 17,0 | 9,60 | 13,0 | 25,0 | 13,0 | 0,80 | 16,0 |
| 4,80 | 15,0 | 28,0 | 15,0 | 0,67 | 22,0 | 9,80 | 14,0 | 26,0 | 14,0 | 0,80 | 17,0 |
| 5,00 | 13,0 | 23,0 | 13,0 | 0,73 | 18,0 | 10,00 | 13,0 | 25,0 | 13,0 | --- | --- |

PROVE PENETROMETRICHE srl
ELABORAZIONE DATI
IL TECNICO

- PENETROMETRO STATICO tipo PAGANI da 10 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann ø = 35.7 mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

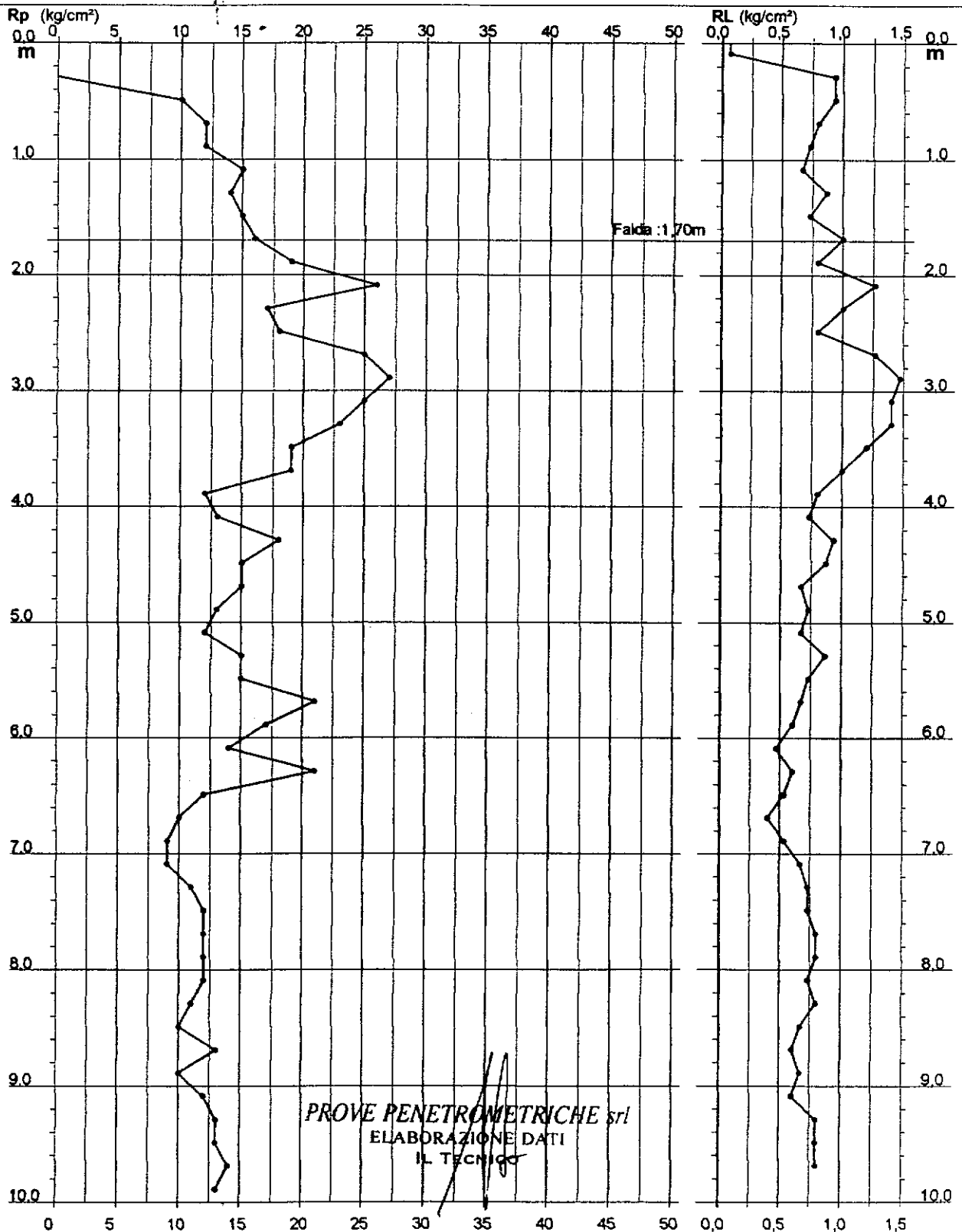
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

3.010496-043

- committente: Geo Group srl
 - lavoro: Studio terreno di fondazione
 - località: Nonantola (MO) - Comparto S. Francesco - Lotto 26
 - resp. cantiere: Dott.ssa Arianna Casarini
 - assist. cantiere: Sig. Giuseppe Colucci

- data prova : 20/05/2005
 - quota inizio : Piano Campagna
 - prof. falda : 1,70 m da quota inizio
 - scala vert. : 1 : 50
 - data emiss. : 20/05/2005
 - pagina n°: 2/4



PROVE PENETROMETRICHE srl
 ELABORAZIONE DATI
 IL TECNICO

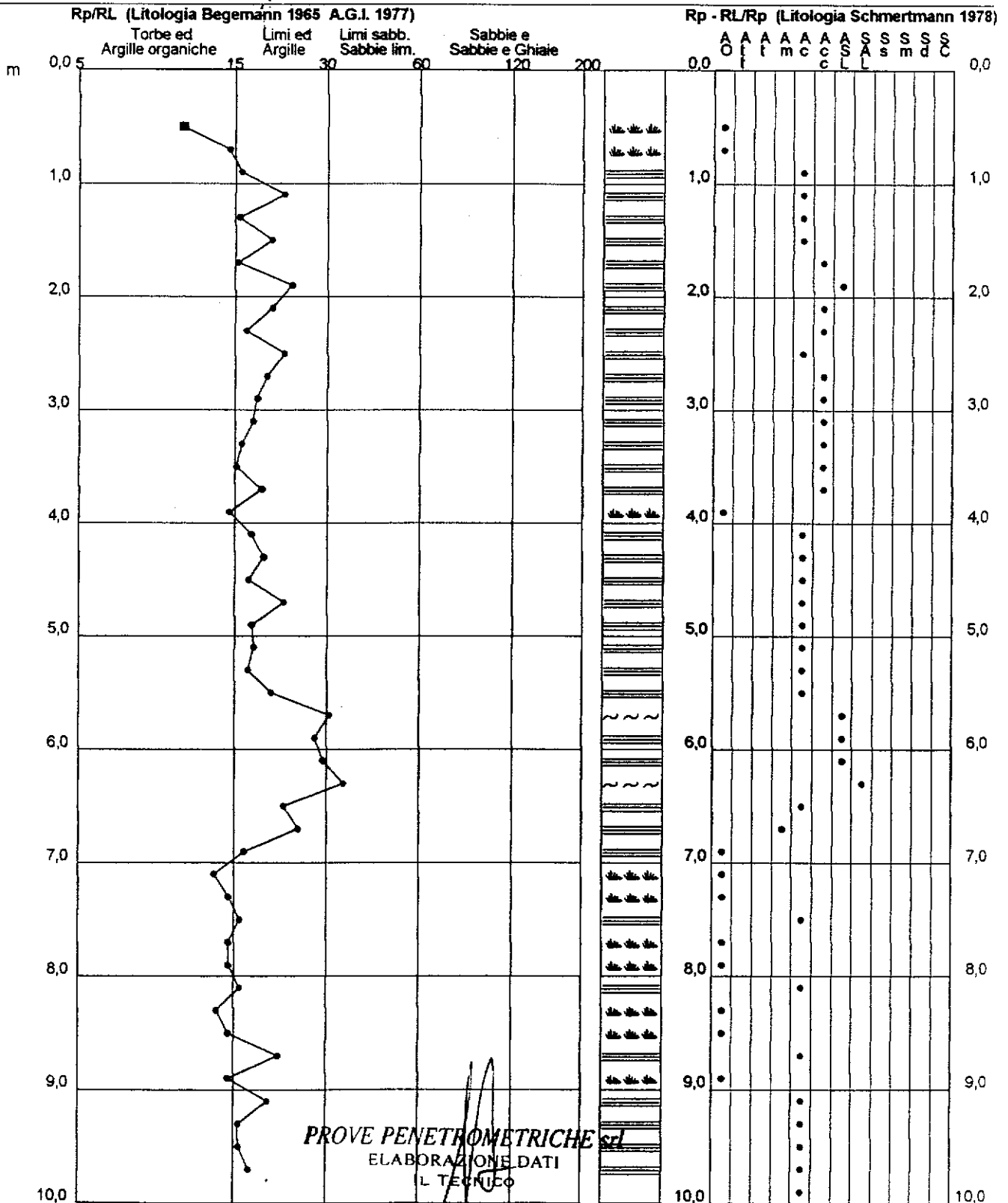
**PROVA PENETROMETRICA STATICA
 VALUTAZIONI LITOLOGICHE**

CPT 1

3.010496-043

- committente: Geo Group srl
 - lavoro: Studio terreno di fondazione
 - località: Nonantola (MO) - Comparto S. Francesco - Lotto 26
 - resp. cantiere: Dott.ssa Arianna Casarini
 - assist. cantiere: Sig. Giuseppe Colucci

- data prova : 20/05/2005
 - quota inizio : Piano Campagna
 - prof. falda : 1,70 m da quota inizio
 - scala vert. : 1 : 50
 - data emiss. : 20/05/2005
 - pagina n° : 3/4



PROVA PENETROMETRICA STATICA
TABELLA PARAMETRI GEOTECNICI

CPT 1

3.010496-043

- committente: Geo Group srl
- lavoro: Studio terreno di fondazione
- località: Nonantola (MO) - Comparto S. Francesco - Lotto 26
- resp. cantiere: Dott.ssa Arianna Casarini
- assist. cantiere: Sig. Giuseppe Colucci

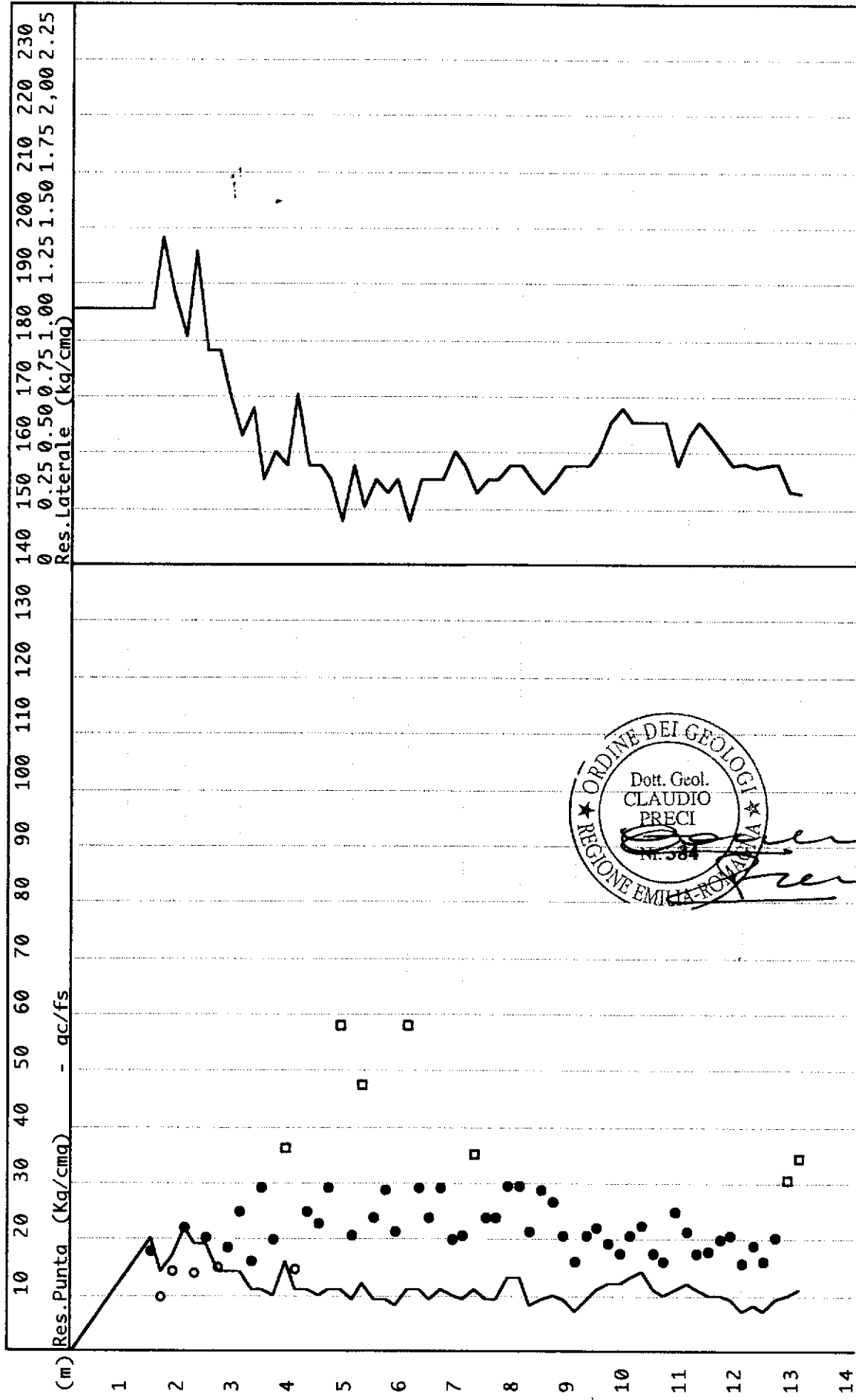
- data prova : 20/05/2005
- quota inizio : Piano Campagna
- prof. falda : 1,70 m da quota inizio

- data emiss. : 20/05/2005
- pagina n° : 4/4

| NATURA COESIVA | | | | | | | | | | | NATURA GRANULARE | | | | | | | | | | | |
|----------------|-----------------------|-----------|---------------|--------------------|-------------------------|-----------------------|---------|-------------------------|-------------------------|-----------------------|------------------|---------|---------|---------|---------|---------|---------|------------|------------------------|------------------------|-----------------------|----|
| Prof. m | Rp kg/cm ² | Rp/Ri (-) | Natura Litol. | Y t/m ³ | p'vo kg/cm ² | Cu kg/cm ² | OCR (-) | Eu50 kg/cm ² | Eu25 kg/cm ² | Mo kg/cm ² | Dr % | σ1s (°) | σ2s (°) | σ3s (°) | σ4s (°) | σdm (°) | σmy (°) | Amax/g (-) | E50 kg/cm ² | E25 kg/cm ² | Mo kg/cm ² | |
| 0,20 | -- | -- | ??? | 1,85 | 0,04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,40 | -- | -- | ??? | 1,85 | 0,07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,60 | 10 | 11 | 2/III | 1,85 | 0,11 | 0,50 | 41,2 | 85 | 128 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,80 | 12 | 15 | 2/III | 1,85 | 0,15 | 0,57 | 34,0 | 97 | 146 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,00 | 12 | 16 | 2/III | 1,85 | 0,19 | 0,57 | 25,7 | 97 | 146 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,20 | 15 | 22 | 2/III | 1,85 | 0,22 | 0,67 | 24,8 | 113 | 170 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,40 | 14 | 16 | 2/III | 1,85 | 0,26 | 0,64 | 19,3 | 108 | 162 | 48 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,60 | 15 | 20 | 2/III | 1,85 | 0,30 | 0,67 | 17,3 | 113 | 170 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,80 | 16 | 16 | 2/III | 0,98 | 0,32 | 0,70 | 16,9 | 118 | 177 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,00 | 19 | 24 | 2/III | 0,99 | 0,34 | 0,78 | 17,9 | 132 | 198 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,20 | 26 | 21 | 4/F | 0,95 | 0,35 | 0,93 | 21,0 | 158 | 237 | 78 | 51 | 35 | 37 | 40 | 42 | 35 | 28 | 0,107 | 43 | 65 | 78 | |
| 2,40 | 17 | 17 | 2/III | 0,97 | 0,37 | 0,72 | 14,4 | 123 | 184 | 54 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,60 | 18 | 22 | 2/III | 0,98 | 0,39 | 0,75 | 14,1 | 128 | 191 | 56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,80 | 25 | 20 | 4/F | 0,94 | 0,41 | 0,91 | 18,9 | 155 | 232 | 75 | 46 | 34 | 37 | 39 | 42 | 34 | 28 | 0,094 | 42 | 63 | 75 | |
| 3,00 | 27 | 18 | 4/F | 0,95 | 0,43 | 0,95 | 16,8 | 161 | 242 | 81 | 48 | 35 | 37 | 39 | 42 | 34 | 28 | 0,098 | 45 | 68 | 81 | |
| 3,20 | 25 | 18 | 4/F | 0,94 | 0,45 | 0,91 | 15,1 | 155 | 232 | 75 | 44 | 34 | 37 | 39 | 42 | 34 | 28 | 0,089 | 42 | 63 | 75 | |
| 3,40 | 23 | 16 | 4/F | 0,94 | 0,47 | 0,87 | 13,6 | 148 | 221 | 69 | 40 | 34 | 36 | 39 | 41 | 33 | 28 | 0,080 | 38 | 58 | 69 | |
| 3,60 | 19 | 16 | 2/III | 0,99 | 0,49 | 0,78 | 11,2 | 132 | 198 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,80 | 19 | 19 | 2/III | 0,99 | 0,51 | 0,78 | 10,7 | 132 | 198 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,00 | 12 | 15 | 2/III | 0,92 | 0,53 | 0,57 | 7,0 | 132 | 199 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,20 | 13 | 18 | 2/III | 0,93 | 0,55 | 0,60 | 7,1 | 136 | 204 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,40 | 18 | 19 | 2/III | 0,98 | 0,56 | 0,75 | 9,0 | 134 | 201 | 56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,60 | 15 | 17 | 2/III | 0,95 | 0,58 | 0,67 | 7,4 | 143 | 215 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,80 | 15 | 22 | 2/III | 0,95 | 0,60 | 0,67 | 7,1 | 150 | 225 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,00 | 13 | 18 | 2/III | 0,93 | 0,62 | 0,60 | 6,1 | 164 | 248 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,20 | 12 | 18 | 2/III | 0,92 | 0,64 | 0,57 | 5,5 | 174 | 281 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,40 | 15 | 17 | 2/III | 0,95 | 0,66 | 0,67 | 6,4 | 171 | 256 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,60 | 15 | 20 | 2/III | 0,95 | 0,68 | 0,67 | 6,2 | 178 | 267 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,80 | 21 | 31 | 3/III | 0,85 | 0,69 | -- | -- | -- | -- | -- | 27 | 32 | 35 | 37 | 40 | 30 | 27 | 0,052 | 35 | 53 | 63 | |
| 6,00 | 17 | 28 | 2/III | 0,97 | 0,71 | 0,72 | 6,4 | 185 | 273 | 54 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,20 | 14 | 30 | 4/F | 0,89 | 0,73 | 0,64 | 5,3 | 200 | 300 | 48 | 12 | 30 | 33 | 36 | 39 | 28 | 26 | 0,024 | 23 | 35 | 42 | |
| 6,40 | 21 | 35 | 3/III | 0,85 | 0,75 | -- | -- | -- | -- | -- | 25 | 32 | 34 | 37 | 40 | 30 | 27 | 0,048 | 35 | 53 | 63 | |
| 6,60 | 12 | 22 | 2/III | 0,92 | 0,77 | 0,57 | 4,3 | 214 | 321 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,80 | 10 | 25 | 2/III | 0,90 | 0,79 | 0,50 | 3,6 | 222 | 332 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,00 | 9 | 17 | 2/III | 0,88 | 0,80 | 0,45 | 3,0 | 220 | 331 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,20 | 9 | 13 | 2/III | 0,88 | 0,82 | 0,45 | 3,0 | 223 | 335 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,40 | 11 | 15 | 2/III | 0,91 | 0,84 | 0,54 | 3,6 | 237 | 355 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,60 | 12 | 16 | 2/III | 0,92 | 0,86 | 0,57 | 3,8 | 241 | 362 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,80 | 12 | 15 | 2/III | 0,92 | 0,88 | 0,57 | 3,7 | 247 | 371 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,00 | 12 | 15 | 2/III | 0,92 | 0,89 | 0,57 | 3,6 | 252 | 379 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,20 | 12 | 16 | 2/III | 0,92 | 0,91 | 0,57 | 3,5 | 257 | 386 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,40 | 11 | 14 | 2/III | 0,91 | 0,93 | 0,54 | 3,2 | 258 | 387 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,60 | 10 | 15 | 2/III | 0,90 | 0,95 | 0,50 | 2,8 | 254 | 380 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,80 | 13 | 22 | 2/III | 0,93 | 0,97 | 0,60 | 3,5 | 273 | 409 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,00 | 10 | 15 | 2/III | 0,90 | 0,99 | 0,50 | 2,7 | 258 | 388 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,20 | 12 | 20 | 2/III | 0,92 | 1,00 | 0,57 | 3,1 | 277 | 415 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,40 | 13 | 18 | 2/III | 0,93 | 1,02 | 0,60 | 3,3 | 285 | 428 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,60 | 13 | 16 | 2/III | 0,93 | 1,04 | 0,60 | 3,2 | 289 | 434 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,80 | 14 | 17 | 2/III | 0,94 | 1,08 | 0,64 | 3,3 | 297 | 445 | 48 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,00 | 13 | -- | 2/III | 0,93 | 1,08 | 0,60 | 3,0 | 296 | 444 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

PROVE PENETROMETRICHE
ELABORAZIONE DATI
IL TECNICO

CRT n° 1 data. 30/05/2004
 Cantiere: P.P.I.P. S. Francesco - Lotto 32 - Nonantola
 Committente: SOCEDIL srl



CLASSIFICAZIONE DI BEGEMANN per qc/fs
 ○ Torbe e argille organiche
 ● Limi ed argille
 □ Sabbie e limi
 ■ Sabbie e/o Ghiaie

qc: 1 cm = 10 Kg/cm2
 fs: 1 cm = 0,25 Kg/cm2
 qc/fs: 1 cm = 10

| Prof ml | Strati | Tipologia | Gamma kg/m3 | Gamma' kg/m3 | Sigma'V kg/cm2 | CU kg/cmq | FI ° | DR % | Mv cm2/Kg | K oriz Kg/cm3 | Perm. cm/sec |
|------------|--------|------------------------|----------------|-----------------|-------------------|--------------|---------|---------|--------------|------------------|-----------------|
| 2.40 | FALDA | Argilla molto compatta | 1851 | 1851 | 0.444 | 0.963 | 0 | 0 | 0.018227 | 1.9250 | 7.4e-5 |
| 3.60 | | Argilla compatta | 1784 | 784 | 0.538 | 0.617 | 0 | 0 | 0.040541 | 1.2333 | 2.1e-4 |
| 3.80 | | Limo argilloso | 1823 | 823 | 0.555 | 0.800 | 0 | 0 | 0.014205 | 1.0667 | 1.1e-2 |
| 4.60 | | Argilla media | 1764 | 764 | 0.616 | 0.537 | 0 | 0 | 0.018151 | 1.0750 | 5.1e-4 |
| 5.20 | | Limo argilloso | 1763 | 763 | 0.662 | 0.533 | 0 | 0 | 0.014960 | 0.7111 | 1.1e-2 |
| 5.80 | | Argilla media | 1732 | 732 | 0.706 | 0.433 | 0 | 0 | 0.018711 | 0.8667 | 1.2e-3 |
| 6.00 | | Sabbia sciolta | 1650 | 650 | 0.719 | 0.000 | 22 | 15 | 0.045455 | 0.5500 | 5.8e-2 |
| 7.60 | | Argilla media | 1751 | 751 | 0.839 | 0.494 | 0 | 0 | 0.018205 | 0.9875 | 1.5e-3 |
| 8.00 | | Argilla limosa | 1792 | 792 | 0.871 | 0.650 | 0 | 0 | 0.015385 | 1.3000 | 3.9e-3 |
| 9.20 | | Argilla media | 1732 | 732 | 0.958 | 0.433 | 0 | 0 | 0.018711 | 0.8667 | 5.8e-4 |
| 11.60 | | Argilla compatta | 1773 | 773 | 1.144 | 0.571 | 0 | 0 | 0.043796 | 1.1417 | 2.2e-4 |
| 12.60 | | Argilla media | 1720 | 720 | 1.216 | 0.400 | 0 | 0 | 0.019231 | 0.8000 | 1.5e-4 |
| 13.00 | | Argilla limosa | 1760 | 760 | 1.246 | 0.525 | 0 | 0 | 0.018141 | 1.0500 | 6.3e-3 |

RELAZIONE TECNICA

CPT n°1 data:30/09/2004
 Cantiere: P.P.I.P. S.Francesco - Lotto 32 - Nonantola
 Committente: SOCEDIL srl

Quota livello di falda: 2.40

Dati prova penetrometrica statica

| Prof. | Resistenza di Punta | Resistenza laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| 1.40 | 20.00 | 1.14 | 17.56 |
| 1.60 | 14.00 | 1.46 | 9.62 |
| 1.80 | 17.00 | 1.20 | 14.14 |
| 2.00 | 22.00 | 1.01 | 21.73 |
| 2.20 | 19.00 | 1.39 | 13.65 |
| 2.40 | 19.00 | 0.95 | 20.01 |
| 2.60 | 14.00 | 0.95 | 14.75 |
| 2.80 | 14.00 | 0.76 | 18.43 |
| 3.00 | 14.00 | 0.57 | 24.58 |
| 3.20 | 11.00 | 0.70 | 15.80 |
| 3.40 | 11.00 | 0.38 | 28.97 |
| 3.60 | 10.00 | 0.51 | 19.75 |
| 3.80 | 16.00 | 0.44 | 36.11 |
| 4.00 | 11.00 | 0.76 | 14.48 |
| 4.20 | 11.00 | 0.44 | 24.83 |
| 4.40 | 10.00 | 0.44 | 22.57 |
| 4.60 | 11.00 | 0.38 | 28.97 |
| 4.80 | 11.00 | 0.19 | 57.93 |
| 5.00 | 9.00 | 0.44 | 20.31 |
| 5.20 | 12.00 | 0.25 | 47.40 |
| 5.40 | 9.00 | 0.38 | 23.70 |
| 5.60 | 9.00 | 0.32 | 28.44 |
| 5.80 | 8.00 | 0.38 | 21.07 |
| 6.00 | 11.00 | 0.19 | 57.93 |
| 6.20 | 11.00 | 0.38 | 28.97 |
| 6.40 | 9.00 | 0.38 | 23.70 |
| 6.60 | 11.00 | 0.38 | 28.97 |
| 6.80 | 10.00 | 0.51 | 19.75 |
| 7.00 | 9.00 | 0.44 | 20.31 |
| 7.20 | 11.00 | 0.32 | 34.76 |
| 7.40 | 9.00 | 0.38 | 23.70 |
| 7.60 | 9.00 | 0.38 | 23.70 |
| 7.80 | 13.00 | 0.44 | 29.34 |
| 8.00 | 13.00 | 0.44 | 29.34 |
| 8.20 | 8.00 | 0.38 | 21.07 |
| 8.40 | 9.00 | 0.32 | 28.44 |
| 8.60 | 10.00 | 0.38 | 26.33 |
| 8.80 | 9.00 | 0.44 | 20.31 |
| 9.00 | 7.00 | 0.44 | 15.80 |
| 9.20 | 9.00 | 0.44 | 20.31 |
| 9.40 | 11.00 | 0.51 | 21.72 |
| 9.60 | 12.00 | 0.63 | 18.96 |
| 9.80 | 12.00 | 0.70 | 17.24 |
| 10.00 | 13.00 | 0.63 | 20.54 |
| 10.20 | 14.00 | 0.63 | 22.12 |
| 10.40 | 11.00 | 0.63 | 17.38 |
| 10.60 | 10.00 | 0.63 | 15.80 |
| 10.80 | 11.00 | 0.44 | 24.83 |
| 11.00 | 12.00 | 0.57 | 21.07 |
| 11.20 | 11.00 | 0.63 | 17.38 |
| 11.40 | 10.00 | 0.57 | 17.56 |
| 11.60 | 10.00 | 0.51 | 19.75 |
| 11.80 | 9.00 | 0.44 | 20.45 |
| 12.00 | 7.00 | 0.45 | 15.56 |
| 12.20 | 8.00 | 0.43 | 18.60 |
| 12.40 | 7.00 | 0.44 | 15.91 |
| 12.60 | 9.00 | 0.45 | 20.00 |
| 12.80 | 10.00 | 0.33 | 30.30 |
| 13.00 | 11.00 | 0.32 | 34.38 |

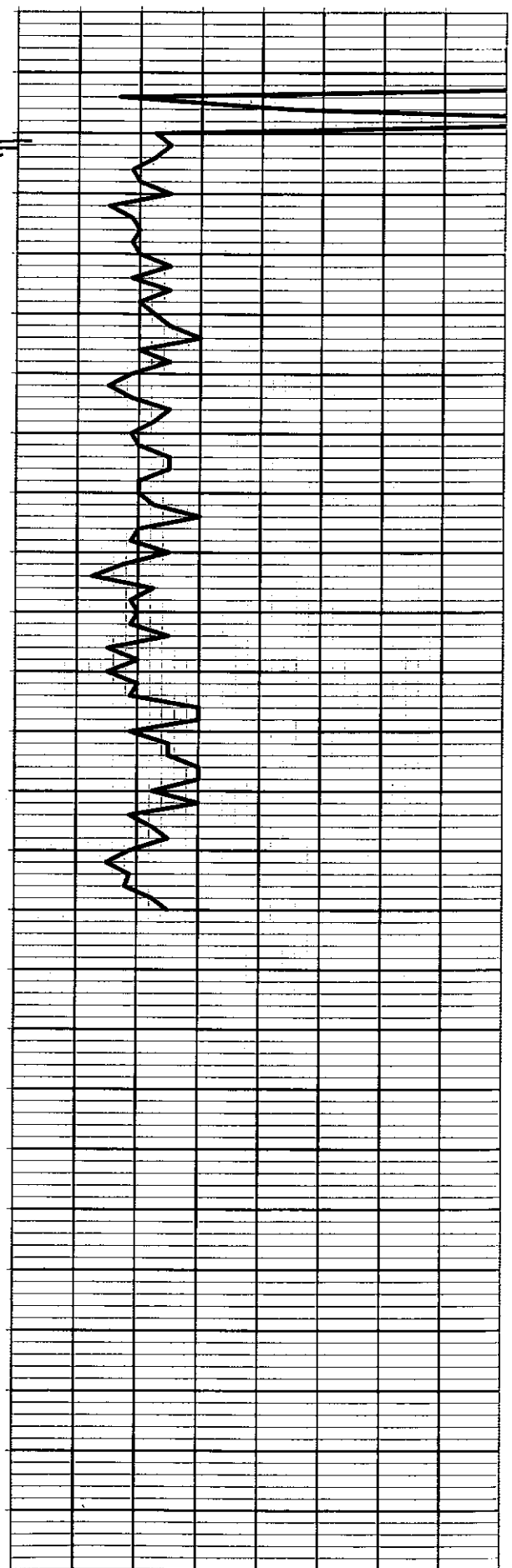
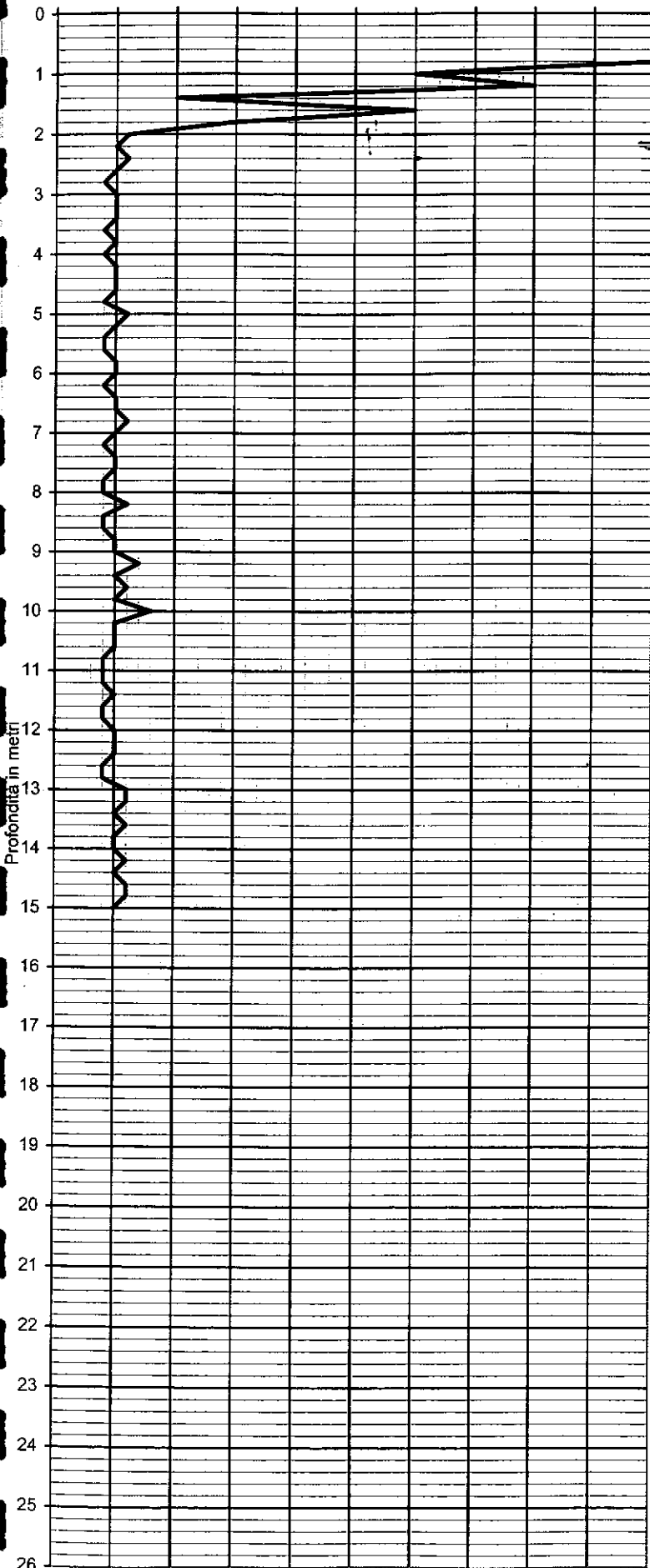
Via AUSTRIA, 24 - 41100 MODENA

Resistenza alla punta R_p (kg/cm²)

Rp/Rl

0 10 20 30 40 50 60 70 80 90 100

0 10 20 30 40 50 60 70 80





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

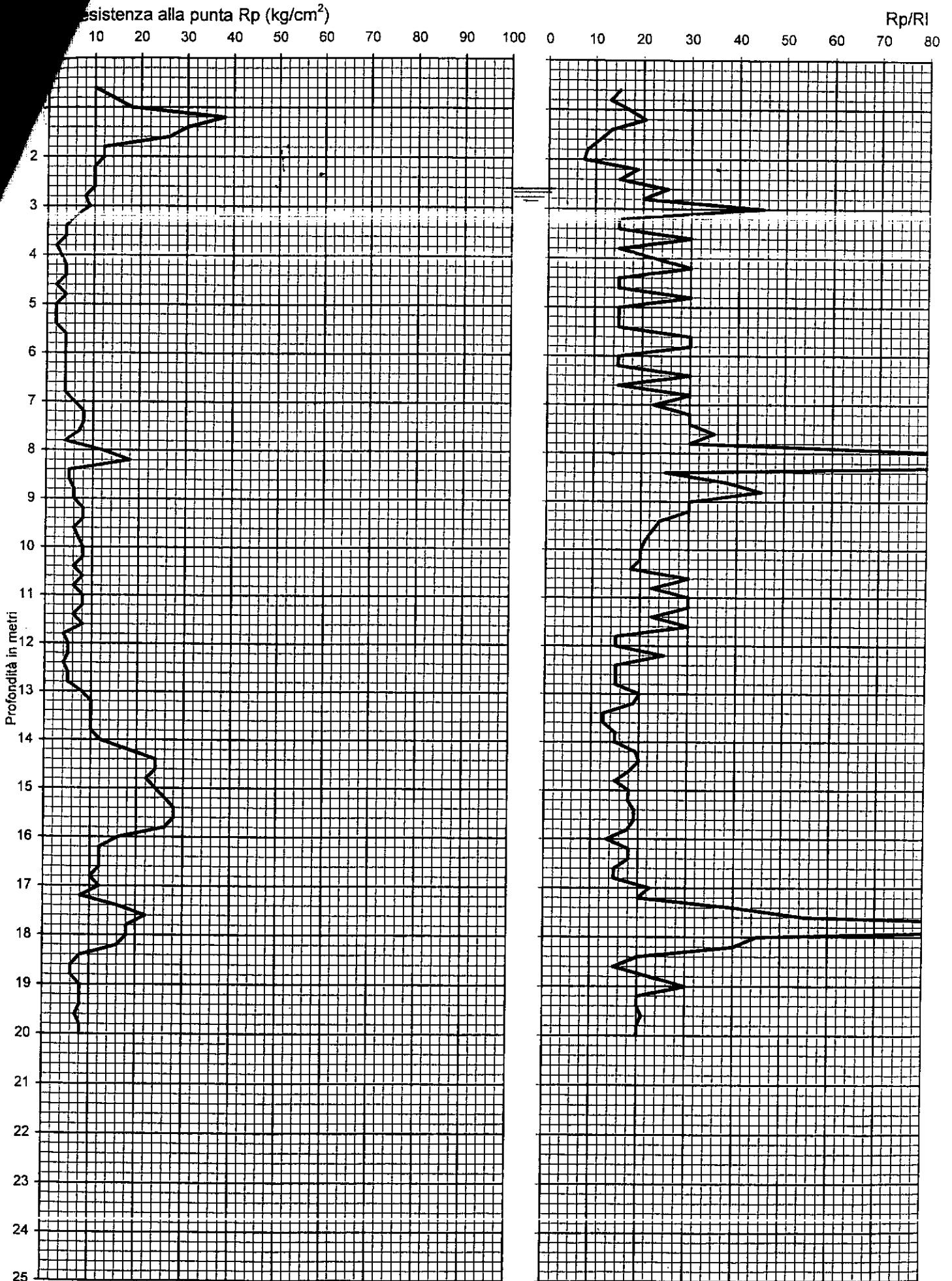
PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : SOCEDIL S.R.L.
Località : NONANTOLA LOTTO 47
Prova numero : 2
Data : 06/09/2004
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 160 | | 160 | | |
| 0,80 | 100 | | 100 | | |
| 1,00 | 60 | 70 | 60 | 0,67 | 90,00 |
| 1,20 | 80 | 90 | 80 | 0,67 | 120,00 |
| 1,40 | 20 | 38 | 20 | 1,20 | 16,67 |
| 1,60 | 60 | 80 | 60 | 1,33 | 45,00 |
| 1,80 | 30 | 34 | 30 | 0,27 | 112,50 |
| 2,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 2,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 2,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 3,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 5,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 7,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 8,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 9,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 9,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,00 | 16 | 28 | 16 | 0,80 | 20,00 |
| 10,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 11,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 12,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 12,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 13,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,20 | 12 | 18 | 12 | 0,40 | 30,00 |
| 13,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 14,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 14,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 14,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 14,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 14,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 15,00 | 10 | 16 | 10 | 0,40 | 25,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O ARCH. ZANELLA
Località : NONANTOLA VIA MAVORA
Prova numero : 1
Data : 21/12/2001
Operatore : DR. REBECCHI
Quota : P.C.

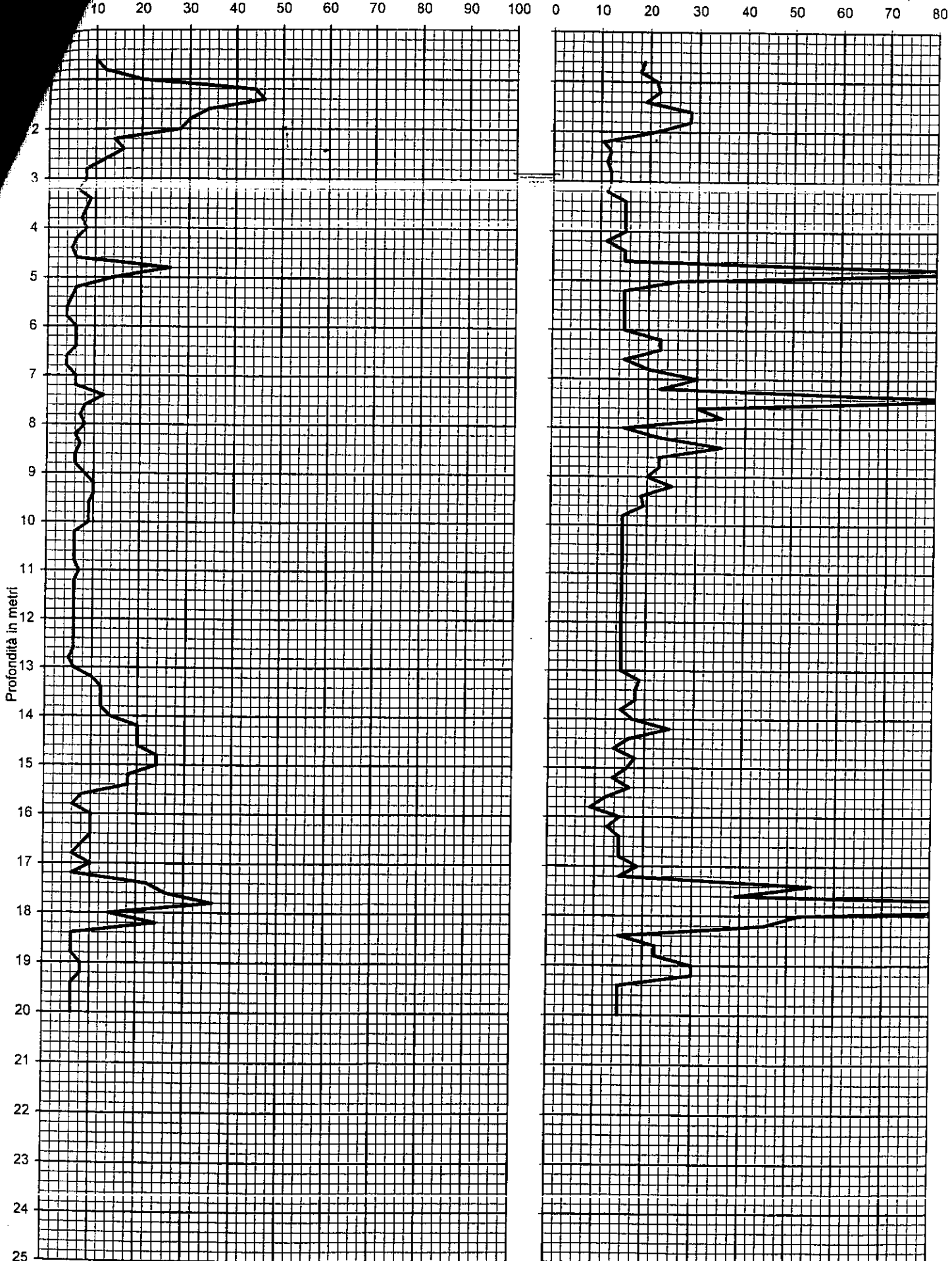
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 0,80 | 14 | 30 | 14 | 1,07 | 13,13 |
| 1,00 | 18 | 34 | 18 | 1,07 | 16,88 |
| 1,20 | 38 | 66 | 38 | 1,87 | 20,36 |
| 1,40 | 30 | 64 | 30 | 2,27 | 13,24 |
| 1,60 | 26 | 62 | 26 | 2,40 | 10,83 |
| 1,80 | 12 | 34 | 12 | 1,47 | 8,18 |
| 2,00 | 12 | 36 | 12 | 1,60 | 7,50 |
| 2,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 2,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,00 | 9 | 12 | 9 | 0,20 | 45,00 |
| 3,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 3,40 | 4 | 8 | 4 | 0,27 | 15,00 |
| 3,60 | 4 | 6 | 4 | 0,13 | 30,00 |
| 3,80 | 2 | 4 | 2 | 0,13 | 15,00 |
| 4,00 | 3 | 5 | 3 | 0,13 | 22,50 |
| 4,20 | 4 | 6 | 4 | 0,13 | 30,00 |
| 4,40 | 4 | 8 | 4 | 0,27 | 15,00 |
| 4,60 | 2 | 4 | 2 | 0,13 | 15,00 |
| 4,80 | 4 | 6 | 4 | 0,13 | 30,00 |
| 5,00 | 2 | 4 | 2 | 0,13 | 15,00 |
| 5,20 | 2 | 4 | 2 | 0,13 | 15,00 |
| 5,40 | 2 | 4 | 2 | 0,13 | 15,00 |
| 5,60 | 4 | 6 | 4 | 0,13 | 30,00 |
| 5,80 | 4 | 6 | 4 | 0,13 | 30,00 |
| 6,00 | 4 | 8 | 4 | 0,27 | 15,00 |
| 6,20 | 4 | 8 | 4 | 0,27 | 15,00 |
| 6,40 | 4 | 6 | 4 | 0,13 | 30,00 |
| 6,60 | 4 | 8 | 4 | 0,27 | 15,00 |
| 6,80 | 4 | 6 | 4 | 0,13 | 30,00 |
| 7,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,60 | 7 | 10 | 7 | 0,20 | 35,00 |
| 7,80 | 4 | 6 | 4 | 0,13 | 30,00 |
| 8,00 | 12 | 14 | 12 | 0,13 | 90,00 |
| 8,20 | 18 | 20 | 18 | 0,13 | 135,00 |
| 8,40 | 5 | 8 | 5 | 0,20 | 25,00 |
| 8,60 | 5 | 7 | 5 | 0,13 | 37,50 |
| 8,80 | 6 | 8 | 6 | 0,13 | 45,00 |
| 9,00 | 6 | 9 | 6 | 0,20 | 30,00 |
| 9,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,40 | 8 | 13 | 8 | 0,33 | 24,00 |
| 9,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,80 | 7 | 12 | 7 | 0,33 | 21,00 |
| 10,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,40 | 6 | 11 | 6 | 0,33 | 18,00 |
| 10,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 11,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 11,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,80 | 4 | 8 | 4 | 0,27 | 15,00 |
| 12,00 | 5 | 10 | 5 | 0,33 | 15,00 |
| 12,20 | 5 | 8 | 5 | 0,20 | 25,00 |
| 12,40 | 4 | 8 | 4 | 0,27 | 15,00 |
| 12,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 12,80 | 5 | 10 | 5 | 0,33 | 15,00 |
| 13,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 13,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 13,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 14,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 14,20 | 18 | 32 | 18 | 0,93 | 19,29 |
| 14,40 | 24 | 42 | 24 | 1,20 | 20,00 |
| 14,60 | 24 | 44 | 24 | 1,33 | 18,00 |
| 14,80 | 22 | 44 | 22 | 1,47 | 15,00 |
| 15,00 | 24 | 44 | 24 | 1,33 | 18,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | 26 | 48 | 26 | 1,47 | 17,73 |
| 15,40 | 28 | 50 | 28 | 1,47 | 19,09 |
| 15,60 | 28 | 50 | 28 | 1,47 | 19,09 |
| 15,80 | 26 | 48 | 26 | 1,47 | 17,73 |
| 16,00 | 16 | 34 | 16 | 1,20 | 13,33 |
| 16,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 16,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 16,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 16,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 17,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 17,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 17,40 | 16 | 22 | 16 | 0,40 | 40,00 |
| 17,60 | 22 | 28 | 22 | 0,40 | 55,00 |
| 17,80 | 18 | 20 | 18 | 0,13 | 135,00 |
| 18,00 | 18 | 24 | 18 | 0,40 | 45,00 |
| 18,20 | 16 | 22 | 16 | 0,40 | 40,00 |
| 18,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 18,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 18,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 19,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 19,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 19,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 19,60 | 7 | 12 | 7 | 0,33 | 21,00 |
| 19,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 20,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

STRIA, 24 - 41100 MODENA

Resistenza alla punta Rp (kg/cm²)

Rp/Rl





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O ARCH. ZANELLA
Località : NONANTOLA VIA MAVORA
Prova numero : 2
Data : 21/12/2001
Operatore : DR. REBECCHI
Quota : P.C.

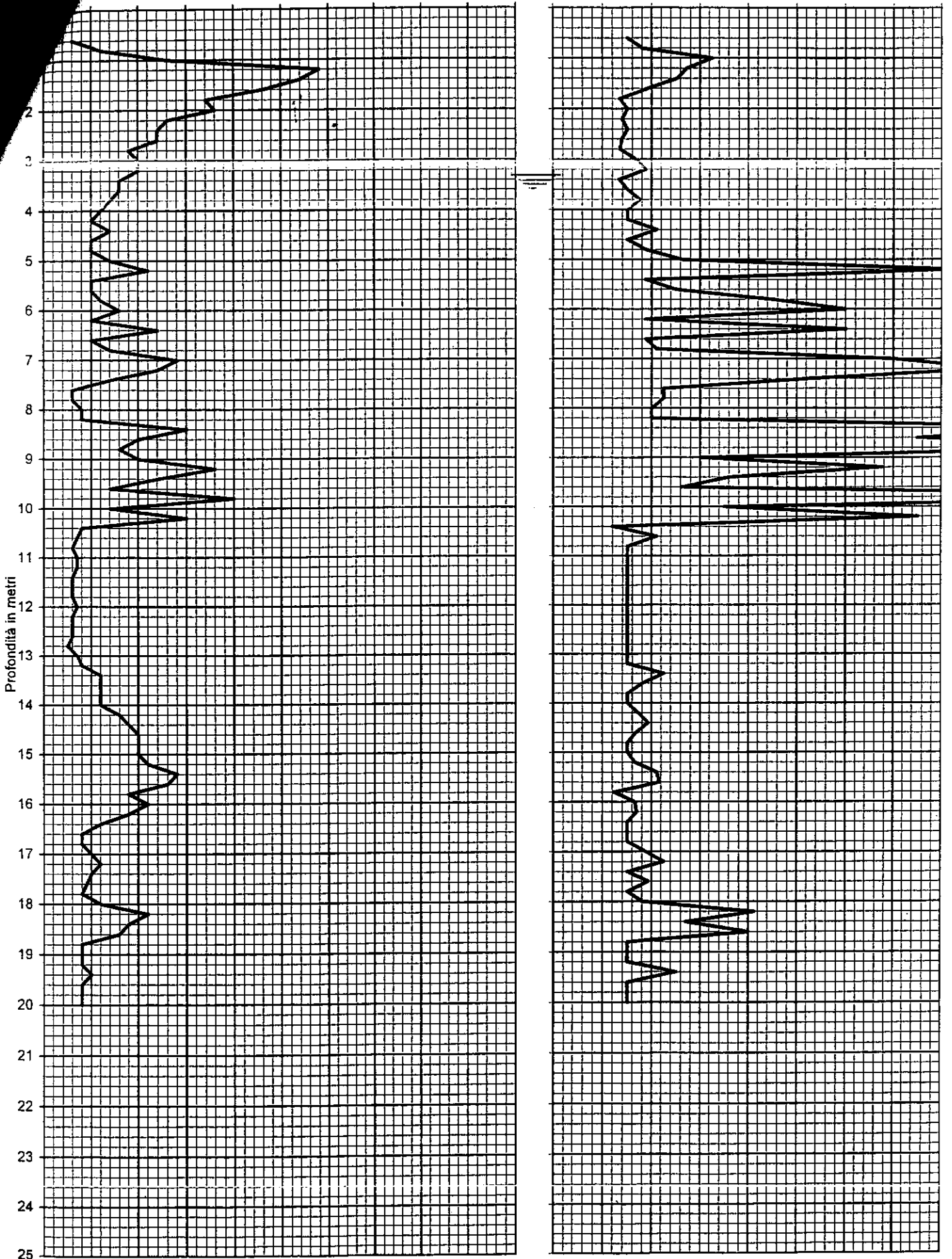
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 0,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 1,00 | 20 | 34 | 20 | 0,93 | 21,43 |
| 1,20 | 44 | 74 | 44 | 2,00 | 22,00 |
| 1,40 | 46 | 82 | 46 | 2,40 | 19,17 |
| 1,60 | 34 | 52 | 34 | 1,20 | 28,33 |
| 1,80 | 30 | 46 | 30 | 1,07 | 28,13 |
| 2,00 | 28 | 48 | 28 | 1,33 | 21,00 |
| 2,20 | 14 | 34 | 14 | 1,33 | 10,50 |
| 2,40 | 16 | 36 | 16 | 1,33 | 12,00 |
| 2,60 | 12 | 28 | 12 | 1,07 | 11,25 |
| 2,80 | 8 | 18 | 8 | 0,67 | 12,00 |
| 3,00 | 8 | 18 | 8 | 0,67 | 12,00 |
| 3,20 | 6 | 14 | 6 | 0,53 | 11,25 |
| 3,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 3,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 3,80 | 7 | 14 | 7 | 0,47 | 15,00 |
| 4,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 4,20 | 6 | 14 | 6 | 0,53 | 11,25 |
| 4,40 | 5 | 10 | 5 | 0,33 | 15,00 |
| 4,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 4,80 | 26 | 30 | 26 | 0,27 | 97,50 |
| 5,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 5,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 5,40 | 5 | 10 | 5 | 0,33 | 15,00 |
| 5,60 | 4 | 8 | 4 | 0,27 | 15,00 |
| 5,80 | 4 | 8 | 4 | 0,27 | 15,00 |
| 6,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 6,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,60 | 4 | 8 | 4 | 0,27 | 15,00 |
| 6,80 | 4 | 7 | 4 | 0,20 | 20,00 |
| 7,00 | 6 | 9 | 6 | 0,20 | 30,00 |
| 7,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,40 | 12 | 14 | 12 | 0,13 | 90,00 |
| 7,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,80 | 7 | 10 | 7 | 0,20 | 35,00 |
| 8,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 8,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,40 | 7 | 10 | 7 | 0,20 | 35,00 |
| 8,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,60 | 9 | 16 | 9 | 0,47 | 19,29 |
| 9,80 | 9 | 18 | 9 | 0,60 | 15,00 |
| 10,00 | 9 | 18 | 9 | 0,60 | 15,00 |
| 10,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 10,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 10,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 10,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 11,00 | 7 | 14 | 7 | 0,47 | 15,00 |
| 11,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 11,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 11,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 11,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,80 | 5 | 10 | 5 | 0,33 | 15,00 |
| 13,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 13,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 14,00 | 14 | 26 | 14 | 0,80 | 17,50 |
| 14,20 | 20 | 32 | 20 | 0,80 | 25,00 |
| 14,40 | 20 | 38 | 20 | 1,20 | 16,67 |
| 14,60 | 20 | 42 | 20 | 1,47 | 13,64 |
| 14,80 | 24 | 44 | 24 | 1,33 | 18,00 |
| 15,00 | 24 | 46 | 24 | 1,47 | 16,36 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | 18 | 38 | 18 | 1,33 | 13,50 |
| 15,40 | 18 | 34 | 18 | 1,07 | 16,88 |
| 15,60 | 8 | 18 | 8 | 0,67 | 12,00 |
| 15,80 | 6 | 16 | 6 | 0,67 | 9,00 |
| 16,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 16,20 | 10 | 22 | 10 | 0,80 | 12,50 |
| 16,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 16,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 16,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 17,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 17,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 17,40 | 22 | 28 | 22 | 0,40 | 55,00 |
| 17,60 | 26 | 36 | 26 | 0,67 | 39,00 |
| 17,80 | 36 | 40 | 36 | 0,27 | 135,00 |
| 18,00 | 14 | 18 | 14 | 0,27 | 52,50 |
| 18,20 | 24 | 32 | 24 | 0,53 | 45,00 |
| 18,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 18,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 18,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 19,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 19,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 19,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 19,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 19,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 20,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
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| 25,40 | | | | | |
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| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Resistenza alla punta Rp (kg/cm²)

Rp/RI

10 20 30 40 50 60 70 80 90 100 0 10 20 30 40 50 60 70 80





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O ARCH. ZANELLA
Località : NONANTOLA VIA MAVORA
Prova numero : 3
Data : 21/12/2001
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Ri (kg/cm ²) | Rp/Ri [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 0,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 1,00 | 26 | 38 | 26 | 0,80 | 32,50 |
| 1,20 | 58 | 90 | 58 | 2,13 | 27,19 |
| 1,40 | 54 | 86 | 54 | 2,13 | 25,31 |
| 1,60 | 46 | 82 | 46 | 2,40 | 19,17 |
| 1,80 | 34 | 72 | 34 | 2,53 | 13,42 |
| 2,00 | 36 | 72 | 36 | 2,40 | 15,00 |
| 2,20 | 26 | 54 | 26 | 1,87 | 13,93 |
| 2,40 | 24 | 48 | 24 | 1,60 | 15,00 |
| 2,60 | 24 | 50 | 24 | 1,73 | 13,85 |
| 2,80 | 18 | 38 | 18 | 1,33 | 13,50 |
| 3,00 | 20 | 38 | 20 | 1,20 | 16,67 |
| 3,20 | 20 | 36 | 20 | 1,07 | 18,75 |
| 3,40 | 16 | 34 | 16 | 1,20 | 13,33 |
| 3,60 | 16 | 32 | 16 | 1,07 | 15,00 |
| 3,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 4,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 4,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 4,40 | 14 | 24 | 14 | 0,67 | 21,00 |
| 4,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 4,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 5,20 | 22 | 26 | 22 | 0,27 | 82,50 |
| 5,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,80 | 12 | 16 | 12 | 0,27 | 45,00 |
| 6,00 | 16 | 20 | 16 | 0,27 | 60,00 |
| 6,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,40 | 24 | 30 | 24 | 0,40 | 60,00 |
| 6,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 7,00 | 28 | 34 | 28 | 0,40 | 70,00 |
| 7,20 | 24 | 28 | 24 | 0,27 | 90,00 |
| 7,40 | 14 | 18 | 14 | 0,27 | 52,50 |
| 7,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,40 | 30 | 34 | 30 | 0,27 | 112,50 |
| 8,60 | 20 | 24 | 20 | 0,27 | 75,00 |
| 8,80 | 16 | 18 | 16 | 0,13 | 120,00 |
| 9,00 | 20 | 30 | 20 | 0,67 | 30,00 |
| 9,20 | 36 | 44 | 36 | 0,53 | 67,50 |
| 9,40 | 24 | 34 | 24 | 0,67 | 36,00 |
| 9,60 | 14 | 22 | 14 | 0,53 | 26,25 |
| 9,80 | 40 | 44 | 40 | 0,27 | 150,00 |
| 10,00 | 14 | 20 | 14 | 0,40 | 35,00 |
| 10,20 | 30 | 36 | 30 | 0,40 | 75,00 |
| 10,40 | 8 | 18 | 8 | 0,67 | 12,00 |
| 10,60 | 7 | 12 | 7 | 0,33 | 21,00 |
| 10,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 11,00 | 7 | 14 | 7 | 0,47 | 15,00 |
| 11,20 | 7 | 14 | 7 | 0,47 | 15,00 |
| 11,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 11,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 11,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,00 | 7 | 14 | 7 | 0,47 | 15,00 |
| 12,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,80 | 5 | 10 | 5 | 0,33 | 15,00 |
| 13,00 | 7 | 14 | 7 | 0,47 | 15,00 |
| 13,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 13,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 14,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 14,20 | 16 | 30 | 16 | 0,93 | 17,14 |
| 14,40 | 18 | 32 | 18 | 0,93 | 19,29 |
| 14,60 | 20 | 38 | 20 | 1,20 | 16,67 |
| 14,80 | 20 | 40 | 20 | 1,33 | 15,00 |
| 15,00 | 20 | 40 | 20 | 1,33 | 15,00 |

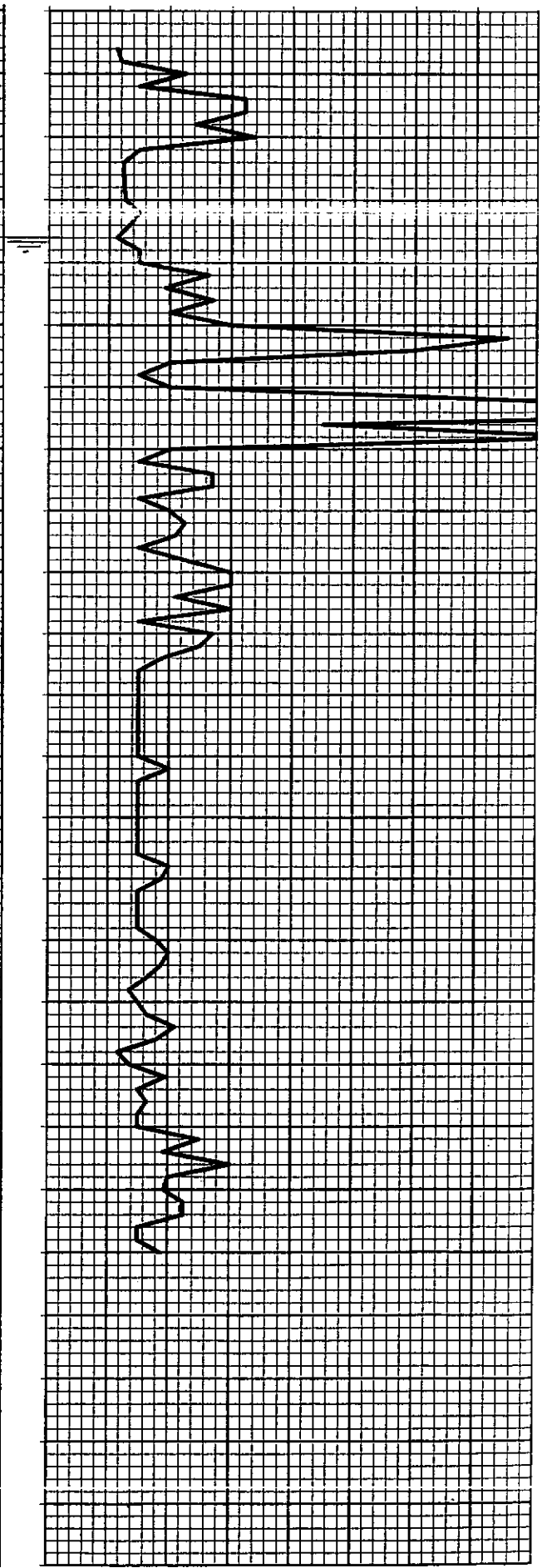
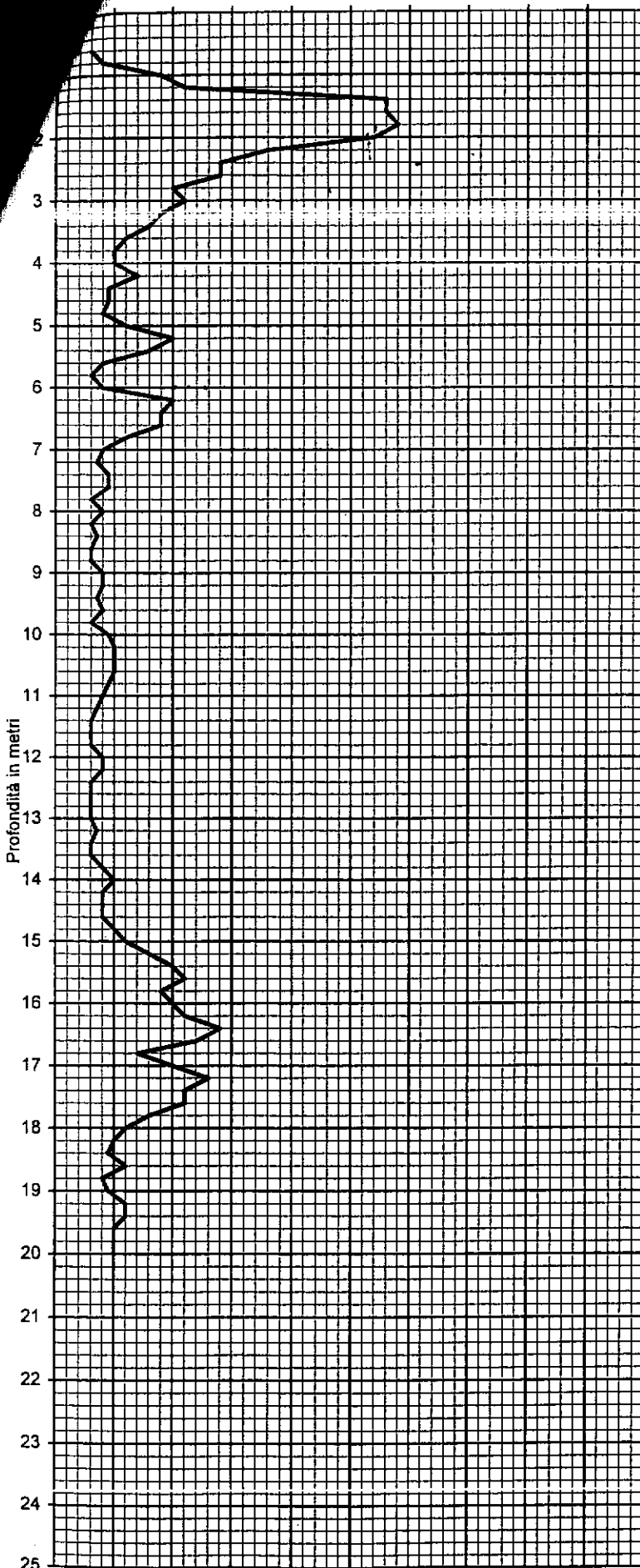
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Ri (kg/cm ²) | Rp/Ri [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | 22 | 42 | 22 | 1,33 | 16,50 |
| 15,40 | 28 | 48 | 28 | 1,33 | 21,00 |
| 15,60 | 26 | 44 | 26 | 1,20 | 21,67 |
| 15,80 | 18 | 40 | 18 | 1,47 | 12,27 |
| 16,00 | 22 | 42 | 22 | 1,33 | 16,50 |
| 16,20 | 18 | 34 | 18 | 1,07 | 16,88 |
| 16,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 16,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 16,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 17,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 17,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 17,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 17,60 | 9 | 16 | 9 | 0,47 | 19,29 |
| 17,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 18,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 18,20 | 22 | 30 | 22 | 0,53 | 41,25 |
| 18,40 | 18 | 28 | 18 | 0,67 | 27,00 |
| 18,60 | 16 | 22 | 16 | 0,40 | 40,00 |
| 18,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 19,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 19,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 19,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 19,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 19,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 20,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
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| 23,40 | | | | | |
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| 26,80 | | | | | |
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| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Resistenza alla punta Rp (kg/cm²)

Rp/Rl

10 20 30 40 50 60 70 80 90 100

0 10 20 30 40 50 60 70 80



Profondità in metri



Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA
Penetrometro Gouda

Committente : C/O ARCH. ZANELLA
Località : NONANTOLA VIA MAVORA
Prova numero : 4
Data : 21/12/2001
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 6 | 14 | 6 | 0,53 | 11,25 |
| 0,80 | 8 | 18 | 8 | 0,67 | 12,00 |
| 1,00 | 18 | 30 | 18 | 0,80 | 22,50 |
| 1,20 | 22 | 44 | 22 | 1,47 | 15,00 |
| 1,40 | 56 | 82 | 56 | 1,73 | 32,31 |
| 1,60 | 56 | 82 | 56 | 1,73 | 32,31 |
| 1,80 | 58 | 94 | 58 | 2,40 | 24,17 |
| 2,00 | 54 | 78 | 54 | 1,60 | 33,75 |
| 2,20 | 36 | 72 | 36 | 2,40 | 15,00 |
| 2,40 | 28 | 62 | 28 | 2,27 | 12,35 |
| 2,60 | 28 | 62 | 28 | 2,27 | 12,35 |
| 2,80 | 20 | 44 | 20 | 1,60 | 12,50 |
| 3,00 | 22 | 48 | 22 | 1,73 | 12,69 |
| 3,20 | 18 | 36 | 18 | 1,20 | 15,00 |
| 3,40 | 16 | 34 | 16 | 1,20 | 13,33 |
| 3,60 | 12 | 28 | 12 | 1,07 | 11,25 |
| 3,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 4,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 4,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 4,40 | 9 | 16 | 9 | 0,47 | 19,29 |
| 4,60 | 9 | 14 | 9 | 0,33 | 27,00 |
| 4,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 5,20 | 20 | 24 | 20 | 0,27 | 75,00 |
| 5,40 | 16 | 20 | 16 | 0,27 | 60,00 |
| 5,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 6,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,20 | 20 | 24 | 20 | 0,27 | 75,00 |
| 6,40 | 18 | 20 | 18 | 0,13 | 135,00 |
| 6,60 | 18 | 24 | 18 | 0,40 | 45,00 |
| 6,80 | 12 | 14 | 12 | 0,13 | 90,00 |
| 7,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,20 | 7 | 14 | 7 | 0,47 | 15,00 |
| 7,40 | 9 | 14 | 9 | 0,33 | 27,00 |
| 7,60 | 9 | 14 | 9 | 0,33 | 27,00 |
| 7,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 8,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,40 | 7 | 12 | 7 | 0,33 | 21,00 |
| 8,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 8,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,40 | 7 | 12 | 7 | 0,33 | 21,00 |
| 9,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 10,00 | 9 | 14 | 9 | 0,33 | 27,00 |
| 10,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,80 | 9 | 18 | 9 | 0,60 | 15,00 |
| 11,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 11,20 | 7 | 14 | 7 | 0,47 | 15,00 |
| 11,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 11,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 11,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 13,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 13,20 | 7 | 14 | 7 | 0,47 | 15,00 |
| 13,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 13,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 13,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 14,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 14,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 14,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 14,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 14,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 15,00 | 12 | 22 | 12 | 0,67 | 18,00 |

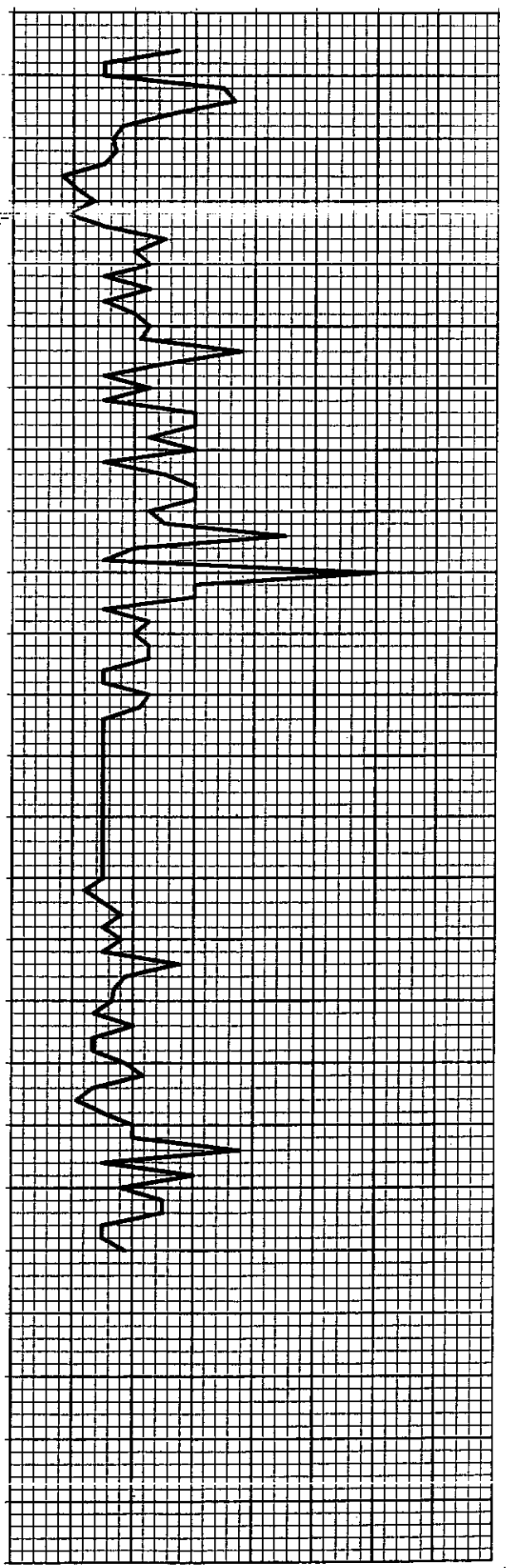
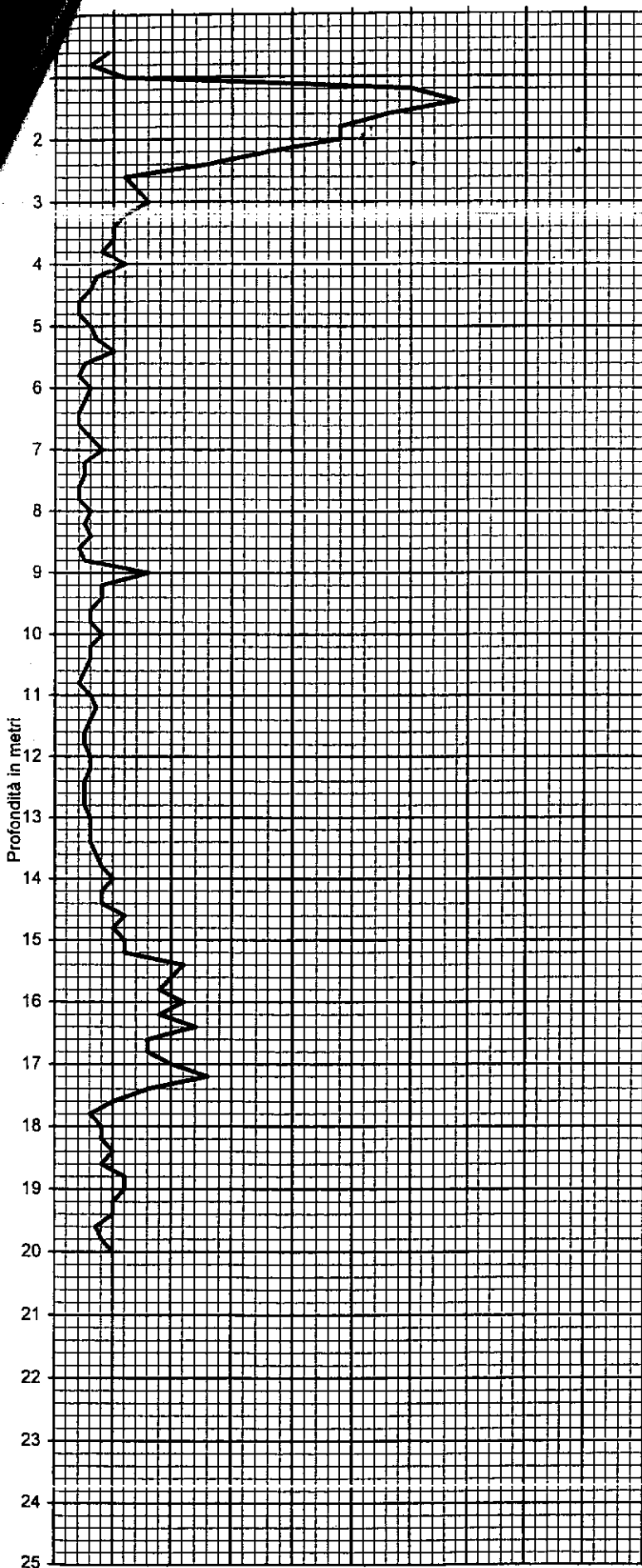
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | 16 | 28 | 16 | 0,80 | 20,00 |
| 15,40 | 20 | 36 | 20 | 1,07 | 18,75 |
| 15,60 | 22 | 42 | 22 | 1,33 | 16,50 |
| 15,80 | 18 | 38 | 18 | 1,33 | 13,50 |
| 16,00 | 20 | 40 | 20 | 1,33 | 15,00 |
| 16,20 | 22 | 42 | 22 | 1,33 | 16,50 |
| 16,40 | 28 | 48 | 28 | 1,33 | 21,00 |
| 16,60 | 24 | 44 | 24 | 1,33 | 18,00 |
| 16,80 | 14 | 32 | 14 | 1,20 | 11,67 |
| 17,00 | 20 | 42 | 20 | 1,47 | 13,64 |
| 17,20 | 26 | 46 | 26 | 1,33 | 19,50 |
| 17,40 | 22 | 44 | 22 | 1,47 | 15,00 |
| 17,60 | 22 | 42 | 22 | 1,33 | 16,50 |
| 17,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 18,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 18,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 18,40 | 9 | 16 | 9 | 0,47 | 19,29 |
| 18,60 | 12 | 18 | 12 | 0,40 | 30,00 |
| 18,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 19,00 | 9 | 16 | 9 | 0,47 | 19,29 |
| 19,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 19,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 19,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 19,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 20,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
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| 22,60 | | | | | |
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| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Resistenza alla punta Rp (kg/cm²)

Rp/Rl

10 20 30 40 50 60 70 80 90 100

0 10 20 30 40 50 60 70 80





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O ARCH. ZANELLA
Località : NONANTOLA VIA MAVORA
Prova numero : 5
Data : 21/12/2001
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 9 | 14 | 9 | 0,33 | 27,00 |
| 0,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 1,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 1,20 | 60 | 86 | 60 | 1,73 | 34,62 |
| 1,40 | 68 | 96 | 68 | 1,87 | 36,43 |
| 1,60 | 56 | 88 | 56 | 2,13 | 26,25 |
| 1,80 | 48 | 88 | 48 | 2,67 | 18,00 |
| 2,00 | 48 | 92 | 48 | 2,93 | 16,36 |
| 2,20 | 36 | 68 | 36 | 2,13 | 16,88 |
| 2,40 | 26 | 52 | 26 | 1,73 | 15,00 |
| 2,60 | 12 | 34 | 12 | 1,47 | 8,18 |
| 2,80 | 14 | 34 | 14 | 1,33 | 10,50 |
| 3,00 | 16 | 34 | 16 | 1,20 | 13,33 |
| 3,20 | 12 | 32 | 12 | 1,33 | 9,00 |
| 3,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 3,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 4,20 | 7 | 14 | 7 | 0,47 | 15,00 |
| 4,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,60 | 4 | 8 | 4 | 0,27 | 15,00 |
| 4,80 | 4 | 7 | 4 | 0,20 | 20,00 |
| 5,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,20 | 7 | 12 | 7 | 0,33 | 21,00 |
| 5,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 5,60 | 5 | 8 | 5 | 0,20 | 25,00 |
| 5,80 | 4 | 8 | 4 | 0,27 | 15,00 |
| 6,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,20 | 5 | 10 | 5 | 0,33 | 15,00 |
| 6,40 | 4 | 6 | 4 | 0,13 | 30,00 |
| 6,60 | 4 | 6 | 4 | 0,13 | 30,00 |
| 6,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,20 | 5 | 10 | 5 | 0,33 | 15,00 |
| 7,40 | 5 | 8 | 5 | 0,20 | 25,00 |
| 7,60 | 4 | 6 | 4 | 0,13 | 30,00 |
| 7,80 | 4 | 6 | 4 | 0,13 | 30,00 |
| 8,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,20 | 5 | 8 | 5 | 0,20 | 25,00 |
| 8,40 | 6 | 8 | 6 | 0,13 | 45,00 |
| 8,60 | 4 | 7 | 4 | 0,20 | 20,00 |
| 8,80 | 5 | 10 | 5 | 0,33 | 15,00 |
| 9,00 | 16 | 20 | 16 | 0,27 | 60,00 |
| 9,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 9,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 10,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 10,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 10,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 10,80 | 4 | 8 | 4 | 0,27 | 15,00 |
| 11,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 11,20 | 7 | 12 | 7 | 0,33 | 21,00 |
| 11,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 11,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 11,80 | 5 | 10 | 5 | 0,33 | 15,00 |
| 12,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,40 | 5 | 10 | 5 | 0,33 | 15,00 |
| 12,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 12,80 | 5 | 10 | 5 | 0,33 | 15,00 |
| 13,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 13,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 13,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 13,60 | 7 | 14 | 7 | 0,47 | 15,00 |
| 13,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 14,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 14,20 | 8 | 18 | 8 | 0,67 | 12,00 |
| 14,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 14,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 14,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 15,00 | 12 | 22 | 12 | 0,67 | 18,00 |

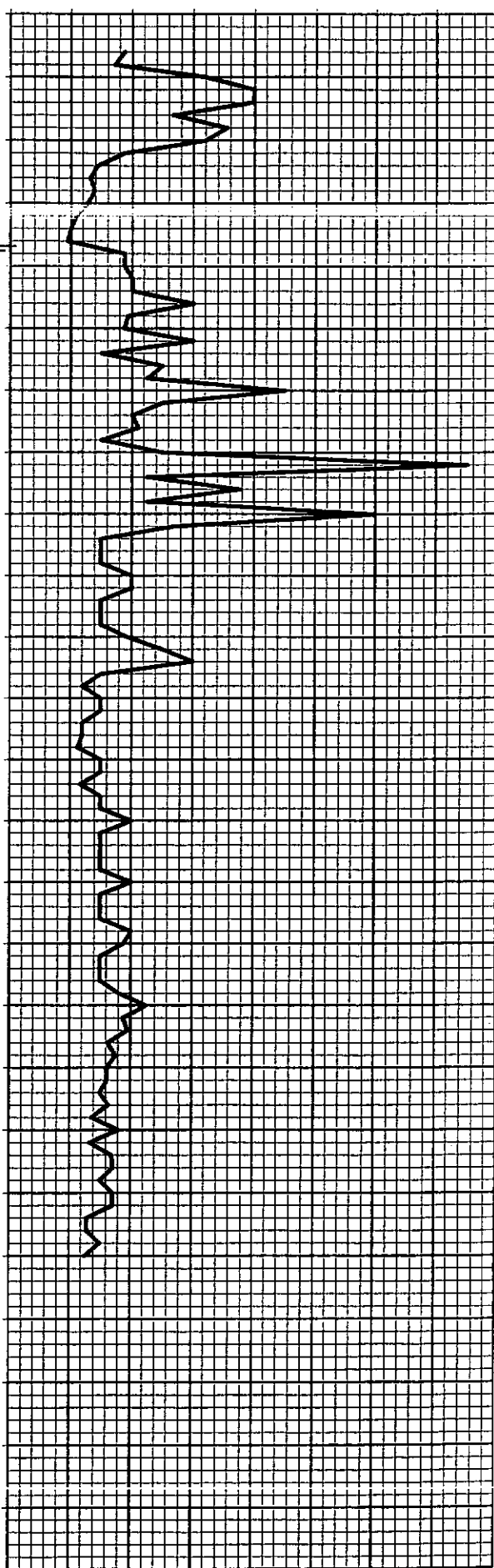
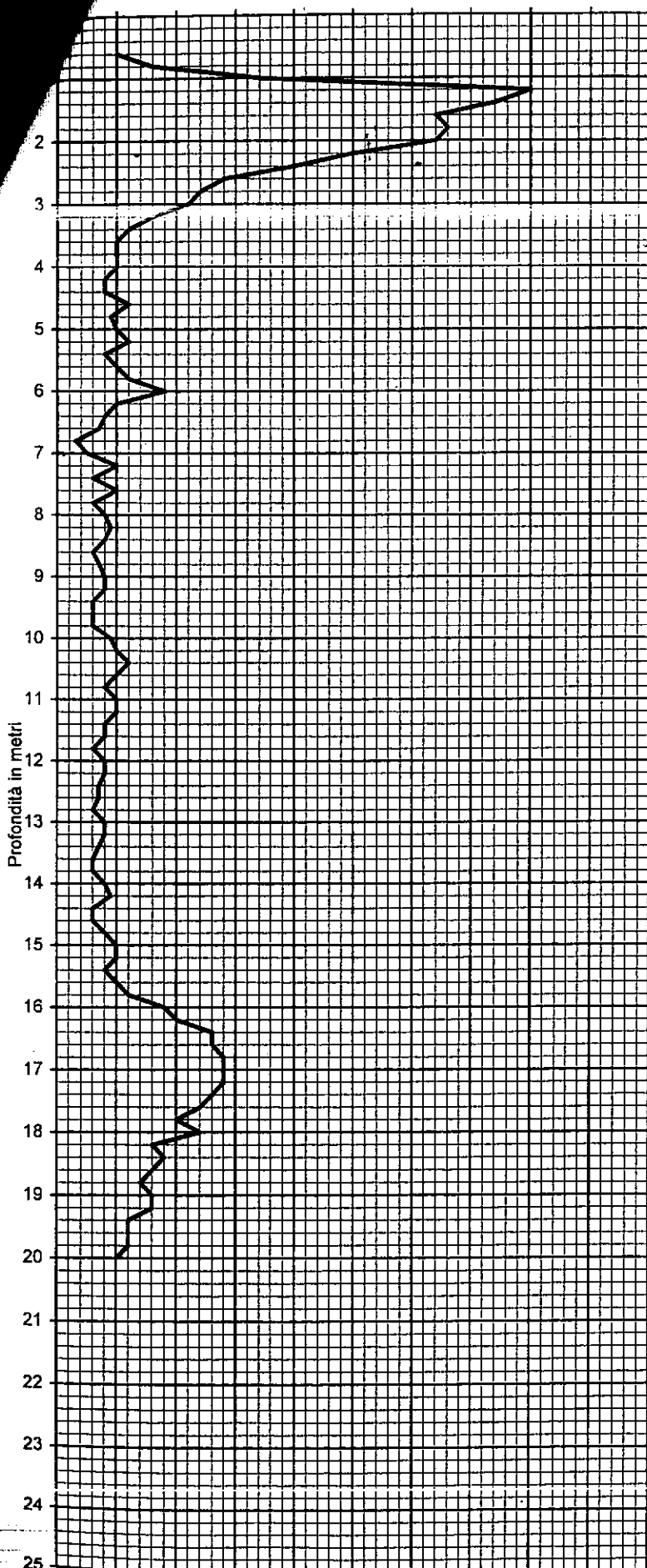
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 15,40 | 22 | 34 | 22 | 0,80 | 27,50 |
| 15,60 | 20 | 36 | 20 | 1,07 | 18,75 |
| 15,80 | 18 | 34 | 18 | 1,07 | 16,88 |
| 16,00 | 22 | 42 | 22 | 1,33 | 16,50 |
| 16,20 | 18 | 38 | 18 | 1,33 | 13,50 |
| 16,40 | 24 | 42 | 24 | 1,20 | 20,00 |
| 16,60 | 16 | 34 | 16 | 1,20 | 13,33 |
| 16,80 | 16 | 34 | 16 | 1,20 | 13,33 |
| 17,00 | 20 | 36 | 20 | 1,07 | 18,75 |
| 17,20 | 26 | 44 | 26 | 1,20 | 21,67 |
| 17,40 | 16 | 34 | 16 | 1,20 | 13,33 |
| 17,60 | 10 | 24 | 10 | 0,93 | 10,71 |
| 17,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 18,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 18,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 18,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 18,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 18,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 19,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 19,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 19,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 19,60 | 7 | 14 | 7 | 0,47 | 15,00 |
| 19,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 20,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Resistenza alla punta Rp (kg/cm²)

Rp/Rl

10 20 30 40 50 60 70 80 90 100

0 10 20 30 40 50 60 70 80





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O ARCH. ZANELLA
Località : NONANTOLA VIA MAVORA
Prova numero : 6
Data : 21/12/2001
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 0,80 | 16 | 30 | 16 | 0,93 | 17,14 |
| 1,00 | 34 | 50 | 34 | 1,07 | 31,88 |
| 1,20 | 80 | 110 | 80 | 2,00 | 40,00 |
| 1,40 | 74 | 102 | 74 | 1,87 | 39,64 |
| 1,60 | 64 | 100 | 64 | 2,40 | 26,67 |
| 1,80 | 66 | 94 | 66 | 1,87 | 35,36 |
| 2,00 | 64 | 94 | 64 | 2,00 | 32,00 |
| 2,20 | 50 | 90 | 50 | 2,67 | 18,75 |
| 2,40 | 40 | 82 | 40 | 2,80 | 14,29 |
| 2,60 | 28 | 60 | 28 | 2,13 | 13,13 |
| 2,80 | 24 | 50 | 24 | 1,73 | 13,85 |
| 3,00 | 22 | 48 | 22 | 1,73 | 12,69 |
| 3,20 | 16 | 38 | 16 | 1,47 | 10,91 |
| 3,40 | 12 | 30 | 12 | 1,20 | 10,00 |
| 3,60 | 10 | 26 | 10 | 1,07 | 9,38 |
| 3,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,60 | 12 | 18 | 12 | 0,40 | 30,00 |
| 4,80 | 9 | 16 | 9 | 0,47 | 19,29 |
| 5,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,20 | 12 | 18 | 12 | 0,40 | 30,00 |
| 5,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 5,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 6,00 | 18 | 24 | 18 | 0,40 | 45,00 |
| 6,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,60 | 7 | 12 | 7 | 0,33 | 21,00 |
| 6,80 | 3 | 6 | 3 | 0,20 | 15,00 |
| 7,00 | 5 | 8 | 5 | 0,20 | 25,00 |
| 7,20 | 10 | 12 | 10 | 0,13 | 75,00 |
| 7,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 7,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,00 | 8 | 10 | 8 | 0,13 | 60,00 |
| 8,20 | 9 | 14 | 9 | 0,33 | 27,00 |
| 8,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 8,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 8,80 | 7 | 14 | 7 | 0,47 | 15,00 |
| 9,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 9,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 9,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 10,00 | 9 | 16 | 9 | 0,47 | 19,29 |
| 10,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 10,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,80 | 8 | 18 | 8 | 0,67 | 12,00 |
| 11,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,40 | 8 | 18 | 8 | 0,67 | 12,00 |
| 11,60 | 8 | 18 | 8 | 0,67 | 12,00 |
| 11,80 | 6 | 14 | 6 | 0,53 | 11,25 |
| 12,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,40 | 7 | 16 | 7 | 0,60 | 11,67 |
| 12,60 | 7 | 14 | 7 | 0,47 | 15,00 |
| 12,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 13,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 13,40 | 7 | 14 | 7 | 0,47 | 15,00 |
| 13,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 13,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 14,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 14,20 | 9 | 18 | 9 | 0,60 | 15,00 |
| 14,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 14,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 14,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 15,00 | 10 | 18 | 10 | 0,53 | 18,75 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 15,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 15,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 15,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 16,00 | 18 | 30 | 18 | 0,80 | 22,50 |
| 16,20 | 20 | 36 | 20 | 1,07 | 18,75 |
| 16,40 | 26 | 46 | 26 | 1,33 | 19,50 |
| 16,60 | 26 | 50 | 26 | 1,60 | 16,25 |
| 16,80 | 28 | 52 | 28 | 1,60 | 17,50 |
| 17,00 | 28 | 54 | 28 | 1,73 | 16,15 |
| 17,20 | 28 | 54 | 28 | 1,73 | 16,15 |
| 17,40 | 26 | 52 | 26 | 1,73 | 15,00 |
| 17,60 | 24 | 46 | 24 | 1,47 | 16,36 |
| 17,80 | 20 | 42 | 20 | 1,47 | 13,64 |
| 18,00 | 24 | 44 | 24 | 1,33 | 18,00 |
| 18,20 | 16 | 34 | 16 | 1,20 | 13,33 |
| 18,40 | 18 | 34 | 18 | 1,07 | 16,88 |
| 18,60 | 16 | 30 | 16 | 0,93 | 17,14 |
| 18,80 | 14 | 28 | 14 | 0,93 | 15,00 |
| 19,00 | 16 | 30 | 16 | 0,93 | 17,14 |
| 19,20 | 16 | 30 | 16 | 0,93 | 17,14 |
| 19,40 | 12 | 26 | 12 | 0,93 | 12,86 |
| 19,60 | 12 | 26 | 12 | 0,93 | 12,86 |
| 19,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 20,00 | 10 | 22 | 10 | 0,80 | 12,50 |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00605S02

PROVA PENETROMETRICA STATICA LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 2

3.010496-043

| | | | |
|---------------------|---------------------------|------------------|--------------------|
| - committente: | Studio Geologico Dallari | - data prova : | 17/01/2005 |
| - lavoro: | Studio terreno | - quota inizio : | Piano Campagna |
| - località: | Nonantola (MO) - Lotto 23 | - prof. falda : | Falda non rilevata |
| - resp. cantiere: | Dott. Pier Luigi Dallari | - data emiss. : | 18/01/2005 |
| - assist. cantiere: | Dott. Fabrizio Vecchi | - pagina n°: | 1/4 |
| - note: | Foro chiuso in superficie | | |

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | -- | 0,07 | --- | 5,20 | 13,0 | 18,0 | 13,0 | 0,40 | 32,0 |
| 0,40 | --- | 1,0 | -- | 0,07 | --- | 5,40 | 10,0 | 16,0 | 10,0 | 0,47 | 21,0 |
| 0,60 | --- | 1,0 | -- | 1,60 | --- | 5,60 | 11,0 | 18,0 | 11,0 | 0,40 | 27,0 |
| 0,80 | 10,0 | 34,0 | 10,0 | 1,00 | 10,0 | 5,80 | 9,0 | 15,0 | 9,0 | 0,47 | 19,0 |
| 1,00 | 13,0 | 28,0 | 13,0 | 0,93 | 14,0 | 6,00 | 12,0 | 19,0 | 12,0 | 0,40 | 30,0 |
| 1,20 | 12,0 | 26,0 | 12,0 | 0,93 | 13,0 | 6,20 | 12,0 | 18,0 | 12,0 | 0,40 | 30,0 |
| 1,40 | 11,0 | 25,0 | 11,0 | 0,67 | 16,0 | 6,40 | 8,0 | 14,0 | 8,0 | 0,33 | 24,0 |
| 1,60 | 16,0 | 26,0 | 16,0 | 0,80 | 20,0 | 6,60 | 10,0 | 15,0 | 10,0 | 0,40 | 25,0 |
| 1,80 | 20,0 | 32,0 | 20,0 | 1,13 | 18,0 | 6,80 | 9,0 | 15,0 | 9,0 | 0,33 | 27,0 |
| 2,00 | 21,0 | 38,0 | 21,0 | 1,13 | 19,0 | 7,00 | 11,0 | 16,0 | 11,0 | 0,53 | 21,0 |
| 2,20 | 20,0 | 37,0 | 20,0 | 1,00 | 20,0 | 7,20 | 11,0 | 19,0 | 11,0 | 0,53 | 21,0 |
| 2,40 | 20,0 | 35,0 | 20,0 | 0,93 | 21,0 | 7,40 | 9,0 | 17,0 | 9,0 | 0,47 | 19,0 |
| 2,60 | 21,0 | 35,0 | 21,0 | 0,73 | 29,0 | 7,60 | 10,0 | 17,0 | 10,0 | 0,40 | 25,0 |
| 2,80 | 22,0 | 33,0 | 22,0 | 1,07 | 21,0 | 7,80 | 11,0 | 17,0 | 11,0 | 0,53 | 21,0 |
| 3,00 | 21,0 | 37,0 | 21,0 | 0,93 | 22,0 | 8,00 | 11,0 | 19,0 | 11,0 | 0,40 | 27,0 |
| 3,20 | 17,0 | 31,0 | 17,0 | 0,67 | 25,0 | 8,20 | 9,0 | 15,0 | 9,0 | 0,33 | 27,0 |
| 3,40 | 10,0 | 20,0 | 10,0 | 0,47 | 21,0 | 8,40 | 9,0 | 14,0 | 9,0 | 0,40 | 22,0 |
| 3,60 | 11,0 | 18,0 | 11,0 | 0,67 | 16,0 | 8,60 | 10,0 | 16,0 | 10,0 | 0,33 | 30,0 |
| 3,80 | 10,0 | 20,0 | 10,0 | 0,40 | 25,0 | 8,80 | 9,0 | 14,0 | 9,0 | 0,27 | 34,0 |
| 4,00 | 14,0 | 20,0 | 14,0 | 0,53 | 26,0 | 9,00 | 9,0 | 13,0 | 9,0 | 0,40 | 22,0 |
| 4,20 | 11,0 | 19,0 | 11,0 | 0,20 | 55,0 | 9,20 | 9,0 | 15,0 | 9,0 | 0,33 | 27,0 |
| 4,40 | 18,0 | 21,0 | 18,0 | 0,53 | 34,0 | 9,40 | 11,0 | 16,0 | 11,0 | 0,53 | 21,0 |
| 4,60 | 21,0 | 29,0 | 21,0 | 0,47 | 45,0 | 9,60 | 11,0 | 19,0 | 11,0 | 0,53 | 21,0 |
| 4,80 | 15,0 | 22,0 | 15,0 | 0,40 | 37,0 | 9,80 | 12,0 | 20,0 | 12,0 | 0,53 | 22,0 |
| 5,00 | 14,0 | 20,0 | 14,0 | 0,33 | 42,0 | 10,00 | 14,0 | 22,0 | 14,0 | --- | --- |

DIRETTORE DI LABORATORIO
PER PROVE IN SITO
Dott. geol. Pierluigi Dallari

RESPONSABILE DI
CANTIERE
Dott. geol. Pierluigi Dallari

ELABORAZIONE
DATI
Dott. Gianni Loricci

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\varnothing = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00605S02

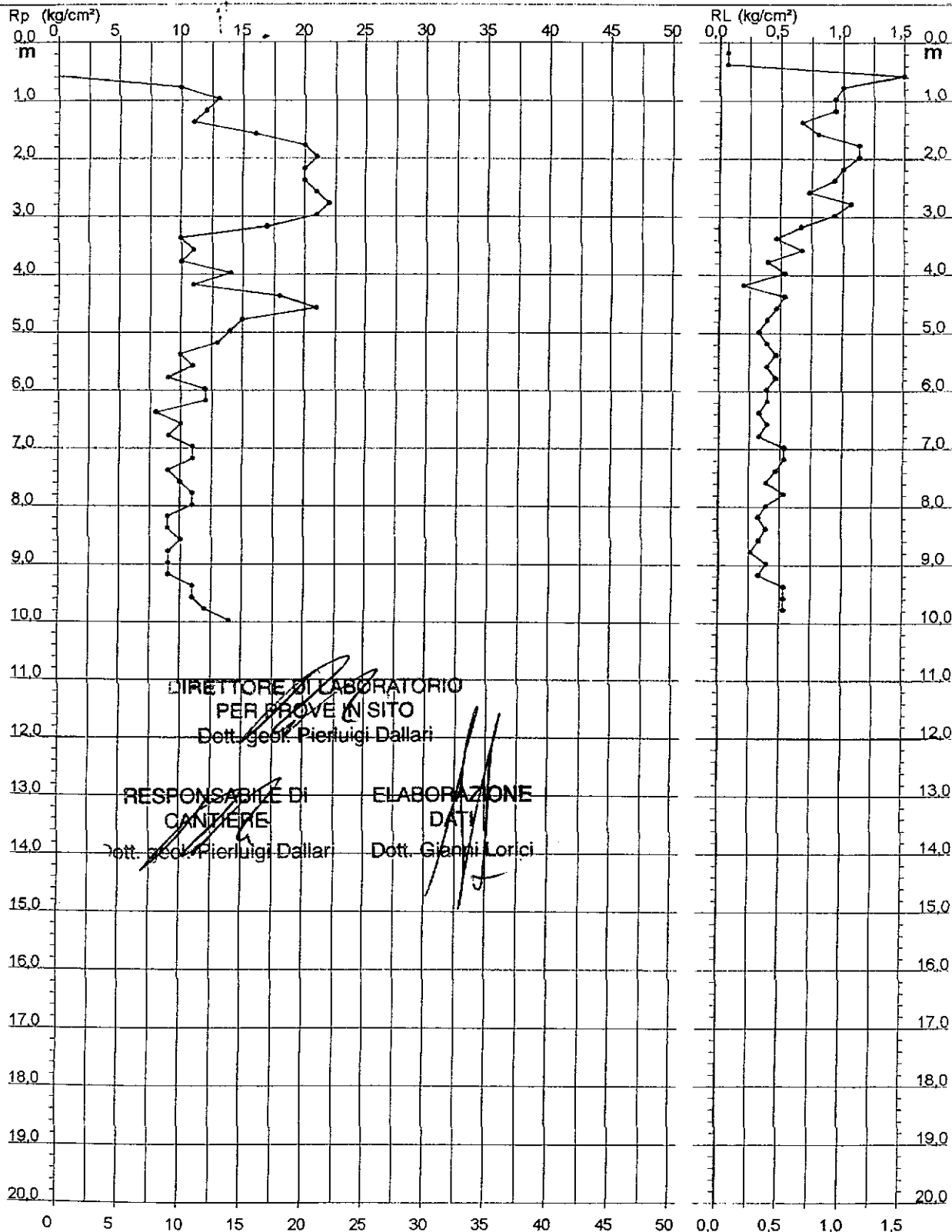
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 2

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Studio terreno
- località: Nonantola (MO) - Lotto 23
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Fabrizio Vecchi
- note: Foro chiuso in superficie

- data prova: 17/01/2005
- quota inizio: Piano Campagna
- prof. falda: Falda non rilevata
- scala vert.: 1 : 100
- data emiss.: 18/01/2005
- pagina n°: 2/4



**DIRETTORE DI LABORATORIO
PER PROVE IN SITO**
Dott. geol. Pierluigi Dallari

**RESPONSABILE DI
CANTIERE**
Dott. geol. Pierluigi Dallari

**ELABORAZIONE
DATI**
Dott. Gianni Loricci

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00605S02

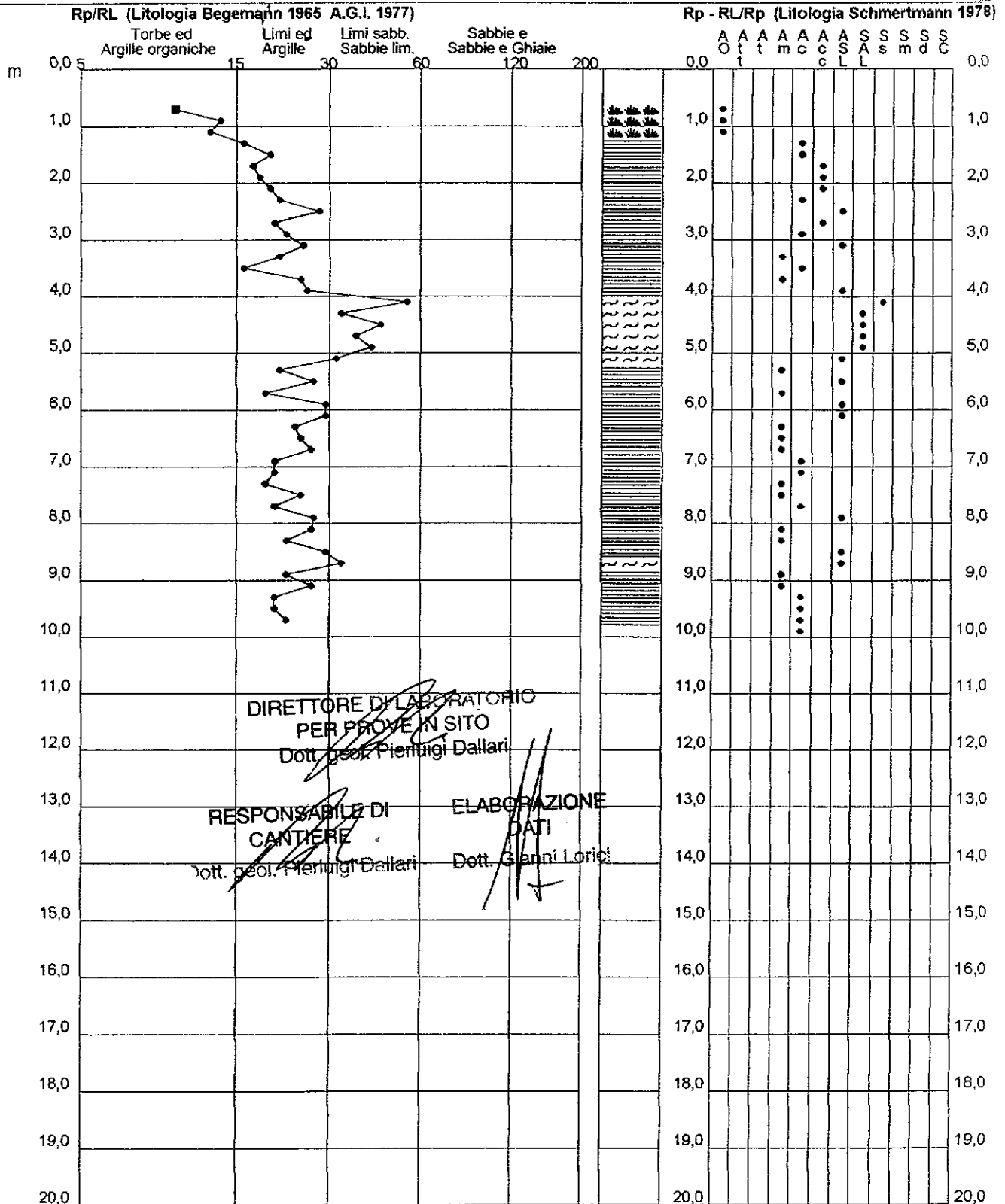
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 2

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Studio terreno
- località: Nonantola (MO) - Lotto 23
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Fabrizio Vecchi
- note: Foro chiuso in superficie

- data prova: 17/01/2005
- quota inizio: Piano Campagna
- prof. falda: Falda non rilevata
- scala vert.: 1 : 100
- data emiss.: 18/01/2005
- pagina n°: 3/4



PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
 p.IVA e C.F. 00812530368

Certificato 00605S02

**PROVA PENETROMETRICA STATICA
 TABELLA PARAMETRI GEOTECNICI**

CPT 2

3.010496-043

- committente: Studio Geologico Dallari
 - lavoro: Studio terreno
 - località: Nonantola (MO) - Lotto 23
 - resp. cantiere: Dott. Pier Luigi Dallari
 - assist. cantiere: Dott. Fabrizio Vecchi
 - note: Foro chiuso in superficie

- data prova : 17/01/2005
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - data emiss. : 18/01/2005
 - pagina n°: 4/4

| NATURA COESIVA | | | | | | | | | | NATURA GRANULARE | | | | | | | | | | | | |
|----------------|-----------|-----------|---------------|-------|-------------|-----------|---------|-------------|-------------|------------------|------|---------|---------|---------|---------|---------|---------|------------|------------|------------|-----------|----|
| Prof. m | Rp kg/cm² | Rp/RI (-) | Natura Litol. | Y Um² | p'vo kg/cm² | C0 kg/cm² | OCR (-) | Eu50 kg/cm² | Eu25 kg/cm² | Mo kg/cm² | Dr % | σ1s (°) | σ2s (°) | σ3s (°) | σ4s (°) | σdm (°) | σmy (°) | Amax/g (-) | E50 kg/cm² | E25 kg/cm² | Mo kg/cm² | |
| 0,20 | -- | -- | ??? | 1,85 | 0,04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,40 | -- | -- | ??? | 1,85 | 0,07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,60 | -- | -- | ??? | 1,85 | 0,11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,80 | 10 | 10 | 2/III | 1,85 | 0,15 | 0,50 | 28,8 | 85 | 128 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,00 | 13 | 14 | 2/III | 1,85 | 0,19 | 0,60 | 27,6 | 103 | 154 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,20 | 12 | 13 | 2/III | 1,85 | 0,22 | 0,57 | 20,5 | 97 | 146 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,40 | 11 | 16 | 2/III | 1,85 | 0,26 | 0,54 | 15,6 | 91 | 137 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,60 | 16 | 20 | 2/III | 1,85 | 0,30 | 0,70 | 18,3 | 118 | 177 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,80 | 20 | 18 | 4/II | 1,85 | 0,33 | 0,80 | 18,8 | 136 | 204 | 60 | 44 | 34 | 36 | 39 | 41 | 34 | 27 | 0,088 | 33 | 50 | 60 | |
| 2,00 | 21 | 19 | 4/II | 1,85 | 0,37 | 0,82 | 17,1 | 140 | 210 | 63 | 43 | 34 | 36 | 39 | 41 | 34 | 27 | 0,088 | 35 | 53 | 63 | |
| 2,20 | 20 | 20 | 4/II | 1,85 | 0,41 | 0,80 | 14,6 | 136 | 204 | 60 | 39 | 33 | 36 | 38 | 41 | 33 | 27 | 0,077 | 33 | 50 | 60 | |
| 2,40 | 20 | 21 | 4/II | 1,85 | 0,44 | 0,80 | 13,1 | 136 | 204 | 60 | 36 | 33 | 36 | 38 | 41 | 33 | 27 | 0,072 | 33 | 50 | 60 | |
| 2,60 | 21 | 29 | 4/II | 1,85 | 0,48 | 0,82 | 12,3 | 140 | 210 | 63 | 36 | 33 | 36 | 38 | 41 | 32 | 27 | 0,071 | 35 | 53 | 63 | |
| 2,80 | 22 | 21 | 4/II | 1,85 | 0,52 | 0,85 | 11,5 | 144 | 216 | 66 | 36 | 33 | 36 | 38 | 41 | 32 | 26 | 0,071 | 37 | 55 | 66 | |
| 3,00 | 21 | 26 | 4/II | 1,85 | 0,55 | 0,92 | 10,3 | 140 | 210 | 63 | 33 | 33 | 35 | 38 | 41 | 32 | 27 | 0,064 | 35 | 53 | 63 | |
| 3,20 | 17 | 26 | 2/III | 1,85 | 0,59 | 0,72 | 8,1 | 142 | 213 | 54 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,40 | 10 | 21 | 2/III | 1,85 | 0,83 | 0,50 | 4,7 | 175 | 262 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,60 | 11 | 16 | 2/III | 1,85 | 0,67 | 0,54 | 4,8 | 185 | 277 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,80 | 10 | 25 | 2/III | 1,85 | 0,70 | 0,50 | 4,1 | 196 | 294 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,00 | 14 | 26 | 2/III | 1,85 | 0,74 | 0,64 | 5,2 | 203 | 304 | 46 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,20 | 11 | 55 | 4/II | 1,85 | 0,78 | 0,54 | 4,0 | 217 | 326 | 42 | 2 | 28 | 32 | 35 | 38 | 26 | 26 | 0,006 | 18 | 28 | 33 | |
| 4,40 | 16 | 34 | 4/II | 1,85 | 0,81 | 0,75 | 5,7 | 219 | 328 | 56 | 16 | 31 | 33 | 38 | 39 | 29 | 27 | 0,034 | 30 | 45 | 54 | |
| 4,60 | 21 | 45 | 3/II | 1,85 | 0,85 | -- | -- | -- | -- | -- | 22 | 31 | 34 | 37 | 40 | 29 | 27 | 0,042 | 35 | 53 | 63 | |
| 4,80 | 15 | 37 | 4/II | 1,85 | 0,88 | 0,67 | 4,4 | 248 | 372 | 50 | 10 | 29 | 32 | 35 | 38 | 27 | 27 | 0,020 | 28 | 38 | 45 | |
| 5,00 | 14 | 42 | 4/II | 1,85 | 0,93 | 0,64 | 3,9 | 259 | 389 | 48 | 6 | 29 | 32 | 35 | 39 | 26 | 26 | 0,015 | 23 | 35 | 42 | |
| 5,20 | 13 | 32 | 4/II | 1,85 | 0,96 | 0,60 | 3,5 | 271 | 407 | 47 | 3 | 28 | 32 | 35 | 38 | 26 | 26 | 0,007 | 22 | 33 | 39 | |
| 5,40 | 10 | 21 | 2/III | 1,85 | 1,00 | 0,50 | 2,6 | 260 | 390 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,60 | 11 | 27 | 2/III | 1,85 | 1,04 | 0,54 | 2,8 | 275 | 412 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,80 | 9 | 19 | 2/III | 1,85 | 1,07 | 0,45 | 2,1 | 249 | 374 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,00 | 12 | 30 | 4/II | 1,85 | 1,11 | 0,57 | 2,7 | 293 | 440 | 45 | -- | 28 | 31 | 35 | 38 | 25 | 26 | -- | 20 | 30 | 36 | |
| 6,20 | 12 | 30 | 4/II | 1,85 | 1,15 | 0,57 | 2,6 | 298 | 447 | 45 | -- | 28 | 31 | 35 | 38 | 25 | 26 | -- | 20 | 30 | 36 | |
| 6,40 | 8 | 24 | 2/III | 1,85 | 1,18 | 0,40 | 1,6 | 231 | 347 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,60 | 10 | 25 | 2/III | 1,85 | 1,22 | 0,50 | 2,1 | 278 | 418 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,80 | 9 | 27 | 2/III | 1,85 | 1,26 | 0,45 | 1,7 | 258 | 387 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,00 | 11 | 21 | 2/III | 1,85 | 1,30 | 0,54 | 2,1 | 298 | 447 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,20 | 11 | 21 | 2/III | 1,85 | 1,33 | 0,54 | 2,0 | 300 | 450 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,40 | 9 | 19 | 2/III | 1,85 | 1,37 | 0,45 | 1,6 | 261 | 382 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,60 | 10 | 25 | 2/III | 1,85 | 1,41 | 0,50 | 1,7 | 287 | 430 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,80 | 11 | 21 | 2/III | 1,85 | 1,44 | 0,54 | 1,8 | 305 | 458 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,00 | 11 | 27 | 2/III | 1,85 | 1,48 | 0,54 | 1,8 | 307 | 460 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,20 | 9 | 27 | 2/III | 1,85 | 1,52 | 0,45 | 1,4 | 265 | 397 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,40 | 9 | 22 | 2/III | 1,85 | 1,55 | 0,45 | 1,3 | 265 | 398 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,60 | 10 | 30 | 4/II | 1,85 | 1,59 | 0,50 | 1,5 | 292 | 438 | 40 | -- | 28 | 31 | 35 | 38 | 25 | 26 | -- | 17 | 25 | 30 | |
| 8,80 | 9 | 34 | 4/II | 1,85 | 1,63 | 0,45 | 1,3 | 266 | 400 | 38 | -- | 28 | 31 | 35 | 38 | 25 | 26 | -- | 15 | 23 | 27 | |
| 9,00 | 9 | 22 | 2/III | 1,85 | 1,66 | 0,45 | 1,2 | 267 | 401 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,20 | 9 | 27 | 2/III | 1,85 | 1,70 | 0,45 | 1,2 | 267 | 401 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,40 | 11 | 21 | 2/III | 1,85 | 1,74 | 0,54 | 1,4 | 314 | 471 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,60 | 11 | 21 | 2/III | 1,85 | 1,78 | 0,54 | 1,4 | 315 | 472 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,80 | 12 | 22 | 2/III | 1,85 | 1,81 | 0,57 | 1,5 | 334 | 501 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,00 | 14 | -- | 2/III | 1,85 | 1,85 | 0,64 | 1,7 | 367 | 551 | 48 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

DIRETTORE DI LABORATORIO
 PER PROVE IN SITO
 Dott. geol. Pierluigi Dallari

RESPONSABILE DI
 CANTIERE
 Dott. geol. Pierluigi Dallari

ELABORAZIONE
 DATI
 Dott. Gianni Lorici

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00105S03

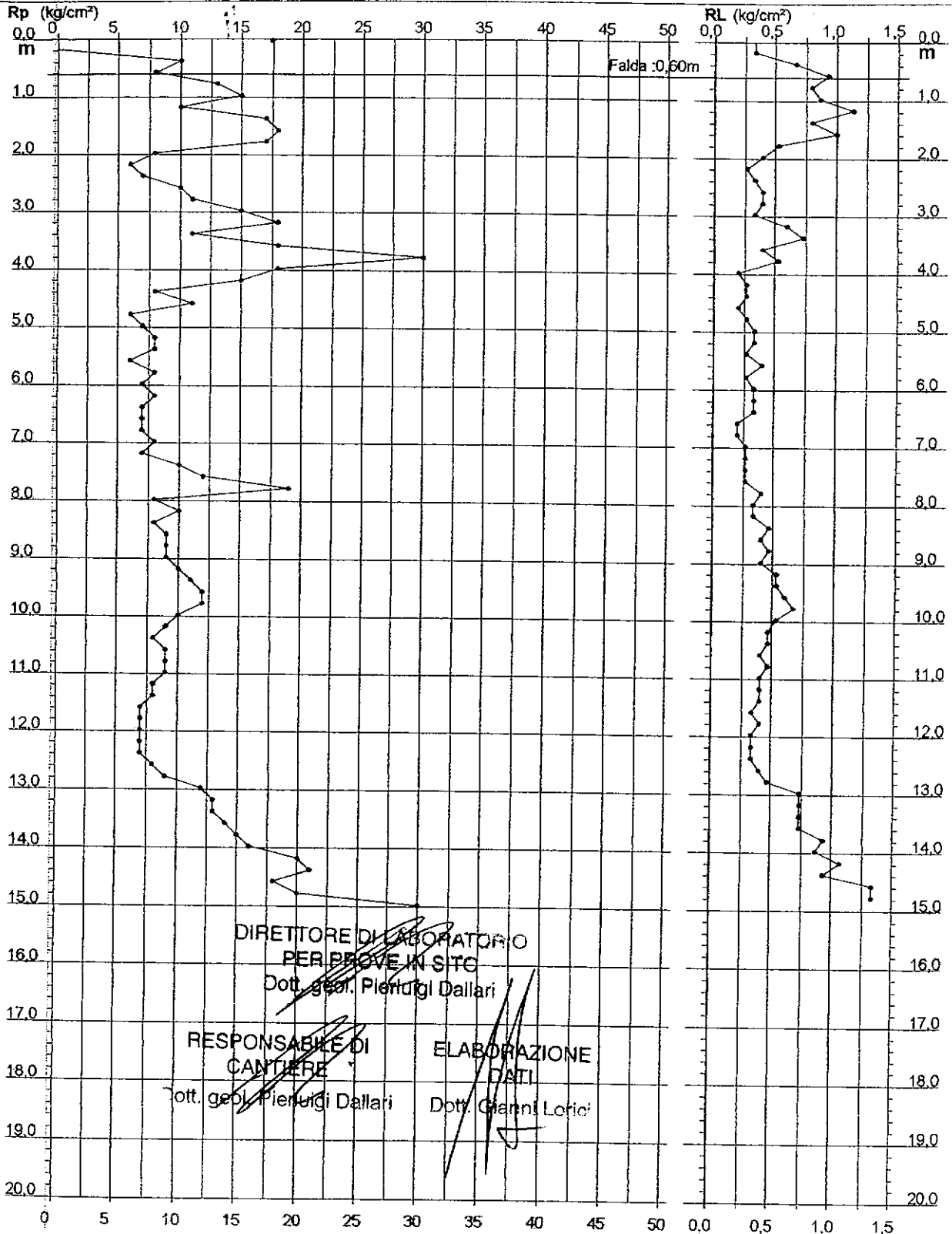
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 2

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Studio terreno
- località: Nonantola (MO) - Lotta 30
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Francesco Dettori

- data prova :
- quota inizio : Piano Campagna
- prof. falda : 0,60 m da quota inizio
- scala vert. : 1 : 100
- data emiss. :
- pagina n° : 2/4



PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00105S03

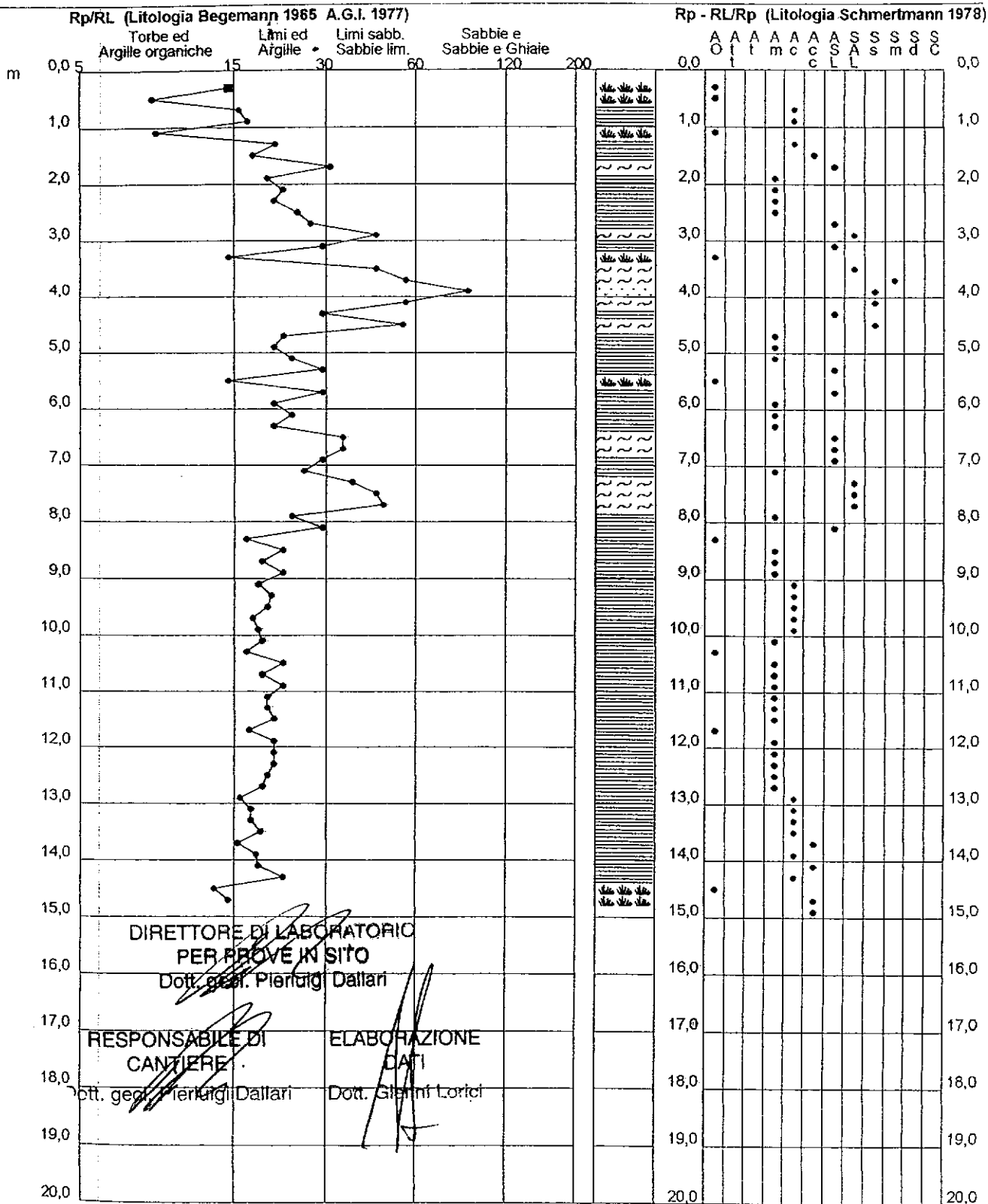
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 2

3.010496-043

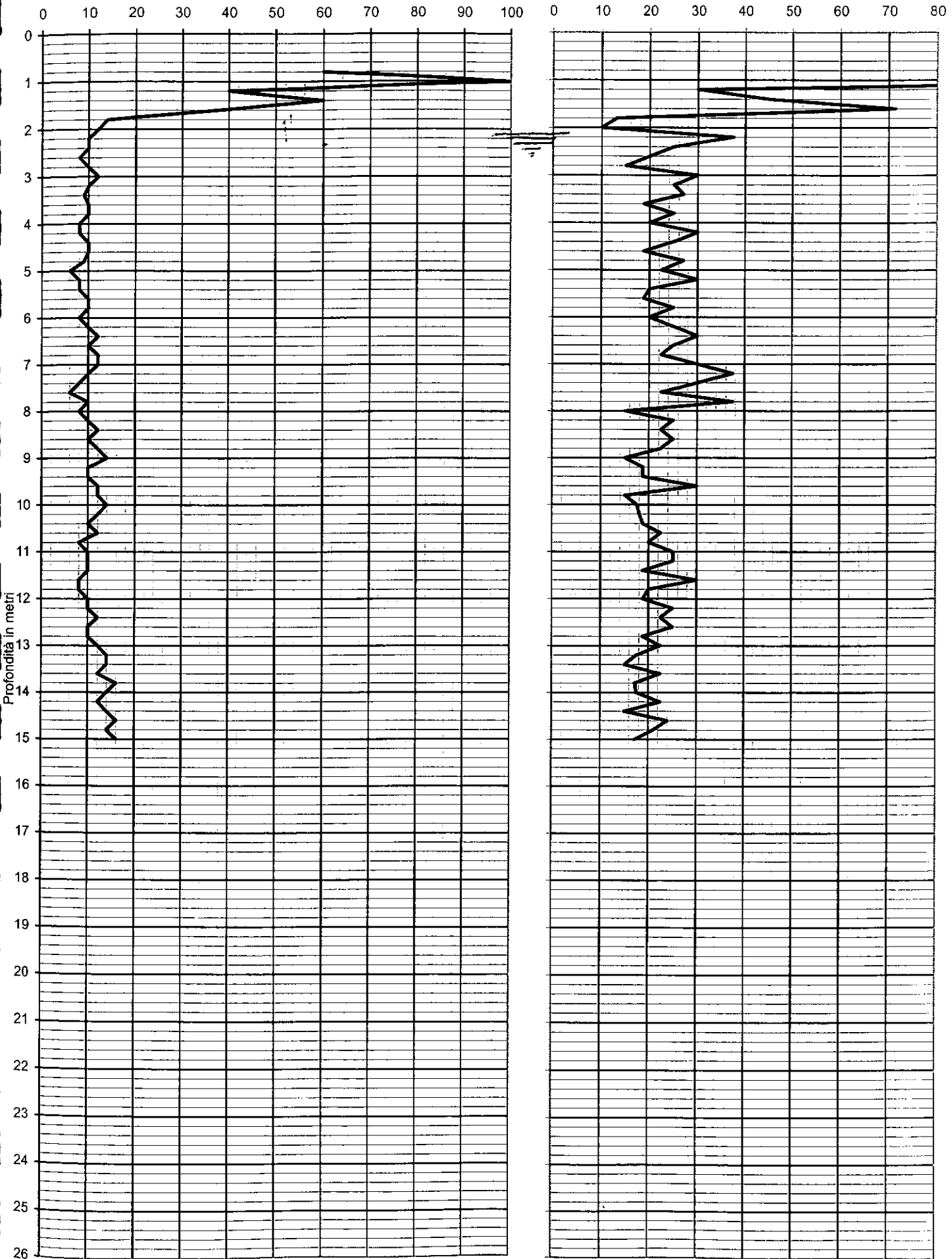
- committente: Studio Geologico Dallari
- lavoro: Studio terreno
- località: Nonantola (MO) - Lotto . 30
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Francesco Dettori

- data prova :
- quota inizio : Piano Campagna
- prof. falda : 0,60 m da quota inizio
- scala vert. : 1 : 100
- data emiss. :
- pagina n°: 3/4



Resistenza alla punta Rp (kg/cm²)

Rp/Rl





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : SOCEDIL S.R.L.
Località : NONANTOLA LOTTO 46
Prova numero : 3
Data : 06/09/2004
Operatore : DR. REBECCHI
Quota : P.C.

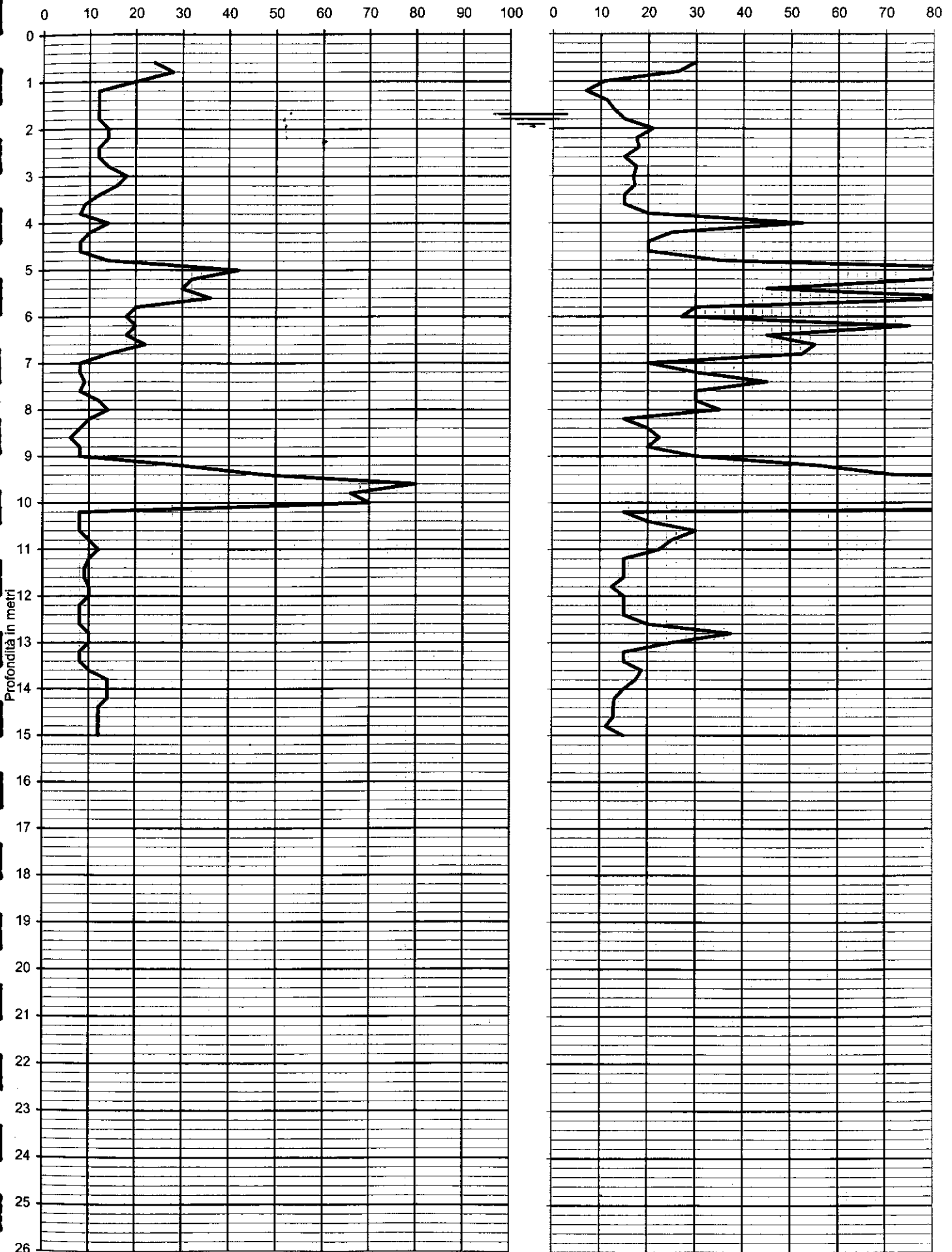
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | | | | | |
| 0,80 | 60 | | 60 | | |
| 1,00 | 100 | 110 | 100 | 0,67 | 150,00 |
| 1,20 | 40 | 60 | 40 | 1,33 | 30,00 |
| 1,40 | 60 | 80 | 60 | 1,33 | 45,00 |
| 1,60 | 38 | 46 | 38 | 0,53 | 71,25 |
| 1,80 | 14 | 30 | 14 | 1,07 | 13,13 |
| 2,00 | 12 | 30 | 12 | 1,20 | 10,00 |
| 2,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 2,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 3,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,40 | 9 | 14 | 9 | 0,33 | 27,00 |
| 3,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,80 | 9 | 14 | 9 | 0,33 | 27,00 |
| 5,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 6,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 7,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 7,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 7,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 8,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 8,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,00 | 14 | 28 | 14 | 0,93 | 15,00 |
| 9,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,60 | 12 | 18 | 12 | 0,40 | 30,00 |
| 9,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 10,00 | 14 | 26 | 14 | 0,80 | 17,50 |
| 10,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 10,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 10,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 11,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 11,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 12,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 13,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 13,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,80 | 16 | 30 | 16 | 0,93 | 17,14 |
| 14,00 | 14 | 26 | 14 | 0,80 | 17,50 |
| 14,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 14,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 14,60 | 16 | 26 | 16 | 0,67 | 24,00 |
| 14,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 15,00 | 16 | 30 | 16 | 0,93 | 17,14 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via AUSTRIA, 24 - 41100 MODENA

Resistenza alla punta R_p (kg/cm²)

R_p/R_l





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999
Telefax 059/454827

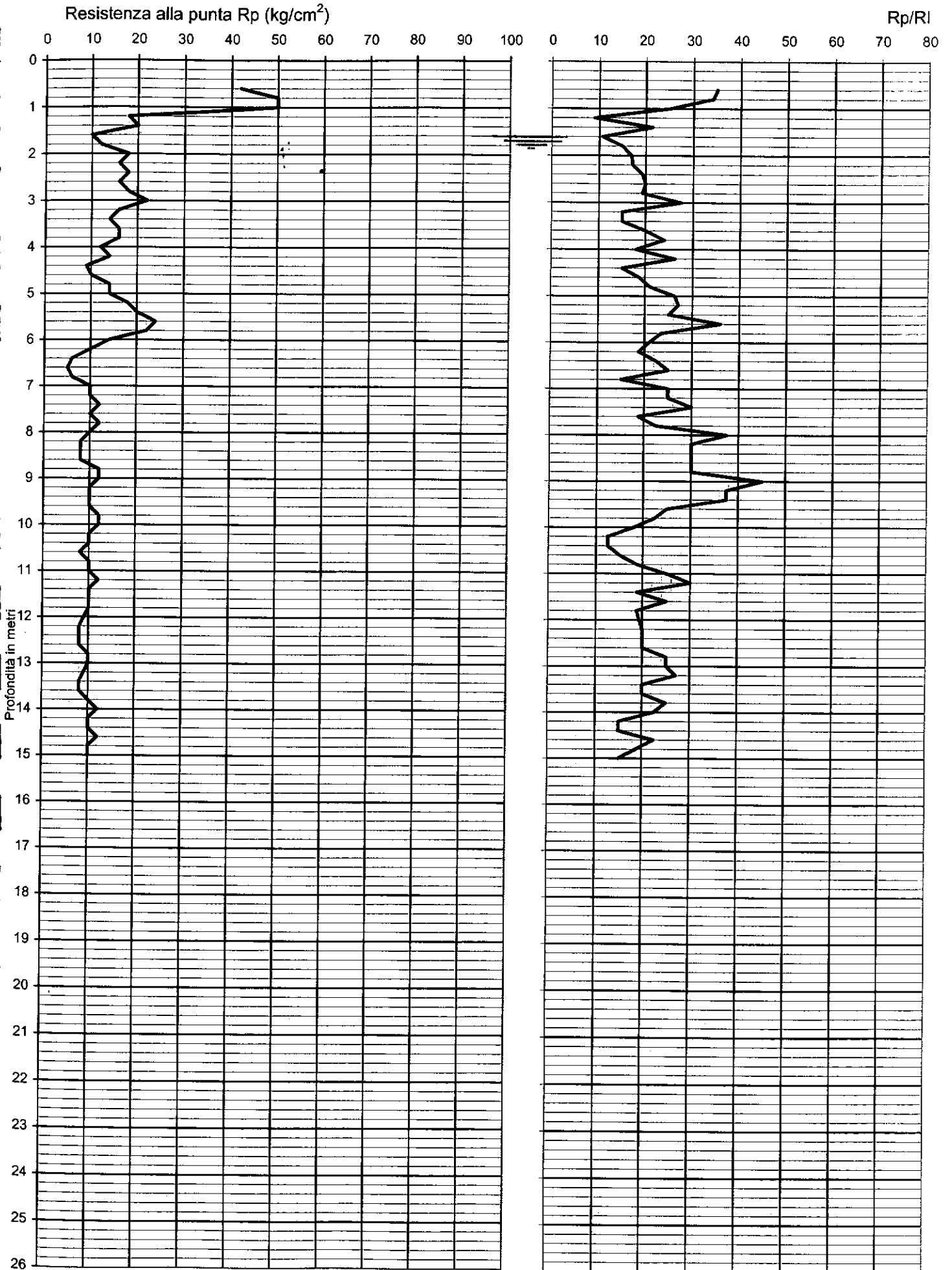
PROVA PENETROMETRICA STATICA
Penetrometro Gouda

Committente : SOCEDIL S.R.L.
Località : NONANTOLA LOTTO 35
Prova numero : 2
Data : 09/07/2004
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 24 | 36 | 24 | 0,80 | 30,00 |
| 0,80 | 28 | 44 | 28 | 1,07 | 26,25 |
| 1,00 | 20 | 48 | 20 | 1,87 | 10,71 |
| 1,20 | 12 | 38 | 12 | 1,73 | 6,92 |
| 1,40 | 12 | 28 | 12 | 1,07 | 11,25 |
| 1,60 | 12 | 26 | 12 | 0,93 | 12,86 |
| 1,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 2,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 2,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 2,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 2,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 2,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 3,00 | 18 | 34 | 18 | 1,07 | 16,88 |
| 3,20 | 16 | 30 | 16 | 0,93 | 17,14 |
| 3,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 3,60 | 9 | 18 | 9 | 0,60 | 15,00 |
| 3,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,00 | 14 | 18 | 14 | 0,27 | 52,50 |
| 4,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,80 | 14 | 20 | 14 | 0,40 | 35,00 |
| 5,00 | 42 | 48 | 42 | 0,40 | 105,00 |
| 5,20 | 32 | 38 | 32 | 0,40 | 80,00 |
| 5,40 | 30 | 40 | 30 | 0,67 | 45,00 |
| 5,60 | 36 | 42 | 36 | 0,40 | 90,00 |
| 5,80 | 20 | 30 | 20 | 0,67 | 30,00 |
| 6,00 | 18 | 28 | 18 | 0,67 | 27,00 |
| 6,20 | 20 | 24 | 20 | 0,27 | 75,00 |
| 6,40 | 18 | 24 | 18 | 0,40 | 45,00 |
| 6,60 | 22 | 28 | 22 | 0,40 | 55,00 |
| 6,80 | 14 | 18 | 14 | 0,27 | 52,50 |
| 7,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,40 | 9 | 12 | 9 | 0,20 | 45,00 |
| 7,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 8,00 | 14 | 20 | 14 | 0,40 | 35,00 |
| 8,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 8,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,20 | 30 | 38 | 30 | 0,53 | 56,25 |
| 9,40 | 48 | 58 | 48 | 0,67 | 72,00 |
| 9,60 | 80 | 86 | 80 | 0,40 | 200,00 |
| 9,80 | 66 | 72 | 66 | 0,40 | 165,00 |
| 10,00 | 70 | 74 | 70 | 0,27 | 262,50 |
| 10,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 10,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 11,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 11,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 11,60 | 9 | 18 | 9 | 0,60 | 15,00 |
| 11,80 | 10 | 22 | 10 | 0,80 | 12,50 |
| 12,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 12,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 13,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 13,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 13,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 13,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 14,00 | 14 | 28 | 14 | 0,93 | 15,00 |
| 14,20 | 14 | 30 | 14 | 1,07 | 13,13 |
| 14,40 | 12 | 26 | 12 | 0,93 | 12,86 |
| 14,60 | 12 | 26 | 12 | 0,93 | 12,86 |
| 14,80 | 12 | 28 | 12 | 1,07 | 11,25 |
| 15,00 | 12 | 24 | 12 | 0,80 | 15,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
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| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via AUSTRIA, 24 - 41100 MODENA





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

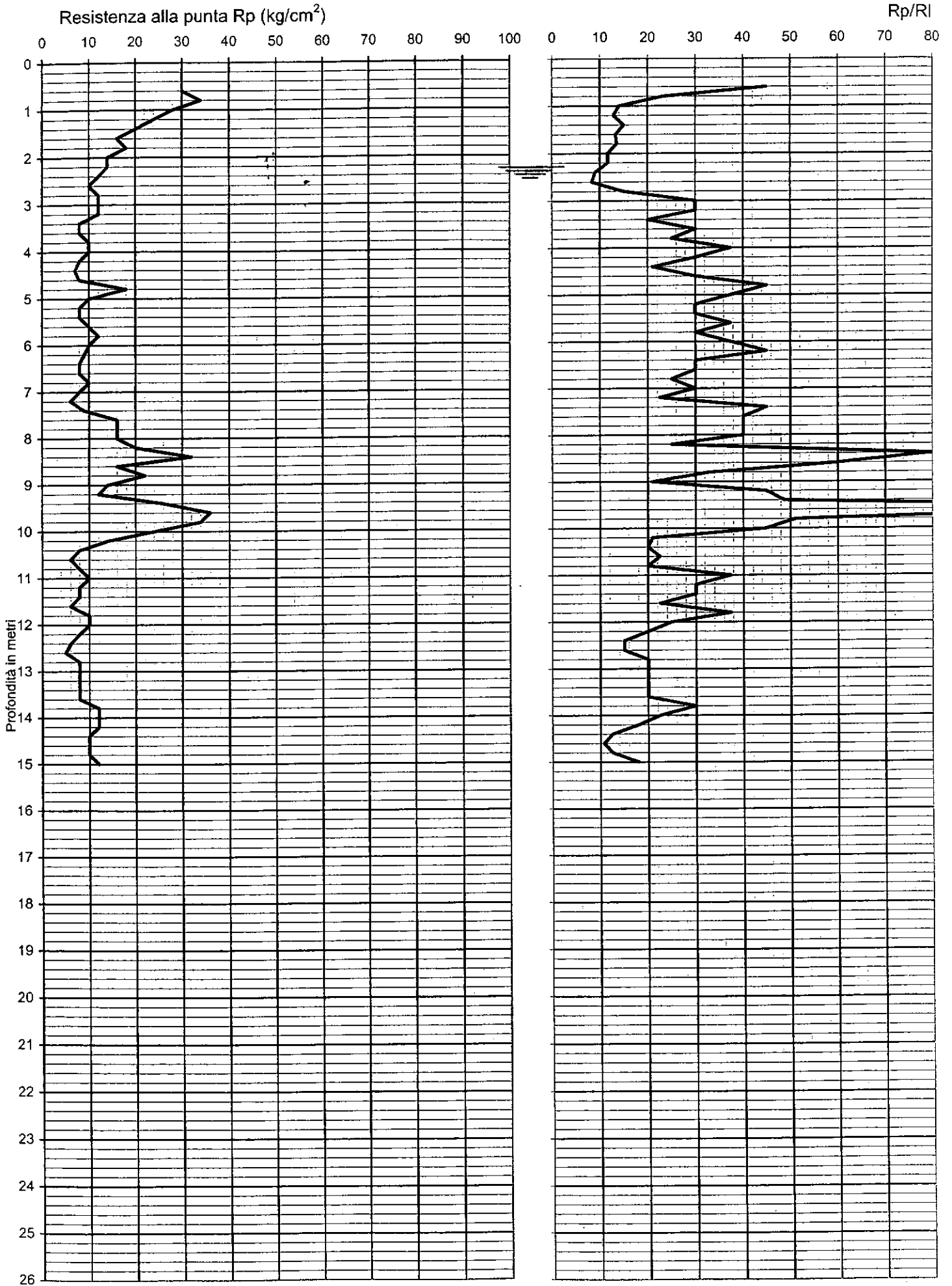
Penetrometro Gouda

Committente : SOCEDIL S.R.L.
Località : NONANTOLA LOTTO 37
Prova numero : 3
Data : 09/07/2004
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 42 | 60 | 42 | 1,20 | 35,00 |
| 0,80 | 50 | 72 | 50 | 1,47 | 34,09 |
| 1,00 | 50 | 80 | 50 | 2,00 | 25,00 |
| 1,20 | 18 | 48 | 18 | 2,00 | 9,00 |
| 1,40 | 20 | 34 | 20 | 0,93 | 21,43 |
| 1,60 | 10 | 24 | 10 | 0,93 | 10,71 |
| 1,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 2,00 | 18 | 34 | 18 | 1,07 | 16,88 |
| 2,20 | 16 | 30 | 16 | 0,93 | 17,14 |
| 2,40 | 18 | 32 | 18 | 0,93 | 19,29 |
| 2,60 | 16 | 28 | 16 | 0,80 | 20,00 |
| 2,80 | 18 | 32 | 18 | 0,93 | 19,29 |
| 3,00 | 22 | 34 | 22 | 0,80 | 27,50 |
| 3,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 3,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 3,60 | 16 | 28 | 16 | 0,80 | 20,00 |
| 3,80 | 16 | 26 | 16 | 0,67 | 24,00 |
| 4,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 4,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 4,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 4,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 5,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 5,20 | 18 | 28 | 18 | 0,67 | 27,00 |
| 5,40 | 20 | 32 | 20 | 0,80 | 25,00 |
| 5,60 | 24 | 34 | 24 | 0,67 | 36,00 |
| 5,80 | 22 | 36 | 22 | 0,93 | 23,57 |
| 6,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 6,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,60 | 5 | 8 | 5 | 0,20 | 25,00 |
| 6,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 7,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 7,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 8,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 9,00 | 12 | 16 | 12 | 0,27 | 45,00 |
| 9,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 9,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 9,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 10,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 10,20 | 10 | 22 | 10 | 0,80 | 12,50 |
| 10,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 10,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 10,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 11,20 | 12 | 18 | 12 | 0,40 | 30,00 |
| 11,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 11,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,00 | 9 | 16 | 9 | 0,47 | 19,29 |
| 12,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 13,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 13,20 | 9 | 14 | 9 | 0,33 | 27,00 |
| 13,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 14,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 14,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 14,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 14,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 14,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 15,00 | 10 | 20 | 10 | 0,67 | 15,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
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| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
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| 23,00 | | | | | |
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| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
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| 28,80 | | | | | |
| 29,00 | | | | | |
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| 29,40 | | | | | |
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| 29,80 | | | | | |
| 30,00 | | | | | |

Via AUSTRIA, 24 - 41100 MODENA





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999
Telefax 059/454827

PROVA PENETROMETRICA STATICA
Penetrometro Gouda

Committente : SOCEDIL S.R.L.
Località : NONANTOLA LOTTO 41
Prova numero : 1
Data : 08/07/2004
Operatore : DR. REBECCHI
Quota : P.C.

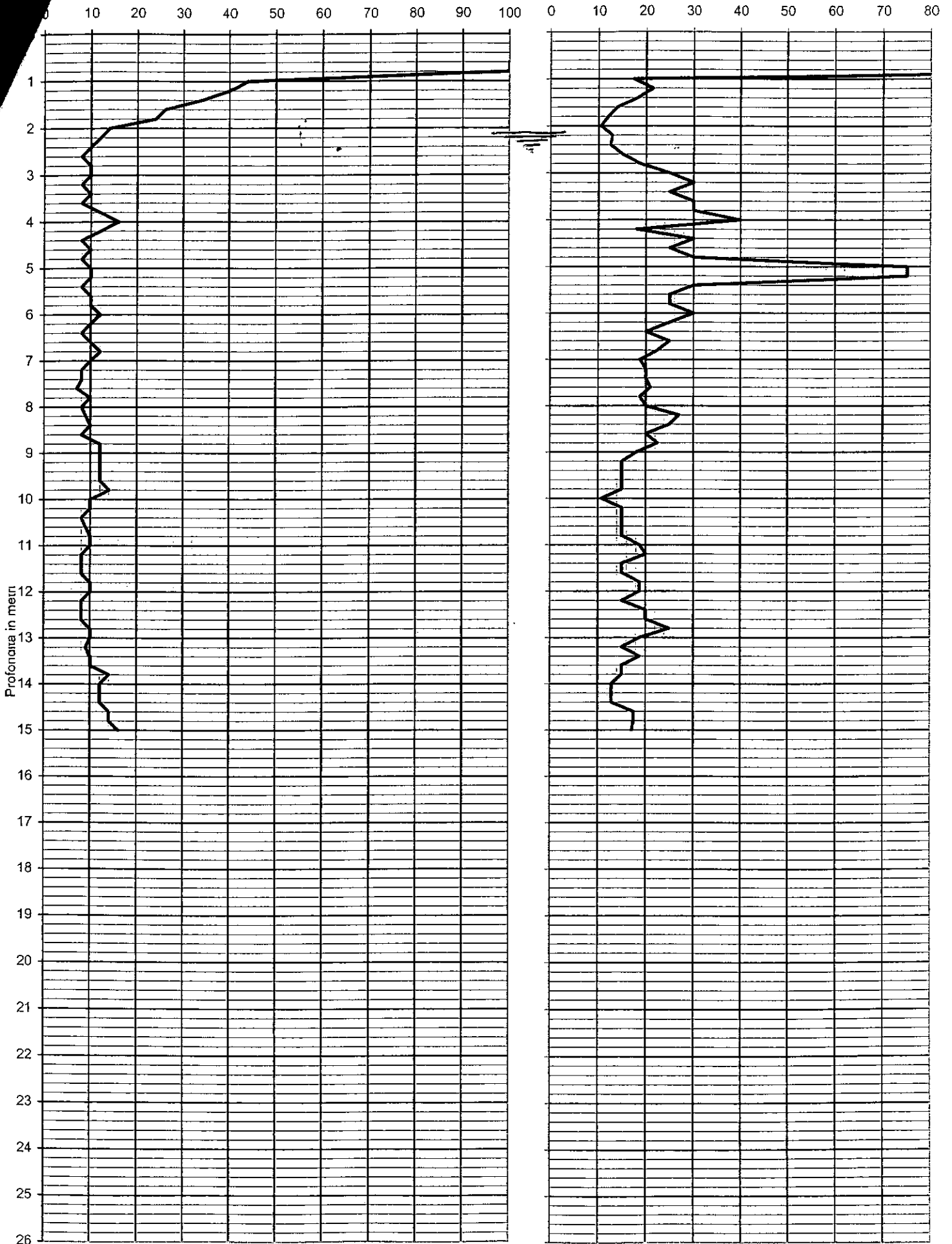
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 30 | 40 | 30 | 0,67 | 45,00 |
| 0,80 | 34 | 56 | 34 | 1,47 | 23,18 |
| 1,00 | 28 | 58 | 28 | 2,00 | 14,00 |
| 1,20 | 24 | 52 | 24 | 1,87 | 12,86 |
| 1,40 | 20 | 40 | 20 | 1,33 | 15,00 |
| 1,60 | 16 | 34 | 16 | 1,20 | 13,33 |
| 1,80 | 18 | 38 | 18 | 1,33 | 13,50 |
| 2,00 | 14 | 32 | 14 | 1,20 | 11,67 |
| 2,20 | 14 | 32 | 14 | 1,20 | 11,67 |
| 2,40 | 12 | 32 | 12 | 1,33 | 9,00 |
| 2,60 | 10 | 28 | 10 | 1,20 | 8,33 |
| 2,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 3,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,20 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 4,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,40 | 7 | 12 | 7 | 0,33 | 21,00 |
| 4,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,80 | 18 | 24 | 18 | 0,40 | 45,00 |
| 5,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 5,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 5,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 6,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 6,20 | 9 | 12 | 9 | 0,20 | 45,00 |
| 6,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,40 | 9 | 12 | 9 | 0,20 | 45,00 |
| 7,60 | 16 | 22 | 16 | 0,40 | 40,00 |
| 7,80 | 16 | 22 | 16 | 0,40 | 40,00 |
| 8,00 | 16 | 22 | 16 | 0,40 | 40,00 |
| 8,20 | 20 | 32 | 20 | 0,80 | 25,00 |
| 8,40 | 32 | 38 | 32 | 0,40 | 80,00 |
| 8,60 | 16 | 20 | 16 | 0,27 | 60,00 |
| 8,80 | 22 | 32 | 22 | 0,67 | 33,00 |
| 9,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 9,20 | 12 | 16 | 12 | 0,27 | 45,00 |
| 9,40 | 26 | 34 | 26 | 0,53 | 48,75 |
| 9,60 | 36 | 40 | 36 | 0,27 | 135,00 |
| 9,80 | 34 | 44 | 34 | 0,67 | 51,00 |
| 10,00 | 24 | 32 | 24 | 0,53 | 45,00 |
| 10,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 10,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 10,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 11,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 11,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 12,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 12,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 14,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 14,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 14,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 14,60 | 10 | 24 | 10 | 0,93 | 10,71 |
| 14,80 | 10 | 22 | 10 | 0,80 | 12,50 |
| 15,00 | 12 | 22 | 12 | 0,67 | 18,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
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| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

via AUSTRIA, 24 - 41100 MODENA

Resistenza alla punta Rp (kg/cm²)

Rp/RI





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : SOCEDIL S.R.L.

Località : NONANTOLA LOTTO 42

Prova numero : 2

Data : 06/09/2004

Operatore : DR. REBECCHI

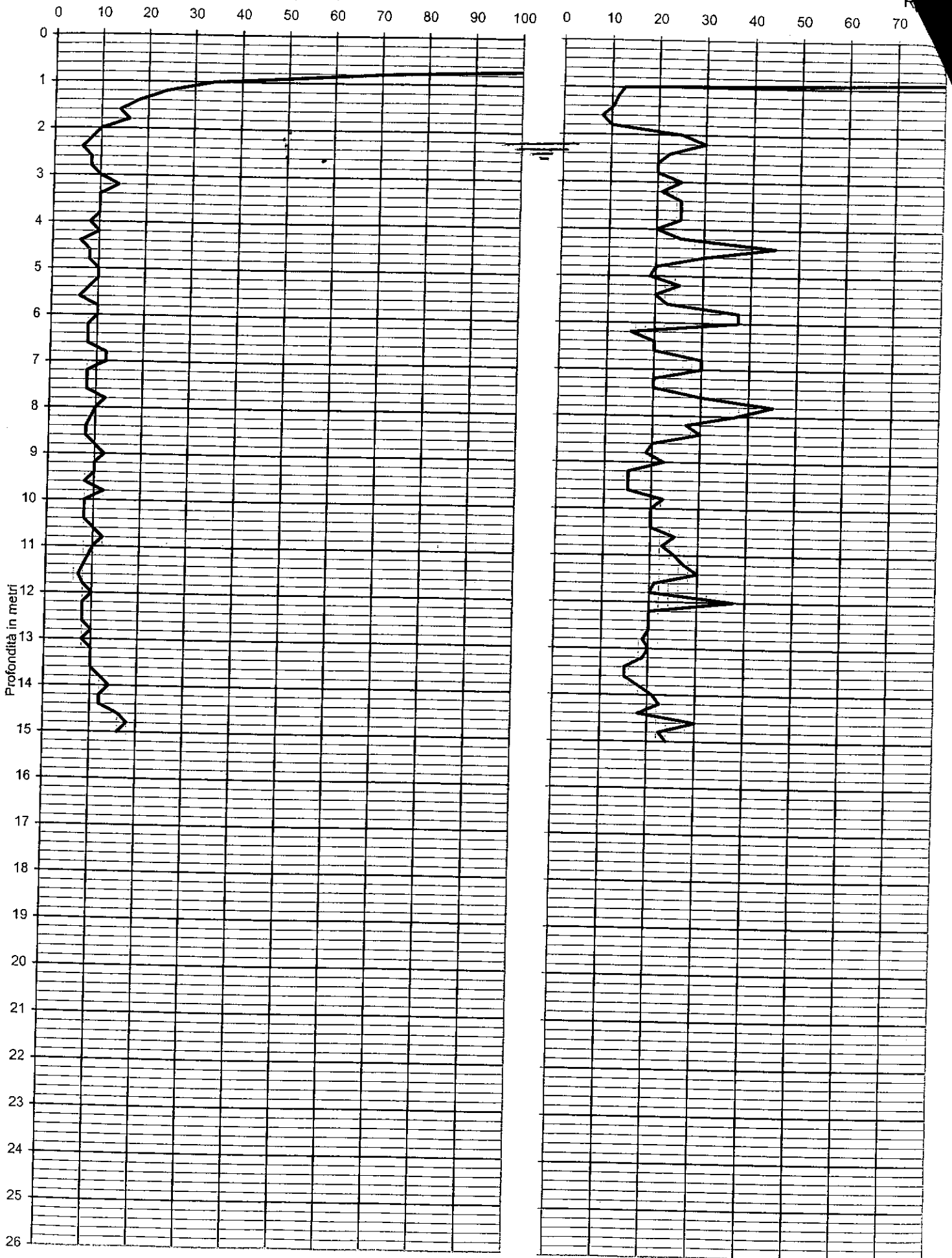
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 100 | | 100 | | |
| 0,80 | 100 | 110 | 100 | 0,67 | 150,00 |
| 1,00 | 44 | 82 | 44 | 2,53 | 17,37 |
| 1,20 | 40 | 68 | 40 | 1,87 | 21,43 |
| 1,40 | 34 | 62 | 34 | 1,87 | 18,21 |
| 1,60 | 26 | 54 | 26 | 1,87 | 13,93 |
| 1,80 | 24 | 54 | 24 | 2,00 | 12,00 |
| 2,00 | 14 | 34 | 14 | 1,33 | 10,50 |
| 2,20 | 12 | 26 | 12 | 0,93 | 12,86 |
| 2,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 2,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 2,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 4,00 | 16 | 22 | 16 | 0,40 | 40,00 |
| 4,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 4,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,00 | 10 | 12 | 10 | 0,13 | 75,00 |
| 5,20 | 10 | 12 | 10 | 0,13 | 75,00 |
| 5,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 6,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 7,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,60 | 7 | 12 | 7 | 0,33 | 21,00 |
| 7,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 8,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,20 | 9 | 14 | 9 | 0,33 | 27,00 |
| 8,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 9,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 9,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 9,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 9,80 | 14 | 28 | 14 | 0,93 | 15,00 |
| 10,00 | 10 | 24 | 10 | 0,93 | 10,71 |
| 10,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 10,60 | 9 | 18 | 9 | 0,60 | 15,00 |
| 10,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 11,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 11,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 13,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,20 | 9 | 18 | 9 | 0,60 | 15,00 |
| 13,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,80 | 14 | 28 | 14 | 0,93 | 15,00 |
| 14,00 | 12 | 26 | 12 | 0,93 | 12,86 |
| 14,20 | 12 | 26 | 12 | 0,93 | 12,86 |
| 14,40 | 12 | 26 | 12 | 0,93 | 12,86 |
| 14,60 | 14 | 26 | 14 | 0,80 | 17,50 |
| 14,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 15,00 | 16 | 30 | 16 | 0,93 | 17,14 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via AUSTRIA, 24 - 41100 MODENA

Resistenza alla punta Rp (kg/cm²)





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

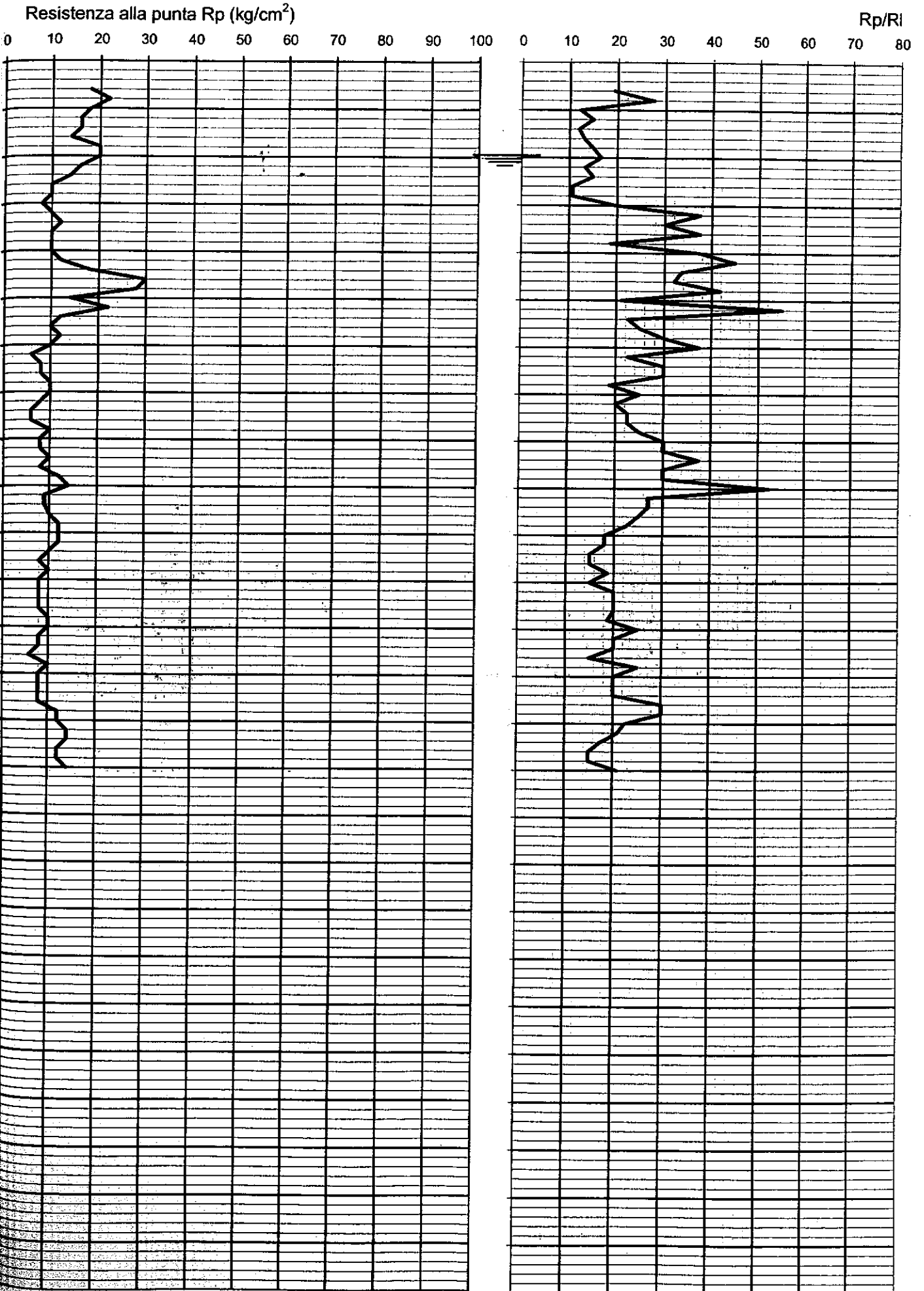
PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : SOCEDIL S.R.L.
Località : NONANTOLA LOTTO 42
Prova numero : 1
Data : 06/09/2004
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 140 | | 140 | | |
| 0,80 | 70 | 78 | 70 | 0,53 | 131,25 |
| 1,00 | 34 | 74 | 34 | 2,67 | 12,75 |
| 1,20 | 24 | 56 | 24 | 2,13 | 11,25 |
| 1,40 | 18 | 44 | 18 | 1,73 | 10,38 |
| 1,60 | 14 | 40 | 14 | 1,73 | 8,08 |
| 1,80 | 16 | 40 | 16 | 1,60 | 10,00 |
| 2,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 2,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 3,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,40 | 6 | 8 | 6 | 0,13 | 45,00 |
| 4,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 6,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 6,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 7,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 7,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,80 | 12 | 16 | 12 | 0,27 | 45,00 |
| 8,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,20 | 9 | 14 | 9 | 0,33 | 27,00 |
| 8,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 9,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 9,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 10,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 11,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 11,20 | 9 | 14 | 9 | 0,33 | 27,00 |
| 11,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,60 | 7 | 12 | 7 | 0,33 | 21,00 |
| 11,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 12,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 14,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 14,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 14,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 14,60 | 16 | 24 | 16 | 0,53 | 30,00 |
| 14,80 | 18 | 30 | 18 | 0,80 | 22,50 |
| 15,00 | 16 | 26 | 16 | 0,67 | 24,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
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| 23,60 | | | | | |
| 23,80 | | | | | |
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| 24,40 | | | | | |
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| 24,80 | | | | | |
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| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
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| 26,40 | | | | | |
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| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

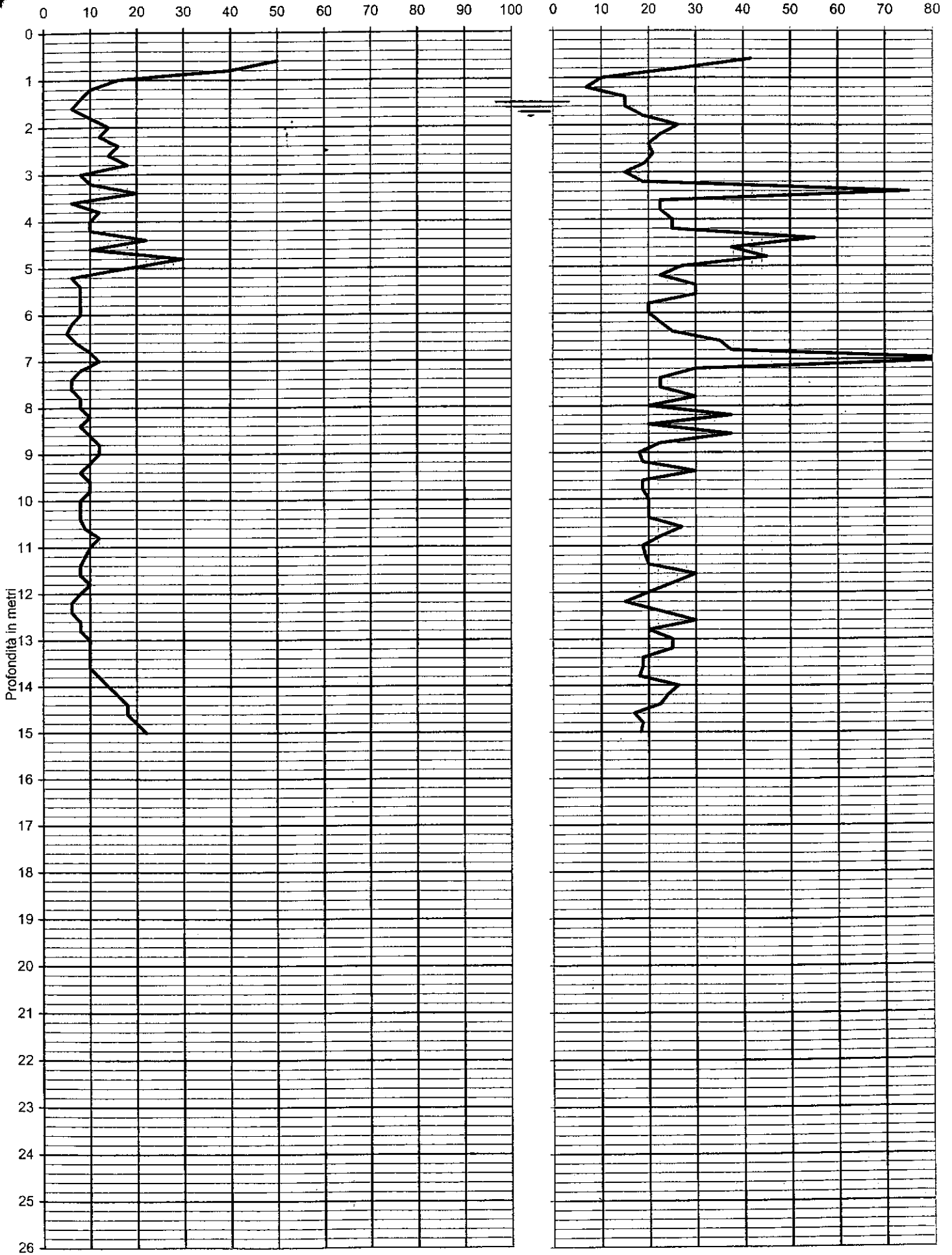
Committente : SOCEDIL S.R.L.
Località : NONANTOLA LOTTO 44
Prova numero : 2
Data : 08/07/2004
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 18 | 32 | 18 | 0,93 | 19,29 |
| 0,80 | 22 | 34 | 22 | 0,80 | 27,50 |
| 1,00 | 18 | 40 | 18 | 1,47 | 12,27 |
| 1,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 1,40 | 16 | 36 | 16 | 1,33 | 12,00 |
| 1,60 | 14 | 30 | 14 | 1,07 | 13,13 |
| 1,80 | 20 | 40 | 20 | 1,33 | 15,00 |
| 2,00 | 20 | 38 | 20 | 1,20 | 16,67 |
| 2,20 | 16 | 34 | 16 | 1,20 | 13,33 |
| 2,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 2,60 | 10 | 24 | 10 | 0,93 | 10,71 |
| 2,80 | 10 | 24 | 10 | 0,93 | 10,71 |
| 3,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 3,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 3,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 4,20 | 12 | 16 | 12 | 0,27 | 45,00 |
| 4,40 | 18 | 26 | 18 | 0,53 | 33,75 |
| 4,60 | 30 | 44 | 30 | 0,93 | 32,14 |
| 4,80 | 28 | 38 | 28 | 0,67 | 42,00 |
| 5,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 5,20 | 22 | 28 | 22 | 0,40 | 55,00 |
| 5,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 5,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 6,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 6,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 9,00 | 14 | 18 | 14 | 0,27 | 52,50 |
| 9,20 | 9 | 14 | 9 | 0,33 | 27,00 |
| 9,40 | 9 | 14 | 9 | 0,33 | 27,00 |
| 9,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 10,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 10,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 10,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 10,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 11,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 13,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 13,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 14,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 14,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 14,40 | 14 | 26 | 14 | 0,80 | 17,50 |
| 14,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 14,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 15,00 | 14 | 24 | 14 | 0,67 | 21,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
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| 22,40 | | | | | |
| 22,60 | | | | | |
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| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Resistenza alla punta Rp (kg/cm²)

Rp/Rl





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

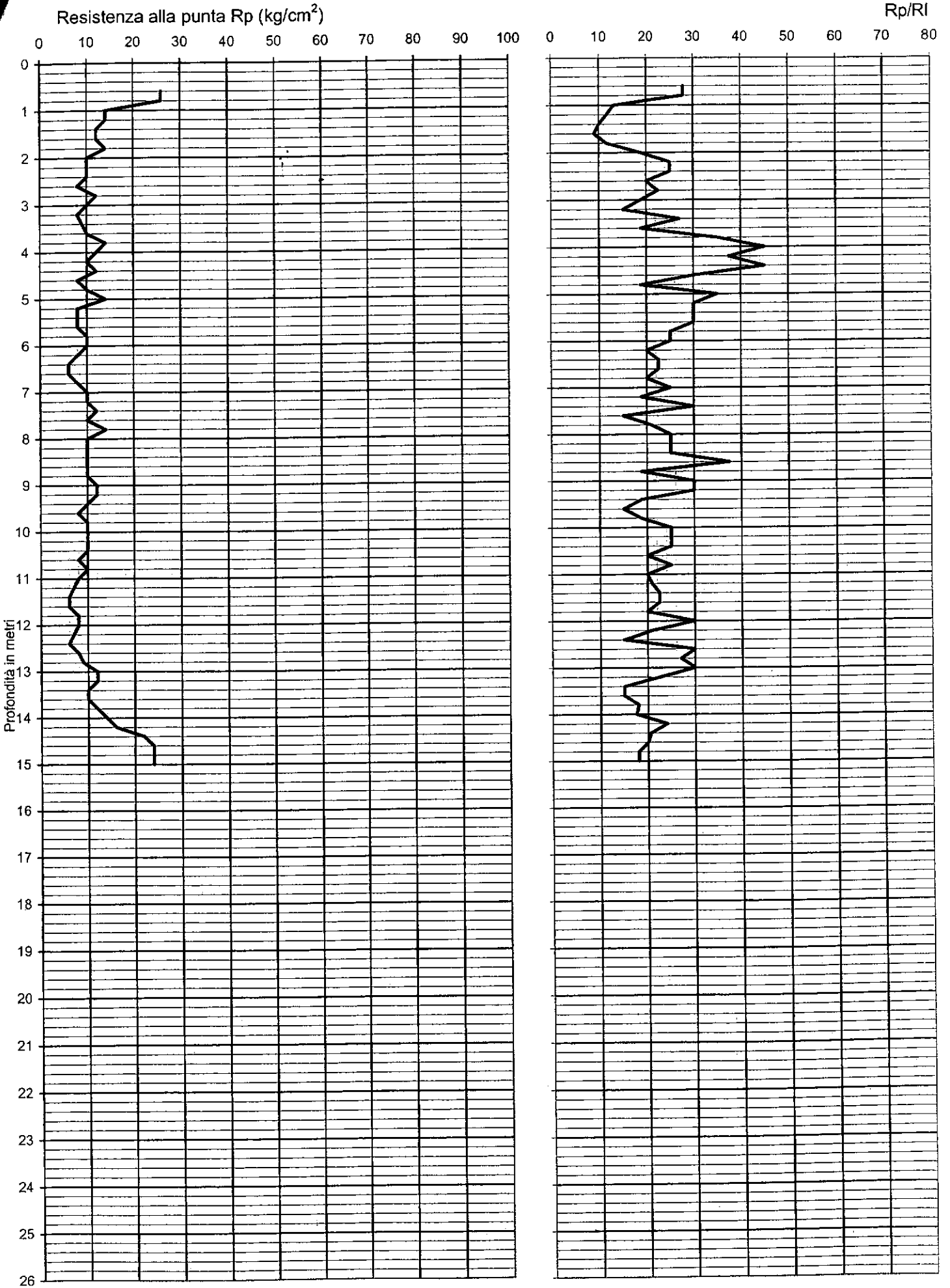
PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : SOCEDIL S.R.L.
Località : NONANTOLA LOTTO 45
Prova numero : 1
Data : 09/07/2004
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 50 | 68 | 50 | 1,20 | 41,67 |
| 0,80 | 40 | 62 | 40 | 1,47 | 27,27 |
| 1,00 | 16 | 40 | 16 | 1,60 | 10,00 |
| 1,20 | 10 | 32 | 10 | 1,47 | 6,82 |
| 1,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 1,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 1,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 2,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 2,40 | 16 | 28 | 16 | 0,80 | 20,00 |
| 2,60 | 14 | 24 | 14 | 0,67 | 21,00 |
| 2,80 | 18 | 32 | 18 | 0,93 | 19,29 |
| 3,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 3,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,40 | 20 | 24 | 20 | 0,27 | 75,00 |
| 3,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 4,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,40 | 22 | 28 | 22 | 0,40 | 55,00 |
| 4,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 4,80 | 30 | 40 | 30 | 0,67 | 45,00 |
| 5,00 | 18 | 28 | 18 | 0,67 | 27,00 |
| 5,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,40 | 5 | 8 | 5 | 0,20 | 25,00 |
| 6,60 | 7 | 10 | 7 | 0,20 | 35,00 |
| 6,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 7,00 | 12 | 14 | 12 | 0,13 | 90,00 |
| 7,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 9,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,60 | 9 | 14 | 9 | 0,33 | 27,00 |
| 10,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 11,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,20 | 9 | 16 | 9 | 0,47 | 19,29 |
| 11,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 12,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 12,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 13,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 13,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 13,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 13,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 14,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 14,20 | 16 | 26 | 16 | 0,67 | 24,00 |
| 14,40 | 18 | 30 | 18 | 0,80 | 22,50 |
| 14,60 | 18 | 34 | 18 | 1,07 | 16,88 |
| 14,80 | 20 | 36 | 20 | 1,07 | 18,75 |
| 15,00 | 22 | 40 | 22 | 1,20 | 18,33 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : SOCEDIL S.R.L.
Località : NONANTOLA LOTTO 45
Prova numero : 3
Data : 09/07/2004
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 26 | 40 | 26 | 0,93 | 27,86 |
| 0,80 | 26 | 40 | 26 | 0,93 | 27,86 |
| 1,00 | 14 | 30 | 14 | 1,07 | 13,13 |
| 1,20 | 14 | 32 | 14 | 1,20 | 11,67 |
| 1,40 | 12 | 30 | 12 | 1,20 | 10,00 |
| 1,60 | 12 | 32 | 12 | 1,33 | 9,00 |
| 1,80 | 14 | 32 | 14 | 1,20 | 11,67 |
| 2,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 3,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 3,40 | 9 | 14 | 9 | 0,33 | 27,00 |
| 3,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,80 | 14 | 20 | 14 | 0,40 | 35,00 |
| 4,00 | 12 | 16 | 12 | 0,27 | 45,00 |
| 4,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 4,40 | 12 | 16 | 12 | 0,27 | 45,00 |
| 4,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 5,00 | 14 | 20 | 14 | 0,40 | 35,00 |
| 5,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 7,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 7,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 8,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 8,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 9,20 | 12 | 18 | 12 | 0,40 | 30,00 |
| 9,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 11,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,20 | 7 | 12 | 7 | 0,33 | 21,00 |
| 11,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 11,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 11,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 12,20 | 7 | 12 | 7 | 0,33 | 21,00 |
| 12,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 12,80 | 9 | 14 | 9 | 0,33 | 27,00 |
| 13,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 13,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 14,00 | 14 | 26 | 14 | 0,80 | 17,50 |
| 14,20 | 16 | 26 | 16 | 0,67 | 24,00 |
| 14,40 | 22 | 38 | 22 | 1,07 | 20,63 |
| 14,60 | 24 | 42 | 24 | 1,20 | 20,00 |
| 14,80 | 24 | 44 | 24 | 1,33 | 18,00 |
| 15,00 | 24 | 44 | 24 | 1,33 | 18,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |



PROVE PENETROMETRICHE SRL

Tel. 059-535046 - Fax: 059-539166

Decreto di Concessione Ministero Infrastrutture e Trasporti n. 54953 del 29/05/2006 - Settore C - Prove In Sito

PROVA PENETROMETRICA STATICA MECCANICA
VALORI DI CAMPAGNA, PUNTA E LATERALE

n°

CPT2

Committente: **Geo group srl**
Cantiere: **Studio terreno di fondazione**
Località: **Nonantola (Mo)**

U.M.: **MPa**
Scala:

Data esecuzione: **29/06/2006**

Preforo:
Falda: **-3,00 m**

| H m | L1 - | L2 - | Lt - | qc MPa | fs kPa | F - | Fr % | H m | L1 - | L2 - | Lt - | qc MPa | fs kPa | F - | Fr % |
|--------|---------|---------|---------|-----------|-----------|--------|---------|--------|---------|---------|---------|-----------|-----------|--------|---------|
| 0,20 | 29,0 | 37,0 | | 2,8 | 53,00 | 55 | 1,8 | | | | | | | | |
| 0,40 | 33,0 | 41,0 | | 3,2 | 93,00 | 35 | 2,8 | | | | | | | | |
| 0,60 | 60,0 | 74,0 | | 5,9 | 307,00 | 20 | 5,1 | | | | | | | | |
| 0,80 | 42,0 | 88,0 | | 4,1 | 193,00 | 22 | 4,6 | | | | | | | | |
| 1,00 | 27,0 | 56,0 | | 2,6 | 73,00 | 37 | 2,7 | | | | | | | | |
| 1,20 | 19,0 | 30,0 | | 1,9 | 120,00 | 16 | 6,3 | | | | | | | | |
| 1,40 | 18,0 | 36,0 | | 1,8 | 93,00 | 19 | 5,2 | | | | | | | | |
| 1,60 | 18,0 | 32,0 | | 1,8 | 87,00 | 21 | 4,8 | | | | | | | | |
| 1,80 | 18,0 | 31,0 | | 1,8 | 87,00 | 21 | 4,8 | | | | | | | | |
| 2,00 | 17,0 | 30,0 | | 1,7 | 93,00 | 18 | 5,5 | | | | | | | | |
| 2,20 | 20,0 | 34,0 | | 2,0 | 80,00 | 25 | 4,0 | | | | | | | | |
| 2,40 | 23,0 | 35,0 | | 2,3 | 80,00 | 29 | 3,5 | | | | | | | | |
| 2,60 | 22,0 | 34,0 | | 2,2 | 100,00 | 22 | 4,5 | | | | | | | | |
| 2,80 | 23,0 | 38,0 | | 2,3 | 100,00 | 23 | 4,3 | | | | | | | | |
| 3,00 | 14,0 | 29,0 | | 1,4 | 53,00 | 26 | 3,8 | | | | | | | | |
| 3,20 | 11,0 | 19,0 | | 1,1 | 60,00 | 18 | 5,5 | | | | | | | | |
| 3,40 | 19,0 | 28,0 | | 1,9 | 87,00 | 22 | 4,6 | | | | | | | | |
| 3,60 | 12,0 | 25,0 | | 1,2 | 40,00 | 30 | 3,3 | | | | | | | | |
| 3,80 | 10,0 | 16,0 | | 1,0 | 27,00 | 37 | 2,7 | | | | | | | | |
| 4,00 | 8,0 | 12,0 | | 0,8 | 47,00 | 17 | 5,9 | | | | | | | | |
| 4,20 | 9,0 | 16,0 | | 0,9 | 33,00 | 27 | 3,7 | | | | | | | | |
| 4,40 | 10,0 | 15,0 | | 1,0 | 33,00 | 30 | 3,3 | | | | | | | | |
| 4,60 | 10,0 | 15,0 | | 1,0 | 27,00 | 37 | 2,7 | | | | | | | | |
| 4,80 | 12,0 | 16,0 | | 1,2 | 33,00 | 36 | 2,8 | | | | | | | | |
| 5,00 | 13,0 | 18,0 | | 1,3 | 53,00 | 25 | 4,1 | | | | | | | | |
| 5,20 | 11,0 | 19,0 | | 1,1 | 87,00 | 13 | 7,9 | | | | | | | | |
| 5,40 | 15,0 | 28,0 | | 1,5 | 47,00 | 32 | 3,1 | | | | | | | | |
| 5,60 | 10,0 | 17,0 | | 1,0 | 33,00 | 30 | 3,3 | | | | | | | | |
| 5,80 | 6,0 | 11,0 | | 0,6 | 33,00 | 18 | 5,5 | | | | | | | | |
| 6,00 | 9,0 | 14,0 | | 0,9 | 27,00 | 33 | 3,0 | | | | | | | | |
| 6,20 | 8,0 | 12,0 | | 0,8 | 40,00 | 20 | 5,0 | | | | | | | | |
| 6,40 | 10,0 | 16,0 | | 1,0 | 40,00 | 25 | 4,0 | | | | | | | | |
| 6,60 | 8,0 | 14,0 | | 0,8 | 40,00 | 20 | 5,0 | | | | | | | | |
| 6,80 | 10,0 | 16,0 | | 1,0 | 53,00 | 19 | 5,3 | | | | | | | | |
| 7,00 | 9,0 | 17,0 | | 0,9 | 47,00 | 19 | 5,2 | | | | | | | | |
| 7,20 | 11,0 | 18,0 | | 1,1 | 53,00 | 21 | 4,8 | | | | | | | | |
| 7,40 | 12,0 | 20,0 | | 1,2 | 47,00 | 26 | 3,9 | | | | | | | | |
| 7,60 | 10,0 | 17,0 | | 1,0 | 27,00 | 37 | 2,7 | | | | | | | | |
| 7,80 | 10,0 | 14,0 | | 1,0 | 47,00 | 21 | 4,7 | | | | | | | | |
| 8,00 | 9,0 | 16,0 | | 0,9 | 47,00 | 19 | 5,2 | | | | | | | | |
| 8,20 | 8,0 | 15,0 | | 0,8 | 47,00 | 17 | 5,9 | | | | | | | | |
| 8,40 | 10,0 | 17,0 | | 1,0 | 47,00 | 21 | 4,7 | | | | | | | | |
| 8,60 | 11,0 | 18,0 | | 1,1 | 40,00 | 28 | 3,6 | | | | | | | | |
| 8,80 | 12,0 | 18,0 | | 1,2 | 60,00 | 20 | 5,0 | | | | | | | | |
| 9,00 | 13,0 | 22,0 | | 1,3 | 87,00 | 15 | 6,7 | | | | | | | | |
| 9,20 | 15,0 | 28,0 | | 1,5 | 80,00 | 19 | 5,3 | | | | | | | | |
| 9,40 | 16,0 | 28,0 | | 1,6 | 80,00 | 20 | 5,0 | | | | | | | | |
| 9,60 | 15,0 | 27,0 | | 1,5 | 73,00 | 21 | 4,9 | | | | | | | | |
| 9,80 | 15,0 | 26,0 | | 1,5 | 67,00 | 22 | 4,5 | | | | | | | | |
| 10,00 | 13,0 | 23,0 | | 1,3 | 60,00 | 22 | 4,6 | | | | | | | | |
| 10,20 | 13,0 | 22,0 | | 1,3 | 73,00 | 18 | 5,6 | | | | | | | | |
| 10,40 | 13,0 | 24,0 | | 1,3 | 80,00 | 16 | 6,2 | | | | | | | | |
| 10,60 | 12,0 | 24,0 | | 1,2 | 53,00 | 23 | 4,4 | | | | | | | | |
| 10,80 | 11,0 | 19,0 | | 1,1 | 60,00 | 18 | 5,5 | | | | | | | | |
| 11,00 | 12,0 | 21,0 | | 1,2 | 60,00 | 20 | 5,0 | | | | | | | | |
| 11,20 | 11,0 | 20,0 | | 1,1 | 53,00 | 21 | 4,8 | | | | | | | | |
| 11,40 | 12,0 | 20,0 | | 1,2 | 53,00 | 23 | 4,4 | | | | | | | | |
| 11,60 | 11,0 | 19,0 | | 1,1 | 53,00 | 21 | 4,8 | | | | | | | | |
| 11,80 | 11,0 | 19,0 | | 1,1 | 73,00 | 15 | 6,6 | | | | | | | | |
| 12,00 | 11,0 | 22,0 | | 1,1 | | | | | | | | | | | |

H = profondità
L1 = prima lettura (punta)
L2 = seconda lettura (punta + laterale)
Lt = terza lettura (totale)
qc = resistenza di punta
fs = resistenza laterale
F = rapporto di Begemann (qc / fs)
Fr = rapporto di Schmertmann (fs / qc)%



PROVE PENETROMETRICHE SRL

Tel. 059-535046 - Fax: 059-539166

Decreto di Concessione Ministero Infrastrutture e Trasporti n. 54953 del 29/05/2006 - Settore C - Prove In Sito

**PROVA PENETROMETRICA STATICA MECCANICA
DIAGRAMMA DI RESISTENZA**

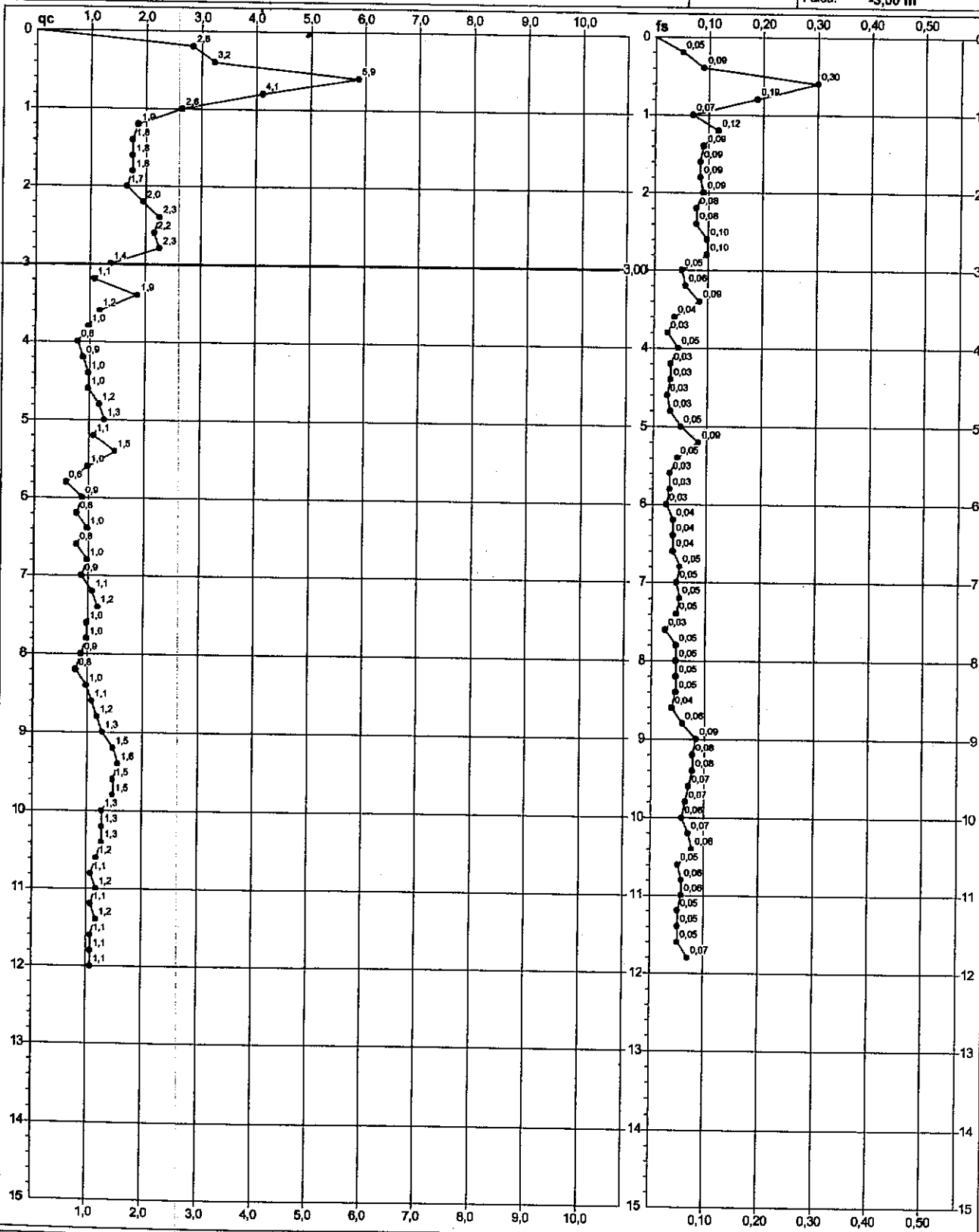
n° **CPT2**

Committente: **Geo group srl**
 Cantiere: **Studio terreno di fondazione**
 Località: **Nonantola (Mo)**

U.M.: **MPa**
 Scala: **1:75**

Data esecuzione: **29/06/2006**

Preforo:
 Falda: **-3,00 m**



| | | | |
|-----------------|--------------------|--|--------------------|
| Coord. Relative | Coord. Geografiche | Penetrometro: GOUDA 200 KN | Quota ass.: |
| Xr: m | Xg: | Responsabile: Dott. Fabrizio Anderlini | Corr.astine: kN/ml |
| Yr: m | Yg: | Assistente: Dott. Francesco Dettori | Cod.ISTAT: 0 |
| Zr: m | Zg: | | |



PROVE PENETROMETRICHE SRL

Tel. 059-535046 - Fax 059-539166

Decreto di Concessione Ministero Infrastrutture e Trasporti n. 54953 del 29/05/2006 - Settore C - Prove In Sito

PROVA PENETROMETRICA STATICA MECCANICA
INTERPRETAZIONE LITOLOGICA

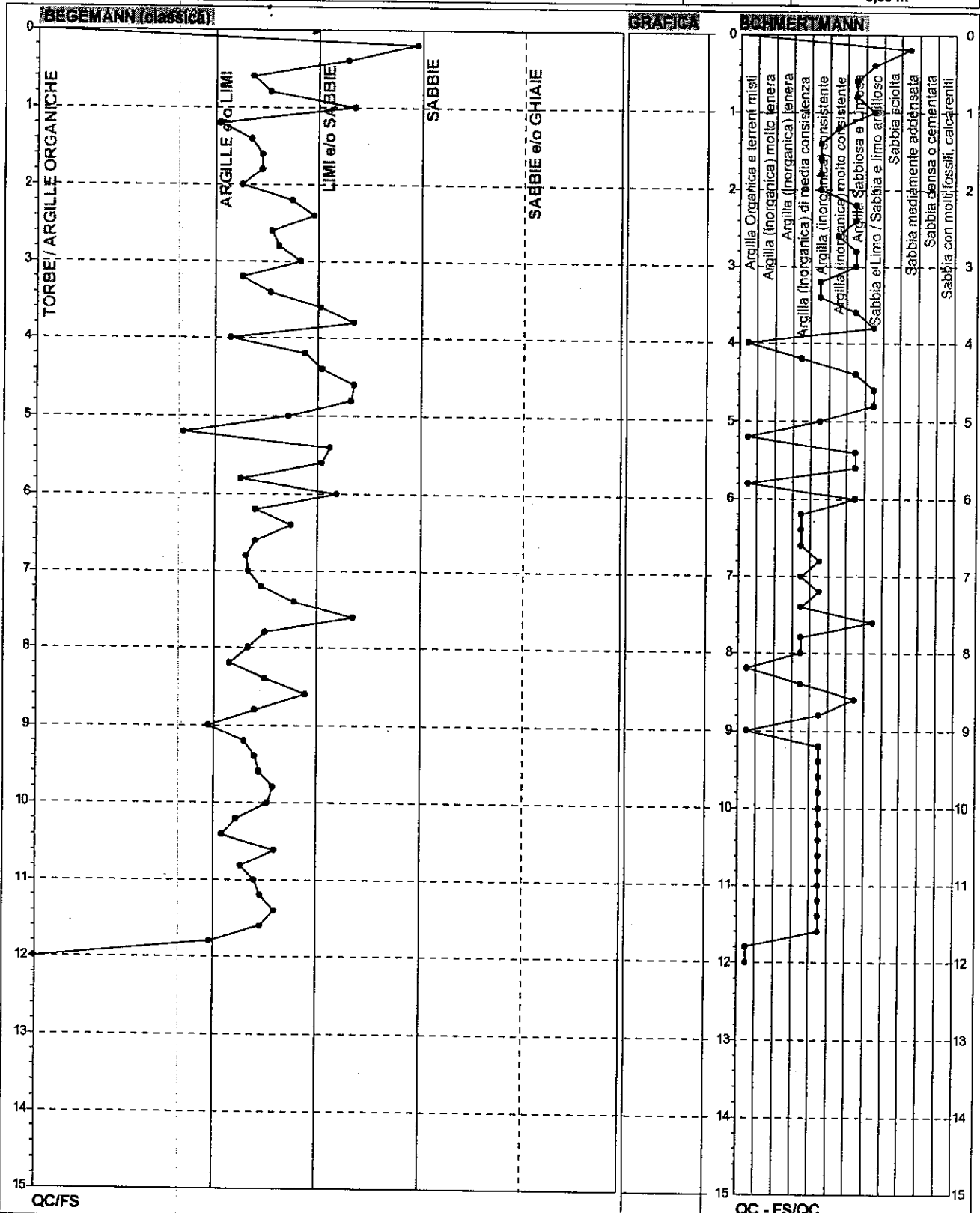
| | |
|----|-------------|
| n° | CPT2 |
| | |
| | |

Committente: **Geo group srl**
 Cantiere: **Studio terreno di fondazione**
 Località: **Nonantola (Mo)**

U.M.: **MPa**
 Scala: **1:75**

Data esecuzione: **29/06/2006**

Preforo:
 Falda: **-3,00 m**



| | | |
|--|--|--|
| Torbe / Argille organiche : 3 punti, 5,00% | Argilla Organica e terreni misti: 6 letture, 10,00% | Argilla Sabbiosa e Limosa: 12 punti, 20,00% |
| Argille e/o Limi : 46 punti, 76,67% | Argilla (inorganica) molto tenera: 0 punti, 0,00% | Sabbia e Limo / Sabbia e limo argilloso: 6 punti, 10,00% |
| Limi e/o Sabbie : 11 punti, 18,33% | Argilla (inorganica) tenera: 0 punti, 0,00% | Sabbia sciolta: 0 punti, 0,00% |
| Sabbie: 0 punti, 0,00% | Argilla (inorganica) media consistenza : 9 punti, 15,00% | Sabbia mediamente addensata: 1 punto, 1,67% |
| Sabbie e/o Ghiaie : 0 punti, 0,00% | Argilla (inorganica) consistente: 23 punti, 38,33% | Sabbia densa o cementata: 0 punti, 0,00% |
| | Argilla (inorganica) molto consistente: 2 punti, 3,33% | Sabbia con molti fossili, calcareniti: 0 punti, 0,00% |



PROVE PENETROMETRICHE SRL

Tel. 059-535046 - Fax: 059-539166

Decreto di Concessione Ministero Infrastrutture e Trasporti n. 54953 del 29/05/2006 - Settore C - Prove in Sito

PROVA PENETROMETRICA STATICA MECCANICA
PARAMETRI GEOTECNICI

| | |
|----|-------------|
| n° | CPT2 |
| | |
| | |

| | | |
|---|------------------|------------------------------------|
| Committente: Geo group srl | U.M.: MPa | Data esecuzione: 29/06/2006 |
| Cantiere: Studio terreno di fondazione | Scala: 1 | Preforo: -3,00 m |
| Località: Nonantola (Mo) | | |

| Prof. m | Qc MPa | Qc/Fs | Zone | γ kN/m³ | σvo kPa | Vs m/s | NATURA COESIVA | | | | | NATURA GRANULARE | | | | | | | | | | |
|---------|--------|-------|------|---------|---------|--------|----------------|---------|----------|----------|--------|------------------|---------|---------|---------|---------|---------|---------|--------|----------|----------|--------|
| | | | | | | | Cu kPa | OCR kPa | Eu50 MPa | Eu25 MPa | Mo MPa | Dr % | σdr (°) | σCa (°) | σKo (°) | σDB (°) | σDM (°) | σMs (°) | F.L. - | E'50 MPa | E'25 MPa | Mo MPa |
| 0,2 | 2,8 | 54,7 | 3 | 184 | 4 | 197 | - | - | - | - | - | 100 | 46 | 43 | 40 | 38 | 45 | 29 | 2,00 | 4,74 | 7,11 | 8,53 |
| 0,4 | 3,2 | 35,5 | 3 | 184 | 7 | 207 | - | - | - | - | - | 97 | 46 | 40 | 37 | 35 | 43 | 29 | 2,00 | 5,39 | 8,09 | 9,70 |
| 0,6 | 5,9 | 19,5 | 4 | 198 | 11 | 259 | 196 | 99,9 | 33,32 | 49,98 | 17,64 | 100 | 46 | 41 | 38 | 36 | 44 | 32 | 2,00 | 9,80 | 14,70 | 17,64 |
| 0,8 | 4,1 | 21,8 | 4 | 196 | 15 | 226 | 137 | 96,0 | 23,32 | 34,99 | 12,35 | 88 | 45 | 38 | 35 | 33 | 41 | 30 | 2,00 | 6,86 | 10,29 | 12,35 |
| 1,0 | 2,6 | 37,0 | 3 | 183 | 19 | 192 | - | - | - | - | - | 67 | 43 | 34 | 31 | 29 | 39 | 28 | 2,00 | 4,41 | 6,62 | 7,94 |
| 1,2 | 1,9 | 15,8 | 2 | 195 | 23 | 168 | 76 | 28,3 | 12,92 | 19,38 | 5,70 | - | - | - | - | - | - | - | - | - | - | - |
| 1,4 | 1,8 | 19,4 | 2 | 194 | 27 | 164 | 74 | 22,3 | 12,50 | 18,74 | 5,50 | - | - | - | - | - | - | - | - | - | - | - |
| 1,6 | 1,8 | 20,7 | 2 | 194 | 31 | 164 | 74 | 18,8 | 12,50 | 18,74 | 5,50 | - | - | - | - | - | - | - | - | - | - | - |
| 1,8 | 1,8 | 20,7 | 2 | 194 | 34 | 164 | 74 | 16,2 | 12,50 | 18,74 | 5,50 | - | - | - | - | - | - | - | - | - | - | - |
| 2,0 | 1,7 | 18,3 | 2 | 193 | 38 | 161 | 71 | 13,6 | 12,05 | 18,08 | 5,30 | - | - | - | - | - | - | - | - | - | - | - |
| 2,2 | 2,0 | 25,0 | 4 | 189 | 42 | 171 | 78 | 13,7 | 13,33 | 19,99 | 5,88 | 37 | 41 | 29 | 26 | 24 | 33 | 27 | - | 3,27 | 4,90 | 5,88 |
| 2,4 | 2,3 | 28,8 | 4 | 190 | 46 | 180 | 85 | 13,6 | 14,46 | 21,69 | 6,76 | 40 | 41 | 29 | 26 | 24 | 33 | 28 | - | 3,76 | 5,64 | 6,76 |
| 2,6 | 2,2 | 22,0 | 4 | 189 | 50 | 177 | 83 | 11,9 | 14,10 | 21,15 | 6,47 | 37 | 41 | 29 | 25 | 24 | 32 | 28 | - | 3,59 | 5,39 | 6,47 |
| 2,8 | 2,3 | 23,0 | 4 | 190 | 53 | 180 | 85 | 11,2 | 14,46 | 21,69 | 6,76 | 36 | 41 | 28 | 25 | 24 | 32 | 28 | - | 3,76 | 5,64 | 6,76 |
| 3,0 | 1,4 | 26,4 | 2 | 192 | 55 | 150 | 62 | 7,3 | 13,67 | 20,50 | 4,72 | - | - | - | - | - | - | - | - | - | - | - |
| 3,2 | 1,1 | 18,3 | 2 | 189 | 57 | 137 | 53 | 5,7 | 15,35 | 23,03 | 4,16 | - | - | - | - | - | - | - | - | - | - | - |
| 3,4 | 1,9 | 21,8 | 2 | 197 | 59 | 168 | 76 | 8,6 | 13,99 | 20,98 | 5,70 | - | - | - | - | - | - | - | - | - | - | - |
| 3,6 | 1,2 | 30,0 | 4 | 186 | 61 | 141 | 56 | 5,7 | 16,33 | 24,50 | 4,37 | 11 | 39 | 24 | 21 | 20 | 28 | 26 | - | 1,96 | 2,94 | 3,53 |
| 3,8 | 1,0 | 37,0 | 4 | 185 | 62 | 132 | 49 | 4,6 | 17,38 | 26,06 | 3,92 | 4 | 38 | 23 | 20 | 19 | 27 | 26 | - | 1,63 | 2,45 | 2,94 |
| 4,0 | 0,8 | 17,0 | 2 | 184 | 64 | 121 | 39 | 3,4 | 18,02 | 27,03 | 3,45 | - | - | - | - | - | - | - | - | - | - | - |
| 4,2 | 0,9 | 27,3 | 2 | 186 | 66 | 127 | 44 | 3,8 | 18,54 | 27,81 | 3,70 | - | - | - | - | - | - | - | - | - | - | - |
| 4,4 | 1,0 | 30,3 | 4 | 185 | 68 | 132 | 49 | 4,2 | 18,86 | 28,29 | 3,92 | 2 | 38 | 23 | 20 | 19 | 26 | 26 | - | 1,63 | 2,45 | 2,94 |
| 4,6 | 1,0 | 37,0 | 4 | 185 | 69 | 132 | 49 | 4,1 | 19,32 | 28,98 | 3,92 | 1 | 38 | 23 | 20 | 19 | 26 | 26 | - | 1,63 | 2,45 | 2,94 |
| 4,8 | 1,2 | 36,4 | 4 | 186 | 71 | 141 | 56 | 4,7 | 19,73 | 29,60 | 4,37 | 7 | 39 | 24 | 20 | 19 | 27 | 26 | - | 1,96 | 2,94 | 3,53 |
| 5,0 | 1,3 | 24,5 | 2 | 189 | 73 | 145 | 59 | 4,9 | 20,16 | 30,24 | 4,56 | - | - | - | - | - | - | - | - | - | - | - |
| 5,2 | 1,1 | 12,6 | 2 | 189 | 75 | 137 | 53 | 4,1 | 20,80 | 31,21 | 4,16 | - | - | - | - | - | - | - | - | - | - | - |
| 5,4 | 1,5 | 31,9 | 4 | 188 | 76 | 154 | 65 | 5,2 | 20,94 | 31,41 | 4,85 | 13 | 39 | 24 | 21 | 20 | 28 | 27 | - | 2,45 | 3,68 | 4,41 |
| 5,6 | 1,0 | 30,3 | 4 | 185 | 78 | 132 | 49 | 3,5 | 22,00 | 33,00 | 3,92 | - | - | - | - | - | - | - | - | - | - | - |
| 5,8 | 0,6 | 18,2 | 2 | 180 | 80 | 109 | 29 | 1,8 | 16,75 | 25,13 | 2,82 | - | - | - | - | - | - | - | - | - | - | - |
| 6,0 | 0,9 | 33,3 | 4 | 183 | 81 | 127 | 44 | 2,9 | 22,02 | 33,03 | 3,70 | - | - | - | - | - | - | - | - | - | - | - |
| 6,2 | 0,8 | 20,0 | 2 | 184 | 83 | 121 | 39 | 2,5 | 20,88 | 31,32 | 3,45 | - | - | - | - | - | - | - | - | - | - | - |
| 6,4 | 1,0 | 25,0 | 2 | 188 | 85 | 132 | 49 | 3,2 | 23,50 | 35,25 | 3,92 | - | - | - | - | - | - | - | - | - | - | - |
| 6,6 | 0,8 | 20,0 | 2 | 184 | 86 | 121 | 39 | 2,3 | 21,19 | 31,78 | 3,45 | - | - | - | - | - | - | - | - | - | - | - |
| 6,8 | 1,0 | 18,9 | 2 | 188 | 88 | 132 | 49 | 3,0 | 24,12 | 36,19 | 3,92 | - | - | - | - | - | - | - | - | - | - | - |
| 7,0 | 0,9 | 19,1 | 2 | 186 | 90 | 127 | 44 | 2,6 | 23,14 | 34,71 | 3,70 | - | - | - | - | - | - | - | - | - | - | - |
| 7,2 | 1,1 | 20,8 | 2 | 189 | 92 | 137 | 53 | 3,1 | 25,37 | 38,05 | 4,16 | - | - | - | - | - | - | - | - | - | - | - |
| 7,4 | 1,2 | 25,5 | 2 | 190 | 93 | 141 | 56 | 3,3 | 28,17 | 39,26 | 4,37 | - | - | - | - | - | - | - | - | - | - | - |
| 7,6 | 1,0 | 37,0 | 4 | 185 | 95 | 132 | 49 | 2,7 | 25,16 | 37,73 | 3,92 | 38 | 21 | 18 | 17 | 25 | 26 | - | 1,63 | 2,45 | 2,94 | |
| 7,8 | 1,0 | 21,3 | 2 | 188 | 97 | 132 | 49 | 2,7 | 25,38 | 38,06 | 3,92 | - | - | - | - | - | - | - | - | - | - | - |
| 8,0 | 0,9 | 19,1 | 2 | 186 | 99 | 127 | 44 | 2,3 | 23,95 | 35,93 | 3,70 | - | - | - | - | - | - | - | - | - | - | - |
| 8,2 | 0,8 | 17,0 | 2 | 184 | 100 | 121 | 39 | 1,9 | 22,08 | 33,12 | 3,45 | - | - | - | - | - | - | - | - | - | - | - |
| 8,4 | 1,0 | 21,3 | 2 | 188 | 102 | 132 | 49 | 2,5 | 25,95 | 38,92 | 3,92 | - | - | - | - | - | - | - | - | - | - | - |
| 8,6 | 1,1 | 27,5 | 2 | 189 | 104 | 137 | 53 | 2,7 | 27,22 | 40,82 | 4,16 | - | - | - | - | - | - | - | - | - | - | - |
| 8,8 | 1,2 | 20,0 | 2 | 190 | 106 | 141 | 56 | 2,8 | 28,33 | 42,50 | 4,37 | - | - | - | - | - | - | - | - | - | - | - |
| 9,0 | 1,3 | 14,9 | 2 | 191 | 108 | 145 | 59 | 3,0 | 29,32 | 43,98 | 4,56 | - | - | - | - | - | - | - | - | - | - | - |
| 9,2 | 1,5 | 18,8 | 2 | 193 | 109 | 154 | 65 | 3,3 | 30,61 | 45,91 | 4,85 | - | - | - | - | - | - | - | - | - | - | - |
| 9,4 | 1,6 | 20,0 | 2 | 194 | 111 | 157 | 68 | 3,4 | 31,29 | 46,93 | 5,08 | - | - | - | - | - | - | - | - | - | - | - |
| 9,6 | 1,5 | 20,5 | 2 | 193 | 113 | 154 | 65 | 3,2 | 31,37 | 47,05 | 4,85 | - | - | - | - | - | - | - | - | - | - | - |
| 9,8 | 1,5 | 22,4 | 2 | 193 | 115 | 154 | 65 | 3,1 | 31,72 | 47,58 | 4,85 | - | - | - | - | - | - | - | - | - | - | - |
| 10,0 | 1,3 | 21,7 | 2 | 191 | 117 | 145 | 59 | 2,7 | 30,64 | 45,95 | 4,56 | - | - | - | - | - | - | - | - | - | - | - |
| 10,2 | 1,3 | 17,8 | 2 | 191 | 119 | 145 | 59 | 2,6 | 30,85 | 46,28 | 4,56 | - | - | - | - | - | - | - | - | - | - | - |
| 10,4 | 1,3 | 16,3 | 2 | 191 | 120 | 145 | 59 | 2,6 | 31,06 | 46,59 | 4,56 | - | - | - | - | - | - | - | - | - | - | - |
| 10,6 | 1,2 | 22,6 | 2 | 190 | 122 | 141 | 56 | 2,4 | 30,17 | 45,25 | 4,37 | - | - | - | - | - | - | - | - | - | - | - |
| 10,8 | 1,1 | 18,3 | 2 | 189 | 124 | 137 | 53 | 2,1 | 29,02 | 43,53 | 4,16 | - | - | - | - | - | - | - | - | - | - | - |
| 11,0 | 1,2 | 20,0 | 2 | 190 | 126 | 141 | 56 | 2,3 | 30,46 | 45,69 | 4,37 | - | - | - | - | - | - | - | - | - | - | - |
| 11,2 | 1,1 | 20,8 | 2 | 189 | 128 | 137 | 53 | 2,1 | 29,24 | 43,86 | 4,16 | - | - | - | - | - | - | - | - | - | - | - |
| 11,4 | 1,2 | 22,6 | 2 | 190 | 129 | 141 | 56 | 2,2 | 30,72 | 46,08 | 4,37 | - | - | - | - | - | - | - | - | - | - | - |
| 11,6 | 1,1 | 20,8 | 2 | 189 | 131 | 137 | 53 | 2,0 | 29,44 | 44,16 | 4,16 | - | - | - | - | - | - | - | - | - | - | - |
| 11,8 | 1,1 | 15,1 | 2 | 189 | 133 | 137 | 53 | 2,0 | 29,54 | 44,30 | 4,16 | - | - | - | - | - | - | - | - | - | - | - |
| 12,0 | 1,1 | - | 3 | 181 | 135 | 137 | - | - | - | - | - | - | 38 | 20 | 17 | 16 | 25 | 26 | 2,00 | 1,80 | 2,70 | 3,23 |

**PROVE PENETROMETRICHE SRL**

Tel. 059-535046 - Fax: 059-539166

Decreto di Concessione Ministero Infrastrutture e Trasporti n. 54953 del 29/05/2006 - Settore C - Prove in Sito

**PROVA PENETROMETRICA STATICA MECCANICA
VALORI DI CAMPAGNA, PUNTA E LATERALE**n° **CPT3**certificato n° **00525**Committente: **Geo group srl**
Cantiere: **Studio terreno di fondazione**
Località: **Nonantola (Mo)**U.M.: **MPa**
Scala:
Elaborat :
Data esecuzione: **05/07/2006**
Data certificato: **05/07/2006**
Preforo:
Falda: **-1,80 m**

| H m | L1 - | L2 - | Lt - | qc MPa | fs kPa | F - | Fr % | H m | L1 - | L2 - | Lt - | qc MPa | fs kPa | F - | Fr % |
|--------|---------|---------|---------|-----------|-----------|--------|---------|--------|---------|---------|---------|-----------|-----------|--------|---------|
| 0,20 | 27,0 | 63,0 | | 2,6 | 113,00 | 24 | 4,2 | | | | | | | | |
| 0,40 | 28,0 | 45,0 | | 2,7 | 227,00 | 12 | 8,1 | | | | | | | | |
| 0,60 | 17,0 | 51,0 | | 1,7 | 100,00 | 17 | 5,9 | | | | | | | | |
| 0,80 | 10,0 | 25,0 | | 1,0 | 53,00 | 19 | 5,3 | | | | | | | | |
| 1,00 | 11,0 | 19,0 | | 1,1 | 53,00 | 21 | 4,8 | | | | | | | | |
| 1,20 | 15,0 | 23,0 | | 1,5 | 67,00 | 22 | 4,5 | | | | | | | | |
| 1,40 | 13,0 | 23,0 | | 1,3 | 67,00 | 19 | 5,2 | | | | | | | | |
| 1,60 | 18,0 | 28,0 | | 1,8 | 73,00 | 25 | 4,1 | | | | | | | | |
| 1,80 | 19,0 | 30,0 | | 1,9 | 67,00 | 28 | 3,5 | | | | | | | | |
| 2,00 | 14,0 | 24,0 | | 1,4 | 60,00 | 23 | 4,3 | | | | | | | | |
| 2,20 | 15,0 | 24,0 | | 1,5 | 53,00 | 28 | 3,5 | | | | | | | | |
| 2,40 | 19,0 | 27,0 | | 1,9 | 93,00 | 20 | 4,9 | | | | | | | | |
| 2,60 | 16,0 | 30,0 | | 1,6 | 73,00 | 22 | 4,6 | | | | | | | | |
| 2,80 | 15,0 | 26,0 | | 1,5 | 60,00 | 25 | 4,0 | | | | | | | | |
| 3,00 | 14,0 | 23,0 | | 1,4 | 47,00 | 30 | 3,4 | | | | | | | | |
| 3,20 | 8,0 | 15,0 | | 0,8 | 33,00 | 24 | 4,1 | | | | | | | | |
| 3,40 | 9,0 | 14,0 | | 0,9 | 53,00 | 17 | 5,9 | | | | | | | | |
| 3,60 | 16,0 | 24,0 | | 1,6 | 73,00 | 22 | 4,6 | | | | | | | | |
| 3,80 | 11,0 | 22,0 | | 1,1 | 47,00 | 23 | 4,3 | | | | | | | | |
| 4,00 | 10,0 | 17,0 | | 1,0 | 33,00 | 30 | 3,3 | | | | | | | | |
| 4,20 | 11,0 | 16,0 | | 1,1 | 53,00 | 21 | 4,8 | | | | | | | | |
| 4,40 | 6,0 | 14,0 | | 0,6 | 27,00 | 22 | 4,5 | | | | | | | | |
| 4,60 | 8,0 | 12,0 | | 0,8 | 53,00 | 15 | 6,6 | | | | | | | | |
| 4,80 | 12,0 | 20,0 | | 1,2 | 40,00 | 30 | 3,3 | | | | | | | | |
| 5,00 | 22,0 | 28,0 | | 2,2 | 27,00 | 81 | 1,2 | | | | | | | | |
| 5,20 | 18,0 | 22,0 | | 1,8 | 27,00 | 67 | 1,5 | | | | | | | | |
| 5,40 | 20,0 | 24,0 | | 2,0 | 20,00 | 100 | 1,0 | | | | | | | | |
| 5,60 | 19,0 | 22,0 | | 1,9 | 33,00 | 58 | 1,7 | | | | | | | | |
| 5,80 | 6,0 | 11,0 | | 0,6 | 33,00 | 18 | 5,5 | | | | | | | | |
| 6,00 | 6,0 | 11,0 | | 0,6 | 27,00 | 22 | 4,5 | | | | | | | | |
| 6,20 | 7,0 | 11,0 | | 0,7 | 33,00 | 21 | 4,7 | | | | | | | | |
| 6,40 | 8,0 | 13,0 | | 0,8 | 73,00 | 11 | 9,1 | | | | | | | | |
| 6,60 | 6,0 | 17,0 | | 0,6 | 40,00 | 15 | 6,7 | | | | | | | | |
| 6,80 | 7,0 | 13,0 | | 0,7 | 47,00 | 15 | 6,7 | | | | | | | | |
| 7,00 | 10,0 | 17,0 | | 1,0 | 73,00 | 14 | 7,3 | | | | | | | | |
| 7,20 | 8,0 | 19,0 | | 0,8 | 47,00 | 17 | 5,9 | | | | | | | | |
| 7,40 | 12,0 | 19,0 | | 1,2 | 67,00 | 18 | 5,6 | | | | | | | | |
| 7,60 | 11,0 | 21,0 | | 1,1 | 60,00 | 18 | 5,5 | | | | | | | | |
| 7,80 | 7,0 | 16,0 | | 0,7 | 47,00 | 15 | 6,7 | | | | | | | | |
| 8,00 | 7,0 | 14,0 | | 0,7 | 40,00 | 18 | 5,7 | | | | | | | | |
| 8,20 | 7,0 | 13,0 | | 0,7 | 33,00 | 21 | 4,7 | | | | | | | | |
| 8,40 | 8,0 | 13,0 | | 0,8 | 73,00 | 11 | 9,1 | | | | | | | | |
| 8,60 | 8,0 | 19,0 | | 0,8 | 40,00 | 20 | 5,0 | | | | | | | | |
| 8,80 | 9,0 | 15,0 | | 0,9 | 40,00 | 23 | 4,4 | | | | | | | | |
| 9,00 | 11,0 | 17,0 | | 1,1 | 53,00 | 21 | 4,8 | | | | | | | | |
| 9,20 | 13,0 | 21,0 | | 1,3 | 60,00 | 22 | 4,6 | | | | | | | | |
| 9,40 | 13,0 | 22,0 | | 1,3 | 73,00 | 18 | 5,6 | | | | | | | | |
| 9,60 | 13,0 | 24,0 | | 1,3 | 73,00 | 18 | 5,6 | | | | | | | | |
| 9,80 | 11,0 | 22,0 | | 1,1 | 67,00 | 16 | 6,1 | | | | | | | | |
| 10,00 | 9,0 | 19,0 | | 0,9 | 53,00 | 17 | 5,9 | | | | | | | | |
| 10,20 | 9,0 | 17,0 | | 0,9 | 53,00 | 17 | 5,9 | | | | | | | | |
| 10,40 | 9,0 | 17,0 | | 0,9 | 33,00 | 27 | 3,7 | | | | | | | | |
| 10,60 | 10,0 | 15,0 | | 1,0 | 67,00 | 15 | 6,7 | | | | | | | | |
| 10,80 | 10,0 | 20,0 | | 1,0 | 73,00 | 14 | 7,3 | | | | | | | | |
| 11,00 | 10,0 | 21,0 | | 1,0 | 67,00 | 15 | 6,7 | | | | | | | | |
| 11,20 | 9,0 | 19,0 | | 0,9 | 60,00 | 15 | 6,7 | | | | | | | | |
| 11,40 | 10,0 | 19,0 | | 1,0 | 60,00 | 17 | 6,0 | | | | | | | | |
| 11,60 | 8,0 | 17,0 | | 0,8 | 27,00 | 30 | 3,4 | | | | | | | | |
| 11,80 | 8,0 | 12,0 | | 0,8 | 53,00 | 15 | 6,6 | | | | | | | | |
| 12,00 | 7,0 | 15,0 | | 0,7 | 53,00 | 13 | 7,6 | | | | | | | | |
| 12,20 | 7,0 | 15,0 | | 0,7 | 47,00 | 15 | 6,7 | | | | | | | | |
| 12,40 | 9,0 | 16,0 | | 0,9 | 27,00 | 33 | 3,0 | | | | | | | | |
| 12,60 | 10,0 | 14,0 | | 1,0 | 53,00 | 19 | 5,3 | | | | | | | | |
| 12,80 | 11,0 | 19,0 | | 1,1 | 60,00 | 18 | 5,5 | | | | | | | | |
| 13,00 | 14,0 | 23,0 | | 1,4 | 80,00 | 18 | 5,7 | | | | | | | | |
| 13,20 | 13,0 | 25,0 | | 1,3 | 73,00 | 18 | 5,6 | | | | | | | | |
| 13,40 | 12,0 | 23,0 | | 1,2 | 73,00 | 16 | 6,1 | | | | | | | | |
| 13,60 | 11,0 | 22,0 | | 1,1 | 73,00 | 15 | 6,6 | | | | | | | | |
| 13,80 | 13,0 | 24,0 | | 1,3 | 80,00 | 16 | 6,2 | | | | | | | | |
| 14,00 | 16,0 | 28,0 | | 1,6 | 87,00 | 18 | 5,4 | | | | | | | | |
| 14,20 | 20,0 | 33,0 | | 2,0 | 107,00 | 19 | 5,4 | | | | | | | | |
| 14,40 | 20,0 | 36,0 | | 2,0 | 67,00 | 30 | 3,4 | | | | | | | | |
| 14,60 | 19,0 | 29,0 | | 1,9 | 113,00 | 17 | 5,9 | | | | | | | | |
| 14,80 | 21,0 | 38,0 | | 2,1 | 107,00 | 20 | 5,1 | | | | | | | | |
| 15,00 | 20,0 | 36,0 | | 2,0 | | | | | | | | | | | |

H = profondità
L1 = prima lettura (punta)
L2 = seconda lettura (punta + laterale)
Lt = terza lettura (totale)

qc = resistenza di punta
fs = resistenza laterale
F = rapporto di Begemann (qc / fs)
Fr = rapporto di Schmertmann (fs / qc)%



PROVE PENETROMETRICHE SRL

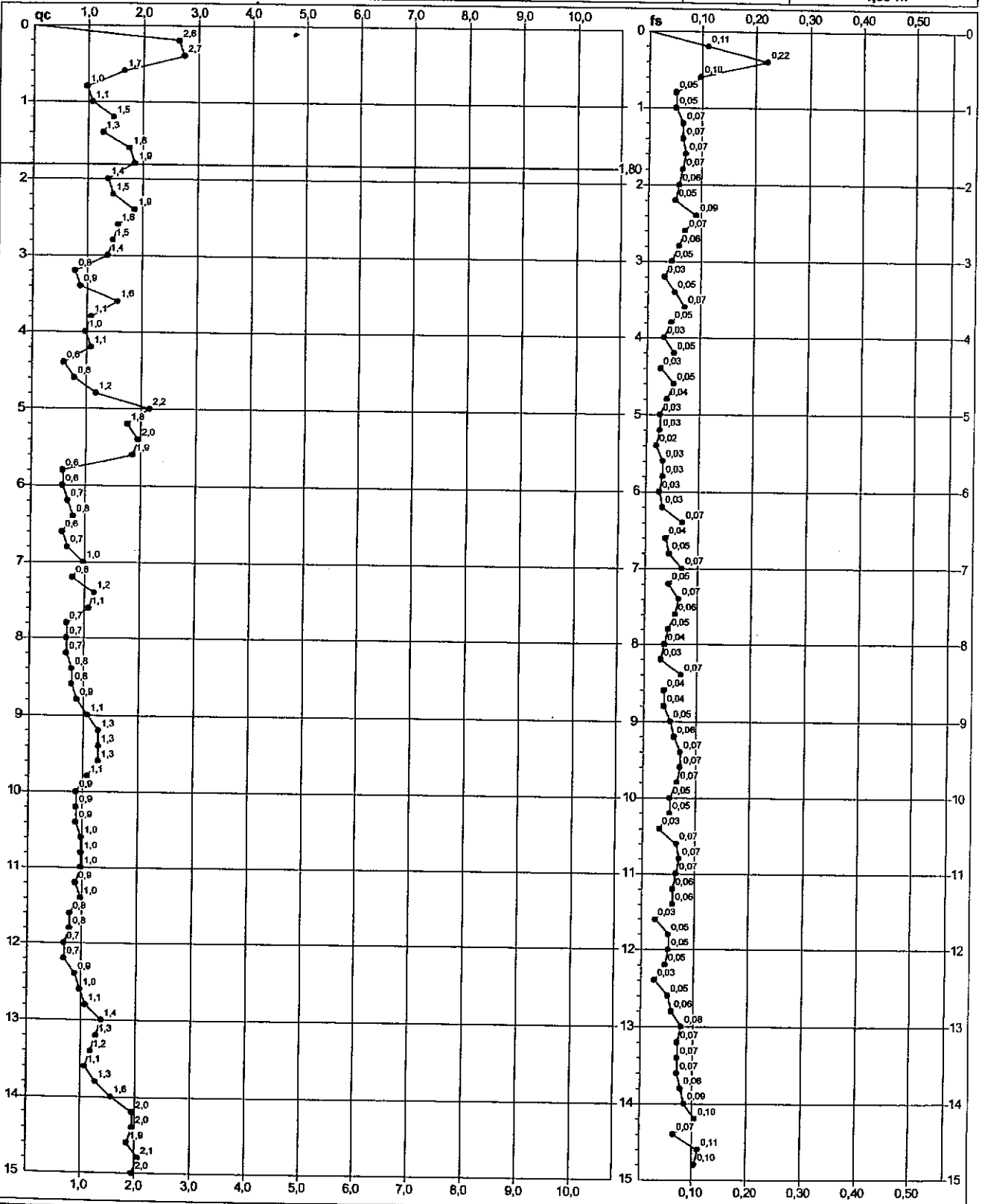
Tel. 059-535046 - Fax: 059-539166

Decreto di Concessione Ministero Infrastrutture e Trasporti n. 54953 del 29/05/2006 - Settore C - Prove in Sito

PROVA PENETROMETRICA STATICA MECCANICA
DIAGRAMMA DI RESISTENZA

| | |
|----------------|--------------|
| n° | CPT3 |
| certificato n° | 00525 |

| | | |
|---|--------------------|-------------------------------------|
| Committente: Geo group srl | U.M.: MPa | Data esecuzione: 05/07/2006 |
| Cantiere: Studio terreno di fondazione | Scala: 1:75 | Data certificato: 05/07/2006 |
| Località: Nonantola (Mo) | Elaborat: | Preforo: |
| | | Falda: -1,80 m |



| | | | |
|-----------------|--------------------|---|---------------------------|
| Coord. Relative | Coord. Geografiche | Penetrometro: Pagani TG63-100 | Quota ass.: |
| Xr: m | Xg: | Responsabile: Dott. Fabrizio Anderlini | Corr.astine: kN/ml |
| Yr: m | Yg: | Assistente: Dott. Francesco Dettori | Cod.ISTAT: 0 |
| Zr: m | Zg: | | |



PROVE PENETROMETRICHE SRL

Tel. 059-535046 - Fax: 059-539166

Decreto di Concessione Ministero Infrastrutture e Trasporti n. 54953 del 29/05/2006 - Settore C - Prove in Sito

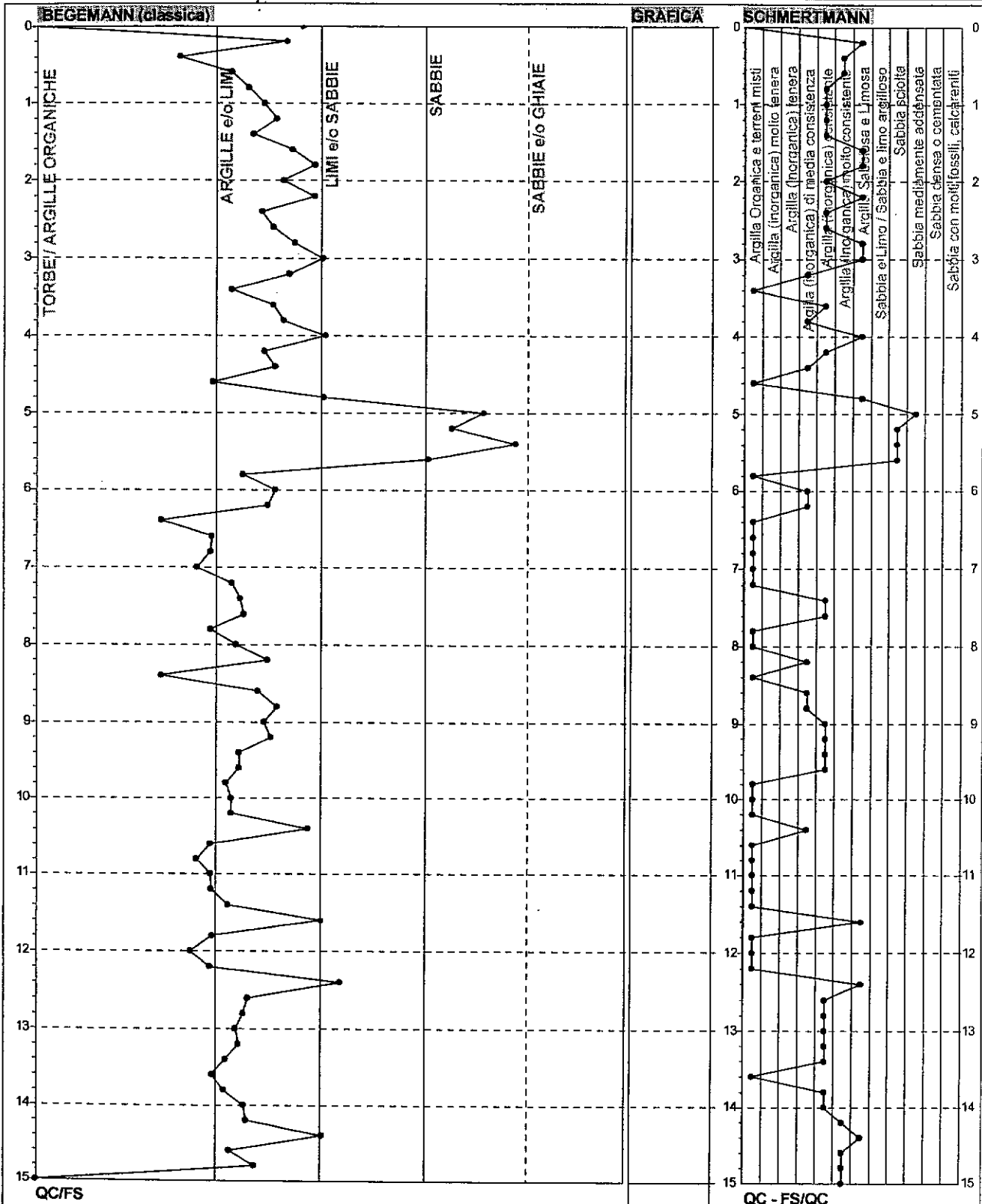
**PROVA PENETROMETRICA STATICA MECCANICA
INTERPRETAZIONE LITOLOGICA**

| | |
|----------------|--------------|
| n° | CPT3 |
| certificato n° | 00525 |

Committente: **Geo group srl**
 Cantiere: **Studio terreno di fondazione**
 Località: **Nonantola (Mo)**

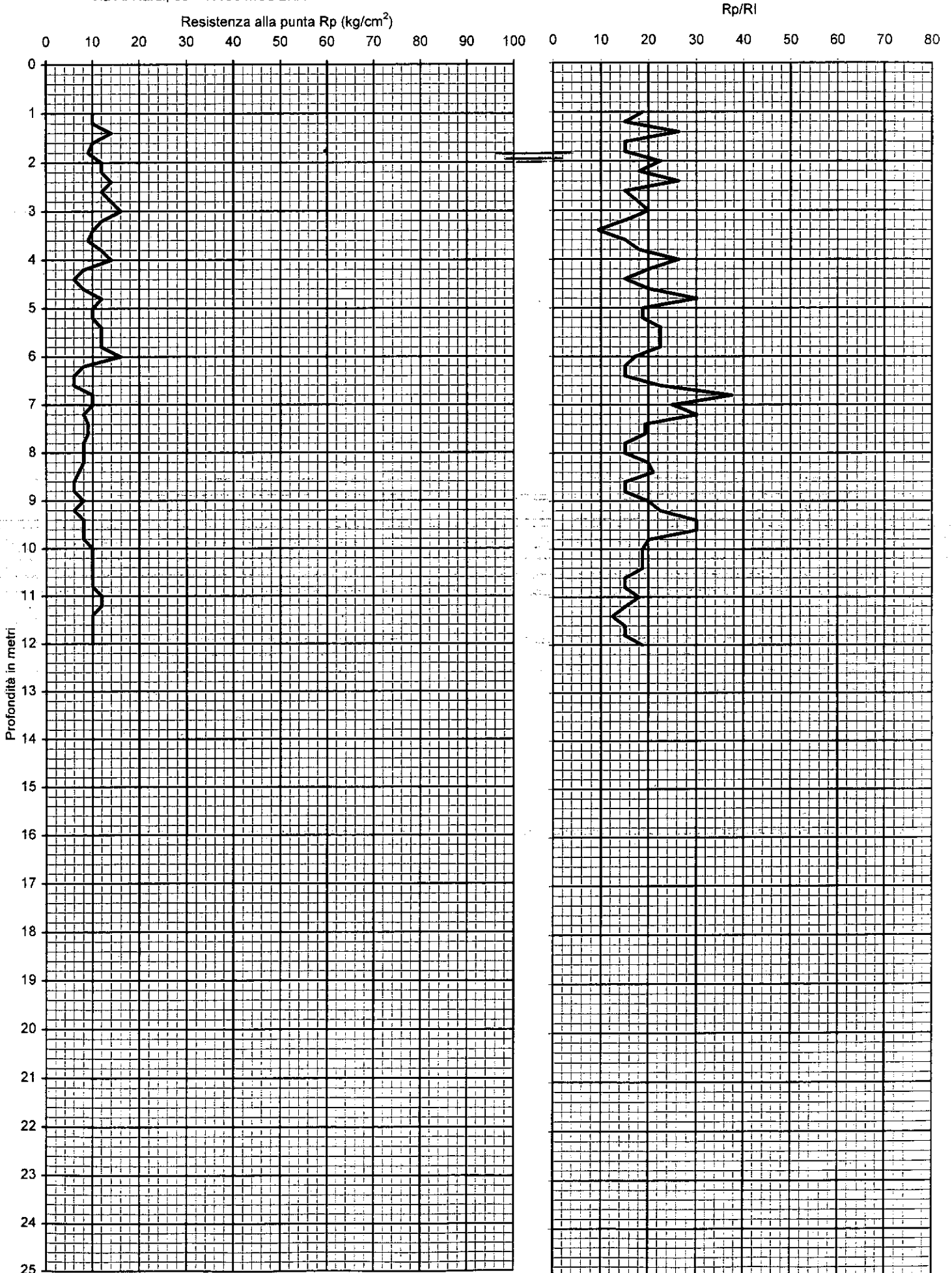
U.M.: **MPa**
 Scala: **1:75**
 Elaborat.:

Data esecuzione: **05/07/2006**
 Data certificato: **05/07/2006**
 Preforo:
 Falda: **-1,80 m**



| | | |
|--|--|---|
| Torbe / Argille organiche : 14 punti, 18,67% | Argilla Organica e terreni misti: 23 letture, 30,67% | Argilla Sabbiosa e Limosa: 11 punti, 14,67% |
| Argille e/o Limi : 55 punti, 73,33% | Argilla (inorganica) molto tenera: 0 punti, 0,00% | Sabbia e Limo / Sabbia e limo argilloso: 0 punti, 0,00% |
| Limi e/o Sabbie : 3 punti, 4,00% | Argilla (inorganica) tenera: 0 punti, 0,00% | Sabbia sciolta: 3 punti, 4,00% |
| Sabbie: 3 punti, 4,00% | Argilla (inorganica) media consistenza : 9 punti, 12,00% | Sabbia mediamente addensata: 1 punti, 1,33% |
| Sabbie e/o Ghiaie : 0 punti, 0,00% | Argilla (inorganica) consistente: 22 punti, 29,33% | Sabbia densa o cementata: 0 punti, 0,00% |
| | Argilla (inorganica) molto consistente: 5 punti, 6,67% | Sabbia con molti fossili, calcareniti: 0 punti, 0,00% |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

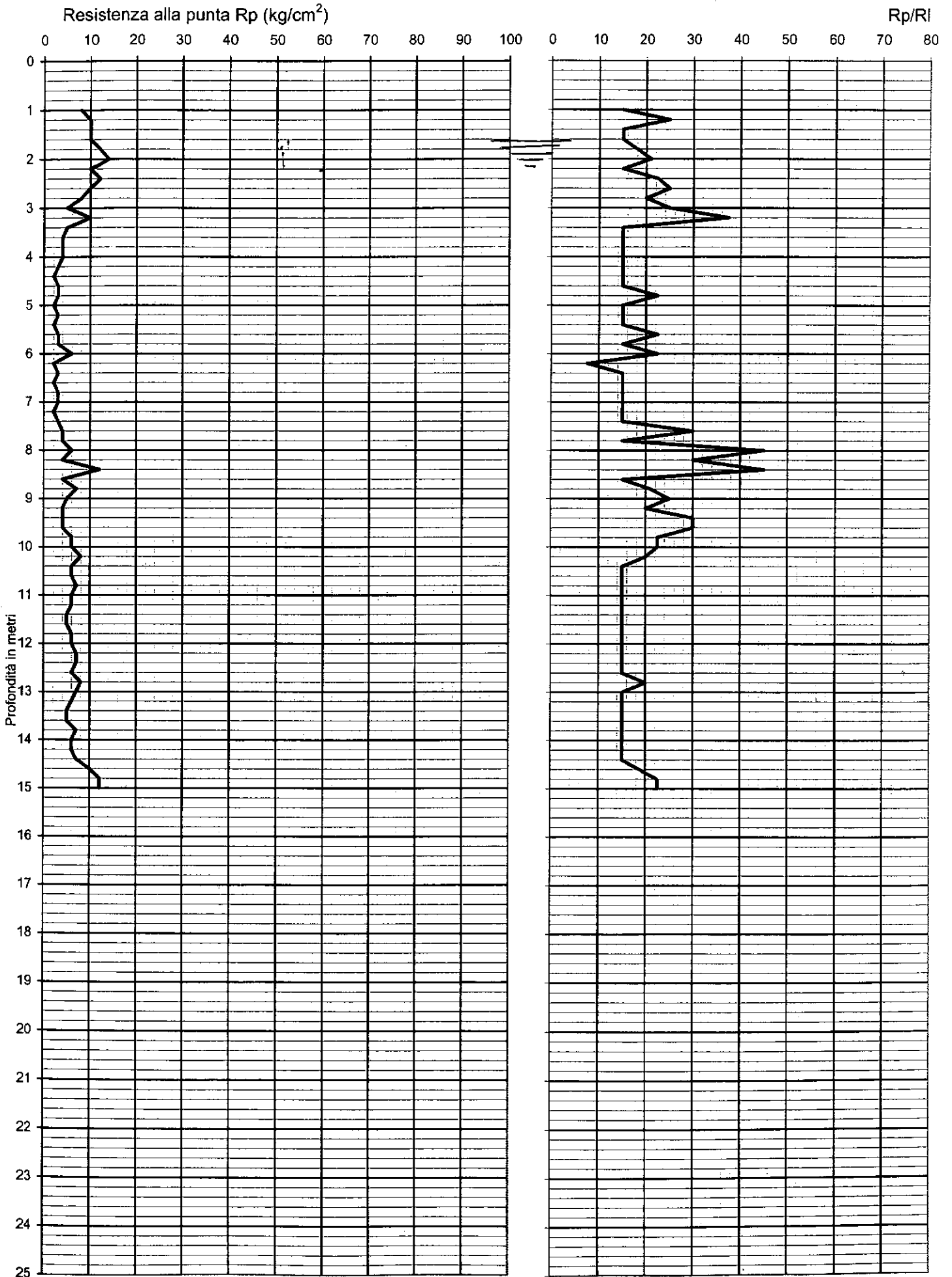
Penetrometro Gouda

Committente : C/O GEOM. ZIRONI
Località : VIA MORANDI-NONANTOLA
Prova numero : 1
Data : 14/12/00
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | | | | | |
| 0.80 | | | | | |
| 1.00 | 10 | 18 | 10 | 0.53 | 18.75 |
| 1.20 | 10 | 20 | 10 | 0.67 | 15.00 |
| 1.40 | 14 | 22 | 14 | 0.53 | 26.25 |
| 1.60 | 10 | 20 | 10 | 0.67 | 15.00 |
| 1.80 | 9 | 18 | 9 | 0.60 | 15.00 |
| 2.00 | 12 | 20 | 12 | 0.53 | 22.50 |
| 2.20 | 12 | 22 | 12 | 0.67 | 18.00 |
| 2.40 | 14 | 22 | 14 | 0.53 | 26.25 |
| 2.60 | 12 | 24 | 12 | 0.80 | 15.00 |
| 2.80 | 14 | 26 | 14 | 0.80 | 17.50 |
| 3.00 | 16 | 28 | 16 | 0.80 | 20.00 |
| 3.20 | 12 | 24 | 12 | 0.80 | 15.00 |
| 3.40 | 10 | 26 | 10 | 1.07 | 9.38 |
| 3.60 | 9 | 18 | 9 | 0.60 | 15.00 |
| 3.80 | 12 | 22 | 12 | 0.67 | 18.00 |
| 4.00 | 14 | 22 | 14 | 0.53 | 26.25 |
| 4.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 4.40 | 6 | 12 | 6 | 0.40 | 15.00 |
| 4.60 | 8 | 14 | 8 | 0.40 | 20.00 |
| 4.80 | 12 | 18 | 12 | 0.40 | 30.00 |
| 5.00 | 10 | 18 | 10 | 0.53 | 18.75 |
| 5.20 | 10 | 18 | 10 | 0.53 | 18.75 |
| 5.40 | 12 | 20 | 12 | 0.53 | 22.50 |
| 5.60 | 12 | 20 | 12 | 0.53 | 22.50 |
| 5.80 | 12 | 20 | 12 | 0.53 | 22.50 |
| 6.00 | 16 | 30 | 16 | 0.93 | 17.14 |
| 6.20 | 8 | 16 | 8 | 0.53 | 15.00 |
| 6.40 | 6 | 12 | 6 | 0.40 | 15.00 |
| 6.60 | 6 | 10 | 6 | 0.27 | 22.50 |
| 6.80 | 10 | 14 | 10 | 0.27 | 37.50 |
| 7.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 7.20 | 8 | 12 | 8 | 0.27 | 30.00 |
| 7.40 | 9 | 16 | 9 | 0.47 | 19.29 |
| 7.60 | 9 | 16 | 9 | 0.47 | 19.29 |
| 7.80 | 8 | 16 | 8 | 0.53 | 15.00 |
| 8.00 | 8 | 16 | 8 | 0.53 | 15.00 |
| 8.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 8.40 | 7 | 12 | 7 | 0.33 | 21.00 |
| 8.60 | 6 | 12 | 6 | 0.40 | 15.00 |
| 8.80 | 6 | 12 | 6 | 0.40 | 15.00 |
| 9.00 | 8 | 14 | 8 | 0.40 | 20.00 |
| 9.20 | 6 | 10 | 6 | 0.27 | 22.50 |
| 9.40 | 8 | 12 | 8 | 0.27 | 30.00 |
| 9.60 | 8 | 12 | 8 | 0.27 | 30.00 |
| 9.80 | 8 | 14 | 8 | 0.40 | 20.00 |
| 10.00 | 10 | 18 | 10 | 0.53 | 18.75 |
| 10.20 | 10 | 18 | 10 | 0.53 | 18.75 |
| 10.40 | 10 | 18 | 10 | 0.53 | 18.75 |
| 10.60 | 10 | 20 | 10 | 0.67 | 15.00 |
| 10.80 | 10 | 20 | 10 | 0.67 | 15.00 |
| 11.00 | 12 | 22 | 12 | 0.67 | 18.00 |
| 11.20 | 12 | 24 | 12 | 0.80 | 15.00 |
| 11.40 | 10 | 22 | 10 | 0.80 | 12.50 |
| 11.60 | 10 | 20 | 10 | 0.67 | 15.00 |
| 11.80 | 10 | 20 | 10 | 0.67 | 15.00 |
| 12.00 | 10 | 18 | 10 | 0.53 | 18.75 |
| 12.20 | | | | | |
| 12.40 | | | | | |
| 12.60 | | | | | |
| 12.80 | | | | | |
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| 14.40 | | | | | |
| 14.60 | | | | | |
| 14.80 | | | | | |
| 15.00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15.20 | | | | | |
| 15.40 | | | | | |
| 15.60 | | | | | |
| 15.80 | | | | | |
| 16.00 | | | | | |
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| 19.60 | | | | | |
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| 28.60 | | | | | |
| 28.80 | | | | | |
| 29.00 | | | | | |
| 29.20 | | | | | |
| 29.40 | | | | | |
| 29.60 | | | | | |
| 29.80 | | | | | |
| 30.00 | | | | | |

Via AUSTRIA, 24 - 41100 MODENA





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : ESSEPI S.R.L.

Località : VIA 2 GIUGNO NONANTOLA (MO)

Prova numero : 2

Data : 30/04/2004

Operatore : DR. REBECCHI

Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | | | | | |
| 0.80 | | | | | |
| 1.00 | 8 | 16 | 8 | 0.53 | 15.00 |
| 1.20 | 10 | 16 | 10 | 0.40 | 25.00 |
| 1.40 | 10 | 20 | 10 | 0.67 | 15.00 |
| 1.60 | 10 | 20 | 10 | 0.67 | 15.00 |
| 1.80 | 12 | 22 | 12 | 0.67 | 18.00 |
| 2.00 | 14 | 24 | 14 | 0.67 | 21.00 |
| 2.20 | 10 | 20 | 10 | 0.67 | 15.00 |
| 2.40 | 12 | 20 | 12 | 0.53 | 22.50 |
| 2.60 | 10 | 16 | 10 | 0.40 | 25.00 |
| 2.80 | 8 | 14 | 8 | 0.40 | 20.00 |
| 3.00 | 5 | 8 | 5 | 0.20 | 25.00 |
| 3.20 | 10 | 14 | 10 | 0.27 | 37.50 |
| 3.40 | 5 | 10 | 5 | 0.33 | 15.00 |
| 3.60 | 4 | 8 | 4 | 0.27 | 15.00 |
| 3.80 | 4 | 8 | 4 | 0.27 | 15.00 |
| 4.00 | 4 | 8 | 4 | 0.27 | 15.00 |
| 4.20 | 3 | 6 | 3 | 0.20 | 15.00 |
| 4.40 | 2 | 4 | 2 | 0.13 | 15.00 |
| 4.60 | 3 | 6 | 3 | 0.20 | 15.00 |
| 4.80 | 3 | 5 | 3 | 0.13 | 22.50 |
| 5.00 | 2 | 4 | 2 | 0.13 | 15.00 |
| 5.20 | 3 | 6 | 3 | 0.20 | 15.00 |
| 5.40 | 2 | 4 | 2 | 0.13 | 15.00 |
| 5.60 | 3 | 5 | 3 | 0.13 | 22.50 |
| 5.80 | 3 | 6 | 3 | 0.20 | 15.00 |
| 6.00 | 6 | 10 | 6 | 0.27 | 22.50 |
| 6.20 | 2 | 6 | 2 | 0.27 | 7.50 |
| 6.40 | 3 | 6 | 3 | 0.20 | 15.00 |
| 6.60 | 2 | 4 | 2 | 0.13 | 15.00 |
| 6.80 | 3 | 6 | 3 | 0.20 | 15.00 |
| 7.00 | 3 | 6 | 3 | 0.20 | 15.00 |
| 7.20 | 2 | 4 | 2 | 0.13 | 15.00 |
| 7.40 | 3 | 6 | 3 | 0.20 | 15.00 |
| 7.60 | 4 | 6 | 4 | 0.13 | 30.00 |
| 7.80 | 4 | 8 | 4 | 0.27 | 15.00 |
| 8.00 | 6 | 8 | 6 | 0.13 | 45.00 |
| 8.20 | 4 | 6 | 4 | 0.13 | 30.00 |
| 8.40 | 12 | 16 | 12 | 0.27 | 45.00 |
| 8.60 | 4 | 8 | 4 | 0.27 | 15.00 |
| 8.80 | 7 | 12 | 7 | 0.33 | 21.00 |
| 9.00 | 5 | 8 | 5 | 0.20 | 25.00 |
| 9.20 | 4 | 7 | 4 | 0.20 | 20.00 |
| 9.40 | 4 | 6 | 4 | 0.13 | 30.00 |
| 9.60 | 4 | 6 | 4 | 0.13 | 30.00 |
| 9.80 | 6 | 10 | 6 | 0.27 | 22.50 |
| 10.00 | 6 | 10 | 6 | 0.27 | 22.50 |
| 10.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 10.40 | 6 | 12 | 6 | 0.40 | 15.00 |
| 10.60 | 6 | 12 | 6 | 0.40 | 15.00 |
| 10.80 | 7 | 14 | 7 | 0.47 | 15.00 |
| 11.00 | 6 | 12 | 6 | 0.40 | 15.00 |
| 11.20 | 6 | 12 | 6 | 0.40 | 15.00 |
| 11.40 | 5 | 10 | 5 | 0.33 | 15.00 |
| 11.60 | 5 | 10 | 5 | 0.33 | 15.00 |
| 11.80 | 6 | 12 | 6 | 0.40 | 15.00 |
| 12.00 | 6 | 12 | 6 | 0.40 | 15.00 |
| 12.20 | 7 | 14 | 7 | 0.47 | 15.00 |
| 12.40 | 7 | 14 | 7 | 0.47 | 15.00 |
| 12.60 | 6 | 12 | 6 | 0.40 | 15.00 |
| 12.80 | 8 | 14 | 8 | 0.40 | 20.00 |
| 13.00 | 7 | 14 | 7 | 0.47 | 15.00 |
| 13.20 | 6 | 12 | 6 | 0.40 | 15.00 |
| 13.40 | 5 | 10 | 5 | 0.33 | 15.00 |
| 13.60 | 5 | 10 | 5 | 0.33 | 15.00 |
| 13.80 | 7 | 14 | 7 | 0.47 | 15.00 |
| 14.00 | 6 | 12 | 6 | 0.40 | 15.00 |
| 14.20 | 6 | 12 | 6 | 0.40 | 15.00 |
| 14.40 | 7 | 14 | 7 | 0.47 | 15.00 |
| 14.60 | 10 | 18 | 10 | 0.53 | 18.75 |
| 14.80 | 12 | 20 | 12 | 0.53 | 22.50 |
| 15.00 | 12 | 20 | 12 | 0.53 | 22.50 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15.20 | | | | | |
| 15.40 | | | | | |
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Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

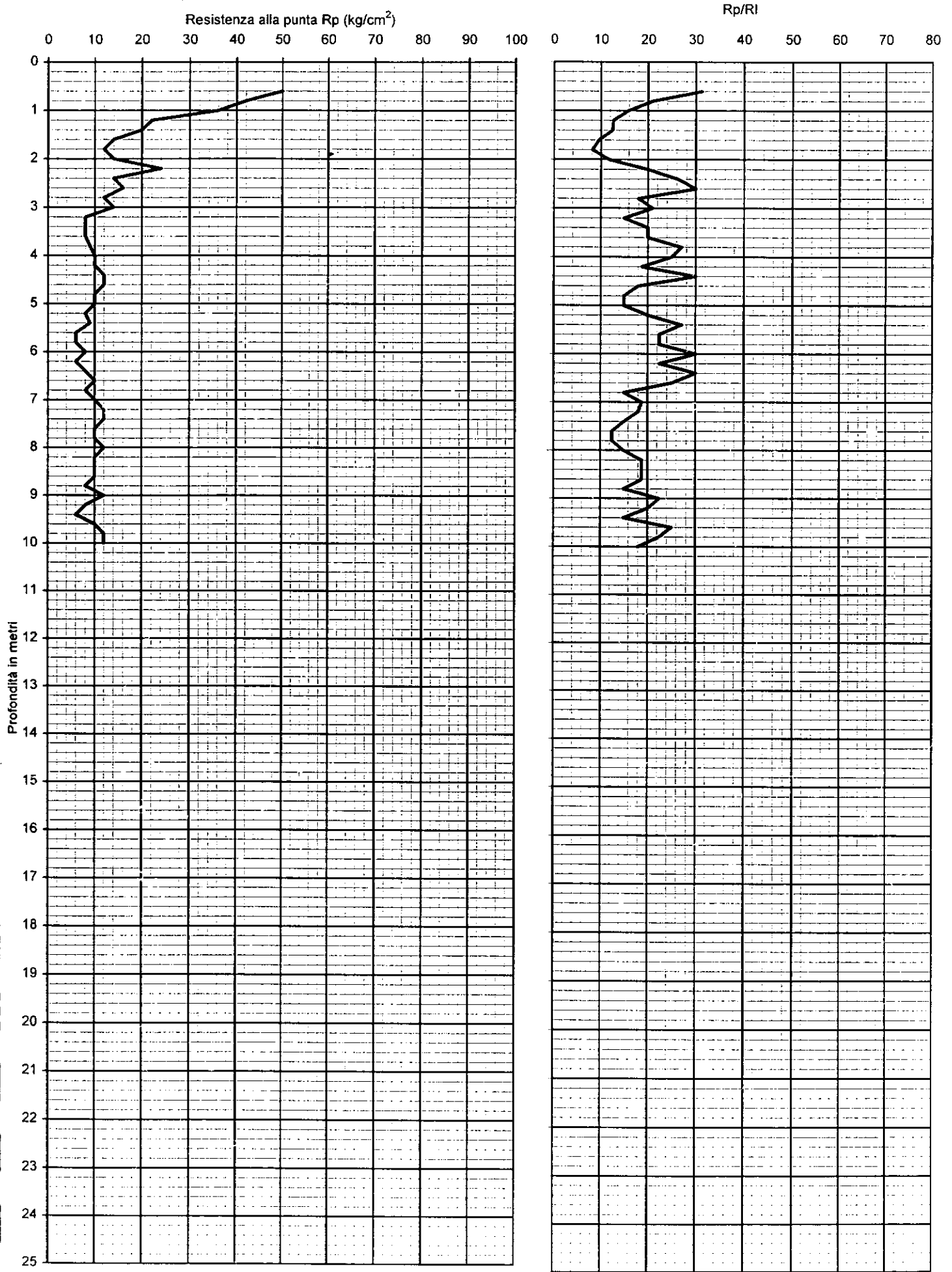
Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O DOTT. FRANCHI
Località : REDU'-NONANTOLA
Prova numero : 1
Data : 25/07/01
Operatore : DR. REBECCHI
Quota : P.C.

Via AUSTRIA, 24 - 41100 MODENA



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 50 | 74 | 50 | 1.60 | 31.25 |
| 0.80 | 42 | 72 | 42 | 2.00 | 21.00 |
| 1.00 | 36 | 70 | 36 | 2.27 | 15.88 |
| 1.20 | 22 | 48 | 22 | 1.73 | 12.69 |
| 1.40 | 20 | 44 | 20 | 1.60 | 12.50 |
| 1.60 | 14 | 36 | 14 | 1.47 | 9.55 |
| 1.80 | 12 | 34 | 12 | 1.47 | 8.18 |
| 2.00 | 14 | 32 | 14 | 1.20 | 11.67 |
| 2.20 | 24 | 42 | 24 | 1.20 | 20.00 |
| 2.40 | 14 | 22 | 14 | 0.53 | 26.25 |
| 2.60 | 16 | 24 | 16 | 0.53 | 30.00 |
| 2.80 | 12 | 22 | 12 | 0.67 | 18.00 |
| 3.00 | 14 | 24 | 14 | 0.67 | 21.00 |
| 3.20 | 8 | 16 | 8 | 0.53 | 15.00 |
| 3.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 3.60 | 8 | 14 | 8 | 0.40 | 20.00 |
| 3.80 | 9 | 14 | 9 | 0.33 | 27.00 |
| 4.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 4.20 | 10 | 18 | 10 | 0.53 | 18.75 |
| 4.40 | 12 | 18 | 12 | 0.40 | 30.00 |
| 4.60 | 12 | 22 | 12 | 0.67 | 18.00 |
| 4.80 | 10 | 20 | 10 | 0.67 | 15.00 |
| 5.00 | 10 | 20 | 10 | 0.67 | 15.00 |
| 5.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 5.40 | 9 | 14 | 9 | 0.33 | 27.00 |
| 5.60 | 6 | 10 | 6 | 0.27 | 22.50 |
| 5.80 | 6 | 10 | 6 | 0.27 | 22.50 |
| 6.00 | 8 | 12 | 8 | 0.27 | 30.00 |
| 6.20 | 6 | 10 | 6 | 0.27 | 22.50 |
| 6.40 | 8 | 12 | 8 | 0.27 | 30.00 |
| 6.60 | 10 | 16 | 10 | 0.40 | 25.00 |
| 6.80 | 8 | 16 | 8 | 0.53 | 15.00 |
| 7.00 | 10 | 18 | 10 | 0.53 | 18.75 |
| 7.20 | 12 | 22 | 12 | 0.67 | 18.00 |
| 7.40 | 12 | 24 | 12 | 0.80 | 15.00 |
| 7.60 | 10 | 22 | 10 | 0.80 | 12.50 |
| 7.80 | 10 | 22 | 10 | 0.80 | 12.50 |
| 8.00 | 12 | 24 | 12 | 0.80 | 15.00 |
| 8.20 | 10 | 18 | 10 | 0.53 | 18.75 |
| 8.40 | 10 | 18 | 10 | 0.53 | 18.75 |
| 8.60 | 10 | 18 | 10 | 0.53 | 18.75 |
| 8.80 | 8 | 16 | 8 | 0.53 | 15.00 |
| 9.00 | 12 | 20 | 12 | 0.53 | 22.50 |
| 9.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 9.40 | 6 | 12 | 6 | 0.40 | 15.00 |
| 9.60 | 10 | 16 | 10 | 0.40 | 25.00 |
| 9.80 | 12 | 20 | 12 | 0.53 | 22.50 |
| 10.00 | 12 | 22 | 12 | 0.67 | 18.00 |
| 10.20 | | | | | |
| 10.40 | | | | | |
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| 13.80 | | | | | |
| 14.00 | | | | | |
| 14.20 | | | | | |
| 14.40 | | | | | |
| 14.60 | | | | | |
| 14.80 | | | | | |
| 15.00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15.20 | | | | | |
| 15.40 | | | | | |
| 15.60 | | | | | |
| 15.80 | | | | | |
| 16.00 | | | | | |
| 16.20 | | | | | |
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| 19.20 | | | | | |
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| 29.40 | | | | | |
| 29.60 | | | | | |
| 29.80 | | | | | |
| 30.00 | | | | | |



Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

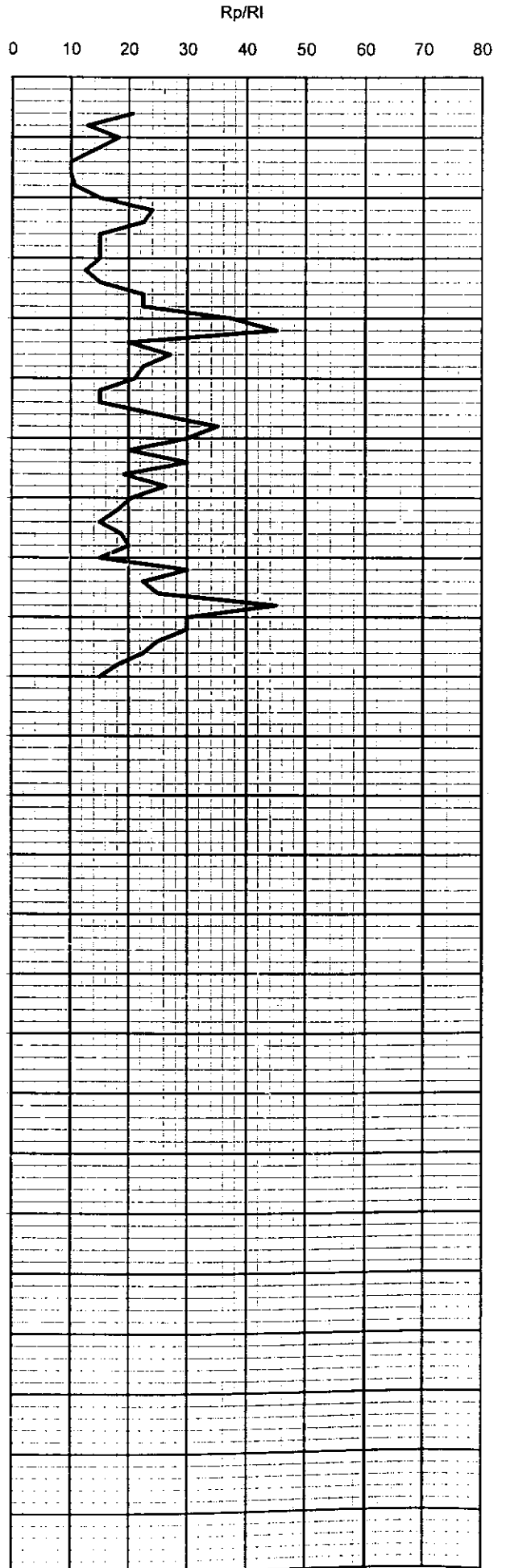
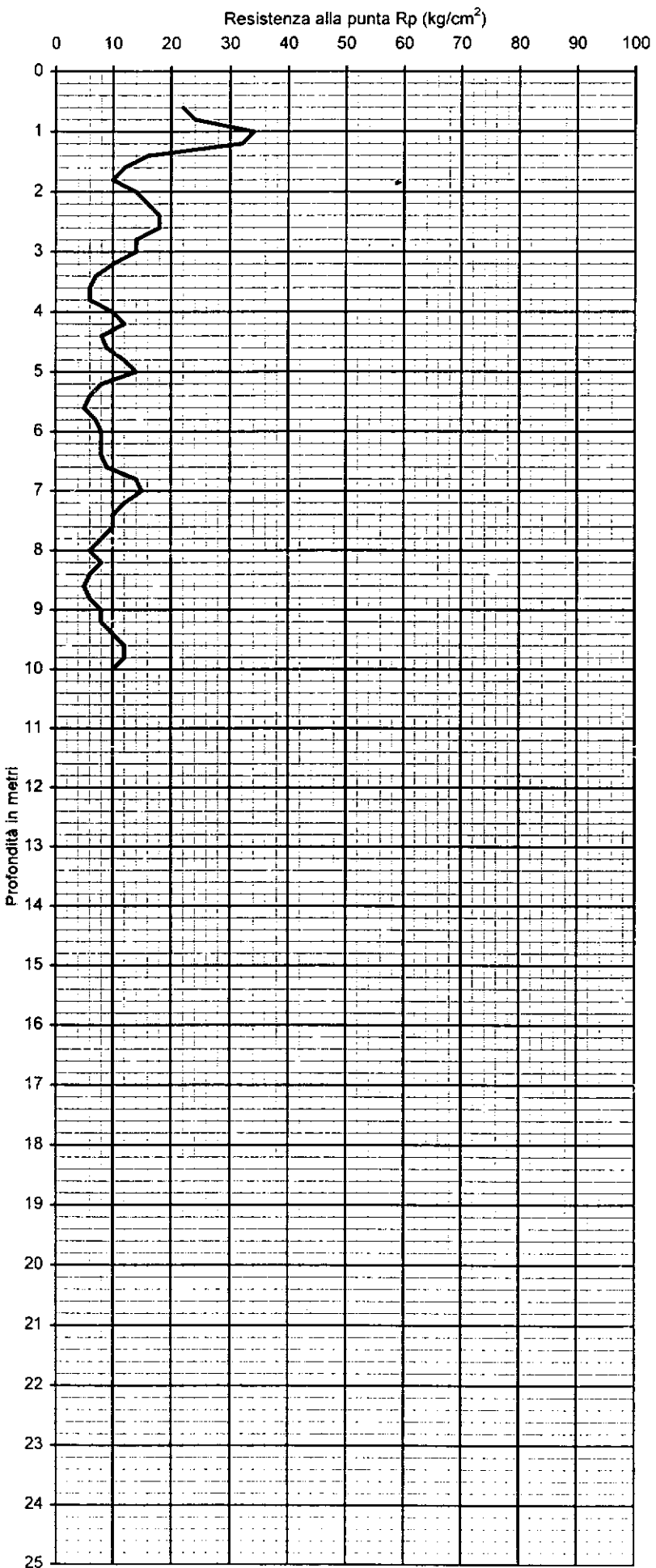
Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O DOTT. FRANCHI
Località : REDU'-NONANTOLA
Prova numero : 3
Data : 25/07/01
Operatore : DR. REBECCHI
Quota : P.C.

Via AUSTRIA, 24 - 41100 MODENA



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 22 | 38 | 22 | 1.07 | 20.63 |
| 0.80 | 24 | 52 | 24 | 1.87 | 12.86 |
| 1.00 | 34 | 62 | 34 | 1.87 | 18.21 |
| 1.20 | 32 | 66 | 32 | 2.27 | 14.12 |
| 1.40 | 16 | 40 | 16 | 1.60 | 10.00 |
| 1.60 | 12 | 30 | 12 | 1.20 | 10.00 |
| 1.80 | 10 | 24 | 10 | 0.93 | 10.71 |
| 2.00 | 14 | 28 | 14 | 0.93 | 15.00 |
| 2.20 | 16 | 26 | 16 | 0.67 | 24.00 |
| 2.40 | 18 | 30 | 18 | 0.80 | 22.50 |
| 2.60 | 18 | 36 | 18 | 1.20 | 15.00 |
| 2.80 | 14 | 28 | 14 | 0.93 | 15.00 |
| 3.00 | 14 | 28 | 14 | 0.93 | 15.00 |
| 3.20 | 10 | 22 | 10 | 0.80 | 12.50 |
| 3.40 | 7 | 14 | 7 | 0.47 | 15.00 |
| 3.60 | 6 | 10 | 6 | 0.27 | 22.50 |
| 3.80 | 6 | 10 | 6 | 0.27 | 22.50 |
| 4.00 | 10 | 14 | 10 | 0.27 | 37.50 |
| 4.20 | 12 | 16 | 12 | 0.27 | 45.00 |
| 4.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 4.60 | 9 | 14 | 9 | 0.33 | 27.00 |
| 4.80 | 12 | 20 | 12 | 0.53 | 22.50 |
| 5.00 | 14 | 24 | 14 | 0.67 | 21.00 |
| 5.20 | 8 | 16 | 8 | 0.53 | 15.00 |
| 5.40 | 6 | 12 | 6 | 0.40 | 15.00 |
| 5.60 | 5 | 8 | 5 | 0.20 | 25.00 |
| 5.80 | 7 | 10 | 7 | 0.20 | 35.00 |
| 6.00 | 8 | 12 | 8 | 0.27 | 30.00 |
| 6.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 6.40 | 8 | 12 | 8 | 0.27 | 30.00 |
| 6.60 | 9 | 16 | 9 | 0.47 | 19.29 |
| 6.80 | 14 | 22 | 14 | 0.53 | 26.25 |
| 7.00 | 15 | 26 | 15 | 0.73 | 20.45 |
| 7.20 | 12 | 22 | 12 | 0.67 | 18.00 |
| 7.40 | 10 | 20 | 10 | 0.67 | 15.00 |
| 7.60 | 10 | 18 | 10 | 0.53 | 18.75 |
| 7.80 | 8 | 14 | 8 | 0.40 | 20.00 |
| 8.00 | 6 | 12 | 6 | 0.40 | 15.00 |
| 8.20 | 8 | 12 | 8 | 0.27 | 30.00 |
| 8.40 | 6 | 10 | 6 | 0.27 | 22.50 |
| 8.60 | 5 | 8 | 5 | 0.20 | 25.00 |
| 8.80 | 6 | 8 | 6 | 0.13 | 45.00 |
| 9.00 | 8 | 12 | 8 | 0.27 | 30.00 |
| 9.20 | 8 | 12 | 8 | 0.27 | 30.00 |
| 9.40 | 10 | 16 | 10 | 0.40 | 25.00 |
| 9.60 | 12 | 20 | 12 | 0.53 | 22.50 |
| 9.80 | 12 | 22 | 12 | 0.67 | 18.00 |
| 10.00 | 10 | 20 | 10 | 0.67 | 15.00 |
| 10.20 | | | | | |
| 10.40 | | | | | |
| 10.60 | | | | | |
| 10.80 | | | | | |
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| 14.40 | | | | | |
| 14.60 | | | | | |
| 14.80 | | | | | |
| 15.00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15.20 | | | | | |
| 15.40 | | | | | |
| 15.60 | | | | | |
| 15.80 | | | | | |
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| 29.40 | | | | | |
| 29.60 | | | | | |
| 29.80 | | | | | |
| 30.00 | | | | | |

ALLEGATI:

- relazioni tecniche delle prove penetrometriche statiche
- simulazione e calcolo dei cedimenti teorici
- ubicazione prove penetrometriche

RELAZIONE TECNICA

C.P.T. n° 1 data: 31/03/99
 Cantiere: v. Maestra di Redù
 Comune: Nonantola

Quota livello di falda : 2.60

Dati prova penetrometrica statica

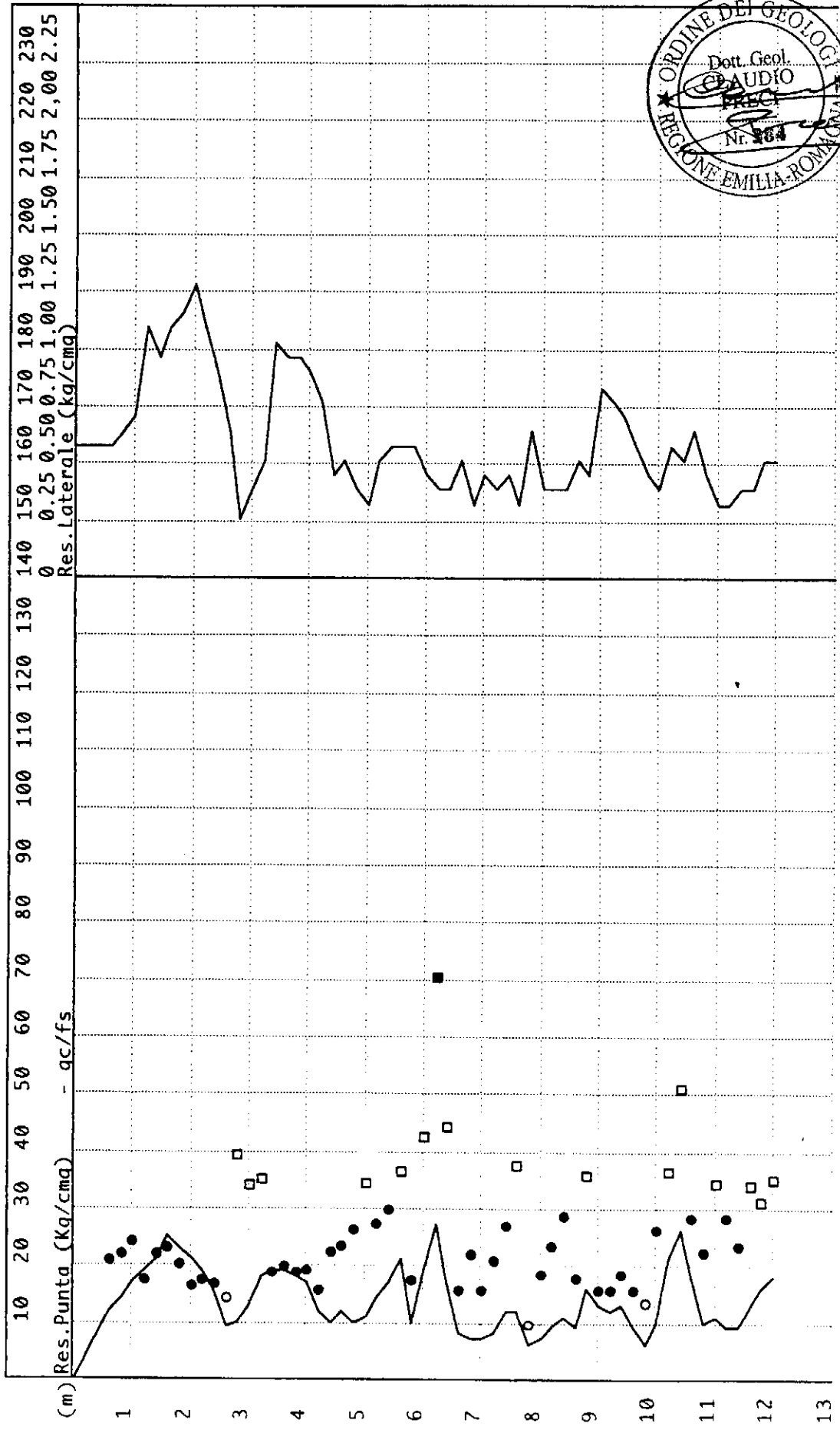
| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| 0.60 | 12.00 | 0.58 | 20.80 |
| 0.80 | 14.00 | 0.64 | 21.84 |
| 1.00 | 17.00 | 0.71 | 24.11 |
| 1.20 | 19.00 | 1.09 | 17.44 |
| 1.40 | 21.00 | 0.96 | 21.84 |
| 1.60 | 25.00 | 1.09 | 22.94 |
| 1.80 | 23.00 | 1.15 | 19.93 |
| 2.00 | 21.00 | 1.28 | 16.38 |
| 2.20 | 19.00 | 1.09 | 17.44 |
| 2.40 | 15.00 | 0.90 | 16.71 |
| 2.60 | 9.00 | 0.64 | 14.04 |
| 2.80 | 10.00 | 0.26 | 39.00 |
| 3.00 | 13.00 | 0.38 | 33.80 |
| 3.20 | 18.00 | 0.51 | 35.10 |
| 3.40 | 19.00 | 1.03 | 18.52 |
| 3.60 | 19.00 | 0.96 | 19.76 |
| 3.80 | 18.00 | 0.96 | 18.72 |
| 4.00 | 17.00 | 0.90 | 18.94 |
| 4.20 | 12.00 | 0.77 | 15.60 |
| 4.40 | 10.00 | 0.45 | 22.29 |
| 4.60 | 12.00 | 0.51 | 23.40 |
| 4.80 | 10.00 | 0.38 | 26.00 |
| 5.00 | 11.00 | 0.32 | 34.32 |
| 5.20 | 14.00 | 0.51 | 27.30 |
| 5.40 | 17.00 | 0.58 | 29.47 |
| 5.60 | 21.00 | 0.58 | 36.40 |
| 5.80 | 10.00 | 0.58 | 17.33 |
| 6.00 | 19.00 | 0.45 | 42.34 |
| 6.20 | 27.00 | 0.38 | 70.20 |
| 6.40 | 17.00 | 0.38 | 44.20 |
| 6.60 | 8.00 | 0.51 | 15.60 |

| | | | |
|-------|-------|------|-------|
| 6.80 | 7.00 | 0.32 | 21.84 |
| 7.00 | 7.00 | 0.45 | 15.60 |
| 7.20 | 8.00 | 0.38 | 20.80 |
| 7.40 | 12.00 | 0.45 | 26.74 |
| 7.60 | 12.00 | 0.32 | 37.44 |
| 7.80 | 6.00 | 0.64 | 9.36 |
| 8.00 | 7.00 | 0.38 | 18.20 |
| 8.20 | 9.00 | 0.38 | 23.40 |
| 8.40 | 11.00 | 0.38 | 28.60 |
| 8.60 | 9.00 | 0.51 | 17.55 |
| 8.80 | 16.00 | 0.45 | 35.66 |
| 9.00 | 13.00 | 0.83 | 15.60 |
| 9.20 | 12.00 | 0.77 | 15.60 |
| 9.40 | 13.00 | 0.71 | 18.44 |
| 9.60 | 9.00 | 0.58 | 15.60 |
| 9.80 | 6.00 | 0.45 | 13.37 |
| 10.00 | 10.00 | 0.38 | 26.00 |
| 10.20 | 21.00 | 0.58 | 36.40 |
| 10.40 | 26.00 | 0.51 | 50.70 |
| 10.60 | 18.00 | 0.64 | 28.08 |
| 10.80 | 10.00 | 0.45 | 22.29 |
| 11.00 | 11.00 | 0.32 | 34.32 |
| 11.20 | 9.00 | 0.32 | 28.08 |
| 11.40 | 9.00 | 0.38 | 23.40 |
| 11.60 | 13.00 | 0.38 | 33.80 |
| 11.80 | 16.00 | 0.51 | 31.20 |
| 12.00 | 18.00 | 0.51 | 35.10 |

Dati medi prova discretizzata

| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs, |
|-------|---------------------|---------------------|--------------|
| 2.60 | 16.85 | 0.87 | 19.41 |
| 3.20 | 13.67 | 0.38 | 35.53 |
| 4.80 | 14.62 | 0.75 | 19.63 |
| 5.40 | 14.00 | 0.47 | 29.78 |
| 5.60 | 21.00 | 0.58 | 36.40 |
| 5.80 | 10.00 | 0.58 | 17.33 |
| 6.00 | 19.00 | 0.45 | 42.34 |
| 6.20 | 27.00 | 0.38 | 70.20 |
| 6.40 | 17.00 | 0.38 | 44.20 |
| 7.40 | 8.40 | 0.42 | 19.85 |
| 7.60 | 12.00 | 0.32 | 37.44 |
| 7.80 | 6.00 | 0.64 | 9.36 |
| 8.60 | 9.00 | 0.42 | 21.60 |
| 8.80 | 16.00 | 0.45 | 35.66 |
| 10.00 | 10.50 | 0.62 | 16.94 |
| 10.40 | 23.50 | 0.54 | 43.13 |
| 11.40 | 11.40 | 0.42 | 26.95 |
| 12.00 | 15.67 | 0.47 | 33.33 |

C.P.T. n° 1 data: 31/03/99
 Cantiere: v. Maestra di Redù
 Comune: Nonantola



CLASSIFICAZIONE DI BEGEMANN per qc/fs
 ○ Torbe e argille organiche □ Sabbie e limi
 ● Limi ed argille ■ Sabbie e/o Ghiaie

qc: 1 cm = 10 Kg/cm²
 fs: 1 cm = 0,25 Kg/cm²
 qc/fs: 1 cm = 10

| Prof ml | Strati | Tipologia | Gamma kg/m3 | Gamma' kg/m3 | Sigma'V kg/cm2 | CU kg/cmq | FI ° | DR % | Mv cm2/Kg |
|------------|--------|----------------------|----------------|-----------------|-------------------|--------------|---------|---------|--------------|
| | | Argilla compatta | 1831 | 1831 | 0.476 | 0.842 | 0 | 0 | 0.025055 |
| 2.60 | FALDA | | | | | | | | |
| 3.20 | | Limo argilloso | 1800 | 800 | 0.524 | 0.683 | 0 | 0 | 0.014026 |
| | | Argilla compatta | 1810 | 810 | 0.654 | 0.731 | 0 | 0 | 0.034188 |
| 4.80 | | Argilla limosa | 1803 | 803 | 0.702 | 0.700 | 0 | 0 | 0.014286 |
| 5.40 | | Limo argilloso | 1864 | 864 | 0.719 | 1.050 | 0 | 0 | 0.015873 |
| 5.80 | | Argilla compatta | 1753 | 753 | 0.734 | 0.500 | 0 | 0 | 0.050000 |
| 6.00 | | Limo argilloso | 1849 | 849 | 0.751 | 0.950 | 0 | 0 | 0.015711 |
| 6.20 | | Sabbia | 1800 | 800 | 0.767 | 0.000 | 32 | 27 | 0.024691 |
| 6.40 | | Limo argilloso | 1832 | 832 | 0.784 | 0.850 | 0 | 0 | 0.014524 |
| | | Argilla media | 1727 | 727 | 0.857 | 0.420 | 0 | 0 | 0.018896 |
| 7.40 | | Limo argilloso | 1780 | 780 | 0.872 | 0.600 | 0 | 0 | 0.014368 |
| 7.80 | | Terre miste/Arg.org. | 1677 | 677 | 0.886 | 0.300 | 0 | 0 | 0.022222 |
| | | Argilla media | 1737 | 737 | 0.945 | 0.450 | 0 | 0 | 0.018519 |
| 8.60 | | Limo argilloso | 1823 | 823 | 0.961 | 0.800 | 0 | 0 | 0.014205 |
| 8.80 | | Argilla compatta | 1760 | 760 | 1.052 | 0.525 | 0 | 0 | 0.047619 |
| 10.00 | | Limo argilloso | 1881 | 881 | 1.088 | 1.175 | 0 | 0 | 0.014184 |
| | | Argilla limosa | 1773 | 773 | 1.165 | 0.570 | 0 | 0 | 0.017544 |
| 11.40 | | Limo argilloso | 1820 | 820 | 1.214 | 0.783 | 0 | 0 | 0.014132 |

Studio Geologico Dallari

Via Cesare Costa, 178-41100 Modena-059828367

Committente: Dott. Alessandra Tagliavini

Località: via Padelle Nonantola (Mo)

Penetrometro: Statico olandese 200 kN

Note: falda -0.80 m da p.c.

Sigla: 01

Tabulato della prova

| Profondità (m) | Resistenza punta (kg) | Res.punta + laterale (kg) | qc (kg/cmq) | fs (kg/cmq) | Rapporto qc/fs |
|----------------|-----------------------|---------------------------|-------------|-------------|----------------|
| 0.4 | 9 | 17 | 9 | 0.53 | 17 |
| 0.6 | 9 | 19 | 9 | 0.67 | 13 |
| 0.8 | 8 | 22 | 8 | 0.93 | 9 |
| 1 | 10 | 23 | 10 | 0.87 | 11 |
| 1.2 | 8 | 19 | 8 | 0.73 | 11 |
| 1.4 | 6 | 17 | 6 | 0.73 | 8 |
| 1.6 | 11 | 17 | 11 | 0.4 | 28 |
| 1.8 | 15 | 21 | 15 | 0.4 | 38 |
| 2 | 14 | 22 | 14 | 0.53 | 26 |
| 2.2 | 10 | 22 | 10 | 0.8 | 12 |
| 2.4 | 9 | 18 | 9 | 0.6 | 15 |
| 2.6 | 9 | 14 | 9 | 0.33 | 27 |
| 2.8 | 11 | 19 | 11 | 0.53 | 21 |
| 3 | 10 | 16 | 10 | 0.4 | 25 |
| 3.2 | 6 | 12 | 6 | 0.4 | 15 |
| 3.4 | 12 | 18 | 12 | 0.4 | 30 |
| 3.6 | 10 | 16 | 10 | 0.4 | 25 |
| 3.8 | 17 | 28 | 17 | 0.73 | 23 |
| 4 | 23 | 26 | 23 | 0.2 | 115 |
| 4.2 | 14 | 22 | 14 | 0.53 | 26 |
| 4.4 | 9 | 17 | 9 | 0.53 | 17 |
| 4.6 | 11 | 18 | 11 | 0.47 | 23 |
| 4.8 | 12 | 21 | 12 | 0.6 | 20 |
| 5 | 13 | 25 | 13 | 0.8 | 16 |
| 5.2 | 12 | 24 | 12 | 0.8 | 15 |
| 5.4 | 16 | 26 | 16 | 0.67 | 24 |
| 5.6 | 14 | 25 | 14 | 0.73 | 19 |
| 5.8 | 12 | 26 | 12 | 0.93 | 13 |
| 6 | 13 | 24 | 13 | 0.73 | 18 |
| 6.2 | 13 | 24 | 13 | 0.73 | 18 |
| 6.4 | 10 | 21 | 10 | 0.73 | 14 |
| 6.6 | 10 | 20 | 10 | 0.67 | 15 |
| 6.8 | 13 | 21 | 13 | 0.53 | 25 |
| 7 | 13 | 27 | 13 | 0.93 | 14 |
| 7.2 | 13 | 24 | 13 | 0.73 | 18 |
| 7.4 | 12 | 26 | 12 | 0.93 | 13 |
| 7.6 | 14 | 27 | 14 | 0.87 | 16 |
| 7.8 | 12 | 25 | 12 | 0.87 | 14 |
| 8 | 9 | 21 | 9 | 0.8 | 11 |

Certificato n.01 del 14/12/2004

Firma:

Studio Geologico Dallari

Via Cesare Costa, 178-41100 Modena-059828367

| <i>Profondità (m)</i> | <i>Resistenza punta (kg)</i> | <i>Res.punta + laterale (kg)</i> | <i>qc (kg/cmq)</i> | <i>fs (kg/cmq)</i> | <i>Rapporto qc/fs</i> |
|-----------------------|------------------------------|----------------------------------|--------------------|--------------------|-----------------------|
| 8.2 | 9 | 19 | 9 | 0.67 | 13 |
| 8.4 | 10 | 20 | 10 | 0.67 | 15 |
| 8.6 | 12 | 24 | 12 | 0.8 | 15 |
| 8.8 | 12 | 24 | 12 | 0.8 | 15 |
| 9 | 12 | 23 | 12 | 0.73 | 16 |
| 9.2 | 5 | 17 | 5 | 0.8 | 6 |
| 9.4 | 4 | 10 | 4 | 0.4 | 10 |
| 9.6 | 6 | 10 | 6 | 0.27 | 22 |
| 9.8 | 8 | 14 | 8 | 0.4 | 20 |
| 10 | 8 | 15 | 8 | 0.47 | 17 |

Certificato n.01 del 14/12/2004

Firma:

Studio Geologico Dallari

Via Cesare Costa, 178-41100 Modena-059828367

Committente: Dott. Alessandra Tagliavini

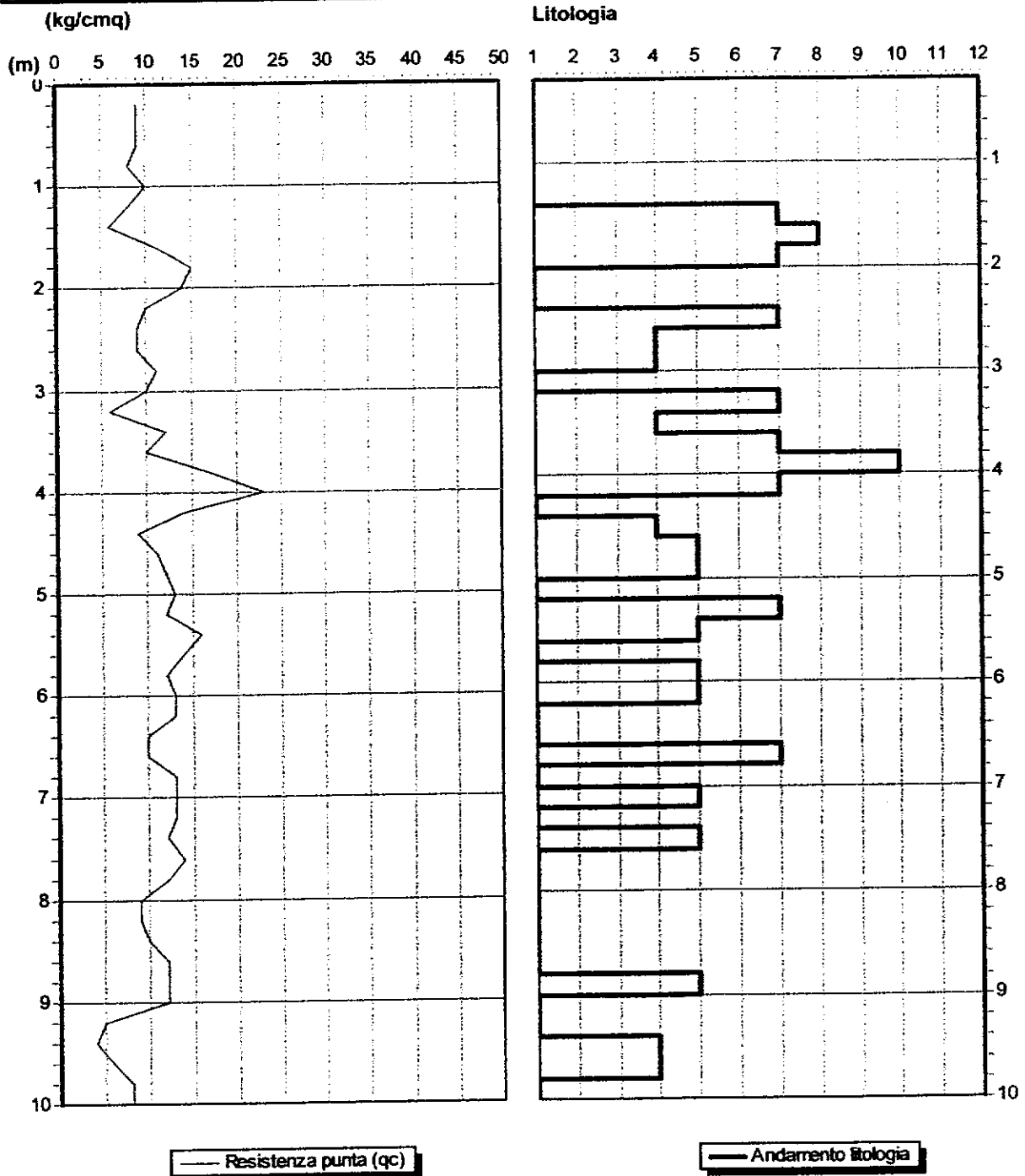
Località: via Padelle Nonantola (Mo)

Penetrometro: Statico olandese 200 kN

Note: falda -0.80 m da p.c.

Sigla: 01

Grafico qc - litologia



SCHMERTMANN(1978): 1=Argilla organica-2=Arg.in.molto molle-3=Arg.molle-4=Arg.med.consistente-5=Arg.consistente-6=Arg.molto consistente-7=Arg.sabbiosa/limosa-8=Sabbia e limo-9=Sabbia sciolta-10=Sabbia med.addensata-11=Sabbia addensata-12=Sabbia cementata

Certificato n. del 14/12/2004

Firma:

Studio Geologico Dallari

Via Cesare Costa, 178-41100 Modena-059828367

Committente: Dott. Alessandra Tagliavini

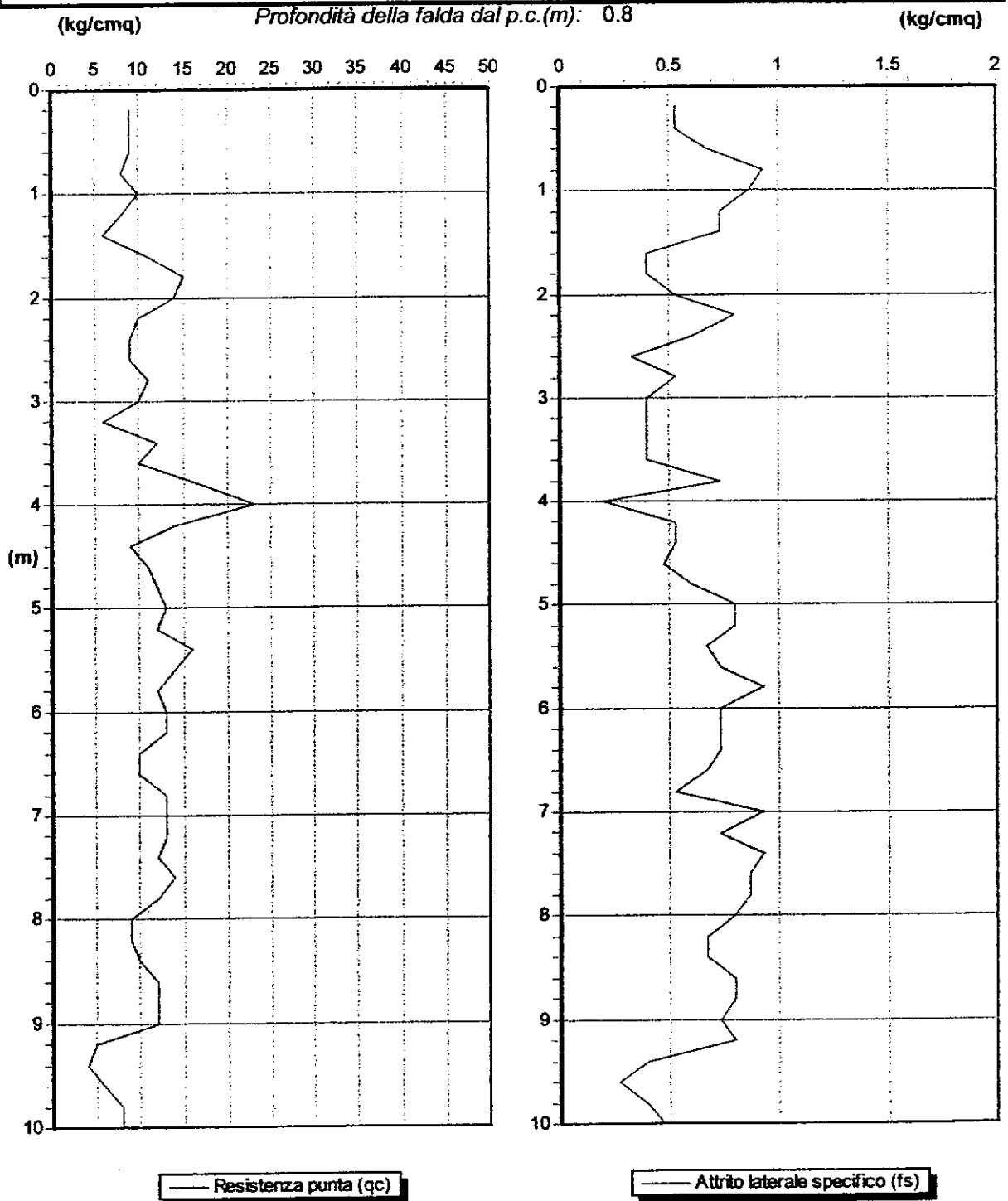
Località: via Padelle Nonantola (Mo)

Penetrometro: Statico olandese 200 kN

Note: falda -0.80 m da p.c.

Sigla: 01

Grafico della prova



Studio Geologico Dallari

Via Cesare Costa, 178-41100 Modena-059828367

Committente: Dott. Alessandra Tagliavini

Località: via Padelle Nonantola (Mo)

Penetrometro: Statico olandese 200 kN

Note: falda -0.80 m da p.c.

Sigla: 01

Stratigrafia della prova

| <i>Profondità (m)</i> | <i>qc (kg/cmq)</i> | <i>fs (kg/cmq)</i> | <i>Descrizione litologica</i> | <i>Comportamento meccanico</i> |
|-----------------------|--------------------|--------------------|------------------------------------|--------------------------------|
| 0.4 | 9 | 0.53 | Argilla organica | 1 |
| 0.6 | 9 | 0.67 | Argilla organica | 1 |
| 0.8 | 8 | 0.93 | Argilla organica | 1 |
| 1 | 10 | 0.87 | Argilla organica | 1 |
| 1.2 | 8 | 0.73 | Argilla organica | 1 |
| 1.4 | 6 | 0.73 | Argilla organica | 1 |
| 1.6 | 11 | 0.4 | Argilla sabbiosa o limosa | 1 |
| 1.8 | 15 | 0.4 | Sabbia e limo | 0 |
| 2 | 14 | 0.53 | Argilla sabbiosa o limosa | 1 |
| 2.2 | 10 | 0.8 | Argilla organica | 1 |
| 2.4 | 9 | 0.6 | Argilla organica | 1 |
| 2.6 | 9 | 0.33 | Argilla sabbiosa o limosa | 1 |
| 2.8 | 11 | 0.53 | Argilla inorganica med.consistente | 1 |
| 3 | 10 | 0.4 | Argilla inorganica med.consistente | 1 |
| 3.2 | 6 | 0.4 | Argilla organica | 1 |
| 3.4 | 12 | 0.4 | Argilla sabbiosa o limosa | 1 |
| 3.6 | 10 | 0.4 | Argilla inorganica med.consistente | 1 |
| 3.8 | 17 | 0.73 | Argilla sabbiosa o limosa | 1 |
| 4 | 23 | 0.2 | Sabbia mediamente addensata | 0 |
| 4.2 | 14 | 0.53 | Argilla sabbiosa o limosa | 1 |
| 4.4 | 9 | 0.53 | Argilla organica | 1 |
| 4.6 | 11 | 0.47 | Argilla inorganica med.consistente | 1 |
| 4.8 | 12 | 0.6 | Argilla inorganica consistente | 1 |
| 5 | 13 | 0.8 | Argilla inorganica consistente | 1 |
| 5.2 | 12 | 0.8 | Argilla organica | 1 |
| 5.4 | 16 | 0.67 | Argilla sabbiosa o limosa | 1 |
| 5.6 | 14 | 0.73 | Argilla inorganica consistente | 1 |
| 5.8 | 12 | 0.93 | Argilla organica | 1 |
| 6 | 13 | 0.73 | Argilla inorganica consistente | 1 |
| 6.2 | 13 | 0.73 | Argilla inorganica consistente | 1 |
| 6.4 | 10 | 0.73 | Argilla organica | 1 |
| 6.6 | 10 | 0.67 | Argilla organica | 1 |
| 6.8 | 13 | 0.53 | Argilla sabbiosa o limosa | 1 |
| 7 | 13 | 0.93 | Argilla organica | 1 |
| 7.2 | 13 | 0.73 | Argilla inorganica consistente | 1 |
| 7.4 | 12 | 0.93 | Argilla organica | 1 |
| 7.6 | 14 | 0.87 | Argilla inorganica consistente | 1 |
| 7.8 | 12 | 0.87 | Argilla organica | 1 |
| 8 | 9 | 0.8 | Argilla organica | 1 |
| 8.2 | 9 | 0.67 | Argilla organica | 1 |
| 8.4 | 10 | 0.67 | Argilla organica | 1 |
| 8.6 | 12 | 0.8 | Argilla organica | 1 |
| 8.8 | 12 | 0.8 | Argilla organica | 1 |

Certificato n. del 14/12/2004

Firma:

Studio Geologico Dallari

Via Cesare Costa, 178-41100 Modena-059828367

| Profondità (m) | q_c (kg/cmq) | f_s (kg/cmq) | Descrizione litologica | Comportamento meccanico |
|----------------|----------------|----------------|------------------------------------|-------------------------|
| 9 | 12 | 0.73 | Argilla inorganica consistente | 1 |
| 9.2 | 5 | 0.8 | Argilla organica | 1 |
| 9.4 | 4 | 0.4 | Argilla organica | 1 |
| 9.6 | 8 | 0.27 | Argilla inorganica med.consistente | 1 |
| 9.8 | 8 | 0.4 | Argilla inorganica med.consistente | 1 |
| 10 | 8 | 0.47 | Argilla organica | 1 |

Comportamento meccanico dello strato: 0
= incoerente - 1 = coesivo

Profondità della falda (m): 0.8

| | |
|---|---------------------------------|
| Area della punta (cmq): 10 | Passo di lettura (cm): 20 |
| Area del manicotto (cmq): 150 | Lunghezza della prova (m): 10 |
| Costante strumentale: 10 | Profondità di partenza (m): 0.2 |
| Tipo di penetrometro statico: a punta elettrica | Metodo: Schmertmann (1978) |
| Fattore a (piezocono): 0.8 | Fattore b (piezocono): 0.014 |

q_c = resistenza alla punta f_s = attrito laterale specifico

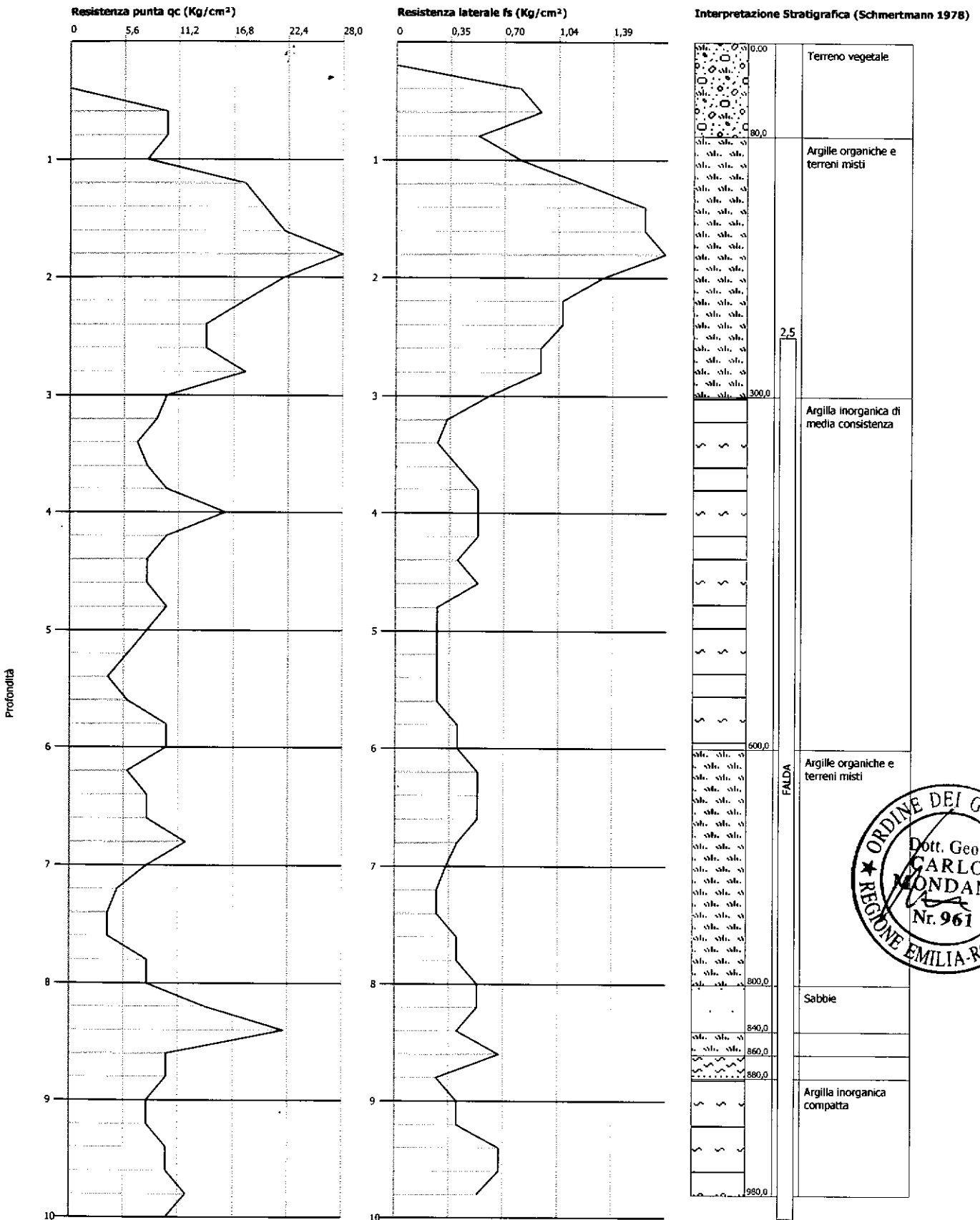
Certificato n. del 14/12/2004

Firma:

Probe CPT - Cone Penetration CPT 2
Strumento utilizzato... GOUDA 100 kN
Diagramma Resistenze qc fs

Committente : Sig.ra Eridan Piccinini
 Cantiere : Costruzione fabbricato ricovero attrezzi agricoli
 Località : Nonantola, via Maestra di Redù n. 80

Data : 19/10/2005



PROVA CPT 2

Strumento utilizzato
 Prova eseguita in data
 Profondità prova

GOUDA 100 kN
 19/10/2005
 10,00 m

| Profondità (m) | Letture punta (Kg/cm ²) | Letture laterale (Kg/cm ²) | qc (Kg/cm ²) | fs (Kg/cm ²) | qc/fs Begemann | fs/qcx100 (Schmertmann) |
|----------------|-------------------------------------|--|--------------------------|--------------------------|----------------|-------------------------|
| 0,20 | 0,0 | 0,0 | 0,0 | 0,0 | | |
| 0,40 | 0,0 | 0,0 | 0,0 | 0,8 | 0,0 | |
| 0,60 | 10,0 | 22,0 | 10,0 | 0,93 | 10,75 | 9,3 |
| 0,80 | 10,0 | 24,0 | 10,0 | 0,53 | 18,87 | 5,3 |
| 1,00 | 8,0 | 16,0 | 8,0 | 0,8 | 10,0 | 10,0 |
| 1,20 | 18,0 | 30,0 | 18,0 | 1,2 | 15,0 | 6,67 |
| 1,40 | 20,0 | 38,0 | 20,0 | 1,6 | 12,5 | 8,0 |
| 1,60 | 22,0 | 46,0 | 22,0 | 1,6 | 13,75 | 7,27 |
| 1,80 | 28,0 | 52,0 | 28,0 | 1,73 | 16,18 | 6,18 |
| 2,00 | 22,0 | 48,0 | 22,0 | 1,33 | 16,54 | 6,05 |
| 2,20 | 18,0 | 38,0 | 18,0 | 1,07 | 16,82 | 5,94 |
| 2,40 | 14,0 | 30,0 | 14,0 | 1,07 | 13,08 | 7,64 |
| 2,60 | 14,0 | 30,0 | 14,0 | 0,93 | 15,05 | 6,64 |
| 2,80 | 18,0 | 32,0 | 18,0 | 0,93 | 19,35 | 5,17 |
| 3,00 | 10,0 | 24,0 | 10,0 | 0,6 | 16,67 | 6,0 |
| 3,20 | 9,0 | 18,0 | 9,0 | 0,33 | 27,27 | 3,67 |
| 3,40 | 7,0 | 12,0 | 7,0 | 0,27 | 25,93 | 3,86 |
| 3,60 | 8,0 | 12,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 3,80 | 10,0 | 16,0 | 10,0 | 0,53 | 18,87 | 5,3 |
| 4,00 | 16,0 | 24,0 | 16,0 | 0,53 | 30,19 | 3,31 |
| 4,20 | 10,0 | 18,0 | 10,0 | 0,53 | 18,87 | 5,3 |
| 4,40 | 8,0 | 16,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 4,60 | 8,0 | 14,0 | 8,0 | 0,53 | 15,09 | 6,63 |
| 4,80 | 10,0 | 18,0 | 10,0 | 0,27 | 37,04 | 2,7 |
| 5,00 | 8,0 | 12,0 | 8,0 | 0,27 | 29,63 | 3,38 |
| 5,20 | 6,0 | 10,0 | 6,0 | 0,27 | 22,22 | 4,5 |
| 5,40 | 4,0 | 8,0 | 4,0 | 0,27 | 14,81 | 6,75 |
| 5,60 | 6,0 | 10,0 | 6,0 | 0,27 | 22,22 | 4,5 |
| 5,80 | 10,0 | 14,0 | 10,0 | 0,4 | 25,0 | 4,0 |
| 6,00 | 10,0 | 16,0 | 10,0 | 0,4 | 25,0 | 4,0 |
| 6,20 | 6,0 | 12,0 | 6,0 | 0,53 | 11,32 | 8,83 |
| 6,40 | 8,0 | 16,0 | 8,0 | 0,53 | 15,09 | 6,63 |
| 6,60 | 8,0 | 16,0 | 8,0 | 0,53 | 15,09 | 6,63 |
| 6,80 | 12,0 | 20,0 | 12,0 | 0,4 | 30,0 | 3,33 |
| 7,00 | 8,0 | 14,0 | 8,0 | 0,33 | 24,24 | 4,13 |
| 7,20 | 5,0 | 10,0 | 5,0 | 0,27 | 18,52 | 5,4 |
| 7,40 | 4,0 | 8,0 | 4,0 | 0,27 | 14,81 | 6,75 |
| 7,60 | 4,0 | 8,0 | 4,0 | 0,4 | 10,0 | 10,0 |
| 7,80 | 8,0 | 14,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 8,00 | 8,0 | 14,0 | 8,0 | 0,53 | 15,09 | 6,63 |
| 8,20 | 14,0 | 22,0 | 14,0 | 0,53 | 26,42 | 3,79 |
| 8,40 | 22,0 | 30,0 | 22,0 | 0,4 | 55,0 | 1,82 |
| 8,60 | 10,0 | 16,0 | 10,0 | 0,67 | 14,93 | 6,7 |
| 8,80 | 10,0 | 20,0 | 10,0 | 0,27 | 37,04 | 2,7 |
| 9,00 | 8,0 | 12,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 9,20 | 8,0 | 14,0 | 8,0 | 0,4 | 20,0 | 5,0 |
| 9,40 | 10,0 | 16,0 | 10,0 | 0,67 | 14,93 | 6,7 |
| 9,60 | 10,0 | 20,0 | 10,0 | 0,67 | 14,93 | 6,7 |
| 9,80 | 12,0 | 22,0 | 12,0 | 0,53 | 22,64 | 4,42 |
| 10,00 | 10,0 | 18,0 | 10,0 | 0,0 | | 0,0 |

RELAZIONE TECNICA

CPT n°1 data:14/04/2000
 Cantiere: P.O.U. CZ.U Rubbiara
 Committenti: Pedroni-Pierli-Brucato-Minelli

Quota livello di falda: 2.40

Dati prova penetrometrica statica

| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| 0.60 | 8.00 | 0.90 | 8.91 |
| 0.80 | 6.00 | 0.71 | 8.51 |
| 1.00 | 6.00 | 0.71 | 8.51 |
| 1.20 | 9.00 | 0.38 | 23.40 |
| 1.40 | 12.00 | 0.45 | 26.74 |
| 1.60 | 17.00 | 0.38 | 44.20 |
| 1.80 | 22.00 | 0.83 | 26.40 |
| 2.00 | 20.00 | 1.22 | 16.42 |
| 2.20 | 14.00 | 1.15 | 12.13 |
| 2.40 | 10.00 | 0.64 | 15.60 |
| 2.60 | 10.00 | 0.38 | 26.00 |
| 2.80 | 13.00 | 0.51 | 25.35 |
| 3.00 | 10.00 | 0.38 | 26.00 |
| 3.20 | 14.00 | 0.32 | 43.68 |
| 3.40 | 12.00 | 0.45 | 26.74 |
| 3.60 | 10.00 | 0.58 | 17.33 |
| 3.80 | 13.00 | 0.45 | 28.97 |
| 4.00 | 11.00 | 0.51 | 21.45 |
| 4.20 | 8.00 | 0.38 | 20.80 |
| 4.40 | 9.00 | 0.32 | 28.08 |
| 4.60 | 12.00 | 0.38 | 31.20 |
| 4.80 | 9.00 | 0.51 | 17.55 |
| 5.00 | 9.00 | 0.51 | 17.55 |
| 5.20 | 9.00 | 0.26 | 35.10 |
| 5.40 | 10.00 | 0.13 | 78.00 |
| 5.60 | 7.00 | 0.38 | 18.20 |
| 5.80 | 10.00 | 0.13 | 78.00 |
| 6.00 | 7.00 | 0.19 | 36.40 |
| 6.20 | 6.00 | 0.19 | 31.20 |
| 6.40 | 6.00 | 0.19 | 31.20 |
| 6.60 | 9.00 | 0.26 | 35.10 |
| 6.80 | 10.00 | 0.32 | 31.20 |
| 7.00 | 21.00 | 0.45 | 46.80 |
| 7.20 | 15.00 | 0.06 | 234.00 |
| 7.40 | 12.00 | 0.38 | 31.20 |
| 7.60 | 21.00 | 0.13 | 163.80 |
| 7.80 | 19.00 | 0.19 | 98.80 |
| 8.00 | 8.00 | 0.32 | 24.96 |
| 8.20 | 13.00 | 0.38 | 33.80 |
| 8.40 | 9.00 | 0.38 | 23.40 |
| 8.60 | 11.00 | 0.45 | 24.51 |
| 8.80 | 9.00 | 0.45 | 20.06 |
| 9.00 | 8.00 | 0.32 | 24.96 |

| | | | |
|-------|-------|------|-------|
| 9.20 | 8.00 | 0.32 | 24.96 |
| 9.40 | 8.00 | 0.38 | 20.80 |
| 9.60 | 9.00 | 0.32 | 28.08 |
| 9.80 | 8.00 | 0.51 | 15.60 |
| 10.00 | 9.00 | 0.51 | 17.55 |
| 10.20 | 9.00 | 0.58 | 15.60 |
| 10.40 | 9.00 | 0.32 | 28.08 |
| 10.60 | 12.00 | 0.26 | 46.80 |
| 10.80 | 14.00 | 0.26 | 54.60 |
| 11.00 | 12.00 | 0.45 | 26.74 |
| 11.20 | 13.00 | 0.45 | 28.97 |
| 11.40 | 12.00 | 0.58 | 20.80 |
| 11.60 | 13.00 | 0.51 | 25.35 |
| 11.80 | 11.00 | 0.58 | 19.07 |
| 12.00 | 10.00 | 0.64 | 15.60 |

RELAZIONE TECNICA

CPT n°2 data:14/04/2000
 Cantiere: P.O.U. C2.U Rubbiara
 Committenti: Pedroni-Pierli-Brucato-Minelli

Quota livello di falda: 1.00

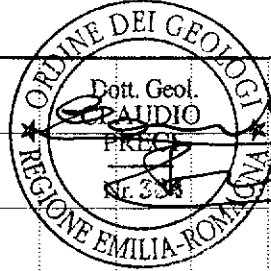
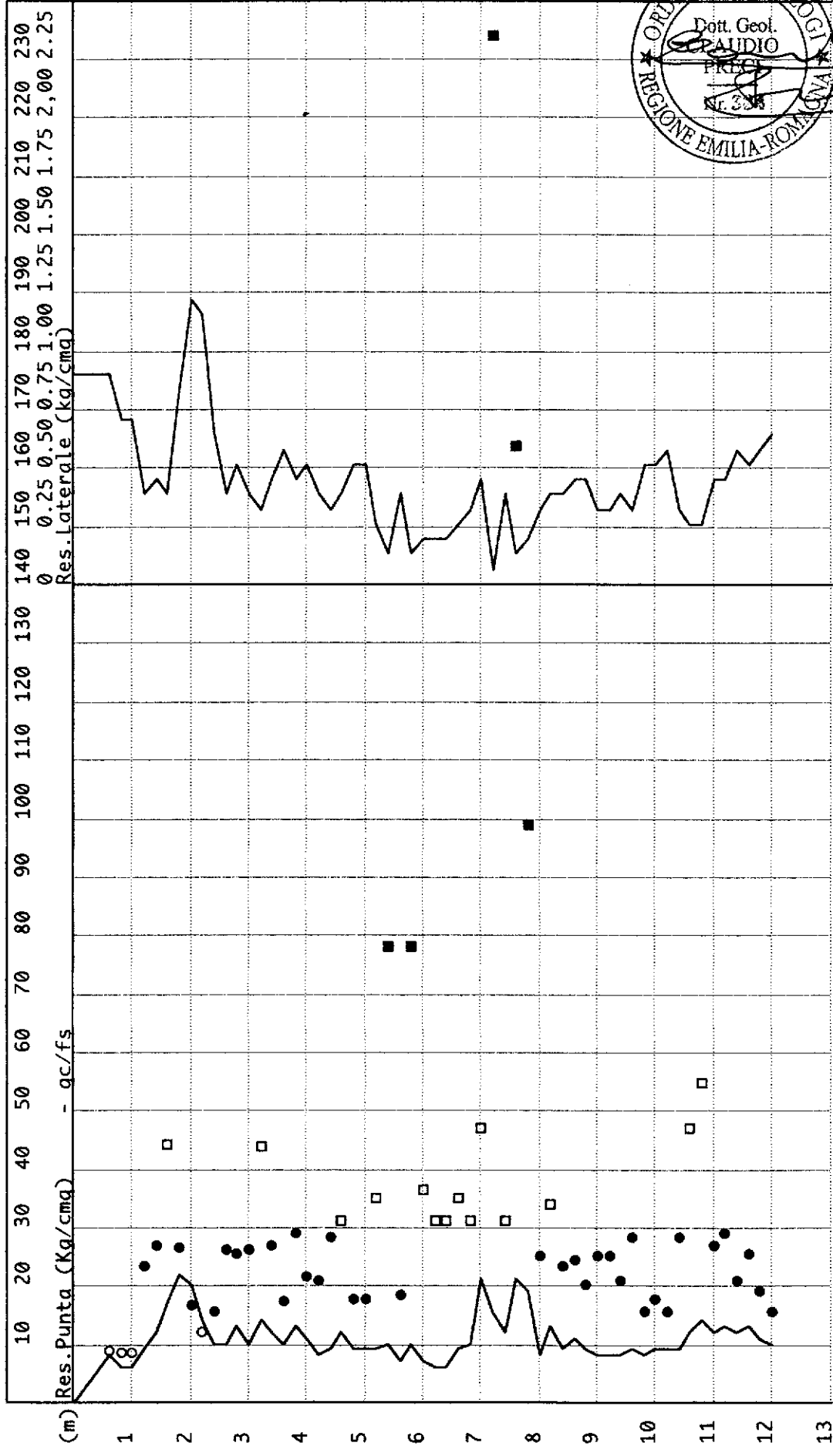
Dati prova penetrometrica statica

| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| ----- | | | |
| 0.60 | 10.00 | 1.03 | 9.75 |
| 0.80 | 7.00 | 1.03 | 6.83 |
| 1.00 | 9.00 | 0.71 | 12.76 |
| 1.20 | 9.00 | 0.51 | 17.55 |
| 1.40 | 12.00 | 0.45 | 26.74 |
| 1.60 | 16.00 | 0.58 | 27.73 |
| 1.80 | 20.00 | 0.83 | 24.00 |
| 2.00 | 18.00 | 1.15 | 15.60 |
| 2.20 | 14.00 | 1.03 | 13.65 |
| 2.40 | 10.00 | 0.51 | 19.50 |
| 2.60 | 9.00 | 0.38 | 23.40 |
| 2.80 | 13.00 | 0.38 | 33.80 |
| 3.00 | 8.00 | 0.45 | 17.83 |
| 3.20 | 8.00 | 0.45 | 17.83 |
| 3.40 | 8.00 | 0.32 | 24.96 |
| 3.60 | 8.00 | 0.19 | 41.60 |
| 3.80 | 9.00 | 0.26 | 35.10 |
| 4.00 | 7.00 | 0.26 | 27.30 |
| 4.20 | 9.00 | 0.26 | 35.10 |
| 4.40 | 4.00 | 0.45 | 8.91 |
| 4.60 | 5.00 | 0.32 | 15.60 |
| 4.80 | 5.00 | 0.26 | 19.50 |
| 5.00 | 4.00 | 0.26 | 15.60 |
| 5.20 | 4.00 | 0.13 | 31.20 |
| 5.40 | 1.00 | 0.06 | 15.60 |
| 5.60 | 1.00 | 0.06 | 15.60 |

CPT n°1 data:14/04/2000

Cantiere: P.O.U. C.Z.U Rubbiara

Committenti: Pedroni-Pierli-Brucato-Minelli



CLASSIFICAZIONE DI BEGEMANN per qc/fs
o Torbe e argille organiche □ Sabbie e limi
● Limi ed argille ■ Sabbie e/o Ghiaie

qc: 1 cm = 10 Kg/cm2
fs: 1 cm = 0,25 Kg/cm2
qc/fs: 1 cm = 10

| | | | |
|-------|-------|------|-------|
| 9.20 | 8.00 | 0.32 | 24.96 |
| 9.40 | 8.00 | 0.38 | 20.80 |
| 9.60 | 9.00 | 0.32 | 28.08 |
| 9.80 | 8.00 | 0.51 | 15.60 |
| 10.00 | 9.00 | 0.51 | 17.55 |
| 10.20 | 9.00 | 0.58 | 15.60 |
| 10.40 | 9.00 | 0.32 | 28.08 |
| 10.60 | 12.00 | 0.26 | 46.80 |
| 10.80 | 14.00 | 0.26 | 54.60 |
| 11.00 | 12.00 | 0.45 | 26.74 |
| 11.20 | 13.00 | 0.45 | 28.97 |
| 11.40 | 12.00 | 0.58 | 20.80 |
| 11.60 | 13.00 | 0.51 | 25.35 |
| 11.80 | 11.00 | 0.58 | 19.07 |
| 12.00 | 10.00 | 0.64 | 15.60 |

RELAZIONE TECNICA

CPT n°2 data:14/04/2000
 Cantiere: P.O.U. C2.U Rubbiara
 Committenti: Pedroni-Pierli-Brucato-Minelli

Quota livello di falda: 1.00

Dati prova penetrometrica statica

| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| ----- | | | |
| 0.60 | 10.00 | 1.03 | 9.75 |
| 0.80 | 7.00 | 1.03 | 6.83 |
| 1.00 | 9.00 | 0.71 | 12.76 |
| 1.20 | 9.00 | 0.51 | 17.55 |
| 1.40 | 12.00 | 0.45 | 26.74 |
| 1.60 | 16.00 | 0.58 | 27.73 |
| 1.80 | 20.00 | 0.83 | 24.00 |
| 2.00 | 18.00 | 1.15 | 15.60 |
| 2.20 | 14.00 | 1.03 | 13.65 |
| 2.40 | 10.00 | 0.51 | 19.50 |
| 2.60 | 9.00 | 0.38 | 23.40 |
| 2.80 | 13.00 | 0.38 | 33.80 |
| 3.00 | 8.00 | 0.45 | 17.83 |
| 3.20 | 8.00 | 0.45 | 17.83 |
| 3.40 | 8.00 | 0.32 | 24.96 |
| 3.60 | 8.00 | 0.19 | 41.60 |
| 3.80 | 9.00 | 0.26 | 35.10 |
| 4.00 | 7.00 | 0.26 | 27.30 |
| 4.20 | 9.00 | 0.26 | 35.10 |
| 4.40 | 4.00 | 0.45 | 8.91 |
| 4.60 | 5.00 | 0.32 | 15.60 |
| 4.80 | 5.00 | 0.26 | 19.50 |
| 5.00 | 4.00 | 0.26 | 15.60 |
| 5.20 | 4.00 | 0.13 | 31.20 |
| 5.40 | 1.00 | 0.06 | 15.60 |
| 5.60 | 1.00 | 0.06 | 15.60 |

| | | | |
|-------|-------|------|-------|
| 5.80 | 2.00 | 0.06 | 31.20 |
| 6.00 | 1.00 | 0.06 | 15.60 |
| 6.20 | 1.00 | 0.51 | 1.95 |
| 6.40 | 1.00 | 0.06 | 15.60 |
| 6.60 | 1.00 | 0.13 | 7.80 |
| 6.80 | 2.00 | 0.19 | 10.40 |
| 7.00 | 3.00 | 0.19 | 15.60 |
| 7.20 | 6.00 | 0.19 | 31.20 |
| 7.40 | 5.00 | 0.32 | 15.60 |
| 7.60 | 7.00 | 0.19 | 36.40 |
| 7.80 | 8.00 | 0.13 | 62.40 |
| 8.00 | 6.00 | 0.38 | 15.60 |
| 8.20 | 5.00 | 0.58 | 8.67 |
| 8.40 | 7.00 | 0.51 | 13.65 |
| 8.60 | 9.00 | 0.32 | 28.08 |
| 8.80 | 6.00 | 0.45 | 13.37 |
| 9.00 | 7.00 | 0.32 | 21.84 |
| 9.20 | 6.00 | 0.58 | 10.40 |
| 9.40 | 9.00 | 0.58 | 15.60 |
| 9.60 | 10.00 | 0.64 | 15.60 |
| 9.80 | 9.00 | 0.51 | 17.55 |
| 10.00 | 7.00 | 0.58 | 12.13 |
| 10.20 | 9.00 | 0.58 | 15.60 |
| 10.40 | 10.00 | 0.71 | 14.18 |
| 10.60 | 12.00 | 0.45 | 26.74 |
| 10.80 | 11.00 | 0.58 | 19.07 |
| 11.00 | 12.00 | 0.51 | 23.40 |
| 11.20 | 11.00 | 0.51 | 21.45 |
| 11.40 | 12.00 | 0.58 | 20.80 |
| 11.60 | 13.00 | 0.45 | 28.97 |
| 11.80 | 12.00 | 0.58 | 20.80 |
| 12.00 | 11.00 | 0.71 | 15.60 |

RELAZIONE TECNICA

CPT n°3 data:14/04/2000
 Cantiere: P.O.U. CZ.U Rubbiara
 Committenti: Pedroni-Pierli-Brucato-Minelli

Quota livello di falda: 0.80

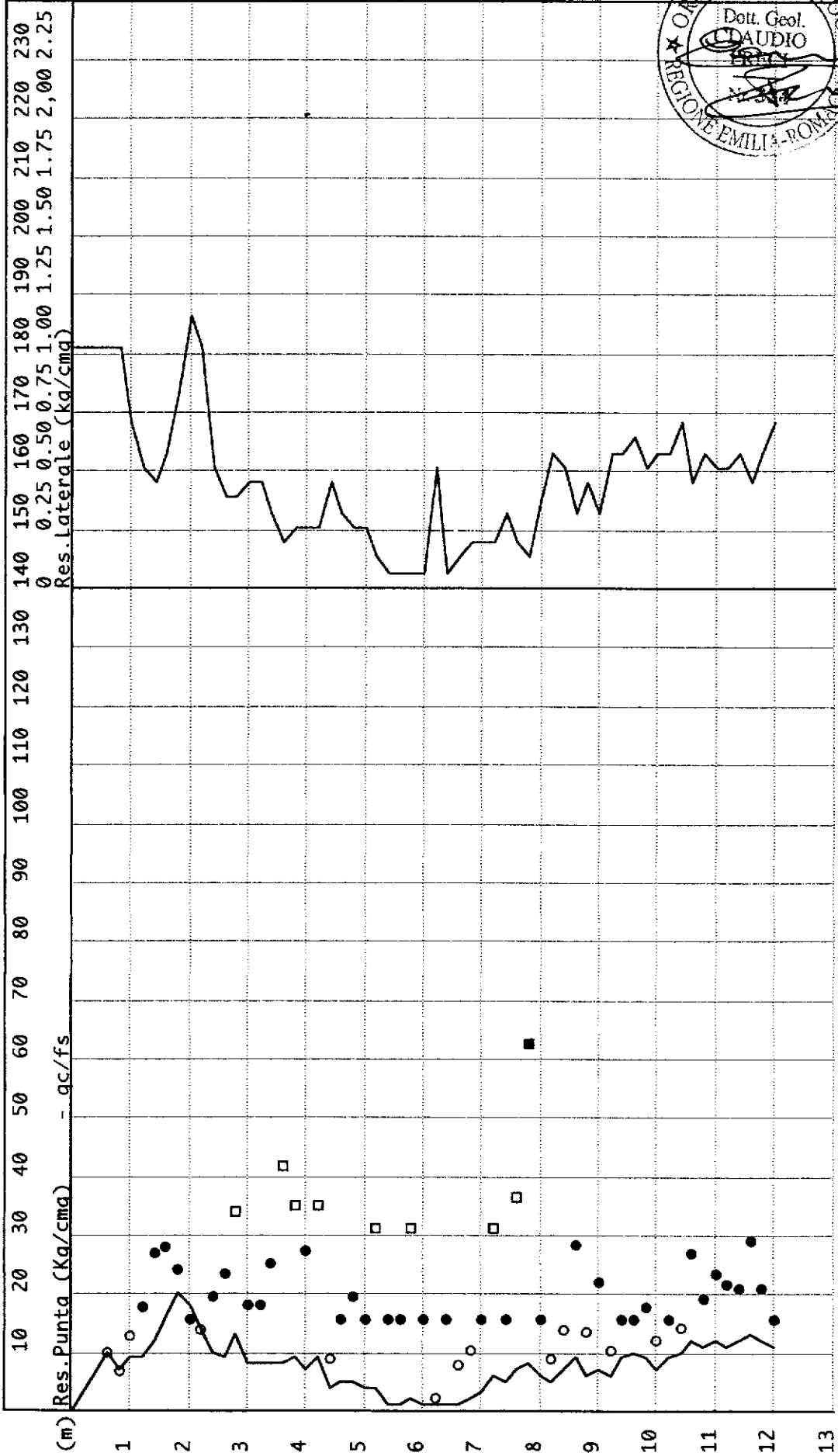
Dati prova penetrometrica statica

| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| 0.60 | 18.00 | 1.35 | 13.37 |
| 0.80 | 13.00 | 1.41 | 9.22 |
| 1.00 | 8.00 | 1.03 | 7.80 |
| 1.20 | 9.00 | 0.51 | 17.55 |
| 1.40 | 11.00 | 0.45 | 24.51 |
| 1.60 | 17.00 | 0.38 | 44.20 |
| 1.80 | 19.00 | 0.71 | 26.95 |
| 2.00 | 14.00 | 1.03 | 13.65 |
| 2.20 | 9.00 | 0.71 | 12.76 |

CPT n° 2 data: 14/04/2000

Cantiere: P.O.U. C2.U Rubbiara

Committenti: Pedroni-Pierli-Brucato-Minelli



qc: 1 cm = 10 Kg/cm²
fs: 1 cm = 0,25 Kg/cm²
qc/fs: 1 cm = 10

| | | | |
|-------|-------|------|-------|
| 5.80 | 2.00 | 0.06 | 31.20 |
| 6.00 | 1.00 | 0.06 | 15.60 |
| 6.20 | 1.00 | 0.51 | 1.95 |
| 6.40 | 1.00 | 0.06 | 15.60 |
| 6.60 | 1.00 | 0.13 | 7.80 |
| 6.80 | 2.00 | 0.19 | 10.40 |
| 7.00 | 3.00 | 0.19 | 15.60 |
| 7.20 | 6.00 | 0.19 | 31.20 |
| 7.40 | 5.00 | 0.32 | 15.60 |
| 7.60 | 7.00 | 0.19 | 36.40 |
| 7.80 | 8.00 | 0.13 | 62.40 |
| 8.00 | 6.00 | 0.38 | 15.60 |
| 8.20 | 5.00 | 0.58 | 8.67 |
| 8.40 | 7.00 | 0.51 | 13.65 |
| 8.60 | 9.00 | 0.32 | 28.08 |
| 8.80 | 6.00 | 0.45 | 13.37 |
| 9.00 | 7.00 | 0.32 | 21.84 |
| 9.20 | 6.00 | 0.58 | 10.40 |
| 9.40 | 9.00 | 0.58 | 15.60 |
| 9.60 | 10.00 | 0.64 | 15.60 |
| 9.80 | 9.00 | 0.51 | 17.55 |
| 10.00 | 7.00 | 0.58 | 12.13 |
| 10.20 | 9.00 | 0.58 | 15.60 |
| 10.40 | 10.00 | 0.71 | 14.18 |
| 10.60 | 12.00 | 0.45 | 26.74 |
| 10.80 | 11.00 | 0.58 | 19.07 |
| 11.00 | 12.00 | 0.51 | 23.40 |
| 11.20 | 11.00 | 0.51 | 21.45 |
| 11.40 | 12.00 | 0.58 | 20.80 |
| 11.60 | 13.00 | 0.45 | 28.97 |
| 11.80 | 12.00 | 0.58 | 20.80 |
| 12.00 | 11.00 | 0.71 | 15.60 |

RELAZIONE TECNICA

CPT n°3 data:14/04/2000
 Cantiere: P.O.U. CZ.U Rubbiara
 Committenti: Pedroni-Pierli-Brucato-Minelli

Quota livello di falda: 0.80

Dati prova penetrometrica statica

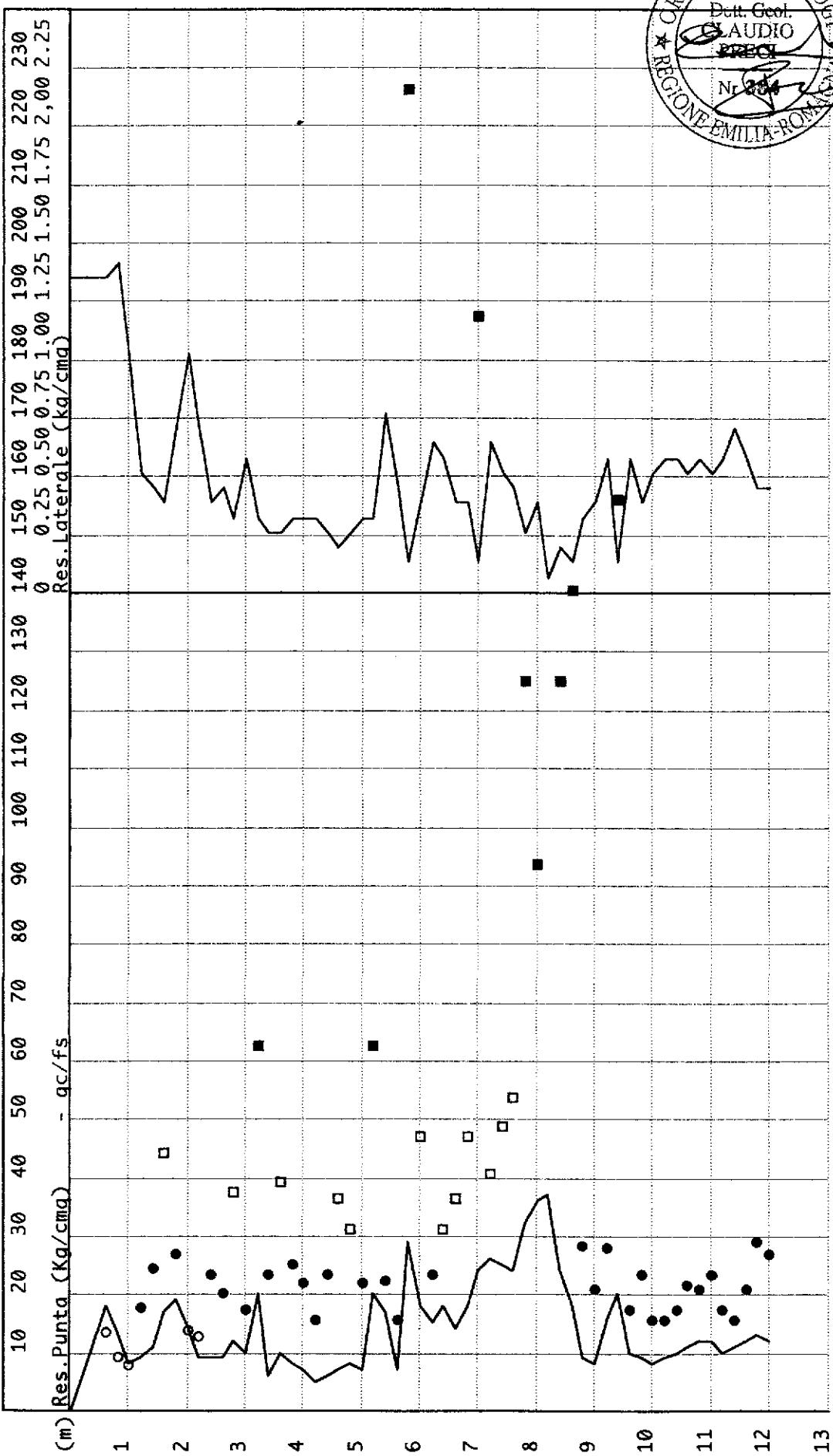
| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| 0.60 | 18.00 | 1.35 | 13.37 |
| 0.80 | 13.00 | 1.41 | 9.22 |
| 1.00 | 8.00 | 1.03 | 7.80 |
| 1.20 | 9.00 | 0.51 | 17.55 |
| 1.40 | 11.00 | 0.45 | 24.51 |
| 1.60 | 17.00 | 0.38 | 44.20 |
| 1.80 | 19.00 | 0.71 | 26.95 |
| 2.00 | 14.00 | 1.03 | 13.65 |
| 2.20 | 9.00 | 0.71 | 12.76 |

| | | | |
|-------|-------|------|--------|
| 2.40 | 9.00 | 0.38 | 23.40 |
| 2.60 | 9.00 | 0.45 | 20.06 |
| 2.80 | 12.00 | 0.32 | 37.44 |
| 3.00 | 10.00 | 0.58 | 17.33 |
| 3.20 | 20.00 | 0.32 | 62.40 |
| 3.40 | 6.00 | 0.26 | 23.40 |
| 3.60 | 10.00 | 0.26 | 39.00 |
| 3.80 | 8.00 | 0.32 | 24.96 |
| 4.00 | 7.00 | 0.32 | 21.84 |
| 4.20 | 5.00 | 0.32 | 15.60 |
| 4.40 | 6.00 | 0.26 | 23.40 |
| 4.60 | 7.00 | 0.19 | 36.40 |
| 4.80 | 8.00 | 0.26 | 31.20 |
| 5.00 | 7.00 | 0.32 | 21.84 |
| 5.20 | 20.00 | 0.32 | 62.40 |
| 5.40 | 17.00 | 0.77 | 22.10 |
| 5.60 | 7.00 | 0.45 | 15.60 |
| 5.80 | 29.00 | 0.13 | 226.20 |
| 6.00 | 18.00 | 0.38 | 46.80 |
| 6.20 | 15.00 | 0.64 | 23.40 |
| 6.40 | 18.00 | 0.58 | 31.20 |
| 6.60 | 14.00 | 0.38 | 36.40 |
| 6.80 | 18.00 | 0.38 | 46.80 |
| 7.00 | 24.00 | 0.13 | 187.20 |
| 7.20 | 26.00 | 0.64 | 40.56 |
| 7.40 | 25.00 | 0.51 | 48.75 |
| 7.60 | 24.00 | 0.45 | 53.49 |
| 7.80 | 32.00 | 0.26 | 124.80 |
| 8.00 | 36.00 | 0.38 | 93.60 |
| 8.20 | 37.00 | 0.06 | 577.20 |
| 8.40 | 24.00 | 0.19 | 124.80 |
| 8.60 | 18.00 | 0.13 | 140.40 |
| 8.80 | 9.00 | 0.32 | 28.08 |
| 9.00 | 8.00 | 0.38 | 20.80 |
| 9.20 | 16.00 | 0.58 | 27.73 |
| 9.40 | 20.00 | 0.13 | 156.00 |
| 9.60 | 10.00 | 0.58 | 17.33 |
| 9.80 | 9.00 | 0.38 | 23.40 |
| 10.00 | 8.00 | 0.51 | 15.60 |
| 10.20 | 9.00 | 0.58 | 15.60 |
| 10.40 | 10.00 | 0.58 | 17.33 |
| 10.60 | 11.00 | 0.51 | 21.45 |
| 10.80 | 12.00 | 0.58 | 20.80 |
| 11.00 | 12.00 | 0.51 | 23.40 |
| 11.20 | 10.00 | 0.58 | 17.33 |
| 11.40 | 11.00 | 0.71 | 15.60 |
| 11.60 | 12.00 | 0.58 | 20.80 |
| 11.80 | 13.00 | 0.45 | 28.97 |
| 12.00 | 12.00 | 0.45 | 26.74 |

CPT n°3 data:14/04/2000

Cantiere: P.O.U. C2.U Rubbiara

Committenti: Pedroni-Pierli-Brucato-Minelli



CLASSIFICAZIONE DI BEGEMANN per qc/fs

- Torbe e argille organiche
- Limi ed argille
- Sabbie e limi
- Sabbie e/o Ghiaie

qc: 1 cm = 10 Kg/cm2
fs: 1 cm = 0,25 Kg/cm2
qc/fs: 1 cm = 10



| | | | |
|-------|-------|------|-------|
| 9.40 | 22.00 | 0.26 | 85.80 |
| 9.60 | 16.00 | 0.58 | 27.73 |
| 9.80 | 14.00 | 0.38 | 36.40 |
| 10.00 | 13.00 | 0.38 | 33.80 |
| 10.20 | 15.00 | 0.38 | 39.00 |
| 10.40 | 16.00 | 0.32 | 49.92 |
| 10.60 | 14.00 | 0.32 | 43.68 |
| 10.80 | 12.00 | 0.64 | 18.72 |
| 11.00 | 10.00 | 0.83 | 12.00 |
| 11.20 | 12.00 | 0.58 | 20.80 |
| 11.40 | 14.00 | 0.38 | 36.40 |
| 11.60 | 13.00 | 0.51 | 25.35 |
| 11.80 | 13.00 | 0.45 | 28.97 |
| 12.00 | 14.00 | 0.45 | 31.20 |

RELAZIONE TECNICA

CPT n°5 data:14/04/2000
 Cantiere: P.O.U. C2.U Rubbiara
 Committenti: Pedroni-Pierli-Brucato-Minelli

Quota livello di falda: 1.40

Dati prova penetrometrica statica

| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| 0.60 | 12.00 | 0.64 | 18.72 |
| 0.80 | 11.00 | 1.22 | 9.03 |
| 1.00 | 14.00 | 1.15 | 12.13 |
| 1.20 | 12.00 | 1.28 | 9.36 |
| 1.40 | 10.00 | 0.58 | 17.33 |
| 1.60 | 14.00 | 0.64 | 21.84 |
| 1.80 | 21.00 | 1.03 | 20.48 |
| 2.00 | 23.00 | 1.28 | 17.94 |
| 2.20 | 19.00 | 1.67 | 11.40 |
| 2.40 | 18.00 | 1.22 | 14.78 |
| 2.60 | 13.00 | 1.03 | 12.68 |
| 2.80 | 10.00 | 0.51 | 19.50 |
| 3.00 | 7.00 | 0.45 | 15.60 |
| 3.20 | 16.00 | 0.32 | 49.92 |
| 3.40 | 16.00 | 0.26 | 62.40 |
| 3.60 | 11.00 | 0.32 | 34.32 |
| 3.80 | 13.00 | 0.38 | 33.80 |
| 4.00 | 12.00 | 0.19 | 62.40 |
| 4.20 | 10.00 | 0.26 | 39.00 |
| 4.40 | 18.00 | 0.19 | 93.60 |
| 4.60 | 21.00 | 0.13 | 163.80 |
| 4.80 | 15.00 | 0.19 | 78.00 |
| 5.00 | 15.00 | 0.26 | 58.50 |
| 5.20 | 18.00 | 0.38 | 46.80 |
| 5.40 | 23.00 | 1.15 | 19.93 |
| 5.60 | 28.00 | 0.38 | 72.80 |
| 5.80 | 23.00 | 0.45 | 51.26 |

| | | | |
|-------|-------|------|-------|
| 6.00 | 24.00 | 0.38 | 62.40 |
| 6.20 | 20.00 | 0.32 | 62.40 |
| 6.40 | 22.00 | 0.26 | 85.80 |
| 6.60 | 23.00 | 0.64 | 35.88 |
| 6.80 | 20.00 | 0.51 | 39.00 |
| 7.00 | 27.00 | 0.38 | 70.20 |
| 7.20 | 23.00 | 0.64 | 35.88 |
| 7.40 | 29.00 | 0.38 | 75.40 |
| 7.60 | 29.00 | 0.96 | 30.16 |
| 7.80 | 25.00 | 0.32 | 78.00 |
| 8.00 | 25.00 | 0.51 | 48.75 |
| 8.20 | 24.00 | 0.32 | 74.88 |
| 8.40 | 18.00 | 0.26 | 70.20 |
| 8.60 | 19.00 | 0.26 | 74.10 |
| 8.80 | 9.00 | 0.32 | 28.08 |
| 9.00 | 14.00 | 0.32 | 43.68 |
| 9.20 | 10.00 | 0.38 | 26.00 |
| 9.40 | 12.00 | 0.32 | 37.44 |
| 9.60 | 10.00 | 0.32 | 31.20 |
| 9.80 | 11.00 | 0.38 | 28.60 |
| 10.00 | 11.00 | 0.45 | 24.51 |
| 10.20 | 12.00 | 0.32 | 37.44 |
| 10.40 | 12.00 | 0.32 | 37.44 |
| 10.60 | 11.00 | 0.45 | 24.51 |
| 10.80 | 13.00 | 0.45 | 28.97 |
| 11.00 | 11.00 | 0.51 | 21.45 |
| 11.20 | 10.00 | 0.38 | 26.00 |
| 11.40 | 10.00 | 0.64 | 15.60 |
| 11.60 | 13.00 | 0.38 | 33.80 |
| 11.80 | 14.00 | 0.38 | 36.40 |
| 12.00 | 13.00 | 0.51 | 25.35 |

RELAZIONE TECNICA

CPT n°6 data:14/04/2000
 Cantiere: P.O.U. C2.U Rubbiara
 Committenti: Pedroni-Pierli-Brucato-Minelli

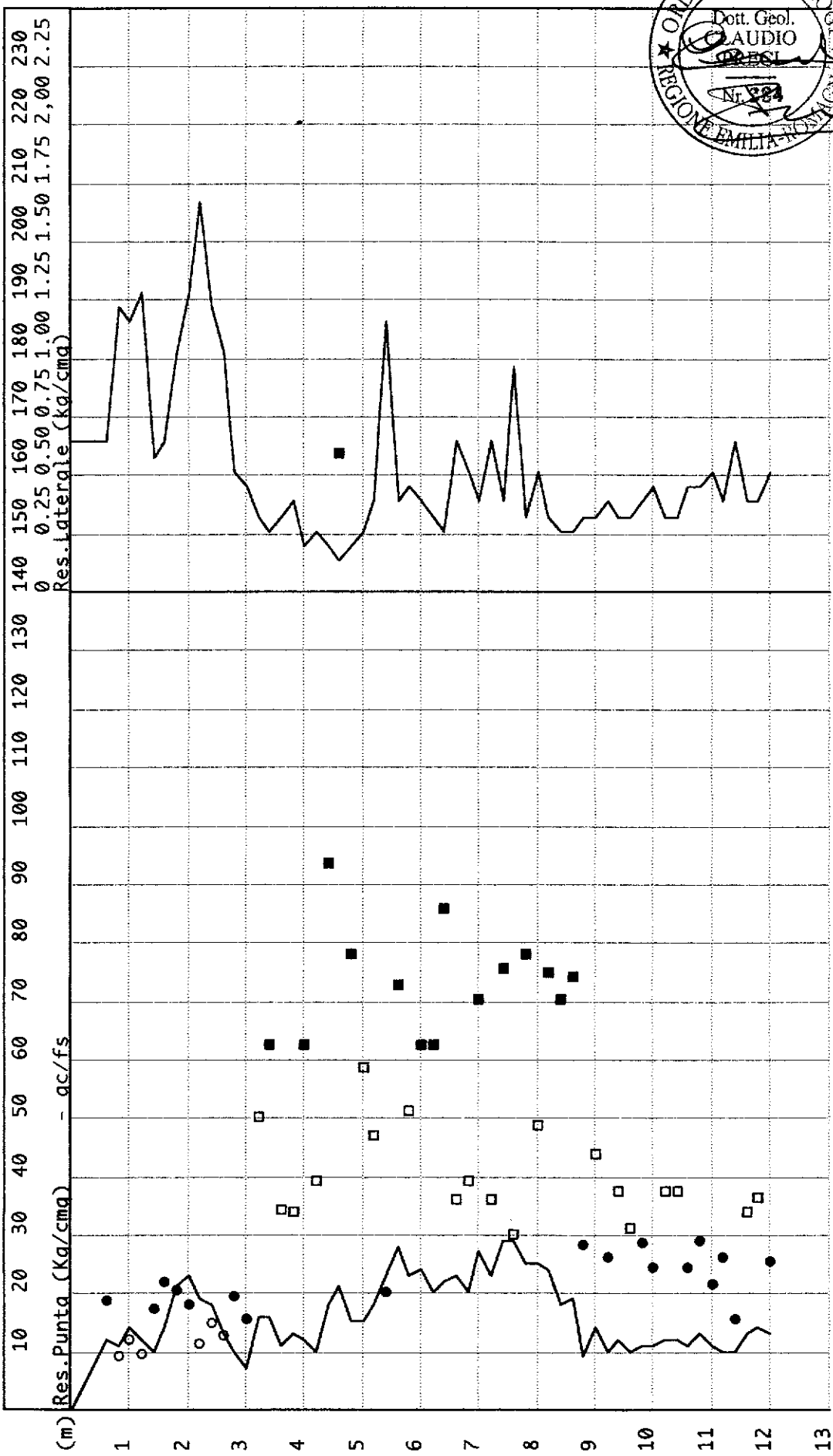
Quota livello di falda: 1.20

Dati prova penetrometrica statica

| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| ----- | | | |
| 0.60 | 15.00 | 0.90 | 16.71 |
| 0.80 | 17.00 | 1.03 | 16.58 |
| 1.00 | 12.00 | 1.28 | 9.36 |
| 1.20 | 13.00 | 0.96 | 13.52 |
| 1.40 | 14.00 | 0.58 | 24.27 |
| 1.60 | 16.00 | 0.64 | 24.96 |
| 1.80 | 16.00 | 0.64 | 24.96 |
| 2.00 | 12.00 | 0.83 | 14.40 |
| 2.20 | 12.00 | 0.45 | 26.74 |
| 2.40 | 13.00 | 0.38 | 33.80 |

CPT n°5 data:14/04/2000

Cantiere: P.O.U. C2.U Rubbiara
Committenti: Pedroni-Pierli-Brucato-Minelli

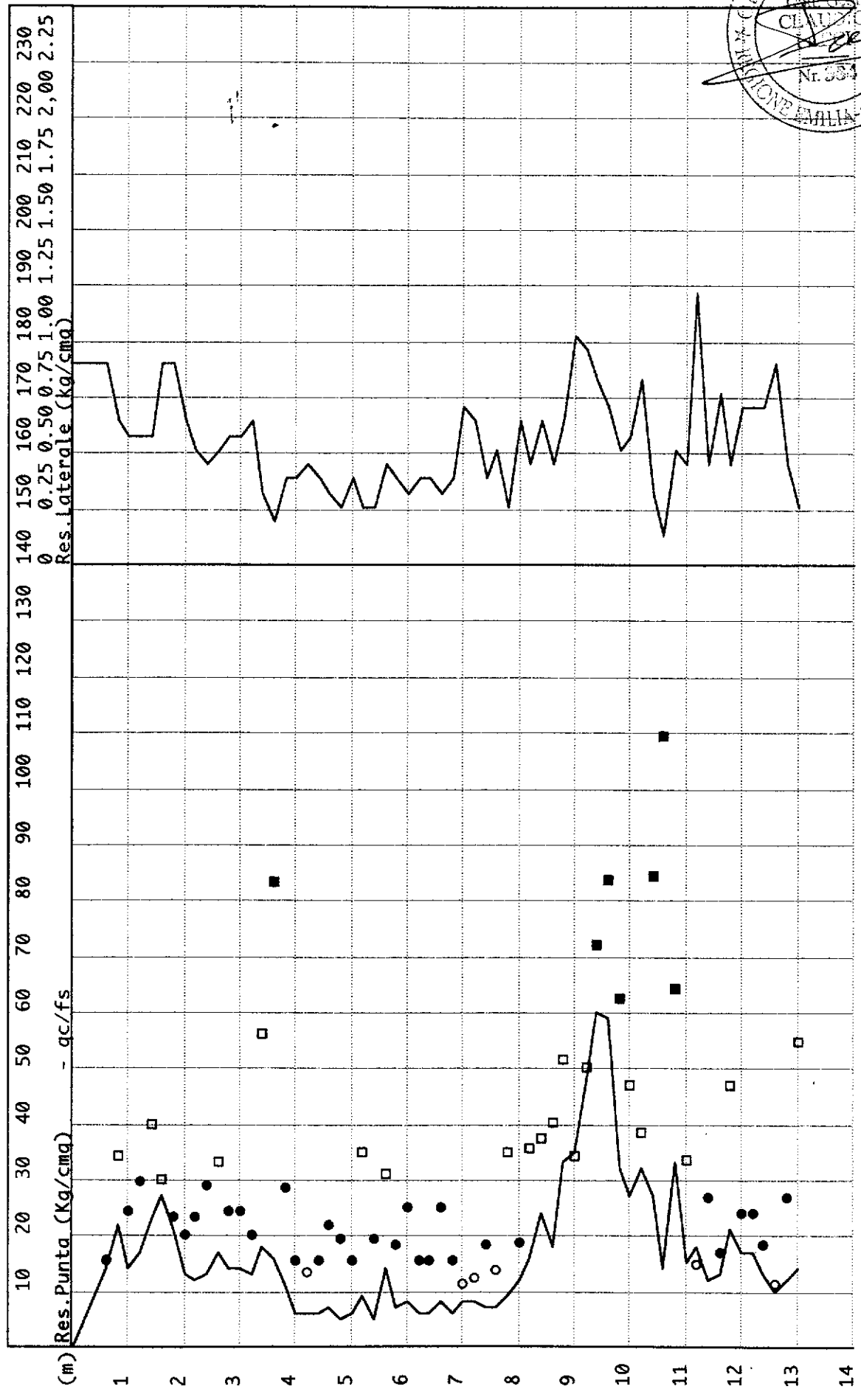
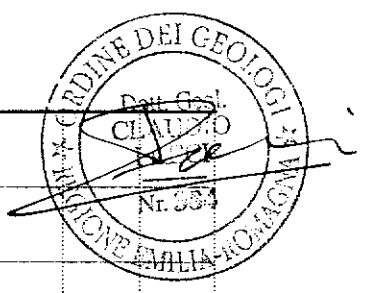


qc: 1 cm = 10 Kg/cm²
fs: 1 cm = 0,25 Kg/cm²
qc/fs: 1 cm = 10

CLASSIFICAZIONE DI BEGEMANN per qc/fs
○ Torbe e argille organiche
● Limi ed argille
□ Sabbie e limi
■ Sabbie e/o Ghiaie



CPT n° 2 data: 24/01/2003
 Cantiere: Str. Comunale Risaie
 Comune: nonantola



CLASSIFICAZIONE DI BEGEMANN per qc/fs
 ○ Torbe e argille organiche □ Sabbie e limi
 ● Limi ed argille ■ Sabbie e/o Ghiaie

qc: 1 cm = 10 Kg/cm²
 fs: 1 cm = 0,25 Kg/cm²
 qc/fs: 1 cm = 10

| Prof m | Strati | Tipologia | Gamma kg/m3 | Gamma' kg/m3 | Sigma'v kg/cm2 | CU kg/cm2 | FI ° | DR % | Mv cm2/Kg | K oriz Kg/cm3 | Perm. cm/sec |
|-----------|--------|---------------------------|----------------|-----------------|-------------------|--------------|---------|---------|--------------|------------------|-----------------|
| 0.60 | | Argilla compatta | 1803 | 1803 | 0.108 | 0.700 | 0 | 0 | 0.035714 | 1.4000 | 3.4e-5 |
| | FAIDA | | | | | | | | | | |
| 1.40 | | Argilla limosa | 1849 | 849 | 0.176 | 0.950 | 0 | 0 | 0.010526 | 1.9000 | 6.3e-3 |
| 1.80 | | Argilla sabbiosa e limosa | 1884 | 884 | 0.211 | 1.200 | 0 | 0 | 0.010965 | 1.6000 | 2.4e-3 |
| 3.20 | | Argilla compatta | 1800 | 800 | 0.324 | 0.686 | 0 | 0 | 0.036458 | 1.3714 | 1.3e-3 |
| 3.60 | | Sabbia sciolta | 1650 | 650 | 0.350 | 0.000 | 33 | 26 | 0.029412 | 0.8500 | 8.3e-2 |
| 5.00 | | Argilla media | 1694 | 694 | 0.447 | 0.336 | 0 | 0 | 0.020851 | 0.6714 | 1.6e-4 |
| 5.20 | | Limo argilloso | 1737 | 737 | 0.461 | 0.450 | 0 | 0 | 0.016221 | 0.6000 | 9.4e-3 |
| 5.40 | | Argilla tenera | 1650 | 650 | 0.474 | 0.250 | 0 | 0 | 0.025000 | 1.0000 | 2.6e-4 |
| 5.60 | | Argilla limosa | 1803 | 803 | 0.490 | 0.700 | 0 | 0 | 0.014286 | 1.4000 | 5.4e-3 |
| 7.60 | | Terre miste/Arg.org. | 1702 | 702 | 0.631 | 0.355 | 0 | 0 | 0.020265 | 1.4200 | 5.5e-5 |
| 7.80 | | Limo argilloso | 1737 | 737 | 0.646 | 0.450 | 0 | 0 | 0.016221 | 0.6000 | 9.4e-3 |
| 8.00 | | Argilla compatta | 1780 | 780 | 0.661 | 0.600 | 0 | 0 | 0.041667 | 1.2000 | 1.7e-4 |
| 9.20 | | Sabbia e limo argilloso | 1500 | 500 | 0.721 | 0.000 | 32 | 30 | 0.017241 | 1.9333 | 2.0e-2 |
| 9.80 | | Sabbia | 1800 | 800 | 0.769 | 0.000 | 34 | 49 | 0.013245 | 2.5167 | 1.1e-1 |
| 10.20 | | Sabbia e limo argilloso | 1500 | 500 | 0.789 | 0.000 | 32 | 29 | 0.016949 | 1.9667 | 2.0e-2 |
| 10.80 | | Sabbia | 1800 | 800 | 0.837 | 0.000 | 31 | 22 | 0.027027 | 1.2333 | 1.2e-1 |
| 11.60 | | Argilla compatta | 1809 | 809 | 0.902 | 0.725 | 0 | 0 | 0.034483 | 1.4500 | 3.1e-4 |
| 11.80 | | Sabbia sciolta | 1650 | 650 | 0.915 | 0.000 | 30 | 15 | 0.023810 | 1.0500 | 3.0e-2 |
| 12.80 | | Argilla compatta | 1801 | 801 | 0.995 | 0.690 | 0 | 0 | 0.036232 | 1.3800 | 2.9e-4 |
| 13.00 | | Sabbia sciolta | 1650 | 650 | 1.008 | 0.000 | 28 | 15 | 0.035714 | 0.7000 | 4.9e-2 |

RELAZIONE TECNICA

CPT n°2 data:24/01/2003

Cantiere: Str. Comunale Risaie

Comune: Nonantola

Quota livello di falda: 0.80

Dati prova penetrometrica statica

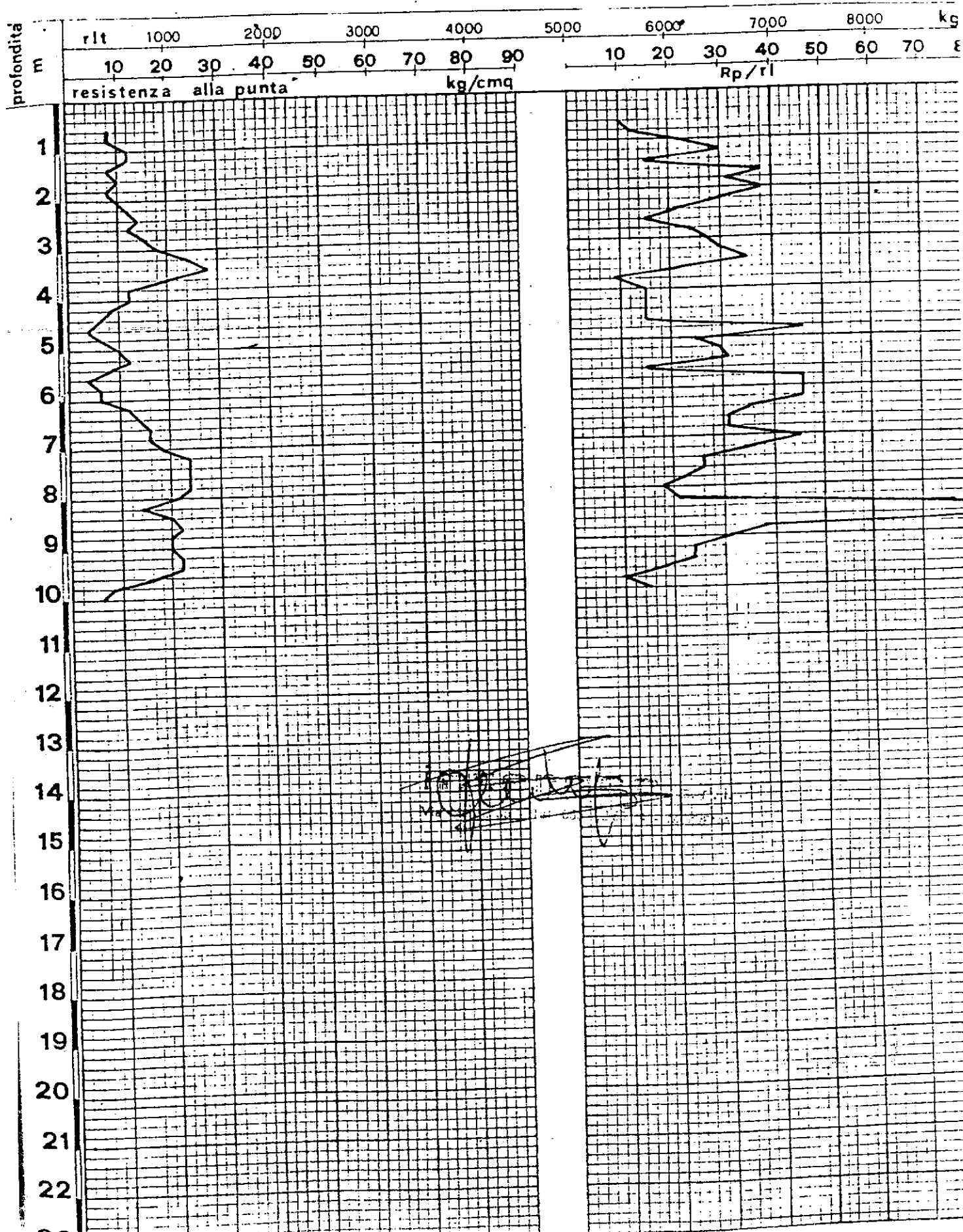
| Prof. | Resistenza di Punta | Resistenza Laterale | Rapp. qc/fs |
|-------|---------------------|---------------------|-------------|
| 0.60 | 14.00 | 0.90 | 15.60 |
| 0.80 | 22.00 | 0.64 | 34.32 |
| 1.00 | 14.00 | 0.58 | 24.27 |
| 1.20 | 17.00 | 0.58 | 29.47 |
| 1.40 | 23.00 | 0.58 | 39.87 |
| 1.60 | 27.00 | 0.90 | 30.09 |
| 1.80 | 21.00 | 0.90 | 23.40 |
| 2.00 | 13.00 | 0.64 | 20.28 |
| 2.20 | 12.00 | 0.51 | 23.40 |
| 2.40 | 13.00 | 0.45 | 28.97 |
| 2.60 | 17.00 | 0.51 | 33.15 |
| 2.80 | 14.00 | 0.58 | 24.27 |
| 3.00 | 14.00 | 0.58 | 24.27 |
| 3.20 | 13.00 | 0.64 | 20.28 |
| 3.40 | 18.00 | 0.32 | 56.16 |
| 3.60 | 16.00 | 0.19 | 83.20 |
| 3.80 | 11.00 | 0.38 | 28.60 |
| 4.00 | 6.00 | 0.38 | 15.60 |
| 4.20 | 6.00 | 0.45 | 13.37 |
| 4.40 | 6.00 | 0.38 | 15.60 |
| 4.60 | 7.00 | 0.32 | 21.84 |
| 4.80 | 5.00 | 0.26 | 19.50 |
| 5.00 | 6.00 | 0.38 | 15.60 |
| 5.20 | 9.00 | 0.26 | 35.10 |
| 5.40 | 5.00 | 0.26 | 19.50 |
| 5.60 | 14.00 | 0.45 | 31.20 |
| 5.80 | 7.00 | 0.38 | 18.20 |
| 6.00 | 8.00 | 0.32 | 24.96 |
| 6.20 | 6.00 | 0.38 | 15.60 |
| 6.40 | 6.00 | 0.38 | 15.60 |
| 6.60 | 8.00 | 0.32 | 24.96 |
| 6.80 | 6.00 | 0.38 | 15.60 |
| 7.00 | 8.00 | 0.71 | 11.35 |
| 7.20 | 8.00 | 0.64 | 12.48 |
| 7.40 | 7.00 | 0.38 | 18.20 |
| 7.60 | 7.00 | 0.51 | 13.65 |
| 7.80 | 9.00 | 0.26 | 35.10 |
| 8.00 | 12.00 | 0.64 | 18.72 |
| 8.20 | 16.00 | 0.45 | 35.66 |
| 8.40 | 24.00 | 0.64 | 37.44 |
| 8.60 | 18.00 | 0.45 | 40.11 |
| 8.80 | 33.00 | 0.64 | 51.48 |
| 9.00 | 35.00 | 1.03 | 34.13 |
| 9.20 | 48.00 | 0.96 | 49.92 |
| 9.40 | 60.00 | 0.83 | 72.00 |
| 9.60 | 59.00 | 0.71 | 83.67 |
| 9.80 | 32.00 | 0.51 | 62.40 |
| 10.00 | 27.00 | 0.58 | 46.80 |
| 10.20 | 32.00 | 0.83 | 38.40 |
| 10.40 | 27.00 | 0.32 | 84.24 |
| 10.60 | 14.00 | 0.13 | 109.20 |
| 10.80 | 33.00 | 0.51 | 64.35 |
| 11.00 | 15.00 | 0.45 | 33.43 |
| 11.20 | 18.00 | 1.22 | 14.78 |
| 11.40 | 12.00 | 0.45 | 26.74 |
| 11.60 | 13.00 | 0.77 | 16.90 |
| 11.80 | 21.00 | 0.45 | 46.80 |
| 12.00 | 17.00 | 0.71 | 24.11 |
| 12.20 | 17.00 | 0.71 | 24.11 |
| 12.40 | 13.00 | 0.71 | 18.44 |
| 12.60 | 10.00 | 0.90 | 11.14 |
| 12.80 | 12.00 | 0.45 | 26.74 |
| 13.00 | 14.00 | 0.26 | 54.60 |

dott. Claudio Preci geologo

Consulenze e Servizi per: Geologia - Geotecnica - Idrogeologia - Ingegneria - Ambiente

Studio: v. C. Costa n°101 41100 Modena tel.059/823020 telefax 059/828635 e-mail geosond@tin.it

PENETROMETRO STATICO GOUDA IO TON.



PROVA PENETROMETRICA STATICA

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 1

2.010496-042

- committente : Piccolo Alessandro
 - lavoro : Costruzione civili fabbricati
 - località : via Giordina Nonatola (MO)
 - note :

- data : 06/02/2001
 - quota inizio : Piano Campagna
 - prof. falda : 1,50 m da quota inizio
 - pagina : 1

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|-------------|--------------------|--------------------|--------------------|--------------------|-------|--------------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | 3,0 | 6,0 | 3,0 | 0,20 | 15,0 | 6,00 | 9,0 | 12,0 | 9,0 | 0,13 | 67,0 |
| 0,40 | 8,0 | 11,0 | 8,0 | 0,40 | 20,0 | 6,20 | 11,0 | 13,0 | 11,0 | 0,13 | 82,0 |
| 0,60 | 9,0 | 15,0 | 9,0 | 0,33 | 27,0 | 6,40 | 19,0 | 21,0 | 19,0 | 0,67 | 28,0 |
| 0,80 | 14,0 | 19,0 | 14,0 | 0,40 | 35,0 | 6,60 | 13,0 | 23,0 | 13,0 | 0,53 | 24,0 |
| 1,00 | 8,0 | 14,0 | 8,0 | 0,47 | 17,0 | 6,80 | 14,0 | 22,0 | 14,0 | 0,20 | 70,0 |
| 1,20 | 11,0 | 18,0 | 11,0 | 0,33 | 33,0 | 7,00 | 16,0 | 19,0 | 16,0 | 0,47 | 34,0 |
| 1,40 | 14,0 | 19,0 | 14,0 | 0,60 | 23,0 | 7,20 | 11,0 | 18,0 | 11,0 | 0,27 | 41,0 |
| 1,60 | 15,0 | 24,0 | 15,0 | 0,60 | 25,0 | 7,40 | 14,0 | 18,0 | 14,0 | 0,67 | 21,0 |
| 1,80 | 25,0 | 34,0 | 25,0 | 0,53 | 47,0 | 7,60 | 11,0 | 21,0 | 11,0 | 0,33 | 33,0 |
| 2,00 | 18,0 | 26,0 | 18,0 | 0,60 | 30,0 | 7,80 | 13,0 | 18,0 | 13,0 | 0,53 | 24,0 |
| 2,20 | 25,0 | 34,0 | 25,0 | 0,40 | 62,0 | 8,00 | 12,0 | 20,0 | 12,0 | 0,53 | 22,0 |
| 2,40 | 26,0 | 32,0 | 26,0 | 0,40 | 65,0 | 8,20 | 13,0 | 21,0 | 13,0 | 0,60 | 22,0 |
| 2,60 | 24,0 | 30,0 | 24,0 | 1,33 | 18,0 | 8,40 | 12,0 | 21,0 | 12,0 | 0,27 | 45,0 |
| 2,80 | 19,0 | 39,0 | 19,0 | 0,87 | 22,0 | 8,60 | 12,0 | 16,0 | 12,0 | 0,53 | 22,0 |
| 3,00 | 20,0 | 33,0 | 20,0 | 0,93 | 21,0 | 8,80 | 12,0 | 20,0 | 12,0 | 0,47 | 26,0 |
| 3,20 | 19,0 | 33,0 | 19,0 | 0,87 | 22,0 | 9,00 | 11,0 | 18,0 | 11,0 | 0,33 | 33,0 |
| 3,40 | 15,0 | 28,0 | 15,0 | 0,93 | 16,0 | 9,20 | 11,0 | 16,0 | 11,0 | 0,20 | 55,0 |
| 3,60 | 15,0 | 29,0 | 15,0 | 0,40 | 37,0 | 9,40 | 11,0 | 14,0 | 11,0 | 0,47 | 24,0 |
| 3,80 | 12,0 | 18,0 | 12,0 | 0,47 | 26,0 | 9,60 | 12,0 | 19,0 | 12,0 | 0,47 | 26,0 |
| 4,00 | 9,0 | 16,0 | 9,0 | 0,40 | 22,0 | 9,80 | 9,0 | 16,0 | 9,0 | 0,40 | 22,0 |
| 4,20 | 12,0 | 18,0 | 12,0 | 0,47 | 26,0 | 10,00 | 12,0 | 18,0 | 12,0 | 0,27 | 45,0 |
| 4,40 | 18,0 | 25,0 | 18,0 | 0,80 | 22,0 | 10,20 | 11,0 | 15,0 | 11,0 | 0,60 | 18,0 |
| 4,60 | 12,0 | 24,0 | 12,0 | 0,33 | 36,0 | 10,40 | 11,0 | 20,0 | 11,0 | 0,47 | 24,0 |
| 4,80 | 14,0 | 19,0 | 14,0 | 0,27 | 52,0 | 10,60 | 15,0 | 22,0 | 15,0 | 0,40 | 37,0 |
| 5,00 | 14,0 | 18,0 | 14,0 | 0,53 | 26,0 | 10,80 | 16,0 | 22,0 | 16,0 | 1,00 | 16,0 |
| 5,20 | 18,0 | 26,0 | 18,0 | 0,60 | 30,0 | 11,00 | 13,0 | 28,0 | 13,0 | 0,47 | 28,0 |
| 5,40 | 12,0 | 21,0 | 12,0 | 0,47 | 26,0 | 11,20 | 12,0 | 19,0 | 12,0 | 0,33 | 36,0 |
| 5,60 | 10,0 | 17,0 | 10,0 | 0,33 | 30,0 | 11,40 | 13,0 | 18,0 | 13,0 | ----- | ---- |
| 5,80 | 9,0 | 14,0 | 9,0 | 0,20 | 45,0 | | | | | | |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
 - punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
 - manicotto laterale (superficie 150 cm²)

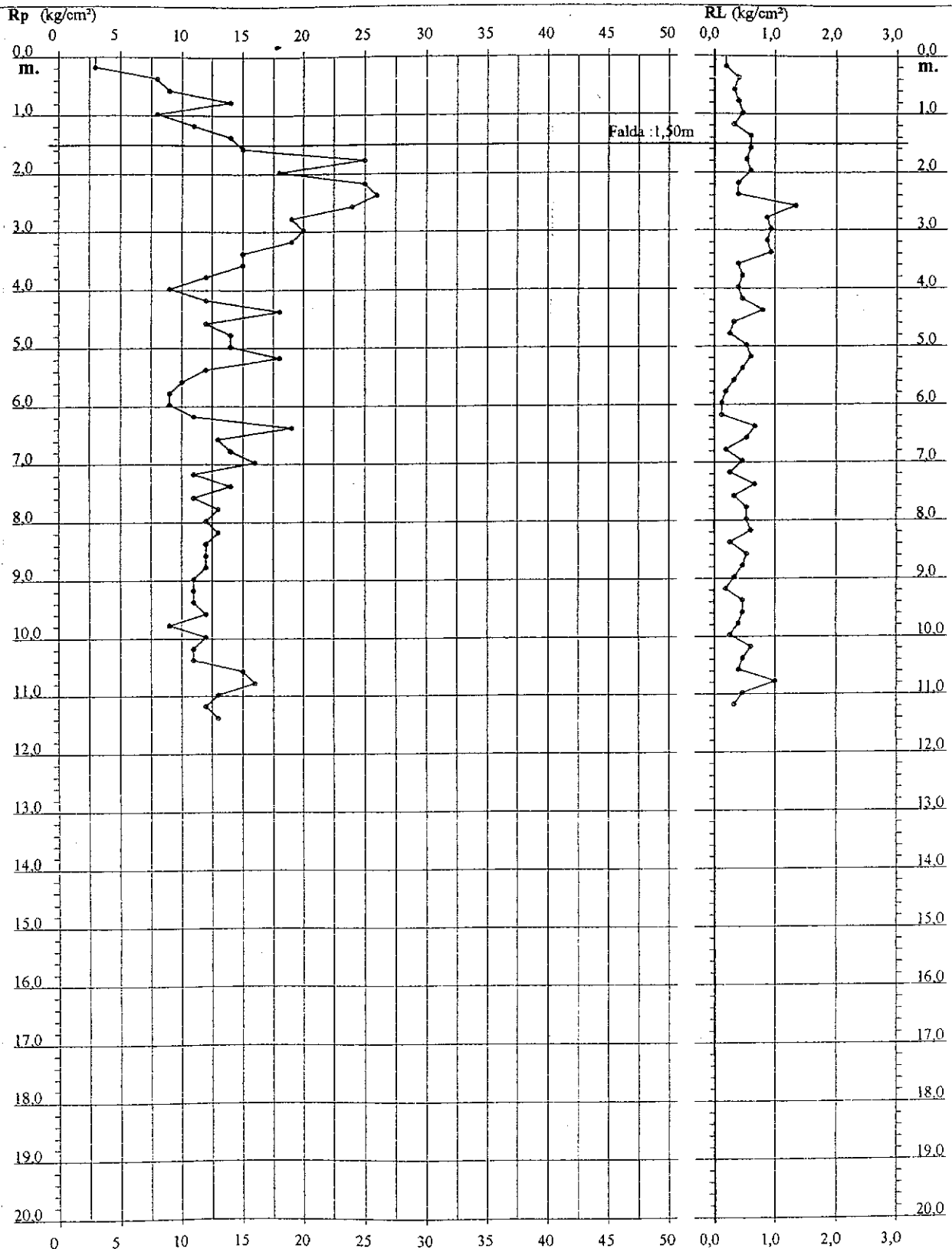
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

2.010496-042

- committente : Piccolo Alessandro
- lavoro : Costruzione civili fabbricati
- località : via Giorgina Nonatola (MO)

- data : 06/02/2001
- quota inizio : Piano Campagna
- prof. falda : 1,50 m da quota inizio
- scala vert.: 1 : 100



PROVA PENETROMETRICA STATICA

CPT 4

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

2:010496-042

- committente : Piccolo Alessandro
 - lavoro : Costruzione civili fabbricati
 - località : via Giorgina Nonatola (MO)
 - note :

- data : 06/02/2001
 - quota inizio : Piano Campagna
 - prof. falda : 1,50 m da quota inizio
 - pagina : 1

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | 5,0 | 7,0 | 5,0 | 0,27 | 19,0 | 6,00 | 13,0 | 17,0 | 13,0 | 0,33 | 39,0 |
| 0,40 | 7,0 | 11,0 | 7,0 | 0,40 | 17,0 | 6,20 | 10,0 | 15,0 | 10,0 | 0,27 | 37,0 |
| 0,60 | 8,0 | 14,0 | 8,0 | 0,53 | 15,0 | 6,40 | 10,0 | 14,0 | 10,0 | 0,47 | 21,0 |
| 0,80 | 8,0 | 16,0 | 8,0 | 0,53 | 15,0 | 6,60 | 10,0 | 17,0 | 10,0 | 0,40 | 25,0 |
| 1,00 | 12,0 | 20,0 | 12,0 | 0,60 | 20,0 | 6,80 | 10,0 | 16,0 | 10,0 | 0,53 | 19,0 |
| 1,20 | 16,0 | 25,0 | 16,0 | 1,20 | 13,0 | 7,00 | 12,0 | 20,0 | 12,0 | 0,40 | 30,0 |
| 1,40 | 18,0 | 36,0 | 18,0 | 0,40 | 45,0 | 7,20 | 10,0 | 16,0 | 10,0 | 0,33 | 30,0 |
| 1,60 | 20,0 | 26,0 | 20,0 | 1,20 | 17,0 | 7,40 | 10,0 | 15,0 | 10,0 | 0,60 | 17,0 |
| 1,80 | 22,0 | 40,0 | 22,0 | 0,47 | 47,0 | 7,60 | 12,0 | 21,0 | 12,0 | 0,27 | 45,0 |
| 2,00 | 20,0 | 27,0 | 20,0 | 1,53 | 13,0 | 7,80 | 9,0 | 13,0 | 9,0 | 0,27 | 34,0 |
| 2,20 | 22,0 | 45,0 | 22,0 | 1,67 | 13,0 | 8,00 | 11,0 | 15,0 | 11,0 | 0,40 | 27,0 |
| 2,40 | 25,0 | 50,0 | 25,0 | 0,47 | 54,0 | 8,20 | 11,0 | 17,0 | 11,0 | 0,20 | 55,0 |
| 2,60 | 28,0 | 35,0 | 28,0 | 2,00 | 14,0 | 8,40 | 12,0 | 15,0 | 12,0 | 0,47 | 26,0 |
| 2,80 | 23,0 | 53,0 | 23,0 | 1,60 | 14,0 | 8,60 | 12,0 | 19,0 | 12,0 | 0,40 | 30,0 |
| 3,00 | 19,0 | 43,0 | 19,0 | 0,87 | 22,0 | 8,80 | 9,0 | 15,0 | 9,0 | 0,27 | 34,0 |
| 3,20 | 12,0 | 25,0 | 12,0 | 0,33 | 36,0 | 9,00 | 9,0 | 13,0 | 9,0 | 0,27 | 34,0 |
| 3,40 | 9,0 | 14,0 | 9,0 | 0,40 | 22,0 | 9,20 | 11,0 | 15,0 | 11,0 | 0,40 | 27,0 |
| 3,60 | 15,0 | 21,0 | 15,0 | 0,87 | 17,0 | 9,40 | 8,0 | 14,0 | 8,0 | 0,33 | 24,0 |
| 3,80 | 19,0 | 32,0 | 19,0 | 0,53 | 36,0 | 9,60 | 10,0 | 15,0 | 10,0 | 0,20 | 50,0 |
| 4,00 | 16,0 | 24,0 | 16,0 | 0,47 | 34,0 | 9,80 | 12,0 | 15,0 | 12,0 | 0,33 | 36,0 |
| 4,20 | 19,0 | 26,0 | 19,0 | 0,40 | 47,0 | 10,00 | 9,0 | 14,0 | 9,0 | 0,33 | 27,0 |
| 4,40 | 19,0 | 25,0 | 19,0 | 0,40 | 47,0 | 10,20 | 12,0 | 17,0 | 12,0 | 0,33 | 36,0 |
| 4,60 | 12,0 | 18,0 | 12,0 | 0,33 | 36,0 | 10,40 | 14,0 | 19,0 | 14,0 | 0,20 | 70,0 |
| 4,80 | 9,0 | 14,0 | 9,0 | 0,27 | 34,0 | 10,60 | 13,0 | 16,0 | 13,0 | 0,60 | 22,0 |
| 5,00 | 9,0 | 13,0 | 9,0 | 0,27 | 34,0 | 10,80 | 14,0 | 23,0 | 14,0 | 0,60 | 23,0 |
| 5,20 | 10,0 | 14,0 | 10,0 | 0,27 | 37,0 | 11,00 | 13,0 | 22,0 | 13,0 | 0,47 | 28,0 |
| 5,40 | 12,0 | 16,0 | 12,0 | 0,40 | 30,0 | 11,20 | 16,0 | 23,0 | 16,0 | 0,73 | 22,0 |
| 5,60 | 13,0 | 19,0 | 13,0 | 1,00 | 13,0 | 11,40 | 16,0 | 27,0 | 16,0 | ----- | ---- |
| 5,80 | 11,0 | 26,0 | 11,0 | 0,27 | 41,0 | | | | | | |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
 - punta meccanica tipo Begemann ø = 35.7 mm (area punta 10 cm² - apertura 60°)
 - manicotto laterale (superficie 150 cm²)

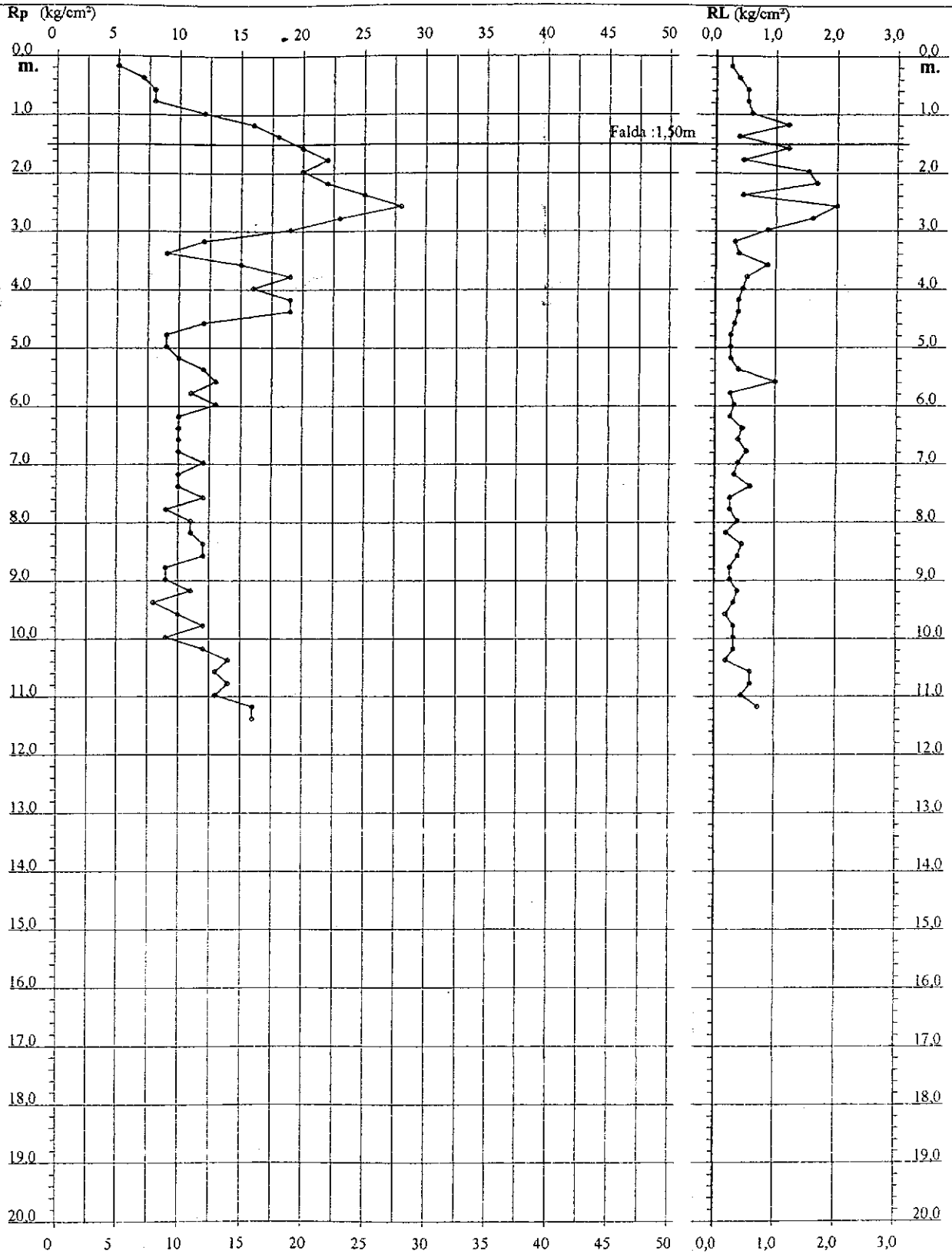
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 4

2:010496-042

- committente : Piccolo Alessandro
- lavoro : Costruzione civili fabbricati
- località : via Giorgina Nonatola (MO)

- data : 06/02/2001
- quota inizio : Piano Campagna
- prof. falda : 1,50 m da quota inizio
- scala vert.: 1 : 100



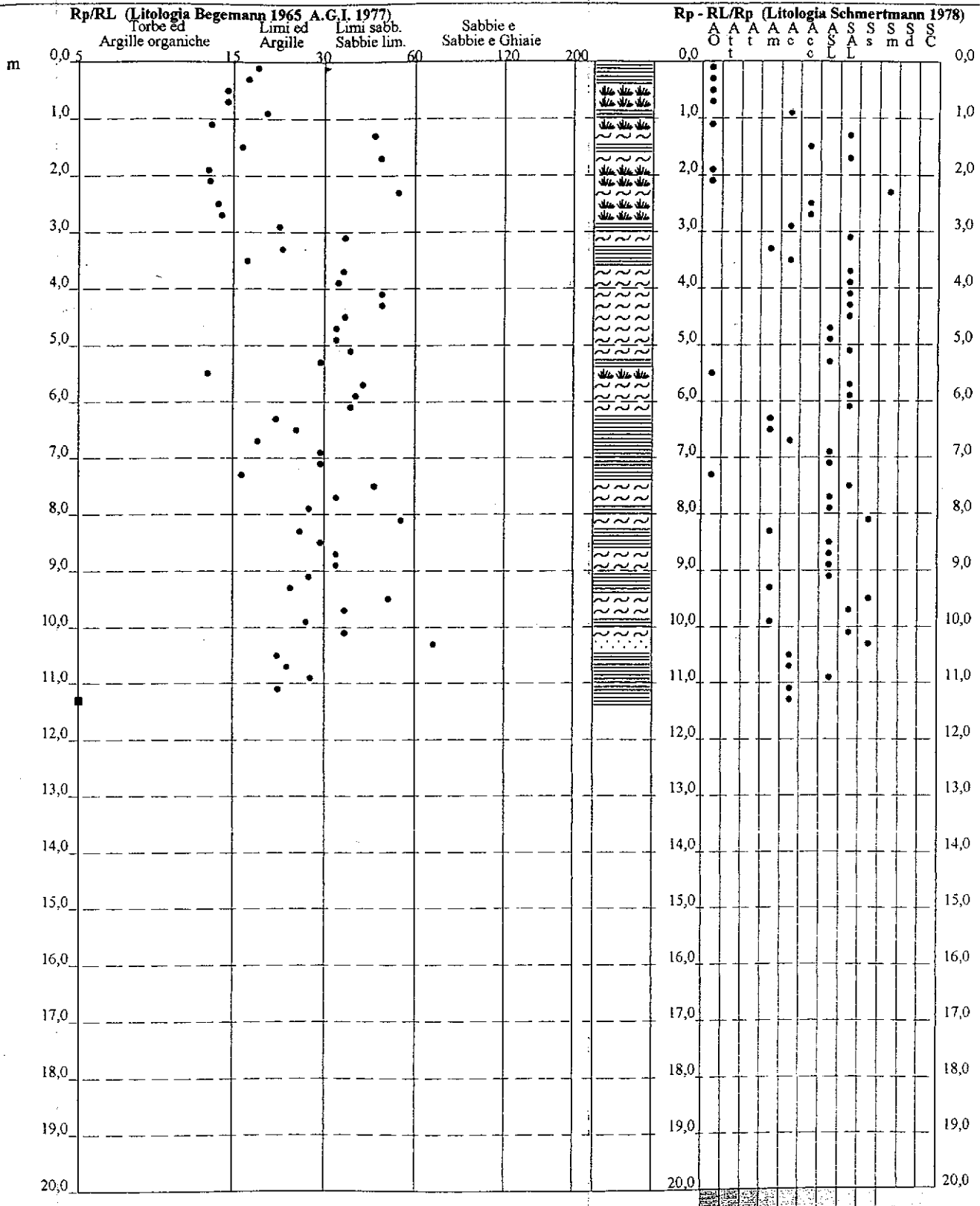
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 4

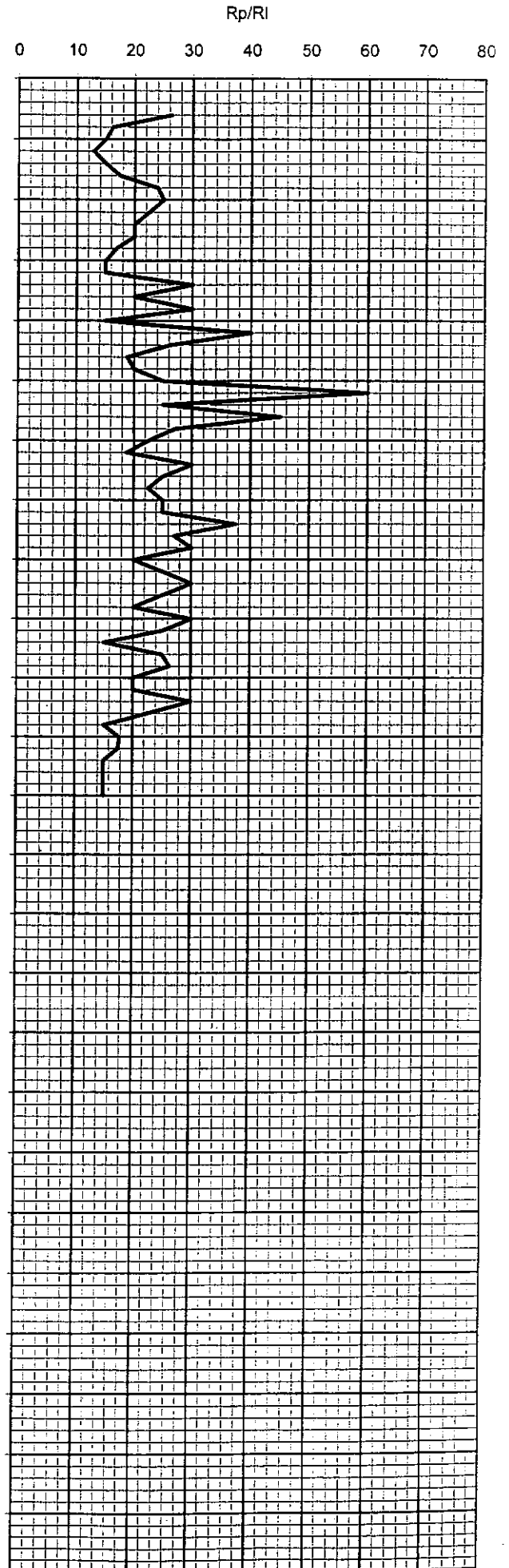
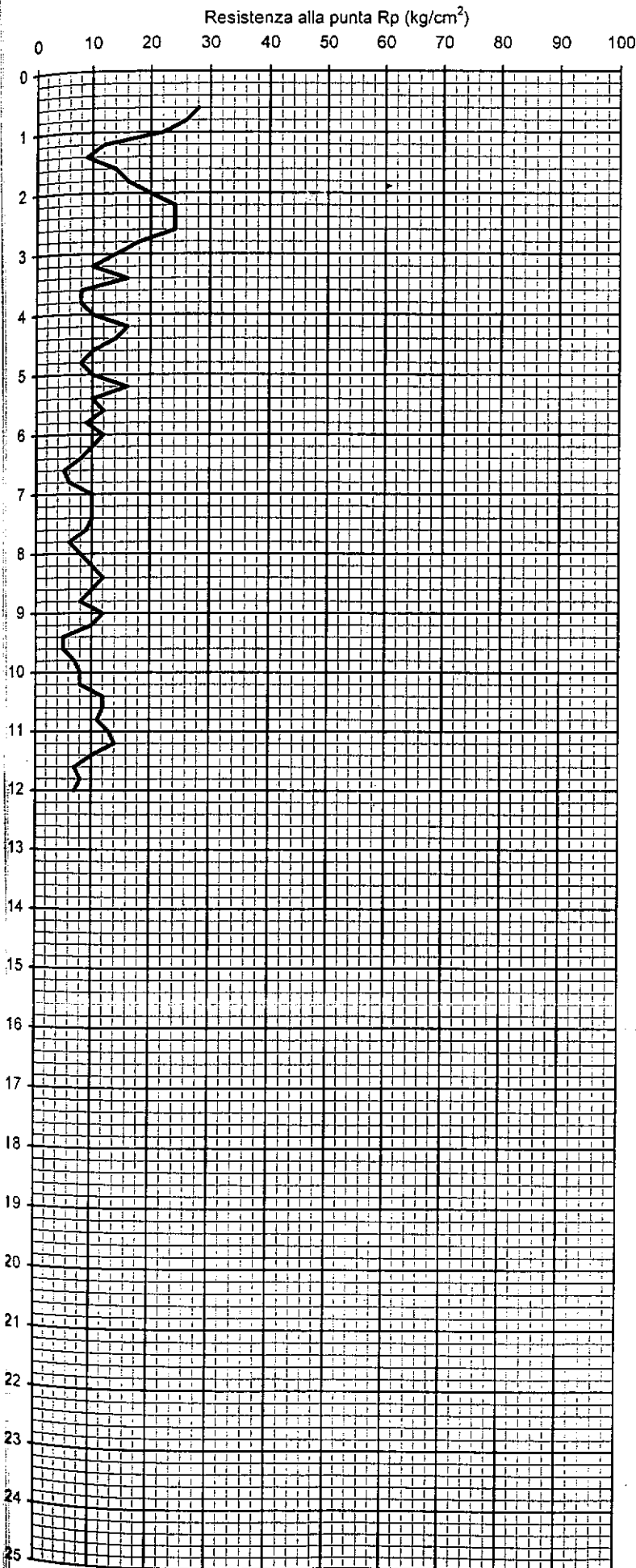
2.010496-042

- committente : Piccolo Alessandro
 - lavoro : Costruzione civili fabbricati
 - località : via Giorgina Nonatola (MO)
 - note :

- data : 06/02/2001
 - quota inizio : Piano Campagna
 - prof. falda : 1,50 m da quota inizio
 - scala vert. : 1 : 100



Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O GEOM. PICCININI
Località : VIA GIORGINA-CASSETTE-NONANTOLA
Prova numero : 2
Data : 26/05/00
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 28 | 44 | 28 | 1,07 | 26,25 |
| 0,80 | 26 | 50 | 26 | 1,60 | 16,25 |
| 1,00 | 22 | 44 | 22 | 1,47 | 15,00 |
| 1,20 | 12 | 26 | 12 | 0,93 | 12,86 |
| 1,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 1,60 | 14 | 26 | 14 | 0,80 | 17,50 |
| 1,80 | 16 | 26 | 16 | 0,67 | 24,00 |
| 2,00 | 20 | 32 | 20 | 0,80 | 25,00 |
| 2,20 | 24 | 40 | 24 | 1,07 | 22,50 |
| 2,40 | 24 | 42 | 24 | 1,20 | 20,00 |
| 2,60 | 24 | 42 | 24 | 1,20 | 20,00 |
| 2,80 | 18 | 34 | 18 | 1,07 | 16,88 |
| 3,00 | 14 | 28 | 14 | 0,93 | 15,00 |
| 3,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 3,40 | 16 | 24 | 16 | 0,53 | 30,00 |
| 3,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 4,20 | 16 | 22 | 16 | 0,40 | 40,00 |
| 4,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 4,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,20 | 16 | 20 | 16 | 0,27 | 60,00 |
| 5,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,60 | 12 | 16 | 12 | 0,27 | 45,00 |
| 5,80 | 9 | 14 | 9 | 0,33 | 27,00 |
| 6,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 6,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,60 | 5 | 8 | 5 | 0,20 | 25,00 |
| 6,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 7,60 | 9 | 14 | 9 | 0,33 | 27,00 |
| 7,80 | 6 | 9 | 6 | 0,20 | 30,00 |
| 8,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 8,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 9,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,40 | 5 | 10 | 5 | 0,33 | 15,00 |
| 9,60 | 5 | 8 | 5 | 0,20 | 25,00 |
| 9,80 | 7 | 11 | 7 | 0,27 | 26,25 |
| 10,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 10,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 10,80 | 11 | 22 | 11 | 0,73 | 15,00 |
| 11,00 | 13 | 24 | 13 | 0,73 | 17,73 |
| 11,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 11,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,60 | 7 | 14 | 7 | 0,47 | 15,00 |
| 11,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,00 | 7 | 14 | 7 | 0,47 | 15,00 |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Dott. Geol. Paolo Beretti

Via Manot 5, Salvarano di Quattro Castella (RE)
Tel. 0522 258008 Fax 0522 258414 Cell. 348 6902667

PROVA PENETROMETRICA

C.P.T. N° **1**

ATTREZZO: Pen. statico dinamico Pagani

Profondità falda: - 1,05 m p.c.

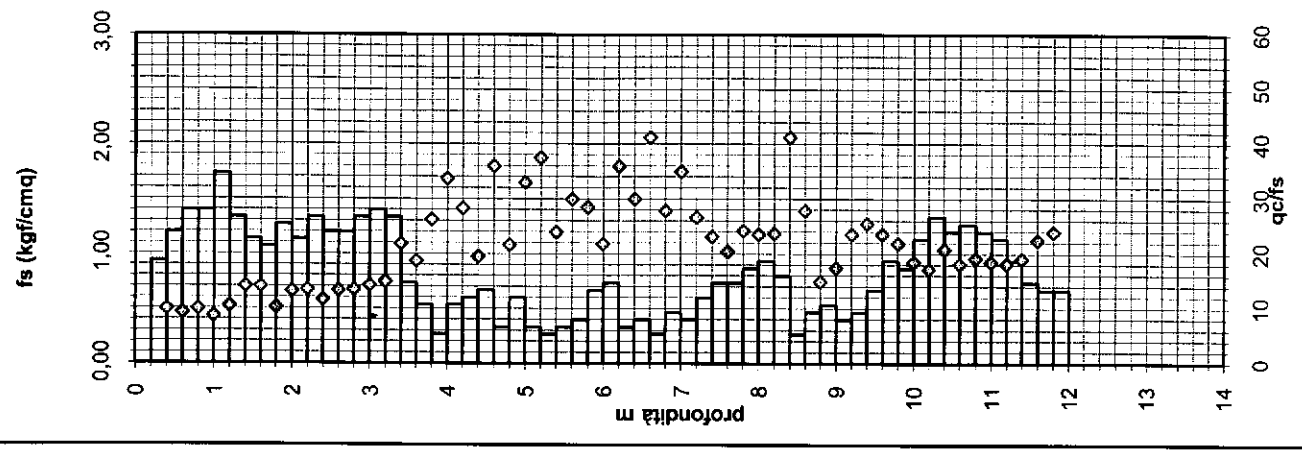
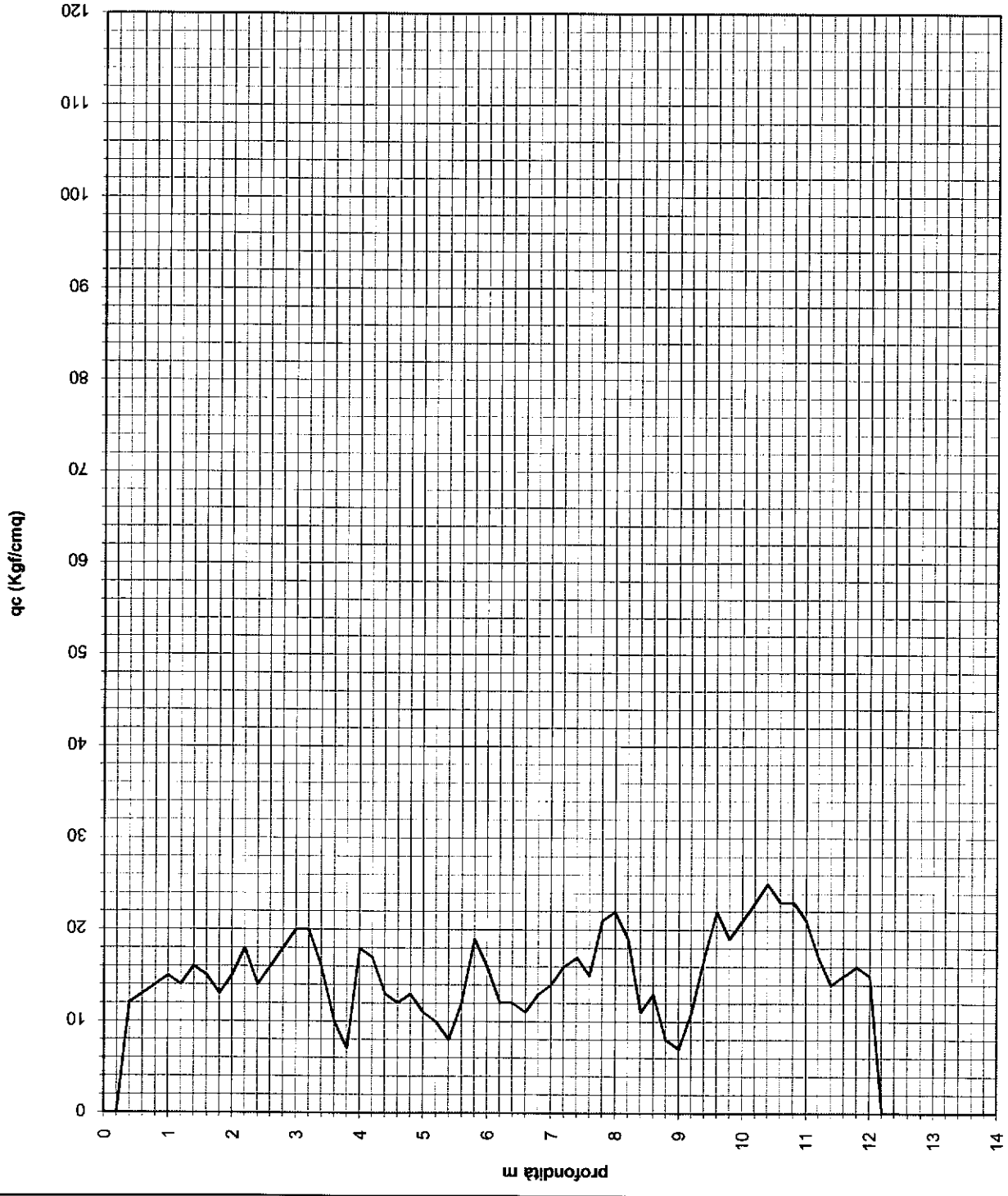
COMMITTENTE:

Borsari spa

CANTIERE:

DATA: 14/04/2009

QUOTA: p.c.



| | | | | | |
|---|--|--|--|---------------------------------|--|
| Dott. Geol. Paolo Beretti | | Prova penetrometrica statica | | COMMITTENTE: Borsari spa | |
| <i>Geologia applicata e Geotecnica, Consulenze Ambientali</i> | | CPT | | CANTIERE: - | |
| Sede: Via Manot 5, Salvarano di Quattro Castella (RE) | | 1 | | Data: 14/04/2009 | |
| Ufficio: Via Turati 8/b, Roncolo di Quattro Castella (RE) | | Pen. Statico dinamico Pagani TG 63-200 | | Profondità falda: - 1,05 m p.c. | |
| Tel 0522 258008 Fax 0522 258414 Cell 348 6902667 | | Dr.Beretti | | | |

Lettere di campagna e elaborazioni

| PROF. | qc kgf/cm ² | RI kgf/cm ² | fs kgf/cm ² | qc/fs | PROF. | qc kgf/cm ² | RI kgf/cm ² | fs kgf/cm ² | qc/fs | PROF. | qc kgf/cm ² | RI kgf/cm ² | fs kgf/cm ² | qc/fs | RI kgf/cm ² | fs kgf/cm ² | qc/fs |
|-------|---------------------------|------------------------|------------------------|-------|-------|---------------------------|------------------------|------------------------|-------|-------|---------------------------|------------------------|------------------------|-------|------------------------|------------------------|-------|
| | | | | | | | | | | | | | | | | | |
| 0,2 | | | | | 5,2 | 10 | 15 | 0,33 | 37,5 | 10,2 | 23 | 40 | 1,13 | 17,3 | | | |
| 0,4 | 12 | 26 | 0,93 | 10,0 | 5,4 | 8 | 12 | 0,27 | 24,0 | 10,4 | 25 | 45 | 1,33 | 20,8 | | | |
| 0,6 | 13 | 31 | 1,20 | 9,3 | 5,6 | 12 | 17 | 0,33 | 30,0 | 10,6 | 23 | 41 | 1,20 | 18,2 | | | |
| 0,8 | 14 | 35 | 1,40 | 10,0 | 5,8 | 19 | 25 | 0,40 | 28,5 | 10,8 | 23 | 42 | 1,27 | 19,2 | | | |
| 1,0 | 15 | 36 | 1,40 | 8,7 | 6,0 | 16 | 26 | 0,67 | 21,8 | 11,0 | 21 | 39 | 1,20 | 18,5 | | | |
| 1,2 | 14 | 40 | 1,73 | 10,5 | 6,2 | 12 | 23 | 0,73 | 36,0 | 11,2 | 17 | 34 | 1,13 | 18,2 | | | |
| 1,4 | 16 | 36 | 1,33 | 14,1 | 6,4 | 12 | 17 | 0,33 | 30,0 | 11,4 | 14 | 28 | 0,93 | 19,1 | | | |
| 1,6 | 15 | 32 | 1,13 | 14,1 | 6,6 | 11 | 17 | 0,40 | 41,3 | 11,6 | 15 | 26 | 0,73 | 22,5 | | | |
| 1,8 | 13 | 29 | 1,07 | 10,3 | 6,8 | 13 | 17 | 0,27 | 27,9 | 11,8 | 16 | 26 | 0,67 | 24,0 | | | |
| 2,0 | 15 | 34 | 1,27 | 13,2 | 7,0 | 14 | 21 | 0,47 | 35,0 | 12,0 | 15 | 25 | 0,67 | | | | |
| 2,2 | 18 | 35 | 1,13 | 13,5 | 7,2 | 16 | 22 | 0,40 | 26,7 | 12,2 | | | | | | | |
| 2,4 | 14 | 34 | 1,33 | 11,7 | 7,4 | 17 | 26 | 0,60 | 23,2 | 12,4 | | | | | | | |
| 2,6 | 16 | 34 | 1,20 | 13,3 | 7,6 | 15 | 26 | 0,73 | 20,5 | 12,6 | | | | | | | |
| 2,8 | 18 | 36 | 1,20 | 13,5 | 7,8 | 21 | 32 | 0,73 | 24,2 | 12,8 | | | | | | | |
| 3,0 | 20 | 40 | 1,33 | 14,3 | 8,0 | 22 | 35 | 0,87 | 23,6 | 13,0 | | | | | | | |
| 3,2 | 20 | 41 | 1,40 | 15,0 | 8,2 | 19 | 33 | 0,93 | 23,8 | 13,2 | | | | | | | |
| 3,4 | 16 | 36 | 1,33 | 21,8 | 8,4 | 11 | 23 | 0,80 | 41,3 | 13,4 | | | | | | | |
| 3,6 | 10 | 21 | 0,73 | 18,8 | 8,6 | 13 | 17 | 0,27 | 27,9 | 13,6 | | | | | | | |
| 3,8 | 7 | 15 | 0,53 | 26,3 | 8,8 | 8 | 15 | 0,47 | 15,0 | 13,8 | | | | | | | |
| 4,0 | 18 | 22 | 0,27 | 33,8 | 9,0 | 7 | 15 | 0,53 | 17,5 | 14,0 | | | | | | | |
| 4,2 | 17 | 25 | 0,53 | 28,3 | 9,2 | 11 | 17 | 0,40 | 23,6 | 14,2 | | | | | | | |
| 4,4 | 13 | 22 | 0,60 | 19,5 | 9,4 | 17 | 24 | 0,47 | 25,5 | 14,4 | | | | | | | |
| 4,6 | 12 | 22 | 0,67 | 36,0 | 9,6 | 22 | 32 | 0,67 | 23,6 | 14,6 | | | | | | | |
| 4,8 | 13 | 18 | 0,33 | 21,7 | 9,8 | 19 | 33 | 0,93 | 21,9 | 14,8 | | | | | | | |
| 5,0 | 11 | 20 | 0,60 | 33,0 | 10,0 | 21 | 34 | 0,87 | 18,5 | 15,0 | | | | | | | |

LEGENDA: qc = resistenza alla punta; RI = resistenza laterale; fs = resistenza ad attrito laterale locale; qc/fs = rapporto di Begemann

Dott. Geol. Paolo Beretti

Via Manot 5, Salvarano di Quattro Castella (RE)
Tel. 0522 258008 Fax 0522 258414 Cell. 348 6902667

PROVA PENETROMETRICA

C.P.T. N° **3**

ATTREZZO: Pen. statico dinamico Pagani
Profondità falda: - 0,95m p.c.

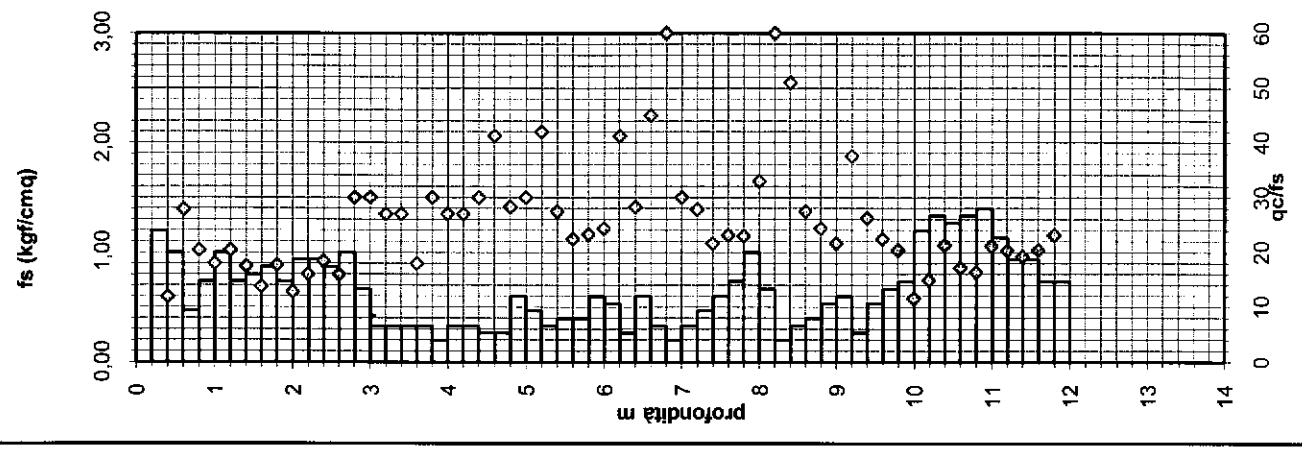
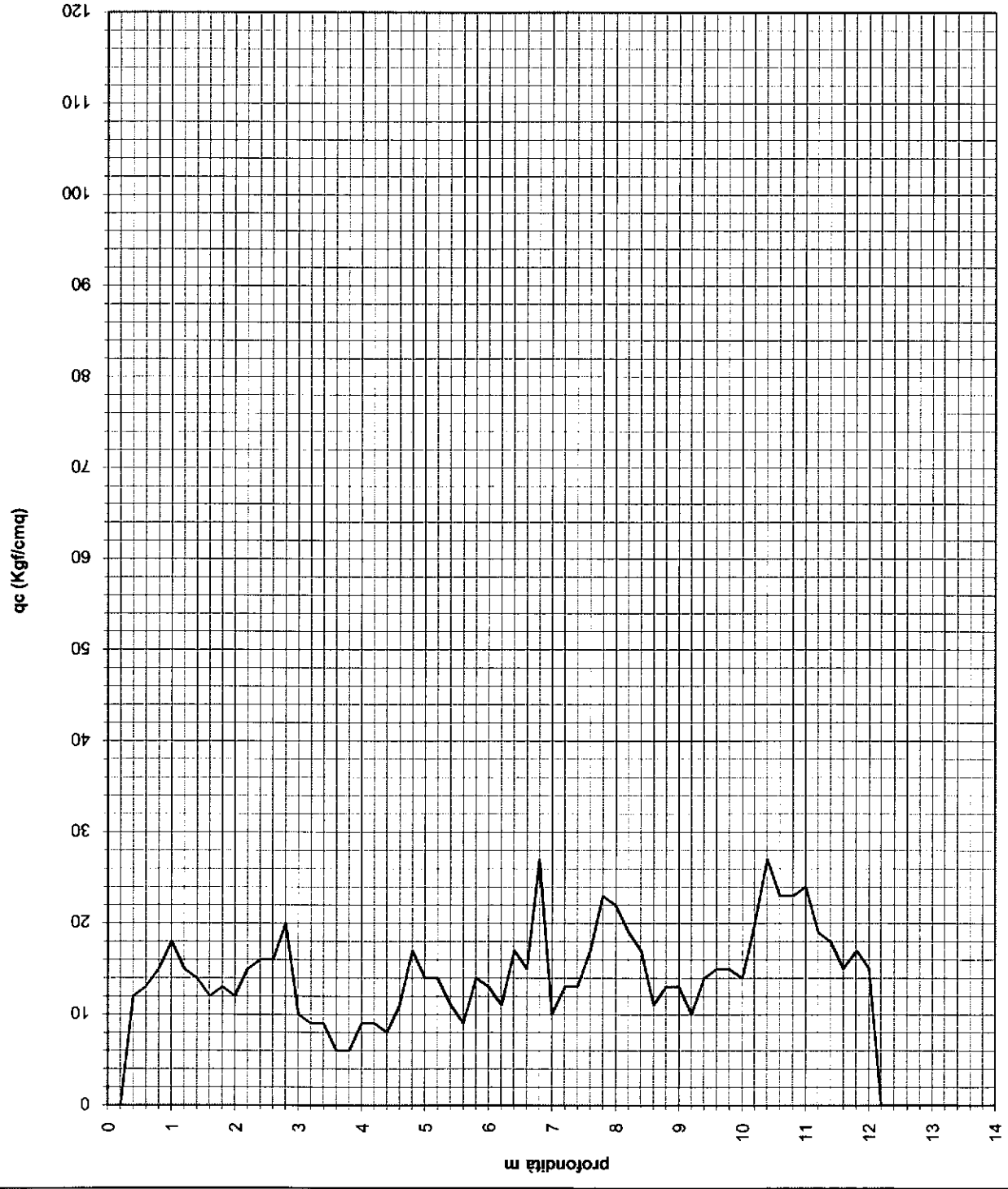
COMMITTENTE:

Borsari spa

CANTIERE:

DATA: 14/04/2009

QUOTA: p.c.



Dott. Geol. Paolo Beretti

Geologia applicata e Geotecnica, Consulenze Ambientali
 Sede: Via Manot 5, Salvarano di Quattro Castella (RE)
 Ufficio: Via Turati 8/b, Roncole di Quattro Castella (RE)
 Tel 0522 258008 Fax 0522 258414 Cell 348 6902667

Prova penetrometrica statica**CPT****3****COMMITTENTE: Borsari spa****CANTIERE: -**

ATTREZZO: Pen. Statico dinamico Pagani TG 63-200

Data: 14/04/2009

OPERATORE: Dr. Beretti

Profondità falda: - 0,95m p.c.

Lettere di campagna e elaborazioni

| PROF. | qc kgf/cm ² | RI kgf/cm ² | fs kgf/cm ² | qc/fs | PROF. | qc kgf/cm ² | RI kgf/cm ² | fs kgf/cm ² | qc/fs | PROF. | qc kgf/cm ² | RI kgf/cm ² | fs kgf/cm ² | qc/fs |
|-------|---------------------------|---------------------------|---------------------------|-------|-------|---------------------------|---------------------------|---------------------------|-------|-------|---------------------------|---------------------------|---------------------------|-------|
| 0,2 | | | | | 5,2 | 14 | 21 | 0,47 | 42,0 | 10,2 | 20 | 38 | 1,20 | 15,0 |
| 0,4 | 12 | 30 | 1,20 | 12,0 | 5,4 | 11 | 16 | 0,33 | 27,5 | 10,4 | 27 | 47 | 1,33 | 21,3 |
| 0,6 | 13 | 28 | 1,00 | 27,9 | 5,6 | 9 | 15 | 0,40 | 22,5 | 10,6 | 23 | 42 | 1,27 | 17,3 |
| 0,8 | 15 | 22 | 0,47 | 20,5 | 5,8 | 14 | 20 | 0,40 | 23,3 | 10,8 | 23 | 43 | 1,33 | 16,4 |
| 1,0 | 18 | 29 | 0,73 | 18,0 | 6,0 | 13 | 22 | 0,60 | 24,4 | 11,0 | 24 | 45 | 1,40 | 21,2 |
| 1,2 | 15 | 30 | 1,00 | 20,5 | 6,2 | 11 | 19 | 0,53 | 41,3 | 11,2 | 19 | 36 | 1,13 | 20,4 |
| 1,4 | 14 | 25 | 0,73 | 17,5 | 6,4 | 17 | 21 | 0,27 | 28,3 | 11,4 | 18 | 32 | 0,93 | 19,3 |
| 1,6 | 12 | 24 | 0,80 | 13,8 | 6,6 | 15 | 24 | 0,60 | 45,0 | 11,6 | 15 | 29 | 0,93 | 20,5 |
| 1,8 | 13 | 26 | 0,87 | 17,7 | 6,8 | 27 | 32 | 0,33 | 135,0 | 11,8 | 17 | 28 | 0,73 | 23,2 |
| 2,0 | 12 | 23 | 0,73 | 12,9 | 7,0 | 10 | 13 | 0,20 | 30,0 | 12,0 | 15 | 26 | 0,73 | |
| 2,2 | 15 | 29 | 0,93 | 16,1 | 7,2 | 13 | 18 | 0,33 | 27,9 | 12,2 | | | | |
| 2,4 | 16 | 30 | 0,93 | 18,5 | 7,4 | 13 | 20 | 0,47 | 21,7 | 12,4 | | | | |
| 2,6 | 16 | 29 | 0,87 | 16,0 | 7,6 | 17 | 26 | 0,60 | 23,2 | 12,6 | | | | |
| 2,8 | 20 | 35 | 1,00 | 30,0 | 7,8 | 23 | 34 | 0,73 | 23,0 | 12,8 | | | | |
| 3,0 | 10 | 20 | 0,67 | 30,0 | 8,0 | 22 | 37 | 1,00 | 33,0 | 13,0 | | | | |
| 3,2 | 9 | 14 | 0,33 | 27,0 | 8,2 | 19 | 29 | 0,67 | 95,0 | 13,2 | | | | |
| 3,4 | 9 | 14 | 0,33 | 27,0 | 8,4 | 17 | 20 | 0,20 | 51,0 | 13,4 | | | | |
| 3,6 | 6 | 11 | 0,33 | 18,0 | 8,6 | 11 | 16 | 0,33 | 27,5 | 13,6 | | | | |
| 3,8 | 6 | 11 | 0,33 | 30,0 | 8,8 | 13 | 19 | 0,40 | 24,4 | 13,8 | | | | |
| 4,0 | 9 | 12 | 0,20 | 27,0 | 9,0 | 13 | 21 | 0,53 | 21,7 | 14,0 | | | | |
| 4,2 | 9 | 14 | 0,33 | 27,0 | 9,2 | 10 | 19 | 0,60 | 37,5 | 14,2 | | | | |
| 4,4 | 8 | 13 | 0,33 | 30,0 | 9,4 | 14 | 18 | 0,27 | 26,3 | 14,4 | | | | |
| 4,6 | 11 | 15 | 0,27 | 41,3 | 9,6 | 15 | 23 | 0,53 | 22,5 | 14,6 | | | | |
| 4,8 | 17 | 21 | 0,27 | 28,3 | 9,8 | 15 | 25 | 0,67 | 20,5 | 14,8 | | | | |
| 5,0 | 14 | 23 | 0,60 | 30,0 | 10,0 | 14 | 25 | 0,73 | 11,7 | 15,0 | | | | |

LEGENDA: qc = resistenza alla punta; RI = resistenza laterale; fs = resistenza ad attrito laterale locale; qc/fs = rapporto di Begemann

Dott. Geol. Paolo Beretti

Via Manot 5, Salvarano di Quattro Castella (RE)
Tel 0522 258008 Fax 0522 258414 Cell. 348 6902667

PROVA PENETROMETRICA

C.P.T. N° **5**

ATTREZZO: Pen. statico dinamico Pagani
Profondità falda: - 0,70 m p.c.

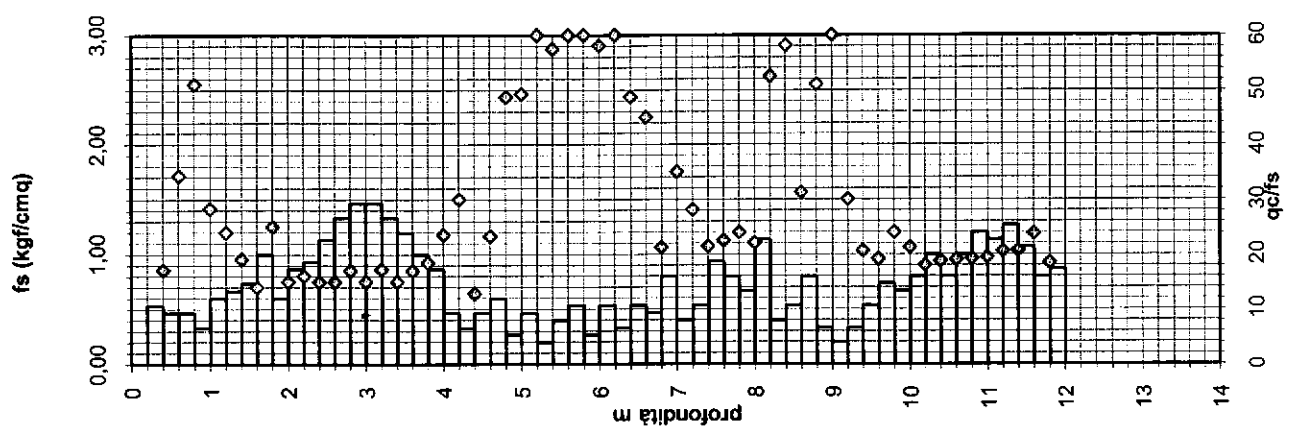
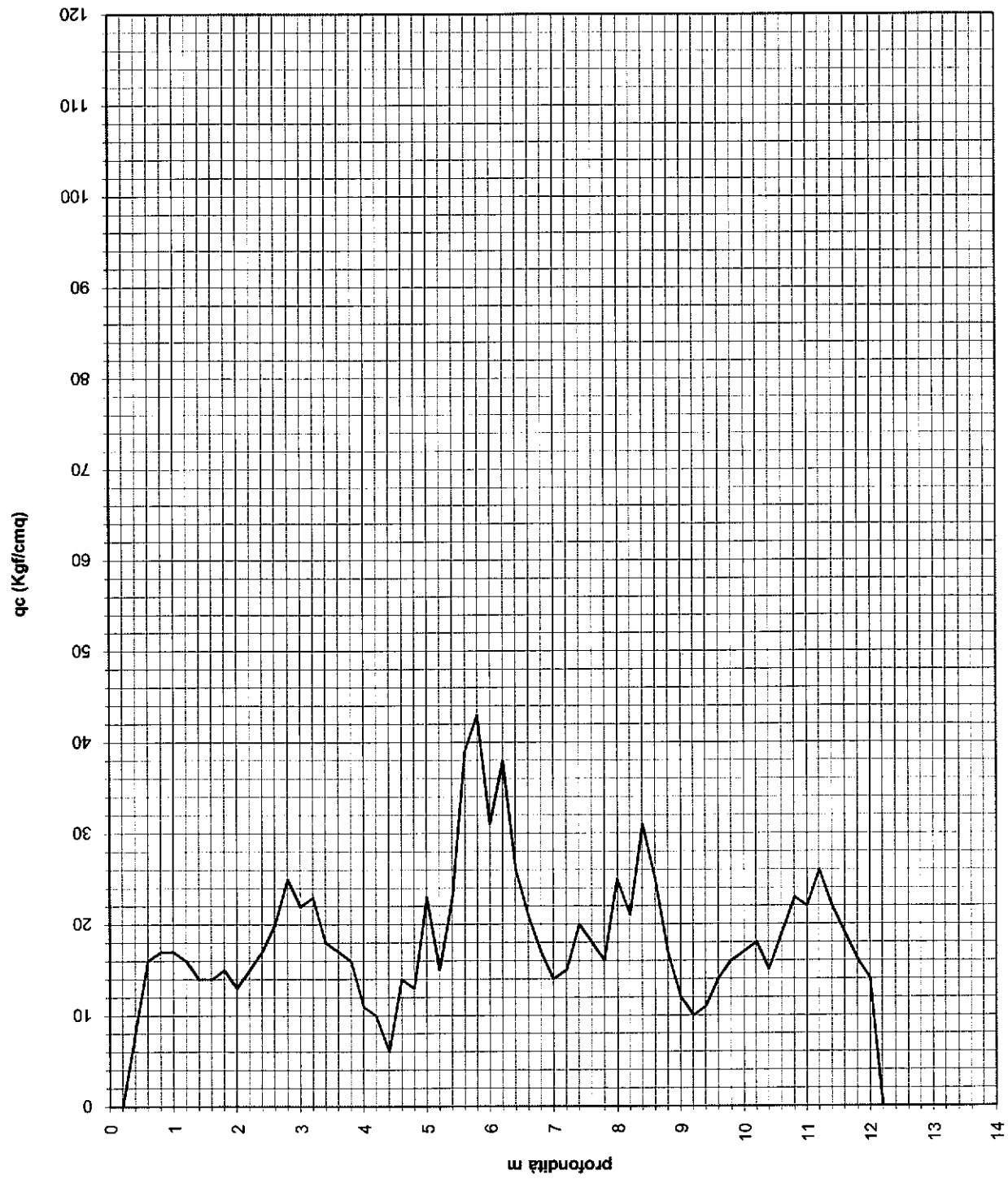
COMMITTENTE:

Borsari spa

CANTIERE:

DATA: 14/04/2009

QUOTA: p.c.



| | | | |
|---|--|----------|---------------------------------|
| Dott. Geol. Paolo Beretti <i>Geologia applicata e Geotecnica, Consulenze Ambientali</i> Sede: Via Manot 5, Salvarano di Quattro Castella (RE) Ufficio: Via Turati 8/b, Roncolo di Quattro Castella (RE) Tel 0522 258008 Fax 0522 258414 Cell 348 6902667 | Prova penetrometrica statica | | COMMITTENTE: Borsari spa |
| | CPT | 5 | CANTIERE: - |
| ATTREZZO: Pen. Statico dinamico Pagani TG 63-200 | Data: 14/04/2009 | | |
| OPERATORE: Dr.Beretti | Profondità falda: - 0,70 m p.c. | | |

Letture di campagna e elaborazioni

| PROF. | qc kgf/cm ² | RI kgf/cm ² | fs kgf/cm ² | qc/fs | PROF. | qc kgf/cm ² | RI kgf/cm ² | fs kgf/cm ² | qc/fs | PROF. | qc kgf/cm ² | RI kgf/cm ² | fs kgf/cm ² | qc/fs |
|-------|---------------------------|------------------------|------------------------|-------|-------|---------------------------|------------------------|------------------------|-------|-------|---------------------------|------------------------|------------------------|-------|
| 0,2 | | | | | 5,2 | 15 | 22 | 0,47 | 75,0 | 10,2 | 18 | 30 | 0,80 | 18,0 |
| 0,4 | 8 | 16 | 0,53 | 17,1 | 5,4 | 23 | 26 | 0,20 | 57,5 | 10,4 | 15 | 30 | 1,00 | 18,8 |
| 0,6 | 16 | 23 | 0,47 | 34,3 | 5,6 | 39 | 45 | 0,40 | 73,1 | 10,6 | 19 | 31 | 0,80 | 19,0 |
| 0,8 | 17 | 24 | 0,47 | 51,0 | 5,8 | 43 | 51 | 0,53 | 161,3 | 10,8 | 23 | 38 | 1,00 | 19,2 |
| 1,0 | 17 | 22 | 0,33 | 28,3 | 6,0 | 31 | 35 | 0,27 | 58,1 | 11,0 | 22 | 40 | 1,20 | 19,4 |
| 1,2 | 16 | 25 | 0,60 | 24,0 | 6,2 | 38 | 46 | 0,53 | 114,0 | 11,2 | 26 | 43 | 1,13 | 20,5 |
| 1,4 | 14 | 24 | 0,67 | 19,1 | 6,4 | 26 | 31 | 0,33 | 48,8 | 11,4 | 22 | 41 | 1,27 | 20,6 |
| 1,6 | 14 | 25 | 0,73 | 14,0 | 6,6 | 21 | 29 | 0,53 | 45,0 | 11,6 | 19 | 35 | 1,07 | 23,8 |
| 1,8 | 15 | 30 | 1,00 | 25,0 | 6,8 | 17 | 24 | 0,47 | 21,3 | 11,8 | 16 | 28 | 0,80 | 18,5 |
| 2,0 | 13 | 22 | 0,60 | 15,0 | 7,0 | 14 | 26 | 0,80 | 35,0 | 12,0 | 14 | 27 | 0,87 | |
| 2,2 | 15 | 28 | 0,87 | 16,1 | 7,2 | 15 | 21 | 0,40 | 28,1 | 12,2 | | | | |
| 2,4 | 17 | 31 | 0,93 | 15,0 | 7,4 | 20 | 28 | 0,53 | 21,4 | 12,4 | | | | |
| 2,6 | 20 | 37 | 1,13 | 15,0 | 7,6 | 18 | 32 | 0,93 | 22,5 | 12,6 | | | | |
| 2,8 | 25 | 45 | 1,33 | 17,0 | 7,8 | 16 | 28 | 0,80 | 24,0 | 12,8 | | | | |
| 3,0 | 22 | 44 | 1,47 | 15,0 | 8,0 | 25 | 35 | 0,67 | 22,1 | 13,0 | | | | |
| 3,2 | 23 | 45 | 1,47 | 17,3 | 8,2 | 21 | 38 | 1,13 | 52,5 | 13,2 | | | | |
| 3,4 | 18 | 38 | 1,33 | 15,0 | 8,4 | 31 | 37 | 0,40 | 58,1 | 13,4 | | | | |
| 3,6 | 17 | 35 | 1,20 | 17,0 | 8,6 | 25 | 33 | 0,53 | 31,3 | 13,6 | | | | |
| 3,8 | 16 | 31 | 1,00 | 18,5 | 8,8 | 17 | 29 | 0,80 | 51,0 | 13,8 | | | | |
| 4,0 | 11 | 24 | 0,87 | 23,6 | 9,0 | 12 | 17 | 0,33 | 60,0 | 14,0 | | | | |
| 4,2 | 10 | 17 | 0,47 | 30,0 | 9,2 | 10 | 13 | 0,20 | 30,0 | 14,2 | | | | |
| 4,4 | 6 | 11 | 0,33 | 12,9 | 9,4 | 11 | 16 | 0,33 | 20,6 | 14,4 | | | | |
| 4,6 | 14 | 21 | 0,47 | 23,3 | 9,6 | 14 | 22 | 0,53 | 19,1 | 14,6 | | | | |
| 4,8 | 13 | 22 | 0,60 | 48,8 | 9,8 | 16 | 27 | 0,73 | 24,0 | 14,8 | | | | |
| 5,0 | 23 | 27 | 0,27 | 49,3 | 10,0 | 17 | 27 | 0,67 | 21,3 | 15,0 | | | | |

LEGENDA: qc = resistenza alla punta; RI = resistenza laterale; fs = resistenza ad attrito laterale locale; qc/fs = rapporto di Begemann

Dott. Geol. Paolo Beretti

Via Manot 5, Salvarano di Quattro Castella (RE)
Tel. 0522 258008 Fax 0522 258414 Cell. 348 6902667

PROVA PENETROMETRICA

C.P.T. N° **6**

ATTREZZO: Pen. statico dinamico Pagani

Profondità falda: - 0,70 m p.c.

COMMITTENTE:

Borsari spa

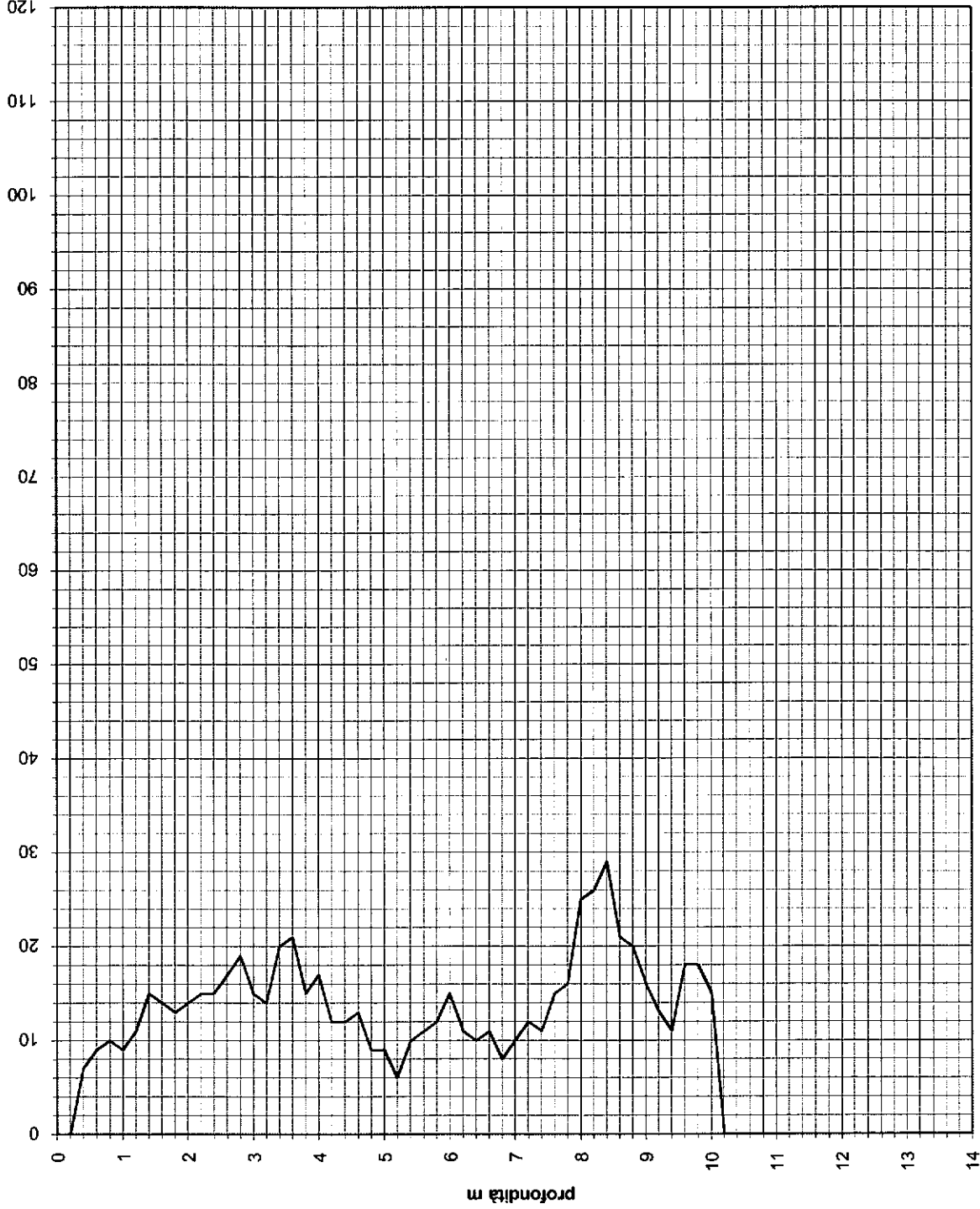
CANTIERE:

DATA:

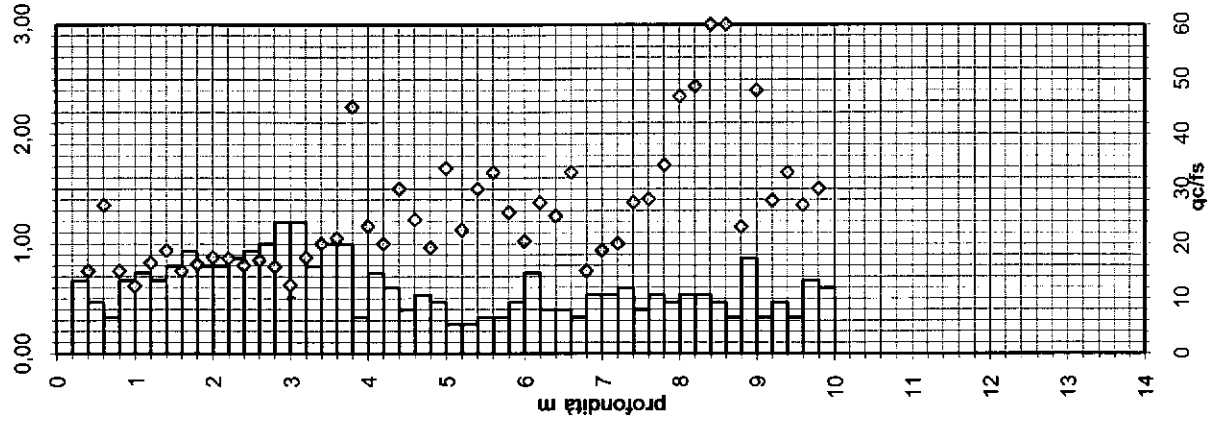
14/04/2009

QUOTA: p.c.

qc (Kg/cm²)



fs (kgf/cm²)



| | | | | | |
|---|--|--|--|---------------------------------|--|
| Dott. Geol. Paolo Beretti | | Prova penetrometrica statica | | COMMITTENTE: Borsari spa | |
| <i>Geologia applicata e Geotecnica, Consulenze Ambientali</i> | | CPT | | CANTIERE: - | |
| Sede: Via Manot 5, Salvarano di Quattro Castella (RE) | | Pen. Statico dinamico Pagani TG 63-200 | | Data: 14/04/2009 | |
| Ufficio: Via Turati 8/b, Roncolo di Quattro Castella (RE) | | Dr. Beretti | | Profondità falda: - 0,70 m p.c. | |
| Tel 0522 258008 Fax 0522 258414 Cell 348 6902667 | | | | | |

Letture di campagna e elaborazioni

| PROF. | qc kgf/cm ² | RI kgf/cm ² | fs kgf/cm ² | qc/fs | PROF. | qc kgf/cm ² | RI kgf/cm ² | fs kgf/cm ² | qc/fs | PROF. | qc kgf/cm ² | RI kgf/cm ² | fs kgf/cm ² | qc/fs |
|-------|---------------------------|------------------------|------------------------|-------|-------|---------------------------|------------------------|------------------------|-------|-------|---------------------------|------------------------|------------------------|-------|
| 0,2 | | | | | 5,2 | 6 | 10 | 0,27 | 22,5 | 10,2 | | | | |
| 0,4 | 7 | 17 | 0,67 | 15,0 | 5,4 | 10 | 14 | 0,27 | 30,0 | 10,4 | | | | |
| 0,6 | 9 | 16 | 0,47 | 27,0 | 5,6 | 11 | 16 | 0,33 | 33,0 | 10,6 | | | | |
| 0,8 | 10 | 15 | 0,33 | 15,0 | 5,8 | 12 | 17 | 0,33 | 25,7 | 10,8 | | | | |
| 1,0 | 9 | 19 | 0,67 | 12,3 | 6,0 | 15 | 22 | 0,47 | 20,5 | 11,0 | | | | |
| 1,2 | 11 | 22 | 0,73 | 16,5 | 6,2 | 11 | 22 | 0,73 | 27,5 | 11,2 | | | | |
| 1,4 | 15 | 25 | 0,67 | 18,8 | 6,4 | 10 | 16 | 0,40 | 25,0 | 11,4 | | | | |
| 1,6 | 14 | 26 | 0,80 | 15,0 | 6,6 | 11 | 17 | 0,40 | 33,0 | 11,6 | | | | |
| 1,8 | 13 | 27 | 0,93 | 16,3 | 6,8 | 8 | 13 | 0,33 | 15,0 | 11,8 | | | | |
| 2,0 | 14 | 26 | 0,80 | 17,5 | 7,0 | 10 | 18 | 0,53 | 18,8 | 12,0 | | | | |
| 2,2 | 15 | 27 | 0,80 | 17,3 | 7,2 | 12 | 20 | 0,53 | 20,0 | 12,2 | | | | |
| 2,4 | 15 | 28 | 0,87 | 16,1 | 7,4 | 11 | 20 | 0,60 | 27,5 | 12,4 | | | | |
| 2,6 | 17 | 31 | 0,93 | 17,0 | 7,6 | 15 | 21 | 0,40 | 28,1 | 12,6 | | | | |
| 2,8 | 19 | 34 | 1,00 | 15,8 | 7,8 | 16 | 24 | 0,53 | 34,3 | 12,8 | | | | |
| 3,0 | 15 | 33 | 1,20 | 12,5 | 8,0 | 25 | 32 | 0,47 | 46,9 | 13,0 | | | | |
| 3,2 | 14 | 32 | 1,20 | 17,5 | 8,2 | 26 | 34 | 0,53 | 48,8 | 13,2 | | | | |
| 3,4 | 20 | 32 | 0,80 | 20,0 | 8,4 | 29 | 37 | 0,53 | 62,1 | 13,4 | | | | |
| 3,6 | 21 | 36 | 1,00 | 21,0 | 8,6 | 21 | 28 | 0,47 | 63,0 | 13,6 | | | | |
| 3,8 | 15 | 30 | 1,00 | 45,0 | 8,8 | 20 | 25 | 0,33 | 23,1 | 13,8 | | | | |
| 4,0 | 17 | 22 | 0,33 | 23,2 | 9,0 | 16 | 29 | 0,87 | 48,0 | 14,0 | | | | |
| 4,2 | 12 | 23 | 0,73 | 20,0 | 9,2 | 13 | 18 | 0,33 | 27,9 | 14,2 | | | | |
| 4,4 | 12 | 21 | 0,60 | 30,0 | 9,4 | 11 | 18 | 0,47 | 33,0 | 14,4 | | | | |
| 4,6 | 13 | 19 | 0,40 | 24,4 | 9,6 | 18 | 23 | 0,33 | 27,0 | 14,6 | | | | |
| 4,8 | 9 | 17 | 0,53 | 19,3 | 9,8 | 18 | 28 | 0,67 | 30,0 | 14,8 | | | | |
| 5,0 | 9 | 16 | 0,47 | 33,8 | 10,0 | 15 | 24 | 0,60 | | 15,0 | | | | |

LEGENDA: qc = resistenza alla punta; RI = resistenza laterale; fs = resistenza ad attrito laterale locale; qc/fs = rapporto di Begemann

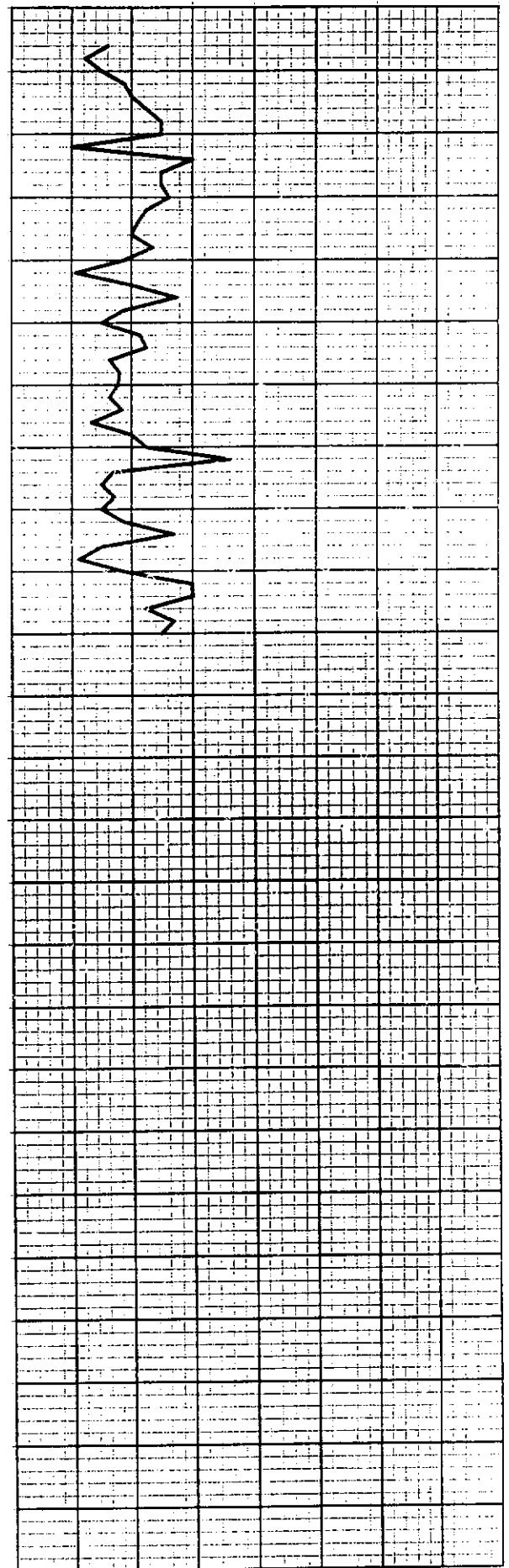
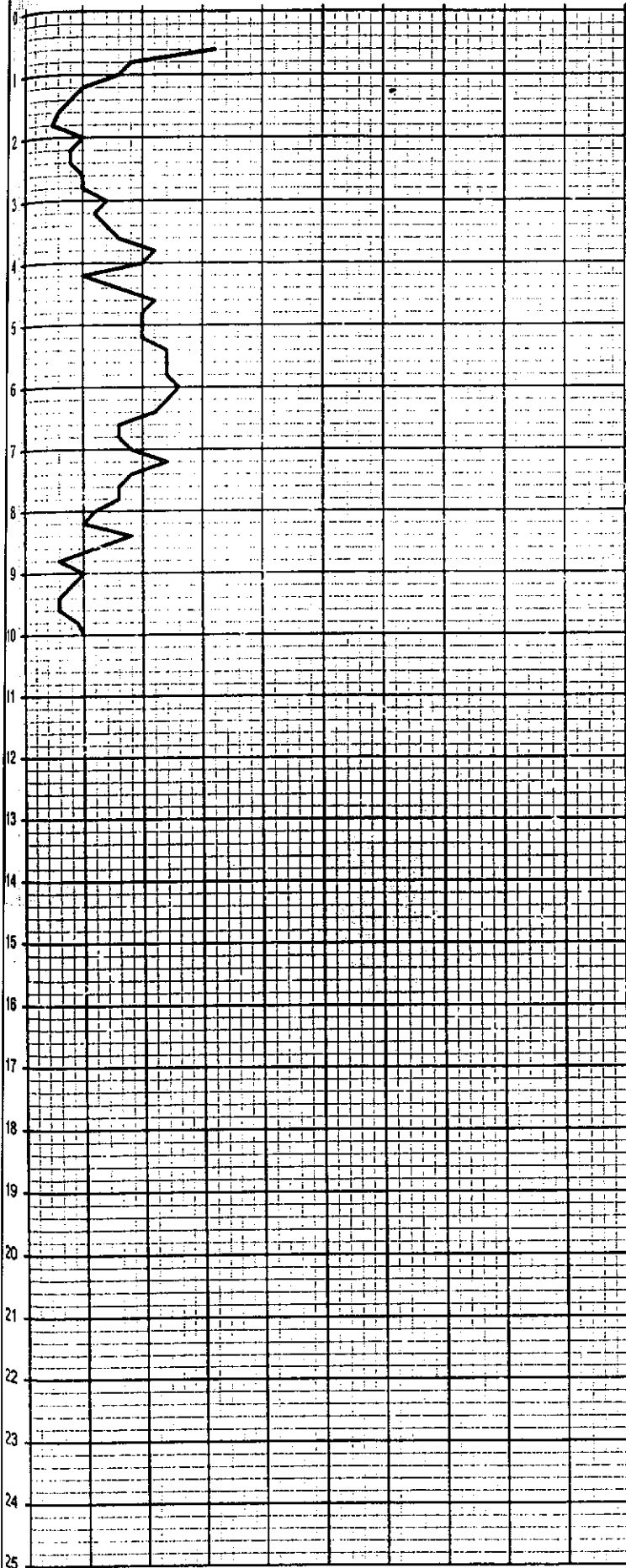
Via AUSTRIA,24 - 41100 MODENA

Resistenza alla punta Rp (kg/cm²)

Rp/RI

0 10 20 30 40 50 60 70 80 90 100

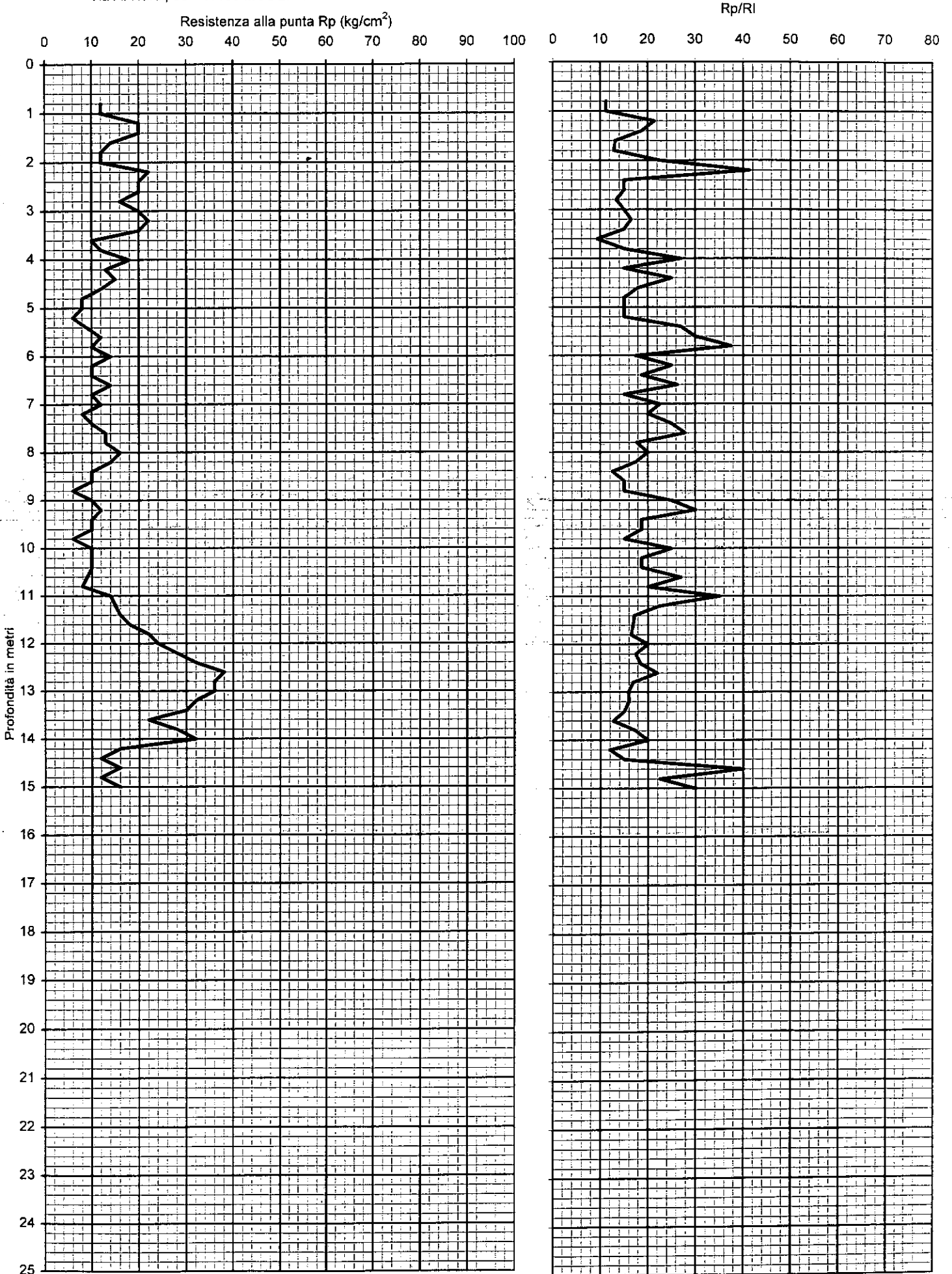
0 10 20 30 40 50 60 70 80



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 32 | 62 | 32 | 2.00 | 16.00 |
| 0.80 | 18 | 40 | 18 | 1.47 | 12.27 |
| 1.00 | 16 | 32 | 16 | 1.07 | 15.00 |
| 1.20 | 10 | 18 | 10 | 0.53 | 18.75 |
| 1.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 1.60 | 6 | 10 | 6 | 0.27 | 22.50 |
| 1.80 | 5 | 8 | 5 | 0.20 | 25.00 |
| 2.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 2.20 | 8 | 20 | 8 | 0.80 | 10.00 |
| 2.40 | 8 | 12 | 8 | 0.27 | 30.00 |
| 2.60 | 10 | 16 | 10 | 0.40 | 25.00 |
| 2.80 | 10 | 16 | 10 | 0.40 | 25.00 |
| 3.00 | 14 | 22 | 14 | 0.53 | 26.25 |
| 3.20 | 12 | 20 | 12 | 0.53 | 22.50 |
| 3.40 | 14 | 24 | 14 | 0.67 | 21.00 |
| 3.60 | 16 | 28 | 16 | 0.80 | 20.00 |
| 3.80 | 22 | 36 | 22 | 0.93 | 23.57 |
| 4.00 | 20 | 36 | 20 | 1.07 | 18.75 |
| 4.20 | 10 | 24 | 10 | 0.93 | 10.71 |
| 4.40 | 16 | 28 | 16 | 0.80 | 20.00 |
| 4.60 | 22 | 34 | 22 | 0.80 | 27.50 |
| 4.80 | 20 | 36 | 20 | 1.07 | 18.75 |
| 5.00 | 20 | 40 | 20 | 1.33 | 15.00 |
| 5.20 | 20 | 34 | 20 | 0.93 | 21.43 |
| 5.40 | 24 | 40 | 24 | 1.07 | 22.50 |
| 5.60 | 24 | 46 | 24 | 1.47 | 16.35 |
| 5.80 | 24 | 44 | 24 | 1.33 | 18.00 |
| 6.00 | 26 | 48 | 26 | 1.47 | 17.73 |
| 6.20 | 24 | 46 | 24 | 1.47 | 16.36 |
| 6.40 | 22 | 40 | 22 | 1.20 | 18.33 |
| 6.60 | 18 | 34 | 16 | 1.20 | 13.33 |
| 6.80 | 16 | 28 | 16 | 0.80 | 20.00 |
| 7.00 | 18 | 30 | 18 | 0.80 | 22.50 |
| 7.20 | 24 | 34 | 24 | 0.67 | 36.00 |
| 7.40 | 18 | 34 | 18 | 1.07 | 16.88 |
| 7.60 | 16 | 32 | 16 | 1.07 | 15.00 |
| 7.80 | 16 | 30 | 16 | 0.93 | 17.14 |
| 8.00 | 12 | 24 | 12 | 0.80 | 15.00 |
| 8.20 | 10 | 18 | 10 | 0.53 | 18.75 |
| 8.40 | 18 | 28 | 18 | 0.67 | 27.00 |
| 8.60 | 12 | 24 | 12 | 0.80 | 15.00 |
| 8.80 | 6 | 14 | 6 | 0.53 | 11.25 |
| 9.00 | 10 | 18 | 10 | 0.53 | 18.75 |
| 9.20 | 8 | 12 | 8 | 0.27 | 30.00 |
| 9.40 | 6 | 9 | 6 | 0.20 | 30.00 |
| 9.60 | 6 | 10 | 6 | 0.27 | 22.50 |
| 9.80 | 9 | 14 | 9 | 0.33 | 27.00 |
| 10.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 10.20 | | | | | |
| 10.40 | | | | | |
| 10.60 | | | | | |
| 10.80 | | | | | |
| 11.00 | | | | | |
| 11.20 | | | | | |
| 11.40 | | | | | |
| 11.60 | | | | | |
| 11.80 | | | | | |
| 12.00 | | | | | |
| 12.20 | | | | | |
| 12.40 | | | | | |
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| 13.80 | | | | | |
| 14.00 | | | | | |
| 14.20 | | | | | |
| 14.40 | | | | | |
| 14.60 | | | | | |
| 14.80 | | | | | |
| 15.00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15.20 | | | | | |
| 15.40 | | | | | |
| 15.60 | | | | | |
| 15.80 | | | | | |
| 16.00 | | | | | |
| 16.20 | | | | | |
| 16.40 | | | | | |
| 16.60 | | | | | |
| 16.80 | | | | | |
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| 19.40 | | | | | |
| 19.60 | | | | | |
| 19.80 | | | | | |
| 20.00 | | | | | |
| 20.20 | | | | | |
| 20.40 | | | | | |
| 20.60 | | | | | |
| 20.80 | | | | | |
| 21.00 | | | | | |
| 21.20 | | | | | |
| 21.40 | | | | | |
| 21.60 | | | | | |
| 21.80 | | | | | |
| 22.00 | | | | | |
| 22.20 | | | | | |
| 22.40 | | | | | |
| 22.60 | | | | | |
| 22.80 | | | | | |
| 23.00 | | | | | |
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| 23.40 | | | | | |
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| 28.20 | | | | | |
| 28.40 | | | | | |
| 28.60 | | | | | |
| 28.80 | | | | | |
| 29.00 | | | | | |
| 29.20 | | | | | |
| 29.40 | | | | | |
| 29.60 | | | | | |
| 29.80 | | | | | |
| 30.00 | | | | | |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

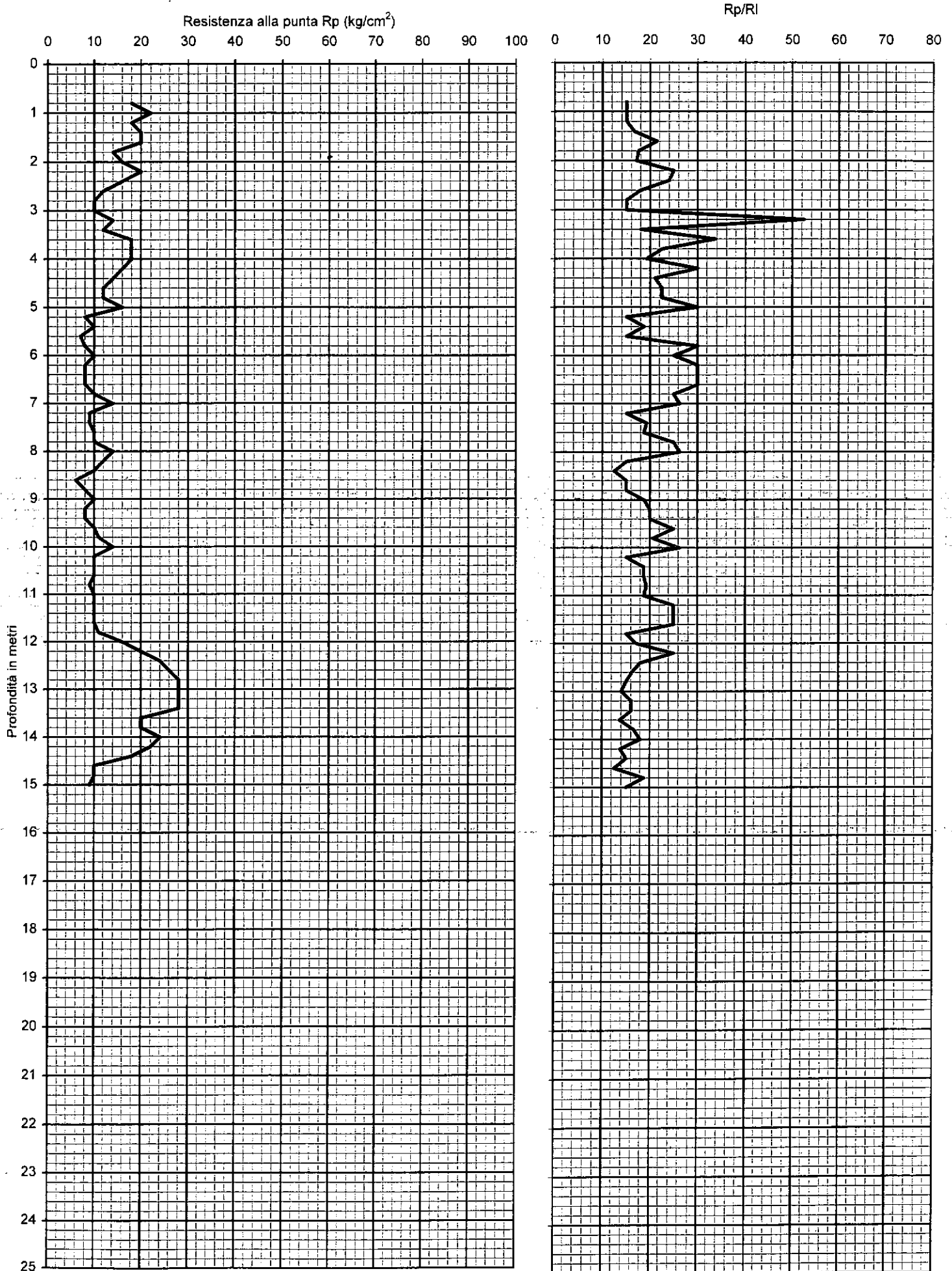
Penetrometro Gouda

Committente : C/O GEOM. PICCININI
Località : VIA LARGA-NONANTOLA
Prova numero : 1
Data : 26/01/01
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | | | | | |
| 0.80 | 12 | 28 | 12 | 1.07 | 11.25 |
| 1.00 | 12 | 28 | 12 | 1.07 | 11.25 |
| 1.20 | 20 | 34 | 20 | 0.93 | 21.43 |
| 1.40 | 20 | 36 | 20 | 1.07 | 18.75 |
| 1.60 | 14 | 30 | 14 | 1.07 | 13.13 |
| 1.80 | 12 | 26 | 12 | 0.93 | 12.86 |
| 2.00 | 12 | 20 | 12 | 0.53 | 22.50 |
| 2.20 | 22 | 30 | 22 | 0.53 | 41.25 |
| 2.40 | 20 | 40 | 20 | 1.33 | 15.00 |
| 2.60 | 20 | 40 | 20 | 1.33 | 15.00 |
| 2.80 | 16 | 34 | 16 | 1.20 | 13.33 |
| 3.00 | 20 | 40 | 20 | 1.33 | 15.00 |
| 3.20 | 22 | 42 | 22 | 1.33 | 16.50 |
| 3.40 | 20 | 40 | 20 | 1.33 | 15.00 |
| 3.60 | 10 | 26 | 10 | 1.07 | 9.38 |
| 3.80 | 12 | 24 | 12 | 0.80 | 15.00 |
| 4.00 | 18 | 28 | 18 | 0.67 | 27.00 |
| 4.20 | 13 | 26 | 13 | 0.87 | 15.00 |
| 4.40 | 15 | 24 | 15 | 0.60 | 25.00 |
| 4.60 | 12 | 22 | 12 | 0.67 | 18.00 |
| 4.80 | 8 | 16 | 8 | 0.53 | 15.00 |
| 5.00 | 8 | 16 | 8 | 0.53 | 15.00 |
| 5.20 | 6 | 12 | 6 | 0.40 | 15.00 |
| 5.40 | 9 | 14 | 9 | 0.33 | 27.00 |
| 5.60 | 12 | 18 | 12 | 0.40 | 30.00 |
| 5.80 | 10 | 14 | 10 | 0.27 | 37.50 |
| 6.00 | 14 | 26 | 14 | 0.80 | 17.50 |
| 6.20 | 10 | 16 | 10 | 0.40 | 25.00 |
| 6.40 | 10 | 18 | 10 | 0.53 | 18.75 |
| 6.60 | 14 | 22 | 14 | 0.53 | 26.25 |
| 6.80 | 10 | 20 | 10 | 0.67 | 15.00 |
| 7.00 | 12 | 20 | 12 | 0.53 | 22.50 |
| 7.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 7.40 | 10 | 16 | 10 | 0.40 | 25.00 |
| 7.60 | 13 | 20 | 13 | 0.47 | 27.86 |
| 7.80 | 13 | 24 | 13 | 0.73 | 17.73 |
| 8.00 | 16 | 28 | 16 | 0.80 | 20.00 |
| 8.20 | 14 | 26 | 14 | 0.80 | 17.50 |
| 8.40 | 10 | 22 | 10 | 0.80 | 12.50 |
| 8.60 | 10 | 20 | 10 | 0.67 | 15.00 |
| 8.80 | 6 | 12 | 6 | 0.40 | 15.00 |
| 9.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 9.20 | 12 | 18 | 12 | 0.40 | 30.00 |
| 9.40 | 10 | 18 | 10 | 0.53 | 18.75 |
| 9.60 | 10 | 18 | 10 | 0.53 | 18.75 |
| 9.80 | 6 | 12 | 6 | 0.40 | 15.00 |
| 10.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 10.20 | 10 | 18 | 10 | 0.53 | 18.75 |
| 10.40 | 10 | 18 | 10 | 0.53 | 18.75 |
| 10.60 | 9 | 14 | 9 | 0.33 | 27.00 |
| 10.80 | 8 | 14 | 8 | 0.40 | 20.00 |
| 11.00 | 14 | 20 | 14 | 0.40 | 35.00 |
| 11.20 | 15 | 25 | 15 | 0.67 | 22.50 |
| 11.40 | 16 | 30 | 16 | 0.93 | 17.14 |
| 11.60 | 18 | 34 | 18 | 1.07 | 16.88 |
| 11.80 | 22 | 42 | 22 | 1.33 | 16.50 |
| 12.00 | 24 | 42 | 24 | 1.20 | 20.00 |
| 12.20 | 28 | 52 | 28 | 1.60 | 17.50 |
| 12.40 | 32 | 58 | 32 | 1.73 | 18.46 |
| 12.60 | 38 | 64 | 38 | 1.73 | 21.92 |
| 12.80 | 36 | 68 | 36 | 2.13 | 16.88 |
| 13.00 | 36 | 70 | 36 | 2.27 | 15.88 |
| 13.20 | 32 | 62 | 32 | 2.00 | 16.00 |
| 13.40 | 30 | 60 | 30 | 2.00 | 15.00 |
| 13.60 | 22 | 48 | 22 | 1.73 | 12.69 |
| 13.80 | 28 | 52 | 28 | 1.60 | 17.50 |
| 14.00 | 32 | 56 | 32 | 1.60 | 20.00 |
| 14.20 | 16 | 36 | 16 | 1.33 | 12.00 |
| 14.40 | 12 | 24 | 12 | 0.80 | 15.00 |
| 14.60 | 16 | 22 | 16 | 0.40 | 40.00 |
| 14.80 | 12 | 20 | 12 | 0.53 | 22.50 |
| 15.00 | 16 | 24 | 16 | 0.53 | 30.00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15.20 | | | | | |
| 15.40 | | | | | |
| 15.60 | | | | | |
| 15.80 | | | | | |
| 16.00 | | | | | |
| 16.20 | | | | | |
| 16.40 | | | | | |
| 16.60 | | | | | |
| 16.80 | | | | | |
| 17.00 | | | | | |
| 17.20 | | | | | |
| 17.40 | | | | | |
| 17.60 | | | | | |
| 17.80 | | | | | |
| 18.00 | | | | | |
| 18.20 | | | | | |
| 18.40 | | | | | |
| 18.60 | | | | | |
| 18.80 | | | | | |
| 19.00 | | | | | |
| 19.20 | | | | | |
| 19.40 | | | | | |
| 19.60 | | | | | |
| 19.80 | | | | | |
| 20.00 | | | | | |
| 20.20 | | | | | |
| 20.40 | | | | | |
| 20.60 | | | | | |
| 20.80 | | | | | |
| 21.00 | | | | | |
| 21.20 | | | | | |
| 21.40 | | | | | |
| 21.60 | | | | | |
| 21.80 | | | | | |
| 22.00 | | | | | |
| 22.20 | | | | | |
| 22.40 | | | | | |
| 22.60 | | | | | |
| 22.80 | | | | | |
| 23.00 | | | | | |
| 23.20 | | | | | |
| 23.40 | | | | | |
| 23.60 | | | | | |
| 23.80 | | | | | |
| 24.00 | | | | | |
| 24.20 | | | | | |
| 24.40 | | | | | |
| 24.60 | | | | | |
| 24.80 | | | | | |
| 25.00 | | | | | |
| 25.20 | | | | | |
| 25.40 | | | | | |
| 25.60 | | | | | |
| 25.80 | | | | | |
| 26.00 | | | | | |
| 26.20 | | | | | |
| 26.40 | | | | | |
| 26.60 | | | | | |
| 26.80 | | | | | |
| 27.00 | | | | | |
| 27.20 | | | | | |
| 27.40 | | | | | |
| 27.60 | | | | | |
| 27.80 | | | | | |
| 28.00 | | | | | |
| 28.20 | | | | | |
| 28.40 | | | | | |
| 28.60 | | | | | |
| 28.80 | | | | | |
| 29.00 | | | | | |
| 29.20 | | | | | |
| 29.40 | | | | | |
| 29.60 | | | | | |
| 29.80 | | | | | |
| 30.00 | | | | | |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O GEOM. PICCININI

Località : VIA LARGA-NONANTOLA

Prova numero : 3

Data : 26/01/01

Operatore : DR. REBECCHI

Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | | | | | |
| 0.80 | 18 | 36 | 18 | 1.20 | 15.00 |
| 1.00 | 22 | 44 | 22 | 1.47 | 15.00 |
| 1.20 | 18 | 36 | 18 | 1.20 | 15.00 |
| 1.40 | 20 | 38 | 20 | 1.20 | 16.67 |
| 1.60 | 20 | 34 | 20 | 0.93 | 21.43 |
| 1.80 | 14 | 26 | 14 | 0.80 | 17.50 |
| 2.00 | 16 | 30 | 16 | 0.93 | 17.14 |
| 2.20 | 20 | 32 | 20 | 0.80 | 25.00 |
| 2.40 | 16 | 26 | 16 | 0.67 | 24.00 |
| 2.60 | 12 | 22 | 12 | 0.67 | 18.00 |
| 2.80 | 10 | 20 | 10 | 0.67 | 15.00 |
| 3.00 | 10 | 20 | 10 | 0.67 | 15.00 |
| 3.20 | 14 | 18 | 14 | 0.27 | 52.50 |
| 3.40 | 12 | 22 | 12 | 0.67 | 18.00 |
| 3.60 | 18 | 26 | 18 | 0.53 | 33.75 |
| 3.80 | 18 | 30 | 18 | 0.80 | 22.50 |
| 4.00 | 18 | 32 | 18 | 0.93 | 19.29 |
| 4.20 | 16 | 24 | 16 | 0.53 | 30.00 |
| 4.40 | 14 | 24 | 14 | 0.67 | 21.00 |
| 4.60 | 12 | 20 | 12 | 0.53 | 22.50 |
| 4.80 | 12 | 20 | 12 | 0.53 | 22.50 |
| 5.00 | 16 | 24 | 16 | 0.53 | 30.00 |
| 5.20 | 8 | 16 | 8 | 0.53 | 15.00 |
| 5.40 | 10 | 18 | 10 | 0.53 | 18.75 |
| 5.60 | 7 | 14 | 7 | 0.47 | 15.00 |
| 5.80 | 8 | 12 | 8 | 0.27 | 30.00 |
| 6.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 6.20 | 8 | 12 | 8 | 0.27 | 30.00 |
| 6.40 | 8 | 12 | 8 | 0.27 | 30.00 |
| 6.60 | 8 | 12 | 8 | 0.27 | 30.00 |
| 6.80 | 10 | 16 | 10 | 0.40 | 25.00 |
| 7.00 | 14 | 22 | 14 | 0.53 | 26.25 |
| 7.20 | 9 | 18 | 9 | 0.60 | 15.00 |
| 7.40 | 9 | 16 | 9 | 0.47 | 19.29 |
| 7.60 | 10 | 18 | 10 | 0.53 | 18.75 |
| 7.80 | 10 | 16 | 10 | 0.40 | 25.00 |
| 8.00 | 14 | 22 | 14 | 0.53 | 26.25 |
| 8.20 | 12 | 24 | 12 | 0.80 | 15.00 |
| 8.40 | 10 | 22 | 10 | 0.80 | 12.50 |
| 8.60 | 6 | 12 | 6 | 0.40 | 15.00 |
| 8.80 | 8 | 16 | 8 | 0.53 | 15.00 |
| 9.00 | 10 | 18 | 10 | 0.53 | 18.75 |
| 9.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 9.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 9.60 | 10 | 16 | 10 | 0.40 | 25.00 |
| 9.80 | 11 | 19 | 11 | 0.53 | 20.63 |
| 10.00 | 14 | 22 | 14 | 0.53 | 26.25 |
| 10.20 | 10 | 20 | 10 | 0.67 | 15.00 |
| 10.40 | 10 | 18 | 10 | 0.53 | 18.75 |
| 10.60 | 10 | 18 | 10 | 0.53 | 18.75 |
| 10.80 | 9 | 16 | 9 | 0.47 | 19.29 |
| 11.00 | 10 | 18 | 10 | 0.53 | 18.75 |
| 11.20 | 10 | 16 | 10 | 0.40 | 25.00 |
| 11.40 | 10 | 16 | 10 | 0.40 | 25.00 |
| 11.60 | 10 | 16 | 10 | 0.40 | 25.00 |
| 11.80 | 11 | 22 | 11 | 0.73 | 15.00 |
| 12.00 | 16 | 30 | 16 | 0.93 | 17.14 |
| 12.20 | 20 | 32 | 20 | 0.80 | 25.00 |
| 12.40 | 24 | 44 | 24 | 1.33 | 18.00 |
| 12.60 | 26 | 50 | 26 | 1.60 | 16.25 |
| 12.80 | 28 | 56 | 28 | 1.87 | 15.00 |
| 13.00 | 28 | 58 | 28 | 2.00 | 14.00 |
| 13.20 | 28 | 54 | 28 | 1.73 | 16.15 |
| 13.40 | 28 | 54 | 28 | 1.73 | 16.15 |
| 13.60 | 20 | 42 | 20 | 1.47 | 13.64 |
| 13.80 | 20 | 38 | 20 | 1.20 | 16.67 |
| 14.00 | 24 | 44 | 24 | 1.33 | 18.00 |
| 14.20 | 22 | 46 | 22 | 1.60 | 13.75 |
| 14.40 | 18 | 36 | 18 | 1.20 | 15.00 |
| 14.60 | 10 | 22 | 10 | 0.80 | 12.50 |
| 14.80 | 10 | 18 | 10 | 0.53 | 18.75 |
| 15.00 | 9 | 18 | 9 | 0.60 | 15.00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15.20 | | | | | |
| 15.40 | | | | | |
| 15.60 | | | | | |
| 15.80 | | | | | |
| 16.00 | | | | | |
| 16.20 | | | | | |
| 16.40 | | | | | |
| 16.60 | | | | | |
| 16.80 | | | | | |
| 17.00 | | | | | |
| 17.20 | | | | | |
| 17.40 | | | | | |
| 17.60 | | | | | |
| 17.80 | | | | | |
| 18.00 | | | | | |
| 18.20 | | | | | |
| 18.40 | | | | | |
| 18.60 | | | | | |
| 18.80 | | | | | |
| 19.00 | | | | | |
| 19.20 | | | | | |
| 19.40 | | | | | |
| 19.60 | | | | | |
| 19.80 | | | | | |
| 20.00 | | | | | |
| 20.20 | | | | | |
| 20.40 | | | | | |
| 20.60 | | | | | |
| 20.80 | | | | | |
| 21.00 | | | | | |
| 21.20 | | | | | |
| 21.40 | | | | | |
| 21.60 | | | | | |
| 21.80 | | | | | |
| 22.00 | | | | | |
| 22.20 | | | | | |
| 22.40 | | | | | |
| 22.60 | | | | | |
| 22.80 | | | | | |
| 23.00 | | | | | |
| 23.20 | | | | | |
| 23.40 | | | | | |
| 23.60 | | | | | |
| 23.80 | | | | | |
| 24.00 | | | | | |
| 24.20 | | | | | |
| 24.40 | | | | | |
| 24.60 | | | | | |
| 24.80 | | | | | |
| 25.00 | | | | | |
| 25.20 | | | | | |
| 25.40 | | | | | |
| 25.60 | | | | | |
| 25.80 | | | | | |
| 26.00 | | | | | |
| 26.20 | | | | | |
| 26.40 | | | | | |
| 26.60 | | | | | |
| 26.80 | | | | | |
| 27.00 | | | | | |
| 27.20 | | | | | |
| 27.40 | | | | | |
| 27.60 | | | | | |
| 27.80 | | | | | |
| 28.00 | | | | | |
| 28.20 | | | | | |
| 28.40 | | | | | |
| 28.60 | | | | | |
| 28.80 | | | | | |
| 29.00 | | | | | |
| 29.20 | | | | | |
| 29.40 | | | | | |
| 29.60 | | | | | |
| 29.80 | | | | | |
| 30.00 | | | | | |

PROVA PENETROMETRICA STATICA LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 2

2.010496-43

- committente : ..
 - lavoro : COSTRUZIONE DI CIVILE FABBRICATO
 - località : VIA PROVINCIALE EST NONANTOLA (MO)
 - note : Pareti foro crollate ad estrazione aste

- data : 01/03/1999
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - pagina : 1

| Prof. m | LP kg/cm ² | LL kg/cm ² | Rp kg/cm ² | RL kg/cm ² | Rp/RI | Prof. m | LP kg/cm ² | LL kg/cm ² | Rp kg/cm ² | RL kg/cm ² | Rp/RI | |
|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|--|
| 0,20 | ---- | 1,0 | -- | 0,07 | ---- | 5,00 | 14,0 | 20,0 | 14,0 | 0,53 | 26,0 | |
| 0,40 | ---- | 1,0 | -- | 0,07 | ---- | 5,20 | 12,0 | 20,0 | 12,0 | 0,40 | 30,0 | |
| 0,60 | ---- | 1,0 | -- | 0,27 | ---- | 5,40 | 10,0 | 16,0 | 10,0 | 0,67 | 15,0 | |
| 0,80 | 20,0 | 24,0 | 20,0 | 0,67 | 30,0 | 5,60 | 12,0 | 22,0 | 12,0 | 0,53 | 22,0 | |
| 1,00 | 8,0 | 18,0 | 8,0 | 0,40 | 20,0 | 5,80 | 17,0 | 25,0 | 17,0 | 0,40 | 42,0 | |
| 1,20 | 10,0 | 16,0 | 10,0 | 0,80 | 12,0 | 6,00 | 10,0 | 16,0 | 10,0 | 0,33 | 30,0 | |
| 1,40 | 16,0 | 28,0 | 16,0 | 1,20 | 13,0 | 6,20 | 12,0 | 17,0 | 12,0 | 0,40 | 30,0 | |
| 1,60 | 22,0 | 40,0 | 22,0 | 1,20 | 18,0 | 6,40 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 | |
| 1,80 | 26,0 | 44,0 | 26,0 | 1,20 | 22,0 | 6,60 | 12,0 | 18,0 | 12,0 | 0,47 | 26,0 | |
| 2,00 | 26,0 | 44,0 | 26,0 | 1,20 | 22,0 | 6,80 | 7,0 | 14,0 | 7,0 | 0,27 | 26,0 | |
| 2,20 | 22,0 | 40,0 | 22,0 | 1,07 | 21,0 | 7,00 | 7,0 | 11,0 | 7,0 | 0,40 | 17,0 | |
| 2,40 | 16,0 | 32,0 | 16,0 | 0,93 | 17,0 | 7,20 | 10,0 | 16,0 | 10,0 | 0,33 | 30,0 | |
| 2,60 | 24,0 | 38,0 | 24,0 | 1,33 | 18,0 | 7,40 | 10,0 | 15,0 | 10,0 | 0,40 | 25,0 | |
| 2,80 | 24,0 | 44,0 | 24,0 | 1,07 | 22,0 | 7,60 | 10,0 | 16,0 | 10,0 | 0,53 | 19,0 | |
| 3,00 | 20,0 | 36,0 | 20,0 | 0,67 | 30,0 | 7,80 | 10,0 | 18,0 | 10,0 | 0,53 | 19,0 | |
| 3,20 | 10,0 | 20,0 | 10,0 | 0,53 | 19,0 | 8,00 | 8,0 | 16,0 | 8,0 | 0,53 | 15,0 | |
| 3,40 | 10,0 | 18,0 | 10,0 | 0,53 | 19,0 | 8,20 | 6,0 | 14,0 | 6,0 | 0,33 | 18,0 | |
| 3,60 | 8,0 | 16,0 | 8,0 | 0,40 | 20,0 | 8,40 | 8,0 | 13,0 | 8,0 | 0,53 | 15,0 | |
| 3,80 | 12,0 | 18,0 | 12,0 | 0,40 | 30,0 | 8,60 | 8,0 | 16,0 | 8,0 | 0,47 | 17,0 | |
| 4,00 | 4,0 | 10,0 | 4,0 | 0,40 | 10,0 | 8,80 | 13,0 | 20,0 | 13,0 | 0,27 | 49,0 | |
| 4,20 | 8,0 | 14,0 | 8,0 | 0,27 | 30,0 | 9,00 | 6,0 | 10,0 | 6,0 | 0,40 | 15,0 | |
| 4,40 | 6,0 | 10,0 | 6,0 | 0,60 | 10,0 | 9,20 | 12,0 | 18,0 | 12,0 | 0,20 | 60,0 | |
| 4,60 | 6,0 | 15,0 | 6,0 | 0,40 | 15,0 | 9,40 | 8,0 | 11,0 | 8,0 | 0,33 | 24,0 | |
| 4,80 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 | 9,60 | 7,0 | 12,0 | 7,0 | ---- | ---- | |

- PENETROMETRO STATICO tipo GOUDA da 10 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\sigma = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

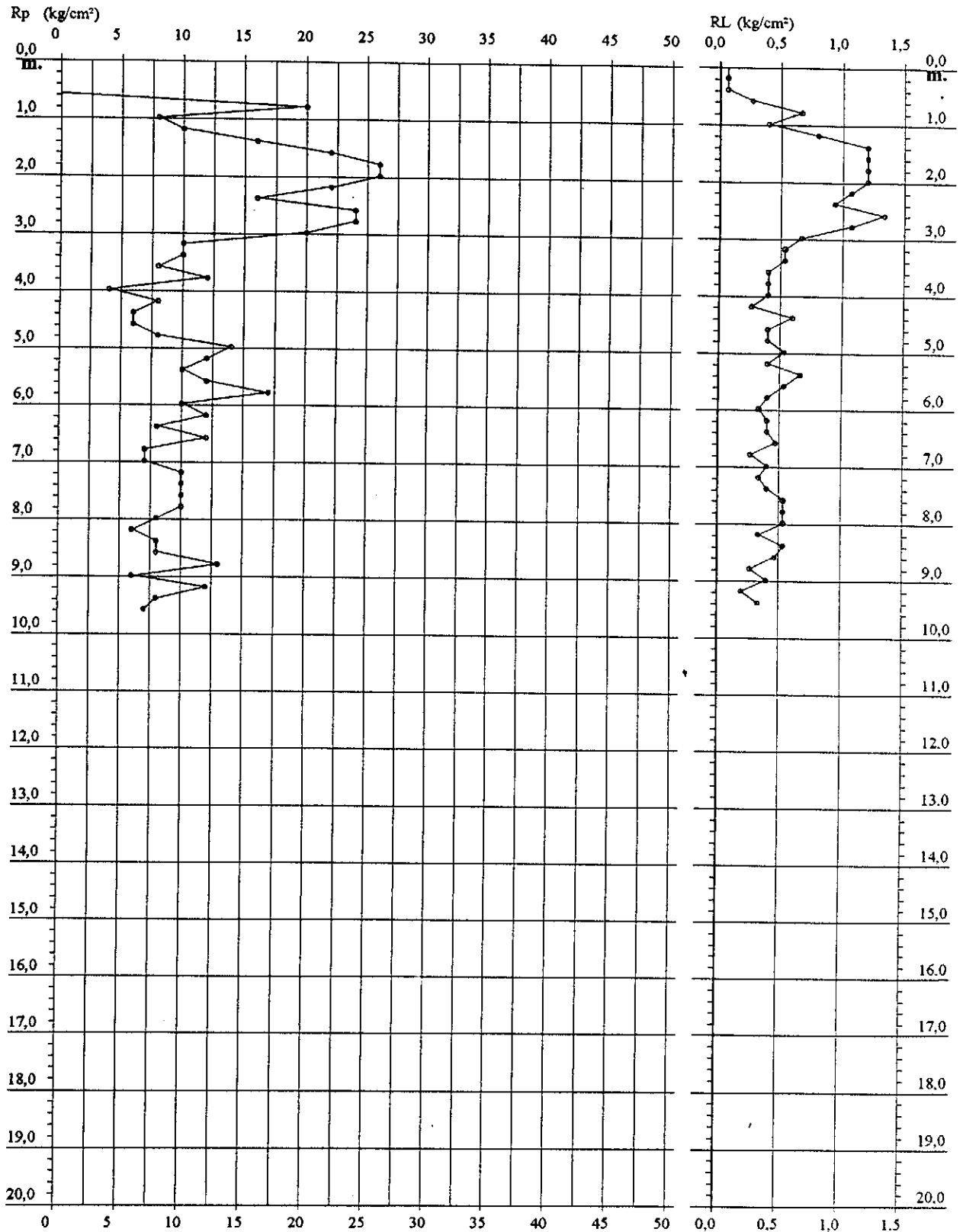
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 2

2.010496-43

- committente : ..
 - lavoro : COSTRUZIONE DI CIVILE FABBRICATO
 - località : VIA PROVINCIALE EST NONANTOLA (MO)
 - note : Pareti foro crollate ad estrazione aste

- data : 01/03/1999
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - scala vert. : 1 : 100



PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 2

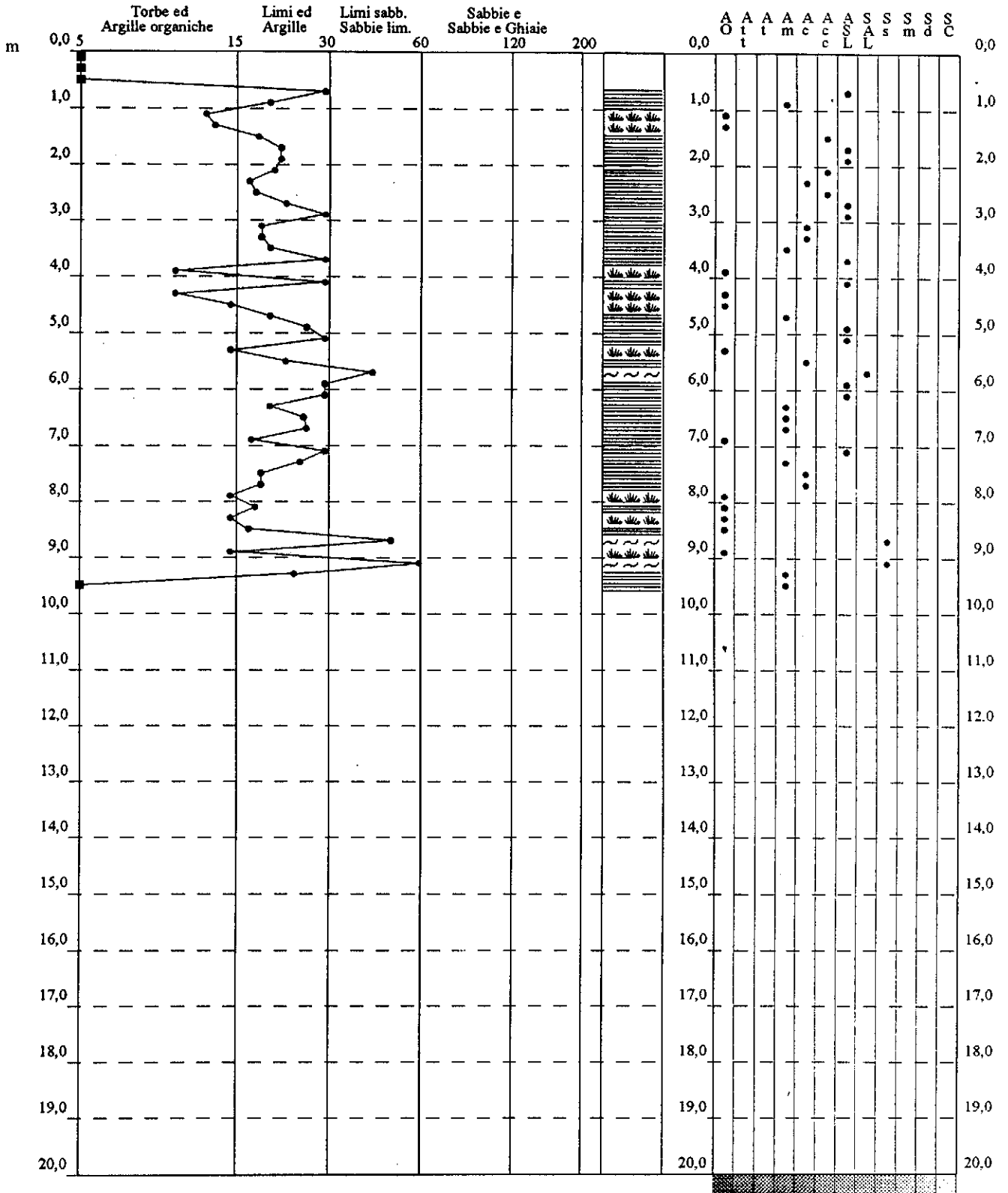
2.010496-43

- committente : ..
 - lavoro : COSTRUZIONE DI CIVILE FABBRICATO
 - località : VIA PROVINCIALE EST NONANTOLA (MO)
 - note : Pareti foro crollate ad estrazione aste

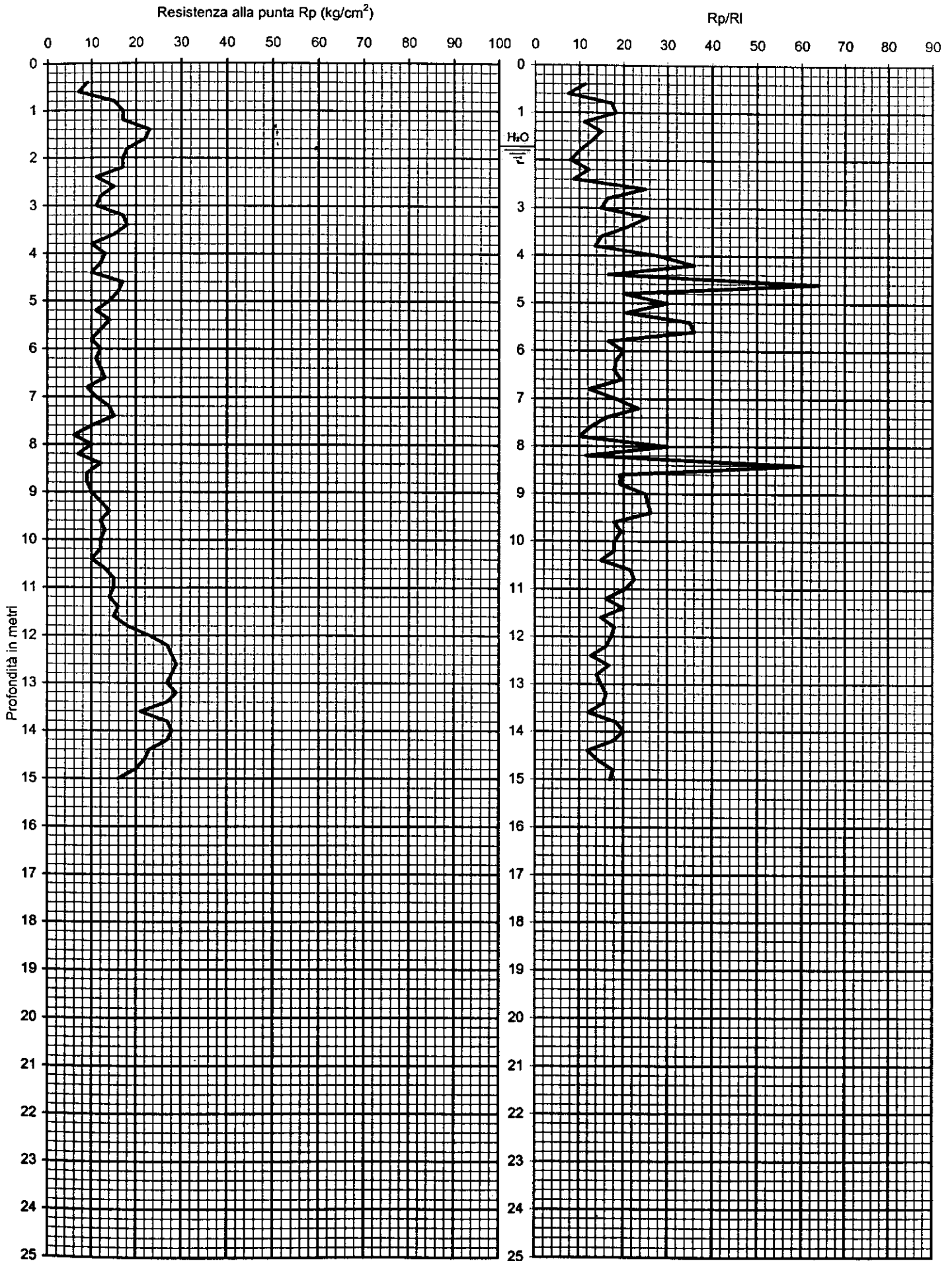
- data : 01/03/1999
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - scala vert.: 1 : 100

Rp/RL (Litologia Begemann 1965 A.G.I. 1977)

Rp - RL/Rp (Litologia Schmertmann 1978)



Software by: Dr.D.Merlin - 0425/840820



| PROF. (M) | P (KG/CM ²) | P + L (KG/CM ²) | RP (KG/CM ²) | RL (KG/CM ²) | RP/RL [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-------------|
| 0,20 | | | | | |
| 0,40 | 9 | 21 | 9 | 0,80 | 11,25 |
| 0,60 | 7 | 21 | 7 | 0,93 | 7,50 |
| 0,80 | 15 | 28 | 15 | 0,87 | 17,31 |
| 1,00 | 17 | 31 | 17 | 0,93 | 18,21 |
| 1,20 | 17 | 40 | 17 | 1,53 | 11,09 |
| 1,40 | 23 | 46 | 23 | 1,53 | 15,00 |
| 1,60 | 22 | 48 | 22 | 1,73 | 12,69 |
| 1,80 | 18 | 45 | 18 | 1,80 | 10,00 |
| 2,00 | 17 | 49 | 17 | 2,13 | 7,97 |
| 2,20 | 17 | 38 | 17 | 1,40 | 12,14 |
| 2,40 | 11 | 30 | 11 | 1,27 | 8,68 |
| 2,60 | 15 | 24 | 15 | 0,60 | 25,00 |
| 2,80 | 12 | 23 | 12 | 0,73 | 16,36 |
| 3,00 | 11 | 22 | 11 | 0,73 | 15,00 |
| 3,20 | 17 | 27 | 17 | 0,67 | 25,50 |
| 3,40 | 18 | 31 | 18 | 0,87 | 20,77 |
| 3,60 | 15 | 30 | 15 | 1,00 | 15,00 |
| 3,80 | 10 | 21 | 10 | 0,73 | 13,64 |
| 4,00 | 13 | 20 | 13 | 0,47 | 27,86 |
| 4,20 | 12 | 17 | 12 | 0,33 | 36,00 |
| 4,40 | 10 | 19 | 10 | 0,60 | 16,67 |
| 4,60 | 17 | 21 | 17 | 0,27 | 63,75 |
| 4,80 | 16 | 28 | 16 | 0,80 | 20,00 |
| 5,00 | 14 | 21 | 14 | 0,47 | 30,00 |
| 5,20 | 11 | 19 | 11 | 0,53 | 20,63 |
| 5,40 | 14 | 20 | 14 | 0,40 | 35,00 |
| 5,60 | 12 | 17 | 12 | 0,33 | 36,00 |
| 5,80 | 10 | 19 | 10 | 0,60 | 16,67 |
| 6,00 | 12 | 21 | 12 | 0,60 | 20,00 |
| 6,20 | 11 | 20 | 11 | 0,60 | 18,33 |
| 6,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 6,60 | 13 | 23 | 13 | 0,67 | 19,50 |
| 6,80 | 9 | 20 | 9 | 0,73 | 12,27 |
| 7,00 | 11 | 20 | 11 | 0,60 | 18,33 |
| 7,20 | 14 | 23 | 14 | 0,60 | 23,33 |
| 7,40 | 15 | 29 | 15 | 0,93 | 16,07 |
| 7,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 7,80 | 6 | 15 | 6 | 0,60 | 10,00 |
| 8,00 | 10 | 15 | 10 | 0,33 | 30,00 |
| 8,20 | 7 | 16 | 7 | 0,60 | 11,67 |
| 8,40 | 12 | 15 | 12 | 0,20 | 60,00 |
| 8,60 | 9 | 16 | 9 | 0,47 | 19,29 |
| 8,80 | 9 | 16 | 9 | 0,47 | 19,29 |
| 9,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,20 | 12 | 19 | 12 | 0,47 | 25,71 |
| 9,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 9,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 9,80 | 13 | 23 | 13 | 0,67 | 19,50 |
| 10,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 10,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 10,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,60 | 13 | 22 | 13 | 0,60 | 21,67 |
| 10,80 | 15 | 25 | 15 | 0,67 | 22,50 |
| 11,00 | 15 | 26 | 15 | 0,73 | 20,45 |
| 11,20 | 14 | 27 | 14 | 0,87 | 16,15 |
| 11,40 | 16 | 28 | 16 | 0,80 | 20,00 |
| 11,60 | 15 | 30 | 15 | 1,00 | 15,00 |
| 11,80 | 18 | 33 | 18 | 1,00 | 18,00 |
| 12,00 | 23 | 43 | 23 | 1,33 | 17,25 |
| 12,20 | 27 | 52 | 27 | 1,67 | 16,20 |
| 12,40 | 28 | 61 | 28 | 2,20 | 12,73 |
| 12,60 | 29 | 55 | 29 | 1,73 | 16,73 |
| 12,80 | 28 | 58 | 28 | 2,00 | 14,00 |
| 13,00 | 27 | 54 | 27 | 1,80 | 15,00 |
| 13,20 | 29 | 56 | 29 | 1,80 | 16,11 |
| 13,40 | 27 | 53 | 27 | 1,73 | 15,58 |
| 13,60 | 21 | 47 | 21 | 1,73 | 12,12 |
| 13,80 | 27 | 49 | 27 | 1,47 | 18,41 |
| 14,00 | 28 | 49 | 28 | 1,40 | 20,00 |
| 14,20 | 27 | 50 | 27 | 1,53 | 17,61 |
| 14,40 | 23 | 52 | 23 | 1,93 | 11,90 |
| 14,60 | 22 | 45 | 22 | 1,53 | 14,35 |
| 14,80 | 20 | 37 | 20 | 1,13 | 17,65 |
| 15,00 | 16 | 30 | 16 | 0,93 | 17,14 |

| PROF. (M) | P (KG/CM ²) | P + L (KG/CM ²) | RP (KG/CM ²) | RL (KG/CM ²) | RP/RL [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |

| | |
|-------|----------------------------------|
| P | Resistenza specifica della punta |
| P+L | Resistenza punta più manicotto |
| Rp | Resistenza alla punta |
| RI | Resistenza laterale |
| Rp/RI | Friction Ratio (fs) |

PENETROMETRO PAGANI TIPO TG63-100 KN

Punta Begemann

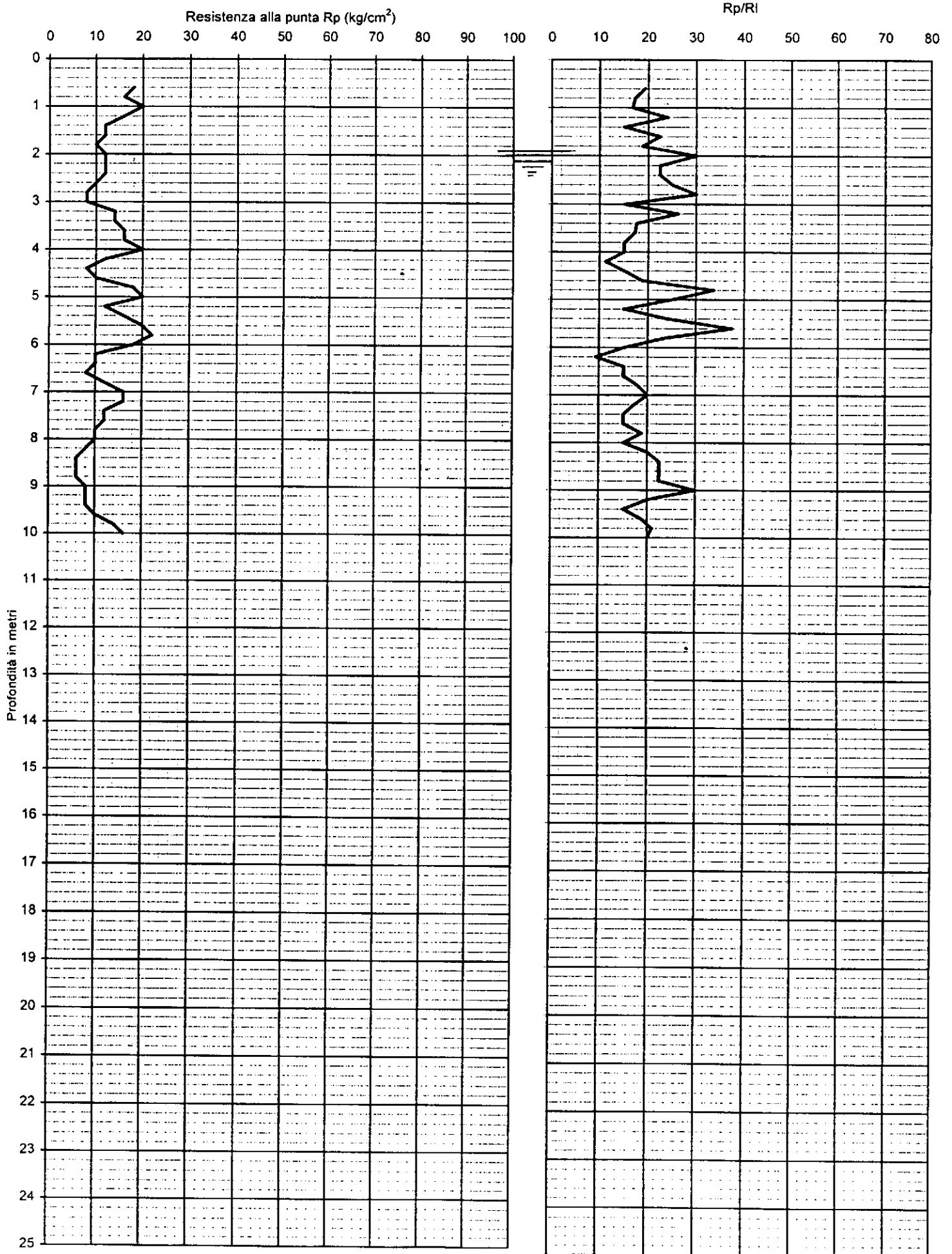
diametro 36 mm

conicità 60°

area 10 cmq

superficie laterale 150 cmq

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

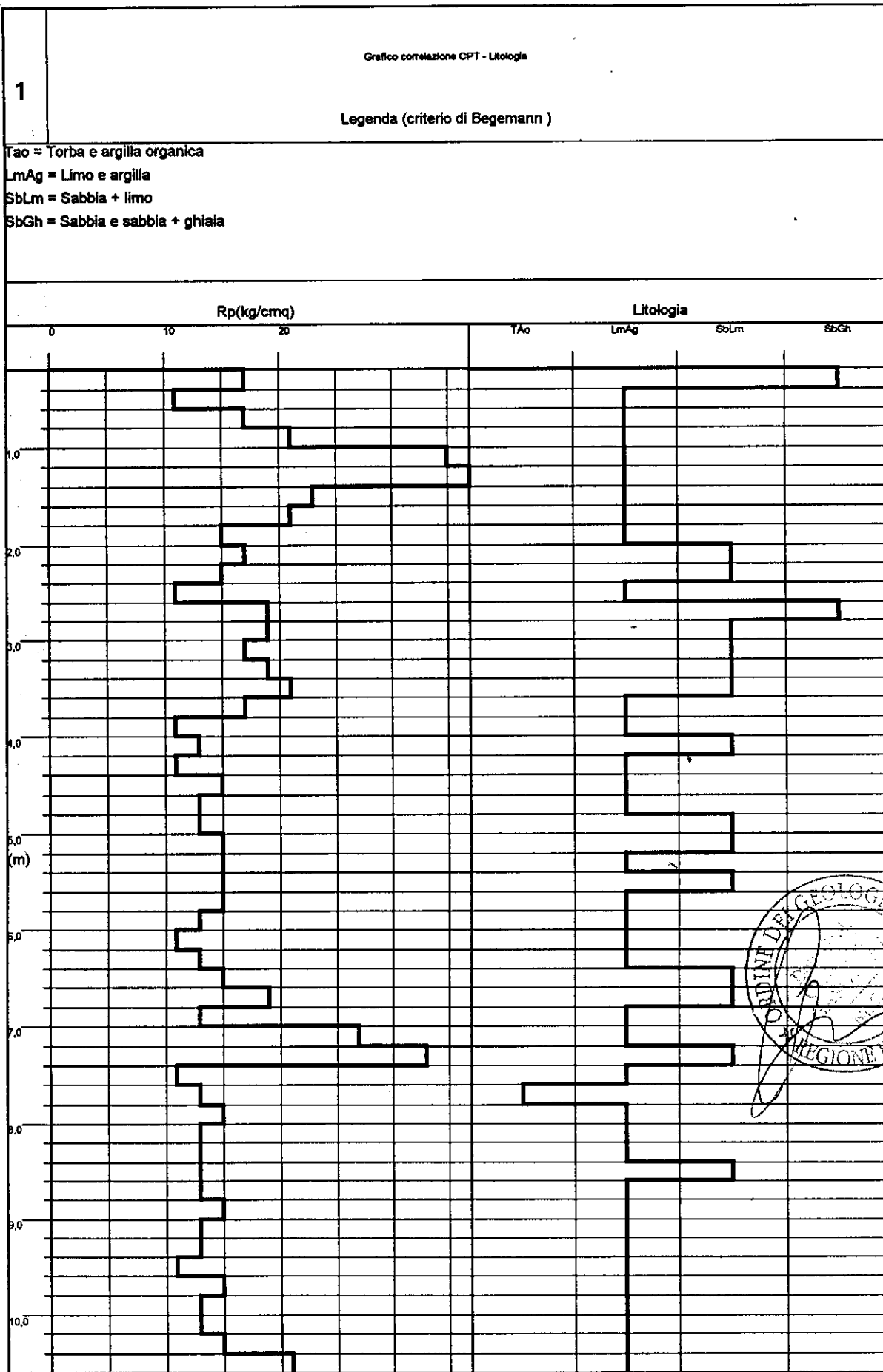
PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : SIG. BARALDI
Località : CAMPAZZO
Prova numero : 1
Data : 14/05/99
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 18 | 32 | 18 | 0,93 | 19,29 |
| 0,80 | 16 | 30 | 16 | 0,93 | 17,14 |
| 1,00 | 20 | 38 | 20 | 1,20 | 16,67 |
| 1,20 | 16 | 26 | 16 | 0,67 | 24,00 |
| 1,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 1,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 1,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 2,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 2,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 2,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 2,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 3,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 3,40 | 14 | 26 | 14 | 0,80 | 17,50 |
| 3,60 | 16 | 30 | 16 | 0,93 | 17,14 |
| 3,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 4,00 | 20 | 40 | 20 | 1,33 | 15,00 |
| 4,20 | 12 | 28 | 12 | 1,07 | 11,25 |
| 4,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 4,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,80 | 18 | 26 | 18 | 0,53 | 33,75 |
| 5,00 | 20 | 32 | 20 | 0,80 | 25,00 |
| 5,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 5,40 | 16 | 26 | 16 | 0,67 | 24,00 |
| 5,60 | 20 | 28 | 20 | 0,53 | 37,50 |
| 5,80 | 22 | 36 | 22 | 0,93 | 23,57 |
| 6,00 | 18 | 36 | 18 | 1,20 | 15,00 |
| 6,20 | 10 | 26 | 10 | 1,07 | 9,38 |
| 6,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 6,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 7,00 | 16 | 28 | 16 | 0,80 | 20,00 |
| 7,20 | 16 | 30 | 16 | 0,93 | 17,14 |
| 7,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 7,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 7,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 8,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 8,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 10,00 | 16 | 28 | 16 | 0,80 | 20,00 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
| 11,20 | | | | | |
| 11,40 | | | | | |
| 11,60 | | | | | |
| 11,80 | | | | | |
| 12,00 | | | | | |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |



PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 1

2.010496-43

- committente : Geom. Cavani
 - lavoro : Realizzazione di civile fabbricato
 - località : via Papa Giovanni XXIII Nonantola (MO)
 - note : Presenza di acqua nel foro di sondaggio a - 1.70 m

- data : 08/09/1999
 - quota inizio : Piano Campagna
 - prof. falda : 1,70 m da quota inizio
 - pagina : 1

| Prof. m | LP kg/cm ² | LL kg/cm ² | Rp kg/cm ² | RL kg/cm ² | Rp/RI | Prof. m | LP kg/cm ² | LL kg/cm ² | Rp kg/cm ² | RL kg/cm ² | Rp/RI |
|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|
| 0,20 | --- | --- | -- | 0,07 | --- | 6,00 | 8,0 | 10,0 | 8,0 | 0,20 | 40,0 |
| 0,40 | --- | 1,0 | -- | 1,33 | --- | 6,20 | 6,0 | 9,0 | 6,0 | 0,20 | 30,0 |
| 0,60 | 107,0 | 127,0 | 107,0 | 1,00 | 107,0 | 6,40 | 6,0 | 9,0 | 6,0 | 0,20 | 30,0 |
| 0,80 | 98,0 | 113,0 | 98,0 | 1,53 | 64,0 | 6,60 | 6,0 | 9,0 | 6,0 | 0,27 | 22,0 |
| 1,00 | 54,0 | 77,0 | 54,0 | 1,60 | 34,0 | 6,80 | 6,0 | 10,0 | 6,0 | 0,27 | 22,0 |
| 1,20 | 21,0 | 45,0 | 21,0 | 0,60 | 35,0 | 7,00 | 15,0 | 19,0 | 15,0 | 0,33 | 45,0 |
| 1,40 | 8,0 | 17,0 | 8,0 | 0,53 | 15,0 | 7,20 | 11,0 | 16,0 | 11,0 | 0,40 | 27,0 |
| 1,60 | 10,0 | 18,0 | 10,0 | 0,53 | 19,0 | 7,40 | 6,0 | 12,0 | 6,0 | 0,20 | 30,0 |
| 1,80 | 10,0 | 18,0 | 10,0 | 0,20 | 50,0 | 7,60 | 8,0 | 11,0 | 8,0 | 0,27 | 30,0 |
| 2,00 | 12,0 | 15,0 | 12,0 | 0,27 | 45,0 | 7,80 | 7,0 | 11,0 | 7,0 | 0,27 | 26,0 |
| 2,20 | 10,0 | 14,0 | 10,0 | 0,33 | 30,0 | 8,00 | 7,0 | 11,0 | 7,0 | 0,33 | 21,0 |
| 2,40 | 15,0 | 20,0 | 15,0 | 0,53 | 28,0 | 8,20 | 8,0 | 13,0 | 8,0 | 0,20 | 40,0 |
| 2,60 | 10,0 | 18,0 | 10,0 | 0,27 | 37,0 | 8,40 | 9,0 | 12,0 | 9,0 | 0,27 | 34,0 |
| 2,80 | 10,0 | 14,0 | 10,0 | 0,33 | 30,0 | 8,60 | 9,0 | 13,0 | 9,0 | 0,33 | 27,0 |
| 3,00 | 10,0 | 15,0 | 10,0 | 0,27 | 37,0 | 8,80 | 9,0 | 14,0 | 9,0 | 0,33 | 27,0 |
| 3,20 | 10,0 | 14,0 | 10,0 | 0,20 | 50,0 | 9,00 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 |
| 3,40 | 10,0 | 13,0 | 10,0 | 0,33 | 30,0 | 9,20 | 10,0 | 16,0 | 10,0 | 0,33 | 30,0 |
| 3,60 | 10,0 | 15,0 | 10,0 | 0,20 | 50,0 | 9,40 | 12,0 | 17,0 | 12,0 | 0,40 | 30,0 |
| 3,80 | 7,0 | 10,0 | 7,0 | 0,27 | 26,0 | 9,60 | 8,0 | 14,0 | 8,0 | 0,33 | 24,0 |
| 4,00 | 8,0 | 12,0 | 8,0 | 0,27 | 30,0 | 9,80 | 7,0 | 12,0 | 7,0 | 0,33 | 21,0 |
| 4,20 | 6,0 | 10,0 | 6,0 | 0,20 | 30,0 | 10,00 | 8,0 | 13,0 | 8,0 | 0,47 | 17,0 |
| 4,40 | 6,0 | 9,0 | 6,0 | 0,33 | 18,0 | 10,20 | 14,0 | 21,0 | 14,0 | 0,53 | 26,0 |
| 4,60 | 8,0 | 13,0 | 8,0 | 0,27 | 30,0 | 10,40 | 14,0 | 22,0 | 14,0 | 0,53 | 26,0 |
| 4,80 | 6,0 | 10,0 | 6,0 | 0,27 | 22,0 | 10,60 | 13,0 | 21,0 | 13,0 | 0,67 | 19,0 |
| 5,00 | 6,0 | 10,0 | 6,0 | 0,20 | 30,0 | 10,80 | 14,0 | 24,0 | 14,0 | 0,60 | 23,0 |
| 5,20 | 6,0 | 9,0 | 6,0 | 0,20 | 30,0 | 11,00 | 13,0 | 22,0 | 13,0 | 0,67 | 19,0 |
| 5,40 | 6,0 | 9,0 | 6,0 | 0,33 | 18,0 | 11,20 | 13,0 | 23,0 | 13,0 | 0,67 | 19,0 |
| 5,60 | 8,0 | 13,0 | 8,0 | 0,20 | 40,0 | 11,40 | 15,0 | 25,0 | 15,0 | --- | --- |
| 5,80 | 6,0 | 9,0 | 6,0 | 0,13 | 45,0 | | | | | | |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
 - punta meccanica tipo Begemann ø = 35.7 mm (area punta 10 cm² - apertura 60°)
 - manicotto laterale (superficie 150 cm²)

PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

2.010496-43

- committente : Geom. Cavani
- lavoro : Realizzazione di civile fabbricato
- località : via Papa Giovanni XXIII Nonantola (MO)
- note : Presenza di acqua nel foro di sondaggio a - 1.70 m

- data : 08/09/1999
- quota inizio : Piano Campagna
- prof. falda : 1,70 m da quota inizio
- scala vert.: 1 : 100

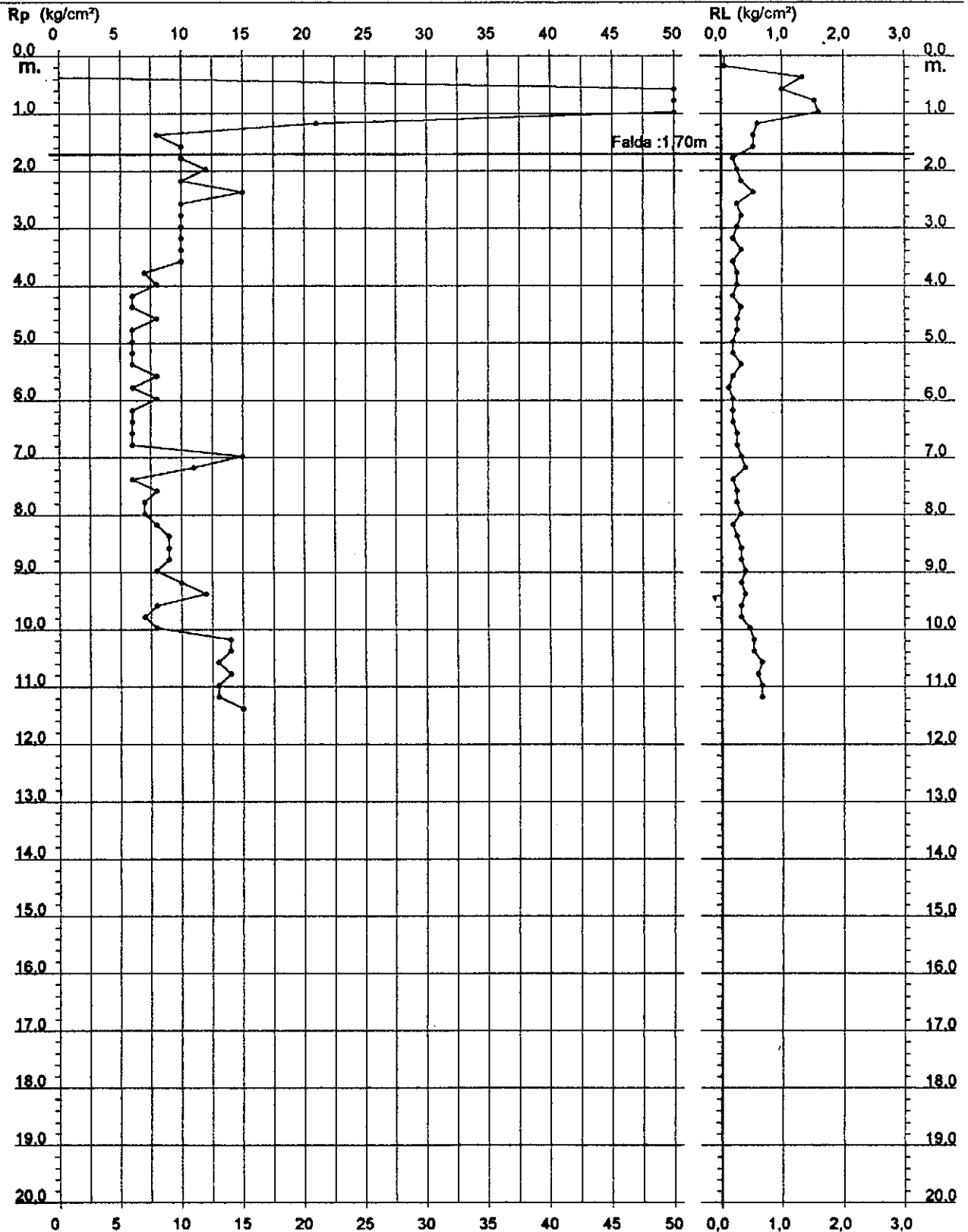


Diagramma prova penetrometrica statica

COMMITTENTE: Dott. ROBERTO BANFI

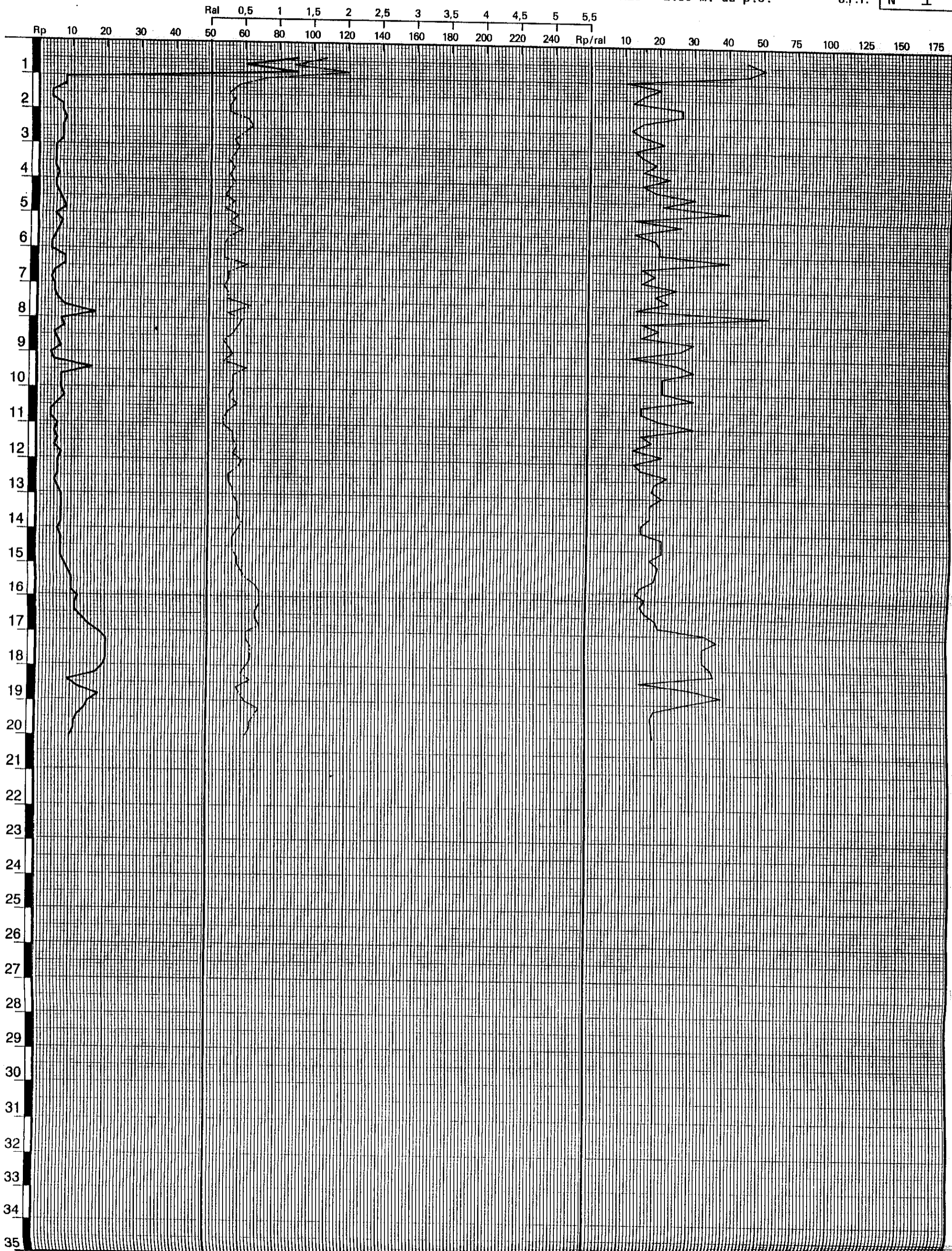
CANTIERE : NONANTOLA - C. Commerciale -

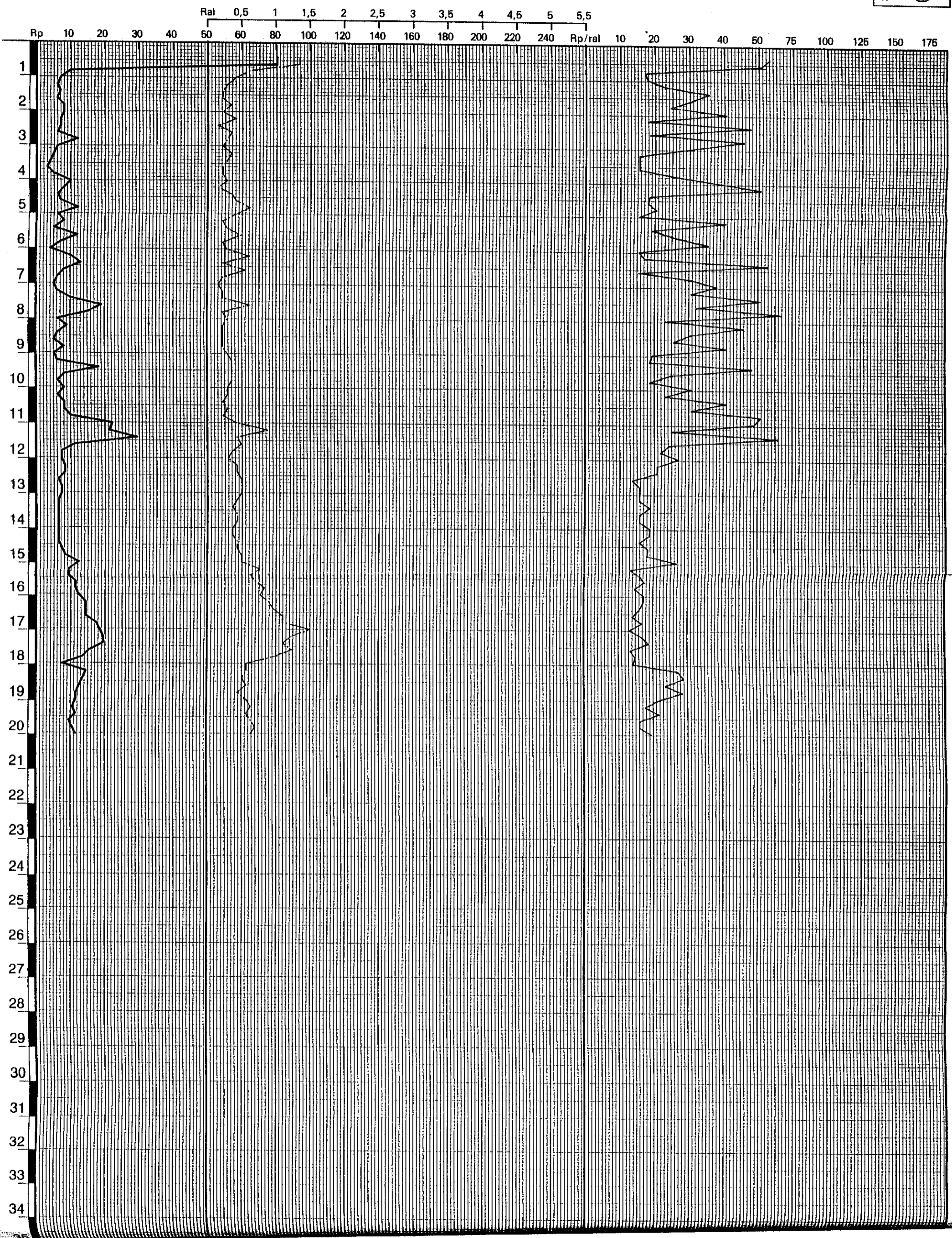
DATA PROVA : 06 - 04 - 1989

Rp resistenza di punta (Kg/cmq)
Ral resistenza attrito laterale (Kg/cmq)
Rp/Ral rapporto Begemann

H20 - 2.60 m. da p.c.

C.P.T. N° 1





PROVA PENETROMETRICA STATICA

CPT 2

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

2.010496-042

- committente : Cooperativa Costruzioni s.c.a r.l. di Modena
 - lavoro : COSTRUZIONE DI CIVILE FABBRICATO
 - località : Via Bruni Nonantola
 - note :

- data : 09/10/2001
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - pagina : 1

| prf m | LP Kg/cm ² | LL Kg/cm ² | Rp Kg/cm ² | RL Kg/cm ² | Rp/RL - | prf m | LP Kg/cm ² | LL Kg/cm ² | Rp Kg/cm ² | RL Kg/cm ² | Rp/RL - |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|------------|----------|--------------------------|--------------------------|--------------------------|--------------------------|------------|
| 0,20 | --- | --- | -- | ----- | --- | 6,00 | 12,0 | 15,0 | 12,0 | 0,40 | 30,0 |
| 0,40 | --- | --- | -- | ----- | --- | 6,20 | 14,0 | 20,0 | 14,0 | 0,40 | 35,0 |
| 0,60 | --- | --- | -- | 3,27 | --- | 6,40 | 10,0 | 16,0 | 10,0 | 0,53 | 19,0 |
| 0,80 | 18,0 | 67,0 | 18,0 | 0,53 | 34,0 | 6,60 | 12,0 | 20,0 | 12,0 | 0,33 | 36,0 |
| 1,00 | 14,0 | 22,0 | 14,0 | 0,53 | 26,0 | 6,80 | 11,0 | 16,0 | 11,0 | 0,33 | 33,0 |
| 1,20 | 13,0 | 21,0 | 13,0 | 0,47 | 28,0 | 7,00 | 7,0 | 12,0 | 7,0 | 0,33 | 21,0 |
| 1,40 | 15,0 | 22,0 | 15,0 | 0,67 | 22,0 | 7,20 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 |
| 1,60 | 15,0 | 25,0 | 15,0 | 0,73 | 20,0 | 7,40 | 12,0 | 18,0 | 12,0 | 0,40 | 30,0 |
| 1,80 | 14,0 | 25,0 | 14,0 | 0,67 | 21,0 | 7,60 | 13,0 | 19,0 | 13,0 | 0,47 | 28,0 |
| 2,00 | 14,0 | 24,0 | 14,0 | 0,73 | 19,0 | 7,80 | 7,0 | 14,0 | 7,0 | 0,27 | 26,0 |
| 2,20 | 12,0 | 23,0 | 12,0 | 0,53 | 22,0 | 8,00 | 10,0 | 14,0 | 10,0 | 0,20 | 50,0 |
| 2,40 | 15,0 | 23,0 | 15,0 | 0,53 | 28,0 | 8,20 | 12,0 | 15,0 | 12,0 | 0,33 | 36,0 |
| 2,60 | 11,0 | 19,0 | 11,0 | 0,53 | 21,0 | 8,40 | 11,0 | 16,0 | 11,0 | 0,47 | 24,0 |
| 2,80 | 9,0 | 17,0 | 9,0 | 0,47 | 19,0 | 8,60 | 11,0 | 18,0 | 11,0 | 0,47 | 24,0 |
| 3,00 | 9,0 | 16,0 | 9,0 | 0,33 | 27,0 | 8,80 | 9,0 | 16,0 | 9,0 | 0,47 | 19,0 |
| 3,20 | 12,0 | 17,0 | 12,0 | 0,33 | 36,0 | 9,00 | 16,0 | 23,0 | 16,0 | 0,53 | 30,0 |
| 3,40 | 10,0 | 15,0 | 10,0 | 0,53 | 19,0 | 9,20 | 9,0 | 17,0 | 9,0 | 0,47 | 19,0 |
| 3,60 | 7,0 | 15,0 | 7,0 | 0,33 | 21,0 | 9,40 | 10,0 | 17,0 | 10,0 | 0,40 | 25,0 |
| 3,80 | 8,0 | 13,0 | 8,0 | 0,33 | 24,0 | 9,60 | 11,0 | 17,0 | 11,0 | 0,53 | 21,0 |
| 4,00 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 | 9,80 | 9,0 | 17,0 | 9,0 | 0,47 | 19,0 |
| 4,20 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 | 10,00 | 12,0 | 19,0 | 12,0 | 0,67 | 18,0 |
| 4,40 | 7,0 | 12,0 | 7,0 | 0,27 | 26,0 | 10,20 | 13,0 | 23,0 | 13,0 | 0,60 | 22,0 |
| 4,60 | 8,0 | 12,0 | 8,0 | 0,33 | 24,0 | 10,40 | 12,0 | 21,0 | 12,0 | 0,40 | 30,0 |
| 4,80 | 10,0 | 15,0 | 10,0 | 0,47 | 21,0 | 10,60 | 11,0 | 17,0 | 11,0 | 0,33 | 33,0 |
| 5,00 | 7,0 | 14,0 | 7,0 | 0,33 | 21,0 | 10,80 | 9,0 | 14,0 | 9,0 | 0,40 | 22,0 |
| 5,20 | 7,0 | 12,0 | 7,0 | 0,27 | 26,0 | 11,00 | 10,0 | 16,0 | 10,0 | 0,47 | 21,0 |
| 5,40 | 8,0 | 12,0 | 8,0 | 0,40 | 20,0 | 11,20 | 9,0 | 16,0 | 9,0 | 0,53 | 17,0 |
| 5,60 | 9,0 | 15,0 | 9,0 | 0,40 | 22,0 | 11,40 | 8,0 | 16,0 | 8,0 | ----- | ---- |
| 5,80 | 10,0 | 16,0 | 10,0 | 0,20 | 50,0 | | | | | | |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
 - punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
 - manicotto laterale (superficie 150 cm²)

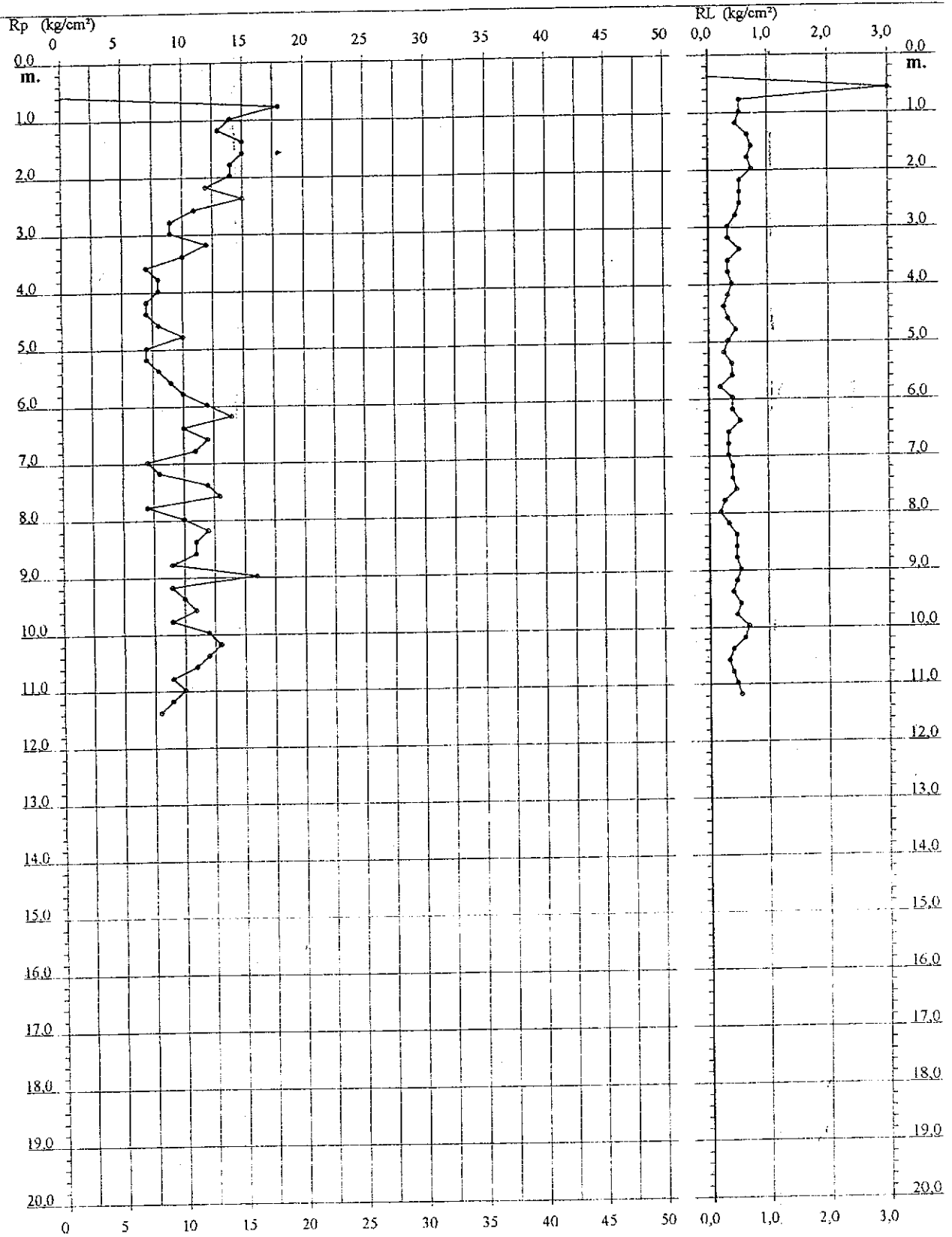
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 2

2.010496-042

- committente : Cooperativa Costruzioni s.c.a r.l. di Modena
- lavoro : COSTRUZIONE DI CIVILE FABBRICATO
- località : Via Bruni Nonantola

- data : 09/10/2001
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- scala vert : 1 : 100



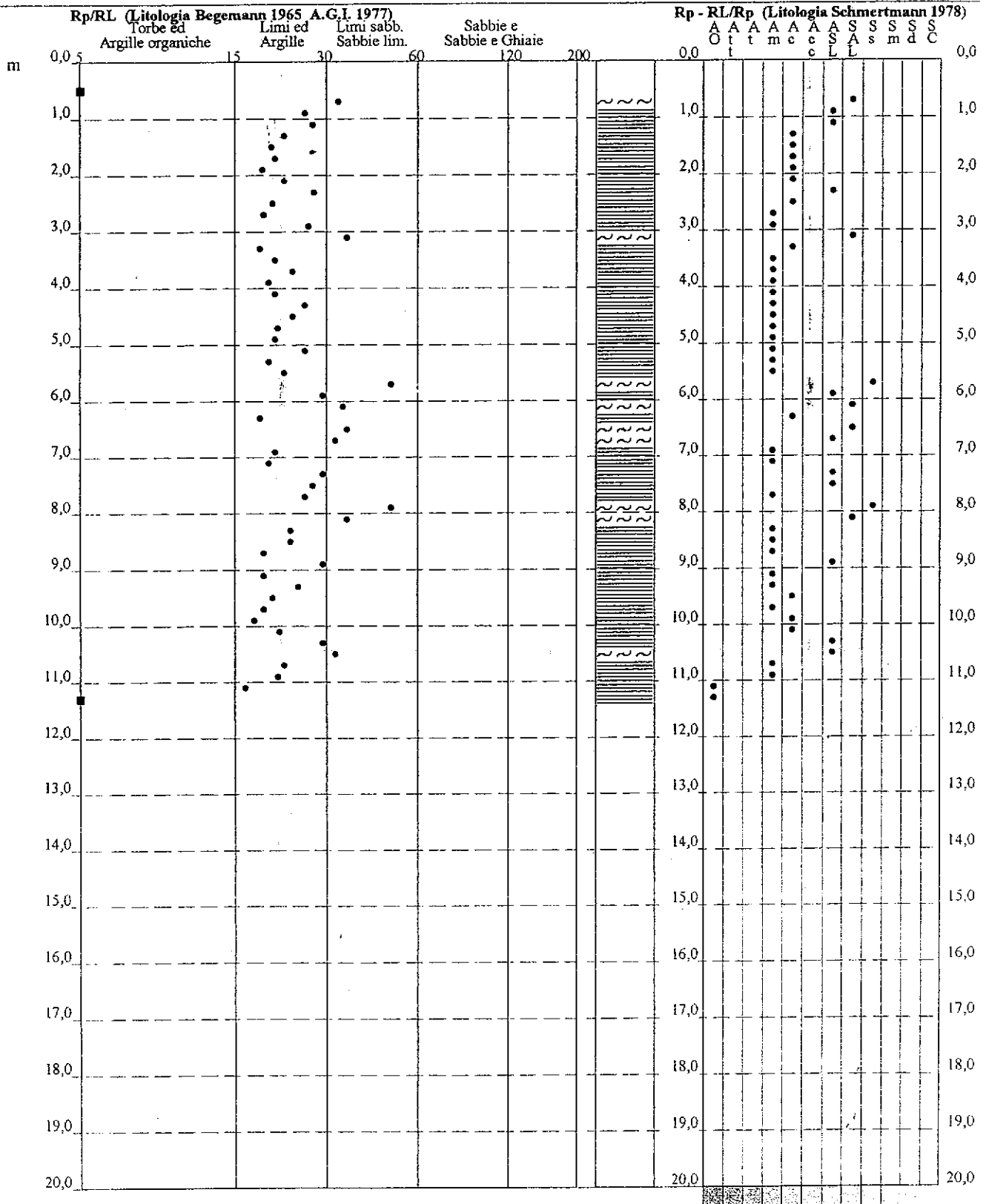
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 2

2:010496-042

- committente : Cooperativa Costruzioni s.c.a.r.l. di Modena
 - lavoro : COSTRUZIONE DI CIVILE FABBRICATO
 - località : Via Bruni Nonantola
 - note :

- data : 09/10/2001
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - scala vert. : 1 : 100



PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 2

2.010496-43

- committente :
 - lavoro : Realizzazione di civile fabbricato
 - località : Via Fermi - Nonantola (MO)
 - note : Preforo con escavatore meccanico a -1.00 m da p.c.

- data : 18/01/2000
 - quota inizio : -1,00 m da quota riferim.
 - prof. falda : 1,00 m da quota inizio
 - pagina : 1

| Prof. m | LP kg/cm ² | LL kg/cm ² | Rp kg/cm ² | RL kg/cm ² | Rp/RI | Prof. m | LP kg/cm ² | LL kg/cm ² | Rp kg/cm ² | RL kg/cm ² | Rp/RI |
|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|
| 0,20 | ---- | 1,0 | -- | 0,07 | ---- | 6,20 | 5,0 | 13,0 | 5,0 | 0,40 | 12,0 |
| 0,40 | ---- | 1,0 | -- | 0,07 | ---- | 6,40 | 9,0 | 15,0 | 9,0 | 0,60 | 15,0 |
| 0,60 | ---- | 1,0 | -- | 0,07 | ---- | 6,60 | 15,0 | 24,0 | 15,0 | 0,47 | 32,0 |
| 0,80 | ---- | 1,0 | -- | 0,07 | ---- | 6,80 | 14,0 | 21,0 | 14,0 | 0,53 | 26,0 |
| 1,00 | ---- | 1,0 | -- | 0,20 | ---- | 7,00 | 12,0 | 20,0 | 12,0 | 0,60 | 20,0 |
| 1,20 | 10,0 | 13,0 | 10,0 | 0,47 | 21,0 | 7,20 | 9,0 | 18,0 | 9,0 | 0,40 | 22,0 |
| 1,40 | 10,0 | 17,0 | 10,0 | 0,47 | 21,0 | 7,40 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 |
| 1,60 | 11,0 | 18,0 | 11,0 | 0,47 | 24,0 | 7,60 | 11,0 | 16,0 | 11,0 | 0,47 | 24,0 |
| 1,80 | 11,0 | 18,0 | 11,0 | 0,47 | 24,0 | 7,80 | 16,0 | 23,0 | 16,0 | 0,33 | 48,0 |
| 2,00 | 12,0 | 19,0 | 12,0 | 0,40 | 30,0 | 8,00 | 17,0 | 22,0 | 17,0 | 0,47 | 36,0 |
| 2,20 | 10,0 | 16,0 | 10,0 | 0,47 | 21,0 | 8,20 | 13,0 | 20,0 | 13,0 | 0,40 | 32,0 |
| 2,40 | 10,0 | 17,0 | 10,0 | 0,27 | 37,0 | 8,40 | 10,0 | 16,0 | 10,0 | 0,47 | 21,0 |
| 2,60 | 13,0 | 17,0 | 13,0 | 0,53 | 24,0 | 8,60 | 8,0 | 15,0 | 8,0 | 0,33 | 24,0 |
| 2,80 | 13,0 | 21,0 | 13,0 | 0,67 | 19,0 | 8,80 | 11,0 | 16,0 | 11,0 | 0,53 | 21,0 |
| 3,00 | 14,0 | 24,0 | 14,0 | 0,60 | 23,0 | 9,00 | 9,0 | 17,0 | 9,0 | 0,53 | 17,0 |
| 3,20 | 13,0 | 22,0 | 13,0 | 0,60 | 22,0 | 9,20 | 9,0 | 17,0 | 9,0 | 0,53 | 17,0 |
| 3,40 | 8,0 | 17,0 | 8,0 | 0,40 | 20,0 | 9,40 | 14,0 | 22,0 | 14,0 | 0,47 | 30,0 |
| 3,60 | 11,0 | 17,0 | 11,0 | 0,53 | 21,0 | 9,60 | 14,0 | 21,0 | 14,0 | 0,60 | 23,0 |
| 3,80 | 11,0 | 19,0 | 11,0 | 0,27 | 41,0 | 9,80 | 11,0 | 20,0 | 11,0 | 0,60 | 18,0 |
| 4,00 | 11,0 | 15,0 | 11,0 | 0,67 | 16,0 | 10,00 | 9,0 | 18,0 | 9,0 | 0,60 | 15,0 |
| 4,20 | 14,0 | 24,0 | 14,0 | 0,73 | 19,0 | 10,20 | 8,0 | 17,0 | 8,0 | 0,53 | 15,0 |
| 4,40 | 15,0 | 26,0 | 15,0 | 0,80 | 19,0 | 10,40 | 10,0 | 18,0 | 10,0 | 0,53 | 19,0 |
| 4,60 | 10,0 | 22,0 | 10,0 | 0,53 | 19,0 | 10,60 | 11,0 | 19,0 | 11,0 | 0,67 | 16,0 |
| 4,80 | 11,0 | 19,0 | 11,0 | 0,60 | 18,0 | 10,80 | 10,0 | 20,0 | 10,0 | 0,60 | 17,0 |
| 5,00 | 8,0 | 17,0 | 8,0 | 0,47 | 17,0 | 11,00 | 12,0 | 21,0 | 12,0 | 0,33 | 36,0 |
| 5,20 | 9,0 | 16,0 | 9,0 | 0,53 | 17,0 | 11,20 | 10,0 | 15,0 | 10,0 | 0,53 | 19,0 |
| 5,40 | 13,0 | 21,0 | 13,0 | 0,80 | 16,0 | 11,40 | 11,0 | 19,0 | 11,0 | 0,40 | 27,0 |
| 5,60 | 12,0 | 24,0 | 12,0 | 0,67 | 18,0 | 11,60 | 10,0 | 16,0 | 10,0 | 0,40 | 25,0 |
| 5,80 | 13,0 | 23,0 | 13,0 | 0,47 | 28,0 | 11,80 | 12,0 | 18,0 | 12,0 | 0,40 | 30,0 |
| 6,00 | 9,0 | 16,0 | 9,0 | 0,53 | 17,0 | 12,00 | 13,0 | 19,0 | 13,0 | ---- | ---- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
 - punta meccanica tipo Begemann ø = 35.7 mm (area punta 10 cm² - apertura 60°)
 - manicotto laterale (superficie 150 cm²)

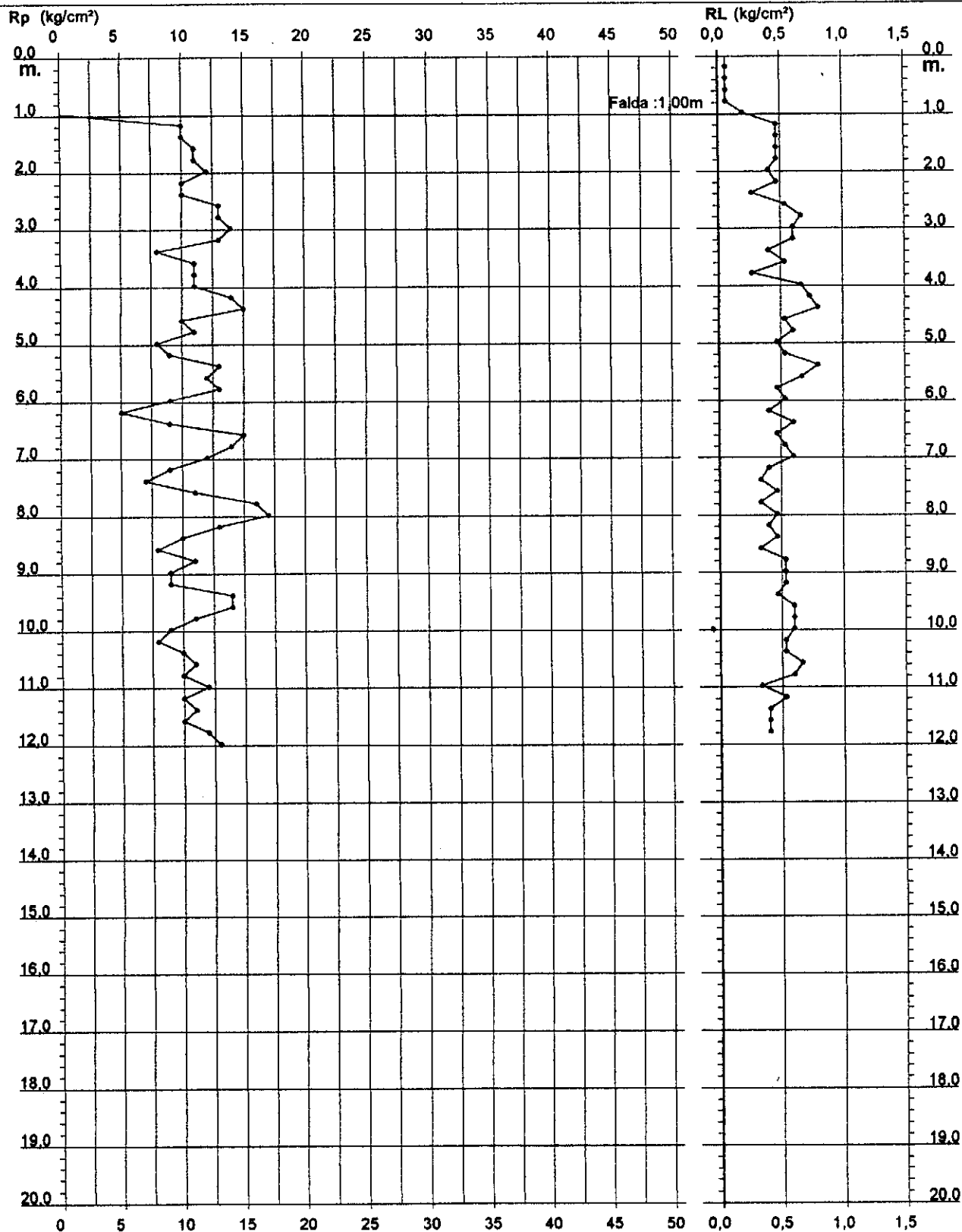
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 2

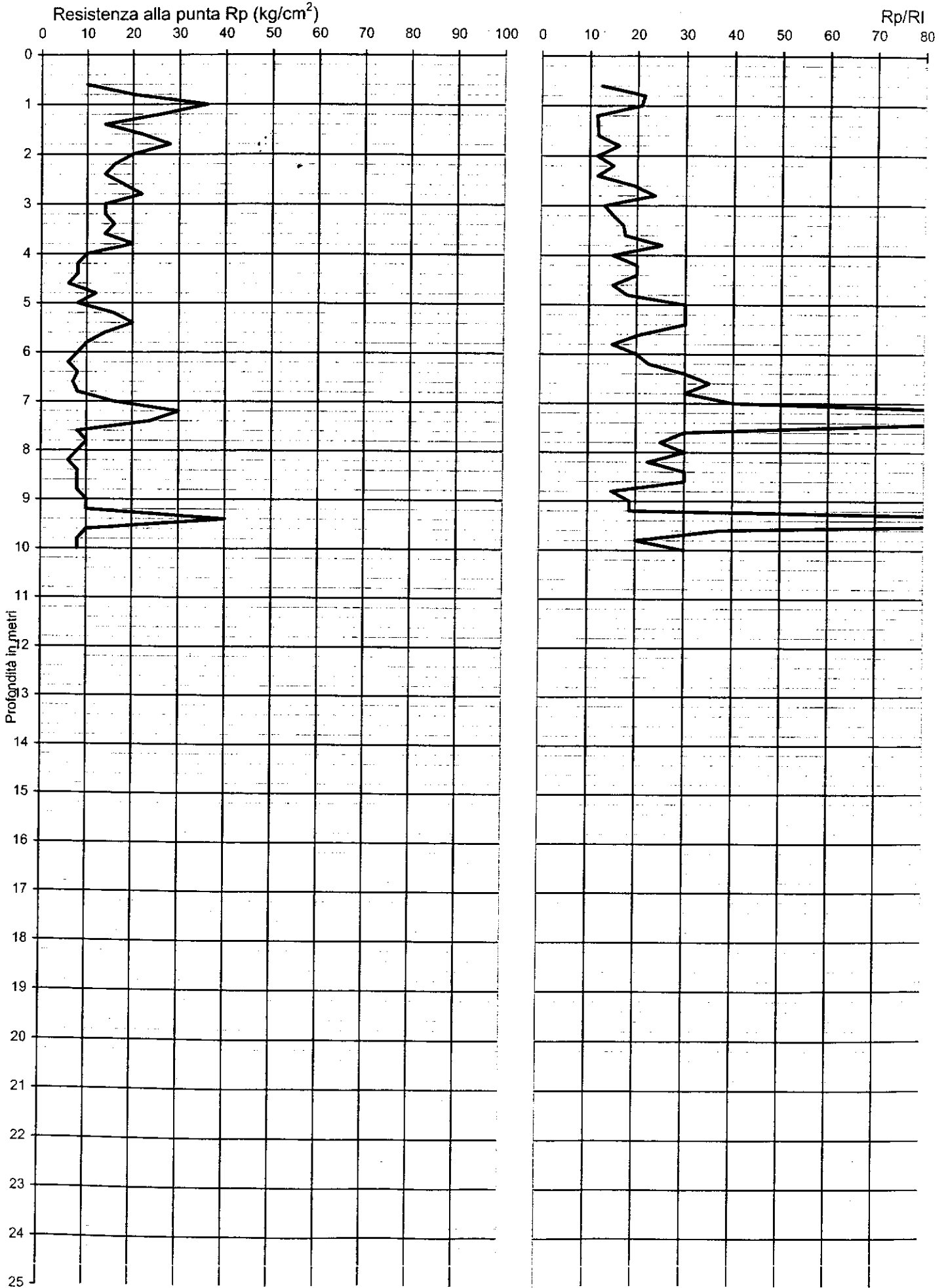
2.010496-43

- committente :
- lavoro : Realizzazione di civile fabbricato
- località : Via Fermi - Nonantola (MO)
- note : Preforo con escavatore meccanico a -1.00 m da p.c.

- data : 18/01/2000
- quota inizio : -1,00 m da quota riferim.
- prof. falda : 1,00 m da quota inizio
- scala vert.: 1 : 100



Via AUSTRIA, 24 - 41100 MODENA





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999
Telefax 059/454827



SINERT

UNI EN ISO 9001:2000
CERTIFICATO N. 156

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O DOTT. MACCAFERRI
Località : VIA MAESTRA DI REDU'-NONANTOLA
Prova numero : 2
Data : 19/09/2006
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 0,80 | 20 | 34 | 20 | 0,93 | 21,43 |
| 1,00 | 36 | 62 | 36 | 1,73 | 20,77 |
| 1,20 | 26 | 60 | 26 | 2,27 | 11,47 |
| 1,40 | 14 | 32 | 14 | 1,20 | 11,67 |
| 1,60 | 22 | 50 | 22 | 1,87 | 11,79 |
| 1,80 | 28 | 54 | 28 | 1,73 | 16,15 |
| 2,00 | 20 | 46 | 20 | 1,73 | 11,54 |
| 2,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 2,40 | 14 | 32 | 14 | 1,20 | 11,67 |
| 2,60 | 18 | 32 | 18 | 0,93 | 19,29 |
| 2,80 | 22 | 36 | 22 | 0,93 | 23,57 |
| 3,00 | 14 | 30 | 14 | 1,07 | 13,13 |
| 3,20 | 14 | 28 | 14 | 0,93 | 15,00 |
| 3,40 | 16 | 30 | 16 | 0,93 | 17,14 |
| 3,60 | 14 | 26 | 14 | 0,80 | 17,50 |
| 3,80 | 20 | 32 | 20 | 0,80 | 25,00 |
| 4,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 4,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 4,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 5,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,20 | 16 | 24 | 16 | 0,53 | 30,00 |
| 5,40 | 20 | 30 | 20 | 0,67 | 30,00 |
| 5,60 | 14 | 24 | 14 | 0,67 | 21,00 |
| 5,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 6,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,60 | 7 | 10 | 7 | 0,20 | 35,00 |
| 6,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,00 | 16 | 22 | 16 | 0,40 | 40,00 |
| 7,20 | 30 | 34 | 30 | 0,27 | 112,50 |
| 7,40 | 24 | 28 | 24 | 0,27 | 90,00 |
| 7,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 8,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,40 | 40 | 44 | 40 | 0,27 | 150,00 |
| 9,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 9,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
| 11,20 | | | | | |
| 11,40 | | | | | |
| 11,60 | | | | | |
| 11,80 | | | | | |
| 12,00 | | | | | |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

41051 CASTELNUOVO R. (MO)Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. 30-00

**PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA****CPT 1**

2.010496-042

- committente : Arkigeo
 - lavoro :
 - località : Nonantola (MO)
 - note :

- data : 31/05/2000
 - quota inizio : Piano Campagna
 - prof. falda : 1,90 m da quota inizio
 - pagina : 1

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | 35,0 | 42,0 | 35,0 | 0,53 | 66,0 | 5,20 | 25,0 | 43,0 | 25,0 | 0,87 | 29,0 |
| 0,40 | 28,0 | 36,0 | 28,0 | 0,87 | 32,0 | 5,40 | 21,0 | 34,0 | 21,0 | 0,47 | 45,0 |
| 0,60 | 29,0 | 42,0 | 29,0 | 0,87 | 33,0 | 5,60 | 21,0 | 28,0 | 21,0 | 0,33 | 63,0 |
| 0,80 | 23,0 | 36,0 | 23,0 | 1,53 | 15,0 | 5,80 | 17,0 | 22,0 | 17,0 | 0,20 | 85,0 |
| 1,00 | 23,0 | 46,0 | 23,0 | 0,20 | 115,0 | 6,00 | 22,0 | 25,0 | 22,0 | 1,00 | 22,0 |
| 1,20 | 17,0 | 20,0 | 17,0 | 0,47 | 36,0 | 6,20 | 18,0 | 33,0 | 18,0 | 0,40 | 45,0 |
| 1,40 | 12,0 | 19,0 | 12,0 | 0,80 | 15,0 | 6,40 | 13,0 | 19,0 | 13,0 | 0,60 | 22,0 |
| 1,60 | 16,0 | 28,0 | 16,0 | 0,67 | 24,0 | 6,60 | 18,0 | 27,0 | 18,0 | 0,20 | 90,0 |
| 1,80 | 14,0 | 24,0 | 14,0 | 0,60 | 23,0 | 6,80 | 20,0 | 23,0 | 20,0 | 1,00 | 20,0 |
| 2,00 | 13,0 | 22,0 | 13,0 | 0,60 | 22,0 | 7,00 | 23,0 | 38,0 | 23,0 | 0,87 | 27,0 |
| 2,20 | 17,0 | 26,0 | 17,0 | 0,60 | 28,0 | 7,20 | 21,0 | 34,0 | 21,0 | 1,00 | 21,0 |
| 2,40 | 17,0 | 26,0 | 17,0 | 0,27 | 64,0 | 7,40 | 27,0 | 42,0 | 27,0 | 1,27 | 21,0 |
| 2,60 | 19,0 | 23,0 | 19,0 | 1,00 | 19,0 | 7,60 | 32,0 | 51,0 | 32,0 | 1,07 | 30,0 |
| 2,80 | 23,0 | 38,0 | 23,0 | 1,13 | 20,0 | 7,80 | 32,0 | 48,0 | 32,0 | 1,67 | 19,0 |
| 3,00 | 15,0 | 32,0 | 15,0 | 0,80 | 19,0 | 8,00 | 26,0 | 51,0 | 26,0 | 1,13 | 23,0 |
| 3,20 | 13,0 | 25,0 | 13,0 | 0,53 | 24,0 | 8,20 | 28,0 | 45,0 | 28,0 | 1,40 | 20,0 |
| 3,40 | 20,0 | 28,0 | 20,0 | 0,33 | 60,0 | 8,40 | 28,0 | 49,0 | 28,0 | 1,33 | 21,0 |
| 3,60 | 17,0 | 22,0 | 17,0 | 0,80 | 21,0 | 8,60 | 27,0 | 47,0 | 27,0 | 1,27 | 21,0 |
| 3,80 | 16,0 | 28,0 | 16,0 | 0,40 | 40,0 | 8,80 | 31,0 | 50,0 | 31,0 | 1,20 | 26,0 |
| 4,00 | 19,0 | 25,0 | 19,0 | 0,80 | 24,0 | 9,00 | 24,0 | 42,0 | 24,0 | 1,13 | 21,0 |
| 4,20 | 18,0 | 30,0 | 18,0 | 0,80 | 22,0 | 9,20 | 17,0 | 34,0 | 17,0 | 0,27 | 64,0 |
| 4,40 | 20,0 | 32,0 | 20,0 | 0,93 | 21,0 | 9,40 | 15,0 | 19,0 | 15,0 | 0,87 | 17,0 |
| 4,60 | 22,0 | 36,0 | 22,0 | 0,87 | 25,0 | 9,60 | 13,0 | 26,0 | 13,0 | 0,93 | 14,0 |
| 4,80 | 21,0 | 34,0 | 21,0 | 0,80 | 26,0 | 9,80 | 14,0 | 28,0 | 14,0 | 0,67 | 21,0 |
| 5,00 | 24,0 | 36,0 | 24,0 | 1,20 | 20,0 | 10,00 | 16,0 | 26,0 | 16,0 | ---- | ---- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. 30-00

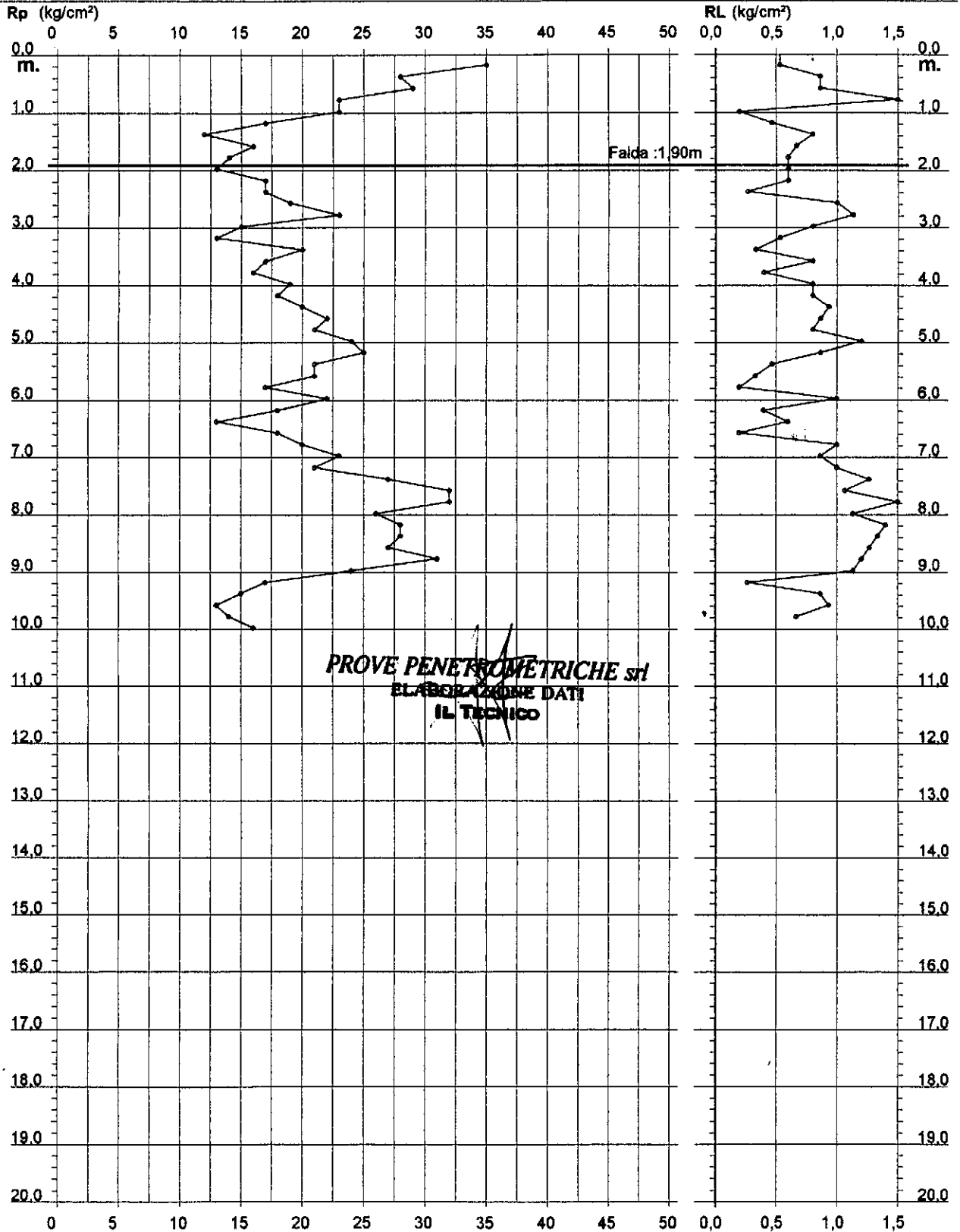
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

2.010496-042

- committente : Arkigeo
- lavoro :
- località : Nonantola (MO)

- data : 31/05/2000
- quota inizio : Piano Campagna
- prof. falda : 1,90 m da quota inizio
- scala vert.: 1 : 100



41051 CASTELNUOVO R. (MO)Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. 30-00

**PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA****CPT 2**
2.010496-042- committente : Arkigeo
- lavoro :
- località : Nonantola (MO)
- note :- data : 31/05/2000
- quota inizio : Piano Campagna
- prof. falda : 2,20 m da quota inizio
- pagina : 1

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | 31,0 | 41,0 | 31,0 | 0,67 | 46,0 | 5,20 | 19,0 | 34,0 | 19,0 | 0,33 | 57,0 |
| 0,40 | 28,0 | 38,0 | 28,0 | 1,20 | 23,0 | 5,40 | 18,0 | 23,0 | 18,0 | 1,20 | 15,0 |
| 0,60 | 21,0 | 39,0 | 21,0 | 0,47 | 45,0 | 5,60 | 18,0 | 36,0 | 18,0 | 0,60 | 30,0 |
| 0,80 | 22,0 | 29,0 | 22,0 | 1,13 | 19,0 | 5,80 | 18,0 | 27,0 | 18,0 | 0,87 | 21,0 |
| 1,00 | 22,0 | 39,0 | 22,0 | 1,07 | 21,0 | 6,00 | 13,0 | 26,0 | 13,0 | 1,13 | 11,0 |
| 1,20 | 19,0 | 35,0 | 19,0 | 0,93 | 20,0 | 6,20 | 13,0 | 30,0 | 13,0 | 1,53 | 8,0 |
| 1,40 | 17,0 | 31,0 | 17,0 | 0,40 | 42,0 | 6,40 | 11,0 | 34,0 | 11,0 | 0,60 | 18,0 |
| 1,60 | 14,0 | 20,0 | 14,0 | 0,87 | 16,0 | 6,60 | 12,0 | 21,0 | 12,0 | 1,27 | 9,0 |
| 1,80 | 18,0 | 31,0 | 18,0 | 1,13 | 16,0 | 6,80 | 15,0 | 34,0 | 15,0 | 0,67 | 22,0 |
| 2,00 | 14,0 | 31,0 | 14,0 | 1,00 | 14,0 | 7,00 | 26,0 | 36,0 | 26,0 | 1,00 | 26,0 |
| 2,20 | 15,0 | 30,0 | 15,0 | 0,60 | 25,0 | 7,20 | 23,0 | 38,0 | 23,0 | 1,73 | 13,0 |
| 2,40 | 15,0 | 24,0 | 15,0 | 0,33 | 45,0 | 7,40 | 25,0 | 51,0 | 25,0 | 0,93 | 27,0 |
| 2,60 | 17,0 | 22,0 | 17,0 | 0,33 | 51,0 | 7,60 | 30,0 | 44,0 | 30,0 | 0,40 | 75,0 |
| 2,80 | 19,0 | 24,0 | 19,0 | 0,67 | 28,0 | 7,80 | 35,0 | 41,0 | 35,0 | 1,00 | 35,0 |
| 3,00 | 19,0 | 29,0 | 19,0 | 1,07 | 18,0 | 8,00 | 26,0 | 41,0 | 26,0 | 1,47 | 18,0 |
| 3,20 | 9,0 | 25,0 | 9,0 | 0,53 | 17,0 | 8,20 | 24,0 | 46,0 | 24,0 | 0,33 | 72,0 |
| 3,40 | 6,0 | 14,0 | 6,0 | 0,33 | 18,0 | 8,40 | 23,0 | 28,0 | 23,0 | 0,80 | 29,0 |
| 3,60 | 15,0 | 20,0 | 15,0 | 0,33 | 45,0 | 8,60 | 22,0 | 34,0 | 22,0 | 0,53 | 41,0 |
| 3,80 | 17,0 | 22,0 | 17,0 | 0,87 | 20,0 | 8,80 | 25,0 | 33,0 | 25,0 | 0,87 | 29,0 |
| 4,00 | 19,0 | 32,0 | 19,0 | 0,40 | 47,0 | 9,00 | 13,0 | 26,0 | 13,0 | 2,07 | 6,0 |
| 4,20 | 18,0 | 24,0 | 18,0 | 1,53 | 12,0 | 9,20 | 16,0 | 47,0 | 16,0 | 0,27 | 60,0 |
| 4,40 | 21,0 | 44,0 | 21,0 | 1,13 | 19,0 | 9,40 | 13,0 | 17,0 | 13,0 | 0,53 | 24,0 |
| 4,60 | 17,0 | 34,0 | 17,0 | 1,87 | 9,0 | 9,60 | 13,0 | 21,0 | 13,0 | 0,80 | 16,0 |
| 4,80 | 19,0 | 47,0 | 19,0 | 0,67 | 28,0 | 9,80 | 14,0 | 26,0 | 14,0 | 0,67 | 21,0 |
| 5,00 | 22,0 | 32,0 | 22,0 | 1,00 | 22,0 | 10,00 | 15,0 | 25,0 | 15,0 | --- | --- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. 30-00

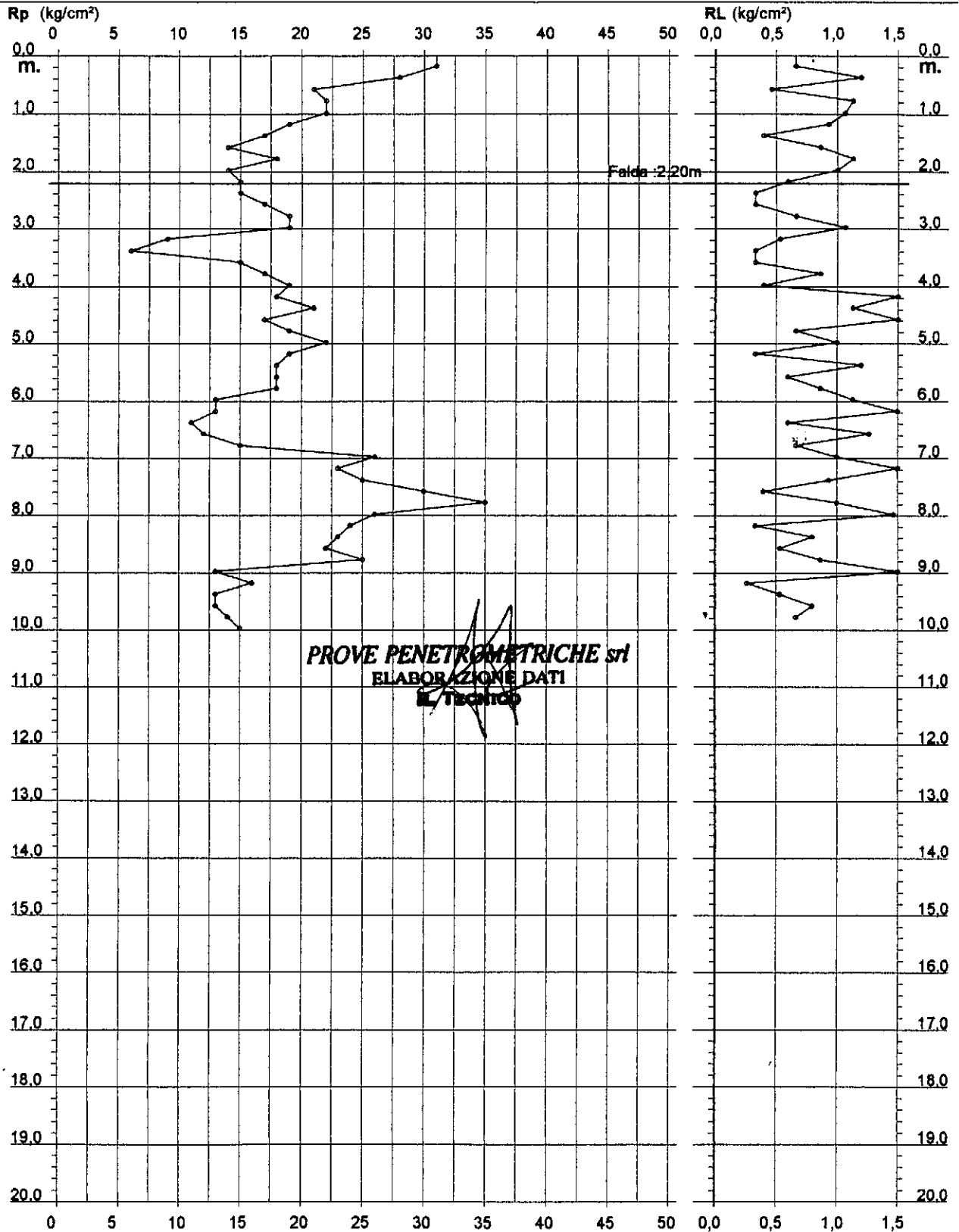
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 2

2.010496-042

- committente : Arkigeo
- lavoro :
- località : Nonantola (MO)

- data : 31/05/2000
- quota inizio : Piano Campagna
- prof. falda : 2,20 m da quota inizio
- scala vert.: 1 : 100



41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. 30-00

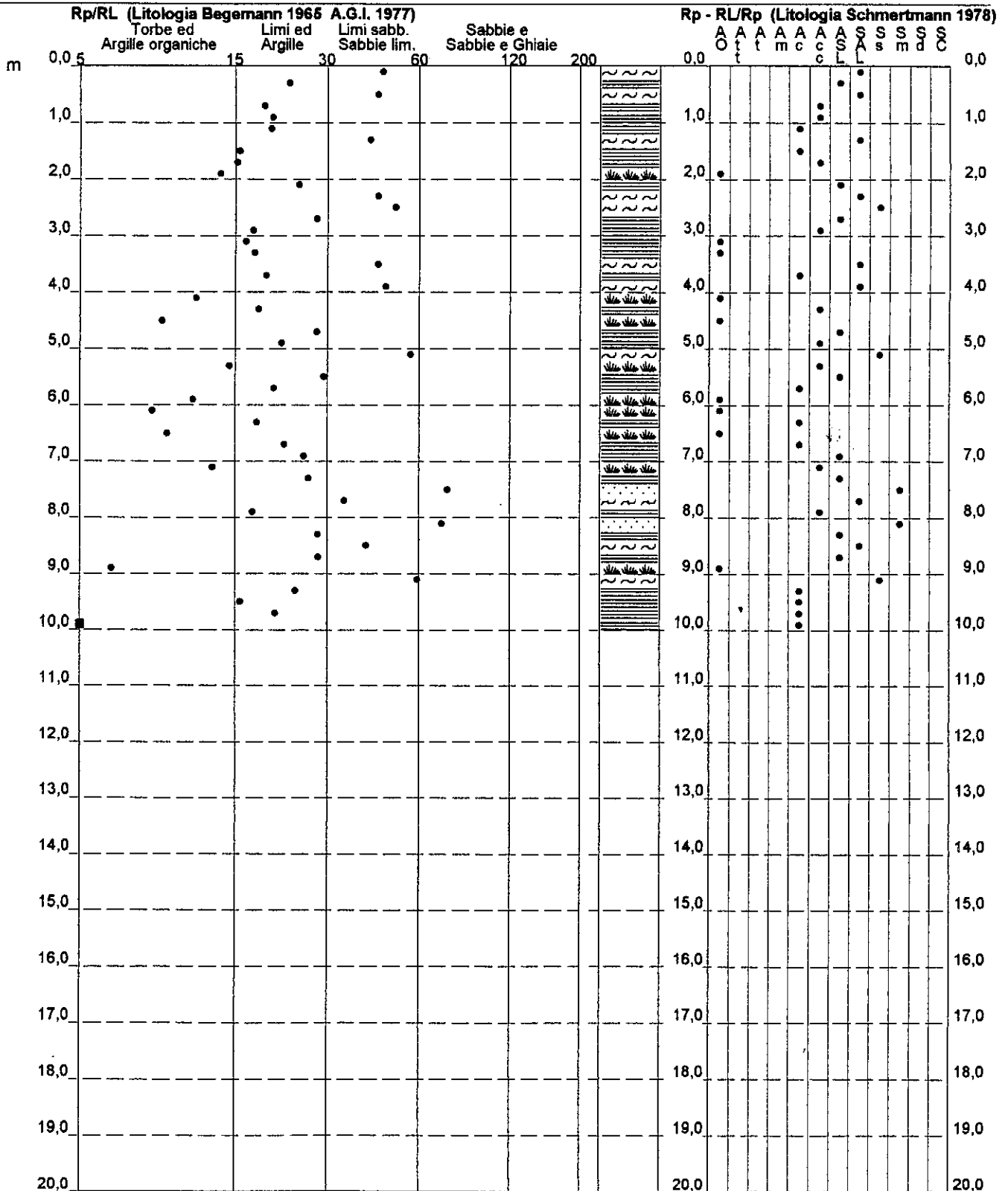
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 2

2.010496-042

- committente : Arkigeo
- lavoro :
- località : Nonantola (MO)
- note :

- data : 31/05/2000
- quota inizio : Piano Campagna
- prof. falda : 2,20 m da quota inizio
- scala vert.: 1 : 100

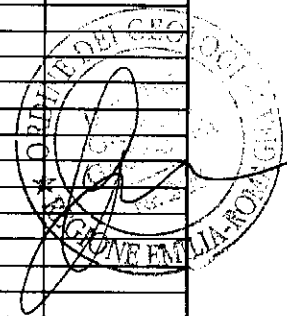
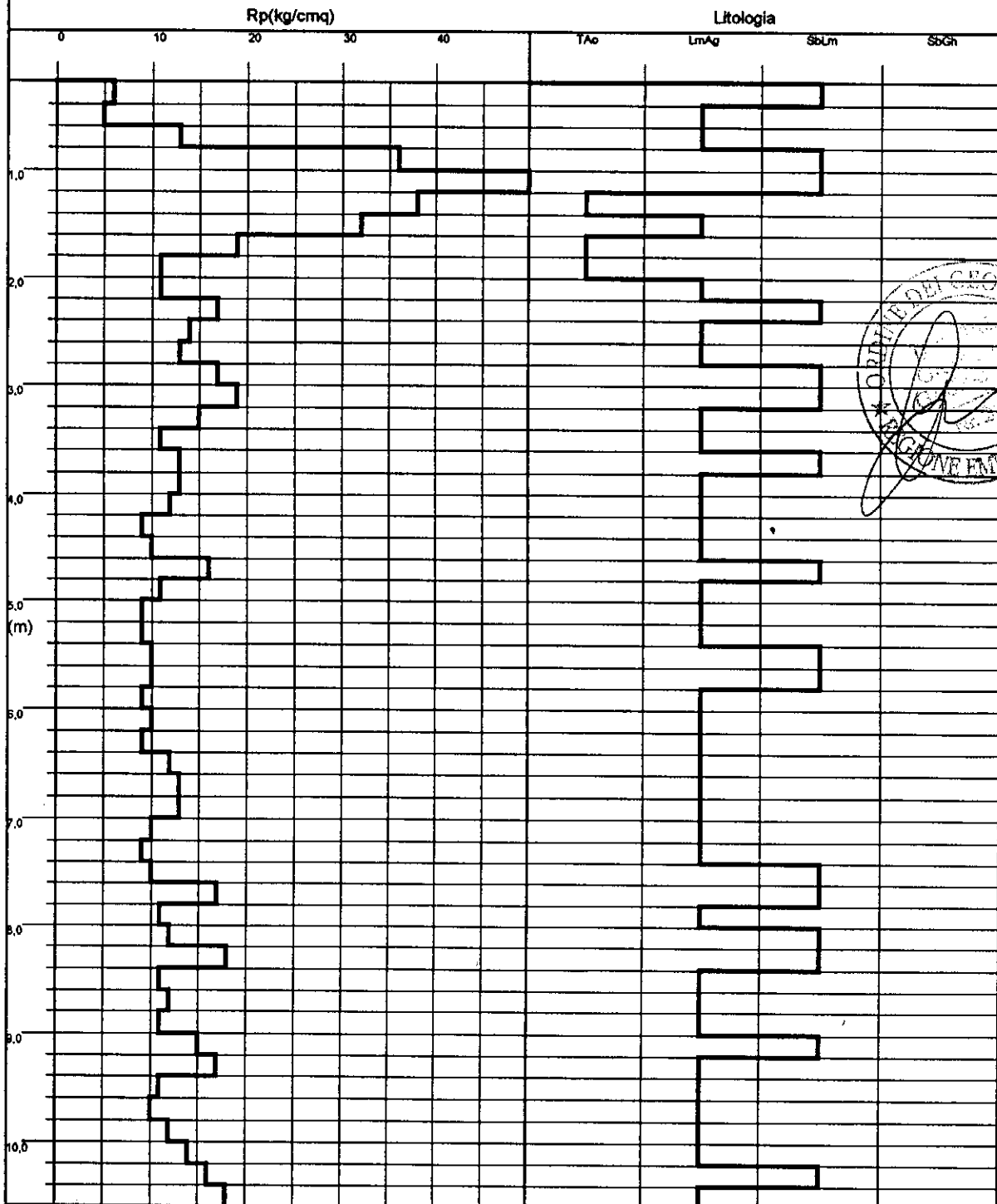


1

Grafico correlazione CPT - Litologia

Legenda (criterio di Begemann)

Tao = Torba e argilla organica
 LmAg = Limo e argilla
 SbLm = Sabbia + limo
 SbGh = Sabbia e sabbia + ghiaia

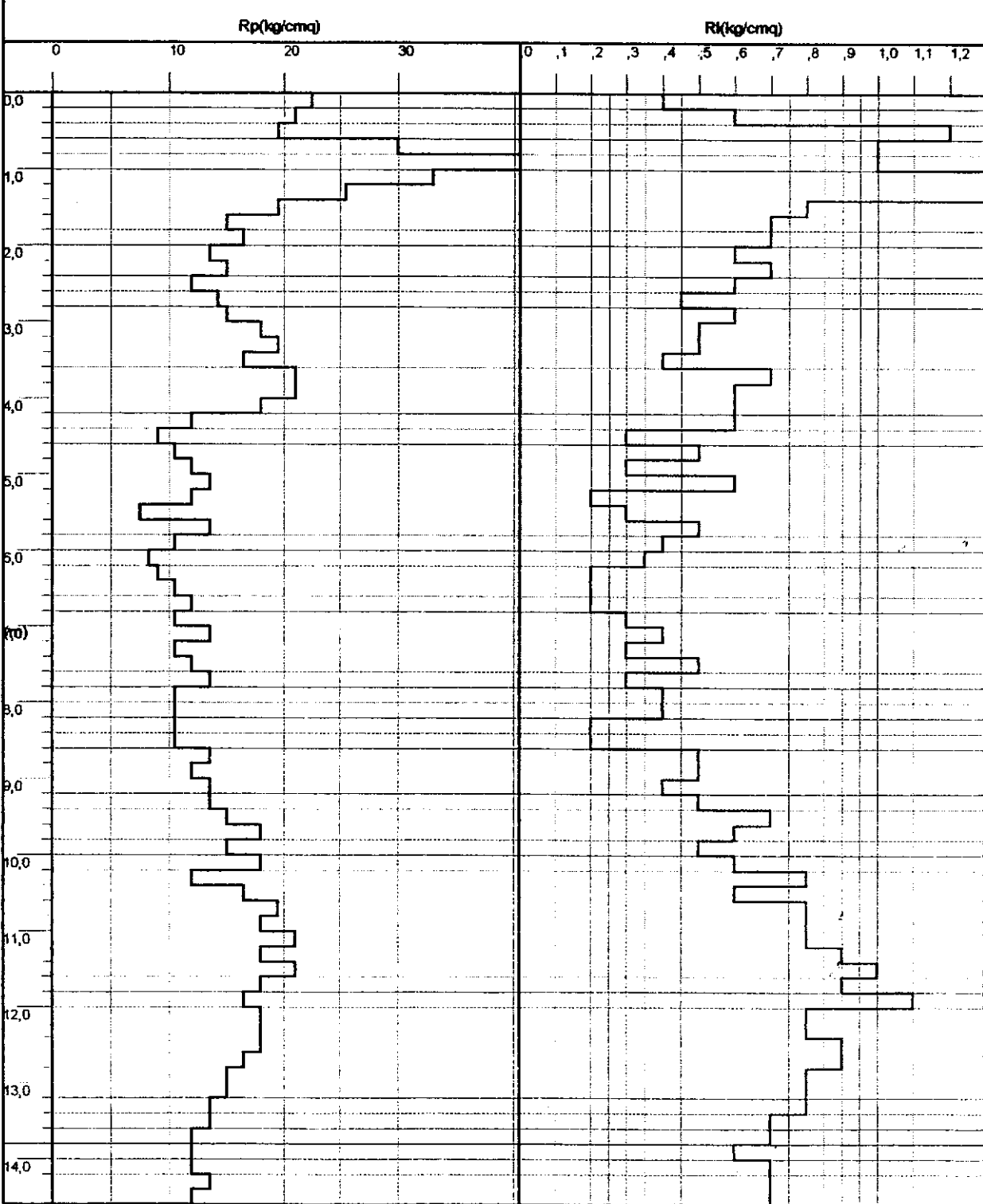


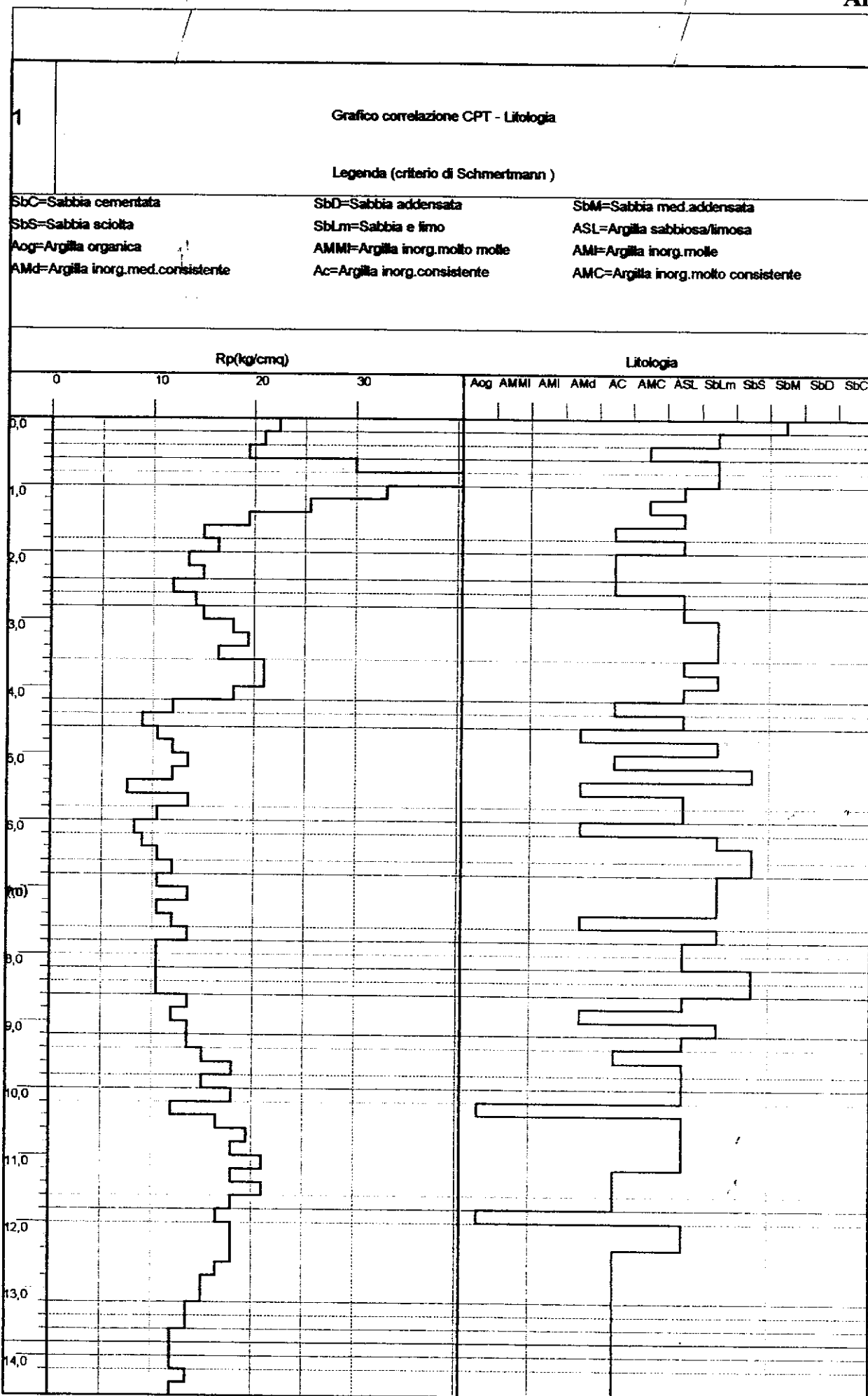
| Prof. (m) | Letture di cantiere | | Valori trasformati | |
|--------------|---------------------|-------|--------------------|-------------|
| | Rp | Rl | Rp (Kg/cmq) | Rl (Kg/cmq) |
| 0,20 | 15,00 | 19,00 | 22,50 | 0,40 |
| 0,40 | 14,00 | 20,00 | 21,00 | 0,60 |
| 0,60 | 13,00 | 25,00 | 19,50 | 1,20 |
| 0,80 | 20,00 | 30,00 | 30,00 | 1,00 |
| 1,00 | 27,00 | 37,00 | 40,50 | 1,00 |
| 1,20 | 22,00 | 35,00 | 33,00 | 1,30 |
| 1,40 | 17,00 | 30,00 | 25,50 | 1,30 |
| 1,60 | 13,00 | 21,00 | 19,50 | 0,80 |
| 1,80 | 10,00 | 17,00 | 15,00 | 0,70 |
| 2,00 | 11,00 | 18,00 | 16,50 | 0,70 |
| 2,20 | 9,00 | 15,00 | 13,50 | 0,60 |
| 2,40 | 10,00 | 17,00 | 15,00 | 0,70 |
| 2,60 | 8,00 | 14,00 | 12,00 | 0,60 |
| 2,80 | 9,50 | 14,00 | 14,25 | 0,45 |
| 3,00 | 10,00 | 16,00 | 15,00 | 0,60 |
| 3,20 | 12,00 | 17,00 | 18,00 | 0,50 |
| 3,40 | 13,00 | 18,00 | 19,50 | 0,50 |
| 3,60 | 11,00 | 15,00 | 16,50 | 0,40 |
| 3,80 | 14,00 | 21,00 | 21,00 | 0,70 |
| 4,00 | 14,00 | 20,00 | 21,00 | 0,60 |
| 4,20 | 12,00 | 18,00 | 18,00 | 0,60 |
| 4,40 | 8,00 | 14,00 | 12,00 | 0,60 |
| 4,60 | 6,00 | 9,00 | 9,00 | 0,30 |
| 4,80 | 7,00 | 12,00 | 10,50 | 0,50 |
| 5,00 | 8,00 | 11,00 | 12,00 | 0,30 |
| 5,20 | 9,00 | 15,00 | 13,50 | 0,60 |
| 5,40 | 8,00 | 10,00 | 12,00 | 0,20 |
| 5,60 | 5,00 | 8,00 | 7,50 | 0,30 |
| 5,80 | 9,00 | 14,00 | 13,50 | 0,50 |
| 6,00 | 7,00 | 11,00 | 10,50 | 0,40 |
| 6,20 | 5,50 | 9,00 | 8,25 | 0,35 |
| 6,40 | 6,00 | 8,00 | 9,00 | 0,20 |
| 6,60 | 7,00 | 9,00 | 10,50 | 0,20 |
| 6,80 | 8,00 | 10,00 | 12,00 | 0,20 |
| 7,00 | 7,00 | 10,00 | 10,50 | 0,30 |
| 7,20 | 9,00 | 13,00 | 13,50 | 0,40 |
| 7,40 | 7,00 | 10,00 | 10,50 | 0,30 |
| 7,60 | 8,00 | 13,00 | 12,00 | 0,50 |
| 7,80 | 9,00 | 12,00 | 13,50 | 0,30 |
| 8,00 | 7,00 | 11,00 | 10,50 | 0,40 |
| 8,20 | 7,00 | 11,00 | 10,50 | 0,40 |
| 8,40 | 7,00 | 9,00 | 10,50 | 0,20 |
| 8,60 | 7,00 | 9,00 | 10,50 | 0,20 |
| 8,80 | 9,00 | 14,00 | 13,50 | 0,50 |
| 9,00 | 8,00 | 13,00 | 12,00 | 0,50 |
| 9,20 | 9,00 | 13,00 | 13,50 | 0,40 |
| 9,40 | 9,00 | 14,00 | 13,50 | 0,50 |
| 9,60 | 10,00 | 17,00 | 15,00 | 0,70 |
| 9,80 | 12,00 | 18,00 | 18,00 | 0,60 |
| 10,00 | 10,00 | 15,00 | 15,00 | 0,50 |
| 10,20 | 12,00 | 18,00 | 18,00 | 0,60 |
| 10,40 | 8,00 | 16,00 | 12,00 | 0,80 |
| 10,60 | 11,00 | 17,00 | 16,50 | 0,60 |
| 10,80 | 13,00 | 21,00 | 19,50 | 0,80 |
| 11,00 | 12,00 | 20,00 | 18,00 | 0,80 |
| 11,20 | 14,00 | 22,00 | 21,00 | 0,80 |
| 11,40 | 12,00 | 21,00 | 18,00 | 0,90 |
| 11,60 | 14,00 | 24,00 | 21,00 | 1,00 |
| 11,80 | 12,00 | 21,00 | 18,00 | 0,90 |
| 12,00 | 11,00 | 22,00 | 16,50 | 1,10 |
| 12,20 | 12,00 | 20,00 | 18,00 | 0,80 |
| 12,40 | 12,00 | 20,00 | 18,00 | 0,80 |
| 12,60 | 12,00 | 21,00 | 18,00 | 0,90 |
| 12,80 | 11,00 | 20,00 | 16,50 | 0,90 |
| 13,00 | 10,00 | 18,00 | 15,00 | 0,80 |
| 13,20 | 10,00 | 18,00 | 15,00 | 0,80 |
| 13,40 | 9,00 | 17,00 | 13,50 | 0,80 |
| 13,60 | 9,00 | 16,00 | 13,50 | 0,70 |
| 13,80 | 8,00 | 15,00 | 12,00 | 0,70 |
| 14,00 | 8,00 | 14,00 | 12,00 | 0,60 |
| 14,20 | 8,00 | 15,00 | 12,00 | 0,70 |
| 14,40 | 9,00 | 16,00 | 13,50 | 0,70 |
| 14,60 | 8,00 | 15,00 | 12,00 | 0,70 |

| | |
|---|---|
| Dott. Geologo Achille Cremaschi Via G. Garibaldi n° 81 - 46024 Moglia (MN) 0376/598479 - 0335/5214816 | Committente: Essepi s. r. l., Pavullo (MO) - Giacobazzi Dr. Riciero, Nonantola Località: Via G. Donizetti, Via G. Rossini a Nonantola (MO). Data: 1 luglio 2000 |
|---|---|

Falda (m): 2,4 Strumento: Penetrometro statico con spinta massima nominale di 20 ton. e munito di speciale punta Begemann.

Descrizione sito: Superficie topografica presenta dislivelli di qualche decina di centimetri, ma nell'insieme è piana.





LITOLOGIA E PARAMETRI GEOTECNICI

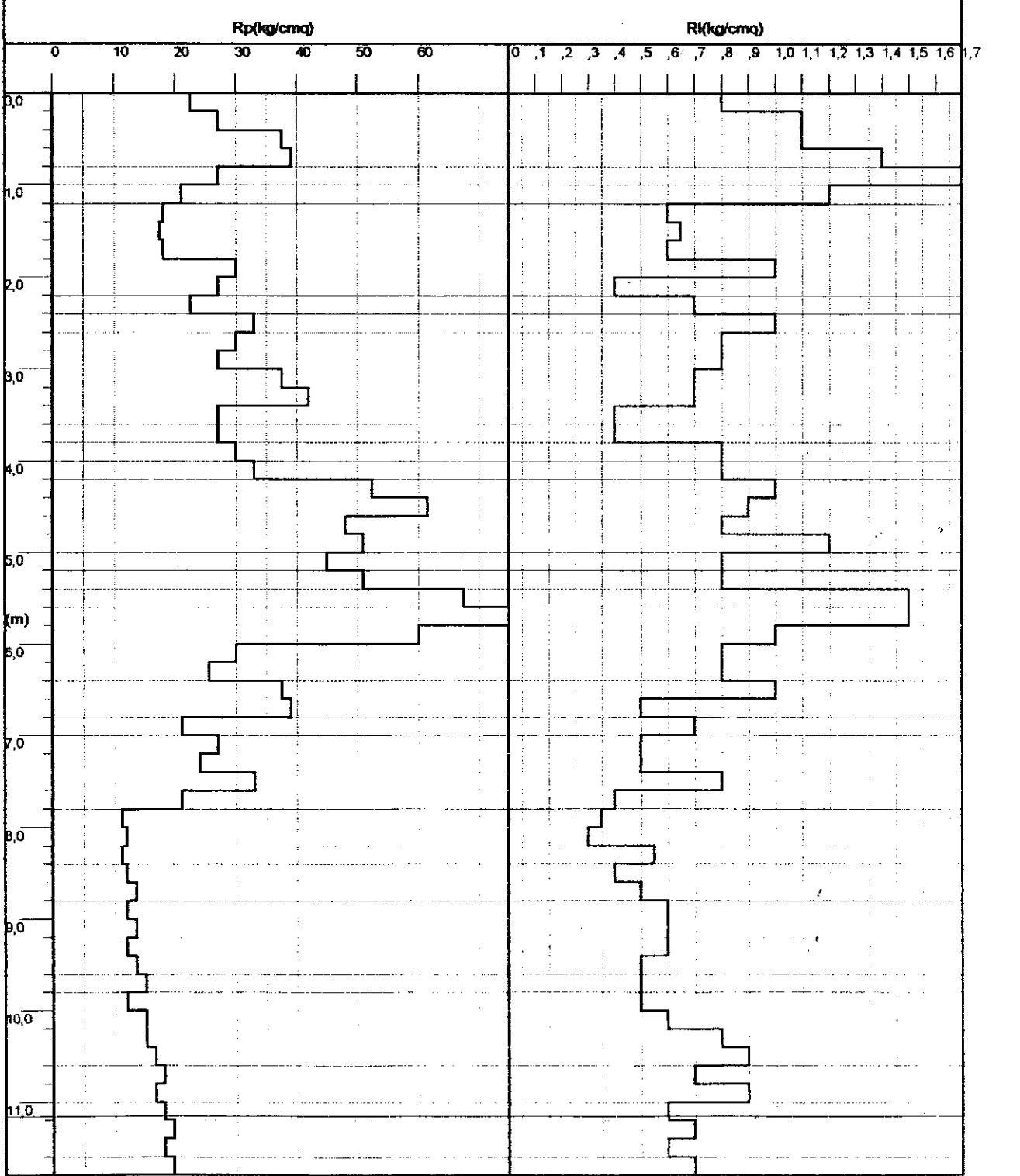
| Descrizione strato | Tetto (m) | Base (m) | Spessore (m) | Phi (°) | Peso secco (Kg/mc) | Peso saturo (Kg/mc) | Peso naturale (Kg/mc) | Dr (%) | E _d (Kg/cmq) | Cu (Kg/cmq) | OCR |
|---|-----------|----------|--------------|---------|--------------------|---------------------|-----------------------|--------|-------------------------|-------------|------|
| Terrno naturale agrario | 0,00 | 0,20 | 0,20 | 32,00 | 1.600,00 | 2.000,00 | 1.800,00 | 50,00 | 200,00 | 0,00 | 0,00 |
| Terrno naturale agrario | 0,20 | 0,40 | 0,20 | 26,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Terrno naturale agrario | 0,40 | 0,60 | 0,20 | 0,00 | 2.100,00 | 2.100,00 | 2.100,00 | 0,00 | 80,00 | 1,50 | 4,00 |
| Sabbia e limo | 0,60 | 1,00 | 0,40 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Argilla sabbiosa/limosa | 1,00 | 1,20 | 0,20 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 80,00 | 1,50 | 1,00 |
| Argilla inorganica molto consistente | 1,20 | 1,40 | 0,20 | 0,00 | 2.100,00 | 2.100,00 | 2.100,00 | 0,00 | 80,00 | 0,50 | 4,00 |
| Argilla sabbiosa/limosa | 1,40 | 1,60 | 0,20 | 0,00 | 1.800,00 | 1.900,00 | 1.900,00 | 0,00 | 80,00 | 0,50 | 1,00 |
| Argilla inorganica consistente | 1,60 | 1,80 | 0,20 | 0,00 | 2.000,00 | 2.000,00 | 2.000,00 | 0,00 | 60,00 | 1,00 | 3,00 |
| Argilla sabbiosa/limosa | 1,80 | 2,00 | 0,20 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla inorganica consistente | 2,00 | 2,60 | 0,60 | 0,00 | 2.000,00 | 2.000,00 | 2.000,00 | 0,00 | 60,00 | 1,00 | 3,00 |
| Argilla sabbiosa/limosa | 2,60 | 3,00 | 0,40 | 0,00 | 1.800,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Sabbia e limo | 3,00 | 3,80 | 0,80 | 28,00 | 1.600,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Argilla sabbiosa/limosa | 3,80 | 3,80 | 0,00 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Sabbia e limo | 3,80 | 4,00 | 0,20 | 28,00 | 1.500,00 | 1.800,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Argilla sabbiosa/limosa | 4,00 | 4,20 | 0,20 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla inorganica consistente | 4,20 | 4,40 | 0,20 | 0,00 | 2.000,00 | 2.000,00 | 2.000,00 | 0,00 | 60,00 | 1,00 | 3,00 |
| Argilla sabbiosa/limosa | 4,40 | 4,80 | 0,40 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla inorganica mediamente consistente | 4,80 | 4,80 | 0,00 | 28,00 | 1.950,00 | 1.950,00 | 1.950,00 | 0,00 | 40,00 | 0,50 | 2,00 |
| Sabbia e limo | 4,80 | 5,00 | 0,20 | 0,00 | 1.500,00 | 1.800,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Argilla inorganica consistente | 5,00 | 5,20 | 0,20 | 0,00 | 2.000,00 | 2.000,00 | 2.000,00 | 0,00 | 60,00 | 1,00 | 3,00 |
| Sabbia sabbia | 5,20 | 5,40 | 0,20 | 30,00 | 1.500,00 | 1.900,00 | 1.700,00 | 30,00 | 150,00 | 0,00 | 0,00 |
| Argilla inorganica mediamente consistente | 5,40 | 5,80 | 0,40 | 0,00 | 1.950,00 | 1.950,00 | 1.950,00 | 0,00 | 40,00 | 0,50 | 2,00 |
| Argilla sabbiosa/limosa | 5,80 | 6,00 | 0,20 | 0,00 | 1.800,00 | 1.800,00 | 1.800,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla inorganica mediamente consistente | 6,00 | 6,20 | 0,20 | 0,00 | 1.950,00 | 1.950,00 | 1.950,00 | 0,00 | 40,00 | 0,50 | 2,00 |
| Sabbia e limo | 6,20 | 6,40 | 0,20 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Sabbia sabbia | 6,40 | 6,80 | 0,40 | 30,00 | 1.500,00 | 1.900,00 | 1.700,00 | 30,00 | 150,00 | 0,00 | 0,00 |
| Sabbia e limo | 6,80 | 7,40 | 0,60 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Argilla inorganica mediamente consistente | 7,40 | 7,60 | 0,20 | 0,00 | 1.950,00 | 1.950,00 | 1.950,00 | 0,00 | 40,00 | 0,50 | 2,00 |
| Sabbia e limo | 7,60 | 7,80 | 0,20 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Argilla inorganica mediamente consistente | 7,80 | 8,20 | 0,40 | 30,00 | 1.900,00 | 1.900,00 | 1.700,00 | 30,00 | 150,00 | 0,00 | 0,00 |
| Sabbia sabbia | 8,20 | 8,80 | 0,60 | 30,00 | 1.500,00 | 1.900,00 | 1.700,00 | 30,00 | 150,00 | 0,00 | 0,00 |
| Argilla inorganica mediamente consistente | 8,80 | 8,80 | 0,00 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Sabbia e limo | 8,80 | 9,00 | 0,20 | 0,00 | 1.950,00 | 1.950,00 | 1.950,00 | 0,00 | 40,00 | 0,50 | 2,00 |
| Argilla inorganica mediamente consistente | 9,00 | 9,20 | 0,20 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Sabbia e limo | 9,20 | 9,40 | 0,20 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla sabbiosa/limosa | 9,40 | 9,60 | 0,20 | 0,00 | 2.000,00 | 2.000,00 | 2.000,00 | 0,00 | 60,00 | 1,00 | 3,00 |
| Argilla inorganica consistente | 9,60 | 9,80 | 0,20 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla sabbiosa/limosa | 9,80 | 10,20 | 0,40 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla organica | 10,20 | 10,40 | 0,20 | 0,00 | 1.650,00 | 1.650,00 | 1.650,00 | 0,00 | 15,00 | 0,20 | 1,00 |
| Argilla sabbiosa/limosa | 10,40 | 11,20 | 0,80 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla inorganica consistente | 11,20 | 11,80 | 0,60 | 0,00 | 2.000,00 | 2.000,00 | 2.000,00 | 0,00 | 60,00 | 1,00 | 3,00 |
| Argilla organica | 11,80 | 12,00 | 0,20 | 0,00 | 1.650,00 | 1.650,00 | 1.650,00 | 0,00 | 15,00 | 0,20 | 1,00 |
| Argilla sabbiosa/limosa | 12,00 | 12,40 | 0,40 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla inorganica consistente | 12,40 | 14,80 | 2,20 | 0,00 | 2.000,00 | 2.000,00 | 2.000,00 | 0,00 | 60,00 | 1,00 | 3,00 |

| Prof. (m) | Letture di cantiere | | Valori trasformati | |
|--------------|---------------------|-------|--------------------|-------------|
| | Rp | Rl | Rp (Kg/cmq) | Rl (Kg/cmq) |
| 0,20 | 15,00 | 23,00 | 22,50 | 0,80 |
| 0,40 | 18,00 | 29,00 | 27,00 | 1,10 |
| 0,60 | 25,00 | 36,00 | 37,50 | 1,10 |
| 0,80 | 26,00 | 40,00 | 39,00 | 1,40 |
| 1,00 | 18,00 | 35,00 | 27,00 | 1,70 |
| 1,20 | 14,00 | 26,00 | 21,00 | 1,20 |
| 1,40 | 12,00 | 18,00 | 18,00 | 0,60 |
| 1,60 | 11,50 | 18,00 | 17,25 | 0,65 |
| 1,80 | 12,00 | 18,00 | 18,00 | 0,60 |
| 2,00 | 20,00 | 30,00 | 30,00 | 1,00 |
| 2,20 | 18,00 | 22,00 | 27,00 | 0,40 |
| 2,40 | 15,00 | 22,00 | 22,50 | 0,70 |
| 2,60 | 22,00 | 32,00 | 33,00 | 1,00 |
| 2,80 | 20,00 | 28,00 | 30,00 | 0,80 |
| 3,00 | 18,00 | 26,00 | 27,00 | 0,80 |
| 3,20 | 25,00 | 32,00 | 37,50 | 0,70 |
| 3,40 | 28,00 | 35,00 | 42,00 | 0,70 |
| 3,60 | 18,00 | 22,00 | 27,00 | 0,40 |
| 3,80 | 18,00 | 22,00 | 27,00 | 0,40 |
| 4,00 | 20,00 | 28,00 | 30,00 | 0,80 |
| 4,20 | 22,00 | 30,00 | 33,00 | 0,80 |
| 4,40 | 35,00 | 45,00 | 52,50 | 1,00 |
| 4,60 | 41,00 | 50,00 | 61,50 | 0,90 |
| 4,80 | 32,00 | 40,00 | 48,00 | 0,80 |
| 5,00 | 34,00 | 46,00 | 51,00 | 1,20 |
| 5,20 | 30,00 | 38,00 | 45,00 | 0,80 |
| 5,40 | 34,00 | 42,00 | 51,00 | 0,80 |
| 5,60 | 45,00 | 60,00 | 67,50 | 1,50 |
| 5,80 | 50,00 | 65,00 | 75,00 | 1,50 |
| 6,00 | 40,00 | 50,00 | 60,00 | 1,00 |
| 6,20 | 20,00 | 28,00 | 30,00 | 0,80 |
| 6,40 | 17,00 | 25,00 | 25,50 | 0,80 |
| 6,60 | 25,00 | 35,00 | 37,50 | 1,00 |
| 6,80 | 26,00 | 31,00 | 39,00 | 0,50 |
| 7,00 | 14,00 | 21,00 | 21,00 | 0,70 |
| 7,20 | 18,00 | 23,00 | 27,00 | 0,50 |
| 7,40 | 16,00 | 21,00 | 24,00 | 0,50 |
| 7,60 | 22,00 | 30,00 | 33,00 | 0,80 |
| 7,80 | 14,00 | 18,00 | 21,00 | 0,40 |
| 8,00 | 7,50 | 11,00 | 11,25 | 0,35 |
| 8,20 | 8,00 | 11,00 | 12,00 | 0,30 |
| 8,40 | 7,50 | 13,00 | 11,25 | 0,55 |
| 8,60 | 8,00 | 12,00 | 12,00 | 0,40 |
| 8,80 | 9,00 | 14,00 | 13,50 | 0,50 |
| 9,00 | 8,00 | 14,00 | 12,00 | 0,60 |
| 9,20 | 9,00 | 15,00 | 13,50 | 0,60 |
| 9,40 | 8,00 | 14,00 | 12,00 | 0,60 |
| 9,60 | 9,00 | 14,00 | 13,50 | 0,50 |
| 9,80 | 10,00 | 15,00 | 15,00 | 0,50 |
| 10,00 | 8,00 | 13,00 | 12,00 | 0,50 |
| 10,20 | 10,00 | 16,00 | 15,00 | 0,60 |
| 10,40 | 10,00 | 18,00 | 15,00 | 0,80 |
| 10,60 | 11,00 | 20,00 | 16,50 | 0,90 |
| 10,80 | 12,00 | 19,00 | 18,00 | 0,70 |
| 11,00 | 11,00 | 20,00 | 16,50 | 0,90 |
| 11,20 | 12,00 | 18,00 | 18,00 | 0,60 |
| 11,40 | 13,00 | 20,00 | 19,50 | 0,70 |
| 11,60 | 12,00 | 18,00 | 18,00 | 0,60 |
| 11,80 | 13,00 | 20,00 | 19,50 | 0,70 |

| | |
|---|--|
| Dott. Geologo Achille Cremaschi Via G. Garibaldi n° 81 - 46024 Moglia (MN) 0376/598479 - 0335/5214816 | Committente:Essepi s. r. l., Pavullo (MO) - Giacobazzi Dr. Riciero, Nonantola Località:Via G. Donizetti, Via G. Rossini a Nonantola (MO). Data:1 luglio 2000 |
|---|--|

Falda (m):1,9 Strumento:Penetrometro statico con spinta massima nominale di 20 ton. e munito di speciale punta Begemann.

Descrizione sito:La superficie topografica presenta dislivelli centimetrici, ma nell'insieme è da considerare piana.

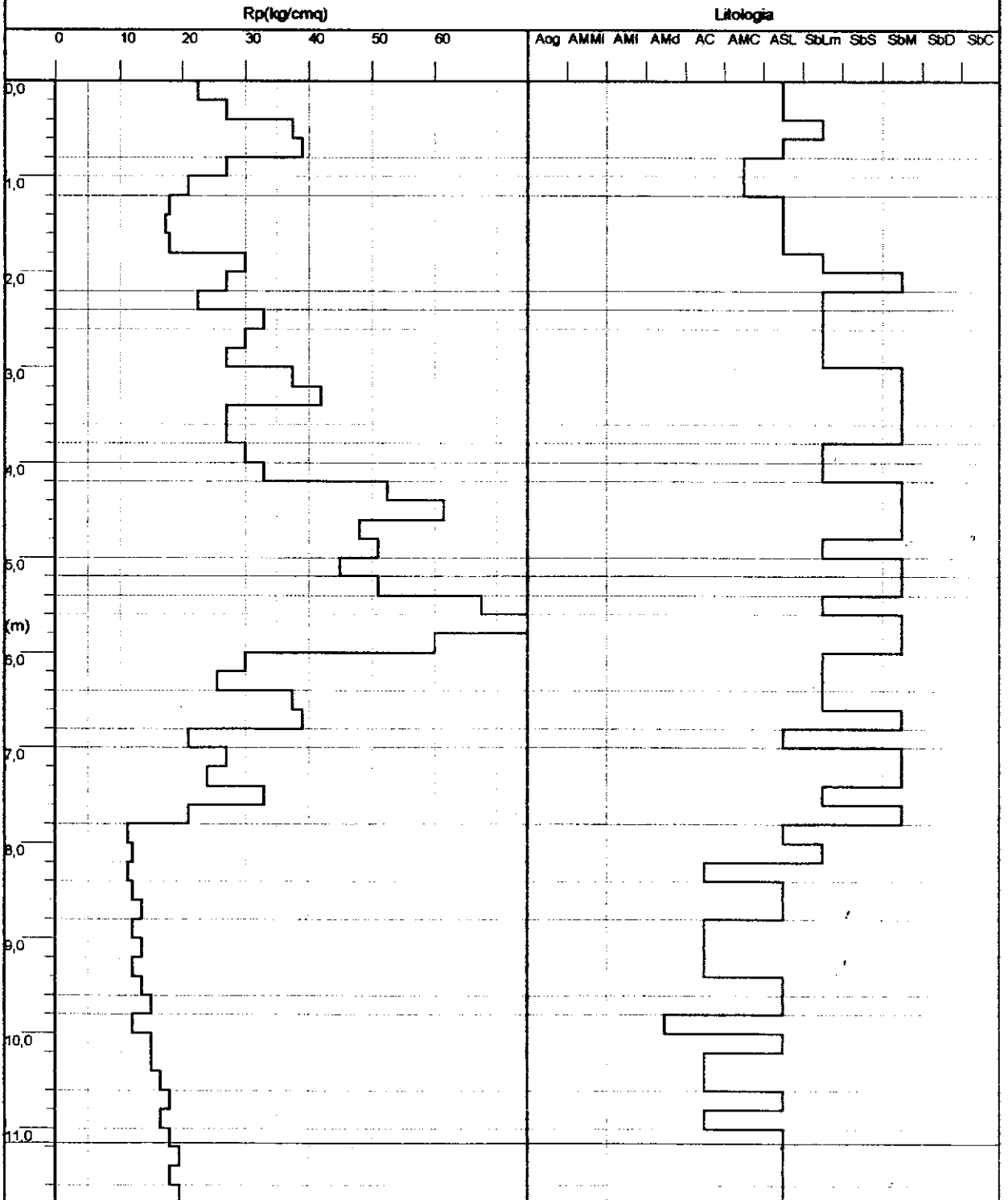


5

Grafico correlazione CPT - Litologia

Legenda (criterio di Schmertmann)

| | | |
|-----------------------------------|--------------------------------|-------------------------------------|
| SbC=Sabbia cementata | SbD=Sabbia addensata | SbM=Sabbia med.addensata |
| SbS=Sabbia sciolta | SbLm=Sabbia e limo | ASL=Argilla sabbiosa/limosa |
| Aog=Argilla organica | AMMI=Argilla inorg.molto molle | AMI=Argilla inorg.molle |
| AMd=Argilla inorg.med.consistente | Ac=Argilla inorg.consistente | AMC=Argilla inorg.molto consistente |



| Descrizione strato | Tetto (m) | Base (m) | Spessore (m) | Phi (°) | Peso secco (Kg/m ³) | Peso saturo (Kg/m ³) | Peso naturale (Kg/m ³) | Dr (%) | Ed (Kg/cm ²) | Cu (Kg/cm ²) | OCR |
|---|-----------|----------|--------------|---------|---------------------------------|----------------------------------|------------------------------------|--------|--------------------------|--------------------------|------|
| Terreno naturale agrario | 0,00 | 0,40 | 0,40 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Terreno naturale agrario | 0,40 | 0,60 | 0,20 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Argilla sabbiosa/limosa | 0,60 | 0,90 | 0,20 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla inorganica molto consistente | 0,90 | 1,20 | 0,40 | 0,00 | 2.100,00 | 2.100,00 | 2.100,00 | 0,00 | 80,00 | 1,50 | 4,00 |
| Argilla sabbiosa/limosa | 1,20 | 1,80 | 0,60 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Sabbia e limo | 1,80 | 2,00 | 0,20 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Sabbia med. addensata | 2,00 | 2,20 | 0,20 | 32,00 | 1.600,00 | 2.000,00 | 1.800,00 | 50,00 | 200,00 | 0,00 | 0,00 |
| Sabbia e limo | 2,20 | 3,00 | 0,80 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Sabbia med. addensata | 3,00 | 3,90 | 0,90 | 32,00 | 1.600,00 | 2.000,00 | 1.800,00 | 50,00 | 200,00 | 0,00 | 0,00 |
| Sabbia e limo | 3,90 | 4,20 | 0,40 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Sabbia med. addensata | 4,20 | 4,90 | 0,60 | 32,00 | 1.600,00 | 2.000,00 | 1.800,00 | 50,00 | 200,00 | 0,00 | 0,00 |
| Sabbia e limo | 4,90 | 5,00 | 0,20 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Sabbia med. addensata | 5,00 | 5,40 | 0,40 | 32,00 | 1.600,00 | 2.000,00 | 1.800,00 | 50,00 | 200,00 | 0,00 | 0,00 |
| Sabbia e limo | 5,40 | 5,60 | 0,20 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Sabbia med. addensata | 5,60 | 6,00 | 0,40 | 32,00 | 1.600,00 | 2.000,00 | 1.800,00 | 50,00 | 200,00 | 0,00 | 0,00 |
| Sabbia e limo | 6,00 | 6,60 | 0,60 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Sabbia med. addensata | 6,60 | 6,80 | 0,20 | 32,00 | 1.600,00 | 2.000,00 | 1.800,00 | 50,00 | 200,00 | 0,00 | 0,00 |
| Argilla sabbiosa/limosa | 6,80 | 7,00 | 0,20 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Sabbie med. addensata | 7,00 | 7,40 | 0,40 | 32,00 | 1.800,00 | 2.000,00 | 1.800,00 | 50,00 | 200,00 | 0,00 | 0,00 |
| Sabbia e limo | 7,40 | 7,80 | 0,20 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Sabbie med. addensata | 7,80 | 7,90 | 0,20 | 32,00 | 1.800,00 | 2.000,00 | 1.800,00 | 50,00 | 200,00 | 0,00 | 0,00 |
| Argilla sabbiosa/limosa | 7,90 | 8,00 | 0,20 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Sabbia e limo | 8,00 | 8,20 | 0,20 | 28,00 | 1.500,00 | 1.900,00 | 1.700,00 | 20,00 | 150,00 | 0,00 | 0,00 |
| Argilla inorganica consistente | 8,20 | 8,40 | 0,20 | 0,00 | 2.000,00 | 2.000,00 | 2.000,00 | 0,00 | 60,00 | 1,00 | 3,00 |
| Argilla sabbiosa/limosa | 8,40 | 8,90 | 0,40 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla inorganica consistente | 8,90 | 9,80 | 0,60 | 0,00 | 2.000,00 | 2.000,00 | 2.000,00 | 0,00 | 60,00 | 1,00 | 3,00 |
| Argilla sabbiosa/limosa | 9,40 | 9,90 | 0,40 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla inorganica mediamente consistente | 9,90 | 10,00 | 0,20 | 0,00 | 1.850,00 | 1.850,00 | 1.850,00 | 0,00 | 40,00 | 0,50 | 2,00 |
| Argilla inorganica consistente | 10,00 | 10,00 | 0,20 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla inorganica consistente | 10,20 | 10,20 | 0,40 | 0,00 | 2.000,00 | 2.000,00 | 2.000,00 | 0,00 | 60,00 | 1,00 | 3,00 |
| Argilla sabbiosa/limosa | 10,60 | 10,80 | 0,20 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |
| Argilla inorganica consistente | 10,80 | 10,80 | 0,20 | 0,00 | 2.000,00 | 2.000,00 | 2.000,00 | 0,00 | 60,00 | 1,00 | 3,00 |
| Argilla inorganica consistente | 10,80 | 11,00 | 0,20 | 0,00 | 2.000,00 | 2.000,00 | 2.000,00 | 0,00 | 60,00 | 1,00 | 3,00 |
| Argilla sabbiosa/limosa | 11,00 | 11,90 | 0,90 | 0,00 | 1.900,00 | 1.900,00 | 1.900,00 | 0,00 | 60,00 | 0,50 | 1,00 |

| | | |
|----------|--|--|
| 5 | Dott. Geologo Achille Cremaschi | Committente: Essepi s. r. l., Pavullo (MO) - Giacobazzi Dr. Riciero, Nonantola |
| | Via G. Garibaldi n° 81 - 46024 Moglia (MN) | Località: Via G. Donizetti, Via G. Rossini a Nonantola (MO). |
| | 0376/598479 - 0335/5214816 | Data: 1 luglio 2000 |

Falda (m): 1,9 Strumento: Penetrometro statico con spinta massima nominale di 20 ton. e munito di speciale punta Begemann.

Descrizione sito: La superficie topografica presenta dislivelli centimetrici, ma nell'insieme è da considerare piana.

Legenda: Phi(°)=angolo d'attrito - C(kg/cmq)=coesione - E(kg/cmq)=modulo di deformazione
 Pv(kg/mc)=peso di volume naturale - Dr(%)=densità relativa - OCR=rapporto di sovraconsolidazione

| H(m) | H ₂ O | Descrizione | Phi (°) | C (kg/cmq) | E (kg/cmq) | Pv (kg/mc) | OCR | Dr (%) |
|------|------------------|---|---------|------------|------------|------------|-----|--------|
| 0,0 | 0,0 | Terreno naturale agrario | 0 | 0,5 | 60,0 | 1900,0 | 1,0 | 0,0 |
| 0,6 | | | | | | | | |
| 1,0 | | Argilla sabbiosa/limosa | 0 | 0,5 | 60,0 | 1900,0 | 1,0 | 0,0 |
| 1,8 | | | | | | | | |
| 2,0 | | Sabbia e limo | 28 | 0,0 | 150,0 | 1700,0 | 0,0 | 20,0 |
| 3,0 | 3,0 | | | | | | | |
| 4,0 | | Sabbia med. addensata | 32 | 0,0 | 200,0 | 1800,0 | 0,0 | 50,0 |
| 5,0 | | | | | | | | |
| 6,0 | 6,0 | Sabbia e limo | 28 | 0,0 | 150,0 | 1700,0 | 0,0 | 20,0 |
| 6,6 | | | | | | | | |
| 7,0 | | Sabbia e limo | 28 | 0,0 | 150,0 | 1700,0 | 0,0 | 20,0 |
| 8,0 | | | | | | | | |
| 8,2 | | Argilla inorganica mediamente consistente | 0 | 0,5 | 40,0 | 1950,0 | 2,0 | 0,0 |
| 9,0 | | | | | | | | |
| 9,4 | | | | | | | | |
| 10,0 | | Argilla sabbiosa/limosa | 0 | 0,5 | 60,0 | 1900,0 | 1,0 | 0,0 |
| 11,0 | | | | | | | | |

11,8

41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

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PROVA PENETROMETRICA STATICA

CPT 1

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

2:010496-042

- committente : Giacobazzi.
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)
- note :

- data : 29/10/2002
- quota inizio : Piano Campagna
- prof. falda : 2,20 m da quota inizio
- pagina : 1

| prf | LP | LL | Rp | RL | Rp/RL | prf | LP | LL | Rp | RL | Rp/RL |
|-------------|--------------------|--------------------|--------------------|--------------------|-------|--------------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | --- | 0,27 | --- | 5,20 | 9,0 | 14,0 | 9,0 | 0,47 | 19,0 |
| 0,40 | 14,0 | 18,0 | 14,0 | 0,33 | 42,0 | 5,40 | 9,0 | 16,0 | 9,0 | 0,60 | 15,0 |
| 0,60 | 18,0 | 23,0 | 18,0 | 1,07 | 17,0 | 5,60 | 8,0 | 17,0 | 8,0 | 0,40 | 20,0 |
| 0,80 | 15,0 | 31,0 | 15,0 | 1,40 | 11,0 | 5,80 | 7,0 | 13,0 | 7,0 | 0,20 | 35,0 |
| 1,00 | 22,0 | 43,0 | 22,0 | 1,47 | 15,0 | 6,00 | 15,0 | 18,0 | 15,0 | 0,53 | 28,0 |
| 1,20 | 22,0 | 44,0 | 22,0 | 1,40 | 16,0 | 6,20 | 8,0 | 16,0 | 8,0 | 0,40 | 20,0 |
| 1,40 | 21,0 | 42,0 | 21,0 | 1,13 | 19,0 | 6,40 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 |
| 1,60 | 18,0 | 35,0 | 18,0 | 0,87 | 21,0 | 6,60 | 10,0 | 15,0 | 10,0 | 0,40 | 25,0 |
| 1,80 | 14,0 | 27,0 | 14,0 | 0,67 | 21,0 | 6,80 | 9,0 | 15,0 | 9,0 | 0,40 | 22,0 |
| 2,00 | 9,0 | 19,0 | 9,0 | 0,40 | 22,0 | 7,00 | 9,0 | 15,0 | 9,0 | 0,40 | 22,0 |
| 2,20 | 9,0 | 15,0 | 9,0 | 0,33 | 27,0 | 7,20 | 8,0 | 14,0 | 8,0 | 0,33 | 24,0 |
| 2,40 | 11,0 | 16,0 | 11,0 | 0,47 | 24,0 | 7,40 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 |
| 2,60 | 9,0 | 16,0 | 9,0 | 0,33 | 27,0 | 7,60 | 9,0 | 15,0 | 9,0 | 0,40 | 22,0 |
| 2,80 | 8,0 | 13,0 | 8,0 | 0,47 | 17,0 | 7,80 | 8,0 | 14,0 | 8,0 | 0,33 | 24,0 |
| 3,00 | 13,0 | 20,0 | 13,0 | 0,33 | 39,0 | 8,00 | 13,0 | 18,0 | 13,0 | 0,67 | 19,0 |
| 3,20 | 14,0 | 19,0 | 14,0 | 0,60 | 23,0 | 8,20 | 15,0 | 25,0 | 15,0 | 0,47 | 32,0 |
| 3,40 | 16,0 | 25,0 | 16,0 | 0,67 | 24,0 | 8,40 | 8,0 | 15,0 | 8,0 | 0,33 | 24,0 |
| 3,60 | 18,0 | 28,0 | 18,0 | 0,60 | 30,0 | 8,60 | 12,0 | 17,0 | 12,0 | 0,53 | 22,0 |
| 3,80 | 9,0 | 18,0 | 9,0 | 0,53 | 17,0 | 8,80 | 8,0 | 16,0 | 8,0 | 0,40 | 20,0 |
| 4,00 | 9,0 | 17,0 | 9,0 | 0,60 | 15,0 | 9,00 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 |
| 4,20 | 8,0 | 17,0 | 8,0 | 0,27 | 30,0 | 9,20 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 |
| 4,40 | 9,0 | 13,0 | 9,0 | 0,47 | 19,0 | 9,40 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 |
| 4,60 | 8,0 | 15,0 | 8,0 | 0,40 | 20,0 | 9,60 | 28,0 | 34,0 | 28,0 | 0,53 | 52,0 |
| 4,80 | 6,0 | 12,0 | 6,0 | 0,33 | 18,0 | 9,80 | 24,0 | 32,0 | 24,0 | 0,80 | 30,0 |
| 5,00 | 7,0 | 12,0 | 7,0 | 0,33 | 21,0 | 10,00 | 14,0 | 26,0 | 14,0 | ----- | ---- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/640820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. NONANTOL

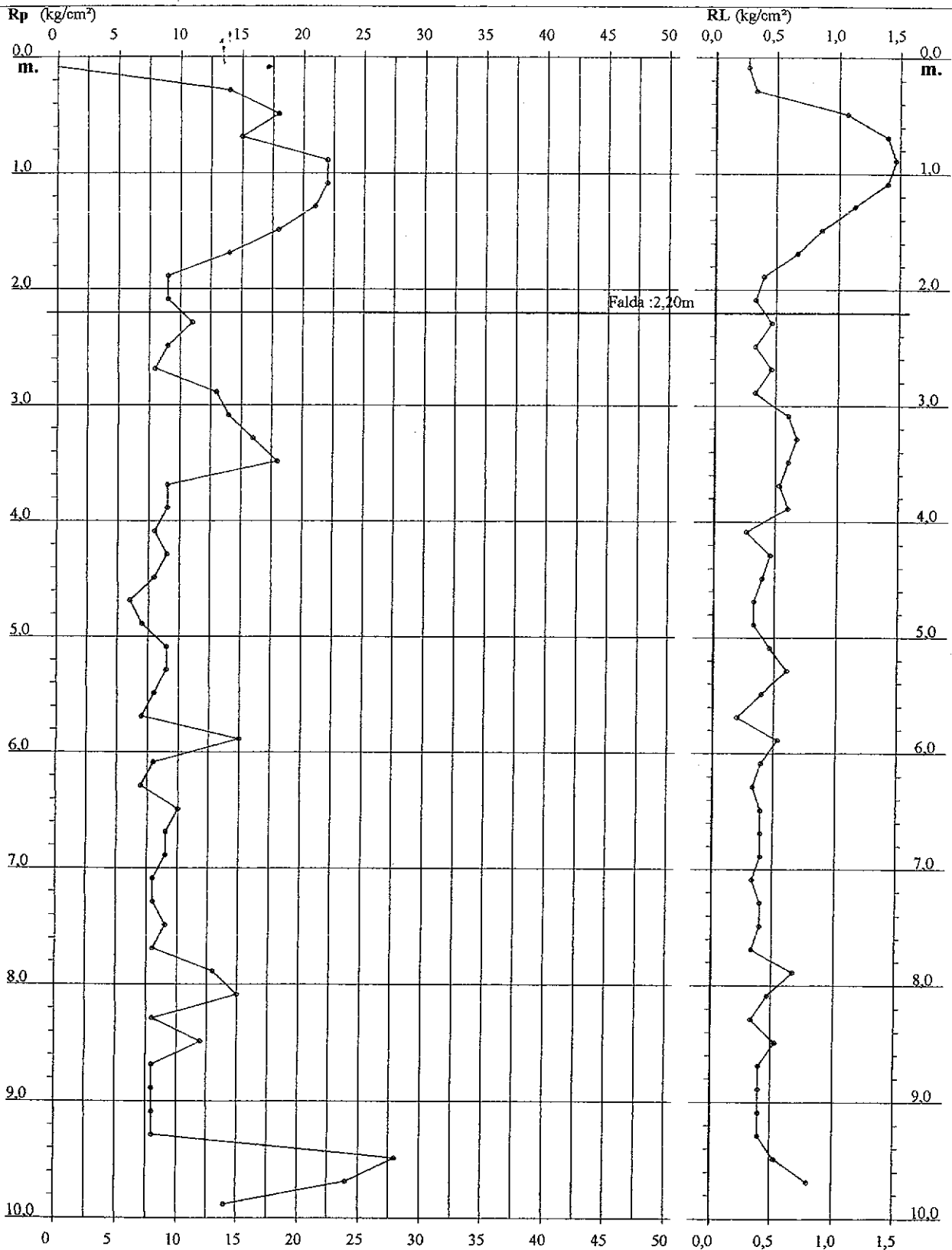
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

2.010496-042

- committente : Giacobazzi.
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)

- data : 29/10/2002
- quota inizio : Piano Campagna
- prof. falda : 2,20 m da quota inizio
- scala vert.: 1 : 50



41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. NONANTOL

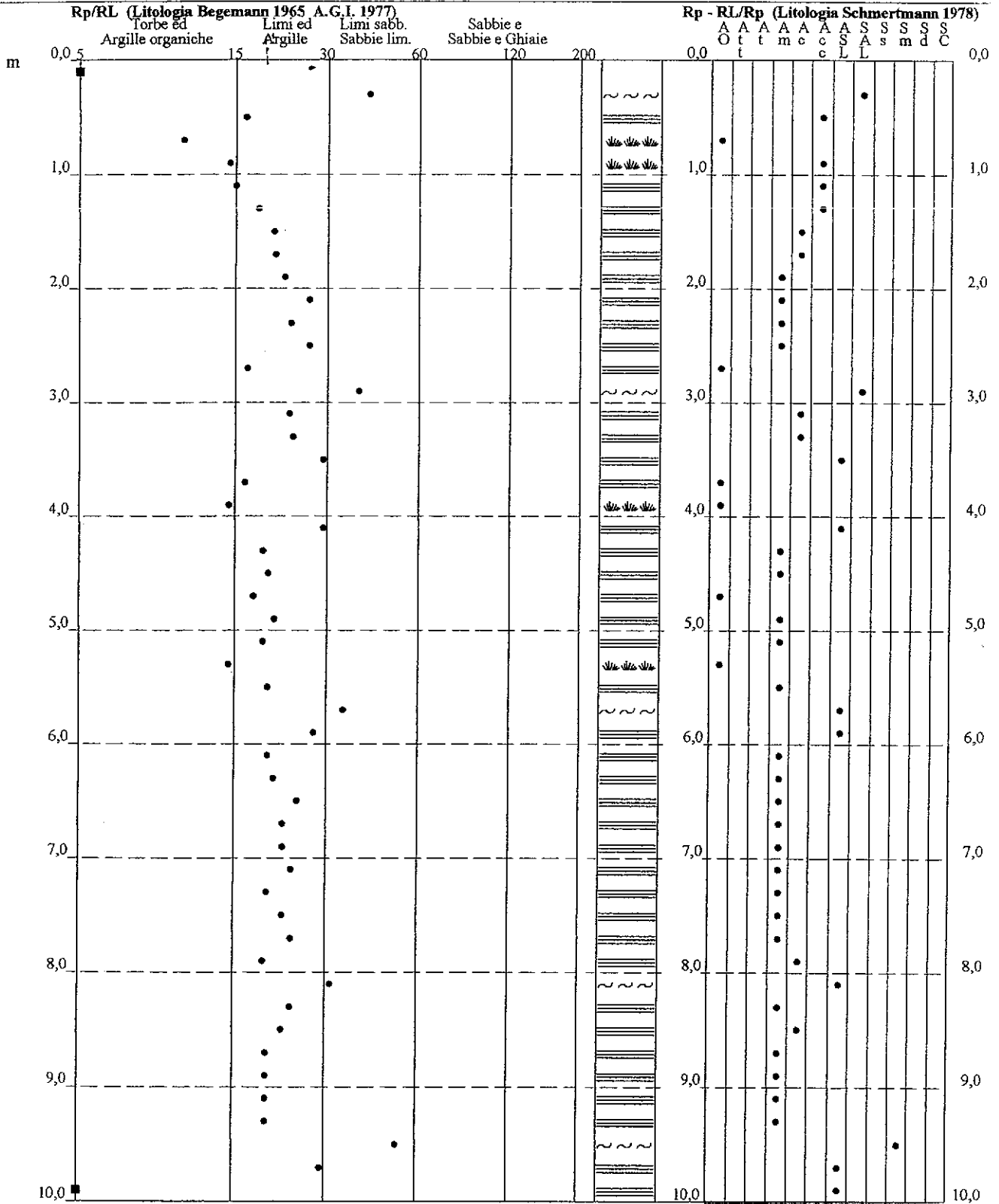
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 1

2.010496-042

- committente : Giacobazzi.
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)
- note :

- data : 29/10/2002
- quota inizio : Piano Campagna
- prof. falda : 2,20 m da quota inizio
- scala vert. : 1 : 50



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p.IVA e C.F. 00812530368

Refer. NONANTOL

PROVA PENETROMETRICA STATICA**CPT 3****LETTURE DI CAMPAGNA / VALORI DI RESISTENZA**

2.010496-042

- committente : Giacobazzi.
 - lavoro : Lottizzazione Mavora
 - località : Nonantola (Mo)
 - note :

- data : 29/10/2002
 - quota inizio : Piano Campagna
 - prof. falda : 2,60 m da quota inizio
 - pagina : 1

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|-------------|--------------------|--------------------|--------------------|--------------------|-------|--------------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | -- | 0,40 | --- | 5,20 | 10,0 | 16,0 | 10,0 | 0,47 | 21,0 |
| 0,40 | 8,0 | 14,0 | 8,0 | 0,60 | 13,0 | 5,40 | 6,0 | 13,0 | 6,0 | 0,27 | 22,0 |
| 0,60 | 13,0 | 22,0 | 13,0 | 0,93 | 14,0 | 5,60 | 7,0 | 11,0 | 7,0 | 0,27 | 26,0 |
| 0,80 | 18,0 | 32,0 | 18,0 | 1,07 | 17,0 | 5,80 | 6,0 | 10,0 | 6,0 | 0,20 | 30,0 |
| 1,00 | 18,0 | 34,0 | 18,0 | 1,20 | 15,0 | 6,00 | 6,0 | 9,0 | 6,0 | 0,20 | 30,0 |
| 1,20 | 21,0 | 39,0 | 21,0 | 1,33 | 16,0 | 6,20 | 10,0 | 13,0 | 10,0 | 0,33 | 30,0 |
| 1,40 | 17,0 | 37,0 | 17,0 | 1,27 | 13,0 | 6,40 | 8,0 | 13,0 | 8,0 | 0,13 | 60,0 |
| 1,60 | 11,0 | 30,0 | 11,0 | 0,67 | 16,0 | 6,60 | 12,0 | 14,0 | 12,0 | 0,53 | 22,0 |
| 1,80 | 11,0 | 21,0 | 11,0 | 0,73 | 15,0 | 6,80 | 15,0 | 23,0 | 15,0 | 0,27 | 56,0 |
| 2,00 | 13,0 | 24,0 | 13,0 | 0,93 | 14,0 | 7,00 | 18,0 | 22,0 | 18,0 | 0,73 | 25,0 |
| 2,20 | 14,0 | 28,0 | 14,0 | 0,67 | 21,0 | 7,20 | 21,0 | 32,0 | 21,0 | 0,73 | 29,0 |
| 2,40 | 9,0 | 19,0 | 9,0 | 0,47 | 19,0 | 7,40 | 26,0 | 37,0 | 26,0 | 0,67 | 39,0 |
| 2,60 | 10,0 | 17,0 | 10,0 | 0,47 | 21,0 | 7,60 | 31,0 | 41,0 | 31,0 | 0,20 | 155,0 |
| 2,80 | 10,0 | 17,0 | 10,0 | 0,47 | 21,0 | 7,80 | 19,0 | 22,0 | 19,0 | 0,27 | 71,0 |
| 3,00 | 9,0 | 16,0 | 9,0 | 0,40 | 22,0 | 8,00 | 15,0 | 19,0 | 15,0 | 0,47 | 32,0 |
| 3,20 | 9,0 | 15,0 | 9,0 | 0,27 | 34,0 | 8,20 | 33,0 | 40,0 | 33,0 | 0,47 | 71,0 |
| 3,40 | 12,0 | 16,0 | 12,0 | 0,40 | 30,0 | 8,40 | 35,0 | 42,0 | 35,0 | 0,87 | 40,0 |
| 3,60 | 11,0 | 17,0 | 11,0 | 0,33 | 33,0 | 8,60 | 30,0 | 43,0 | 30,0 | 0,60 | 50,0 |
| 3,80 | 8,0 | 13,0 | 8,0 | 0,33 | 24,0 | 8,80 | 30,0 | 39,0 | 30,0 | 0,80 | 37,0 |
| 4,00 | 9,0 | 14,0 | 9,0 | 0,33 | 27,0 | 9,00 | 28,0 | 40,0 | 28,0 | 0,47 | 60,0 |
| 4,20 | 8,0 | 13,0 | 8,0 | 0,33 | 24,0 | 9,20 | 16,0 | 23,0 | 16,0 | 0,27 | 60,0 |
| 4,40 | 8,0 | 13,0 | 8,0 | 0,33 | 24,0 | 9,40 | 18,0 | 22,0 | 18,0 | 0,47 | 39,0 |
| 4,60 | 10,0 | 15,0 | 10,0 | 0,40 | 25,0 | 9,60 | 10,0 | 17,0 | 10,0 | 0,40 | 25,0 |
| 4,80 | 9,0 | 15,0 | 9,0 | 0,40 | 22,0 | 9,80 | 10,0 | 16,0 | 10,0 | 0,47 | 21,0 |
| 5,00 | 11,0 | 17,0 | 11,0 | 0,40 | 27,0 | 10,00 | 9,0 | 16,0 | 9,0 | --- | --- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
 - punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
 - manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. NONANTOL

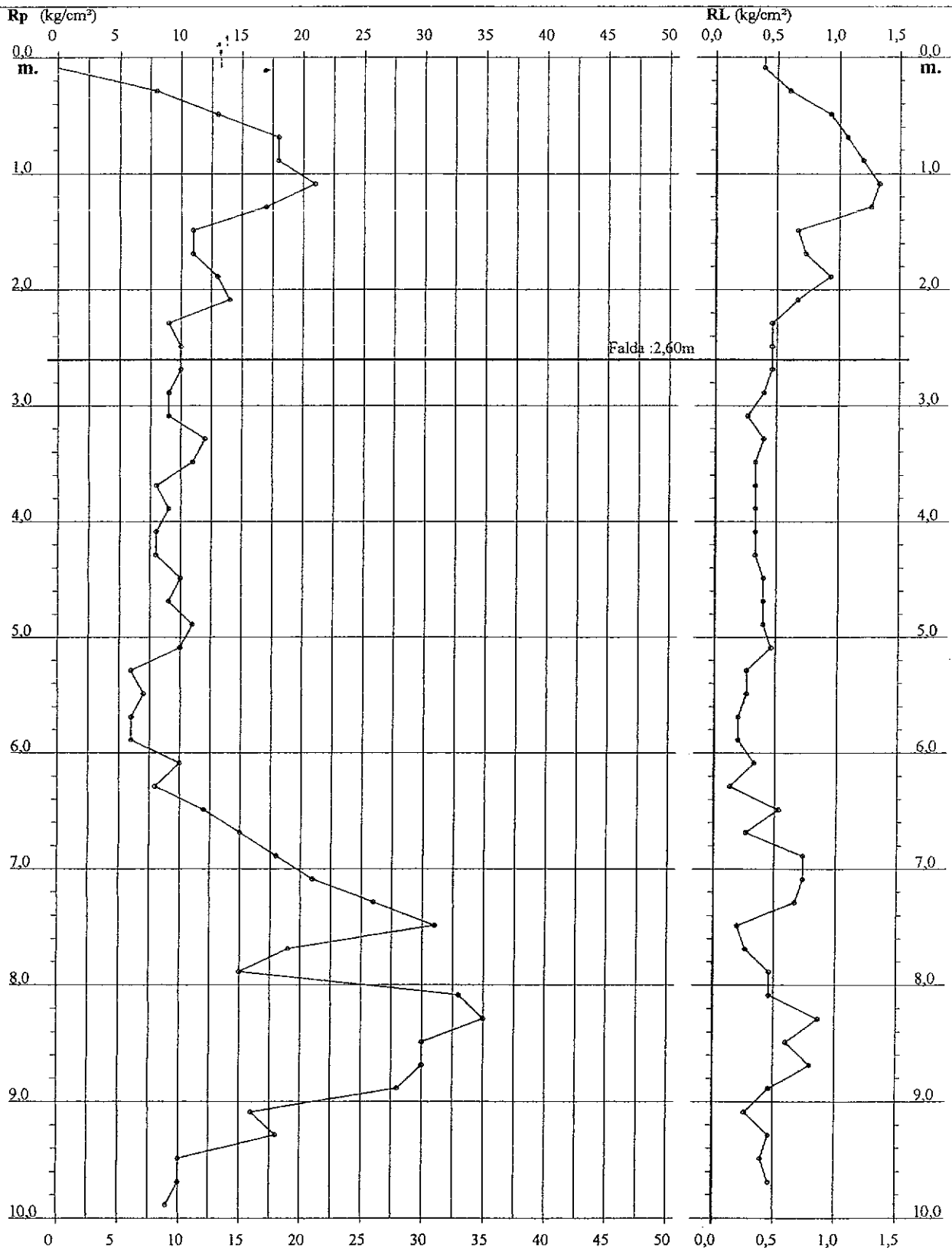
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 3

2.010496-042

- committente : Giacobazzi.
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)

- data : 29/10/2002
- quota inizio : Piano Campagna
- prof. falda : 2,60 m da quota inizio
- scala vert. : 1 : 50



41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. NONANTOL

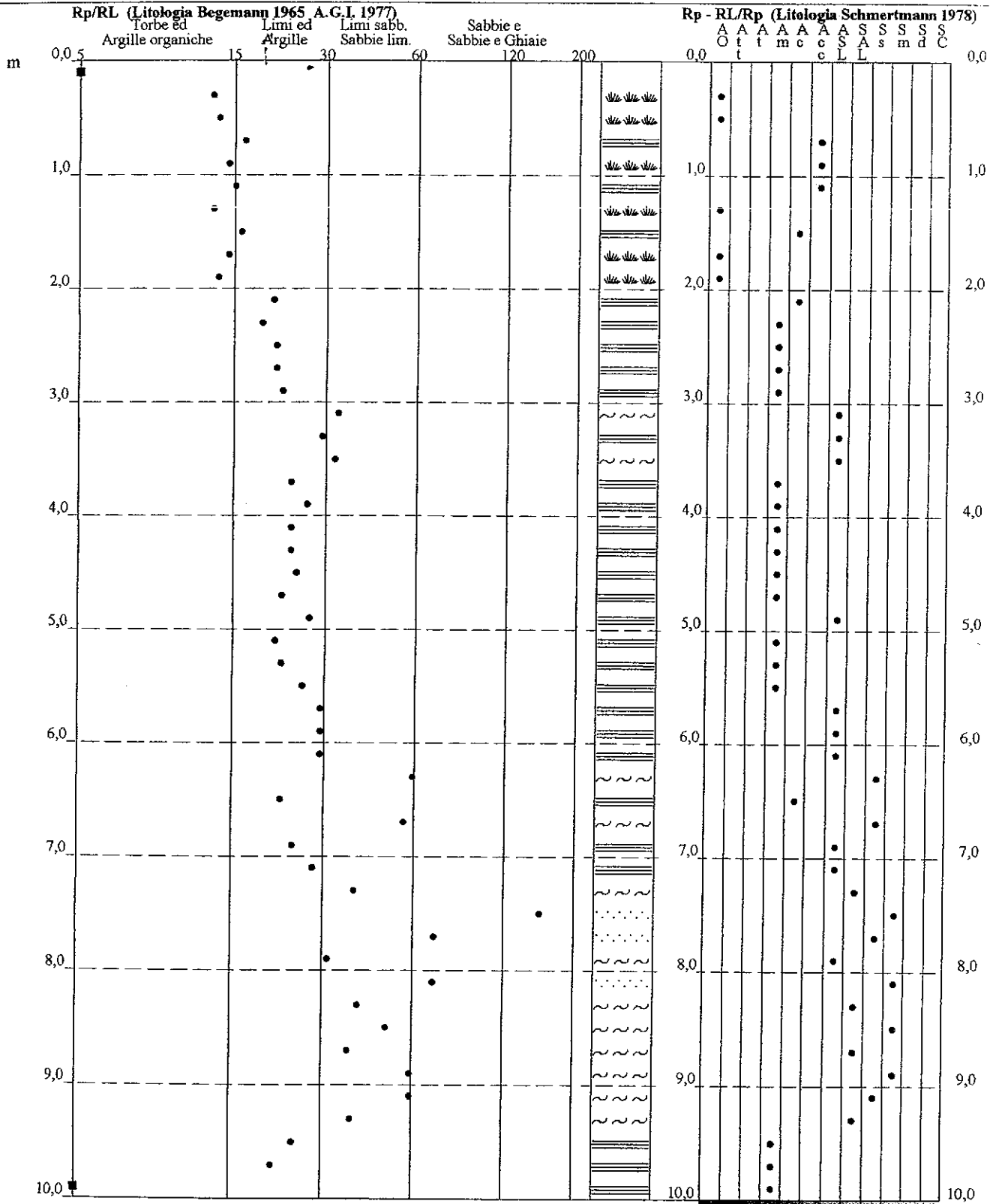
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 3

2:010496-042

- committente : Giacobazzi.
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)
- note :

- data : 29/10/2002
- quota inizio : Piano Campagna
- prof. falda : 2,60 m da quota inizio
- scala vert.: 1 : 50



41051 CASTELNUOVO R. (MO)

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PROVA PENETROMETRICA STATICA

CPT 5

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

2:010496-042

- committente : Giacobazzi.
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)
- note :

- data : 29/10/2002
- quota inizio : Piano Campagna
- prof. falda : 2,60 m da quota inizio
- pagina : 1

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | -- | 0,40 | --- | 5,20 | 10,0 | 18,0 | 10,0 | 0,47 | 21,0 |
| 0,40 | 15,0 | 21,0 | 15,0 | 1,20 | 12,0 | 5,40 | 11,0 | 18,0 | 11,0 | 0,47 | 24,0 |
| 0,60 | 18,0 | 36,0 | 18,0 | 1,07 | 17,0 | 5,60 | 11,0 | 18,0 | 11,0 | 0,40 | 27,0 |
| 0,80 | 18,0 | 34,0 | 18,0 | 0,87 | 21,0 | 5,80 | 13,0 | 19,0 | 13,0 | 0,53 | 24,0 |
| 1,00 | 31,0 | 44,0 | 31,0 | 0,67 | 46,0 | 6,00 | 10,0 | 18,0 | 10,0 | 0,27 | 37,0 |
| 1,20 | 32,0 | 42,0 | 32,0 | 0,93 | 34,0 | 6,20 | 9,0 | 13,0 | 9,0 | 0,33 | 27,0 |
| 1,40 | 32,0 | 46,0 | 32,0 | 2,27 | 14,0 | 6,40 | 10,0 | 15,0 | 10,0 | 0,33 | 30,0 |
| 1,60 | 19,0 | 53,0 | 19,0 | 2,07 | 9,0 | 6,60 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 |
| 1,80 | 19,0 | 50,0 | 19,0 | 1,47 | 13,0 | 6,80 | 8,0 | 14,0 | 8,0 | 0,33 | 24,0 |
| 2,00 | 17,0 | 39,0 | 17,0 | 0,80 | 21,0 | 7,00 | 8,0 | 13,0 | 8,0 | 0,27 | 30,0 |
| 2,20 | 13,0 | 25,0 | 13,0 | 0,67 | 19,0 | 7,20 | 8,0 | 12,0 | 8,0 | 0,20 | 40,0 |
| 2,40 | 14,0 | 24,0 | 14,0 | 0,47 | 30,0 | 7,40 | 14,0 | 17,0 | 14,0 | 0,40 | 35,0 |
| 2,60 | 9,0 | 16,0 | 9,0 | 0,33 | 27,0 | 7,60 | 18,0 | 24,0 | 18,0 | 0,67 | 27,0 |
| 2,80 | 9,0 | 14,0 | 9,0 | 0,27 | 34,0 | 7,80 | 10,0 | 20,0 | 10,0 | 0,47 | 21,0 |
| 3,00 | 11,0 | 15,0 | 11,0 | 0,40 | 27,0 | 8,00 | 9,0 | 16,0 | 9,0 | 0,20 | 45,0 |
| 3,20 | 14,0 | 20,0 | 14,0 | 0,47 | 30,0 | 8,20 | 9,0 | 12,0 | 9,0 | 0,27 | 34,0 |
| 3,40 | 16,0 | 23,0 | 16,0 | 0,47 | 34,0 | 8,40 | 9,0 | 13,0 | 9,0 | 0,27 | 34,0 |
| 3,60 | 13,0 | 20,0 | 13,0 | 0,47 | 28,0 | 8,60 | 8,0 | 12,0 | 8,0 | 0,40 | 20,0 |
| 3,80 | 12,0 | 19,0 | 12,0 | 0,47 | 26,0 | 8,80 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 |
| 4,00 | 13,0 | 20,0 | 13,0 | 0,47 | 28,0 | 9,00 | 9,0 | 15,0 | 9,0 | 0,40 | 22,0 |
| 4,20 | 12,0 | 19,0 | 12,0 | 0,27 | 45,0 | 9,20 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 |
| 4,40 | 14,0 | 18,0 | 14,0 | 0,40 | 35,0 | 9,40 | 8,0 | 14,0 | 8,0 | 0,47 | 17,0 |
| 4,60 | 11,0 | 17,0 | 11,0 | 0,67 | 16,0 | 9,60 | 9,0 | 16,0 | 9,0 | 0,40 | 22,0 |
| 4,80 | 17,0 | 27,0 | 17,0 | 0,60 | 28,0 | 9,80 | 10,0 | 16,0 | 10,0 | 0,47 | 21,0 |
| 5,00 | 12,0 | 21,0 | 12,0 | 0,53 | 22,0 | 10,00 | 11,0 | 18,0 | 11,0 | ----- | ---- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Mertin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

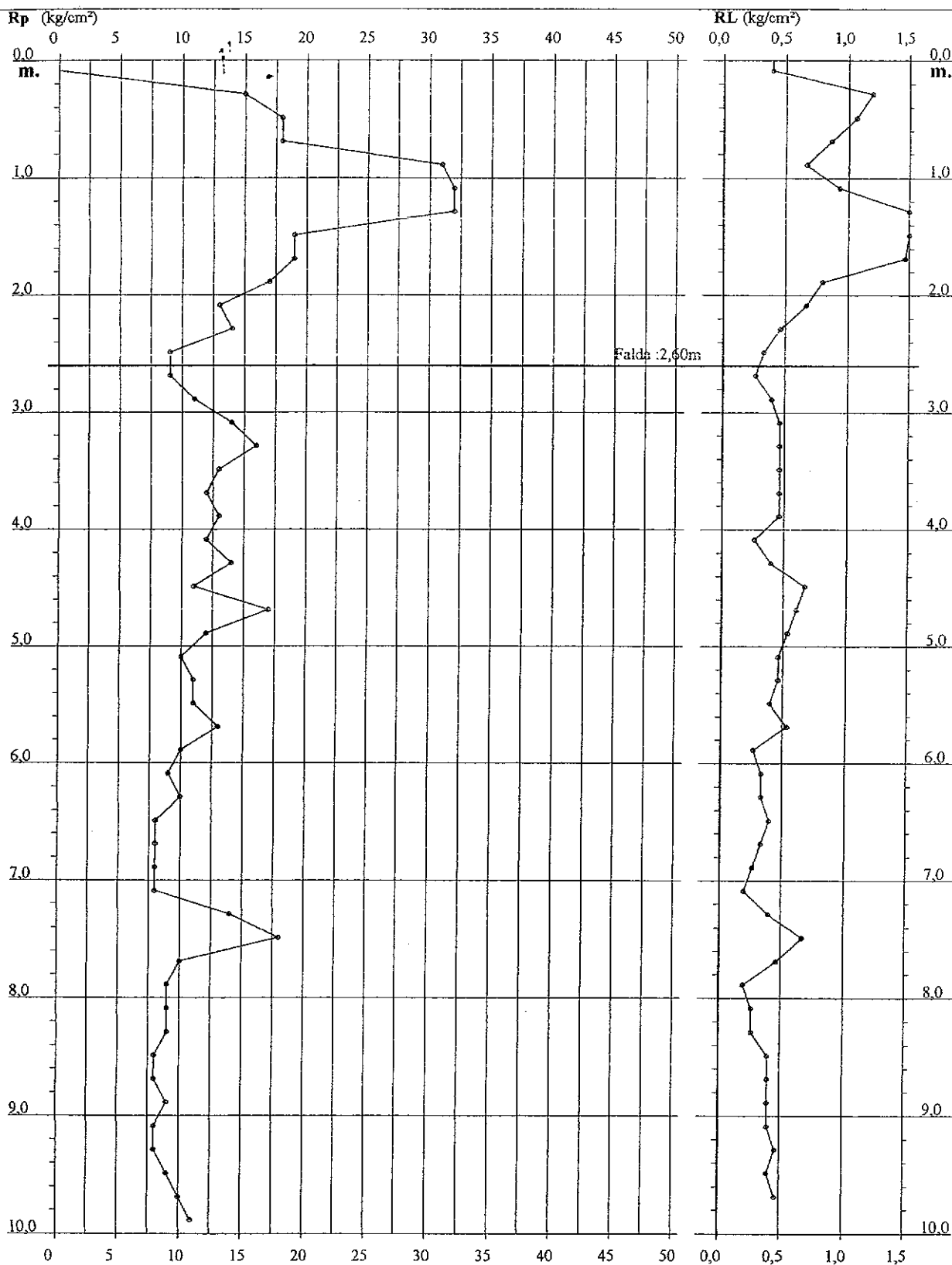
**PROVA PENETROMETRICA STATICA
DIAGRAMMA DI RESISTENZA**

CPT 5

2.010496-042

- committente : Giacobazzi.
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)

- data : 29/10/2002
- quota inizio : Piano Campagna
- prof. falda : 2,60 m da quota inizio
- scala vert.: 1 : 50



41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
 p.IVA e C.F. 00812530368

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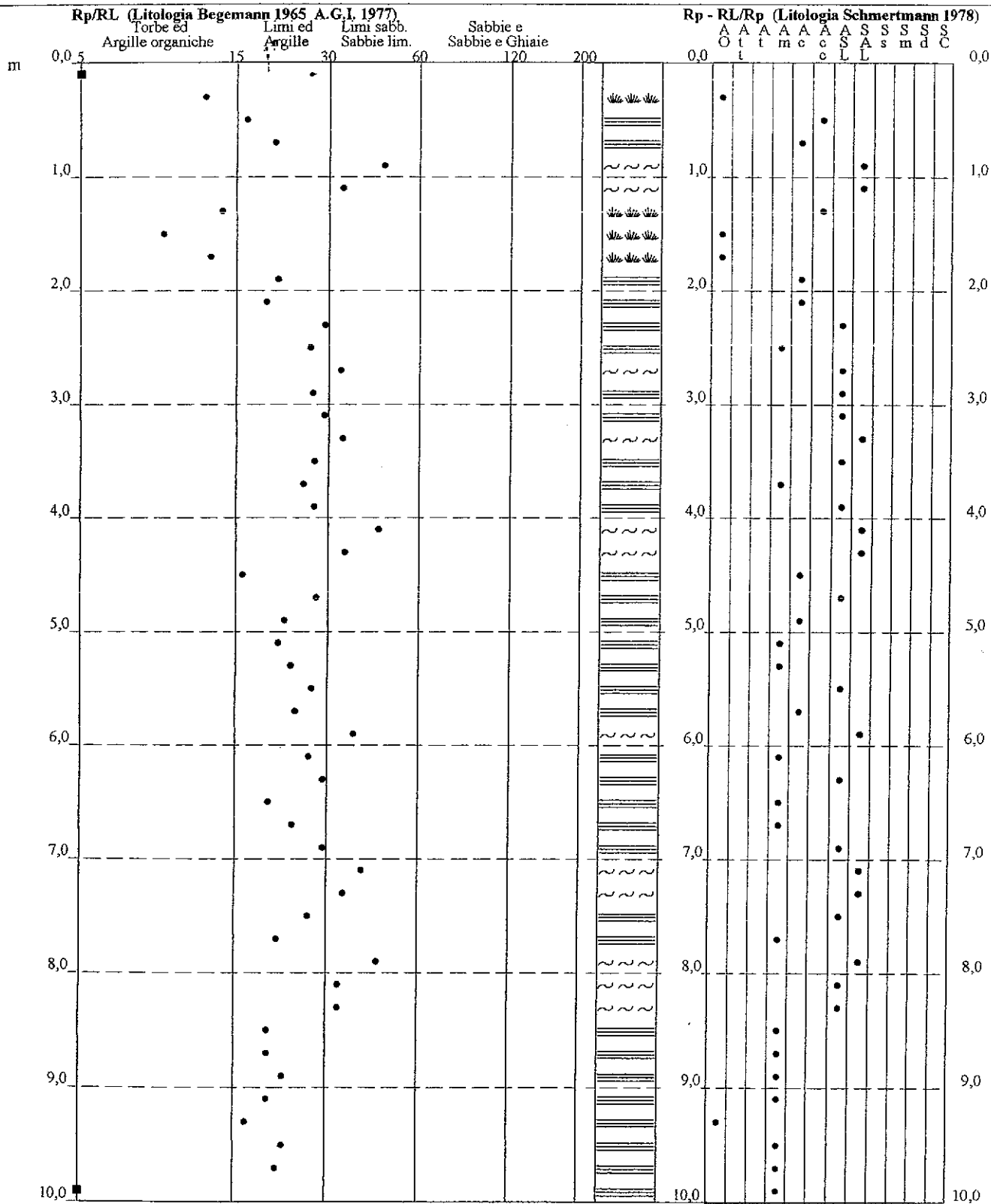
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 5

2.010496-042

- committente : Giacobazzi.
 - lavoro : Lottizzazione Mavora
 - località : Nonantola (Mo)
 - note :

- data : 29/10/2002
 - quota inizio : Piano Campagna
 - prof. falda : 2,60 m da quota inizio
 - scala vert.: 1 : 50



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PROVA PENETROMETRICA STATICA

CPT 7

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

2.010496-042

- committente : Giacobazzi
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)
- note :

- data : 30/10/2002
- quota inizio : Piano Campagna
- prof. falda : -2,40 m da quota inizio
- pagina : 1

| prf | LP | LL | Rp | RL | Rp/Rl | prf | LP | LL | Rp | RL | Rp/Rl |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | -- | 0,07 | --- | 5,20 | 29,0 | 35,0 | 29,0 | 0,60 | 48,0 |
| 0,40 | --- | 1,0 | -- | 0,47 | --- | 5,40 | 12,0 | 21,0 | 12,0 | 0,33 | 36,0 |
| 0,60 | 18,0 | 25,0 | 18,0 | 1,47 | 12,0 | 5,60 | 15,0 | 20,0 | 15,0 | 0,53 | 28,0 |
| 0,80 | 13,0 | 35,0 | 13,0 | 1,33 | 10,0 | 5,80 | 9,0 | 17,0 | 9,0 | 0,40 | 22,0 |
| 1,00 | 15,0 | 35,0 | 15,0 | 1,00 | 15,0 | 6,00 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 |
| 1,20 | 17,0 | 32,0 | 17,0 | 0,93 | 18,0 | 6,20 | 7,0 | 13,0 | 7,0 | 0,27 | 26,0 |
| 1,40 | 17,0 | 31,0 | 17,0 | 1,00 | 17,0 | 6,40 | 10,0 | 14,0 | 10,0 | 0,40 | 25,0 |
| 1,60 | 19,0 | 34,0 | 19,0 | 1,13 | 17,0 | 6,60 | 9,0 | 15,0 | 9,0 | 0,47 | 19,0 |
| 1,80 | 16,0 | 33,0 | 16,0 | 0,73 | 22,0 | 6,80 | 6,0 | 13,0 | 6,0 | 0,27 | 22,0 |
| 2,00 | 13,0 | 24,0 | 13,0 | 0,53 | 24,0 | 7,00 | 7,0 | 11,0 | 7,0 | 0,40 | 17,0 |
| 2,20 | 11,0 | 19,0 | 11,0 | 0,47 | 24,0 | 7,20 | 7,0 | 13,0 | 7,0 | 0,27 | 26,0 |
| 2,40 | 10,0 | 17,0 | 10,0 | 0,27 | 37,0 | 7,40 | 8,0 | 12,0 | 8,0 | 0,47 | 17,0 |
| 2,60 | 15,0 | 19,0 | 15,0 | 0,47 | 32,0 | 7,60 | 11,0 | 18,0 | 11,0 | 0,60 | 18,0 |
| 2,80 | 10,0 | 17,0 | 10,0 | 0,33 | 30,0 | 7,80 | 6,0 | 15,0 | 6,0 | 0,40 | 15,0 |
| 3,00 | 9,0 | 14,0 | 9,0 | 0,33 | 27,0 | 8,00 | 7,0 | 13,0 | 7,0 | 0,53 | 13,0 |
| 3,20 | 12,0 | 17,0 | 12,0 | 0,47 | 26,0 | 8,20 | 8,0 | 16,0 | 8,0 | 0,53 | 15,0 |
| 3,40 | 10,0 | 17,0 | 10,0 | 0,40 | 25,0 | 8,40 | 8,0 | 16,0 | 8,0 | 0,33 | 24,0 |
| 3,60 | 10,0 | 16,0 | 10,0 | 0,33 | 30,0 | 8,60 | 9,0 | 14,0 | 9,0 | 0,40 | 22,0 |
| 3,80 | 9,0 | 14,0 | 9,0 | 0,27 | 34,0 | 8,80 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 |
| 4,00 | 9,0 | 13,0 | 9,0 | 0,33 | 27,0 | 9,00 | 8,0 | 14,0 | 8,0 | 0,33 | 24,0 |
| 4,20 | 9,0 | 14,0 | 9,0 | 0,40 | 22,0 | 9,20 | 10,0 | 15,0 | 10,0 | 0,33 | 30,0 |
| 4,40 | 9,0 | 15,0 | 9,0 | 0,33 | 27,0 | 9,40 | 9,0 | 14,0 | 9,0 | 0,47 | 19,0 |
| 4,60 | 16,0 | 21,0 | 16,0 | 0,60 | 27,0 | 9,60 | 10,0 | 17,0 | 10,0 | 0,40 | 25,0 |
| 4,80 | 14,0 | 23,0 | 14,0 | 0,53 | 26,0 | 9,80 | 10,0 | 16,0 | 10,0 | 0,47 | 21,0 |
| 5,00 | 19,0 | 27,0 | 19,0 | 0,40 | 47,0 | 10,00 | 10,0 | 17,0 | 10,0 | ---- | ---- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct= 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

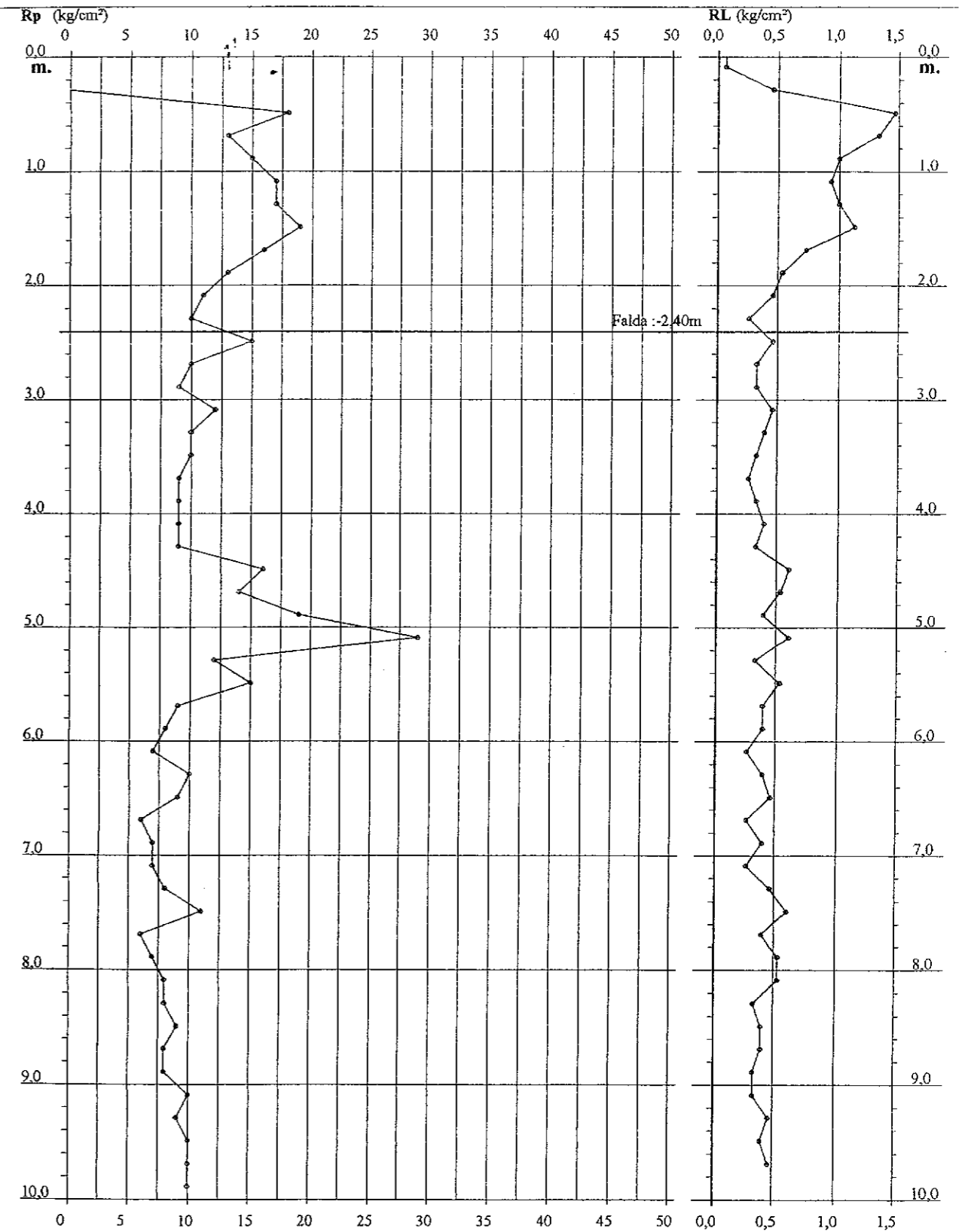
**PROVA PENETROMETRICA STATICA
DIAGRAMMA DI RESISTENZA**

CPT 7

2.010496-042

- committente : Giacobazzi.
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)

- data : 30/10/2002
- quota inizio : Piano Campagna
- prof. falda : -2,40 m da quota inizio
- scala vert. : 1 : 50



41051 CASTELNUOVO R. (MO)Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

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PROVA PENETROMETRICA STATICA**CPT 9****LETTURE DI CAMPAGNA / VALORI DI RESISTENZA**

2.010496-042

- committente : Giacobazzi.
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)
- note :- data : 30/10/2002
- quota inizio : Piano Campagna
- prof. falda : 1,50 m da quota inizio
- pagina : 1

| prf | LP | LL | Rp | RL | Rp/Rl | prf | LP | LL | Rp | RL | Rp/Rl |
|-------------|--------------------|--------------------|--------------------|--------------------|-------|--------------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | -- | 0,07 | --- | 5,20 | 21,0 | 27,0 | 21,0 | 0,60 | 35,0 |
| 0,40 | --- | 1,0 | -- | 1,13 | --- | 5,40 | 19,0 | 28,0 | 19,0 | 0,60 | 32,0 |
| 0,60 | 12,0 | 29,0 | 12,0 | 0,73 | 16,0 | 5,60 | 16,0 | 25,0 | 16,0 | 0,53 | 30,0 |
| 0,80 | 12,0 | 23,0 | 12,0 | 1,13 | 11,0 | 5,80 | 8,0 | 16,0 | 8,0 | 0,53 | 15,0 |
| 1,00 | 10,0 | 27,0 | 10,0 | 0,93 | 11,0 | 6,00 | 8,0 | 16,0 | 8,0 | 0,33 | 24,0 |
| 1,20 | 12,0 | 26,0 | 12,0 | 0,40 | 30,0 | 6,20 | 10,0 | 15,0 | 10,0 | 0,40 | 25,0 |
| 1,40 | 18,0 | 24,0 | 18,0 | 0,60 | 30,0 | 6,40 | 10,0 | 16,0 | 10,0 | 0,40 | 25,0 |
| 1,60 | 19,0 | 28,0 | 19,0 | 1,07 | 18,0 | 6,60 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 |
| 1,80 | 20,0 | 36,0 | 20,0 | 1,13 | 18,0 | 6,80 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 |
| 2,00 | 15,0 | 32,0 | 15,0 | 0,87 | 17,0 | 7,00 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 |
| 2,20 | 13,0 | 26,0 | 13,0 | 0,53 | 24,0 | 7,20 | 6,0 | 12,0 | 6,0 | 0,33 | 18,0 |
| 2,40 | 12,0 | 20,0 | 12,0 | 0,60 | 20,0 | 7,40 | 8,0 | 13,0 | 8,0 | 0,33 | 24,0 |
| 2,60 | 9,0 | 18,0 | 9,0 | 0,33 | 27,0 | 7,60 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 |
| 2,80 | 12,0 | 17,0 | 12,0 | 0,53 | 22,0 | 7,80 | 10,0 | 16,0 | 10,0 | 0,40 | 25,0 |
| 3,00 | 7,0 | 15,0 | 7,0 | 0,33 | 21,0 | 8,00 | 9,0 | 15,0 | 9,0 | 0,40 | 22,0 |
| 3,20 | 7,0 | 12,0 | 7,0 | 0,20 | 35,0 | 8,20 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 |
| 3,40 | 8,0 | 11,0 | 8,0 | 0,33 | 24,0 | 8,40 | 9,0 | 14,0 | 9,0 | 0,60 | 15,0 |
| 3,60 | 13,0 | 18,0 | 13,0 | 0,53 | 24,0 | 8,60 | 9,0 | 18,0 | 9,0 | 0,47 | 19,0 |
| 3,80 | 11,0 | 19,0 | 11,0 | 0,53 | 21,0 | 8,80 | 10,0 | 17,0 | 10,0 | 0,53 | 19,0 |
| 4,00 | 9,0 | 17,0 | 9,0 | 0,33 | 27,0 | 9,00 | 11,0 | 19,0 | 11,0 | 0,53 | 21,0 |
| 4,20 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 | 9,20 | 10,0 | 18,0 | 10,0 | 0,33 | 30,0 |
| 4,40 | 9,0 | 15,0 | 9,0 | 0,60 | 15,0 | 9,40 | 13,0 | 18,0 | 13,0 | 0,53 | 24,0 |
| 4,60 | 11,0 | 20,0 | 11,0 | 0,40 | 27,0 | 9,60 | 9,0 | 17,0 | 9,0 | 0,27 | 34,0 |
| 4,80 | 10,0 | 16,0 | 10,0 | 0,53 | 19,0 | 9,80 | 15,0 | 19,0 | 15,0 | 0,53 | 28,0 |
| 5,00 | 13,0 | 21,0 | 13,0 | 0,40 | 32,0 | 10,00 | 9,0 | 17,0 | 9,0 | ----- | ---- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct= 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35,7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

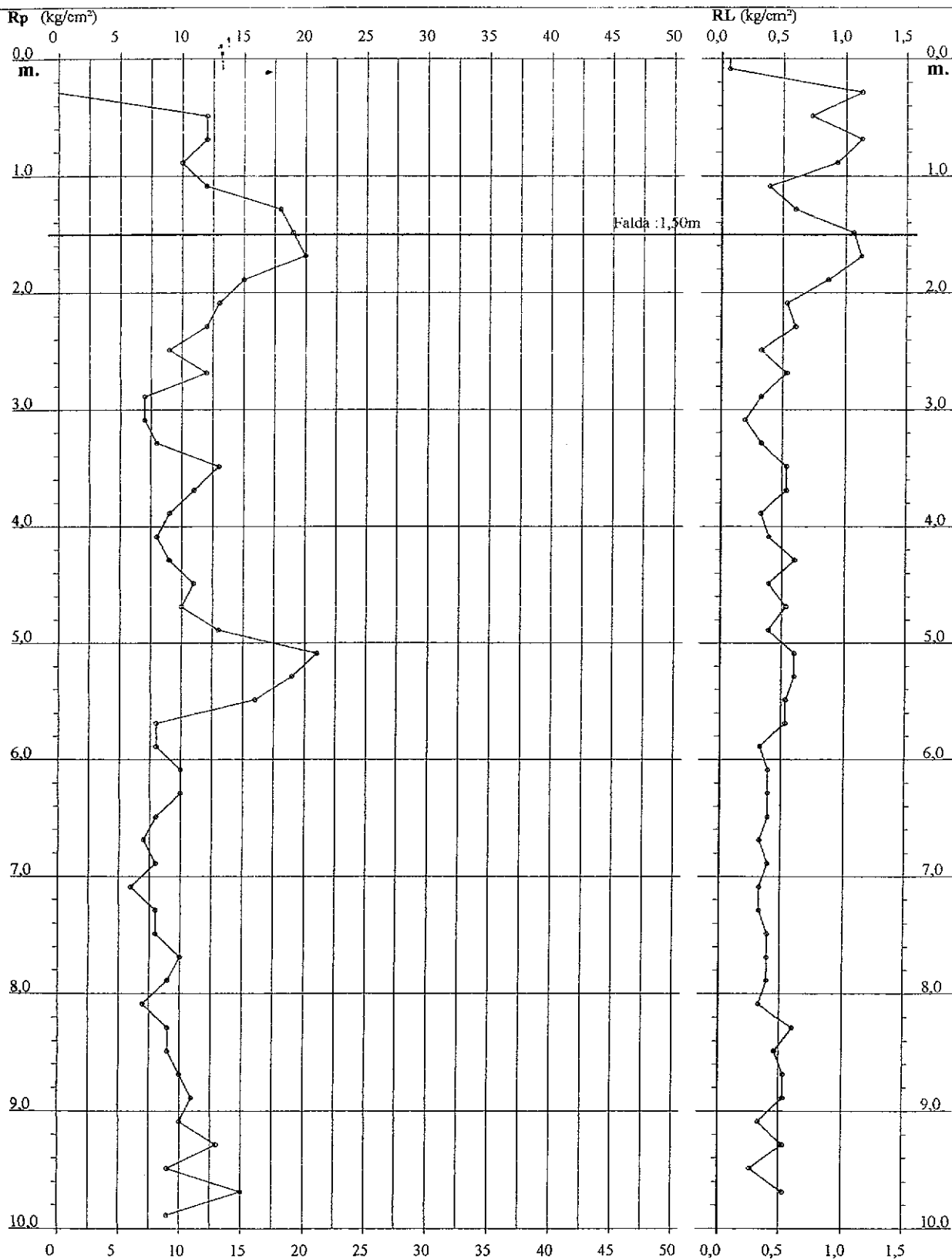
PROVA PENETROMETRICA STATICA
DIAGRAMMA DI RESISTENZA

CPT 9

2.010496-042

- committente : Giacobazzi.
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)

- data : 30/10/2002
- quota inizio : Piano Campagna
- prof. falda : 1,50 m da quota inizio
- scala vert.: 1 : 50



41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

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PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 9

2.010496-042

- committente : Giacobazzi.
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)
- note :

- data : 30/10/2002
- quota inizio : Piano Campagna
- prof. falda : 1,50 m da quota inizio
- pagina : I

| NATURA COESIVA | | | | | | | | | | | NATURA GRANULARE | | | | | | | | | | | |
|----------------|-----------------------|-----------|---------------|---------------------|-------------------------------------|-----------------------|---------|-------------------------|-------------------------|-----------------------|------------------|---------|---------|---------|---------|---------|---------|------------|-------------------------|-------------------------|-----------------------|----|
| Prof. m | Rp kg/cm ² | Rp/Rl (-) | Natura Litol. | Y' U/m ³ | p _w δ kg/dm ³ | Cu kg/cm ² | OCR (-) | Eu50 kg/cm ² | Eu25 kg/cm ² | Mo kg/cm ² | Dr % | e1s (°) | e2s (°) | e3s (°) | e4s (°) | edm (°) | emy (°) | Amax/g (-) | E'50 kg/cm ² | E'25 kg/cm ² | Mo kg/cm ² | |
| 0,20 | -- | -- | ??? | 1,85 | 0,04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,40 | -- | -- | ??? | 1,85 | 0,07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,60 | 12 | 16 | 2III | 1,85 | 0,11 | 0,57 | 48,7 | 97 | 146 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,80 | 12 | 11 | 2III | 1,85 | 0,15 | 0,57 | 34,0 | 97 | 146 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,00 | 10 | 11 | 2III | 1,85 | 0,19 | 0,50 | 21,8 | 85 | 128 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,20 | 12 | 30 | 4I: | 1,85 | 0,22 | 0,57 | 20,5 | 97 | 146 | 45 | 36 | 33 | 36 | 38 | 41 | 34 | 26 | 0,070 | 20 | 30 | 36 | -- |
| 1,40 | 18 | 30 | 4I: | 1,85 | 0,26 | 0,75 | 23,7 | 128 | 191 | 56 | 46 | 34 | 37 | 39 | 42 | 35 | 27 | 0,094 | 30 | 45 | 54 | -- |
| 1,60 | 19 | 18 | 2III | 0,99 | 0,28 | 0,78 | 22,6 | 132 | 198 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,80 | 20 | 18 | 4I: | 0,95 | 0,30 | 0,80 | 21,6 | 136 | 204 | 60 | 46 | 34 | 37 | 39 | 42 | 35 | 27 | 0,095 | 33 | 50 | 60 | -- |
| 2,00 | 15 | 17 | 2III | 0,95 | 0,32 | 0,67 | 15,9 | 113 | 170 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,20 | 13 | 24 | 2III | 0,93 | 0,33 | 0,60 | 13,1 | 103 | 154 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,40 | 12 | 20 | 2III | 0,92 | 0,35 | 0,57 | 11,5 | 97 | 146 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,60 | 9 | 27 | 2III | 0,88 | 0,37 | 0,45 | 8,0 | 89 | 134 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,80 | 12 | 22 | 2III | 0,92 | 0,39 | 0,57 | 10,1 | 97 | 146 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,00 | 7 | 21 | 2III | 0,84 | 0,41 | 0,35 | 5,2 | 111 | 167 | 32 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,20 | 7 | 35 | 4I: | 0,83 | 0,42 | 0,35 | 5,0 | 117 | 175 | 32 | 2 | 28 | 31 | 35 | 38 | 27 | 26 | 0,004 | 12 | 18 | 21 | -- |
| 3,40 | 8 | 24 | 2III | 0,86 | 0,44 | 0,40 | 5,6 | 119 | 178 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,60 | 13 | 24 | 2III | 0,93 | 0,46 | 0,60 | 8,9 | 109 | 163 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,80 | 11 | 21 | 2III | 0,91 | 0,48 | 0,54 | 7,3 | 118 | 177 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,00 | 9 | 27 | 2III | 0,88 | 0,49 | 0,45 | 5,6 | 133 | 200 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,20 | 8 | 20 | 2III | 0,86 | 0,51 | 0,40 | 4,6 | 142 | 214 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,40 | 9 | 15 | 2III | 0,88 | 0,53 | 0,45 | 5,1 | 145 | 218 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,60 | 11 | 27 | 2III | 0,91 | 0,55 | 0,54 | 6,1 | 144 | 216 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,80 | 10 | 19 | 2III | 0,90 | 0,57 | 0,50 | 5,4 | 154 | 231 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,00 | 13 | 32 | 4I: | 0,88 | 0,58 | 0,60 | 6,6 | 150 | 224 | 47 | 15 | 30 | 33 | 36 | 39 | 29 | 26 | 0,029 | 22 | 33 | 39 | -- |
| 5,20 | 21 | 35 | 3::: | 0,85 | 0,60 | -- | -- | -- | -- | -- | 31 | 32 | 35 | 38 | 40 | 31 | 27 | 0,059 | 35 | 53 | 63 | -- |
| 5,40 | 19 | 32 | 4I: | 0,92 | 0,62 | 0,78 | 8,3 | 147 | 221 | 58 | 27 | 32 | 34 | 37 | 40 | 30 | 27 | 0,051 | 32 | 48 | 57 | -- |
| 5,60 | 16 | 30 | 4I: | 0,90 | 0,64 | 0,70 | 7,0 | 160 | 239 | 52 | 20 | 31 | 34 | 37 | 40 | 29 | 27 | 0,038 | 27 | 40 | 48 | -- |
| 5,80 | 8 | 15 | 2III | 0,86 | 0,65 | 0,40 | 3,4 | 184 | 276 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,00 | 8 | 24 | 2III | 0,86 | 0,67 | 0,40 | 3,3 | 188 | 281 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,20 | 10 | 25 | 2III | 0,90 | 0,69 | 0,50 | 4,2 | 192 | 289 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,40 | 10 | 25 | 2III | 0,90 | 0,71 | 0,50 | 4,1 | 197 | 296 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,60 | 8 | 20 | 2III | 0,86 | 0,72 | 0,40 | 3,0 | 198 | 296 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,80 | 7 | 21 | 2III | 0,84 | 0,74 | 0,35 | 2,5 | 186 | 280 | 32 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,00 | 8 | 20 | 2III | 0,86 | 0,76 | 0,40 | 2,8 | 203 | 304 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,20 | 6 | 18 | 2III | 0,82 | 0,77 | 0,30 | 1,9 | 169 | 254 | 29 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,40 | 8 | 24 | 2III | 0,86 | 0,79 | 0,40 | 2,7 | 207 | 311 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,60 | 8 | 20 | 2III | 0,86 | 0,81 | 0,40 | 2,6 | 209 | 314 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,80 | 10 | 25 | 2III | 0,90 | 0,83 | 0,50 | 3,3 | 232 | 348 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,00 | 9 | 22 | 2III | 0,88 | 0,84 | 0,45 | 2,9 | 227 | 340 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,20 | 7 | 21 | 2III | 0,84 | 0,86 | 0,35 | 2,0 | 195 | 293 | 32 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,40 | 9 | 15 | 2III | 0,88 | 0,88 | 0,45 | 2,7 | 232 | 347 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,60 | 9 | 19 | 2III | 0,88 | 0,90 | 0,45 | 2,7 | 234 | 351 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,80 | 10 | 19 | 2III | 0,90 | 0,91 | 0,50 | 3,0 | 249 | 373 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,00 | 11 | 21 | 2III | 0,91 | 0,93 | 0,54 | 3,1 | 258 | 387 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,20 | 10 | 30 | 4I: | 0,86 | 0,95 | 0,50 | 2,8 | 254 | 381 | 40 | -- | 28 | 31 | 35 | 38 | 25 | 26 | -- | 17 | 25 | 30 | -- |
| 9,40 | 13 | 24 | 2III | 0,93 | 0,97 | 0,60 | 3,5 | 273 | 409 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,60 | 9 | 34 | 4I: | 0,85 | 0,99 | 0,45 | 2,4 | 243 | 364 | 38 | -- | 28 | 31 | 35 | 38 | 25 | 26 | -- | 15 | 23 | 27 | -- |
| 9,80 | 15 | 28 | 2III | 0,95 | 1,00 | 0,67 | 3,8 | 283 | 425 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,00 | 9 | -- | 2III | 0,88 | 1,02 | 0,45 | 2,3 | 246 | 368 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

41051 CASTELNUOVO R. (MO)Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. NONANTOL

PROVA PENETROMETRICA STATICA**CPT 11****LETTURE DI CAMPAGNA / VALORI DI RESISTENZA**

2.010496-042

- committente : Giacobazzi.
 - lavoro : Lottizzazione Mavora
 - località : Nonantola (Mo)
 - note :

- data : 30/10/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,90 m da quota inizio
 - pagina : 1

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|-------------|--------------------|--------------------|--------------------|--------------------|-------|--------------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | ---- | 1,0 | -- | 0,07 | ---- | 5,20 | 11,0 | 21,0 | 11,0 | 0,47 | 24,0 |
| 0,40 | ---- | 1,0 | -- | 0,47 | ---- | 5,40 | 13,0 | 20,0 | 13,0 | 0,67 | 19,0 |
| 0,60 | 14,0 | 21,0 | 14,0 | 0,67 | 21,0 | 5,60 | 12,0 | 22,0 | 12,0 | 0,47 | 26,0 |
| 0,80 | 13,0 | 23,0 | 13,0 | 0,80 | 16,0 | 5,80 | 9,0 | 16,0 | 9,0 | 0,47 | 19,0 |
| 1,00 | 15,0 | 27,0 | 15,0 | 1,27 | 12,0 | 6,00 | 7,0 | 14,0 | 7,0 | 0,67 | 10,0 |
| 1,20 | 11,0 | 30,0 | 11,0 | 1,13 | 10,0 | 6,20 | 7,0 | 17,0 | 7,0 | 0,60 | 12,0 |
| 1,40 | 14,0 | 31,0 | 14,0 | 1,00 | 14,0 | 6,40 | 9,0 | 18,0 | 9,0 | 0,80 | 11,0 |
| 1,60 | 15,0 | 30,0 | 15,0 | 1,47 | 10,0 | 6,60 | 9,0 | 21,0 | 9,0 | 0,60 | 15,0 |
| 1,80 | 20,0 | 42,0 | 20,0 | 1,47 | 14,0 | 6,80 | 7,0 | 16,0 | 7,0 | 0,47 | 15,0 |
| 2,00 | 19,0 | 41,0 | 19,0 | 1,40 | 14,0 | 7,00 | 13,0 | 20,0 | 13,0 | 0,47 | 28,0 |
| 2,20 | 19,0 | 40,0 | 19,0 | 1,27 | 15,0 | 7,20 | 8,0 | 15,0 | 8,0 | 0,53 | 15,0 |
| 2,40 | 16,0 | 35,0 | 16,0 | 0,87 | 18,0 | 7,40 | 8,0 | 16,0 | 8,0 | 0,60 | 13,0 |
| 2,60 | 14,0 | 27,0 | 14,0 | 0,67 | 21,0 | 7,60 | 12,0 | 21,0 | 12,0 | 0,60 | 20,0 |
| 2,80 | 11,0 | 21,0 | 11,0 | 0,53 | 21,0 | 7,80 | 8,0 | 17,0 | 8,0 | 0,60 | 13,0 |
| 3,00 | 12,0 | 20,0 | 12,0 | 0,67 | 18,0 | 8,00 | 9,0 | 18,0 | 9,0 | 1,13 | 8,0 |
| 3,20 | 12,0 | 22,0 | 12,0 | 0,47 | 26,0 | 8,20 | 13,0 | 30,0 | 13,0 | 0,53 | 24,0 |
| 3,40 | 14,0 | 21,0 | 14,0 | 0,53 | 26,0 | 8,40 | 10,0 | 18,0 | 10,0 | 0,60 | 17,0 |
| 3,60 | 13,0 | 21,0 | 13,0 | 0,53 | 24,0 | 8,60 | 10,0 | 19,0 | 10,0 | 0,53 | 19,0 |
| 3,80 | 11,0 | 19,0 | 11,0 | 0,53 | 21,0 | 8,80 | 9,0 | 17,0 | 9,0 | 0,53 | 17,0 |
| 4,00 | 9,0 | 17,0 | 9,0 | 0,53 | 17,0 | 9,00 | 10,0 | 18,0 | 10,0 | 0,53 | 19,0 |
| 4,20 | 16,0 | 24,0 | 16,0 | 0,60 | 27,0 | 9,20 | 10,0 | 18,0 | 10,0 | 0,60 | 17,0 |
| 4,40 | 15,0 | 24,0 | 15,0 | 0,67 | 22,0 | 9,40 | 11,0 | 20,0 | 11,0 | 0,60 | 18,0 |
| 4,60 | 13,0 | 23,0 | 13,0 | 0,47 | 28,0 | 9,60 | 11,0 | 20,0 | 11,0 | 0,53 | 21,0 |
| 4,80 | 13,0 | 20,0 | 13,0 | 0,53 | 24,0 | 9,80 | 9,0 | 17,0 | 9,0 | 0,33 | 27,0 |
| 5,00 | 12,0 | 20,0 | 12,0 | 0,67 | 18,0 | 10,00 | 8,0 | 13,0 | 8,0 | ---- | ---- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
 - punta meccanica tipo Begemann ø = 35.7 mm (area punta 10 cm² - apertura 60°)
 - manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

41051 CASTELNUOVO R. (MO)

Via per Modena, 8 - Tel. 059/535046
p.IVA e C.F. 00812530368

Rifer. NONANTOL

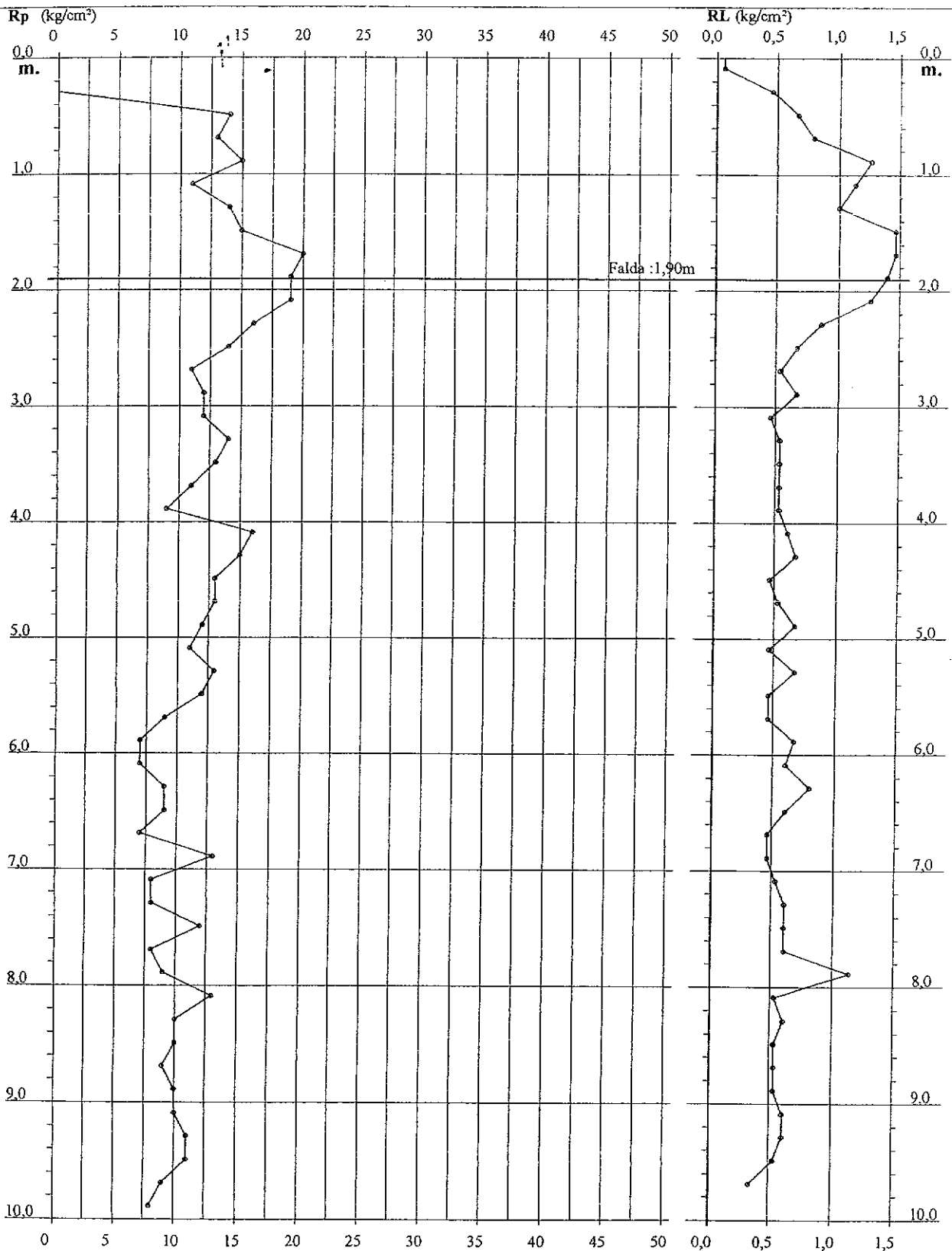
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 11

2.010496-042

- committente : Giacobazzi.
- lavoro : Lottizzazione Mavora
- località : Nonantola (Mo)

- data : 30/10/2002
- quota inizio : Piano Campagna
- prof. falda : 1,90 m da quota inizio
- scala vert. : 1 : 50





di Paolo Cestari & C.
Sede legale: Via degli Artigiani n. 4
Tel. 0535/52637 - Tel. auto 0337/562805
41036 MEDOLLA (MO)

Diagramma prova penetrometrica statica

COMMITTENTE: IL PENTAGONO S.R.L.

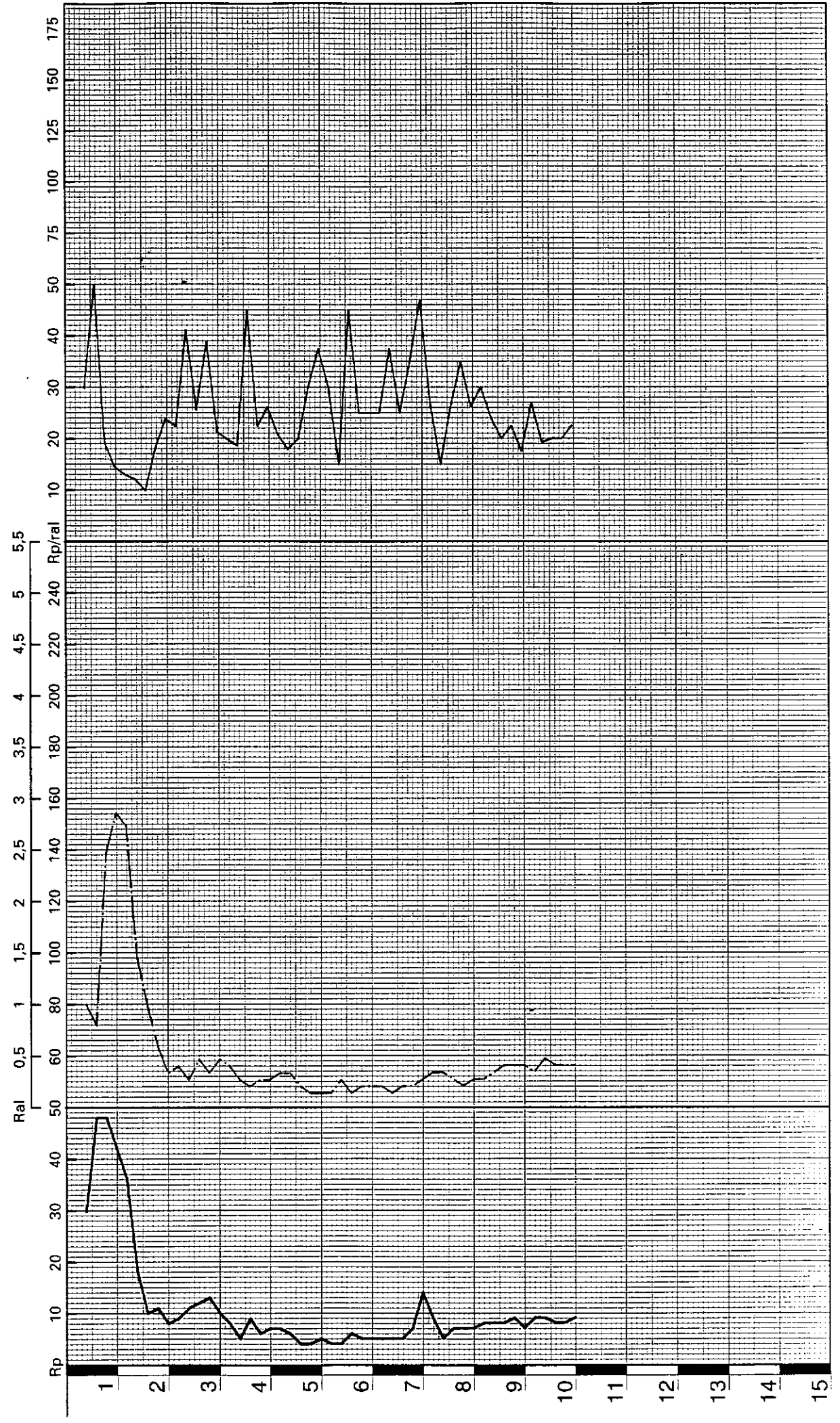
CANTIERE : NONANTOLA - MD -

DATA PROVA : 08 - 07 - 1998

Rp resistenza di punta (Kg/cmq)
Ral resistenza attrito laterale (Kg/cmq)
Rp/Ral rapporto Begemann

H20 - 2.4 m. da p.c.

C.P.T. N° 1





di Paolo Cestari & C.
Sede legale: Via degli Avigiani n. 4
Tel. 0535/52637 - Tel. altro 0337/562805
41036 MEDOLLA (MO)

Diagramma prova penetrometrica statica

COMMITTENTE: **IL PENTAGONO S.R.L.**

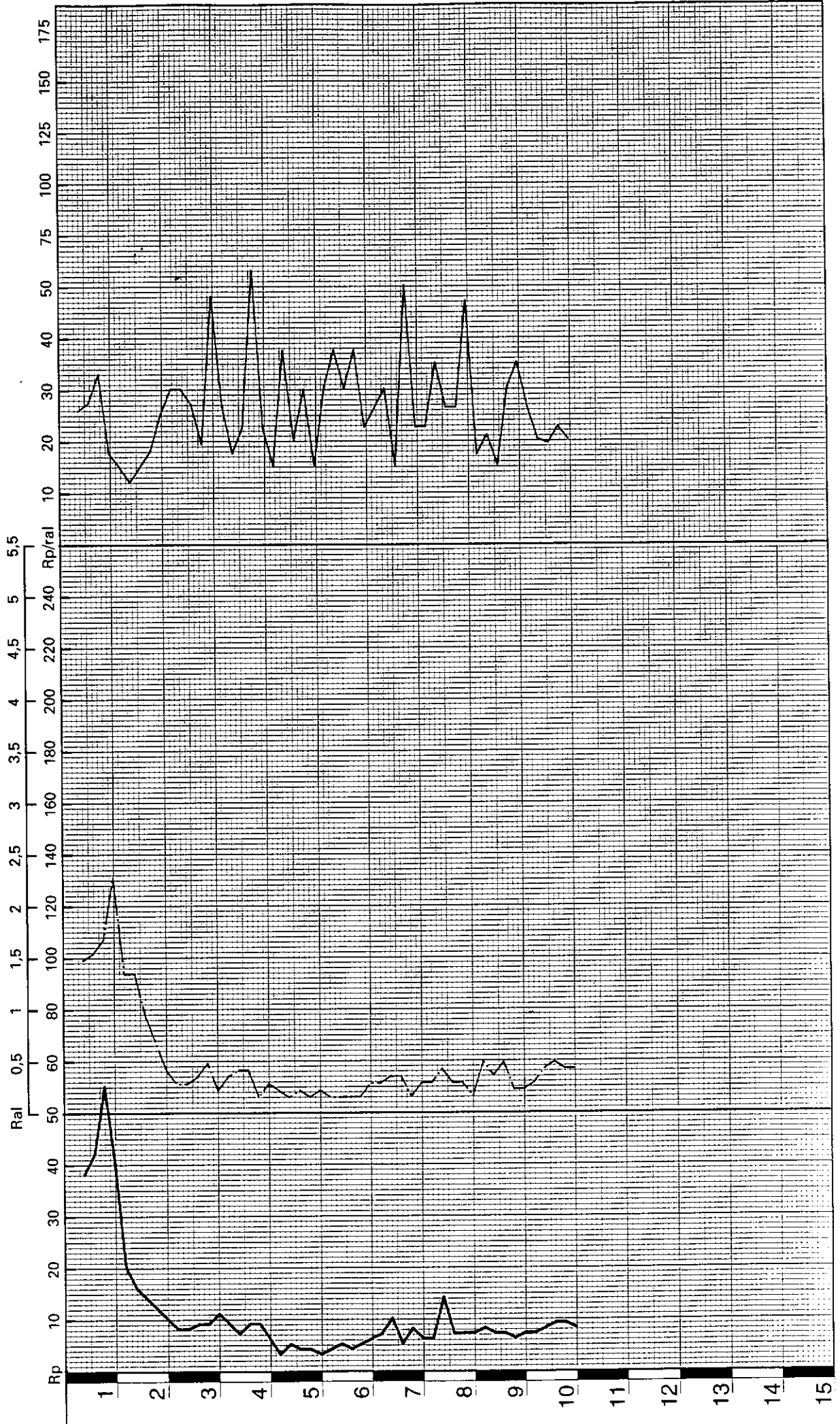
CANTIERE: **NONANTOLA - MD -**

DATA PROVA: **08 - 07 - 1998**

Re resistenza di punta (V.Goriva)
Rai resistenza attrito laterale (Kg/cmq)
Rp/Rai rapporto Begemann

H20 - 3 m. da p.c.

C.P.T. N° 4





di Paolo Cestari & C.
Sede legale: Via degli Artigiani n. 4
Tel. 0535/52637 - Tel. auto 0337/562805
41036 MEDOLLA (MO)

Diagramma prova penetrometrica statica

COMMITTENTE: IL PENTAGONO S.r.l.

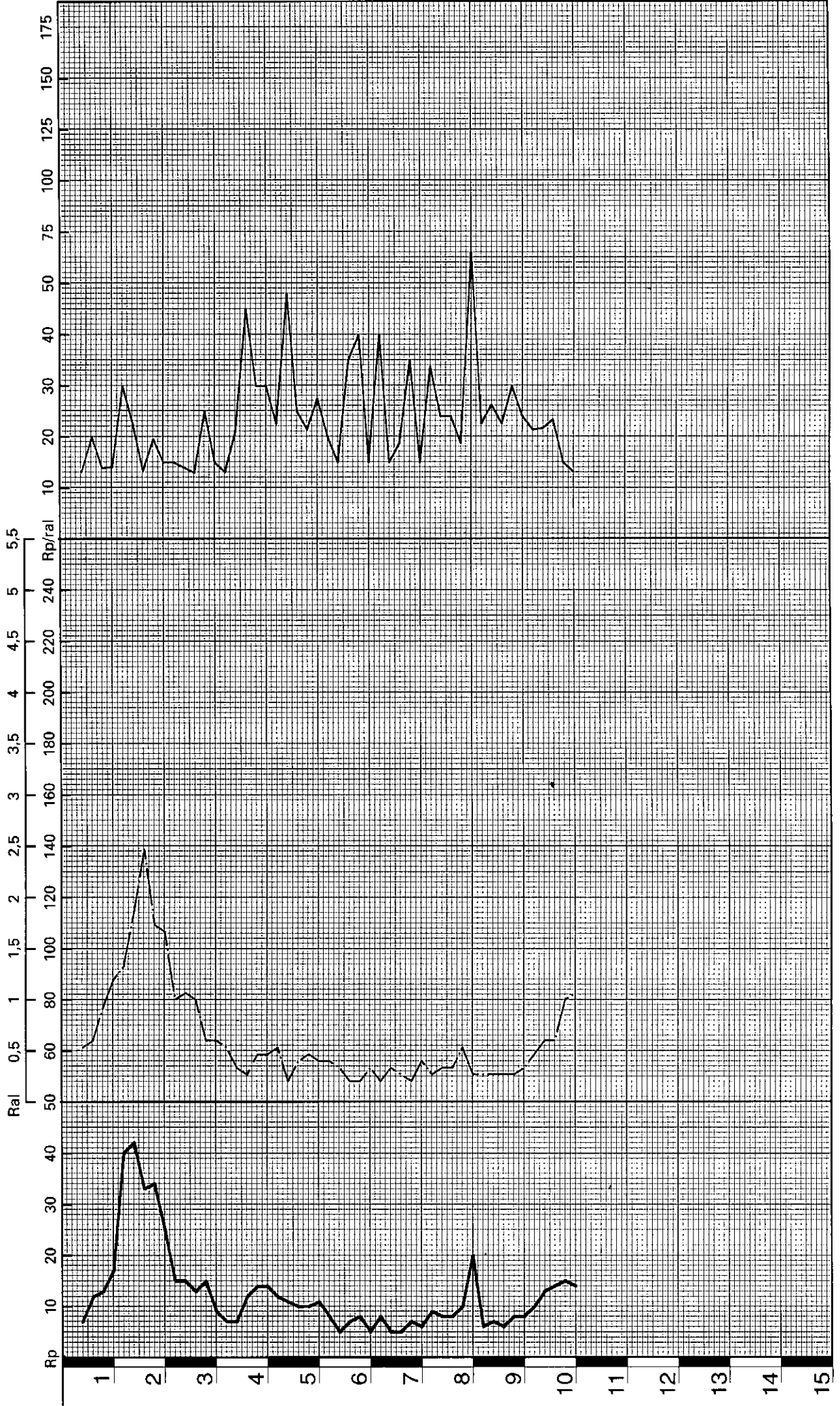
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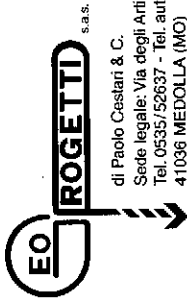
DATA PROVA : 23 - 12 - 1998

Rp resistenza di punta (Kg/cmq)
Ral resistenza attrito laterale (Kg/cmq)
Rp/Ral rapporto Begemann

C.P.T. N° 1

H20 - 2 m. da p.c.





di Paolo Cestari & C.
Sede legale: Via degli Artigiani n. 4
Tel. 0535/52637 - Tel. auto 0337/562805
41036 MEDOLLA (MO)

Diagramma prova penetrometrica statica

COMMITTENTE: **IL PENTAGONO S.r.l.**

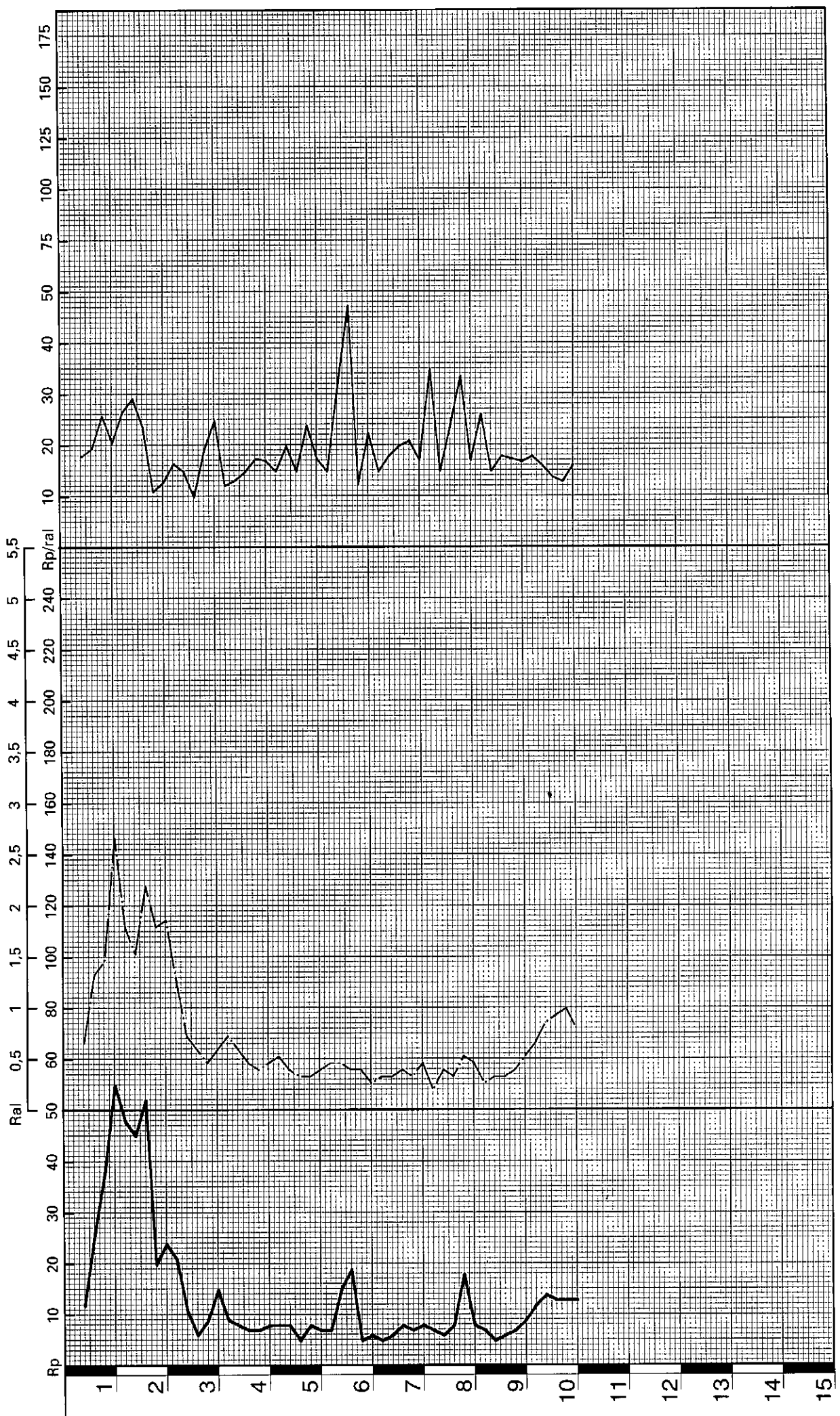
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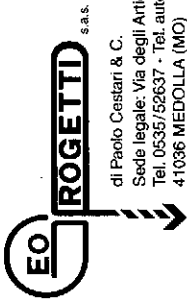
DATA PROVA: **23 - 12 - 1998**

Rp resistenza di punta (Kg/cmq)
Ral resistenza attrito laterale (Kg/cmq)
Rp/Ral rapporto Begemann

C.P.T. N° **4**

H20 - 2.2 m. da p.c.





di Paolo Cestari & C.
Sede legale: Via degli Artigiani n. 4
Tel. 0535/52637 - Tel. auto 0337/562805
41036 MIEGOLLA (MO)

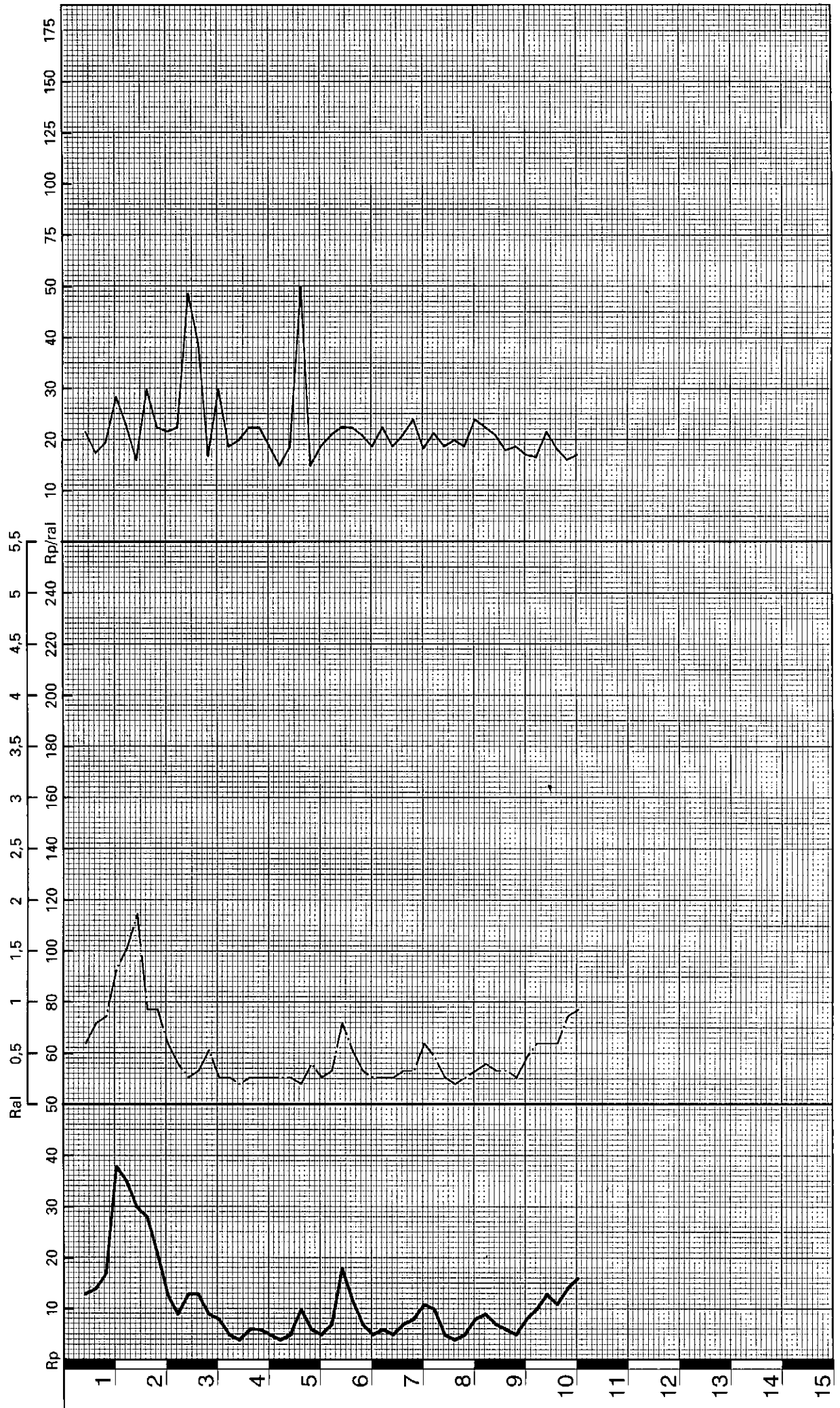
Diagramma prova penetrometrica statica

COMMITTENTE: IL PENTAGONO S.r.l.
CANTIERE: NONANTOLA - MO -
DATA PROVA: 23 - 12 - 1998

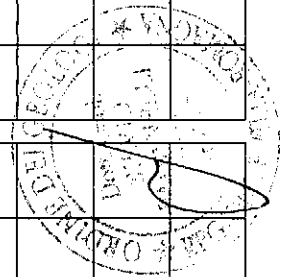
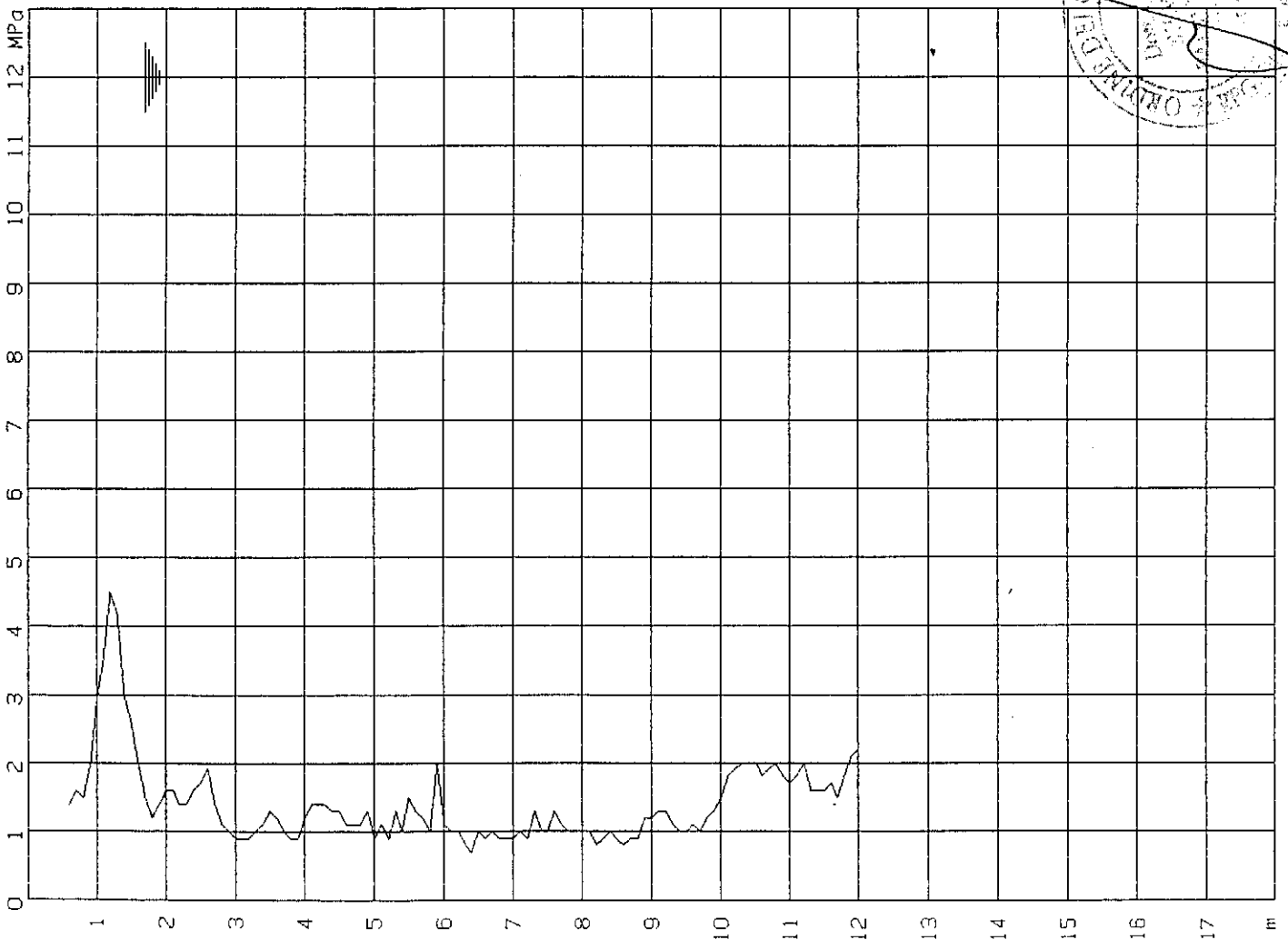
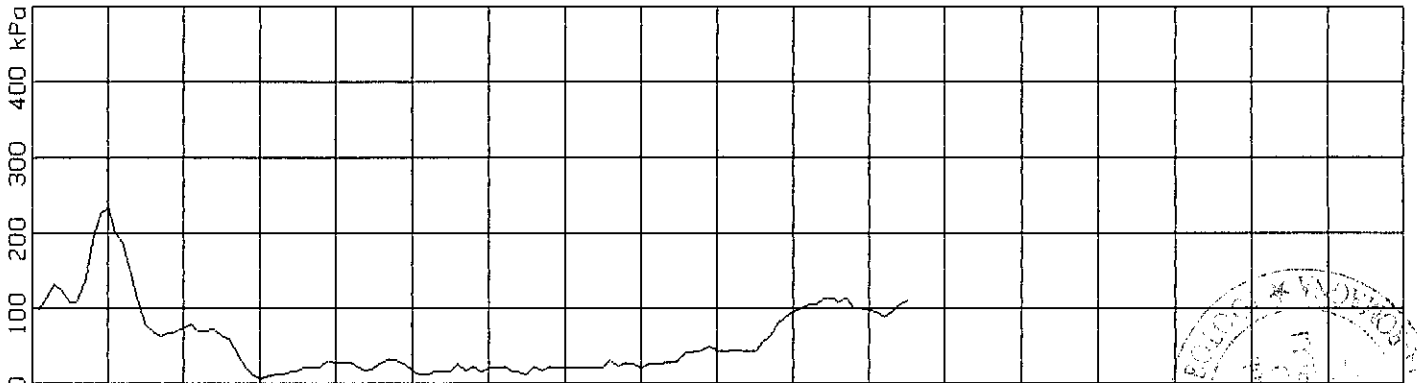
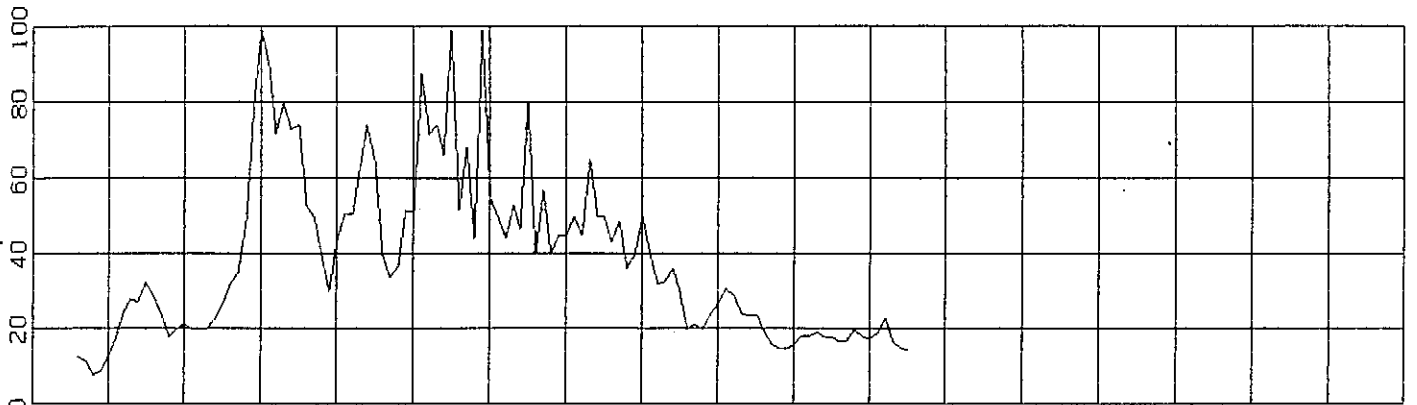
Rp resistenza di punta (Kg/cmq)
Ral resistenza attrito laterale (Kg/cmq)
Rp/Ral rapporto Begemann

C.P.T. N° **6**

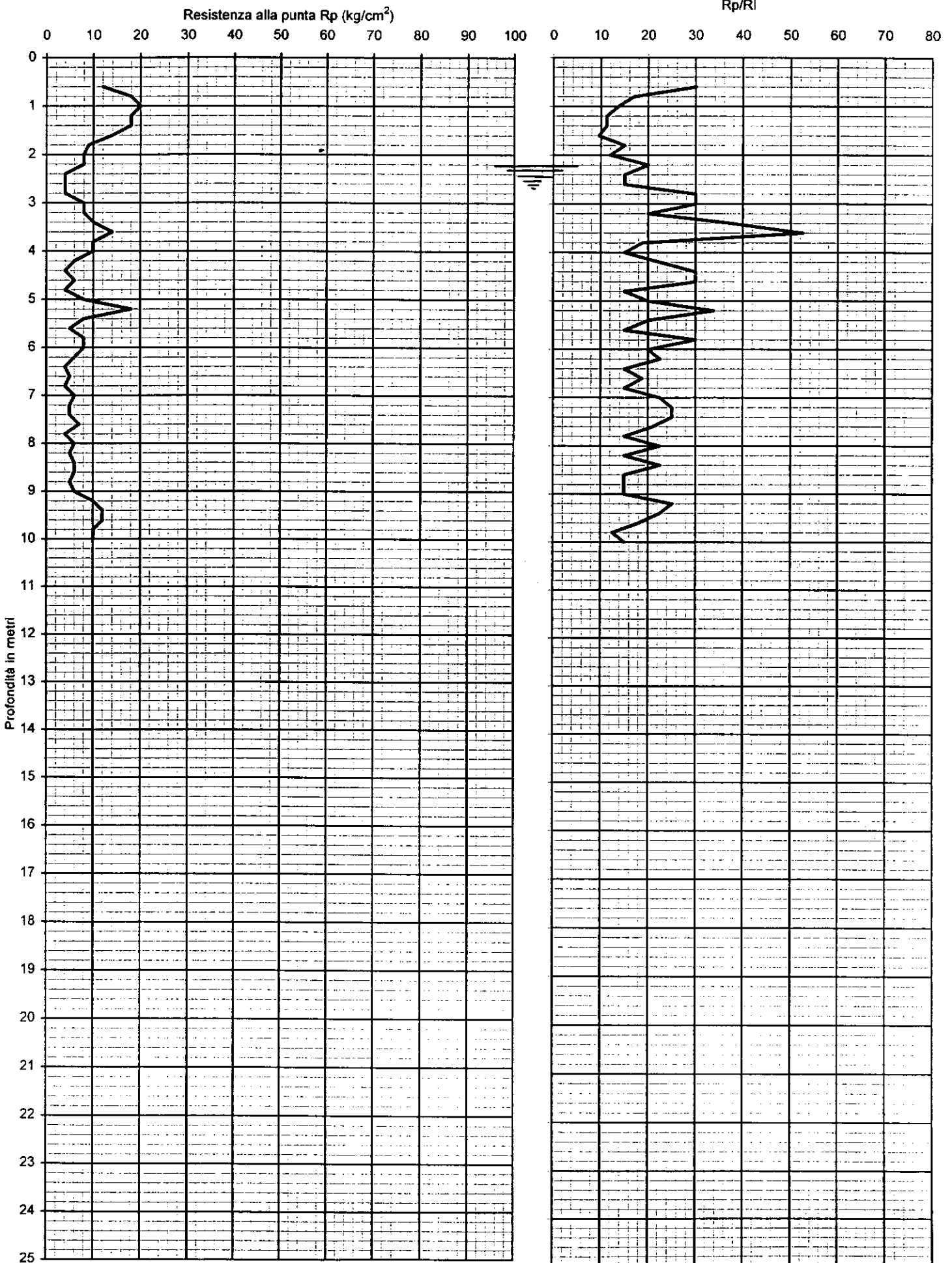
H20 - 2.2 m. da p.c.



| | | |
|---------------------------------|-----------------------------|----------------|
| CPT N. 2 | ESECUTORE: PRO-GEO S. G. A. | DATA: 02/04/98 |
| COMMITTENTE: PICCININI E ZOBOLI | LOCALITA': NONANTOLA | |
| CANTIERE: VIA MAESTRA DI REDU' | D. L.: DR. PAGANELLI | TAV. 2 |



Via AUSTRIA,24 - 41100 MODENA



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 12 | 18 | 12 | 0.40 | 30.00 |
| 0.80 | 18 | 34 | 18 | 1.07 | 16.88 |
| 1.00 | 20 | 42 | 20 | 1.47 | 13.64 |
| 1.20 | 18 | 42 | 18 | 1.60 | 11.25 |
| 1.40 | 18 | 42 | 18 | 1.60 | 11.25 |
| 1.60 | 14 | 36 | 14 | 1.47 | 9.55 |
| 1.80 | 9 | 18 | 9 | 0.60 | 15.00 |
| 2.00 | 8 | 18 | 8 | 0.67 | 12.00 |
| 2.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 2.40 | 4 | 8 | 4 | 0.27 | 15.00 |
| 2.60 | 4 | 8 | 4 | 0.27 | 15.00 |
| 2.80 | 4 | 6 | 4 | 0.13 | 30.00 |
| 3.00 | 8 | 12 | 8 | 0.27 | 30.00 |
| 3.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 3.40 | 10 | 14 | 10 | 0.27 | 37.50 |
| 3.60 | 14 | 18 | 14 | 0.27 | 52.50 |
| 3.80 | 10 | 18 | 10 | 0.53 | 18.75 |
| 4.00 | 10 | 20 | 10 | 0.67 | 15.00 |
| 4.20 | 6 | 10 | 6 | 0.27 | 22.50 |
| 4.40 | 4 | 6 | 4 | 0.13 | 30.00 |
| 4.60 | 6 | 9 | 6 | 0.20 | 30.00 |
| 4.80 | 4 | 8 | 4 | 0.27 | 15.00 |
| 5.00 | 8 | 14 | 8 | 0.40 | 20.00 |
| 5.20 | 18 | 26 | 18 | 0.53 | 33.75 |
| 5.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 5.60 | 5 | 10 | 5 | 0.33 | 15.00 |
| 5.80 | 8 | 12 | 8 | 0.27 | 30.00 |
| 6.00 | 8 | 14 | 8 | 0.40 | 20.00 |
| 6.20 | 6 | 10 | 6 | 0.27 | 22.50 |
| 6.40 | 4 | 8 | 4 | 0.27 | 15.00 |
| 6.60 | 5 | 9 | 5 | 0.27 | 18.75 |
| 6.80 | 4 | 8 | 4 | 0.27 | 15.00 |
| 7.00 | 6 | 10 | 6 | 0.27 | 22.50 |
| 7.20 | 5 | 8 | 5 | 0.20 | 25.00 |
| 7.40 | 5 | 8 | 5 | 0.20 | 25.00 |
| 7.60 | 7 | 12 | 7 | 0.33 | 21.00 |
| 7.80 | 4 | 8 | 4 | 0.27 | 15.00 |
| 8.00 | 6 | 10 | 6 | 0.27 | 22.50 |
| 8.20 | 5 | 10 | 5 | 0.33 | 15.00 |
| 8.40 | 6 | 10 | 6 | 0.27 | 22.50 |
| 8.60 | 6 | 12 | 6 | 0.40 | 15.00 |
| 8.80 | 5 | 10 | 5 | 0.33 | 15.00 |
| 9.00 | 6 | 12 | 6 | 0.40 | 15.00 |
| 9.20 | 10 | 16 | 10 | 0.40 | 25.00 |
| 9.40 | 12 | 20 | 12 | 0.53 | 22.50 |
| 9.60 | 12 | 22 | 12 | 0.67 | 18.00 |
| 9.80 | 10 | 22 | 10 | 0.80 | 12.50 |
| 10.00 | 10 | 20 | 10 | 0.67 | 15.00 |
| 10.20 | | | | | |
| 10.40 | | | | | |
| 10.60 | | | | | |
| 10.80 | | | | | |
| 11.00 | | | | | |
| 11.20 | | | | | |
| 11.40 | | | | | |
| 11.60 | | | | | |
| 11.80 | | | | | |
| 12.00 | | | | | |
| 12.20 | | | | | |
| 12.40 | | | | | |
| 12.60 | | | | | |
| 12.80 | | | | | |
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| 13.40 | | | | | |
| 13.60 | | | | | |
| 13.80 | | | | | |
| 14.00 | | | | | |
| 14.20 | | | | | |
| 14.40 | | | | | |
| 14.60 | | | | | |
| 14.80 | | | | | |
| 15.00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15.20 | | | | | |
| 15.40 | | | | | |
| 15.60 | | | | | |
| 15.80 | | | | | |
| 16.00 | | | | | |
| 16.20 | | | | | |
| 16.40 | | | | | |
| 16.60 | | | | | |
| 16.80 | | | | | |
| 17.00 | | | | | |
| 17.20 | | | | | |
| 17.40 | | | | | |
| 17.60 | | | | | |
| 17.80 | | | | | |
| 18.00 | | | | | |
| 18.20 | | | | | |
| 18.40 | | | | | |
| 18.60 | | | | | |
| 18.80 | | | | | |
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| 19.20 | | | | | |
| 19.40 | | | | | |
| 19.60 | | | | | |
| 19.80 | | | | | |
| 20.00 | | | | | |
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| 20.40 | | | | | |
| 20.60 | | | | | |
| 20.80 | | | | | |
| 21.00 | | | | | |
| 21.20 | | | | | |
| 21.40 | | | | | |
| 21.60 | | | | | |
| 21.80 | | | | | |
| 22.00 | | | | | |
| 22.20 | | | | | |
| 22.40 | | | | | |
| 22.60 | | | | | |
| 22.80 | | | | | |
| 23.00 | | | | | |
| 23.20 | | | | | |
| 23.40 | | | | | |
| 23.60 | | | | | |
| 23.80 | | | | | |
| 24.00 | | | | | |
| 24.20 | | | | | |
| 24.40 | | | | | |
| 24.60 | | | | | |
| 24.80 | | | | | |
| 25.00 | | | | | |
| 25.20 | | | | | |
| 25.40 | | | | | |
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| 26.00 | | | | | |
| 26.20 | | | | | |
| 26.40 | | | | | |
| 26.60 | | | | | |
| 26.80 | | | | | |
| 27.00 | | | | | |
| 27.20 | | | | | |
| 27.40 | | | | | |
| 27.60 | | | | | |
| 27.80 | | | | | |
| 28.00 | | | | | |
| 28.20 | | | | | |
| 28.40 | | | | | |
| 28.60 | | | | | |
| 28.80 | | | | | |
| 29.00 | | | | | |
| 29.20 | | | | | |
| 29.40 | | | | | |
| 29.60 | | | | | |
| 29.80 | | | | | |
| 30.00 | | | | | |

RONCHETTI E MALAGOLI

NONANTOLA

Certificato N : 36-96

Data : 06-03-96

PROVA PENETROMETRICA STATICA

COMMITTENTE :RONCHETTI -MALAGOLI

CANTIERE :N.12 ALLOGGI

PENETROMETRO :GOUDA

COMUNE :NONANTOLA

LOCALITA' :VIA LARGA

PICCHETTO :2 /

PROVA N.RO : 2 DEL :06-03-96

INIZIO A ML : 0.00

FINE A ML :10.00

Q.TA FALDA : 2.00

Q.TA PIANO CAMPAGNA : 0.00

COMMENTI :

TECNICO :DOTT.GUERZONI

LABORATORIO :

PROVA PENETROMETRICA STATICA

CERTIFICATO N.RO : 36-96

CANTIERE : N.12 ALLOGGI

| PROF. | QC | RL. | FS. | X | PROF. | QC | RL. | FS. | X | PROF. | QC | RL. | FS. | X |
|-------|----|-----|------|-------|-------|----|-----|------|-------|-------|----|-----|-----|---|
| 0.00 | 0 | 1 | 0.07 | 0.00 | 10.00 | 14 | 22 | 0.53 | 26.42 | | | | | |
| 0.20 | 0 | 1 | 0.07 | 0.00 | | | | | | | | | | |
| 0.40 | 4 | 8 | 0.27 | 14.81 | | | | | | | | | | |
| 0.60 | 8 | 16 | 0.53 | 15.09 | | | | | | | | | | |
| 0.80 | 14 | 25 | 0.73 | 19.18 | | | | | | | | | | |
| 1.00 | 16 | 28 | 0.80 | 20.00 | | | | | | | | | | |
| 1.20 | 20 | 40 | 1.33 | 15.04 | | | | | | | | | | |
| 1.40 | 18 | 40 | 1.47 | 12.24 | | | | | | | | | | |
| 1.60 | 20 | 40 | 1.33 | 15.04 | | | | | | | | | | |
| 1.80 | 20 | 38 | 1.20 | 16.67 | | | | | | | | | | |
| 2.00 | 22 | 44 | 1.47 | 14.97 | | | | | | | | | | |
| 2.20 | 20 | 40 | 1.33 | 15.04 | | | | | | | | | | |
| 2.40 | 20 | 40 | 1.33 | 15.04 | | | | | | | | | | |
| 2.60 | 18 | 38 | 1.33 | 13.53 | | | | | | | | | | |
| 2.80 | 16 | 36 | 1.33 | 12.03 | | | | | | | | | | |
| 3.00 | 10 | 20 | 0.67 | 14.93 | | | | | | | | | | |
| 3.20 | 10 | 18 | 0.53 | 18.87 | | | | | | | | | | |
| 3.40 | 9 | 16 | 0.47 | 19.15 | | | | | | | | | | |
| 3.60 | 9 | 16 | 0.47 | 19.15 | | | | | | | | | | |
| 3.80 | 12 | 19 | 0.47 | 25.53 | | | | | | | | | | |
| 4.00 | 14 | 20 | 0.40 | 35.00 | | | | | | | | | | |
| 4.20 | 12 | 20 | 0.53 | 22.64 | | | | | | | | | | |
| 4.40 | 10 | 18 | 0.53 | 18.87 | | | | | | | | | | |
| 4.60 | 10 | 16 | 0.40 | 25.00 | | | | | | | | | | |
| 4.80 | 15 | 22 | 0.47 | 31.91 | | | | | | | | | | |
| 5.00 | 16 | 24 | 0.53 | 30.19 | | | | | | | | | | |
| 5.20 | 20 | 29 | 0.60 | 33.33 | | | | | | | | | | |
| 5.40 | 18 | 28 | 0.67 | 26.87 | | | | | | | | | | |
| 5.60 | 30 | 42 | 0.80 | 37.50 | | | | | | | | | | |
| 5.80 | 36 | 50 | 0.93 | 38.71 | | | | | | | | | | |
| 6.00 | 18 | 40 | 1.47 | 12.24 | | | | | | | | | | |
| 6.20 | 15 | 32 | 1.13 | 13.27 | | | | | | | | | | |
| 6.40 | 14 | 26 | 0.80 | 17.50 | | | | | | | | | | |
| 6.60 | 14 | 26 | 0.80 | 17.50 | | | | | | | | | | |
| 6.80 | 15 | 26 | 0.73 | 20.55 | | | | | | | | | | |
| 7.00 | 16 | 24 | 0.53 | 30.19 | | | | | | | | | | |
| 7.20 | 12 | 22 | 0.67 | 17.91 | | | | | | | | | | |
| 7.40 | 10 | 22 | 0.80 | 12.50 | | | | | | | | | | |
| 7.60 | 10 | 21 | 0.73 | 13.70 | | | | | | | | | | |
| 7.80 | 10 | 20 | 0.67 | 14.93 | | | | | | | | | | |
| 8.00 | 16 | 28 | 0.80 | 20.00 | | | | | | | | | | |
| 8.20 | 18 | 36 | 1.20 | 15.00 | | | | | | | | | | |
| 8.40 | 20 | 40 | 1.33 | 15.04 | | | | | | | | | | |
| 8.60 | 20 | 40 | 1.33 | 15.04 | | | | | | | | | | |
| 8.80 | 16 | 36 | 1.33 | 12.03 | | | | | | | | | | |
| 9.00 | 14 | 28 | 0.93 | 15.05 | | | | | | | | | | |
| 9.20 | 12 | 26 | 0.93 | 12.90 | | | | | | | | | | |
| 9.40 | 14 | 22 | 0.53 | 26.42 | | | | | | | | | | |
| 9.60 | 14 | 20 | 0.40 | 35.00 | | | | | | | | | | |
| 9.80 | 12 | 20 | 0.53 | 22.64 | | | | | | | | | | |

LEGENDA : PROF. = PROFONDITA' DI INFISSIONE m. FS = RESISTENZA SPECIFICA AL MANICOTTO daN/cm²
 QC = RESISTENZA SPECIFICA ALLA PUNTA daN/cm² X = RAPPORTO QC/FS %
 RL = RESISTENZA LATERALE LOCALE daN/cm²

LITOLOGIA : T=TORBE A=ARGILLE LA=LIMI ARGILLOSI LS=LIMI SABBIOSI SL=SABBIE LIMOSE
 S=SABBIE SG=SABBIE E GHIAIE AG=COPERTURA SUPERFICIALE

CPT Cone Penetration Test

Picchetto n. 2 /

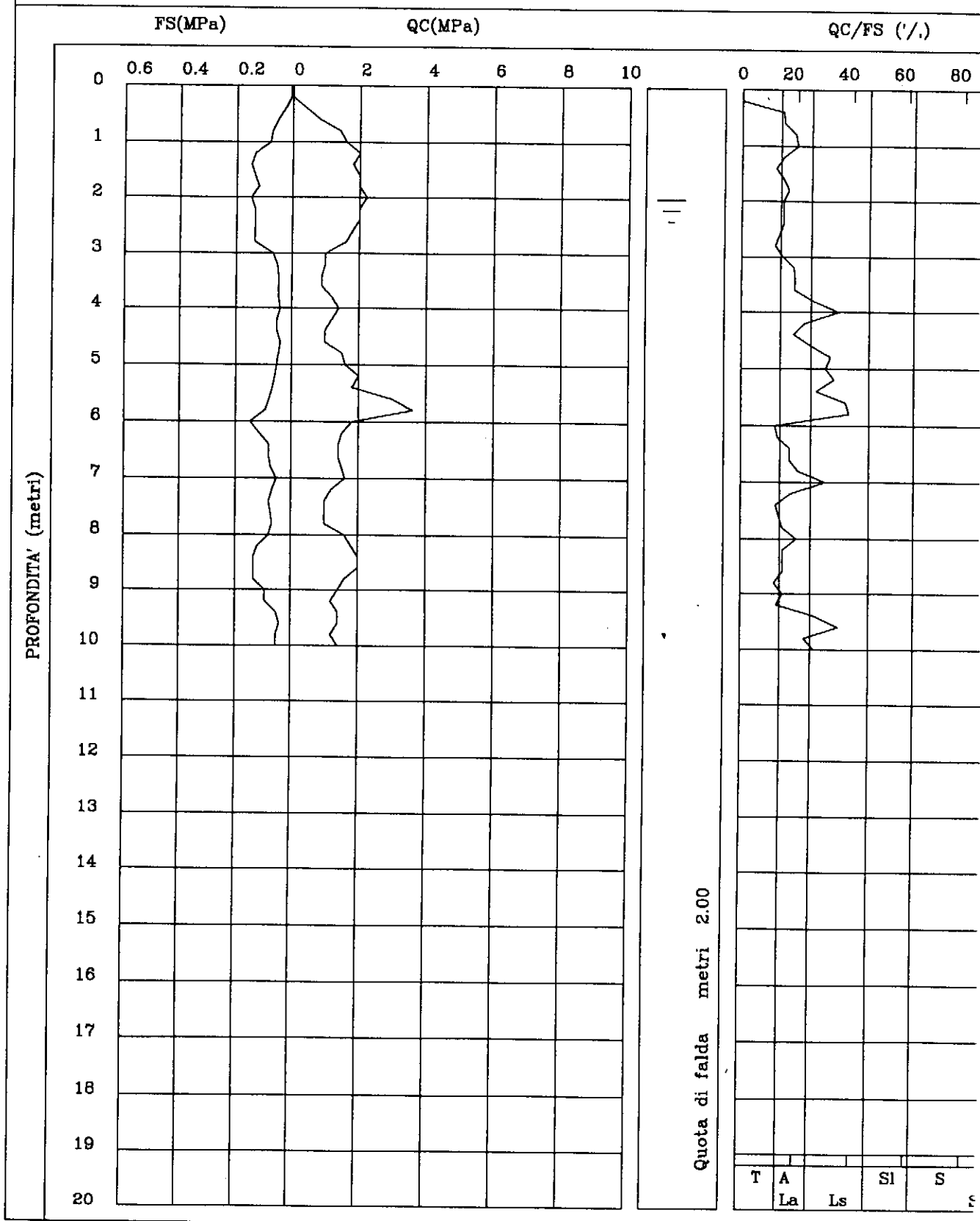
Cantiere

N.12 ALLOGGI

Committente RONCHETTI -MALAGOLI

Certif.n. 36-96

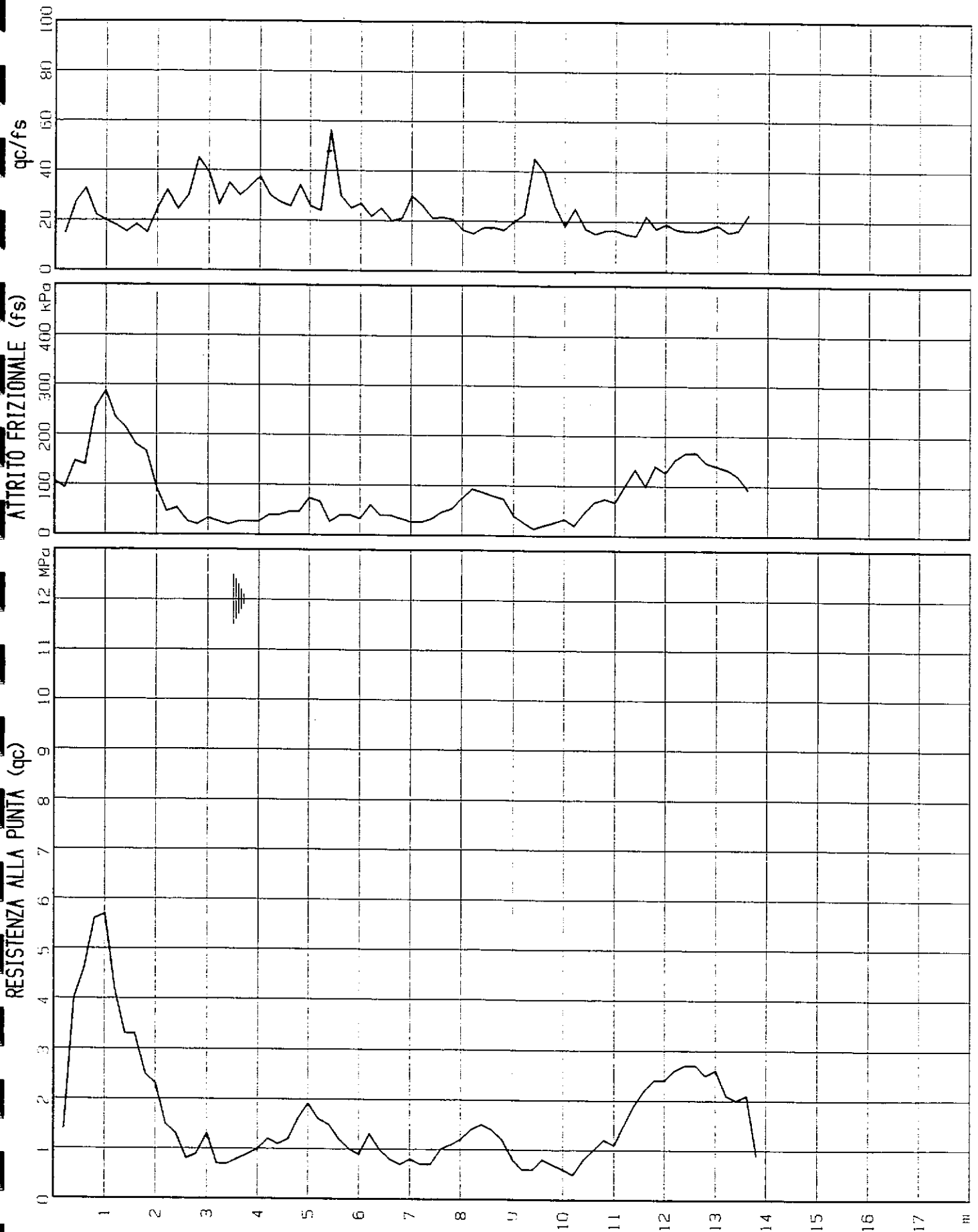
del 06/03/1996



CPT n°: 1
 Committente:
Immobiliare San Carlo S.r.l.
 Cantiere: *Via Golfiera*
 Località: *Nonantola (MO)*



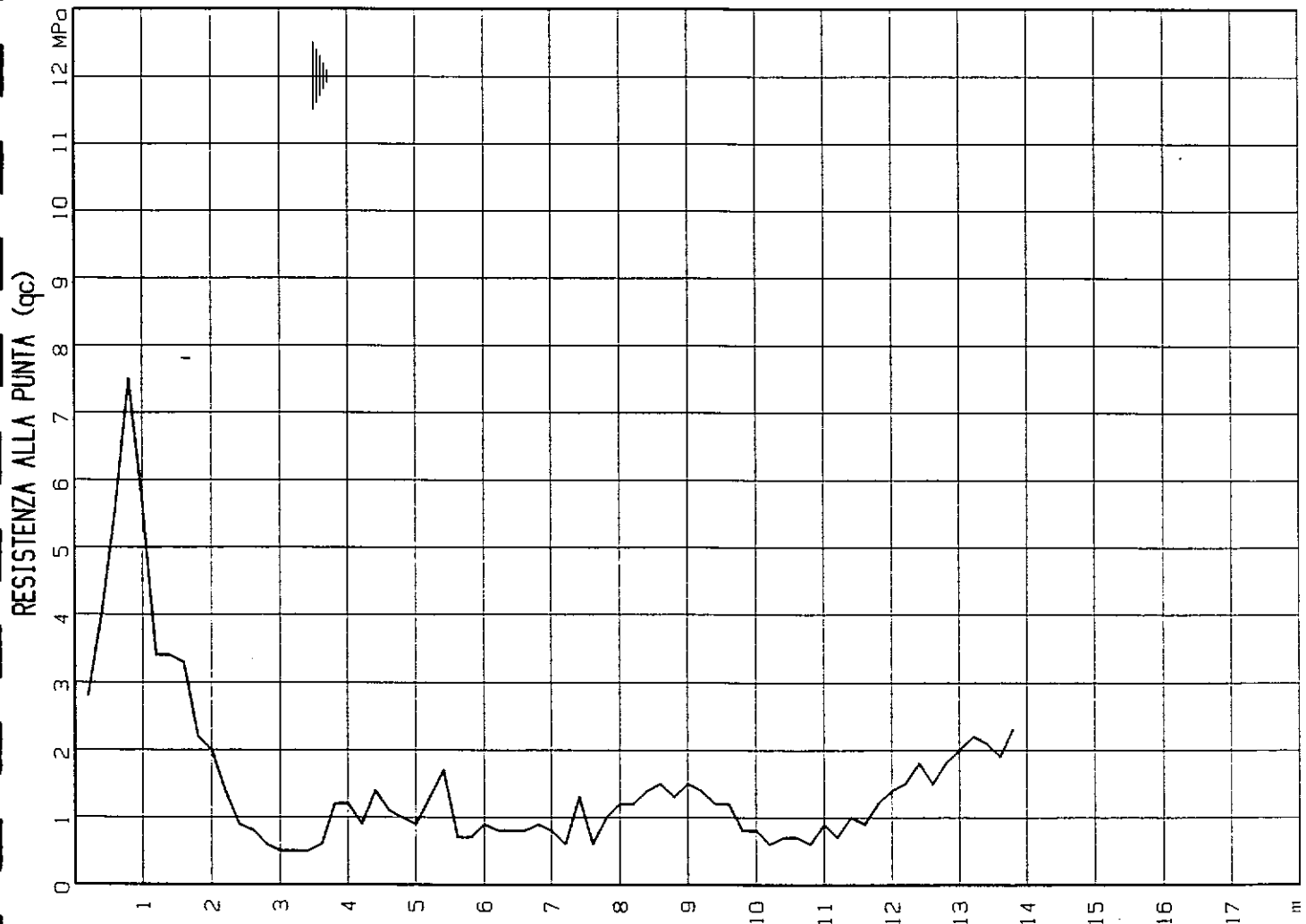
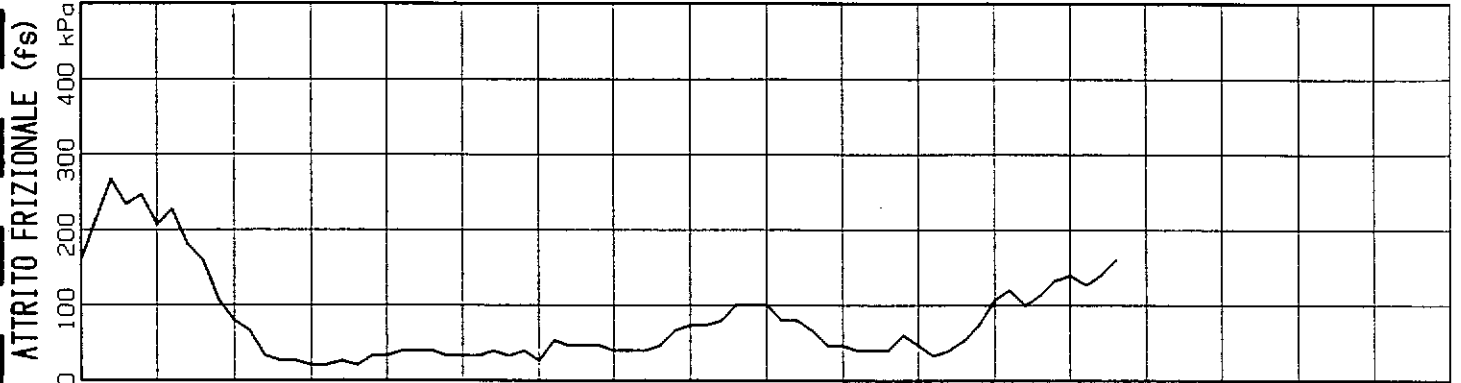
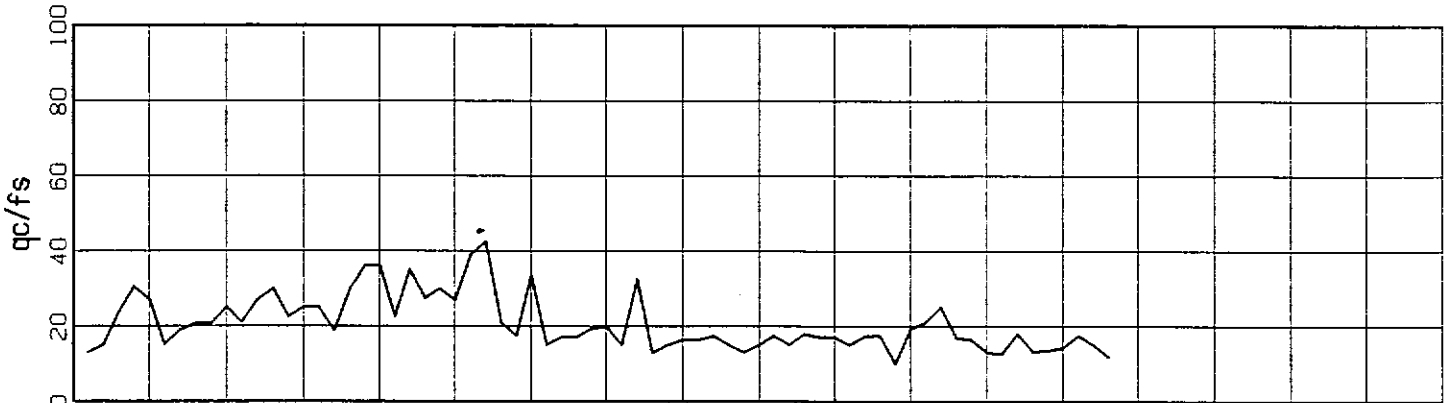
Esecutore: *Geoprogetti S.a.S.*
 Note:
 Scala: *n.d.*
 Data: *19-10-99*
 Dir. Lavori
Dr. M. Casali
 Tavola n° *3*



CPT n°: 3
 Committente:
Immobiliare San Carlo S.r.l.
 Cantiere: *Via Golfiera*
 Località: *Nonantola (MO)*



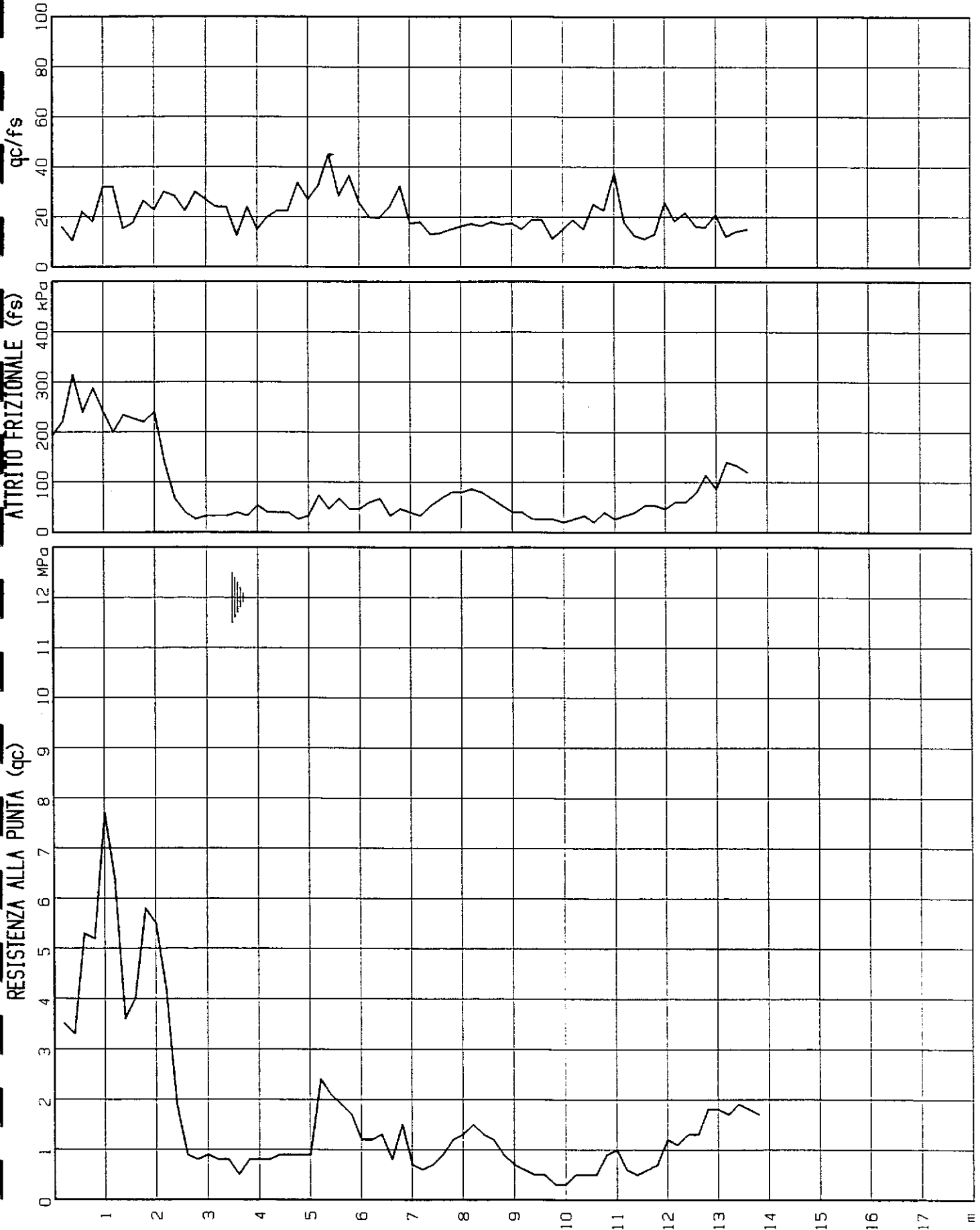
Esecutore: *Geoprogetti S.a.s.*
 Note:
 Data: *19-10-99*
 Dir. Lavori
Dr. M. Casali
 Scala: *n.d.*
 Tavola n° 5



CPT n°: 5
 Committente:
Immobiliare San Carlo S.r.l.
 Cantiere: *Via Golfiera*
 Località: *Nonantola (MO)*



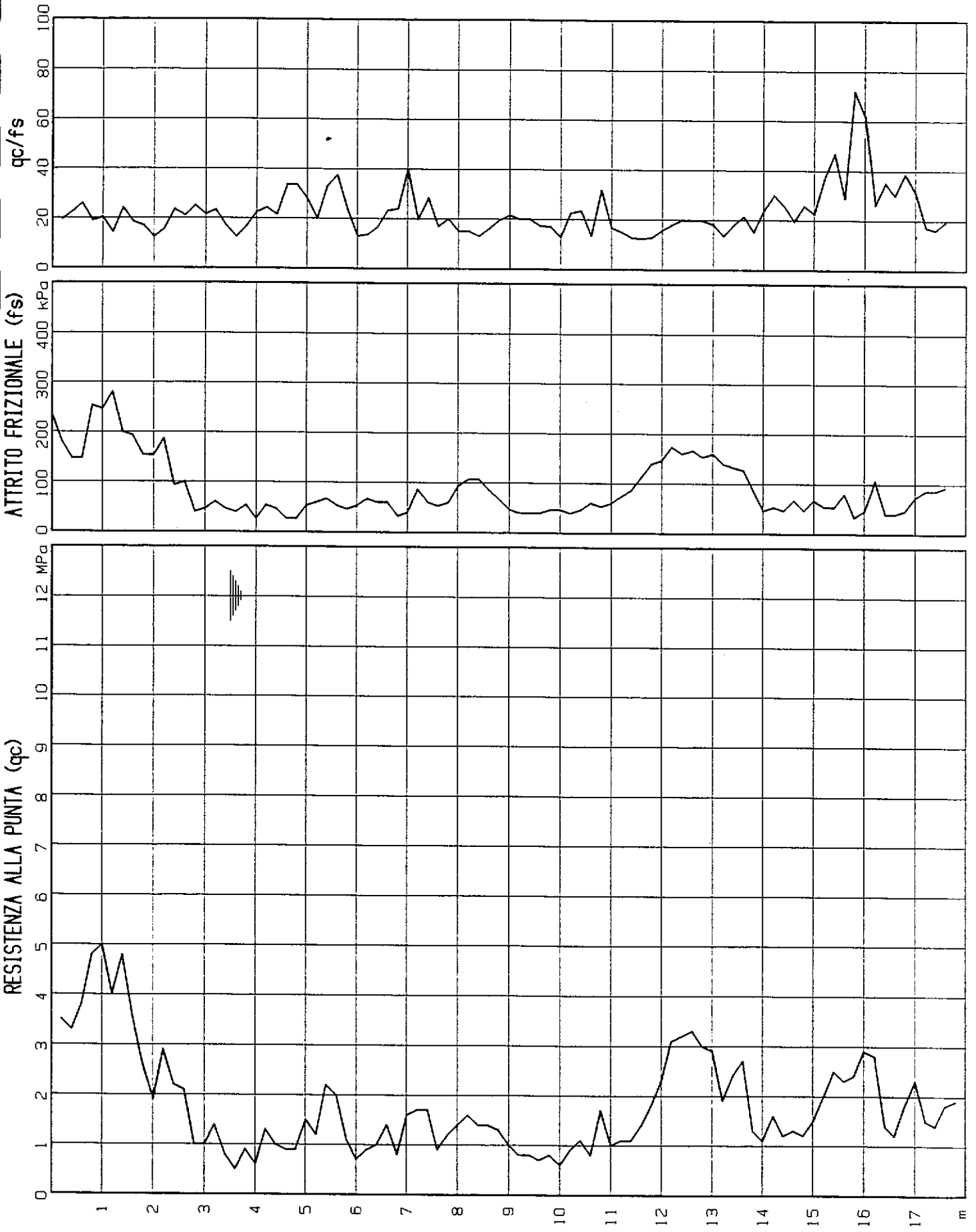
Esecutore: *Geoprogetti S.a.s.*
 Note:
 Data: *19-10-99*
 Dir. Lavori
Dr. M. Casali
 Scala: *n.d.*
 Tavola n° 7



CPT n°: 7
 Committente:
Immobiliare San Carlo S.r.l.
 Cantiere: *Via Golfiera*
 Località: *Nonantola (MO)*



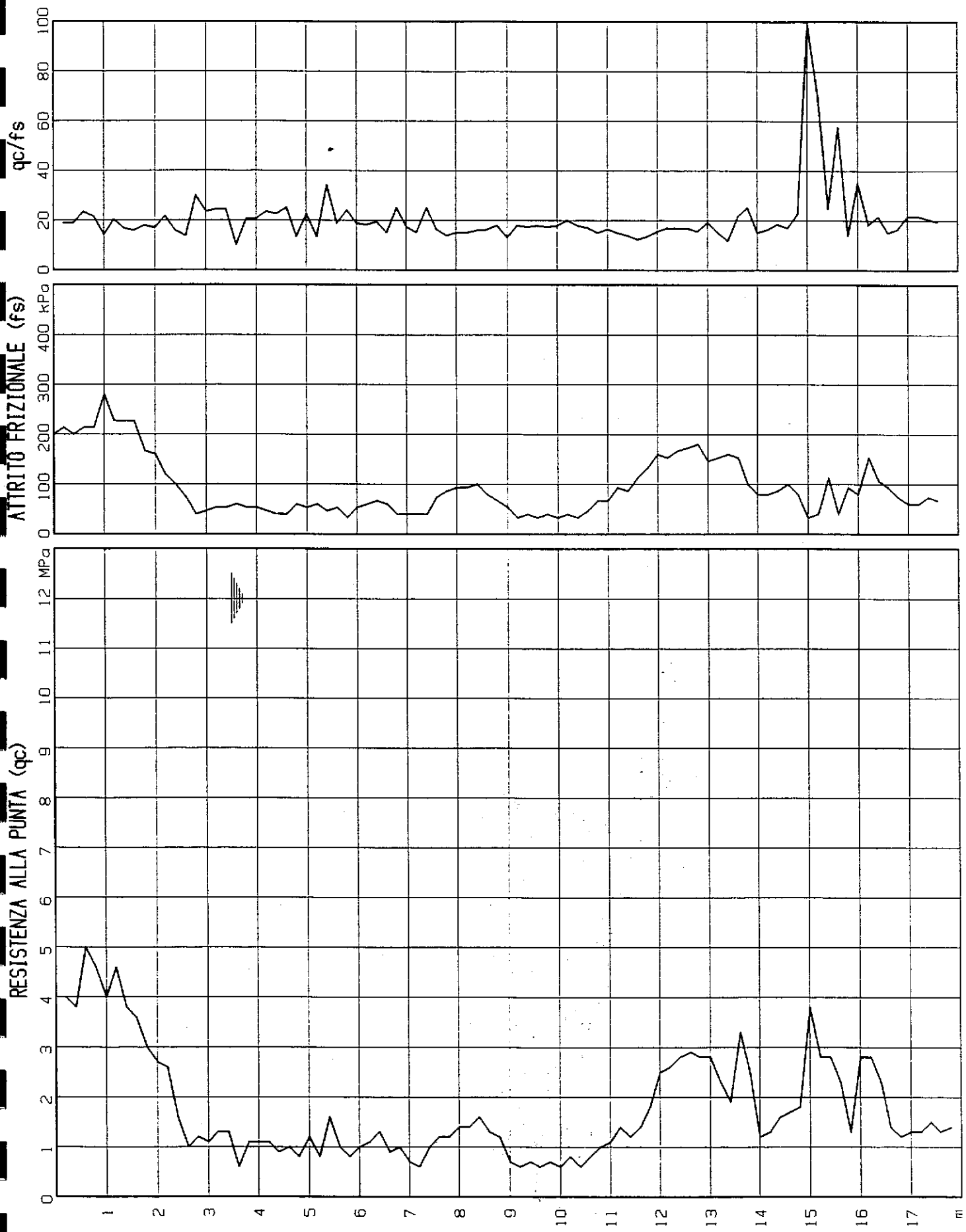
Esecutore: *Geoprogetti S.a.s.*
 Note:
 Data: *19-10-99*
 Dir. Lavori
Dr. M. Casali
 Scala: *n.d.*
 Tavola n° *9*



CPT n°: 9
 Committente:
 Immobiliare San Carlo S.r.l.
 Cantiere: Via Golfiera
 Località: Nonantola (MO)



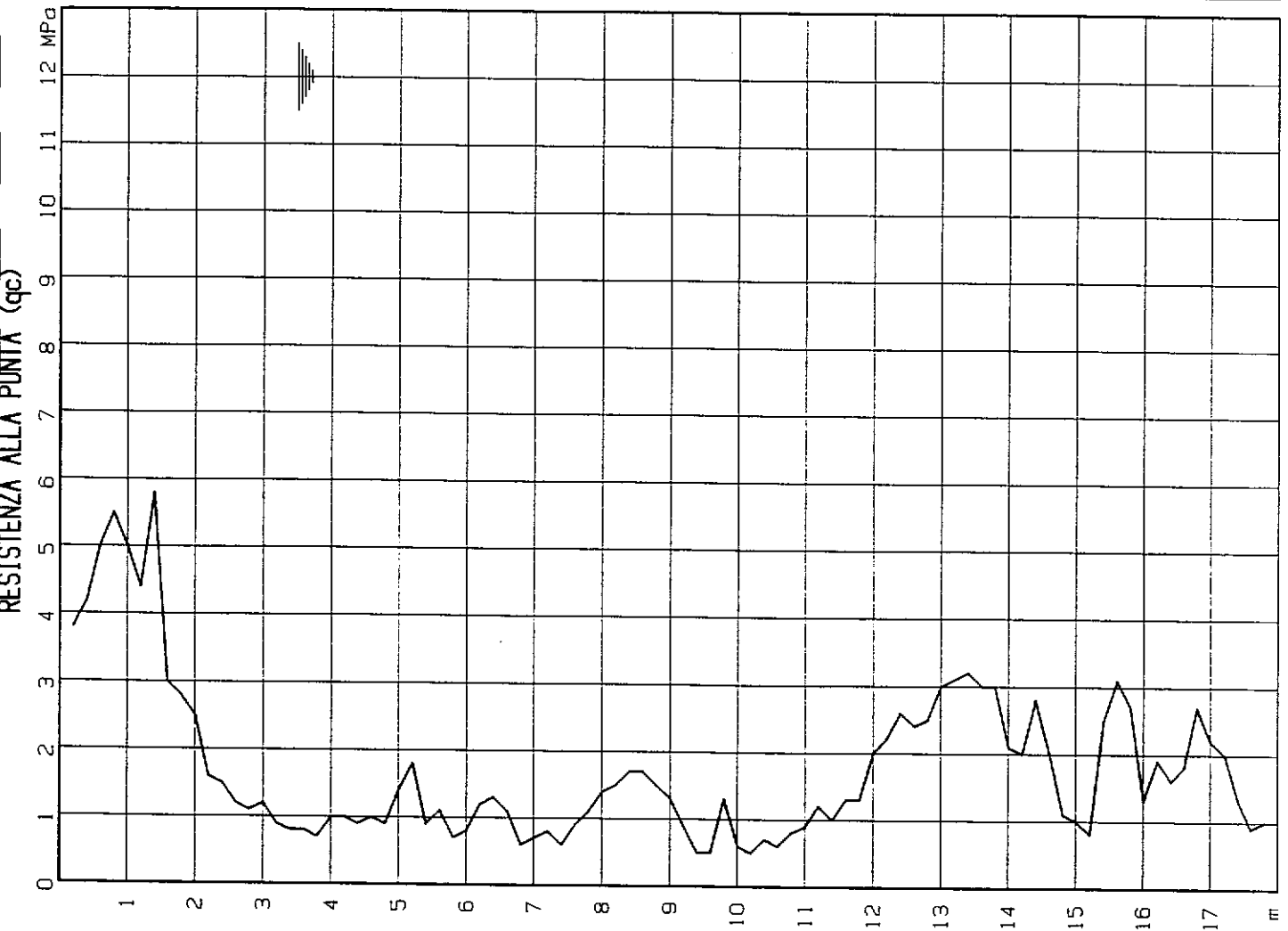
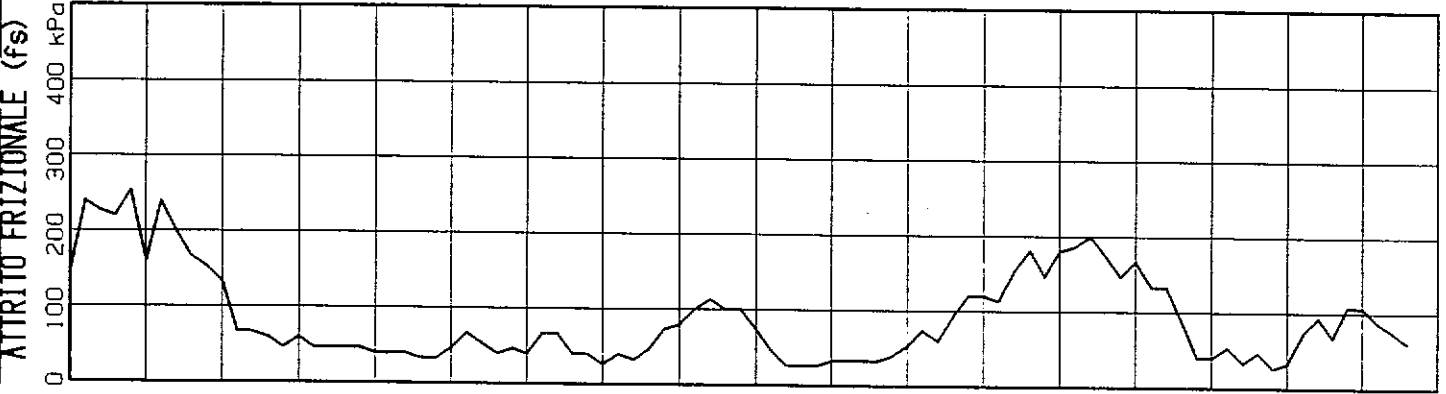
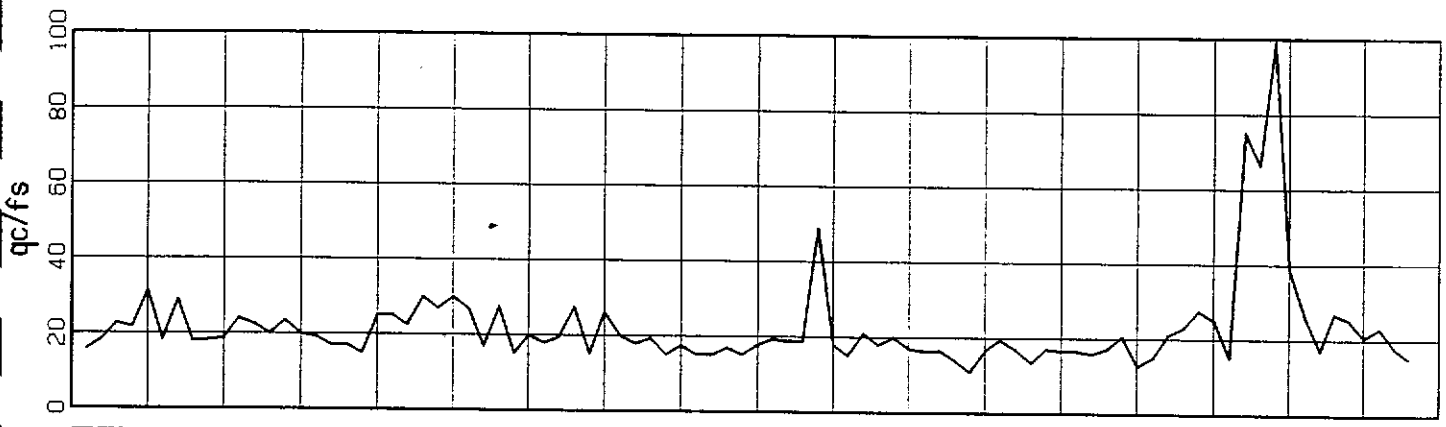
Esecutore: Geoprogetti S.a.s.
 Note:
 Data: 19-10-99
 Dir. Lavori
 Dr. M. Casali
 Scala: n.d.
 Tavola n° 11



CPT n°: 11
 Committente:
Immobiliare San Carlo S.r.l.
 Cantiere: *Via Golfiera*
 Località: *Nonantola (MO)*

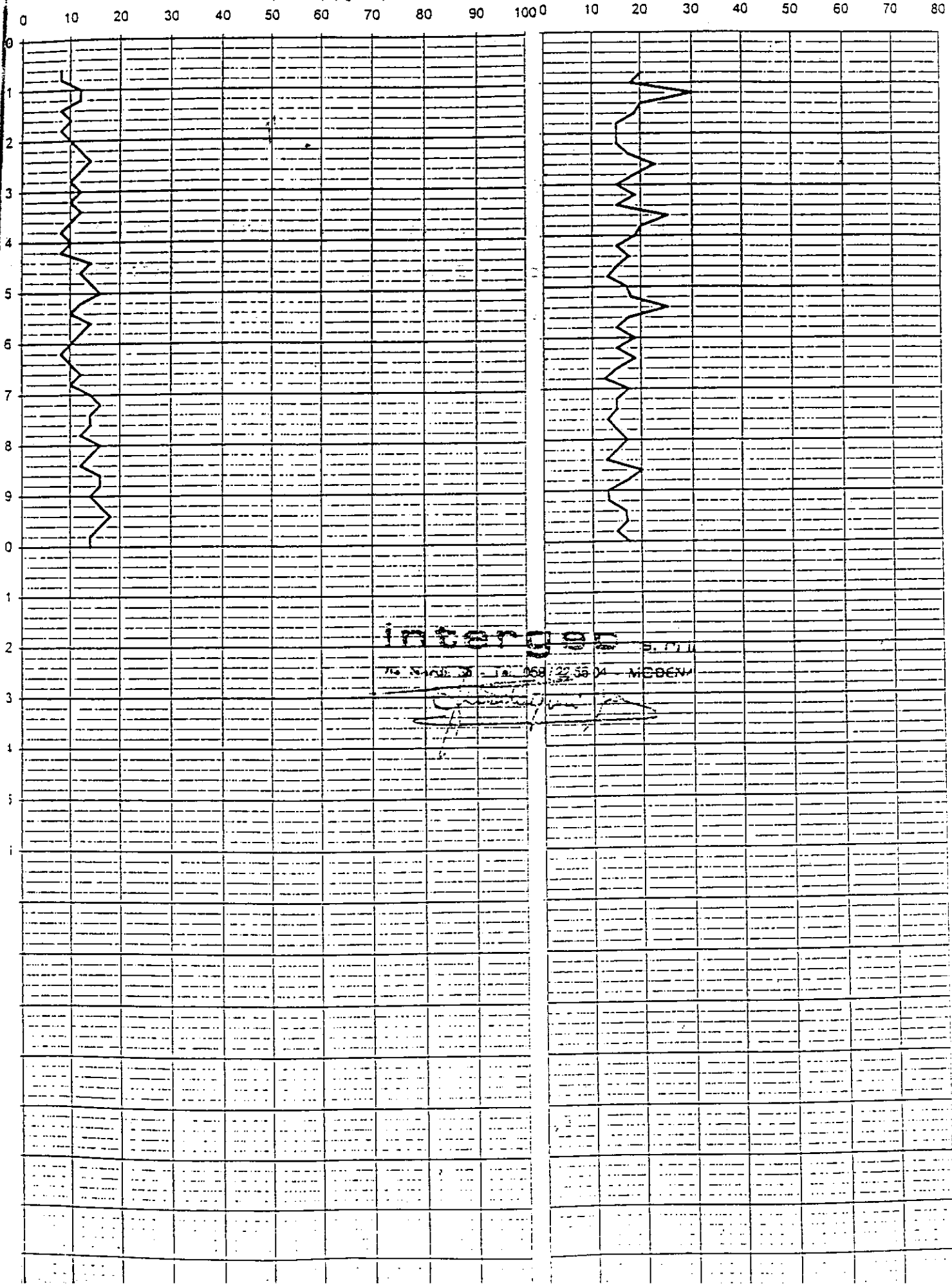


Esecutore: *Geoprogetti S.a.s.*
 Note:
 Data: *19-10-99*
 Dir. Lavori
Dr. M. Casali
 Scala: *n.d.*
 Tavola n° *13*



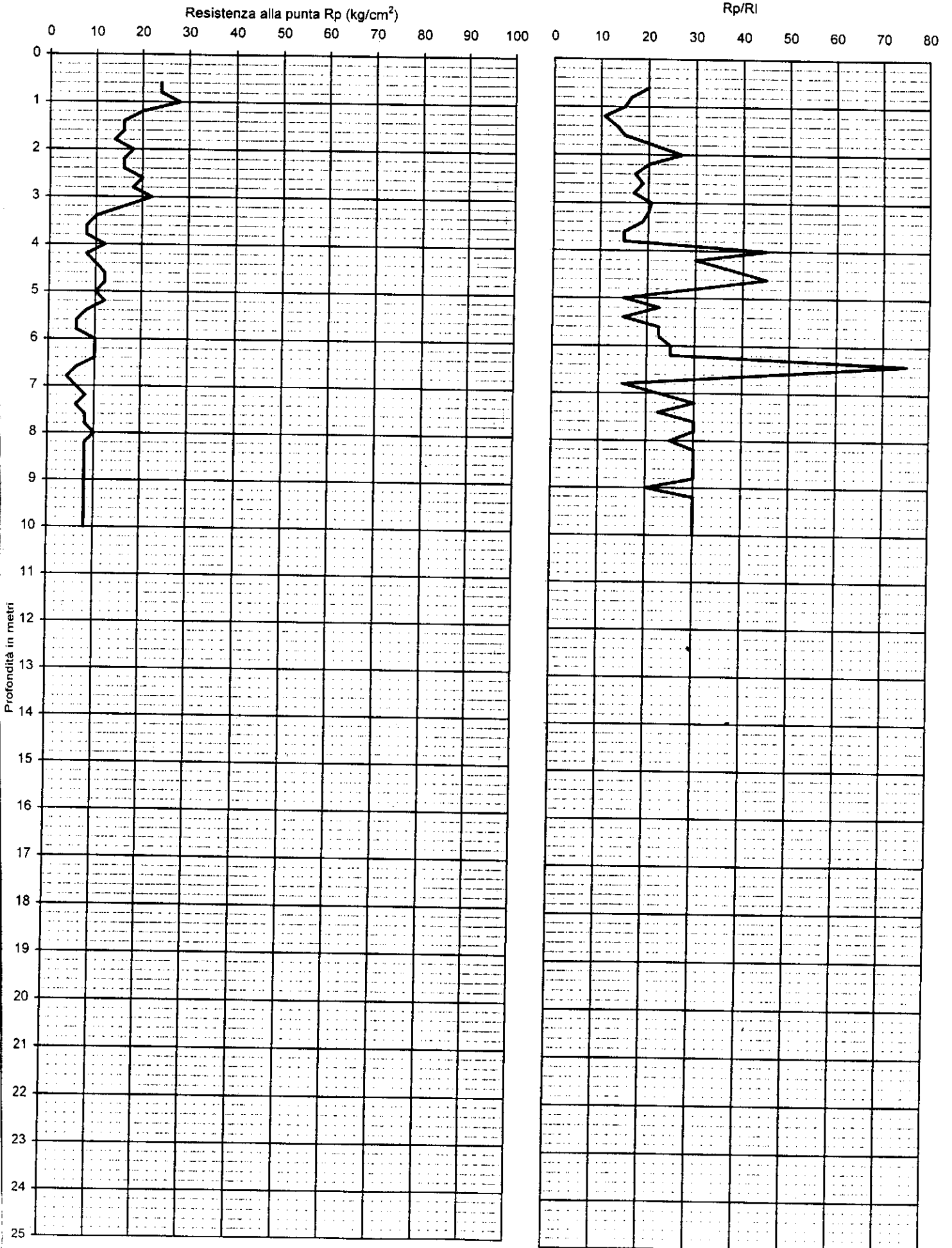
Resistenza alla punta Rp (kg/cm²)

Rp/Rl



| Profondità (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-------------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 8 | 16 | 8 | 0.53 | 15.00 |
| 0.80 | 8 | 14 | 8 | 0.40 | 20.00 |
| 1.00 | 12 | 22 | 12 | 0.67 | 18.00 |
| 1.20 | 12 | 18 | 12 | 0.40 | 30.00 |
| 1.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 1.60 | 10 | 18 | 10 | 0.53 | 18.75 |
| 1.80 | 8 | 16 | 8 | 0.53 | 15.00 |
| 2.00 | 10 | 20 | 10 | 0.67 | 15.00 |
| 2.20 | 12 | 24 | 12 | 0.80 | 15.00 |
| 2.40 | 14 | 26 | 14 | 0.80 | 17.50 |
| 2.60 | 12 | 20 | 12 | 0.53 | 22.50 |
| 2.80 | 10 | 18 | 10 | 0.53 | 18.75 |
| 3.00 | 12 | 24 | 12 | 0.80 | 15.00 |
| 3.20 | 10 | 18 | 10 | 0.53 | 18.75 |
| 3.40 | 12 | 24 | 12 | 0.80 | 15.00 |
| 3.60 | 10 | 16 | 10 | 0.40 | 25.00 |
| 3.80 | 8 | 14 | 8 | 0.40 | 20.00 |
| 4.00 | 10 | 18 | 10 | 0.53 | 18.75 |
| 4.20 | 8 | 16 | 8 | 0.53 | 15.00 |
| 4.40 | 14 | 26 | 14 | 0.80 | 17.50 |
| 4.60 | 12 | 24 | 12 | 0.80 | 15.00 |
| 4.80 | 14 | 30 | 14 | 1.07 | 13.13 |
| 5.00 | 16 | 30 | 16 | 0.93 | 17.14 |
| 5.20 | 12 | 22 | 12 | 0.67 | 18.00 |
| 5.40 | 10 | 16 | 10 | 0.40 | 25.00 |
| 5.60 | 14 | 26 | 14 | 0.80 | 17.50 |
| 5.80 | 12 | 24 | 12 | 0.80 | 15.00 |
| 6.00 | 10 | 18 | 10 | 0.53 | 18.75 |
| 6.20 | 8 | 16 | 8 | 0.53 | 15.00 |
| 6.40 | 10 | 18 | 10 | 0.53 | 18.75 |
| 6.60 | 12 | 24 | 12 | 0.80 | 15.00 |
| 6.80 | 10 | 22 | 10 | 0.80 | 12.50 |
| 7.00 | 14 | 26 | 14 | 0.80 | 17.50 |
| 7.20 | 16 | 32 | 16 | 1.07 | 15.00 |
| 7.40 | 14 | 28 | 14 | 0.93 | 15.00 |
| 7.60 | 14 | 30 | 14 | 1.07 | 13.13 |
| 7.80 | 12 | 24 | 12 | 0.80 | 15.00 |
| 8.00 | 16 | 30 | 16 | 0.93 | 17.14 |
| 8.20 | 14 | 28 | 14 | 0.93 | 15.00 |
| 8.40 | 12 | 26 | 12 | 0.93 | 12.86 |
| 8.60 | 16 | 28 | 16 | 0.80 | 20.00 |
| 8.80 | 16 | 30 | 16 | 0.93 | 17.14 |
| 9.00 | 14 | 30 | 14 | 1.07 | 13.13 |
| 9.20 | 16 | 34 | 16 | 1.20 | 13.33 |
| 9.40 | 18 | 34 | 18 | 1.07 | 16.88 |
| 9.60 | 16 | 30 | 16 | 0.93 | 17.14 |
| 9.80 | 14 | 28 | 14 | 0.93 | 15.00 |
| 10.00 | 14 | 26 | 14 | 0.80 | 17.50 |
| 10.20 | | | | | |
| 10.40 | | | | | |
| 10.50 | | | | | |
| 10.80 | | | | | |
| 11.00 | | | | | |
| 11.20 | | | | | |
| 11.40 | | | | | |
| 11.60 | | | | | |
| 11.80 | | | | | |
| 12.00 | | | | | |
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| 12.40 | | | | | |
| 12.60 | | | | | |
| 12.80 | | | | | |
| 13.00 | | | | | |
| 13.20 | | | | | |
| 13.40 | | | | | |
| 13.60 | | | | | |
| 13.80 | | | | | |
| 14.00 | | | | | |
| 14.20 | | | | | |
| 14.40 | | | | | |
| 14.60 | | | | | |
| 14.80 | | | | | |
| 15.00 | | | | | |

Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O GEOM. MAZZI

Località : NONANTOLA-MO

Prova numero : 1

Data : 07/07/99

Operatore : DR. REBECCHI

Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 24 | 42 | 24 | 1,20 | 20,00 |
| 0,80 | 24 | 46 | 24 | 1,47 | 16,36 |
| 1,00 | 28 | 56 | 28 | 1,87 | 15,00 |
| 1,20 | 20 | 48 | 20 | 1,87 | 10,71 |
| 1,40 | 16 | 34 | 16 | 1,20 | 13,33 |
| 1,60 | 16 | 32 | 16 | 1,07 | 15,00 |
| 1,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 2,00 | 18 | 28 | 18 | 0,67 | 27,00 |
| 2,20 | 16 | 28 | 16 | 0,80 | 20,00 |
| 2,40 | 16 | 30 | 16 | 0,93 | 17,14 |
| 2,60 | 20 | 36 | 20 | 1,07 | 18,75 |
| 2,80 | 18 | 34 | 18 | 1,07 | 16,88 |
| 3,00 | 22 | 38 | 22 | 1,07 | 20,63 |
| 3,20 | 16 | 28 | 16 | 0,80 | 20,00 |
| 3,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 3,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 4,00 | 12 | 16 | 12 | 0,27 | 45,00 |
| 4,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 4,60 | 12 | 16 | 12 | 0,27 | 45,00 |
| 4,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 5,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 5,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 5,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 5,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,40 | 10 | 12 | 10 | 0,13 | 75,00 |
| 6,60 | 6 | 8 | 6 | 0,13 | 45,00 |
| 6,80 | 4 | 8 | 4 | 0,27 | 15,00 |
| 7,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
| 11,20 | | | | | |
| 11,40 | | | | | |
| 11,60 | | | | | |
| 11,80 | | | | | |
| 12,00 | | | | | |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
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| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
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| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

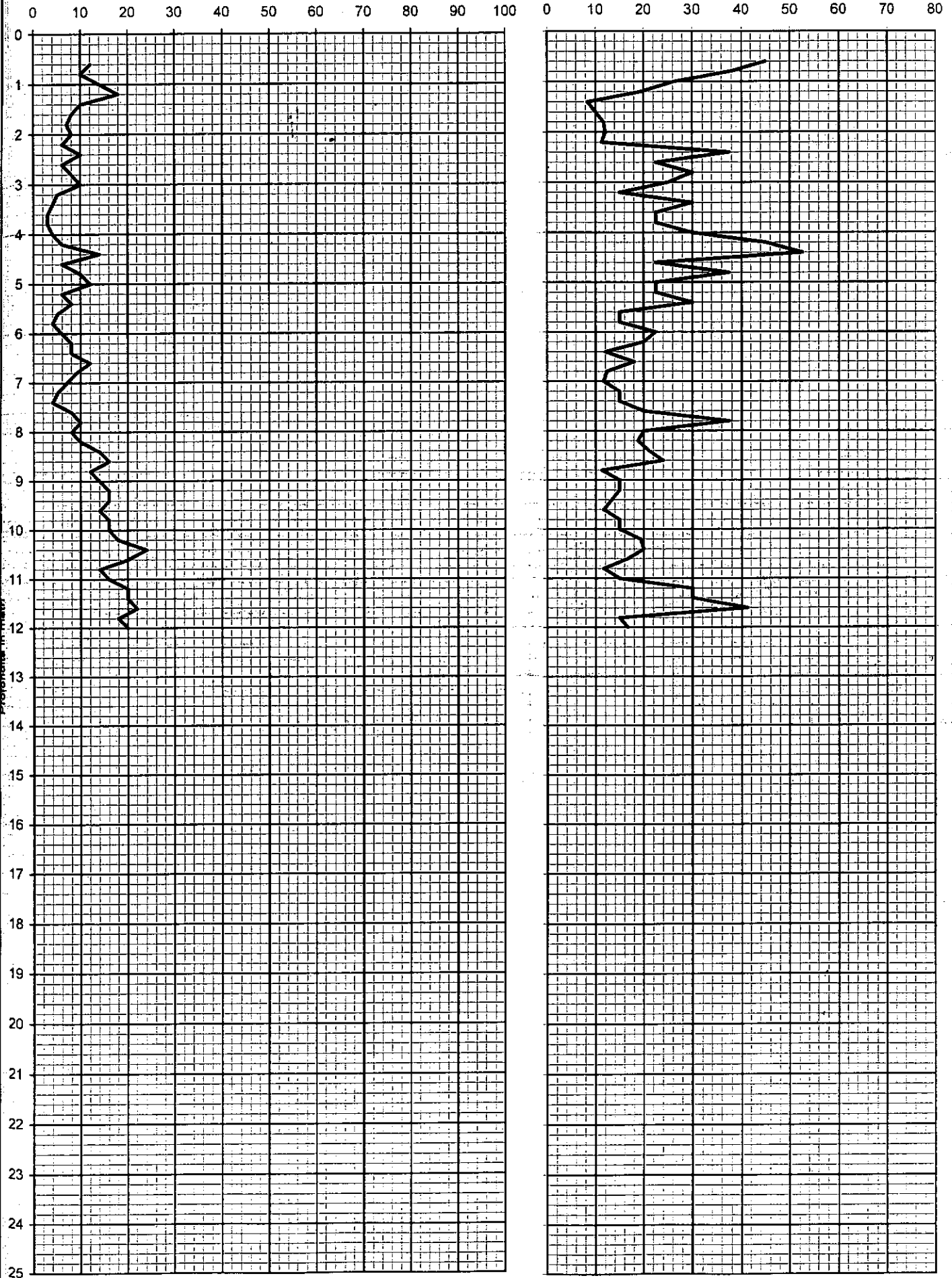
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 12 | 16 | 12 | 0.27 | 45.00 |
| 0.80 | 10 | 14 | 10 | 0.27 | 37.50 |
| 1.00 | 14 | 22 | 14 | 0.53 | 26.25 |
| 1.20 | 18 | 32 | 18 | 0.93 | 19.29 |
| 1.40 | 10 | 28 | 10 | 1.20 | 8.33 |
| 1.60 | 8 | 20 | 8 | 0.80 | 10.00 |
| 1.80 | 7 | 16 | 7 | 0.60 | 11.67 |
| 2.00 | 8 | 18 | 8 | 0.67 | 12.00 |
| 2.20 | 6 | 14 | 6 | 0.53 | 11.25 |
| 2.40 | 10 | 14 | 10 | 0.27 | 37.50 |
| 2.60 | 6 | 10 | 6 | 0.27 | 22.50 |
| 2.80 | 8 | 12 | 8 | 0.27 | 30.00 |
| 3.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 3.20 | 5 | 10 | 5 | 0.33 | 15.00 |
| 3.40 | 4 | 6 | 4 | 0.13 | 30.00 |
| 3.60 | 3 | 5 | 3 | 0.13 | 22.50 |
| 3.80 | 3 | 5 | 3 | 0.13 | 22.50 |
| 4.00 | 4 | 6 | 4 | 0.13 | 30.00 |
| 4.20 | 6 | 8 | 6 | 0.13 | 45.00 |
| 4.40 | 14 | 18 | 14 | 0.27 | 52.50 |
| 4.60 | 6 | 10 | 6 | 0.27 | 22.50 |
| 4.80 | 10 | 14 | 10 | 0.27 | 37.50 |
| 5.00 | 12 | 20 | 12 | 0.53 | 22.50 |
| 5.20 | 6 | 10 | 6 | 0.27 | 22.50 |
| 5.40 | 8 | 12 | 8 | 0.27 | 30.00 |
| 5.60 | 5 | 10 | 5 | 0.33 | 15.00 |
| 5.80 | 4 | 8 | 4 | 0.27 | 15.00 |
| 6.00 | 6 | 10 | 6 | 0.27 | 22.50 |
| 6.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 6.40 | 8 | 18 | 8 | 0.67 | 12.00 |
| 6.60 | 12 | 22 | 12 | 0.67 | 18.00 |
| 6.80 | 9 | 20 | 9 | 0.73 | 12.27 |
| 7.00 | 7 | 16 | 7 | 0.60 | 11.67 |
| 7.20 | 5 | 10 | 5 | 0.33 | 15.00 |
| 7.40 | 4 | 8 | 4 | 0.27 | 15.00 |
| 7.60 | 8 | 14 | 8 | 0.40 | 20.00 |
| 7.80 | 10 | 14 | 10 | 0.27 | 37.50 |
| 8.00 | 8 | 14 | 8 | 0.40 | 20.00 |
| 8.20 | 10 | 18 | 10 | 0.53 | 18.75 |
| 8.40 | 14 | 24 | 14 | 0.67 | 21.00 |
| 8.60 | 16 | 26 | 16 | 0.67 | 24.00 |
| 8.80 | 12 | 28 | 12 | 1.07 | 11.25 |
| 9.00 | 14 | 28 | 14 | 0.93 | 15.00 |
| 9.20 | 16 | 32 | 16 | 1.07 | 15.00 |
| 9.40 | 16 | 34 | 16 | 1.20 | 13.33 |
| 9.60 | 14 | 32 | 14 | 1.20 | 11.67 |
| 9.80 | 16 | 32 | 16 | 1.07 | 15.00 |
| 10.00 | 16 | 32 | 16 | 1.07 | 15.00 |
| 10.20 | 18 | 32 | 18 | 0.93 | 19.29 |
| 10.40 | 24 | 42 | 24 | 1.20 | 20.00 |
| 10.60 | 20 | 38 | 20 | 1.20 | 16.67 |
| 10.80 | 14 | 32 | 14 | 1.20 | 11.67 |
| 11.00 | 16 | 32 | 16 | 1.07 | 15.00 |
| 11.20 | 20 | 30 | 20 | 0.67 | 30.00 |
| 11.40 | 20 | 30 | 20 | 0.67 | 30.00 |
| 11.60 | 22 | 30 | 22 | 0.53 | 41.25 |
| 11.80 | 18 | 36 | 18 | 1.20 | 15.00 |
| 12.00 | 20 | 38 | 20 | 1.20 | 16.67 |
| 12.20 | | | | | |
| 12.40 | | | | | |
| 12.60 | | | | | |
| 12.80 | | | | | |
| 13.00 | | | | | |
| 13.20 | | | | | |
| 13.40 | | | | | |
| 13.60 | | | | | |
| 13.80 | | | | | |
| 14.00 | | | | | |
| 14.20 | | | | | |
| 14.40 | | | | | |
| 14.60 | | | | | |
| 14.80 | | | | | |
| 15.00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15.20 | | | | | |
| 15.40 | | | | | |
| 15.60 | | | | | |
| 15.80 | | | | | |
| 16.00 | | | | | |
| 16.20 | | | | | |
| 16.40 | | | | | |
| 16.60 | | | | | |
| 16.80 | | | | | |
| 17.00 | | | | | |
| 17.20 | | | | | |
| 17.40 | | | | | |
| 17.60 | | | | | |
| 17.80 | | | | | |
| 18.00 | | | | | |
| 18.20 | | | | | |
| 18.40 | | | | | |
| 18.60 | | | | | |
| 18.80 | | | | | |
| 19.00 | | | | | |
| 19.20 | | | | | |
| 19.40 | | | | | |
| 19.60 | | | | | |
| 19.80 | | | | | |
| 20.00 | | | | | |
| 20.20 | | | | | |
| 20.40 | | | | | |
| 20.60 | | | | | |
| 20.80 | | | | | |
| 21.00 | | | | | |
| 21.20 | | | | | |
| 21.40 | | | | | |
| 21.60 | | | | | |
| 21.80 | | | | | |
| 22.00 | | | | | |
| 22.20 | | | | | |
| 22.40 | | | | | |
| 22.60 | | | | | |
| 22.80 | | | | | |
| 23.00 | | | | | |
| 23.20 | | | | | |
| 23.40 | | | | | |
| 23.60 | | | | | |
| 23.80 | | | | | |
| 24.00 | | | | | |
| 24.20 | | | | | |
| 24.40 | | | | | |
| 24.60 | | | | | |
| 24.80 | | | | | |
| 25.00 | | | | | |
| 25.20 | | | | | |
| 25.40 | | | | | |
| 25.60 | | | | | |
| 25.80 | | | | | |
| 26.00 | | | | | |
| 26.20 | | | | | |
| 26.40 | | | | | |
| 26.60 | | | | | |
| 26.80 | | | | | |
| 27.00 | | | | | |
| 27.20 | | | | | |
| 27.40 | | | | | |
| 27.60 | | | | | |
| 27.80 | | | | | |
| 28.00 | | | | | |
| 28.20 | | | | | |
| 28.40 | | | | | |
| 28.60 | | | | | |
| 28.80 | | | | | |
| 29.00 | | | | | |
| 29.20 | | | | | |
| 29.40 | | | | | |
| 29.60 | | | | | |
| 29.80 | | | | | |
| 30.00 | | | | | |

Via AUSTRIA, 24 - 41100 MODENA

Resistenza alla punta Rp (kg/cm²)

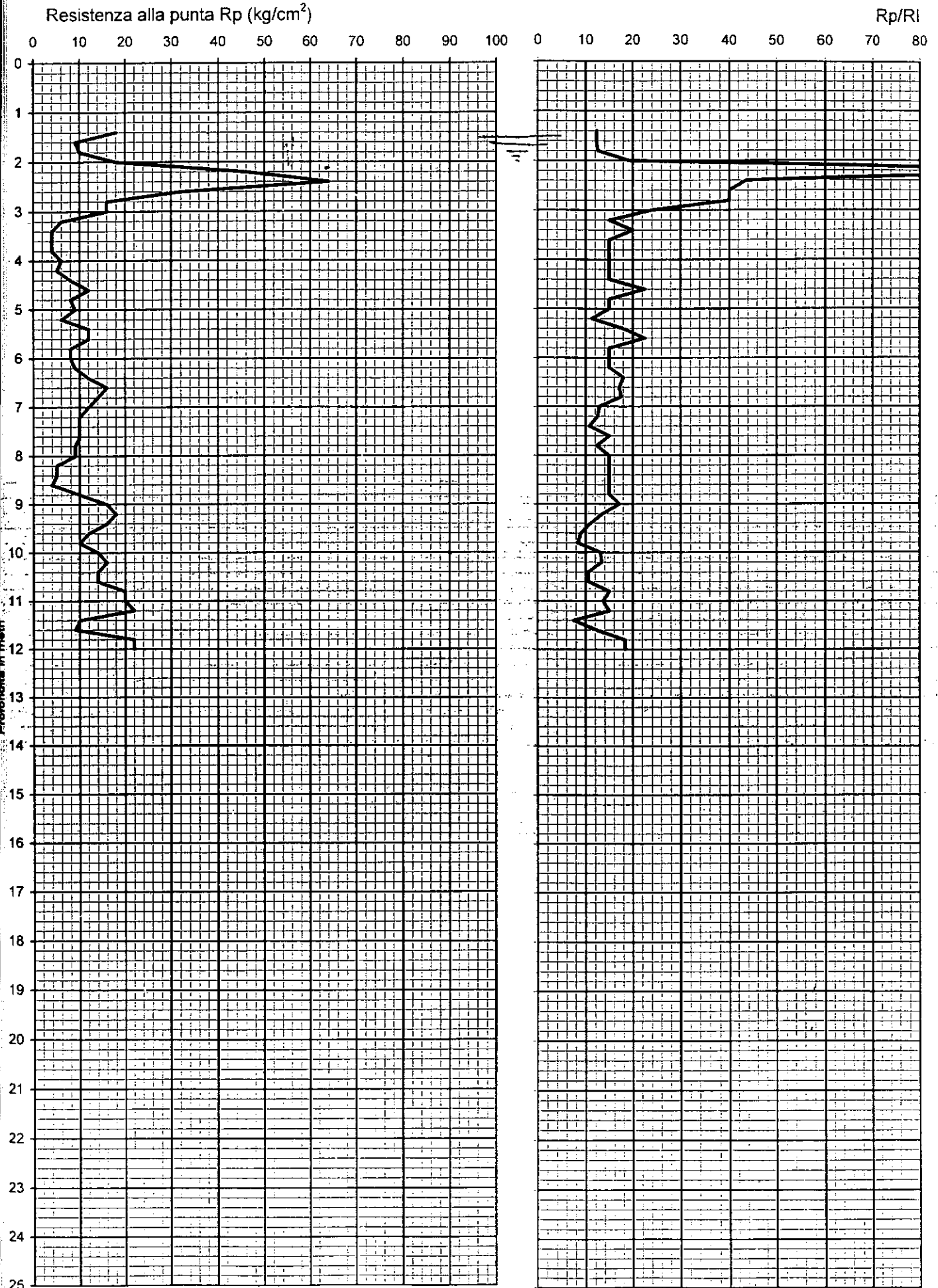
Rp/RI



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | | | | | |
| 0,80 | | | | | |
| 1,00 | | | | | |
| 1,20 | | | | | |
| 1,40 | 18 | 40 | 18 | 1,47 | 12,27 |
| 1,60 | 9 | 20 | 9 | 0,73 | 12,27 |
| 1,80 | 10 | 22 | 10 | 0,80 | 12,50 |
| 2,00 | 18 | 32 | 18 | 0,93 | 19,29 |
| 2,20 | 46 | 52 | 46 | 0,40 | 115,00 |
| 2,40 | 64 | 86 | 64 | 1,47 | 43,64 |
| 2,60 | 32 | 44 | 32 | 0,80 | 40,00 |
| 2,80 | 16 | 22 | 16 | 0,40 | 40,00 |
| 3,00 | 16 | 26 | 16 | 0,67 | 24,00 |
| 3,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 3,40 | 4 | 7 | 4 | 0,20 | 20,00 |
| 3,60 | 4 | 8 | 4 | 0,27 | 15,00 |
| 3,80 | 4 | 8 | 4 | 0,27 | 15,00 |
| 4,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 4,20 | 5 | 10 | 5 | 0,33 | 15,00 |
| 4,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 4,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 4,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 5,00 | 9 | 18 | 9 | 0,60 | 15,00 |
| 5,20 | 6 | 14 | 6 | 0,53 | 11,25 |
| 5,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 5,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 5,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,20 | 9 | 18 | 9 | 0,60 | 15,00 |
| 6,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 6,60 | 16 | 30 | 16 | 0,93 | 17,14 |
| 6,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 7,00 | 12 | 26 | 12 | 0,93 | 12,86 |
| 7,20 | 10 | 22 | 10 | 0,80 | 12,50 |
| 7,40 | 10 | 24 | 10 | 0,93 | 10,71 |
| 7,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 7,80 | 9 | 20 | 9 | 0,73 | 12,27 |
| 8,00 | 9 | 18 | 9 | 0,60 | 15,00 |
| 8,20 | 5 | 10 | 5 | 0,33 | 15,00 |
| 8,40 | 5 | 10 | 5 | 0,33 | 15,00 |
| 8,60 | 4 | 8 | 4 | 0,27 | 15,00 |
| 8,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 9,00 | 16 | 30 | 16 | 0,93 | 17,14 |
| 9,20 | 18 | 38 | 18 | 1,33 | 13,50 |
| 9,40 | 16 | 38 | 16 | 1,47 | 10,91 |
| 9,60 | 12 | 32 | 12 | 1,33 | 9,00 |
| 9,80 | 10 | 28 | 10 | 1,20 | 8,33 |
| 10,00 | 14 | 30 | 14 | 1,07 | 13,13 |
| 10,20 | 16 | 34 | 16 | 1,20 | 13,33 |
| 10,40 | 14 | 34 | 14 | 1,33 | 10,50 |
| 10,60 | 14 | 34 | 14 | 1,33 | 10,50 |
| 10,80 | 20 | 40 | 20 | 1,33 | 15,00 |
| 11,00 | 20 | 42 | 20 | 1,47 | 13,64 |
| 11,20 | 22 | 44 | 22 | 1,47 | 15,00 |
| 11,40 | 10 | 30 | 10 | 1,33 | 7,50 |
| 11,60 | 9 | 20 | 9 | 0,73 | 12,27 |
| 11,80 | 22 | 40 | 22 | 1,20 | 18,33 |
| 12,00 | 22 | 40 | 22 | 1,20 | 18,33 |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via AUSTRIA, 24 - 41100 MODENA

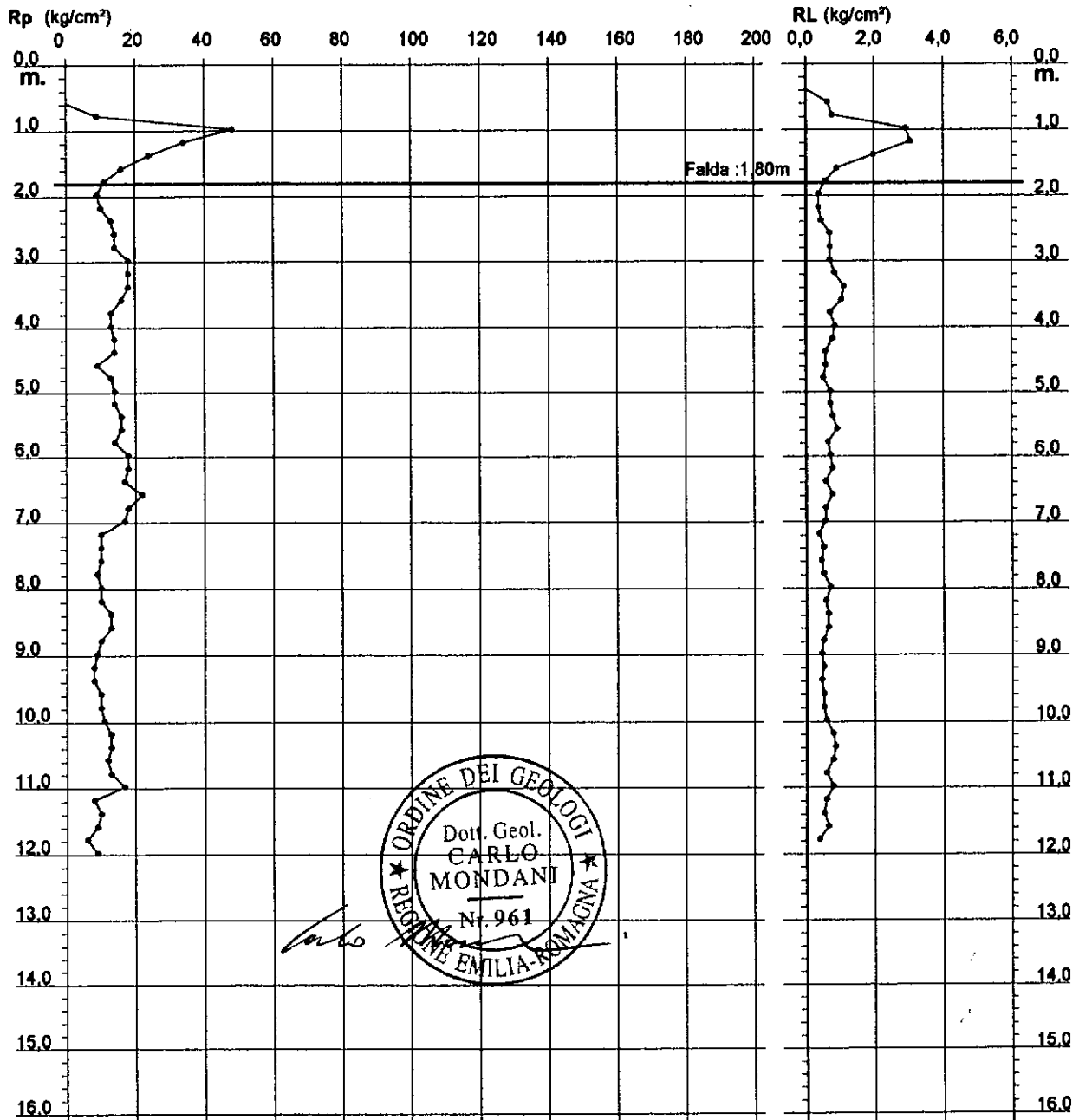


PROVA PENETROMETRICA STATICA

CPT 2

DIAGRAMMI DI RESISTENZA

| | | | |
|--------------|-------------------------|-----------------------|----------------|
| Committente: | Impresa Edile Rebecchi | Data: | 26.11.2001 |
| Lavoro: | Fabbricato residenziale | Quota di riferimento: | piano campagna |
| Località: | Nonantola | Profondità falda: | 1,80 m |

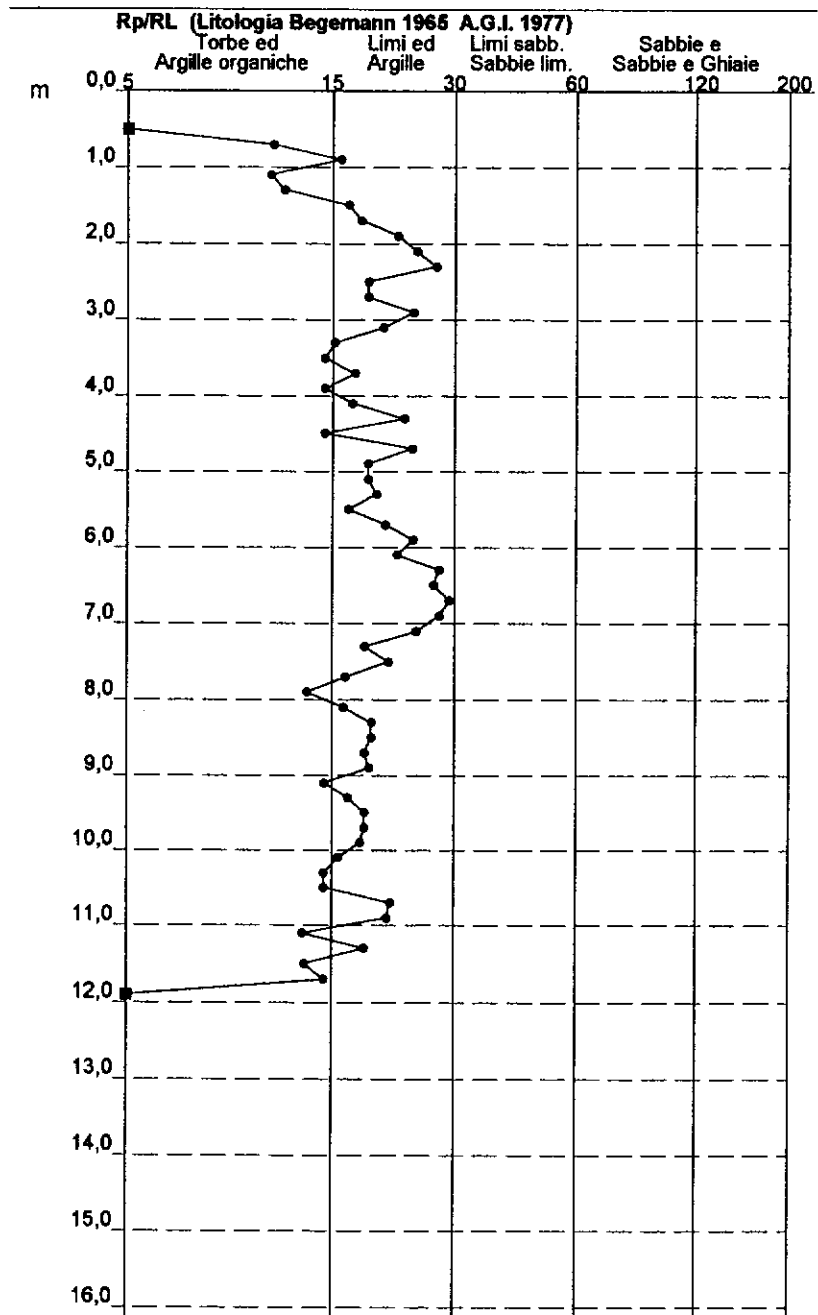


PROVA PENETROMETRICA STATICA

CPT 2

INTERPRETAZIONI LITOLOGICHE

| | | | |
|--------------|-------------------------|-----------------------|----------------|
| Committente: | Impresa Edile Rebecchi | Data: | 26.11.2001 |
| Lavoro: | Fabbricato residenziale | Quota di riferimento: | piano campagna |
| Località: | Nonantola | Profondità falda: | 1,80 m |



PROVA PENETROMETRICA STATICA

CPT 2

LETTURA DI CAMPAGNA E VALORI DI RESISTENZA

| | | | |
|--------------|-------------------------|-----------------------|----------------|
| Committente: | Impresa Edile Rebecchi | Data: | 26.11.2001 |
| Lavoro: | Fabbricato residenziale | Quota di riferimento: | piano campagna |
| Località: | Nonantola | Profondità falda: | 1,80 m |

| Prof. m | Letture di campagna | | Rp | RL | Rp/RL | Prof. m | Letture di campagna | | Rp | RL | Rp/RL |
|---------|---------------------|----------|--------------------|------|-------|---------|---------------------|----------|--------------------|------|-------|
| | punta | laterale | kg/cm ² | | | | punta | laterale | kg/cm ² | | |
| 0,20 | --- | --- | -- | --- | --- | 6,20 | 18,0 | 29,0 | 18,0 | 0,80 | 22,0 |
| 0,40 | --- | --- | -- | --- | --- | 6,40 | 17,0 | 29,0 | 17,0 | 0,60 | 28,0 |
| 0,60 | --- | --- | -- | 0,67 | --- | 6,60 | 22,0 | 31,0 | 22,0 | 0,80 | 27,0 |
| 0,80 | 9,0 | 19,0 | 9,0 | 0,80 | 11,0 | 6,80 | 18,0 | 30,0 | 18,0 | 0,60 | 30,0 |
| 1,00 | 48,0 | 60,0 | 48,0 | 2,93 | 16,0 | 7,00 | 17,0 | 26,0 | 17,0 | 0,60 | 28,0 |
| 1,20 | 34,0 | 78,0 | 34,0 | 3,07 | 11,0 | 7,20 | 10,0 | 19,0 | 10,0 | 0,40 | 25,0 |
| 1,40 | 24,0 | 70,0 | 24,0 | 2,00 | 12,0 | 7,40 | 10,0 | 16,0 | 10,0 | 0,53 | 19,0 |
| 1,60 | 16,0 | 46,0 | 16,0 | 0,93 | 17,0 | 7,60 | 10,0 | 18,0 | 10,0 | 0,47 | 21,0 |
| 1,80 | 11,0 | 25,0 | 11,0 | 0,60 | 18,0 | 7,80 | 9,0 | 16,0 | 9,0 | 0,53 | 17,0 |
| 2,00 | 9,0 | 18,0 | 9,0 | 0,40 | 22,0 | 8,00 | 10,0 | 18,0 | 10,0 | 0,73 | 14,0 |
| 2,20 | 10,0 | 16,0 | 10,0 | 0,40 | 25,0 | 8,20 | 10,0 | 21,0 | 10,0 | 0,60 | 17,0 |
| 2,40 | 13,0 | 19,0 | 13,0 | 0,47 | 28,0 | 8,40 | 13,0 | 22,0 | 13,0 | 0,67 | 19,0 |
| 2,60 | 14,0 | 21,0 | 14,0 | 0,73 | 19,0 | 8,60 | 13,0 | 23,0 | 13,0 | 0,67 | 19,0 |
| 2,80 | 14,0 | 25,0 | 14,0 | 0,73 | 19,0 | 8,80 | 10,0 | 20,0 | 10,0 | 0,53 | 19,0 |
| 3,00 | 18,0 | 29,0 | 18,0 | 0,73 | 25,0 | 9,00 | 9,0 | 17,0 | 9,0 | 0,47 | 19,0 |
| 3,20 | 18,0 | 29,0 | 18,0 | 0,87 | 21,0 | 9,20 | 8,0 | 15,0 | 8,0 | 0,53 | 15,0 |
| 3,40 | 18,0 | 31,0 | 18,0 | 1,13 | 16,0 | 9,40 | 8,0 | 16,0 | 8,0 | 0,47 | 17,0 |
| 3,60 | 16,0 | 33,0 | 16,0 | 1,07 | 15,0 | 9,60 | 10,0 | 17,0 | 10,0 | 0,53 | 19,0 |
| 3,80 | 13,0 | 29,0 | 13,0 | 0,73 | 18,0 | 9,80 | 10,0 | 18,0 | 10,0 | 0,53 | 19,0 |
| 4,00 | 13,0 | 24,0 | 13,0 | 0,87 | 15,0 | 10,00 | 11,0 | 19,0 | 11,0 | 0,60 | 18,0 |
| 4,20 | 14,0 | 27,0 | 14,0 | 0,80 | 17,0 | 10,20 | 13,0 | 22,0 | 13,0 | 0,80 | 16,0 |
| 4,40 | 14,0 | 26,0 | 14,0 | 0,60 | 23,0 | 10,40 | 13,0 | 25,0 | 13,0 | 0,87 | 15,0 |
| 4,60 | 9,0 | 18,0 | 9,0 | 0,60 | 15,0 | 10,60 | 12,0 | 25,0 | 12,0 | 0,80 | 15,0 |
| 4,80 | 13,0 | 22,0 | 13,0 | 0,53 | 24,0 | 10,80 | 13,0 | 25,0 | 13,0 | 0,60 | 22,0 |
| 5,00 | 14,0 | 22,0 | 14,0 | 0,73 | 19,0 | 11,00 | 17,0 | 26,0 | 17,0 | 0,80 | 21,0 |
| 5,20 | 14,0 | 25,0 | 14,0 | 0,73 | 19,0 | 11,20 | 8,0 | 20,0 | 8,0 | 0,60 | 13,0 |
| 5,40 | 16,0 | 27,0 | 16,0 | 0,80 | 20,0 | 11,40 | 10,0 | 19,0 | 10,0 | 0,53 | 19,0 |
| 5,60 | 16,0 | 28,0 | 16,0 | 0,93 | 17,0 | 11,60 | 9,0 | 17,0 | 9,0 | 0,67 | 13,0 |
| 5,80 | 14,0 | 28,0 | 14,0 | 0,67 | 21,0 | 11,80 | 6,0 | 16,0 | 6,0 | 0,40 | 15,0 |
| 6,00 | 18,0 | 28,0 | 18,0 | 0,73 | 25,0 | 12,00 | 9,0 | 15,0 | 9,0 | --- | --- |

PROVA PENETROMETRICA STATICA

CPT 2

PARAMETRI GEOTECNICI

| | | | |
|--------------|-------------------------|-----------------------|----------------|
| Committente: | Impresa Edile Rebecchi | Data: | 26.11.2001 |
| Lavoro: | Fabbricato residenziale | Quota di riferimento: | piano campagna |
| Località: | Nonantola | Profondità falda: | 1,80 m |

| NATURA COESIVA | | | | | | | NATURA GRANULARE | | | | | | | | |
|----------------|-----------------------|-----------|------------------|------------------------------------|-----------------------|-----------------------|------------------|---------|---------|---------|---------|---------|---------|-----------------------|-----|
| Prof. m | Rp kg/cm ² | Rp/Rl (-) | Y _v % | d _{v0} kg/cm ² | Cu kg/cm ² | Mo kg/cm ² | Dr % | s1s (°) | s2s (°) | s3s (°) | s4s (°) | edm (°) | amy (°) | Mo kg/cm ² | |
| 0,20 | - | - | 1,85 | 0,04 | - | - | - | - | - | - | - | - | - | - | |
| 0,40 | - | - | 1,85 | 0,07 | - | - | - | - | - | - | - | - | - | - | |
| 0,60 | - | ??? | 1,85 | 0,11 | - | - | - | - | - | - | - | - | - | - | |
| 0,80 | 9 | 11 | 2,11 | 1,85 | 0,15 | 0,45 | - | - | - | - | - | - | - | - | |
| 1,00 | 48 | 16 | 4,1: | 1,85 | 0,19 | 1,60 | 144 | 88 | 40 | 42 | 43 | 45 | 41 | 31 | 144 |
| 1,20 | 34 | 11 | 4,1: | 1,85 | 0,22 | 1,13 | 102 | 72 | 38 | 40 | 42 | 44 | 39 | 29 | 102 |
| 1,40 | 24 | 12 | 4,1: | 1,85 | 0,28 | 0,89 | 72 | 58 | 36 | 38 | 40 | 42 | 37 | 28 | 72 |
| 1,60 | 16 | 17 | 2,11 | 1,85 | 0,30 | 0,70 | 52 | - | - | - | - | - | - | - | - |
| 1,80 | 11 | 18 | 2,11 | 0,91 | 0,31 | 0,54 | 42 | - | - | - | - | - | - | - | - |
| 2,00 | 9 | 22 | 2,11 | 0,88 | 0,33 | 0,45 | 38 | - | - | - | - | - | - | - | - |
| 2,20 | 10 | 25 | 2,11 | 0,90 | 0,35 | 0,50 | 40 | - | - | - | - | - | - | - | - |
| 2,40 | 13 | 28 | 2,11 | 0,93 | 0,37 | 0,60 | 47 | - | - | - | - | - | - | - | - |
| 2,60 | 14 | 19 | 2,11 | 0,94 | 0,39 | 0,64 | 48 | - | - | - | - | - | - | - | - |
| 2,80 | 14 | 19 | 2,11 | 0,94 | 0,41 | 0,64 | 48 | - | - | - | - | - | - | - | - |
| 3,00 | 18 | 25 | 2,11 | 0,98 | 0,43 | 0,75 | 58 | - | - | - | - | - | - | - | - |
| 3,20 | 18 | 21 | 2,11 | 0,98 | 0,45 | 0,75 | 56 | - | - | - | - | - | - | - | - |
| 3,40 | 18 | 16 | 2,11 | 0,98 | 0,48 | 0,75 | 56 | - | - | - | - | - | - | - | - |
| 3,60 | 16 | 15 | 2,11 | 0,98 | 0,48 | 0,70 | 52 | - | - | - | - | - | - | - | - |
| 3,80 | 13 | 18 | 2,11 | 0,93 | 0,50 | 0,60 | 47 | - | - | - | - | - | - | - | - |
| 4,00 | 13 | 15 | 2,11 | 0,93 | 0,52 | 0,60 | 47 | - | - | - | - | - | - | - | - |
| 4,20 | 14 | 17 | 2,11 | 0,94 | 0,54 | 0,64 | 48 | - | - | - | - | - | - | - | - |
| 4,40 | 14 | 23 | 2,11 | 0,94 | 0,58 | 0,64 | 48 | - | - | - | - | - | - | - | - |
| 4,60 | 9 | 15 | 2,11 | 0,88 | 0,58 | 0,45 | 38 | - | - | - | - | - | - | - | - |
| 4,80 | 13 | 24 | 2,11 | 0,93 | 0,59 | 0,60 | 47 | - | - | - | - | - | - | - | - |
| 5,00 | 14 | 19 | 2,11 | 0,94 | 0,61 | 0,64 | 48 | - | - | - | - | - | - | - | - |
| 5,20 | 14 | 19 | 2,11 | 0,94 | 0,63 | 0,64 | 48 | - | - | - | - | - | - | - | - |
| 5,40 | 16 | 20 | 2,11 | 0,98 | 0,65 | 0,70 | 52 | - | - | - | - | - | - | - | - |
| 5,60 | 16 | 17 | 2,11 | 0,98 | 0,67 | 0,70 | 52 | - | - | - | - | - | - | - | - |
| 5,80 | 14 | 21 | 2,11 | 0,94 | 0,69 | 0,64 | 48 | - | - | - | - | - | - | - | - |
| 6,00 | 18 | 25 | 2,11 | 0,98 | 0,71 | 0,75 | 58 | - | - | - | - | - | - | - | - |
| 6,20 | 18 | 22 | 2,11 | 0,98 | 0,73 | 0,75 | 56 | - | - | - | - | - | - | - | - |
| 6,40 | 17 | 28 | 2,11 | 0,97 | 0,75 | 0,72 | 54 | - | - | - | - | - | - | - | - |
| 6,60 | 22 | 27 | 4,1: | 0,93 | 0,77 | 0,85 | 68 | 26 | 32 | 34 | 37 | 40 | 30 | 28 | 68 |
| 6,80 | 18 | 30 | 4,1: | 0,91 | 0,79 | 0,75 | 58 | 19 | 31 | 34 | 38 | 40 | 29 | 27 | 54 |
| 7,00 | 17 | 28 | 2,11 | 0,97 | 0,80 | 0,72 | 54 | - | - | - | - | - | - | - | - |
| 7,20 | 10 | 25 | 2,11 | 0,90 | 0,82 | 0,50 | 40 | - | - | - | - | - | - | - | - |
| 7,40 | 10 | 19 | 2,11 | 0,90 | 0,84 | 0,50 | 40 | - | - | - | - | - | - | - | - |
| 7,60 | 10 | 21 | 2,11 | 0,90 | 0,86 | 0,50 | 40 | - | - | - | - | - | - | - | - |
| 7,80 | 9 | 17 | 2,11 | 0,88 | 0,88 | 0,45 | 38 | - | - | - | - | - | - | - | - |
| 8,00 | 10 | 14 | 2,11 | 0,90 | 0,89 | 0,50 | 40 | - | - | - | - | - | - | - | - |
| 8,20 | 10 | 17 | 2,11 | 0,90 | 0,91 | 0,50 | 40 | - | - | - | - | - | - | - | - |
| 8,40 | 13 | 19 | 2,11 | 0,93 | 0,93 | 0,60 | 47 | - | - | - | - | - | - | - | - |
| 8,60 | 13 | 19 | 2,11 | 0,93 | 0,95 | 0,60 | 47 | - | - | - | - | - | - | - | - |
| 8,80 | 10 | 19 | 2,11 | 0,90 | 0,97 | 0,50 | 40 | - | - | - | - | - | - | - | - |
| 9,00 | 9 | 19 | 2,11 | 0,88 | 0,99 | 0,45 | 38 | - | - | - | - | - | - | - | - |
| 9,20 | 8 | 15 | 2,11 | 0,88 | 1,00 | 0,40 | 35 | - | - | - | - | - | - | - | - |
| 9,40 | 8 | 17 | 2,11 | 0,88 | 1,02 | 0,40 | 35 | - | - | - | - | - | - | - | - |
| 9,60 | 10 | 19 | 2,11 | 0,90 | 1,04 | 0,50 | 40 | - | - | - | - | - | - | - | - |
| 9,80 | 10 | 19 | 2,11 | 0,90 | 1,06 | 0,50 | 40 | - | - | - | - | - | - | - | - |
| 10,00 | 11 | 18 | 2,11 | 0,91 | 1,07 | 0,54 | 42 | - | - | - | - | - | - | - | - |
| 10,20 | 13 | 18 | 2,11 | 0,93 | 1,09 | 0,60 | 47 | - | - | - | - | - | - | - | - |
| 10,40 | 13 | 15 | 2,11 | 0,93 | 1,11 | 0,60 | 47 | - | - | - | - | - | - | - | - |
| 10,60 | 12 | 15 | 2,11 | 0,92 | 1,13 | 0,57 | 45 | - | - | - | - | - | - | - | - |
| 10,80 | 13 | 22 | 2,11 | 0,93 | 1,15 | 0,60 | 47 | - | - | - | - | - | - | - | - |
| 11,00 | 17 | 21 | 2,11 | 0,97 | 1,17 | 0,72 | 54 | - | - | - | - | - | - | - | - |
| 11,20 | 8 | 13 | 2,11 | 0,88 | 1,18 | 0,40 | 35 | - | - | - | - | - | - | - | - |
| 11,40 | 10 | 19 | 2,11 | 0,90 | 1,20 | 0,50 | 40 | - | - | - | - | - | - | - | - |
| 11,60 | 9 | 13 | 2,11 | 0,88 | 1,22 | 0,45 | 38 | - | - | - | - | - | - | - | - |
| 11,80 | 6 | 15 | 1*** | 0,48 | 1,23 | 0,30 | 8 | - | - | - | - | - | - | - | - |
| 12,00 | 9 | - | 2,11 | 0,88 | 1,25 | 0,45 | 38 | - | - | - | - | - | - | - | - |

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p.IVA e C.F. 00812530368

Rifer. ALE2000

PROVA PENETROMETRICA STATICA**CPT 1****LETTURE DI CAMPAGNA / VALORI DI RESISTENZA**

2.010496-042

- committente : Sig.ra Masinelli Elsa
 - lavoro : Realizzazione di palazzina residenziale
 - località : via della Pace n. 2/4 Nonantola (Mo)
 - note : falda freatica a -2.00 m dal p.c.

- data : 29/08/2000
 - quota inizio : Piano Campagna
 - prof. falda : 2,00 m da quota inizio
 - pagina : 1

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|-------------|--------------------|--------------------|--------------------|--------------------|-------|--------------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | ---- | 1,0 | -- | 1,20 | ---- | 6,00 | 8,0 | 12,0 | 8,0 | 0,33 | 24,0 |
| 0,40 | 16,0 | 34,0 | 16,0 | 1,33 | 12,0 | 6,20 | 8,0 | 13,0 | 8,0 | 1,13 | 7,0 |
| 0,60 | 70,0 | 90,0 | 70,0 | 2,67 | 26,0 | 6,40 | 14,0 | 31,0 | 14,0 | 0,73 | 19,0 |
| 0,80 | 70,0 | 110,0 | 70,0 | 2,40 | 29,0 | 6,60 | 16,0 | 27,0 | 16,0 | 0,33 | 48,0 |
| 1,00 | 60,0 | 96,0 | 60,0 | 6,13 | 10,0 | 6,80 | 13,0 | 18,0 | 13,0 | 1,53 | 8,0 |
| 1,20 | 58,0 | 150,0 | 58,0 | 2,00 | 29,0 | 7,00 | 22,0 | 45,0 | 22,0 | 1,27 | 17,0 |
| 1,40 | 50,0 | 80,0 | 50,0 | 1,87 | 27,0 | 7,20 | 20,0 | 39,0 | 20,0 | 1,07 | 19,0 |
| 1,60 | 23,0 | 51,0 | 23,0 | 1,40 | 16,0 | 7,40 | 24,0 | 40,0 | 24,0 | 0,53 | 45,0 |
| 1,80 | 15,0 | 36,0 | 15,0 | 1,27 | 12,0 | 7,60 | 10,0 | 18,0 | 10,0 | 0,47 | 21,0 |
| 2,00 | 40,0 | 59,0 | 40,0 | 1,20 | 33,0 | 7,80 | 7,0 | 14,0 | 7,0 | 0,20 | 35,0 |
| 2,20 | 14,0 | 32,0 | 14,0 | 0,87 | 16,0 | 8,00 | 8,0 | 11,0 | 8,0 | 0,20 | 40,0 |
| 2,40 | 13,0 | 26,0 | 13,0 | 1,20 | 11,0 | 8,20 | 8,0 | 11,0 | 8,0 | 0,20 | 40,0 |
| 2,60 | 16,0 | 34,0 | 16,0 | 0,60 | 27,0 | 8,40 | 8,0 | 11,0 | 8,0 | 0,40 | 20,0 |
| 2,80 | 8,0 | 17,0 | 8,0 | 0,27 | 30,0 | 8,60 | 8,0 | 14,0 | 8,0 | 0,33 | 24,0 |
| 3,00 | 6,0 | 10,0 | 6,0 | 0,13 | 45,0 | 8,80 | 8,0 | 13,0 | 8,0 | 0,27 | 30,0 |
| 3,20 | 6,0 | 8,0 | 6,0 | 0,20 | 30,0 | 9,00 | 9,0 | 13,0 | 9,0 | 0,27 | 34,0 |
| 3,40 | 8,0 | 11,0 | 8,0 | 0,27 | 30,0 | 9,20 | 8,0 | 12,0 | 8,0 | 0,47 | 17,0 |
| 3,60 | 12,0 | 16,0 | 12,0 | 0,20 | 60,0 | 9,40 | 8,0 | 15,0 | 8,0 | 0,27 | 30,0 |
| 3,80 | 8,0 | 11,0 | 8,0 | 0,27 | 30,0 | 9,60 | 8,0 | 12,0 | 8,0 | 0,20 | 40,0 |
| 4,00 | 9,0 | 13,0 | 9,0 | 0,20 | 45,0 | 9,80 | 9,0 | 12,0 | 9,0 | 0,27 | 34,0 |
| 4,20 | 9,0 | 12,0 | 9,0 | 0,33 | 27,0 | 10,00 | 10,0 | 14,0 | 10,0 | 0,53 | 19,0 |
| 4,40 | 9,0 | 14,0 | 9,0 | 0,53 | 17,0 | 10,20 | 8,0 | 16,0 | 8,0 | 0,33 | 24,0 |
| 4,60 | 7,0 | 15,0 | 7,0 | 0,33 | 21,0 | 10,40 | 9,0 | 14,0 | 9,0 | 0,40 | 22,0 |
| 4,80 | 6,0 | 11,0 | 6,0 | 0,27 | 22,0 | 10,60 | 10,0 | 16,0 | 10,0 | 0,53 | 19,0 |
| 5,00 | 7,0 | 11,0 | 7,0 | 0,20 | 35,0 | 10,80 | 9,0 | 17,0 | 9,0 | 0,60 | 15,0 |
| 5,20 | 7,0 | 10,0 | 7,0 | 0,40 | 17,0 | 11,00 | 8,0 | 17,0 | 8,0 | 0,40 | 20,0 |
| 5,40 | 12,0 | 18,0 | 12,0 | 0,53 | 22,0 | 11,20 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 |
| 5,60 | 9,0 | 17,0 | 9,0 | 0,33 | 27,0 | 11,40 | 7,0 | 13,0 | 7,0 | 0,40 | 17,0 |
| 5,80 | 7,0 | 12,0 | 7,0 | 0,27 | 26,0 | 11,60 | 8,0 | 14,0 | 8,0 | ----- | ----- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE C1 = 10 - Velocità Avanzamento punta 2 cm/s
 - punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
 - manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

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Rifer. ALE2000

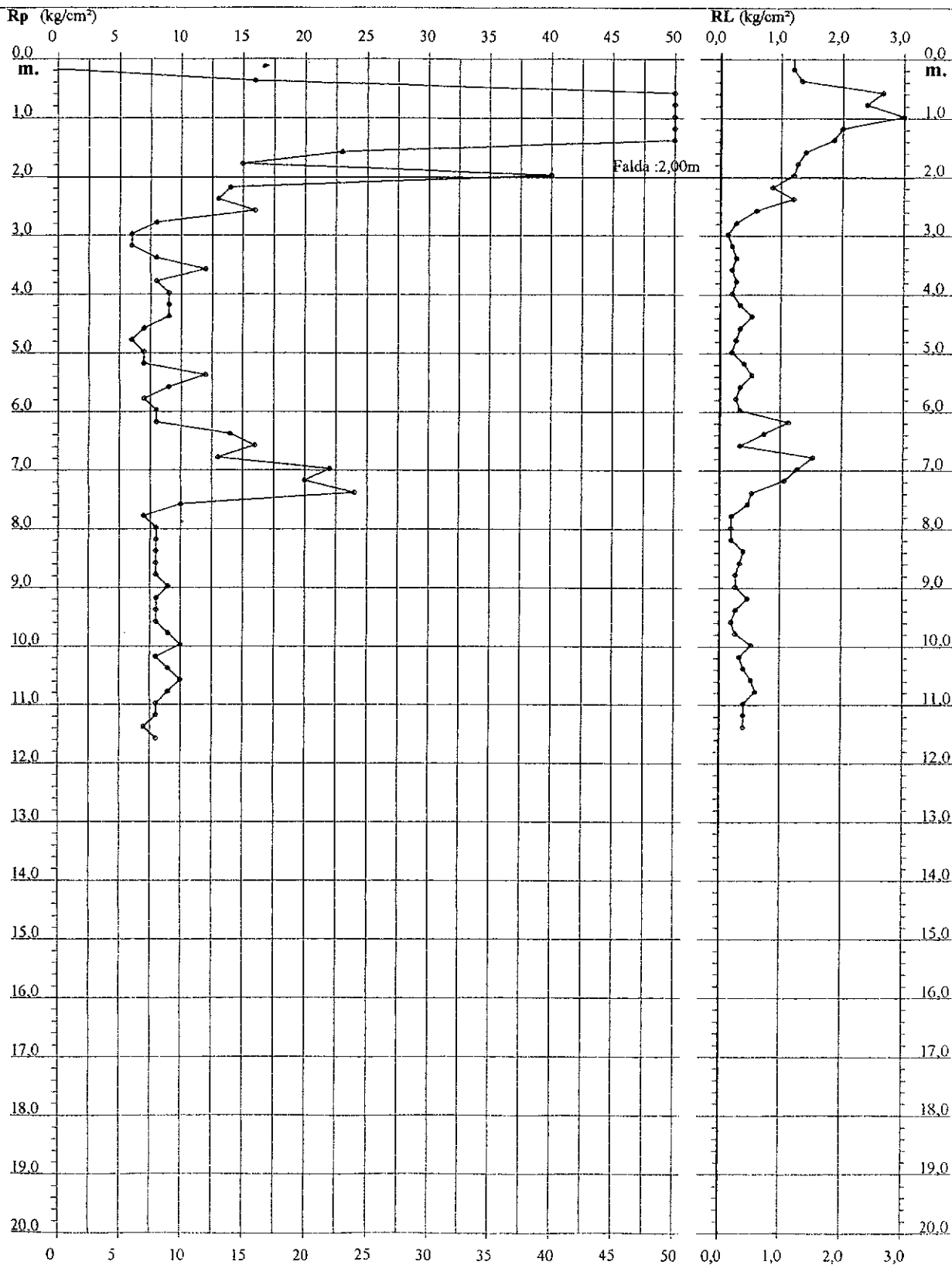
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

2.010496-042

- committente : Sig.ra Masinelli Elsa
- lavoro : Realizzazione di palazzina residenziale
- località : via della Pace n. 2/4 Nonantola (Mo)
- note : falda freatica a -2.00 m dal p.c.

- data : 29/08/2000
- quota inizio : Piano Campagna
- prof. falda : 2,00 m da quota inizio
- scala vert. : 1 : 100



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Rifer. ALE2000

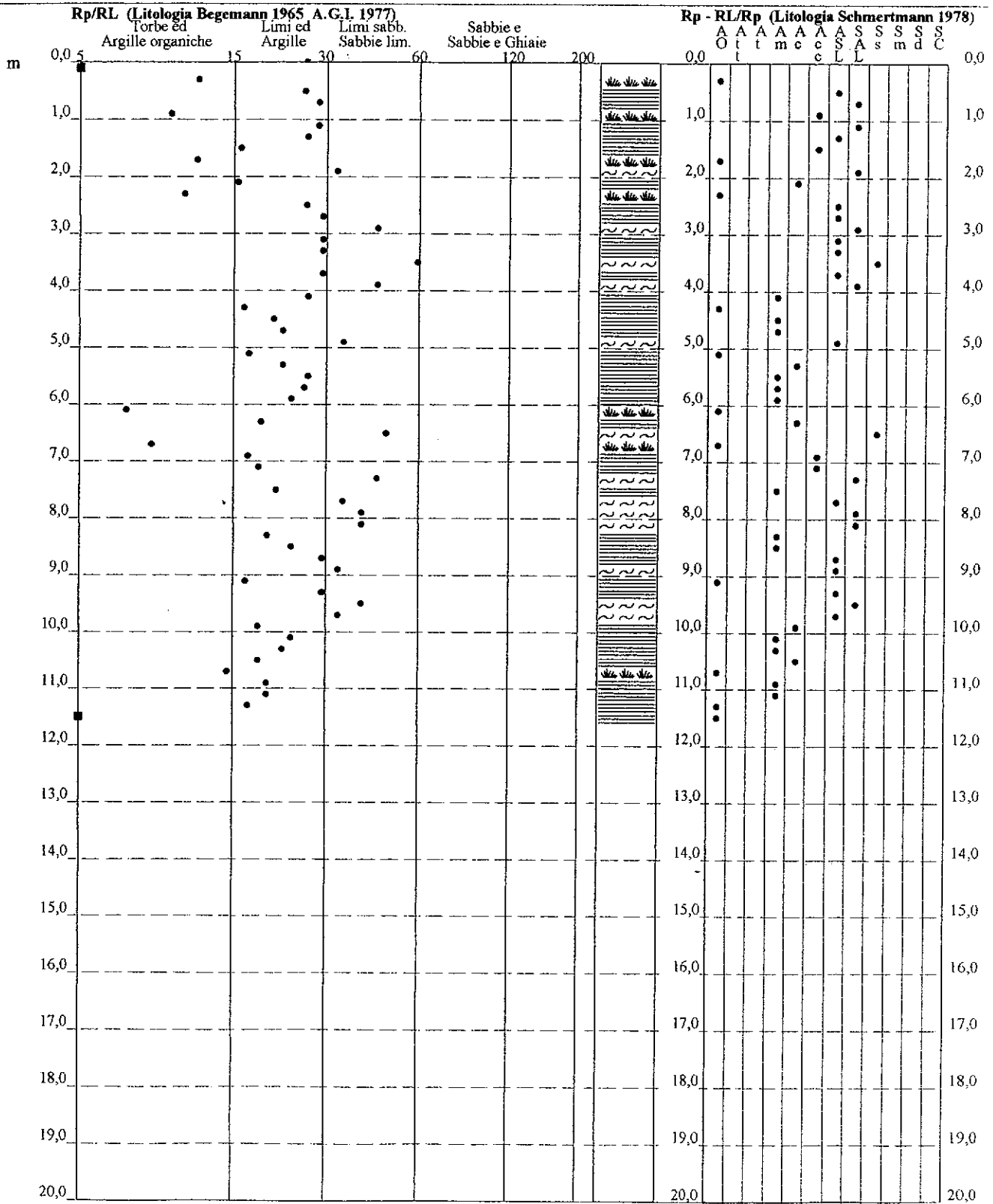
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

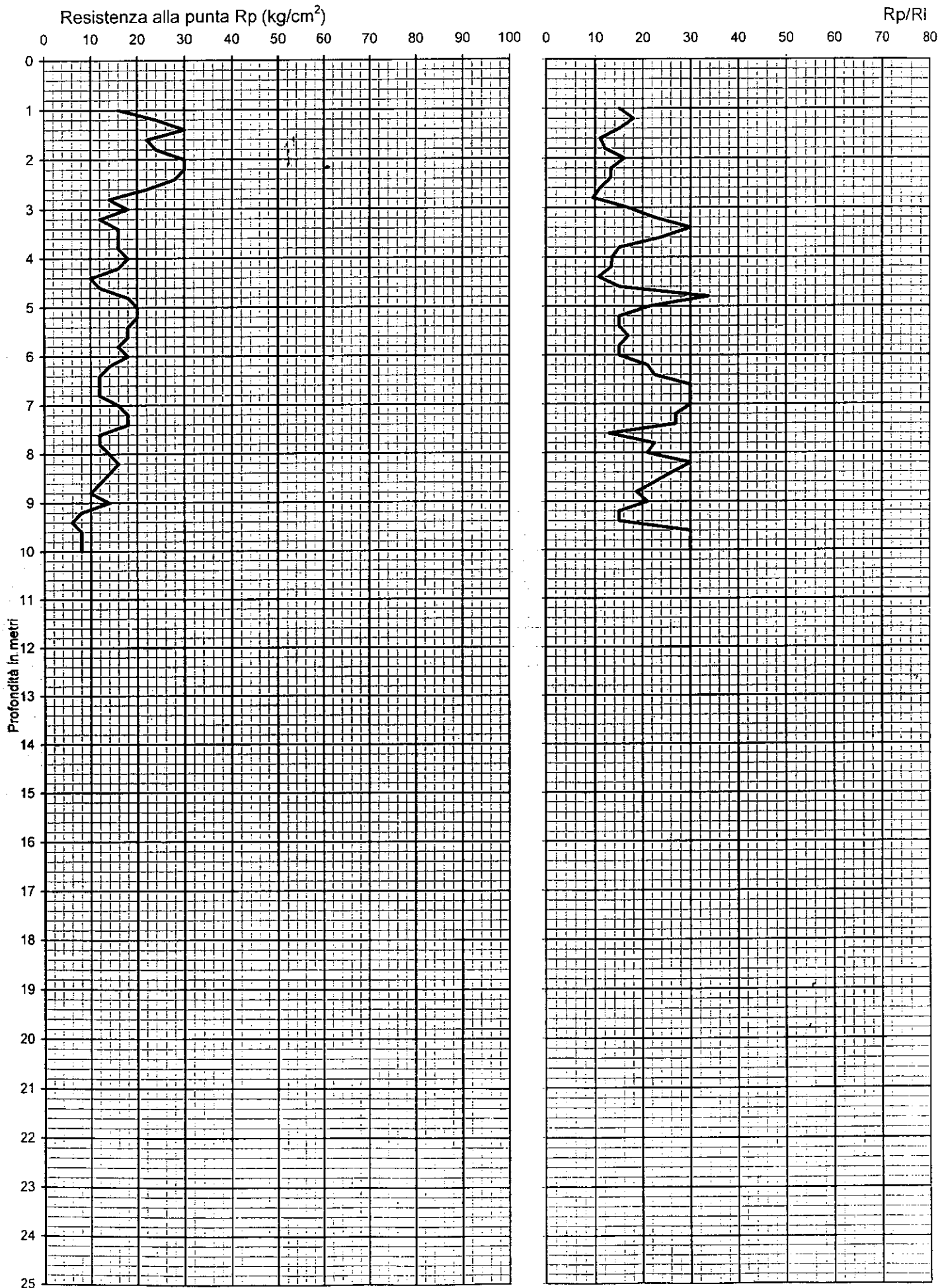
CPT 1

2.010496-042

- committente : Sig.ra Masinelli Elsa
- lavoro : Realizzazione di palazzina residenziale
- località : via della Pace n. 2/4 Nonantola (Mo)
- note : falda freatica a -2.00 m dal p.c.

- data : 29/08/2000
- quota inizio : Piano Campagna
- prof. falda : 2,00 m da quota inizio
- scala vert. : 1 : 100





| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | | | | | |
| 0,80 | | | | | |
| 1,00 | 16 | 32 | 16 | 1,07 | 15,00 |
| 1,20 | 24 | 44 | 24 | 1,33 | 18,00 |
| 1,40 | 30 | 60 | 30 | 2,00 | 15,00 |
| 1,60 | 22 | 52 | 22 | 2,00 | 11,00 |
| 1,80 | 24 | 54 | 24 | 2,00 | 12,00 |
| 2,00 | 30 | 58 | 30 | 1,87 | 16,07 |
| 2,20 | 30 | 64 | 30 | 2,27 | 13,24 |
| 2,40 | 28 | 60 | 28 | 2,13 | 13,13 |
| 2,60 | 22 | 52 | 22 | 2,00 | 11,00 |
| 2,80 | 14 | 36 | 14 | 1,47 | 9,55 |
| 3,00 | 18 | 34 | 18 | 1,07 | 16,88 |
| 3,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 3,40 | 16 | 24 | 16 | 0,53 | 30,00 |
| 3,60 | 16 | 26 | 16 | 0,67 | 24,00 |
| 3,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 4,00 | 18 | 38 | 18 | 1,33 | 13,50 |
| 4,20 | 16 | 34 | 16 | 1,20 | 13,33 |
| 4,40 | 10 | 24 | 10 | 0,93 | 10,71 |
| 4,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 4,80 | 18 | 26 | 18 | 0,53 | 33,75 |
| 5,00 | 20 | 34 | 20 | 0,93 | 21,43 |
| 5,20 | 20 | 40 | 20 | 1,33 | 15,00 |
| 5,40 | 18 | 36 | 18 | 1,20 | 15,00 |
| 5,60 | 18 | 34 | 18 | 1,07 | 16,88 |
| 5,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 6,00 | 18 | 36 | 18 | 1,20 | 15,00 |
| 6,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 6,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 6,60 | 12 | 18 | 12 | 0,40 | 30,00 |
| 6,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 7,00 | 16 | 24 | 16 | 0,53 | 30,00 |
| 7,20 | 18 | 28 | 18 | 0,67 | 27,00 |
| 7,40 | 18 | 28 | 18 | 0,67 | 27,00 |
| 7,60 | 12 | 26 | 12 | 0,93 | 12,86 |
| 7,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 8,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 8,20 | 16 | 24 | 16 | 0,53 | 30,00 |
| 8,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 8,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 8,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 9,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 9,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
| 11,20 | | | | | |
| 11,40 | | | | | |
| 11,60 | | | | | |
| 11,80 | | | | | |
| 12,00 | | | | | |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00204S01

PROVA PENETROMETRICA STATICA

CPT 1

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

3.010496-043

| | | | |
|---------------------|------------------------------|------------------|------------------------|
| - committente: | Studio Geologico Dallari | - data prova : | 11/01/2005 |
| - lavoro: | Studio Terreno di fondazione | - quota inizio : | Piano Campagna |
| - località: | Nonantola (MO) - Via Larga | - prof. falda : | 0,90 m da quota inizio |
| - resp. cantiere: | Dott. Pier Luigi Dallari | - data emiss. : | 12/01/2005 |
| - assist. cantiere: | Dott. Francesco Dettori | - pagina n°: | 1/4 |

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|-------------|--------------------|--------------------|--------------------|--------------------|-------|--------------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | --- | 0,27 | --- | 6,40 | 10,0 | 17,0 | 10,0 | 0,73 | 14,0 |
| 0,40 | 12,0 | 16,0 | 12,0 | 0,73 | 16,0 | 6,60 | 12,0 | 23,0 | 12,0 | 0,53 | 22,0 |
| 0,60 | 10,0 | 21,0 | 10,0 | 0,67 | 15,0 | 6,80 | 15,0 | 23,0 | 15,0 | 0,73 | 20,0 |
| 0,80 | 10,0 | 20,0 | 10,0 | 0,60 | 17,0 | 7,00 | 12,0 | 23,0 | 12,0 | 0,60 | 20,0 |
| 1,00 | 15,0 | 24,0 | 15,0 | 0,87 | 17,0 | 7,20 | 9,0 | 18,0 | 9,0 | 0,47 | 19,0 |
| 1,20 | 15,0 | 28,0 | 15,0 | 0,73 | 20,0 | 7,40 | 8,0 | 15,0 | 8,0 | 0,40 | 20,0 |
| 1,40 | 17,0 | 28,0 | 17,0 | 0,93 | 18,0 | 7,60 | 7,0 | 13,0 | 7,0 | 0,40 | 17,0 |
| 1,60 | 16,0 | 30,0 | 16,0 | 0,80 | 20,0 | 7,80 | 6,0 | 12,0 | 6,0 | 0,40 | 15,0 |
| 1,80 | 16,0 | 28,0 | 16,0 | 0,67 | 24,0 | 8,00 | 16,0 | 22,0 | 16,0 | 0,33 | 48,0 |
| 2,00 | 14,0 | 24,0 | 14,0 | 0,47 | 30,0 | 8,20 | 16,0 | 21,0 | 16,0 | 0,60 | 27,0 |
| 2,20 | 9,0 | 16,0 | 9,0 | 0,40 | 22,0 | 8,40 | 6,0 | 15,0 | 6,0 | 0,40 | 15,0 |
| 2,40 | 8,0 | 14,0 | 8,0 | 0,47 | 17,0 | 8,60 | 8,0 | 14,0 | 8,0 | 0,40 | 20,0 |
| 2,60 | 11,0 | 18,0 | 11,0 | 0,47 | 24,0 | 8,80 | 10,0 | 16,0 | 10,0 | 0,53 | 19,0 |
| 2,80 | 19,0 | 26,0 | 19,0 | 0,73 | 26,0 | 9,00 | 10,0 | 18,0 | 10,0 | 0,60 | 17,0 |
| 3,00 | 20,0 | 31,0 | 20,0 | 0,93 | 21,0 | 9,20 | 11,0 | 20,0 | 11,0 | 0,67 | 16,0 |
| 3,20 | 20,0 | 34,0 | 20,0 | 0,73 | 27,0 | 9,40 | 10,0 | 20,0 | 10,0 | 0,80 | 12,0 |
| 3,40 | 19,0 | 30,0 | 19,0 | 0,87 | 22,0 | 9,60 | 11,0 | 23,0 | 11,0 | 0,60 | 18,0 |
| 3,60 | 18,0 | 31,0 | 18,0 | 0,67 | 27,0 | 9,80 | 10,0 | 19,0 | 10,0 | 0,53 | 19,0 |
| 3,80 | 18,0 | 28,0 | 18,0 | 0,53 | 34,0 | 10,00 | 11,0 | 19,0 | 11,0 | 0,53 | 21,0 |
| 4,00 | 11,0 | 19,0 | 11,0 | 0,73 | 15,0 | 10,20 | 10,0 | 18,0 | 10,0 | 0,53 | 19,0 |
| 4,20 | 13,0 | 24,0 | 13,0 | 0,60 | 22,0 | 10,40 | 10,0 | 18,0 | 10,0 | 0,80 | 12,0 |
| 4,40 | 19,0 | 28,0 | 19,0 | 0,73 | 26,0 | 10,60 | 12,0 | 24,0 | 12,0 | 0,87 | 14,0 |
| 4,60 | 19,0 | 30,0 | 19,0 | 0,80 | 24,0 | 10,80 | 14,0 | 27,0 | 14,0 | 0,80 | 17,0 |
| 4,80 | 21,0 | 33,0 | 21,0 | 0,87 | 24,0 | 11,00 | 13,0 | 25,0 | 13,0 | 0,80 | 16,0 |
| 5,00 | 14,0 | 27,0 | 14,0 | 0,60 | 23,0 | 11,20 | 13,0 | 25,0 | 13,0 | 0,80 | 16,0 |
| 5,20 | 11,0 | 20,0 | 11,0 | 0,47 | 24,0 | 11,40 | 16,0 | 28,0 | 16,0 | 1,07 | 15,0 |
| 5,40 | 7,0 | 14,0 | 7,0 | 0,60 | 12,0 | 11,60 | 20,0 | 36,0 | 20,0 | 1,07 | 19,0 |
| 5,60 | 8,0 | 17,0 | 8,0 | 0,47 | 17,0 | 11,80 | 26,0 | 42,0 | 26,0 | 1,27 | 21,0 |
| 5,80 | 8,0 | 15,0 | 8,0 | 0,47 | 17,0 | 12,00 | 25,0 | 44,0 | 25,0 | 1,53 | 16,0 |
| 6,00 | 8,0 | 15,0 | 8,0 | 0,47 | 17,0 | 12,20 | 32,0 | 55,0 | 32,0 | 1,53 | 21,0 |
| 6,20 | 10,0 | 17,0 | 10,0 | 0,47 | 21,0 | 12,40 | 33,0 | 56,0 | 33,0 | --- | --- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\varnothing = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00204S01

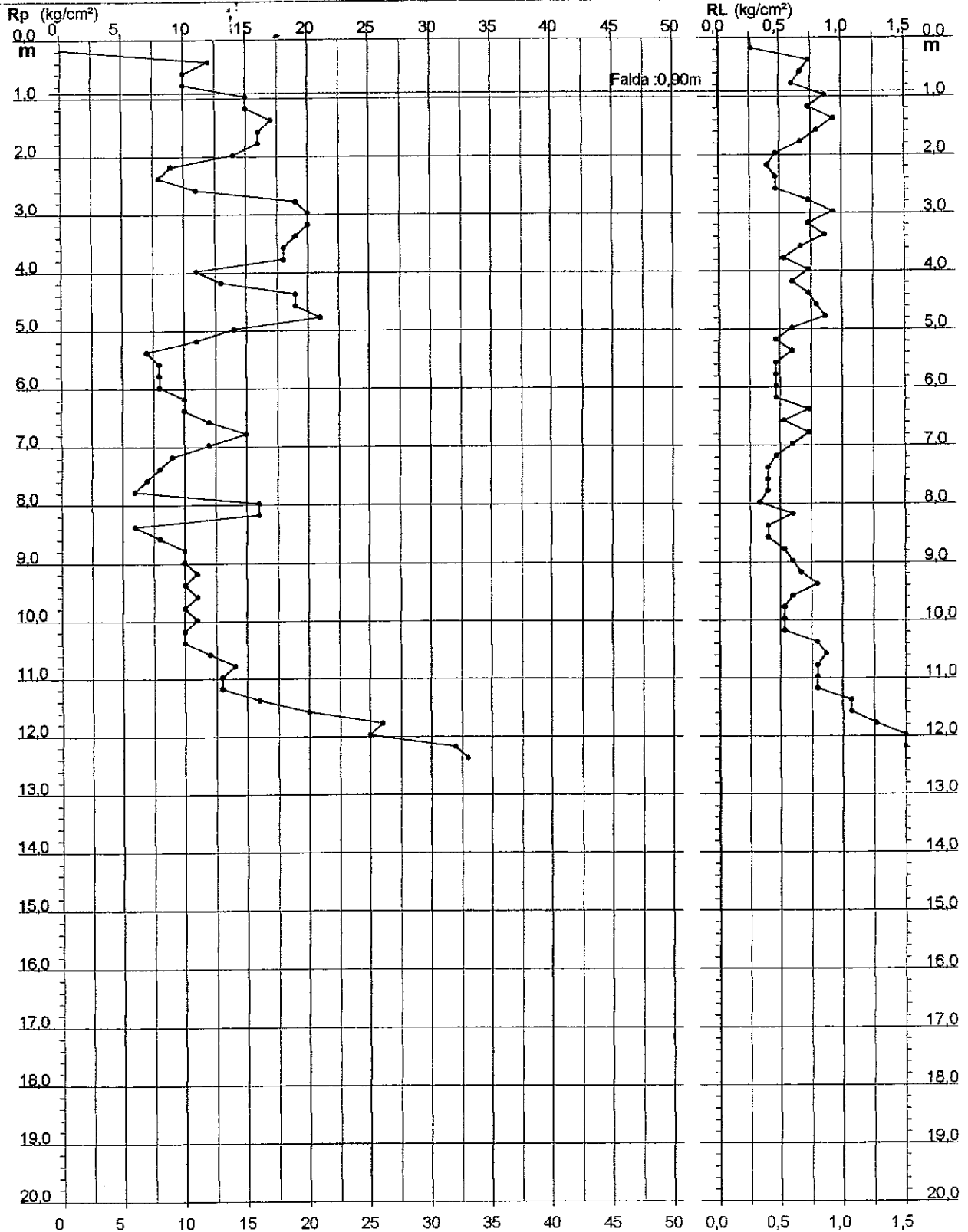
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Studio Terreno di fondazione
- località: Nonantola (MO) - Via Larga
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Francesco Dettori

- data prova : 11/01/2005
- quota inizio : Piano Campagna
- prof. falda : 0,90 m da quota inizio
- scala vert.: 1 : 100
- data emiss. : 12/01/2005
- pagina n°: 2/4



PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00204S01

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 1

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Studio Terreno di fondazione
- località: Nonantola (MO) - Via Larga
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Francesco Dettori

- data prova: 11/01/2005
- quota inizio: Piano Campagna
- prof. falda: 0,90 m da quota inizio

- data emiss.: 12/01/2005
- pagina n°: 4/4

| NATURA COESIVA | | | | | | | | | | NATURA GRANULARE | | | | | | | | | | | | |
|----------------|-----------|-----------|---------------|--------|-------------|-----------|---------|-------------|-------------|------------------|------|---------|---------|---------|---------|---------|---------|------------|-------------|-------------|-----------|----|
| Prof. m | Rp kg/cm² | Rp/Rl (-) | Natura Litol. | Y t/m³ | p'vd kg/cm² | Cu kg/cm² | OCR (-) | Eu50 kg/cm² | Eu25 kg/cm² | Mo kg/cm² | Dr % | σ1s (°) | σ2s (°) | σ3s (°) | σ4s (°) | σdm (°) | σmy (°) | Amax/g (-) | E'50 kg/cm² | E'25 kg/cm² | Mo kg/cm² | |
| 0,20 | -- | -- | ??? | 1,85 | 0,04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,40 | 12 | 16 | 2III | 1,85 | 0,07 | 0,57 | 80,8 | 97 | 146 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,60 | 10 | 15 | 2III | 1,85 | 0,11 | 0,50 | 41,2 | 85 | 128 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,80 | 10 | 17 | 2III | 1,85 | 0,15 | 0,50 | 28,8 | 85 | 128 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,00 | 15 | 17 | 2III | 0,95 | 0,17 | 0,67 | 35,4 | 113 | 170 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,20 | 15 | 20 | 2III | 0,95 | 0,19 | 0,67 | 31,0 | 113 | 170 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,40 | 17 | 18 | 2III | 0,97 | 0,21 | 0,72 | 30,3 | 123 | 184 | 54 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,60 | 18 | 20 | 2III | 0,96 | 0,22 | 0,70 | 25,8 | 118 | 177 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,80 | 16 | 24 | 2III | 0,96 | 0,24 | 0,70 | 23,3 | 118 | 177 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,00 | 14 | 30 | 4I: | 0,89 | 0,26 | 0,64 | 19,1 | 108 | 162 | 48 | 37 | 33 | 36 | 38 | 41 | 33 | 26 | 0,073 | 23 | 35 | 42 | |
| 2,20 | 9 | 22 | 2III | 0,88 | 0,28 | 0,45 | 11,4 | 77 | 115 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,40 | 8 | 17 | 2III | 0,86 | 0,30 | 0,40 | 9,1 | 70 | 106 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,60 | 11 | 24 | 2III | 0,91 | 0,31 | 0,54 | 12,2 | 91 | 137 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,80 | 19 | 26 | 2III | 0,99 | 0,33 | 0,78 | 18,0 | 132 | 198 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,00 | 20 | 21 | 4I: | 0,93 | 0,35 | 0,80 | 17,5 | 136 | 204 | 60 | 42 | 34 | 36 | 39 | 41 | 34 | 27 | 0,085 | 33 | 50 | 60 | |
| 3,20 | 20 | 27 | 4I: | 0,93 | 0,37 | 0,80 | 16,4 | 136 | 204 | 60 | 41 | 34 | 36 | 39 | 41 | 34 | 27 | 0,082 | 33 | 50 | 60 | |
| 3,40 | 19 | 22 | 2III | 0,99 | 0,39 | 0,78 | 14,8 | 132 | 198 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,60 | 18 | 27 | 2III | 0,98 | 0,41 | 0,75 | 13,3 | 128 | 191 | 56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,80 | 18 | 34 | 4I: | 0,91 | 0,43 | 0,75 | 12,6 | 128 | 191 | 56 | 34 | 33 | 35 | 38 | 41 | 32 | 27 | 0,066 | 30 | 45 | 54 | |
| 4,00 | 11 | 15 | 2III | 0,91 | 0,45 | 0,54 | 7,9 | 108 | 162 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,20 | 13 | 22 | 2III | 0,93 | 0,47 | 0,60 | 8,7 | 110 | 166 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,40 | 19 | 26 | 2III | 0,99 | 0,49 | 0,78 | 11,3 | 132 | 198 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,60 | 19 | 24 | 2III | 0,99 | 0,51 | 0,78 | 10,7 | 132 | 198 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,80 | 21 | 24 | 4I: | 0,93 | 0,52 | 0,82 | 11,0 | 140 | 210 | 63 | 34 | 33 | 35 | 38 | 41 | 32 | 27 | 0,067 | 35 | 53 | 63 | |
| 5,00 | 14 | 23 | 2III | 0,94 | 0,54 | 0,64 | 7,7 | 132 | 198 | 48 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,20 | 11 | 24 | 2III | 0,91 | 0,56 | 0,54 | 5,9 | 149 | 223 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,40 | 7 | 12 | 1*** | 0,46 | 0,57 | 0,35 | 3,4 | 31 | 47 | 11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,60 | 8 | 17 | 2III | 0,88 | 0,59 | 0,40 | 3,9 | 165 | 247 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,80 | 8 | 17 | 2III | 0,86 | 0,60 | 0,40 | 3,7 | 170 | 256 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,00 | 8 | 17 | 2III | 0,86 | 0,62 | 0,40 | 3,5 | 176 | 263 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,20 | 10 | 14 | 2III | 0,90 | 0,64 | 0,50 | 4,6 | 178 | 267 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,40 | 10 | 14 | 2III | 0,90 | 0,66 | 0,50 | 4,5 | 184 | 275 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,60 | 12 | 22 | 2III | 0,92 | 0,68 | 0,57 | 5,1 | 186 | 279 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,80 | 15 | 20 | 2III | 0,95 | 0,70 | 0,67 | 6,0 | 184 | 277 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,00 | 12 | 20 | 2III | 0,92 | 0,71 | 0,57 | 4,8 | 198 | 297 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,20 | 9 | 19 | 2III | 0,88 | 0,73 | 0,45 | 3,4 | 206 | 309 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,40 | 8 | 20 | 2III | 0,86 | 0,75 | 0,40 | 2,9 | 201 | 302 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,60 | 7 | 17 | 2III | 0,84 | 0,77 | 0,35 | 2,4 | 189 | 283 | 32 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,80 | 6 | 15 | 1*** | 0,46 | 0,77 | 0,30 | 1,9 | 36 | 55 | 9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,00 | 16 | 48 | 4I: | 0,90 | 0,79 | 0,70 | 5,3 | 216 | 324 | 52 | 15 | 30 | 33 | 36 | 39 | 28 | 27 | 0,026 | 27 | 40 | 48 | |
| 8,20 | 16 | 27 | 2III | 0,96 | 0,81 | 0,70 | 5,2 | 223 | 334 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,40 | 6 | 15 | 1*** | 0,46 | 0,82 | 0,30 | 1,8 | 37 | 55 | 9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,60 | 8 | 20 | 2III | 0,86 | 0,84 | 0,40 | 2,5 | 212 | 318 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,80 | 10 | 19 | 2III | 0,90 | 0,86 | 0,50 | 3,2 | 238 | 357 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,00 | 10 | 17 | 2III | 0,90 | 0,87 | 0,50 | 3,1 | 242 | 362 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,20 | 11 | 16 | 2III | 0,91 | 0,89 | 0,54 | 3,3 | 250 | 375 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,40 | 10 | 12 | 2III | 0,90 | 0,91 | 0,50 | 3,0 | 248 | 372 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,60 | 11 | 18 | 2III | 0,91 | 0,93 | 0,54 | 3,2 | 257 | 386 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,80 | 10 | 19 | 2III | 0,90 | 0,95 | 0,50 | 2,8 | 253 | 380 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,00 | 11 | 21 | 2III | 0,91 | 0,96 | 0,54 | 3,0 | 264 | 396 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,20 | 10 | 19 | 2III | 0,90 | 0,98 | 0,50 | 2,7 | 258 | 387 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,40 | 10 | 12 | 2III | 0,90 | 1,00 | 0,50 | 2,8 | 280 | 390 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,60 | 12 | 14 | 2III | 0,92 | 1,02 | 0,57 | 3,0 | 280 | 420 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,80 | 14 | 17 | 2III | 0,94 | 1,04 | 0,64 | 3,4 | 292 | 438 | 48 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,00 | 13 | 18 | 2III | 0,93 | 1,06 | 0,60 | 3,1 | 292 | 438 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,20 | 13 | 18 | 2III | 0,93 | 1,07 | 0,60 | 3,1 | 295 | 443 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,40 | 16 | 15 | 2III | 0,96 | 1,09 | 0,70 | 3,6 | 309 | 463 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,60 | 20 | 19 | 4I: | 0,93 | 1,11 | 0,80 | 4,2 | 311 | 466 | 60 | 14 | 30 | 33 | 36 | 39 | 27 | 27 | 0,027 | 33 | 50 | 60 | |
| 11,80 | 26 | 21 | 4I: | 0,95 | 1,13 | 0,93 | 4,9 | 313 | 470 | 78 | 23 | 31 | 34 | 37 | 40 | 29 | 28 | 0,043 | 43 | 65 | 78 | |
| 12,00 | 25 | 16 | 4I: | 0,94 | 1,15 | 0,91 | 4,7 | 320 | 480 | 75 | 21 | 31 | 34 | 37 | 40 | 28 | 28 | 0,040 | 42 | 63 | 75 | |
| 12,20 | 32 | 21 | 4I: | 0,97 | 1,17 | 1,07 | 5,6 | 316 | 474 | 96 | 29 | 32 | 35 | 37 | 40 | 30 | 29 | 0,066 | 53 | 80 | 96 | |
| 12,40 | 33 | -- | 3*** | 0,88 | 1,19 | -- | -- | -- | -- | -- | 30 | 32 | 35 | 37 | 40 | 30 | 29 | 0,057 | 55 | 83 | 99 | |

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00204S04

PROVA PENETROMETRICA STATICA LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 4

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Studio Terreno di fondazione
- località: Nonantola (MO) - Via Larga
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Francesco Dettori

- data prova: 11/01/2005
- quota inizio: Piano Campagna
- prof. falda: 1,00 m da quota inizio

- data emiss.: 12/01/2005
- pagina n°: 1/4

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|-------------|--------------------|--------------------|--------------------|--------------------|-------|--------------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | --- | 0,40 | --- | 6,40 | 11,0 | 21,0 | 11,0 | 0,87 | 13,0 |
| 0,40 | 26,0 | 32,0 | 26,0 | 1,60 | 16,0 | 6,60 | 18,0 | 31,0 | 18,0 | 0,87 | 21,0 |
| 0,60 | 12,0 | 36,0 | 12,0 | 0,73 | 16,0 | 6,80 | 21,0 | 34,0 | 21,0 | 1,07 | 20,0 |
| 0,80 | 9,0 | 20,0 | 9,0 | 0,67 | 13,0 | 7,00 | 16,0 | 32,0 | 16,0 | 0,73 | 22,0 |
| 1,00 | 15,0 | 25,0 | 15,0 | 0,93 | 16,0 | 7,20 | 14,0 | 25,0 | 14,0 | 0,67 | 21,0 |
| 1,20 | 22,0 | 36,0 | 22,0 | 1,20 | 18,0 | 7,40 | 8,0 | 18,0 | 8,0 | 0,53 | 15,0 |
| 1,40 | 22,0 | 40,0 | 22,0 | 1,47 | 15,0 | 7,60 | 8,0 | 16,0 | 8,0 | 0,53 | 15,0 |
| 1,60 | 19,0 | 41,0 | 19,0 | 1,20 | 16,0 | 7,80 | 9,0 | 17,0 | 9,0 | 0,47 | 19,0 |
| 1,80 | 19,0 | 37,0 | 19,0 | 1,27 | 15,0 | 8,00 | 10,0 | 17,0 | 10,0 | 0,53 | 19,0 |
| 2,00 | 21,0 | 40,0 | 21,0 | 1,13 | 19,0 | 8,20 | 8,0 | 16,0 | 8,0 | 0,33 | 24,0 |
| 2,20 | 20,0 | 37,0 | 20,0 | 0,93 | 21,0 | 8,40 | 7,0 | 12,0 | 7,0 | 0,40 | 17,0 |
| 2,40 | 12,0 | 26,0 | 12,0 | 0,60 | 20,0 | 8,60 | 8,0 | 14,0 | 8,0 | 0,47 | 17,0 |
| 2,60 | 10,0 | 19,0 | 10,0 | 0,60 | 17,0 | 8,80 | 8,0 | 15,0 | 8,0 | 0,53 | 15,0 |
| 2,80 | 13,0 | 22,0 | 13,0 | 0,67 | 19,0 | 9,00 | 10,0 | 18,0 | 10,0 | 0,60 | 17,0 |
| 3,00 | 26,0 | 36,0 | 26,0 | 1,33 | 19,0 | 9,20 | 12,0 | 21,0 | 12,0 | 0,67 | 18,0 |
| 3,20 | 23,0 | 43,0 | 23,0 | 1,27 | 18,0 | 9,40 | 11,0 | 21,0 | 11,0 | 0,67 | 16,0 |
| 3,40 | 25,0 | 44,0 | 25,0 | 1,47 | 17,0 | 9,60 | 13,0 | 23,0 | 13,0 | 0,60 | 22,0 |
| 3,60 | 21,0 | 43,0 | 21,0 | 1,13 | 19,0 | 9,80 | 14,0 | 23,0 | 14,0 | 0,80 | 17,0 |
| 3,80 | 19,0 | 36,0 | 19,0 | 0,87 | 22,0 | 10,00 | 11,0 | 23,0 | 11,0 | 0,67 | 16,0 |
| 4,00 | 15,0 | 28,0 | 15,0 | 0,93 | 16,0 | 10,20 | 10,0 | 20,0 | 10,0 | 0,47 | 21,0 |
| 4,20 | 14,0 | 28,0 | 14,0 | 0,73 | 19,0 | 10,40 | 10,0 | 17,0 | 10,0 | 0,60 | 17,0 |
| 4,40 | 12,0 | 23,0 | 12,0 | 0,67 | 18,0 | 10,60 | 11,0 | 20,0 | 11,0 | 0,67 | 16,0 |
| 4,60 | 19,0 | 29,0 | 19,0 | 0,93 | 20,0 | 10,80 | 13,0 | 23,0 | 13,0 | 0,73 | 18,0 |
| 4,80 | 21,0 | 35,0 | 21,0 | 1,07 | 20,0 | 11,00 | 14,0 | 25,0 | 14,0 | 0,80 | 17,0 |
| 5,00 | 16,0 | 32,0 | 16,0 | 0,73 | 22,0 | 11,20 | 16,0 | 28,0 | 16,0 | 0,53 | 30,0 |
| 5,20 | 12,0 | 23,0 | 12,0 | 0,60 | 20,0 | 11,40 | 16,0 | 24,0 | 16,0 | 1,00 | 16,0 |
| 5,40 | 10,0 | 19,0 | 10,0 | 0,67 | 15,0 | 11,60 | 20,0 | 35,0 | 20,0 | 1,20 | 17,0 |
| 5,60 | 11,0 | 21,0 | 11,0 | 0,67 | 16,0 | 11,80 | 24,0 | 42,0 | 24,0 | 1,47 | 16,0 |
| 5,80 | 8,0 | 18,0 | 8,0 | 0,53 | 15,0 | 12,00 | 28,0 | 50,0 | 28,0 | 1,60 | 17,0 |
| 6,00 | 10,0 | 18,0 | 10,0 | 0,60 | 17,0 | 12,20 | 29,0 | 53,0 | 29,0 | 1,60 | 18,0 |
| 6,20 | 12,0 | 21,0 | 12,0 | 0,67 | 18,0 | 12,40 | 35,0 | 59,0 | 35,0 | --- | --- |

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann ø = 35.7 mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/640820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
p.IVA e C.F. 00812530368

Certificato 00204S04

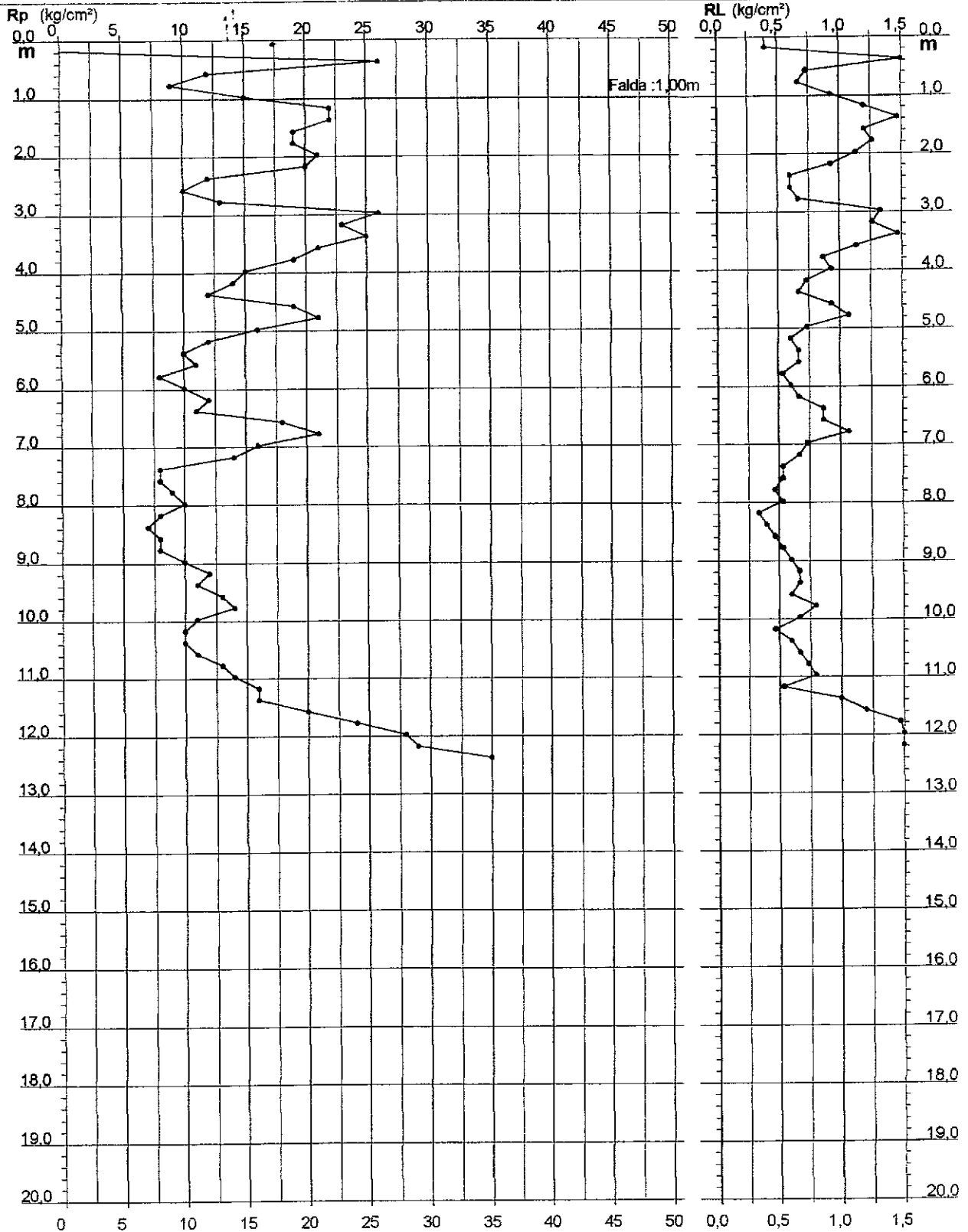
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 4

3.010496-043

- committente: Studio Geologico Dallari
- lavoro: Studio Terreno di fondazione
- località: Nonantola (MO) - Via Larga
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere: Dott. Francesco Dettori

- data prova : 11/01/2005
- quota inizio : Piano Campagna
- prof. falda : 1,00 m da quota inizio
- scala vert. : 1 : 100
- data emiss. : 12/01/2005
- pagina n°: 2/4



PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
 p.IVA e C.F. 00812530368

Certificato 00204S04

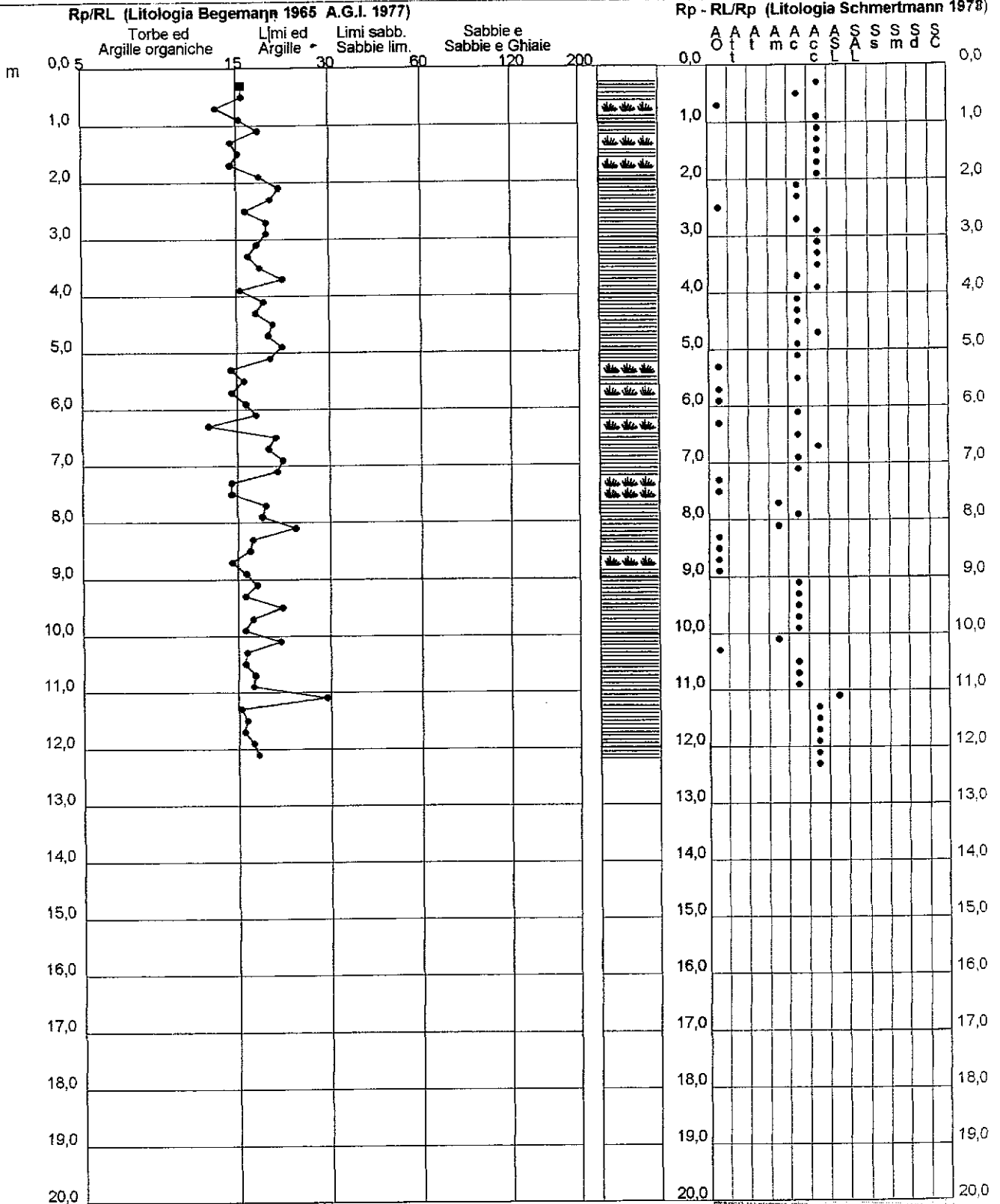
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 4

3.010496-043

- committente: Studio Geologico Dallari
 - lavoro: Studio Terreno di fondazione
 - località: Nonantola (MO) - Via Larga
 - resp. cantiere: Dott. Pier Luigi Dallari
 - assist. cantiere: Dott. Francesco Dettori

- data prova : 11/01/2005
 - quota inizio : Piano Campagna
 - prof. falda : 1,00 m da quota inizio
 - scala vert.: 1 : 100
 - data emiss. : 12/01/2005
 - pagina n°: 3/4



PROVE PENETROMETRICHE

Via per Modena, 8 - Tel. 059/535046 - 41051 CASTELNUOVO R. (MO)
 p.IVA e C.F. 00812530368

Certificato 00204S04

**PROVA PENETROMETRICA STATICA
 TABELLA PARAMETRI GEOTECNICI**

CPT 4

3.010496-043

- committente: Studio Geologico Dallari
 - lavoro: Studio Terreno di fondazione
 - località: Nonantola (MO) - Via Larga
 - resp. cantiere: Dott. Pier Luigi Dallari
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- data prova : 11/01/2005
 - quota inizio : Piano Campagna
 - prof. falda : 1,00 m da quota inizio
 - data emiss. : 12/01/2005
 - pagina n°: 4/4

| NATURA COESIVA | | | | | | | | | | NATURA GRANULARE | | | | | | | | | | | | |
|----------------|-----------|-----------|---------------|--------|---------------|-----------|---------|-------------|-------------|------------------|------|---------|---------|---------|---------|---------|---------|------------|-------------|-------------|-----------|----|
| Prof. m | Rp kg/cm² | Rp/RI (-) | Natura Litol. | Y t/m² | p'v'v' kg/cm² | Cu kg/cm² | OCR (-) | Eu50 kg/cm² | Eu25 kg/cm² | Mo kg/cm² | Dr % | σ1s (°) | σ2s (°) | σ3s (°) | σ4s (°) | σdm (°) | σmy (°) | Amax/g (-) | E'50 kg/cm² | E'25 kg/cm² | Mo kg/cm² | |
| 0,20 | -- | -- | ??? | 1,85 | 0,04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,40 | 28 | 16 | 4f.f. | 1,85 | 0,07 | 0,93 | 99,9 | 158 | 237 | 78 | 89 | 40 | 42 | 44 | 45 | 42 | 28 | 0,220 | 43 | 65 | 78 | |
| 0,60 | 12 | 16 | 2f.f. | 1,85 | 0,11 | 0,57 | 48,7 | 97 | 146 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 0,80 | 9 | 13 | 2f.f. | 1,85 | 0,15 | 0,45 | 25,2 | 77 | 115 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,00 | 15 | 16 | 2f.f. | 0,95 | 0,17 | 0,67 | 95,4 | 113 | 170 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,20 | 22 | 18 | 4f.f. | 0,93 | 0,19 | 0,85 | 41,8 | 144 | 216 | 66 | 61 | 37 | 39 | 41 | 43 | 38 | 28 | 0,133 | 37 | 55 | 65 | |
| 1,40 | 22 | 15 | 4f.f. | 0,93 | 0,20 | 0,85 | 37,1 | 144 | 216 | 66 | 59 | 36 | 38 | 40 | 43 | 37 | 28 | 0,127 | 37 | 55 | 66 | |
| 1,60 | 19 | 18 | 2f.f. | 0,99 | 0,22 | 0,78 | 29,6 | 132 | 198 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,80 | 19 | 15 | 2f.f. | 0,99 | 0,24 | 0,78 | 26,7 | 132 | 198 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,00 | 21 | 19 | 4f.f. | 0,93 | 0,26 | 0,82 | 26,2 | 140 | 210 | 63 | 51 | 35 | 37 | 40 | 42 | 36 | 27 | 0,107 | 35 | 53 | 63 | |
| 2,20 | 20 | 21 | 4f.f. | 0,93 | 0,26 | 0,80 | 23,2 | 136 | 204 | 60 | 48 | 35 | 37 | 39 | 42 | 35 | 27 | 0,098 | 39 | 50 | 60 | |
| 2,40 | 12 | 20 | 2f.f. | 0,92 | 0,30 | 0,57 | 14,1 | 97 | 146 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,60 | 10 | 17 | 2f.f. | 0,90 | 0,32 | 0,50 | 11,1 | 85 | 128 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,80 | 13 | 19 | 2f.f. | 0,93 | 0,34 | 0,60 | 13,1 | 103 | 154 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,00 | 26 | 19 | 4f.f. | 0,95 | 0,35 | 0,93 | 20,9 | 158 | 237 | 76 | 51 | 35 | 37 | 40 | 42 | 35 | 28 | 0,106 | 43 | 65 | 78 | |
| 3,20 | 23 | 18 | 4f.f. | 0,94 | 0,37 | 0,87 | 18,0 | 148 | 221 | 59 | 45 | 34 | 37 | 39 | 42 | 34 | 28 | 0,093 | 38 | 58 | 69 | |
| 3,40 | 25 | 17 | 4f.f. | 0,94 | 0,39 | 0,91 | 17,9 | 155 | 232 | 75 | 47 | 35 | 37 | 39 | 42 | 34 | 26 | 0,087 | 42 | 63 | 75 | |
| 3,60 | 21 | 19 | 4f.f. | 0,93 | 0,41 | 0,82 | 15,0 | 140 | 210 | 63 | 40 | 34 | 36 | 39 | 41 | 33 | 27 | 0,080 | 35 | 53 | 63 | |
| 3,80 | 19 | 22 | 2f.f. | 0,99 | 0,43 | 0,78 | 13,1 | 132 | 198 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,00 | 15 | 16 | 2f.f. | 0,95 | 0,45 | 0,67 | 10,3 | 113 | 170 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,20 | 14 | 19 | 2f.f. | 0,94 | 0,47 | 0,64 | 9,2 | 112 | 167 | 48 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,40 | 12 | 18 | 2f.f. | 0,92 | 0,49 | 0,57 | 7,7 | 118 | 178 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,60 | 19 | 20 | 2f.f. | 0,99 | 0,51 | 0,78 | 10,7 | 132 | 198 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,80 | 21 | 20 | 4f.f. | 0,93 | 0,53 | 0,82 | 11,0 | 140 | 210 | 63 | 34 | 33 | 35 | 38 | 41 | 32 | 27 | 0,088 | 35 | 53 | 63 | |
| 5,00 | 16 | 22 | 2f.f. | 0,96 | 0,54 | 0,70 | 8,5 | 129 | 194 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,20 | 12 | 20 | 2f.f. | 0,92 | 0,56 | 0,57 | 6,2 | 146 | 219 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,40 | 10 | 15 | 2f.f. | 0,90 | 0,58 | 0,50 | 5,6 | 159 | 239 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,60 | 11 | 16 | 2f.f. | 0,91 | 0,60 | 0,40 | 3,7 | 163 | 244 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5,80 | 8 | 15 | 2f.f. | 0,86 | 0,62 | 0,54 | 4,7 | 174 | 261 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,00 | 10 | 17 | 2f.f. | 0,90 | 0,63 | 0,50 | 4,7 | 177 | 265 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,20 | 12 | 18 | 2f.f. | 0,92 | 0,65 | 0,57 | 5,3 | 178 | 267 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,40 | 11 | 13 | 2f.f. | 0,82 | 0,67 | 0,54 | 4,7 | 186 | 280 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,60 | 18 | 21 | 2f.f. | 0,98 | 0,69 | 0,75 | 7,0 | 174 | 261 | 56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6,80 | 21 | 20 | 4f.f. | 0,93 | 0,71 | 0,82 | 7,6 | 173 | 260 | 63 | 27 | 32 | 34 | 37 | 40 | 30 | 27 | 0,051 | 35 | 53 | 63 | |
| 7,00 | 16 | 22 | 2f.f. | 0,96 | 0,73 | 0,70 | 5,9 | 194 | 290 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,20 | 14 | 21 | 2f.f. | 0,94 | 0,75 | 0,64 | 5,1 | 205 | 308 | 48 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,40 | 8 | 15 | 2f.f. | 0,86 | 0,76 | 0,40 | 2,8 | 204 | 306 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,60 | 8 | 15 | 2f.f. | 0,86 | 0,78 | 0,40 | 2,7 | 206 | 309 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7,80 | 9 | 19 | 2f.f. | 0,85 | 0,80 | 0,45 | 3,1 | 220 | 330 | 38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,00 | 10 | 19 | 2f.f. | 0,90 | 0,82 | 0,50 | 3,4 | 230 | 345 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,20 | 8 | 24 | 2f.f. | 0,86 | 0,83 | 0,40 | 2,5 | 212 | 318 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,40 | 7 | 17 | 2f.f. | 0,84 | 0,85 | 0,35 | 2,1 | 195 | 292 | 32 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,60 | 8 | 17 | 2f.f. | 0,86 | 0,87 | 0,40 | 2,4 | 215 | 323 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8,80 | 8 | 15 | 2f.f. | 0,86 | 0,89 | 0,40 | 2,3 | 217 | 325 | 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,00 | 10 | 17 | 2f.f. | 0,90 | 0,90 | 0,50 | 3,0 | 247 | 370 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,20 | 12 | 18 | 2f.f. | 0,92 | 0,92 | 0,57 | 3,5 | 260 | 390 | 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,40 | 11 | 16 | 2f.f. | 0,91 | 0,94 | 0,54 | 3,1 | 250 | 380 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,60 | 13 | 22 | 2f.f. | 0,93 | 0,96 | 0,60 | 3,5 | 271 | 406 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9,80 | 14 | 17 | 2f.f. | 0,94 | 0,98 | 0,64 | 3,7 | 276 | 414 | 48 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,00 | 11 | 16 | 2f.f. | 0,91 | 1,00 | 0,54 | 2,9 | 269 | 404 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,20 | 10 | 21 | 2f.f. | 0,90 | 1,01 | 0,50 | 2,6 | 262 | 393 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,40 | 10 | 17 | 2f.f. | 0,90 | 1,03 | 0,50 | 2,6 | 264 | 396 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,60 | 11 | 16 | 2f.f. | 0,91 | 1,05 | 0,54 | 2,7 | 276 | 415 | 42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10,80 | 13 | 18 | 2f.f. | 0,93 | 1,07 | 0,60 | 3,1 | 294 | 441 | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,00 | 14 | 17 | 2f.f. | 0,94 | 1,09 | 0,64 | 3,2 | 303 | 454 | 48 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,20 | 16 | 30 | 4f.f. | 0,90 | 1,11 | 0,70 | 3,5 | 312 | 468 | 52 | 7 | 29 | 32 | 35 | 39 | 26 | 27 | 0,015 | 27 | 40 | 48 | |
| 11,40 | 16 | 30 | 2f.f. | 0,96 | 1,12 | 0,70 | 3,4 | 317 | 475 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11,60 | 20 | 17 | 4f.f. | 0,93 | 1,14 | 0,80 | 4,0 | 319 | 478 | 60 | 13 | 30 | 33 | 36 | 39 | 27 | 27 | 0,026 | 33 | 50 | 60 | |
| 11,80 | 24 | 16 | 4f.f. | 0,94 | 1,16 | 0,89 | 4,5 | 324 | 486 | 72 | 19 | 31 | 34 | 36 | 40 | 28 | 28 | 0,037 | 40 | 60 | 72 | |
| 12,00 | 28 | 17 | 4f.f. | 0,96 | 1,18 | 0,97 | 4,9 | 327 | 491 | 84 | 24 | 31 | 34 | 37 | 40 | 28 | 28 | 0,048 | 47 | 70 | 84 | |
| 12,20 | 29 | 18 | 4f.f. | 0,98 | 1,20 | 0,98 | 4,9 | 332 | 498 | 87 | 25 | 31 | 34 | 37 | 40 | 28 | 29 | 0,048 | 48 | 78 | 87 | |
| 12,40 | 35 | -- | 3:... | 0,89 | 1,22 | -- | -- | -- | -- | -- | 31 | 32 | 35 | 38 | 40 | 30 | 29 | 0,060 | 58 | 88 | 106 | |



di Paolo Cestari & C.
Sede legale: Via Duca d'Este, 6
41036 MEDOLLA (MO)
Tel: 0535.47170
Fax: 0535.49364
E-mail: soc.geoprogetti@libero.it
P. IVA 01754860367

Diagramma prova penetrometrica statica

COMMITTENTE: **FANGAREGGI CARLA**

CANTIERE: **NONANTOLA**

DATA PROVA: **11 - 02 - 2005**

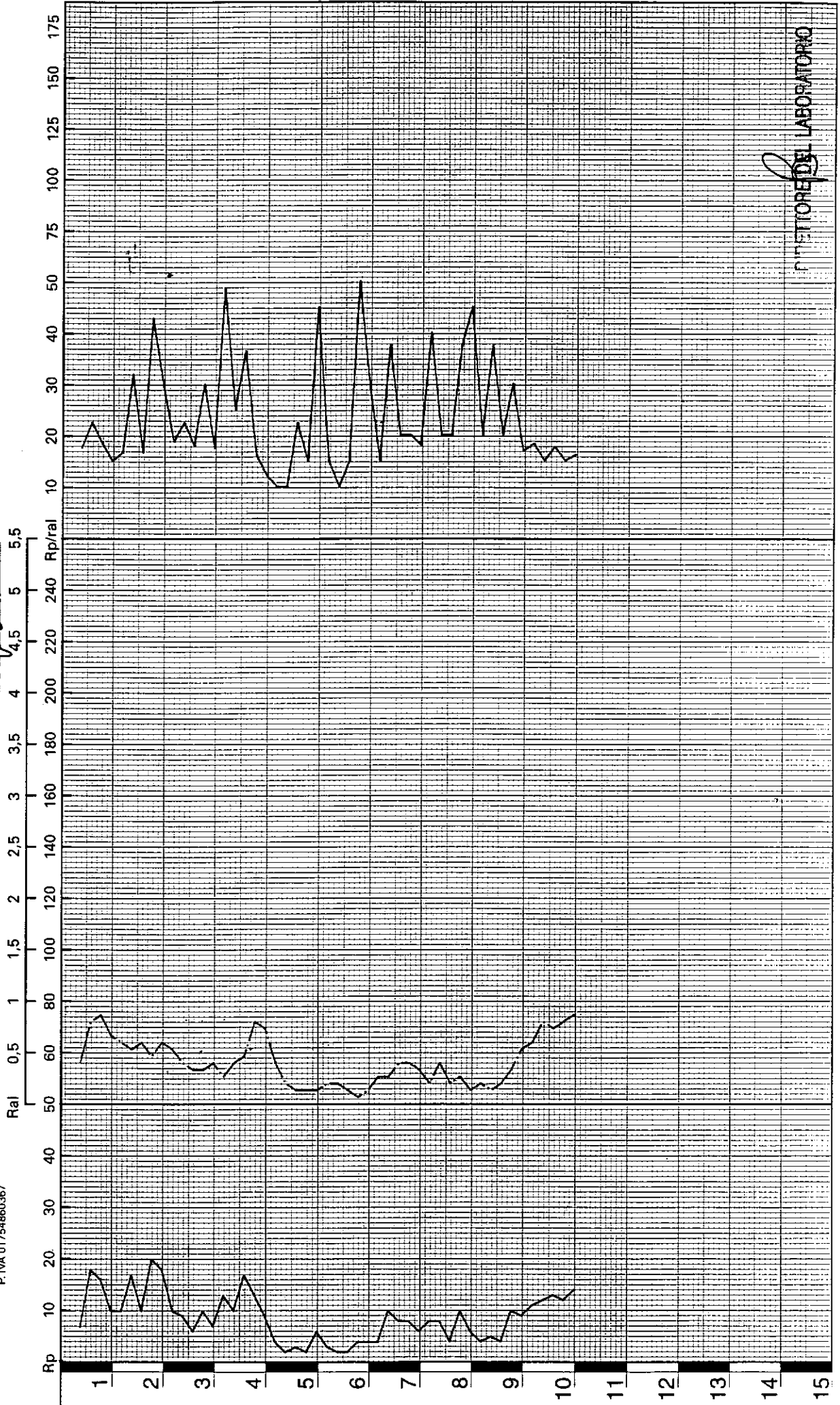
SPERIMENTATORE: **Geol. PAOLO CESTARI**

Rp resistenza di punta (Kg/cmq)
Ral resistenza attrito laterale (Kg/cmq)
Rp/Ral rapporto Begemann

C.P.T.

H20 - 1.20 m. da p.c.

N° 1



PIRELLA GÖTTSCHE LOWE
LABORATORIO



di Paolo Cestari & C.
Sede legale: Via Duca d'Este, 6
41036 MEDOLLA (MO)
Tel. 0535.47170
Fax 0535.48364
E-mail: soc.geoprogetti@libero.it
P. IVA 01754860367

Diagramma prova penetrometrica statica

COMMITTENTE: FANGAREGGI CARLA

CANTIERE : NONANTOLA

DATA PROVA : 11 - 02 - 2005

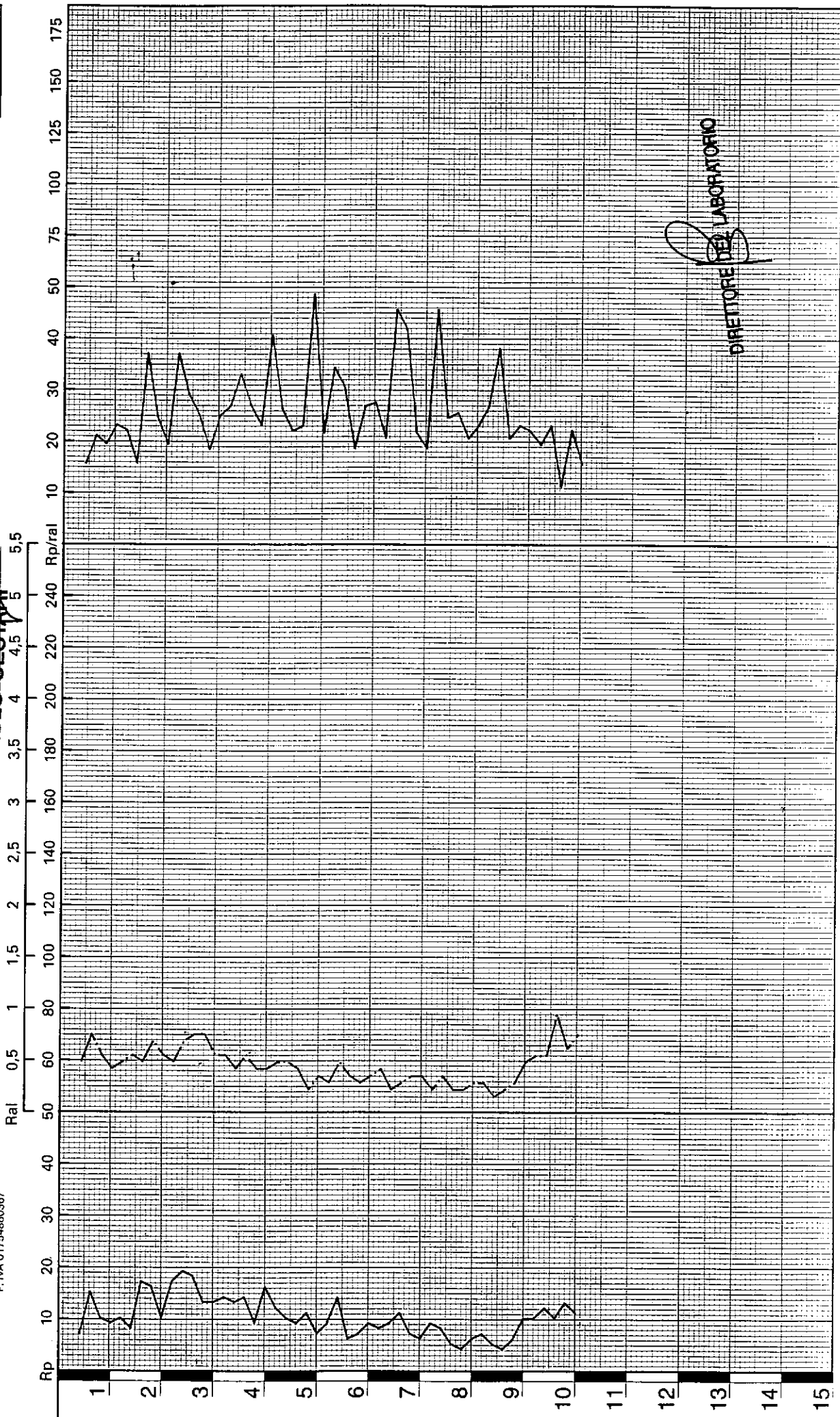
SPERIMENTATORE: ~~Geol. PAOLO CESTARI~~

Rp resistenza di punta (Kg/cmq)
Ral resistenza attrito laterale (Kg/cmq)
Rp/Ral rapporto Begemann

H20 - 1.20 m. da p.c.

C.P.T.

N° 3



DIRETTORE DEL LABORATORIO

Dott. Geol. Carlo Mondani - Studio Tecnico di Geologia
via Vivaldi 11 - 41030 Bomporto MO
tel./fax 059.909919 cell. 349.8016138
e-mail: ancafed@tin.it

Località: Campazzo, via Farini

Committente: LEGO CASA s.r.l.

Prova: CPI 1

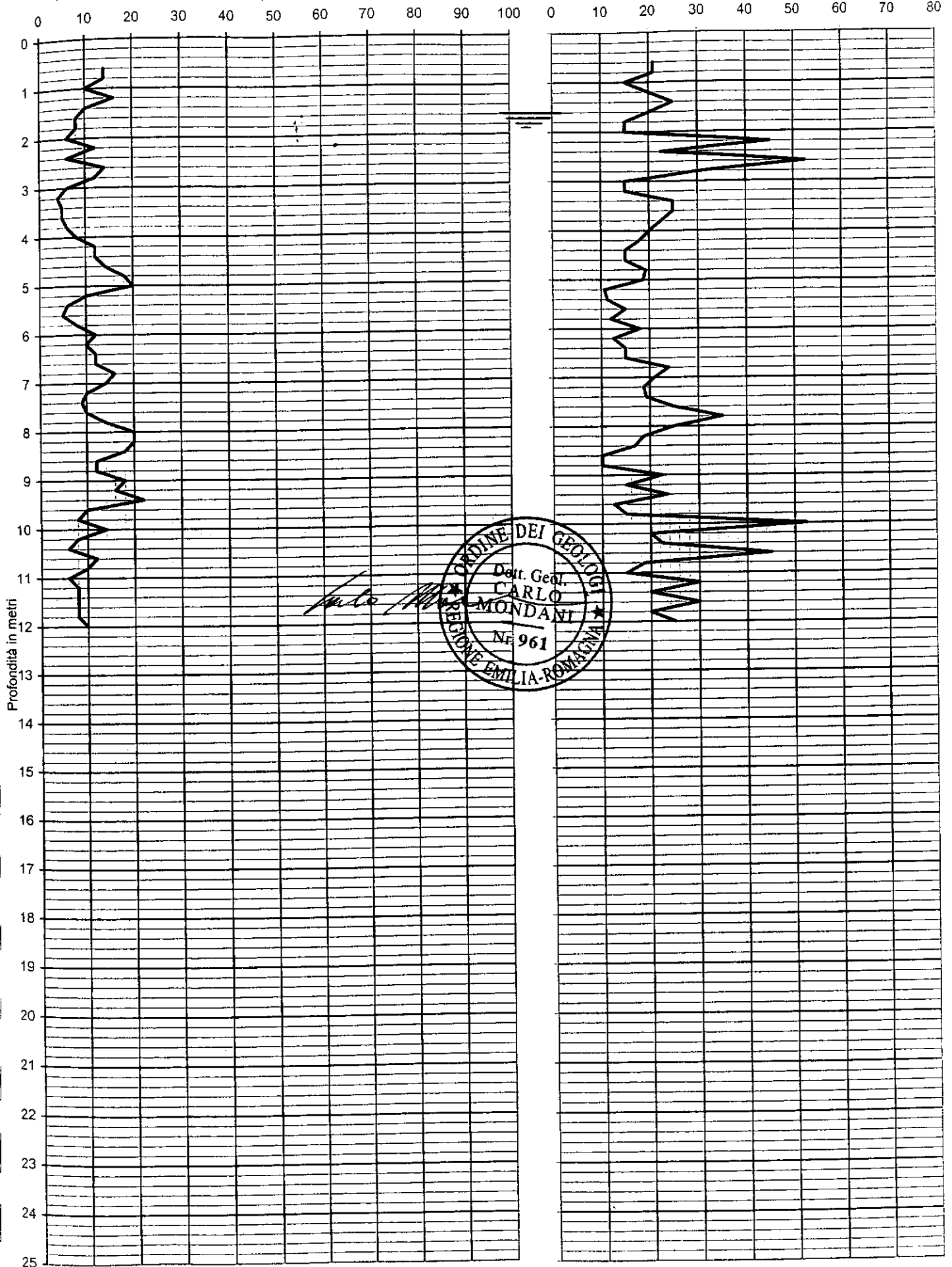
Falda: -1,60 m

Quota: P.C.

Data: 09.02.2004

Resistenza alla punta R_p (kg/cm²)

Rp/RI



Dott. Geol. Carlo Mondani - Studio Tecnico di Geologia
 via Vivaldi 11 - 41030 Bomporto MO
 tel./fax 059.909919 cell. 349.8018138
 e-mail: ancafed@tin.it

Località: Campazzo, via Farini
 Committente: LEGO CASA s.r.l.

Prova: CPT 1

Falda: -1,60 m

Quota: P.C.

Data: 09.02.2004

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 14 | 24 | 14 | 0,67 | 21,00 |
| 0,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 1,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 1,20 | 16 | 28 | 16 | 0,80 | 20,00 |
| 1,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 1,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 1,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 2,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 2,20 | 12 | 16 | 12 | 0,27 | 45,00 |
| 2,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 2,60 | 14 | 18 | 14 | 0,27 | 52,50 |
| 2,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 3,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 3,20 | 4 | 8 | 4 | 0,27 | 15,00 |
| 3,40 | 5 | 8 | 5 | 0,20 | 25,00 |
| 3,60 | 5 | 8 | 5 | 0,20 | 25,00 |
| 3,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 4,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 4,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 4,80 | 18 | 32 | 18 | 0,93 | 19,29 |
| 5,00 | 20 | 36 | 20 | 1,07 | 18,75 |
| 5,20 | 10 | 24 | 10 | 0,93 | 10,71 |
| 5,40 | 6 | 14 | 6 | 0,53 | 11,25 |
| 5,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 5,80 | 8 | 18 | 8 | 0,67 | 12,00 |
| 6,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 6,20 | 10 | 22 | 10 | 0,80 | 12,50 |
| 6,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 6,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 6,80 | 16 | 26 | 16 | 0,67 | 24,00 |
| 7,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 7,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,40 | 9 | 16 | 9 | 0,47 | 19,29 |
| 7,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,80 | 14 | 20 | 14 | 0,40 | 35,00 |
| 8,00 | 20 | 32 | 20 | 0,80 | 25,00 |
| 8,20 | 20 | 36 | 20 | 1,07 | 18,75 |
| 8,40 | 18 | 34 | 18 | 1,07 | 16,88 |
| 8,60 | 12 | 30 | 12 | 1,20 | 10,00 |
| 8,80 | 12 | 30 | 12 | 1,20 | 10,00 |
| 9,00 | 18 | 30 | 18 | 0,80 | 22,50 |
| 9,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 9,40 | 22 | 36 | 22 | 0,93 | 23,57 |
| 9,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 9,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 10,00 | 14 | 18 | 14 | 0,27 | 52,50 |
| 10,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 10,60 | 12 | 16 | 12 | 0,27 | 45,00 |
| 10,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 11,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 11,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 11,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
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| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | Rl (kg/cm ²) | Rp/Rl [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
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| 27,60 | | | | | |
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| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Dott. Geol. Carlo Mondani - Studio Tecnico di Geologia
via Vivaioni 11 - 41030 Bomporto MO
tel./fax 059.909919 cell. 349.8016138
e-mail: ancafed@tin.it

Località: Campazzo, via Farini

Committente: LEGO CASA s.r.l.

Prova:

CPT 2

Falda: -1,50 m

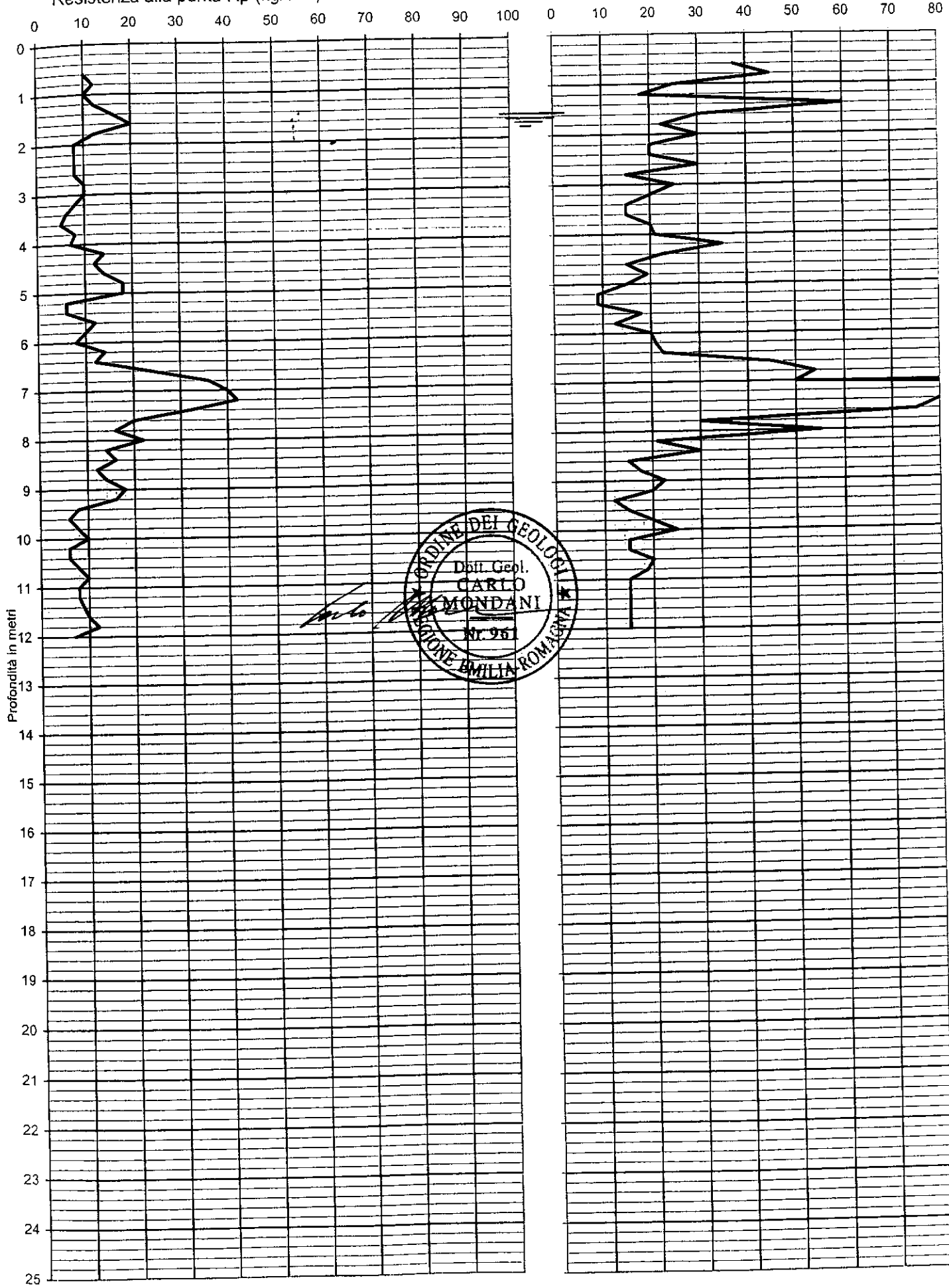
Quota: P.C.

Data:

09.02.2004

Resistenza alla punta R_p (kg/cm^2)

R_p/R_I



Dott. Geol. Carlo Mondani - Studio Tecnico di Geologia
 via Vivaldi 11 - 41030 Bomporto MO
 tel./fax 059.909919 cell. 349.8016138
 e-mail: ancafed@tin.it

Località: Campazzo, via Farini

Committente: LEGO CASA s.r.l.

Prova: CPT 2

Falda: -1,50 m

Quota: P.C.

Data: 09.02.2004

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 0,80 | 12 | 16 | 12 | 0,27 | 45,00 |
| 1,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 1,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 1,40 | 16 | 20 | 16 | 0,27 | 60,00 |
| 1,60 | 20 | 30 | 20 | 0,67 | 30,00 |
| 1,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 2,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 3,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 3,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 3,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,00 | 7 | 12 | 7 | 0,33 | 21,00 |
| 4,20 | 14 | 20 | 14 | 0,40 | 35,00 |
| 4,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 4,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 4,80 | 18 | 32 | 18 | 0,93 | 19,29 |
| 5,00 | 18 | 36 | 18 | 1,20 | 15,00 |
| 5,20 | 6 | 16 | 6 | 0,67 | 9,00 |
| 5,40 | 6 | 16 | 6 | 0,67 | 9,00 |
| 5,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 5,80 | 10 | 22 | 10 | 0,80 | 12,50 |
| 6,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 6,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 6,60 | 24 | 32 | 24 | 0,53 | 45,00 |
| 6,80 | 36 | 46 | 36 | 0,67 | 54,00 |
| 7,00 | 40 | 52 | 40 | 0,80 | 50,00 |
| 7,20 | 42 | 46 | 42 | 0,27 | 157,50 |
| 7,40 | 32 | 38 | 32 | 0,40 | 80,00 |
| 7,60 | 20 | 24 | 20 | 0,27 | 75,00 |
| 7,80 | 16 | 24 | 16 | 0,53 | 30,00 |
| 8,00 | 22 | 28 | 22 | 0,40 | 55,00 |
| 8,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 8,40 | 16 | 24 | 16 | 0,53 | 30,00 |
| 8,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 8,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 9,00 | 18 | 30 | 18 | 0,80 | 22,50 |
| 9,20 | 16 | 28 | 16 | 0,80 | 20,00 |
| 9,40 | 8 | 18 | 8 | 0,67 | 12,00 |
| 9,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 9,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 10,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 10,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 11,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 11,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 11,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 11,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 12,00 | 7 | 14 | 7 | 0,47 | 15,00 |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

GEO GROUP s.r.l.

Indagini geognostiche, geofisiche e consulenze geologiche e geotecniche

182, via C. Costa 41100 Modena - Tel. 059/828367 - Fax 059/3368245 - Email: geol_st@libero.it

**PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA**

CPT 4

3.010496-043

- committente:
- lavoro: studio del terreno di fondazione
- località: Casette di Nonantola (Mo)
- resp. cantiere: Dott. Pier Luigi Dallari
- assist. cantiere:

- data prova : 10/12/2005
- quota inizio : Piano Campagna
- prof. falda : 0,60 m da quota inizio

- data emiss. : 12/12/2005
- pagina n°: 1/4

| prf m | LP Kg/cm ² | LL Kg/cm ² | Rp Kg/cm ² | RL Kg/cm ² | Rp/RI - | prf m | LP Kg/cm ² | LL Kg/cm ² | Rp Kg/cm ² | RL Kg/cm ² | Rp/RI - |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|------------|----------|--------------------------|--------------------------|--------------------------|--------------------------|------------|
| 0,20 | 4,0 | 7,0 | 4,0 | 0,40 | 10,0 | 7,80 | 7,0 | 12,0 | 7,0 | 0,33 | 21,0 |
| 0,40 | 5,0 | 11,0 | 5,0 | 0,67 | 7,0 | 8,00 | 6,0 | 11,0 | 6,0 | 0,27 | 22,0 |
| 0,60 | 10,0 | 20,0 | 10,0 | 0,73 | 14,0 | 8,20 | 7,0 | 11,0 | 7,0 | 0,40 | 17,0 |
| 0,80 | 9,0 | 20,0 | 9,0 | 0,53 | 17,0 | 8,40 | 6,0 | 12,0 | 6,0 | 0,33 | 18,0 |
| 1,00 | 14,0 | 22,0 | 14,0 | 0,87 | 16,0 | 8,60 | 7,0 | 12,0 | 7,0 | 0,40 | 17,0 |
| 1,20 | 13,0 | 26,0 | 13,0 | 0,80 | 16,0 | 8,80 | 8,0 | 14,0 | 8,0 | 0,47 | 17,0 |
| 1,40 | 12,0 | 24,0 | 12,0 | 0,80 | 15,0 | 9,00 | 7,0 | 14,0 | 7,0 | 0,40 | 17,0 |
| 1,60 | 15,0 | 27,0 | 15,0 | 1,07 | 14,0 | 9,20 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 |
| 1,80 | 17,0 | 33,0 | 17,0 | 1,27 | 13,0 | 9,40 | 5,0 | 10,0 | 5,0 | 0,40 | 12,0 |
| 2,00 | 18,0 | 37,0 | 18,0 | 1,27 | 14,0 | 9,60 | 7,0 | 13,0 | 7,0 | 0,53 | 13,0 |
| 2,20 | 18,0 | 37,0 | 18,0 | 1,27 | 14,0 | 9,80 | 10,0 | 18,0 | 10,0 | 0,67 | 15,0 |
| 2,40 | 20,0 | 39,0 | 20,0 | 1,33 | 15,0 | 10,00 | 12,0 | 22,0 | 12,0 | 0,80 | 15,0 |
| 2,60 | 19,0 | 39,0 | 19,0 | 0,87 | 22,0 | 10,20 | 14,0 | 26,0 | 14,0 | 0,93 | 15,0 |
| 2,80 | 11,0 | 24,0 | 11,0 | 0,87 | 13,0 | 10,40 | 14,0 | 28,0 | 14,0 | 1,07 | 13,0 |
| 3,00 | 14,0 | 27,0 | 14,0 | 0,67 | 21,0 | 10,60 | 17,0 | 33,0 | 17,0 | 1,20 | 14,0 |
| 3,20 | 17,0 | 27,0 | 17,0 | 1,20 | 14,0 | 10,80 | 19,0 | 37,0 | 19,0 | 1,13 | 17,0 |
| 3,40 | 17,0 | 35,0 | 17,0 | 0,67 | 25,0 | 11,00 | 17,0 | 34,0 | 17,0 | 0,87 | 20,0 |
| 3,60 | 19,0 | 29,0 | 19,0 | 0,67 | 28,0 | 11,20 | 14,0 | 27,0 | 14,0 | 0,80 | 17,0 |
| 3,80 | 11,0 | 21,0 | 11,0 | 0,80 | 14,0 | 11,40 | 12,0 | 24,0 | 12,0 | 0,67 | 18,0 |
| 4,00 | 9,0 | 21,0 | 9,0 | 0,60 | 15,0 | 11,60 | 9,0 | 19,0 | 9,0 | 0,67 | 13,0 |
| 4,20 | 8,0 | 17,0 | 8,0 | 0,53 | 15,0 | 11,80 | 10,0 | 20,0 | 10,0 | 0,60 | 17,0 |
| 4,40 | 6,0 | 14,0 | 6,0 | 0,53 | 11,0 | 12,00 | 10,0 | 19,0 | 10,0 | 0,60 | 17,0 |
| 4,60 | 6,0 | 14,0 | 6,0 | 0,53 | 11,0 | 12,20 | 11,0 | 20,0 | 11,0 | 0,67 | 16,0 |
| 4,80 | 12,0 | 20,0 | 12,0 | 0,67 | 18,0 | 12,40 | 10,0 | 20,0 | 10,0 | 0,60 | 17,0 |
| 5,00 | 12,0 | 22,0 | 12,0 | 0,80 | 15,0 | 12,60 | 7,0 | 16,0 | 7,0 | 0,60 | 12,0 |
| 5,20 | 11,0 | 23,0 | 11,0 | 0,60 | 18,0 | 12,80 | 12,0 | 21,0 | 12,0 | 0,80 | 15,0 |
| 5,40 | 17,0 | 26,0 | 17,0 | 0,60 | 28,0 | 13,00 | 15,0 | 27,0 | 15,0 | 0,93 | 16,0 |
| 5,60 | 11,0 | 20,0 | 11,0 | 0,67 | 16,0 | 13,20 | 14,0 | 28,0 | 14,0 | 1,07 | 13,0 |
| 5,80 | 13,0 | 23,0 | 13,0 | 0,67 | 19,0 | 13,40 | 17,0 | 33,0 | 17,0 | 1,13 | 15,0 |
| 6,00 | 11,0 | 21,0 | 11,0 | 0,60 | 18,0 | 13,60 | 21,0 | 38,0 | 21,0 | 1,53 | 14,0 |
| 6,20 | 12,0 | 21,0 | 12,0 | 0,67 | 18,0 | 13,80 | 24,0 | 47,0 | 24,0 | 1,47 | 16,0 |
| 6,40 | 14,0 | 24,0 | 14,0 | 0,47 | 30,0 | 14,00 | 23,0 | 45,0 | 23,0 | 1,33 | 17,0 |
| 6,60 | 11,0 | 18,0 | 11,0 | 0,53 | 21,0 | 14,20 | 20,0 | 40,0 | 20,0 | 1,33 | 15,0 |
| 6,80 | 9,0 | 17,0 | 9,0 | 0,53 | 17,0 | 14,40 | 19,0 | 39,0 | 19,0 | 1,47 | 13,0 |
| 7,00 | 8,0 | 16,0 | 8,0 | 0,33 | 24,0 | 14,60 | 23,0 | 45,0 | 23,0 | 1,33 | 17,0 |
| 7,20 | 8,0 | 13,0 | 8,0 | 0,40 | 20,0 | 14,80 | 28,0 | 48,0 | 28,0 | 1,67 | 17,0 |
| 7,40 | 7,0 | 13,0 | 7,0 | 0,33 | 21,0 | 15,00 | 28,0 | 53,0 | 28,0 | — | — |
| 7,60 | 7,0 | 12,0 | 7,0 | 0,33 | 21,0 | | | | | | |

- PENETROMETRO STATICO tipo PAGANI da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann ø = 35,7 mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr. D. Merlin - 0425/840820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - incinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

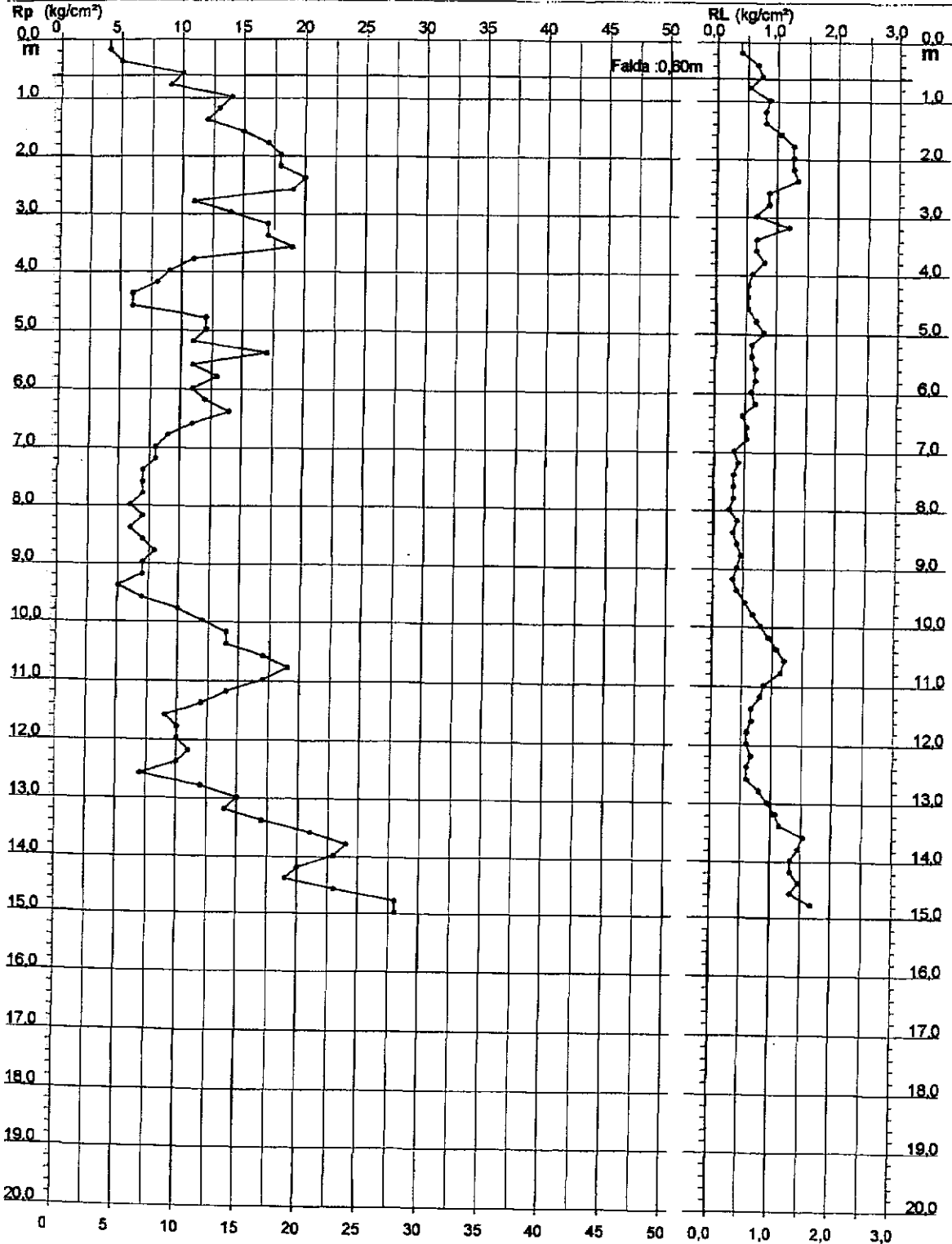
**PROVA PENETROMETRICA STATICA
 DIAGRAMMA DI RESISTENZA**

CPT 4

3.010496-043

- committente:
 - lavoro: studio del terreno di fondazione
 - località: Casette di Nonantola (Mo)
 - resp. cantiere: Dott. Pier Luigi Dallari
 - assist. cantiere:

- data prova : 10/12/2005
 - quota inizio : Piano Campagna
 - prof. falda : 0,60 m da quota inizio
 - scala vert.: 1 : 100
 - data emiss. : 12/12/2005
 - pagina n°: 2/4



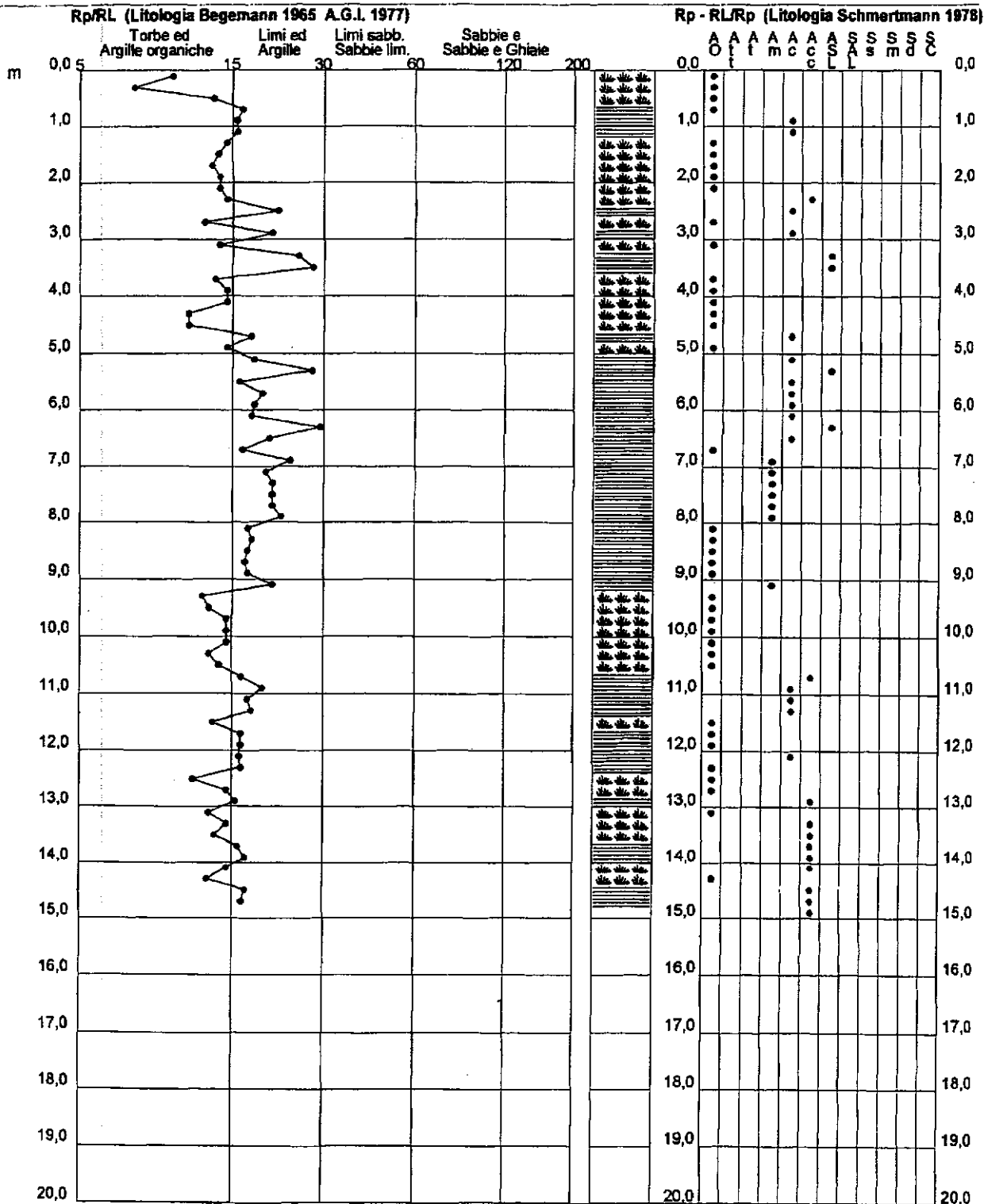
**PROVA PENETROMETRICA STATICA
 VALUTAZIONI LITOLOGICHE**

CPT 4

3.010496-043

- committente:
 - lavoro: studio del terreno di fondazione
 - località: Casette di Nonantola (Mo)
 - resp. cantiere: Dott. Pier Luigi Dallari
 - assist. cantiere:

- data prova : 10/12/2005
 - quota inizio : Piano Campagna
 - prof. falda : 0,60 m da quota inizio
 - scala vert. : 1 : 100
 - data emiss. : 12/12/2005
 - pagina n°: 3/4



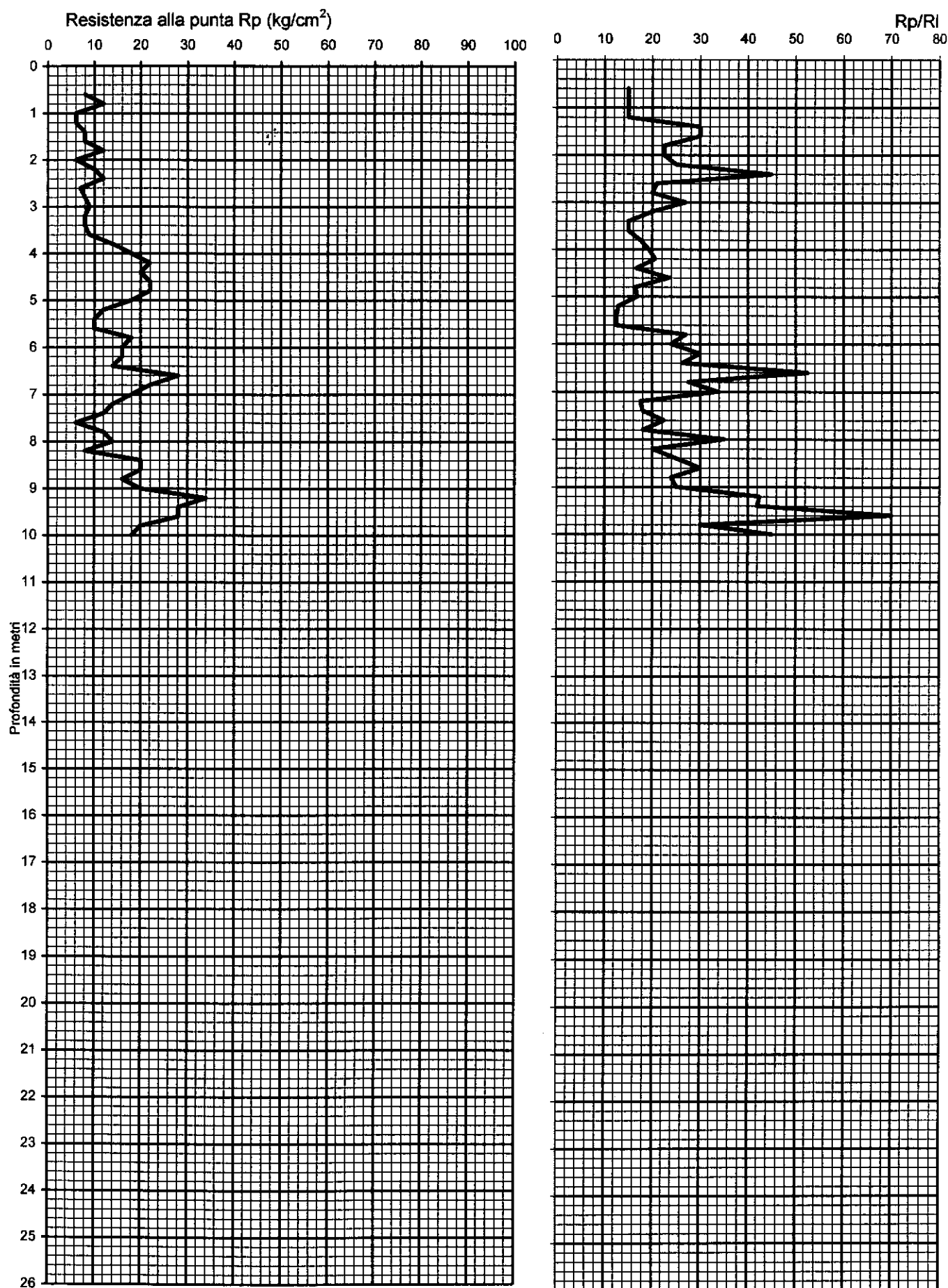


Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999
Telefax 059/454827

PROVA PENETROMETRICA STATICA
Penetrometro Gouda

Committente : DR. FRANCHI
Località : CAMPAZZO-NONANTOLA
Prova numero : 1
Data : 23/12/2005
Operatore : DR. REBECCHI
Quota : P.C.



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 0,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 1,00 | 6 | 12 | 6 | 0,40 | 15,00 |
| 1,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 1,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 1,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 1,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 2,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 2,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 2,40 | 12 | 16 | 12 | 0,27 | 45,00 |
| 2,60 | 7 | 12 | 7 | 0,33 | 21,00 |
| 2,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,00 | 9 | 14 | 9 | 0,33 | 27,00 |
| 3,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 3,60 | 9 | 18 | 9 | 0,60 | 15,00 |
| 3,80 | 14 | 26 | 14 | 0,80 | 17,50 |
| 4,00 | 18 | 32 | 18 | 0,93 | 19,29 |
| 4,20 | 22 | 38 | 22 | 1,07 | 20,63 |
| 4,40 | 20 | 38 | 20 | 1,20 | 16,67 |
| 4,60 | 22 | 36 | 22 | 0,93 | 23,57 |
| 4,80 | 22 | 42 | 22 | 1,33 | 16,50 |
| 5,00 | 18 | 34 | 18 | 1,07 | 16,88 |
| 5,20 | 12 | 26 | 12 | 0,93 | 12,86 |
| 5,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 5,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 5,80 | 18 | 28 | 18 | 0,67 | 27,00 |
| 6,00 | 16 | 26 | 16 | 0,67 | 24,00 |
| 6,20 | 16 | 24 | 16 | 0,53 | 30,00 |
| 6,40 | 14 | 22 | 14 | 0,53 | 26,25 |
| 6,60 | 28 | 36 | 28 | 0,53 | 52,50 |
| 6,80 | 22 | 34 | 22 | 0,80 | 27,50 |
| 7,00 | 18 | 26 | 18 | 0,53 | 33,75 |
| 7,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 7,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 7,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 8,00 | 14 | 20 | 14 | 0,40 | 35,00 |
| 8,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,40 | 20 | 32 | 20 | 0,80 | 25,00 |
| 8,60 | 20 | 30 | 20 | 0,67 | 30,00 |
| 8,80 | 16 | 26 | 16 | 0,67 | 24,00 |
| 9,00 | 20 | 32 | 20 | 0,80 | 25,00 |
| 9,20 | 34 | 46 | 34 | 0,80 | 42,50 |
| 9,40 | 28 | 38 | 28 | 0,67 | 42,00 |
| 9,60 | 28 | 34 | 28 | 0,40 | 70,00 |
| 9,80 | 20 | 30 | 20 | 0,67 | 30,00 |
| 10,00 | 18 | 24 | 18 | 0,40 | 45,00 |
| 10,20 | | | | | |
| 10,40 | | | | | |
| 10,60 | | | | | |
| 10,80 | | | | | |
| 11,00 | | | | | |
| 11,20 | | | | | |
| 11,40 | | | | | |
| 11,60 | | | | | |
| 11,80 | | | | | |
| 12,00 | | | | | |
| 12,20 | | | | | |
| 12,40 | | | | | |
| 12,60 | | | | | |
| 12,80 | | | | | |
| 13,00 | | | | | |
| 13,20 | | | | | |
| 13,40 | | | | | |
| 13,60 | | | | | |
| 13,80 | | | | | |
| 14,00 | | | | | |
| 14,20 | | | | | |
| 14,40 | | | | | |
| 14,60 | | | | | |
| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
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| 28,80 | | | | | |
| 29,00 | | | | | |
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| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |



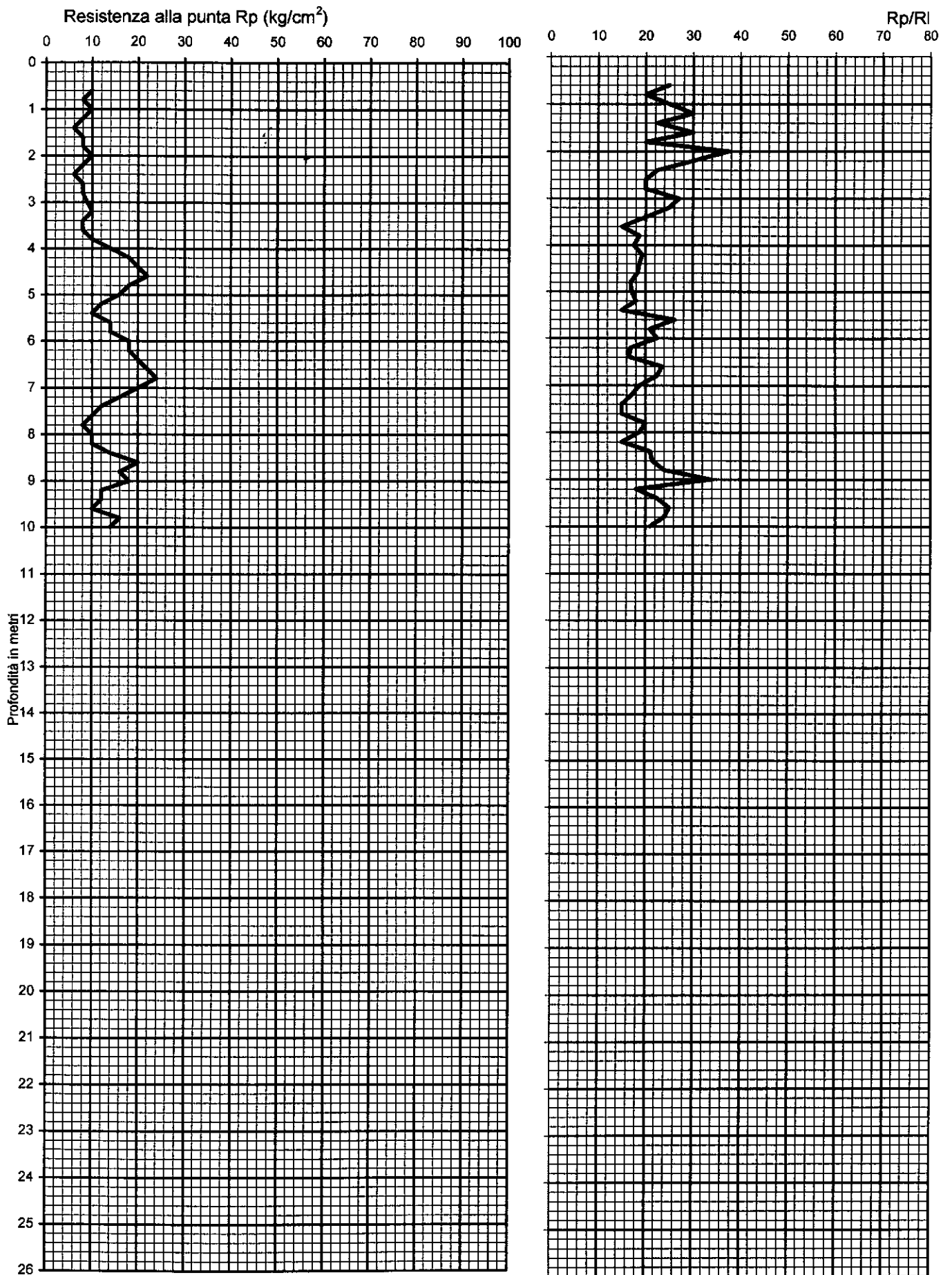
Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999
Telefax 059/454827

PROVA PENETROMETRICA STATICA
Penetrometro Gouda

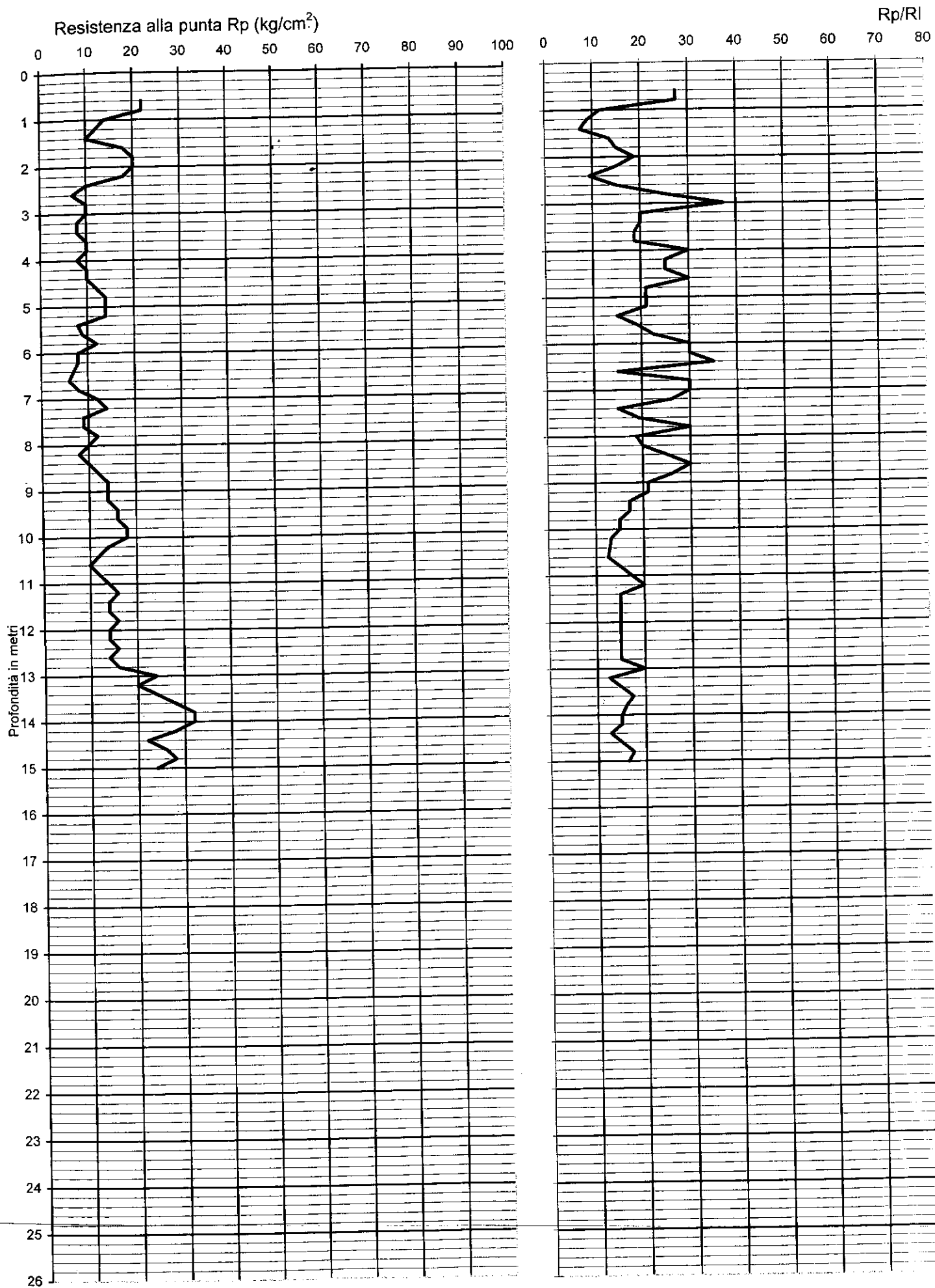
Committente : DR. FRANCHI
Località : CAMPAZZO-NONANTOLA
Prova numero : 3
Data : 23/12/2005
Operatore : DR. REBECCHI
Quota : P.C.

Via AUSTRIA, 24 - 41100 MODENA



| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 0,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 1,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 1,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 1,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 1,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 1,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 2,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 2,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,00 | 9 | 14 | 9 | 0,33 | 27,00 |
| 3,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 3,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,00 | 14 | 26 | 14 | 0,80 | 17,50 |
| 4,20 | 18 | 32 | 18 | 0,93 | 19,29 |
| 4,40 | 20 | 36 | 20 | 1,07 | 18,75 |
| 4,60 | 22 | 40 | 22 | 1,20 | 18,33 |
| 4,80 | 18 | 34 | 18 | 1,07 | 16,88 |
| 5,00 | 16 | 30 | 16 | 0,93 | 17,14 |
| 5,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 5,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 5,60 | 14 | 22 | 14 | 0,53 | 26,25 |
| 5,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 6,00 | 18 | 30 | 18 | 0,80 | 22,50 |
| 6,20 | 18 | 34 | 18 | 1,07 | 16,88 |
| 6,40 | 20 | 38 | 20 | 1,20 | 16,67 |
| 6,60 | 22 | 36 | 22 | 0,93 | 23,57 |
| 6,80 | 24 | 40 | 24 | 1,07 | 22,50 |
| 7,00 | 20 | 36 | 20 | 1,07 | 18,75 |
| 7,20 | 16 | 30 | 16 | 0,93 | 17,14 |
| 7,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 7,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 7,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 8,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 8,40 | 14 | 24 | 14 | 0,67 | 21,00 |
| 8,60 | 20 | 34 | 20 | 0,93 | 21,43 |
| 8,80 | 16 | 26 | 16 | 0,67 | 24,00 |
| 9,00 | 18 | 26 | 18 | 0,53 | 33,75 |
| 9,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 9,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,80 | 16 | 26 | 16 | 0,67 | 24,00 |
| 10,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 10,20 | | | | | |
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| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
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Via AUSTRIA, 24 - 41100 MODENA

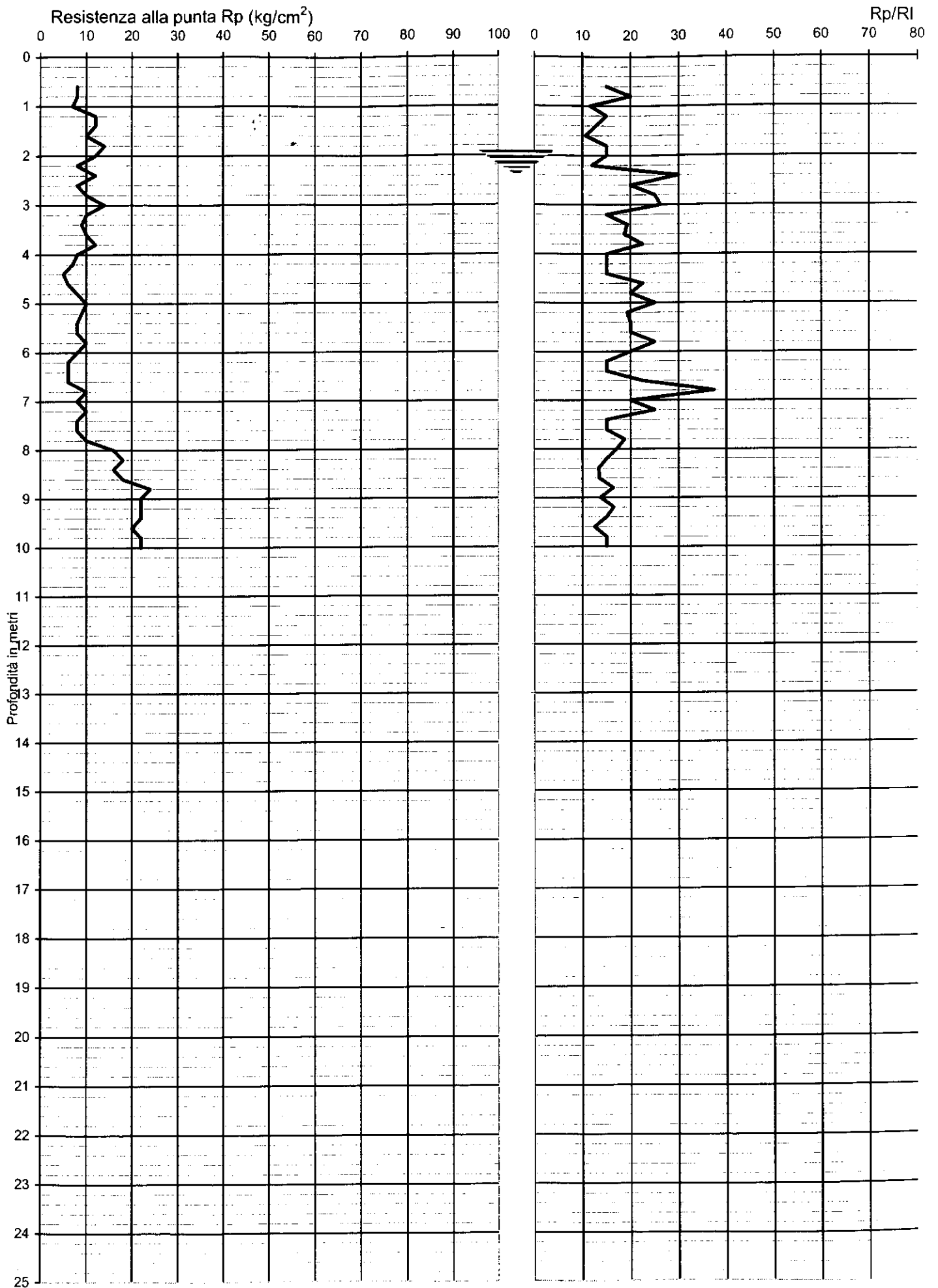
Telefono 059/313999
Telefax 059/454827

PROVA PENETROMETRICA STATICA
Penetrometro Gouda

Committente : C/O GEOM. ZIRONI
Località : VIA VALLUZZA-NONANTOLA
Prova numero : 1
Data : 13/06/2005
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 22 | 34 | 22 | 0,80 | 27,50 |
| 0,80 | 22 | 34 | 22 | 0,80 | 27,50 |
| 1,00 | 14 | 32 | 14 | 1,20 | 11,67 |
| 1,20 | 12 | 32 | 12 | 1,33 | 9,00 |
| 1,40 | 10 | 30 | 10 | 1,33 | 7,50 |
| 1,60 | 18 | 38 | 18 | 1,33 | 13,50 |
| 1,80 | 20 | 40 | 20 | 1,33 | 15,00 |
| 2,00 | 20 | 36 | 20 | 1,07 | 18,75 |
| 2,20 | 18 | 36 | 18 | 1,20 | 15,00 |
| 2,40 | 10 | 26 | 10 | 1,07 | 9,38 |
| 2,60 | 7 | 14 | 7 | 0,47 | 15,00 |
| 2,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 3,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,60 | 12 | 18 | 12 | 0,40 | 30,00 |
| 4,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 5,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 5,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 5,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 5,60 | 9 | 16 | 9 | 0,47 | 19,29 |
| 5,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 6,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,40 | 7 | 10 | 7 | 0,20 | 35,00 |
| 6,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 6,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 7,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 7,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 7,60 | 9 | 16 | 9 | 0,47 | 19,29 |
| 7,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 8,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 8,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,60 | 12 | 18 | 12 | 0,40 | 30,00 |
| 8,80 | 14 | 22 | 14 | 0,53 | 26,25 |
| 9,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 9,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 9,40 | 16 | 30 | 16 | 0,93 | 17,14 |
| 9,60 | 16 | 30 | 16 | 0,93 | 17,14 |
| 9,80 | 18 | 36 | 18 | 1,20 | 15,00 |
| 10,00 | 18 | 36 | 18 | 1,20 | 15,00 |
| 10,20 | 14 | 30 | 14 | 1,07 | 13,13 |
| 10,40 | 12 | 26 | 12 | 0,93 | 12,86 |
| 10,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 10,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 11,00 | 14 | 26 | 14 | 0,80 | 17,50 |
| 11,20 | 16 | 28 | 16 | 0,80 | 20,00 |
| 11,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 11,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 11,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 12,00 | 14 | 28 | 14 | 0,93 | 15,00 |
| 12,20 | 14 | 28 | 14 | 0,93 | 15,00 |
| 12,40 | 16 | 32 | 16 | 1,07 | 15,00 |
| 12,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 12,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 13,00 | 24 | 42 | 24 | 1,20 | 20,00 |
| 13,20 | 20 | 44 | 20 | 1,60 | 12,50 |
| 13,40 | 24 | 48 | 24 | 1,60 | 15,00 |
| 13,60 | 28 | 52 | 28 | 1,60 | 17,50 |
| 13,80 | 32 | 62 | 32 | 2,00 | 16,00 |
| 14,00 | 32 | 64 | 32 | 2,13 | 15,00 |
| 14,20 | 28 | 56 | 28 | 1,87 | 15,00 |
| 14,40 | 22 | 48 | 22 | 1,73 | 12,69 |
| 14,60 | 26 | 52 | 26 | 1,73 | 15,00 |
| 14,80 | 28 | 52 | 28 | 1,60 | 17,50 |
| 15,00 | 24 | 46 | 24 | 1,47 | 16,36 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
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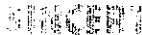
Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827



ORGANISMO DI
CERTIFICAZIONE



UNI EN ISO 9001:2000
CERTIFICATO N. 158

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O DOTT. MACCAFERRI
Località : BAGAZZANO-NONANTOLA
Prova numero : 1
Data : 17/11/2005
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 0,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 1,00 | 7 | 16 | 7 | 0,60 | 11,67 |
| 1,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 1,40 | 12 | 26 | 12 | 0,93 | 12,86 |
| 1,60 | 10 | 24 | 10 | 0,93 | 10,71 |
| 1,80 | 14 | 28 | 14 | 0,93 | 15,00 |
| 2,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 2,20 | 8 | 18 | 8 | 0,67 | 12,00 |
| 2,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 2,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,00 | 14 | 22 | 14 | 0,53 | 26,25 |
| 3,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 3,40 | 9 | 16 | 9 | 0,47 | 19,29 |
| 3,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 3,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 4,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 4,20 | 7 | 14 | 7 | 0,47 | 15,00 |
| 4,40 | 5 | 10 | 5 | 0,33 | 15,00 |
| 4,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,20 | 9 | 16 | 9 | 0,47 | 19,29 |
| 5,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 6,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 6,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 6,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 6,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 7,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 7,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 7,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 8,00 | 16 | 30 | 16 | 0,93 | 17,14 |
| 8,20 | 18 | 36 | 18 | 1,20 | 15,00 |
| 8,40 | 16 | 34 | 16 | 1,20 | 13,33 |
| 8,60 | 18 | 38 | 18 | 1,33 | 13,50 |
| 8,80 | 24 | 46 | 24 | 1,47 | 16,36 |
| 9,00 | 22 | 46 | 22 | 1,60 | 13,75 |
| 9,20 | 22 | 42 | 22 | 1,33 | 16,50 |
| 9,40 | 22 | 44 | 22 | 1,47 | 15,00 |
| 9,60 | 20 | 44 | 20 | 1,60 | 12,50 |
| 9,80 | 22 | 44 | 22 | 1,47 | 15,00 |
| 10,00 | 22 | 44 | 22 | 1,47 | 15,00 |
| 10,20 | | | | | |
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| 14,80 | | | | | |
| 15,00 | | | | | |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
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| 15,80 | | | | | |
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| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

PROVA PENETROMETRICA STATICA **CPT 1**
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA 3.010496-043

| | |
|---|------------------------------------|
| - committente: Geo Group srl | - data prova : 31/05/2005 |
| - lavoro: Studio terreno di fondazione | - quota inizio : Piano Campagna |
| - località: Nonantola (MO) | - prof. falda : Falda non rilevata |
| - resp. cantiere: Dott. Fabrizio Vecchi | |
| - assist. cantiere: | - data emiss. : 01/06/2005 |
| - note: Foro chiuso a -3.00 m | - pagina n°: 1/4 |

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | --- | 0,07 | --- | 6,20 | 27,0 | 50,0 | 27,0 | 1,40 | 19,0 |
| 0,40 | --- | 1,0 | --- | 0,07 | --- | 6,40 | 25,0 | 46,0 | 25,0 | 1,33 | 19,0 |
| 0,60 | --- | 1,0 | --- | 2,07 | --- | 6,60 | 24,0 | 44,0 | 24,0 | 1,47 | 16,0 |
| 0,80 | 23,0 | 54,0 | 23,0 | 1,67 | 14,0 | 6,80 | 20,0 | 42,0 | 20,0 | 1,40 | 14,0 |
| 1,00 | 34,0 | 59,0 | 34,0 | 1,33 | 25,0 | 7,00 | 19,0 | 40,0 | 19,0 | 1,20 | 16,0 |
| 1,20 | 12,0 | 32,0 | 12,0 | 0,73 | 16,0 | 7,20 | 18,0 | 36,0 | 18,0 | 1,47 | 12,0 |
| 1,40 | 12,0 | 23,0 | 12,0 | 0,60 | 20,0 | 7,40 | 12,0 | 34,0 | 12,0 | 1,40 | 9,0 |
| 1,60 | 16,0 | 25,0 | 16,0 | 0,67 | 24,0 | 7,60 | 22,0 | 43,0 | 22,0 | 1,60 | 14,0 |
| 1,80 | 13,0 | 23,0 | 13,0 | 0,93 | 14,0 | 7,80 | 24,0 | 48,0 | 24,0 | 1,80 | 13,0 |
| 2,00 | 12,0 | 26,0 | 12,0 | 0,80 | 15,0 | 8,00 | 27,0 | 54,0 | 27,0 | 2,00 | 14,0 |
| 2,20 | 15,0 | 27,0 | 15,0 | 0,73 | 20,0 | 8,20 | 28,0 | 58,0 | 28,0 | 1,80 | 16,0 |
| 2,40 | 18,0 | 29,0 | 18,0 | 0,33 | 54,0 | 8,40 | 27,0 | 54,0 | 27,0 | 2,07 | 13,0 |
| 2,60 | 18,0 | 23,0 | 18,0 | 1,13 | 16,0 | 8,60 | 27,0 | 58,0 | 27,0 | 1,80 | 15,0 |
| 2,80 | 19,0 | 36,0 | 19,0 | 1,27 | 15,0 | 8,80 | 30,0 | 57,0 | 30,0 | 1,87 | 16,0 |
| 3,00 | 20,0 | 39,0 | 20,0 | 1,27 | 16,0 | 9,00 | 28,0 | 56,0 | 28,0 | 2,13 | 13,0 |
| 3,20 | 19,0 | 38,0 | 19,0 | 1,07 | 18,0 | 9,20 | 32,0 | 64,0 | 32,0 | 1,73 | 18,0 |
| 3,40 | 18,0 | 34,0 | 18,0 | 1,00 | 18,0 | 9,40 | 26,0 | 52,0 | 26,0 | 2,00 | 13,0 |
| 3,60 | 22,0 | 37,0 | 22,0 | 1,13 | 19,0 | 9,60 | 25,0 | 55,0 | 25,0 | 1,73 | 14,0 |
| 3,80 | 19,0 | 36,0 | 19,0 | 1,00 | 19,0 | 9,80 | 25,0 | 51,0 | 25,0 | 1,60 | 16,0 |
| 4,00 | 14,0 | 29,0 | 14,0 | 0,67 | 21,0 | 10,00 | 26,0 | 50,0 | 26,0 | 1,60 | 16,0 |
| 4,20 | 14,0 | 24,0 | 14,0 | 0,67 | 21,0 | 10,20 | 24,0 | 48,0 | 24,0 | 1,07 | 22,0 |
| 4,40 | 13,0 | 23,0 | 13,0 | 0,67 | 19,0 | 10,40 | 24,0 | 40,0 | 24,0 | 1,53 | 16,0 |
| 4,60 | 20,0 | 30,0 | 20,0 | 1,07 | 19,0 | 10,60 | 26,0 | 49,0 | 26,0 | 1,60 | 16,0 |
| 4,80 | 26,0 | 42,0 | 26,0 | 1,40 | 19,0 | 10,80 | 26,0 | 50,0 | 26,0 | 1,47 | 18,0 |
| 5,00 | 30,0 | 51,0 | 30,0 | 1,53 | 20,0 | 11,00 | 24,0 | 46,0 | 24,0 | 1,53 | 16,0 |
| 5,20 | 29,0 | 52,0 | 29,0 | 1,53 | 19,0 | 11,20 | 25,0 | 48,0 | 25,0 | 1,53 | 16,0 |
| 5,40 | 26,0 | 49,0 | 26,0 | 1,27 | 21,0 | 11,40 | 28,0 | 51,0 | 28,0 | 1,67 | 17,0 |
| 5,60 | 30,0 | 49,0 | 30,0 | 1,73 | 17,0 | 11,60 | 26,0 | 51,0 | 26,0 | 1,33 | 19,0 |
| 5,80 | 27,0 | 53,0 | 27,0 | 1,60 | 17,0 | 11,80 | 20,0 | 40,0 | 20,0 | 1,40 | 14,0 |
| 6,00 | 25,0 | 49,0 | 25,0 | 1,53 | 16,0 | 12,00 | 18,0 | 39,0 | 18,0 | --- | --- |

PROVE PENETROMETRICHE srl
ELABORAZIONE DATI
IL TECNICO

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann ø = 35.7 mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

[Handwritten signatures]

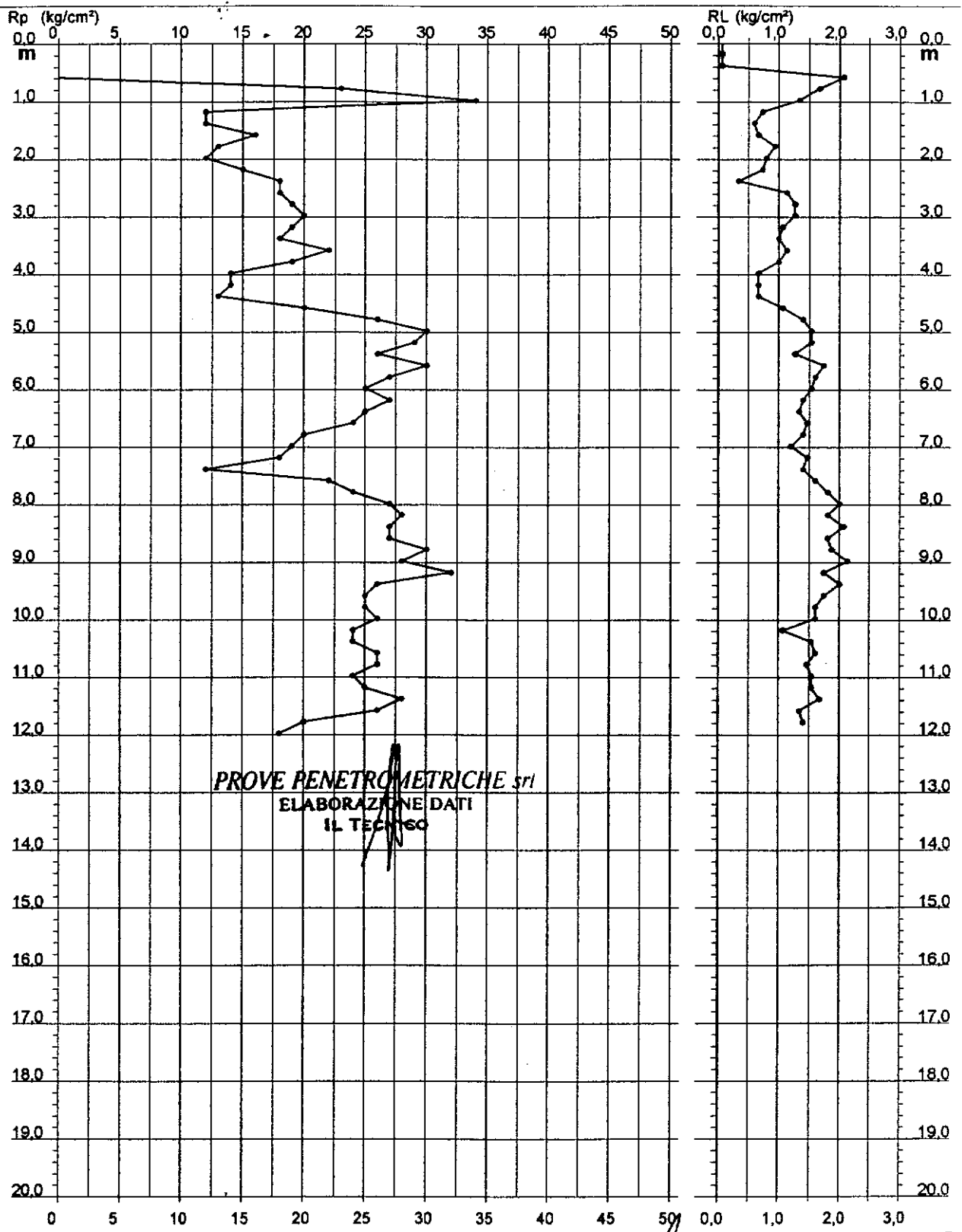
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

3.010496-043

- committente: Geo Group srl
 - lavoro: Studio terreno di fondazione
 - località: Nonantola (MO)
 - resp. cantiere: Dott. Fabrizio Vecchi
 - assist. cantiere:
 - note: Foro chiuso a -3.00 m

- data prova : 31/05/2005
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - scala vert. : 1 : 100
 - data emiss. : 01/06/2005
 - pagina n°: 2/4



[Handwritten signatures and initials]

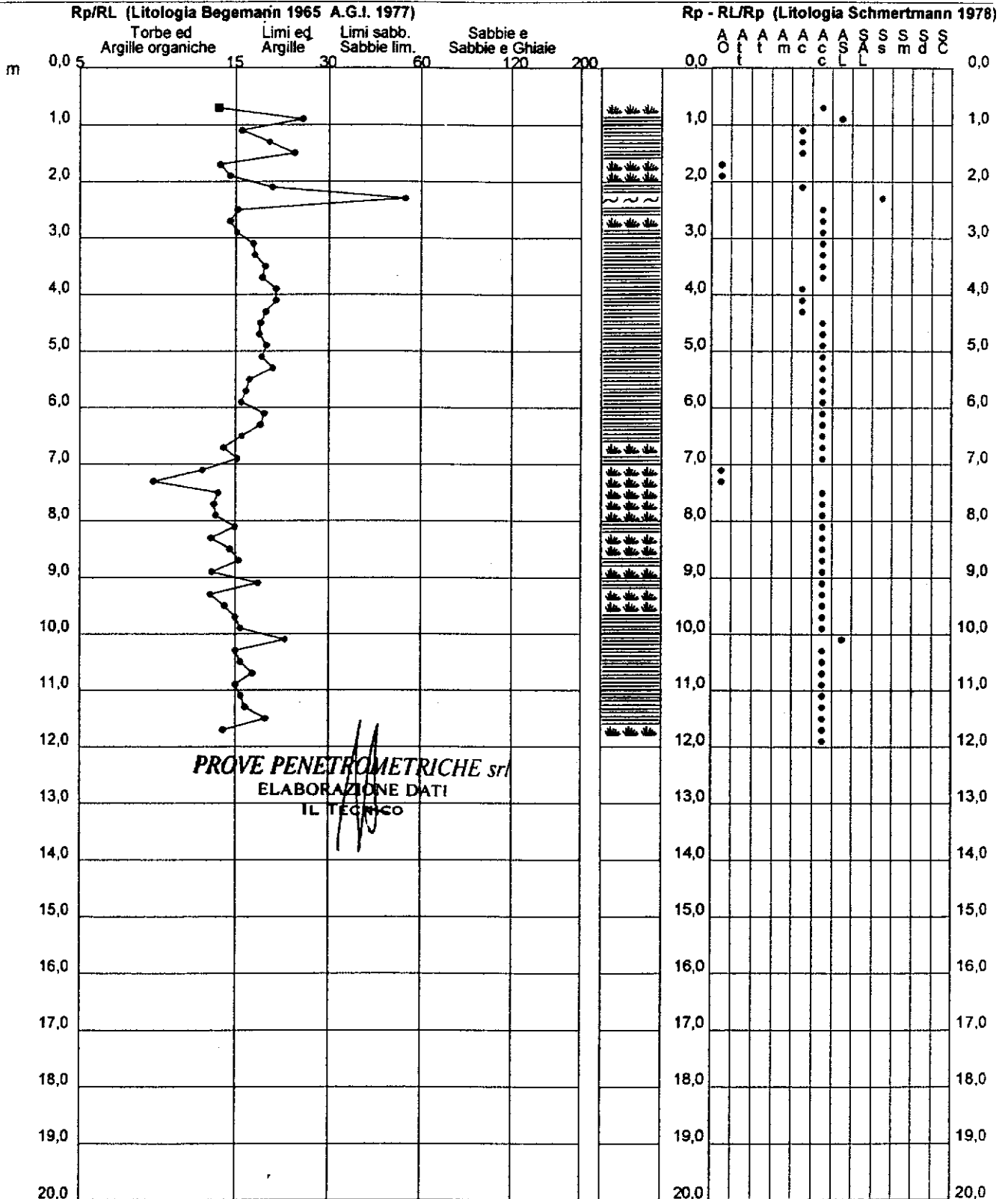
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 1

3.010496-043

- committente: Geo Group srl
 - lavoro: Studio terreno di fondazione
 - località: Nonantola (MO)
 - resp. cantiere: Dott. Fabrizio Vecchi
 - assist. cantiere:
 - note: Foro chiuso a -3.00 m

- data prova : 31/05/2005
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - scala vert. : 1 : 100
 - data emiss. : 01/06/2005
 - pagina n° : 3/4



PROVA PENETROMETRICA STATICA
TABELLA PARAMETRI GEOTECNICI

CPT 1

3.010496-043

- committente: Geo Group srl
 - lavoro: Studio terreno di fondazione
 - località: Nonantola (MO)
 - resp. cantiere: Dott. Fabrizio Vecchi
 - assist. cantiere:
 - note: Foro chiuso a -3.00 m

- data prova : 31/05/2005
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - data emiss. : 01/06/2005
 - pagina n°: 4/4

| Prof. m | Rp kg/cm² | Rp/Rl (-) | Natura Litol. | Y V/m² | p'vo kg/cm² | Cu kg/cm² | OCR (-) | Eu50 kg/cm² | Eu25 kg/cm² | Mo kg/cm² | Dr % | NATURA COESIVA | | | | NATURA GRANULARE | | | | Amax/g (-) | E'50 kg/cm² | E'25 kg/cm² | Mo kg/cm² | | |
|---------|-----------|-----------|---------------|--------|-------------|-----------|---------|-------------|-------------|-----------|------|----------------|---------|---------|---------|------------------|---------|---------|---------|------------|-------------|-------------|-----------|---|---|
| | | | | | | | | | | | | a1s (°) | a2s (°) | a3s (°) | a4s (°) | edm (°) | emy (°) | Edm (°) | E25 (°) | | | | | | |
| 0,20 | - | - | ??? | 1,85 | 0,04 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,40 | - | - | ??? | 1,85 | 0,07 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,60 | - | - | ??? | 1,85 | 0,11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,80 | 23 | 14 | 4.F. | 1,85 | 0,15 | 0,87 | 57,3 | 148 | 221 | 69 | 68 | 38 | 39 | 41 | 43 | 39 | 28 | 0,153 | 38 | 58 | 69 | - | - | - | |
| 1,00 | 34 | 25 | 4.F. | 1,85 | 0,19 | 1,13 | 60,5 | 193 | 289 | 102 | 76 | 39 | 40 | 42 | 44 | 40 | 29 | 0,178 | 57 | 85 | 102 | - | - | - | |
| 1,20 | 12 | 16 | 2.HH. | 1,85 | 0,22 | 0,57 | 20,5 | 97 | 146 | 45 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,40 | 12 | 20 | 2.HH. | 1,85 | 0,26 | 0,57 | 16,9 | 97 | 146 | 45 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,60 | 16 | 24 | 2.HH. | 1,85 | 0,30 | 0,70 | 18,3 | 118 | 177 | 52 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,80 | 13 | 14 | 2.HH. | 1,85 | 0,33 | 0,60 | 13,2 | 103 | 154 | 47 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2,00 | 12 | 15 | 2.HH. | 1,85 | 0,37 | 0,57 | 10,8 | 97 | 146 | 45 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2,20 | 15 | 20 | 2.HH. | 1,85 | 0,41 | 0,67 | 11,6 | 113 | 170 | 50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2,40 | 18 | 54 | 4.F. | 1,85 | 0,44 | 0,75 | 12,1 | 128 | 191 | 56 | 33 | 33 | 35 | 38 | 41 | 32 | 27 | 0,064 | 30 | 45 | 54 | - | - | - | |
| 2,60 | 18 | 16 | 2.HH. | 1,85 | 0,48 | 0,75 | 10,9 | 128 | 191 | 56 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2,80 | 19 | 15 | 2.HH. | 1,85 | 0,52 | 0,78 | 10,4 | 132 | 198 | 58 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3,00 | 20 | 16 | 4.F. | 1,85 | 0,55 | 0,80 | 9,9 | 136 | 204 | 60 | 31 | 32 | 35 | 38 | 40 | 31 | 27 | 0,060 | 33 | 50 | 60 | - | - | - | |
| 3,20 | 19 | 18 | 2.HH. | 1,85 | 0,59 | 0,78 | 8,8 | 140 | 210 | 58 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3,40 | 18 | 18 | 2.HH. | 1,85 | 0,63 | 0,75 | 7,8 | 152 | 228 | 56 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3,60 | 22 | 19 | 4.F. | 1,85 | 0,67 | 0,85 | 8,5 | 158 | 237 | 66 | 30 | 32 | 35 | 38 | 40 | 31 | 28 | 0,058 | 37 | 55 | 66 | - | - | - | |
| 3,80 | 19 | 19 | 2.HH. | 1,85 | 0,70 | 0,78 | 7,1 | 178 | 263 | 58 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4,00 | 14 | 21 | 2.HH. | 1,85 | 0,74 | 0,64 | 5,2 | 203 | 304 | 48 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4,20 | 14 | 21 | 2.HH. | 1,85 | 0,78 | 0,64 | 4,9 | 215 | 323 | 48 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4,40 | 13 | 19 | 2.HH. | 1,85 | 0,81 | 0,60 | 4,3 | 227 | 341 | 47 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4,60 | 20 | 19 | 4.F. | 1,85 | 0,85 | 0,80 | 5,8 | 227 | 341 | 60 | 21 | 31 | 34 | 37 | 40 | 29 | 27 | 0,039 | 33 | 50 | 60 | - | - | - | |
| 4,80 | 26 | 19 | 4.F. | 1,85 | 0,89 | 0,93 | 6,6 | 227 | 341 | 78 | 29 | 32 | 35 | 37 | 40 | 30 | 28 | 0,055 | 43 | 65 | 78 | - | - | - | |
| 5,00 | 30 | 20 | 4.F. | 1,85 | 0,93 | 1,00 | 6,9 | 233 | 350 | 90 | 33 | 33 | 35 | 38 | 41 | 31 | 29 | 0,063 | 50 | 75 | 90 | - | - | - | |
| 5,20 | 29 | 19 | 4.F. | 1,85 | 0,96 | 0,98 | 6,5 | 249 | 373 | 87 | 30 | 32 | 35 | 38 | 40 | 30 | 29 | 0,059 | 48 | 73 | 87 | - | - | - | |
| 5,40 | 26 | 21 | 4.F. | 1,85 | 1,00 | 0,93 | 5,7 | 268 | 402 | 78 | 26 | 32 | 34 | 37 | 40 | 29 | 28 | 0,049 | 43 | 65 | 78 | - | - | - | |
| 5,60 | 30 | 17 | 4.F. | 1,85 | 1,04 | 1,00 | 6,0 | 274 | 411 | 90 | 30 | 32 | 35 | 38 | 40 | 30 | 29 | 0,057 | 50 | 75 | 90 | - | - | - | |
| 5,80 | 27 | 17 | 4.F. | 1,85 | 1,07 | 0,95 | 5,4 | 292 | 438 | 81 | 25 | 32 | 34 | 37 | 40 | 29 | 28 | 0,048 | 45 | 68 | 81 | - | - | - | |
| 6,00 | 25 | 16 | 4.F. | 1,85 | 1,11 | 0,91 | 4,9 | 307 | 461 | 75 | 22 | 31 | 34 | 37 | 40 | 29 | 28 | 0,041 | 42 | 63 | 75 | - | - | - | |
| 6,20 | 27 | 19 | 4.F. | 1,85 | 1,15 | 0,95 | 4,9 | 317 | 476 | 81 | 24 | 31 | 34 | 37 | 40 | 29 | 28 | 0,045 | 45 | 68 | 81 | - | - | - | |
| 6,40 | 25 | 19 | 4.F. | 1,85 | 1,18 | 0,91 | 4,5 | 330 | 495 | 75 | 20 | 31 | 34 | 37 | 40 | 28 | 28 | 0,038 | 42 | 63 | 75 | - | - | - | |
| 6,60 | 24 | 16 | 4.F. | 1,85 | 1,22 | 0,89 | 4,2 | 341 | 512 | 72 | 18 | 31 | 33 | 36 | 39 | 28 | 28 | 0,034 | 40 | 60 | 72 | - | - | - | |
| 6,80 | 20 | 14 | 4.F. | 1,85 | 1,26 | 0,80 | 3,6 | 355 | 533 | 60 | 11 | 30 | 33 | 36 | 39 | 27 | 27 | 0,022 | 33 | 50 | 60 | - | - | - | |
| 7,00 | 19 | 16 | 2.HH. | 1,85 | 1,30 | 0,78 | 3,3 | 363 | 544 | 58 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 7,20 | 18 | 12 | 2.HH. | 1,85 | 1,33 | 0,75 | 3,1 | 366 | 549 | 56 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 7,40 | 12 | 9 | 2.HH. | 1,85 | 1,37 | 0,57 | 2,1 | 317 | 475 | 45 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 7,60 | 22 | 14 | 4.F. | 1,85 | 1,41 | 0,85 | 3,3 | 394 | 591 | 66 | 12 | 30 | 33 | 36 | 39 | 27 | 28 | 0,023 | 37 | 55 | 66 | - | - | - | |
| 7,80 | 24 | 13 | 4.F. | 1,85 | 1,44 | 0,89 | 3,4 | 406 | 609 | 72 | 14 | 30 | 33 | 36 | 39 | 27 | 28 | 0,027 | 40 | 60 | 72 | - | - | - | |
| 8,00 | 27 | 14 | 4.F. | 1,85 | 1,48 | 0,95 | 3,6 | 418 | 627 | 81 | 17 | 30 | 33 | 36 | 39 | 27 | 28 | 0,033 | 45 | 68 | 81 | - | - | - | |
| 8,20 | 28 | 16 | 4.F. | 1,85 | 1,52 | 0,97 | 3,6 | 428 | 642 | 84 | 18 | 31 | 33 | 36 | 39 | 28 | 28 | 0,034 | 47 | 70 | 84 | - | - | - | |
| 8,40 | 27 | 13 | 4.F. | 1,85 | 1,55 | 0,95 | 3,4 | 437 | 655 | 81 | 16 | 30 | 33 | 36 | 39 | 27 | 28 | 0,031 | 45 | 68 | 81 | - | - | - | |
| 8,60 | 27 | 15 | 4.F. | 1,85 | 1,59 | 0,95 | 3,3 | 445 | 667 | 81 | 16 | 30 | 33 | 36 | 39 | 27 | 28 | 0,030 | 45 | 68 | 81 | - | - | - | |
| 8,80 | 30 | 16 | 4.F. | 1,85 | 1,63 | 1,00 | 3,4 | 458 | 687 | 90 | 19 | 31 | 33 | 36 | 39 | 28 | 29 | 0,036 | 50 | 75 | 90 | - | - | - | |
| 9,00 | 28 | 13 | 4.F. | 1,85 | 1,66 | 0,97 | 3,2 | 462 | 693 | 84 | 16 | 30 | 33 | 36 | 39 | 27 | 28 | 0,030 | 47 | 70 | 84 | - | - | - | |
| 9,20 | 32 | 18 | 4.F. | 1,85 | 1,70 | 1,07 | 3,5 | 480 | 720 | 96 | 20 | 31 | 34 | 37 | 40 | 28 | 29 | 0,038 | 53 | 80 | 96 | - | - | - | |
| 9,40 | 26 | 13 | 4.F. | 1,85 | 1,74 | 0,93 | 2,9 | 468 | 702 | 78 | 12 | 30 | 33 | 36 | 39 | 26 | 26 | 0,024 | 43 | 65 | 78 | - | - | - | |
| 9,60 | 25 | 14 | 4.F. | 1,85 | 1,78 | 0,91 | 2,7 | 468 | 702 | 75 | 10 | 29 | 32 | 35 | 38 | 26 | 26 | 0,021 | 42 | 63 | 75 | - | - | - | |
| 9,80 | 25 | 16 | 4.F. | 1,85 | 1,81 | 0,91 | 2,6 | 473 | 709 | 75 | 10 | 29 | 32 | 35 | 38 | 26 | 26 | 0,020 | 42 | 63 | 75 | - | - | - | |
| 10,00 | 26 | 16 | 4.F. | 1,85 | 1,85 | 0,93 | 2,7 | 482 | 724 | 78 | 11 | 29 | 32 | 35 | 38 | 26 | 26 | 0,022 | 43 | 65 | 78 | - | - | - | |
| 10,20 | 24 | 22 | 4.F. | 1,85 | 1,89 | 0,89 | 2,5 | 474 | 711 | 72 | 7 | 29 | 32 | 35 | 38 | 25 | 28 | 0,016 | 40 | 60 | 72 | - | - | - | |
| 10,40 | 24 | 16 | 4.F. | 1,85 | 1,92 | 0,89 | 2,4 | 477 | 716 | 72 | 7 | 29 | 32 | 35 | 38 | 25 | 28 | 0,016 | 40 | 60 | 72 | - | - | - | |
| 10,60 | 26 | 16 | 4.F. | 1,85 | 1,96 | 0,93 | 2,5 | 494 | 741 | 78 | 9 | 29 | 32 | 35 | 38 | 26 | 28 | 0,019 | 43 | 65 | 78 | - | - | - | |
| 10,80 | 26 | 18 | 4.F. | 1,85 | 2,00 | 0,93 | 2,4 | 498 | 746 | 78 | 9 | 29 | 32 | 35 | 38 | 26 | 28 | 0,018 | 43 | 65 | 78 | - | - | - | |
| 11,00 | 24 | 16 | 4.F. | 1,85 | 2,03 | 0,89 | 2,2 | 486 | 729 | 72 | 6 | 29 | 32 | 35 | 38 | 25 | 28 | 0,013 | 40 | 60 | 72 | - | - | - | |
| 11,20 | 25 | 16 | 4.F. | 1,85 | 2,07 | 0,91 | 2,2 | 497 | 745 | 75 | 7 | 29 | 32 | 35 | 38 | 25 | 28 | 0,015 | 42 | 63 | 75 | - | - | - | |
| 11,40 | 28 | 17 | 4.F. | 1,85 | 2,11 | 0,97 | 2,4 | 520 | 780 | 84 | 10 | 29 | 32 | 35 | 38 | 26 | 28 | 0,020 | 47 | 70 | 84 | - | - | - | |
| 11,60 | 26 | 19 | 4.F. | 1,85 | 2,15 | 0,93 | 2,2 | 508 | 764 | 78 | 7 | 29 | 32 | 35 | 38 | 25 | 28 | 0,016 | 43 | 65 | 78 | - | - | - | |
| 11,80 | 20 | 14 | 4.F. | 1,85 | 2,18 | 0,80 | 1,8 | 456 | 685 | 60 | 7 | 28 | 31 | 35 | 38 | 25 | 27 | - | 33 | 50 | 60 | - | - | - | |
| 12,00 | 18 | - | 4.F. | 1,85 | 2,22 | 0,75 | 1,6 | 434 | 651 | 56 | - | - | - | - | - | - | - | - | 30 | 45 | 54 | - | - | - | |

PROVE PENETROMETRICHE srl
 ELABORAZIONE DATI
 IL TECNICO

(Handwritten signatures and initials)

PROVA PENETROMETRICA STATICA

CPT 2

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

3.010496-043

- committente: Geo Group srl
 - lavoro: Studio terreno di fondazione
 - località: Nonantola (MO)
 - resp. cantiere: Dott. Fabrizio Vecchi
 - assist. cantiere:
 - note: Foro chiuso a -4.00 m

- data prova : 31/05/2005
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - data emiss. : 01/06/2005
 - pagina n°: 1/4

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | --- | 0,07 | --- | 6,20 | 18,0 | 30,0 | 18,0 | 0,80 | 22,0 |
| 0,40 | --- | 1,0 | --- | 0,07 | --- | 6,40 | 24,0 | 36,0 | 24,0 | 1,20 | 20,0 |
| 0,60 | --- | 1,0 | --- | 1,80 | --- | 6,60 | 23,0 | 41,0 | 23,0 | 1,20 | 19,0 |
| 0,80 | 25,0 | 52,0 | 25,0 | 1,20 | 21,0 | 6,80 | 17,0 | 35,0 | 17,0 | 0,87 | 20,0 |
| 1,00 | 27,0 | 45,0 | 27,0 | 0,87 | 31,0 | 7,00 | 20,0 | 33,0 | 20,0 | 1,13 | 18,0 |
| 1,20 | 24,0 | 37,0 | 24,0 | 1,27 | 19,0 | 7,20 | 22,0 | 39,0 | 22,0 | 1,27 | 17,0 |
| 1,40 | 26,0 | 45,0 | 26,0 | 1,53 | 17,0 | 7,40 | 23,0 | 42,0 | 23,0 | 1,40 | 16,0 |
| 1,60 | 20,0 | 43,0 | 20,0 | 1,53 | 13,0 | 7,60 | 25,0 | 46,0 | 25,0 | 1,67 | 15,0 |
| 1,80 | 16,0 | 39,0 | 16,0 | 0,80 | 20,0 | 7,80 | 31,0 | 56,0 | 31,0 | 2,00 | 16,0 |
| 2,00 | 17,0 | 29,0 | 17,0 | 1,00 | 17,0 | 8,00 | 30,0 | 60,0 | 30,0 | 2,07 | 15,0 |
| 2,20 | 19,0 | 34,0 | 19,0 | 1,07 | 18,0 | 8,20 | 30,0 | 61,0 | 30,0 | 1,93 | 16,0 |
| 2,40 | 17,0 | 33,0 | 17,0 | 1,20 | 14,0 | 8,40 | 26,0 | 55,0 | 26,0 | 1,73 | 15,0 |
| 2,60 | 19,0 | 37,0 | 19,0 | 1,33 | 14,0 | 8,60 | 29,0 | 55,0 | 29,0 | 1,53 | 19,0 |
| 2,80 | 20,0 | 40,0 | 20,0 | 1,53 | 13,0 | 8,80 | 30,0 | 53,0 | 30,0 | 1,67 | 18,0 |
| 3,00 | 22,0 | 45,0 | 22,0 | 1,80 | 12,0 | 9,00 | 26,0 | 51,0 | 26,0 | 1,73 | 15,0 |
| 3,20 | 20,0 | 47,0 | 20,0 | 1,33 | 15,0 | 9,20 | 18,0 | 44,0 | 18,0 | 0,93 | 19,0 |
| 3,40 | 21,0 | 41,0 | 21,0 | 1,40 | 15,0 | 9,40 | 18,0 | 32,0 | 18,0 | 0,53 | 34,0 |
| 3,60 | 22,0 | 43,0 | 22,0 | 1,13 | 19,0 | 9,60 | 17,0 | 25,0 | 17,0 | 0,33 | 51,0 |
| 3,80 | 27,0 | 44,0 | 27,0 | 1,53 | 18,0 | 9,80 | 16,0 | 21,0 | 16,0 | 0,40 | 40,0 |
| 4,00 | 17,0 | 40,0 | 17,0 | 1,00 | 17,0 | 10,00 | 17,0 | 23,0 | 17,0 | 0,53 | 32,0 |
| 4,20 | 13,0 | 28,0 | 13,0 | 0,47 | 28,0 | 10,20 | 15,0 | 23,0 | 15,0 | 0,47 | 32,0 |
| 4,40 | 13,0 | 20,0 | 13,0 | 0,47 | 28,0 | 10,40 | 17,0 | 24,0 | 17,0 | 0,60 | 28,0 |
| 4,60 | 13,0 | 20,0 | 13,0 | 0,53 | 24,0 | 10,60 | 23,0 | 32,0 | 23,0 | 0,53 | 43,0 |
| 4,80 | 14,0 | 22,0 | 14,0 | 0,53 | 26,0 | 10,80 | 19,0 | 27,0 | 19,0 | 0,47 | 41,0 |
| 5,00 | 23,0 | 31,0 | 23,0 | 0,87 | 27,0 | 11,00 | 19,0 | 26,0 | 19,0 | 0,53 | 36,0 |
| 5,20 | 26,0 | 39,0 | 26,0 | 1,33 | 19,0 | 11,20 | 13,0 | 21,0 | 13,0 | 0,40 | 32,0 |
| 5,40 | 28,0 | 48,0 | 28,0 | 1,73 | 16,0 | 11,40 | 13,0 | 19,0 | 13,0 | 0,47 | 28,0 |
| 5,60 | 26,0 | 52,0 | 26,0 | 1,47 | 18,0 | 11,60 | 16,0 | 23,0 | 16,0 | 0,40 | 40,0 |
| 5,80 | 26,0 | 48,0 | 26,0 | 1,27 | 21,0 | 11,80 | 11,0 | 17,0 | 11,0 | 0,27 | 41,0 |
| 6,00 | 16,0 | 35,0 | 16,0 | 0,80 | 20,0 | 12,00 | 12,0 | 16,0 | 12,0 | --- | --- |

PROVE PENETROMETRICHE srl
 ELABORAZIONE DATI
 IL TECNICO

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE C1= 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann $\phi = 35.7$ mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/840820

[Handwritten signatures and initials]

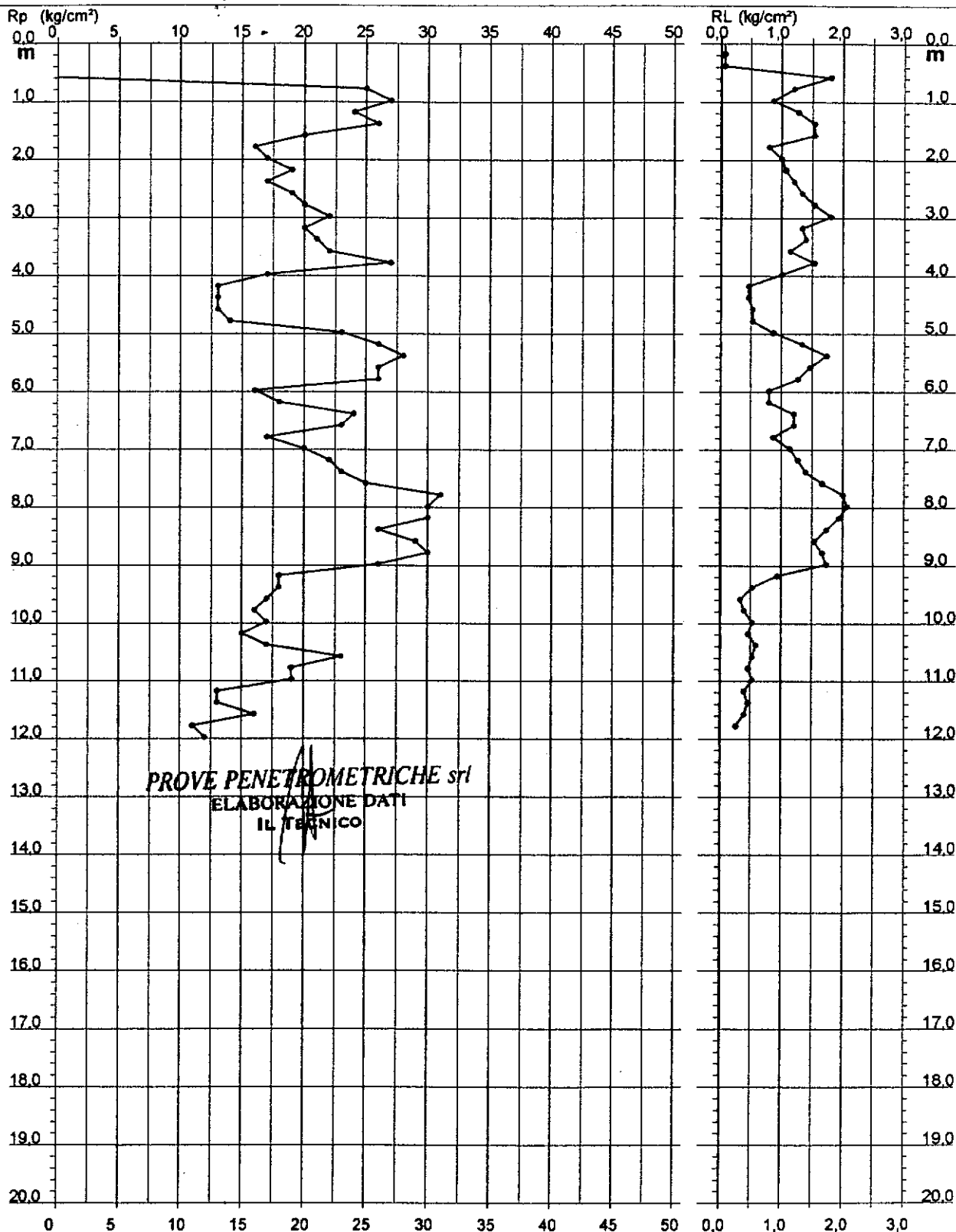
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 2

3.010496-043

- committente: Geo Group srl
 - lavoro: Studio terreno di fondazione
 - località: Nonantola (MO)
 - resp. cantiere: Dott. Fabrizio Vecchi
 - assist. cantiere:
 - note: Foro chiuso a -4.00 m

- data prova : 31/05/2005
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - scala vert. : 1 : 100
 - data emiss. : 01/06/2005
 - pagina n° : 2/4



[Handwritten signatures and marks]

PROVA PENETROMETRICA STATICA
TABELLA PARAMETRI GEOTECNICI

CPT 2

3.010496-043

- committente: Geo Group srl
 - lavoro: Studio terreno di fondazione
 - località: Nonantola (MO)
 - resp. cantiere: Dott. Fabrizio Vecchi
 - assist. cantiere:
 - note: Foro chiuso a -4.00 m

- data prova : 31/05/2005
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - data emiss. : 01/06/2005
 - pagina n°: 4/4

| NATURA COESIVA | | | | | | | | | | NATURA GRANULARE | | | | | | | | | | | | |
|----------------|-----------|-----------|---------------|-------|-------------|-----------|---------|-------------|-------------|------------------|------|---------|---------|---------|---------|---------|---------|------------|-------------|-------------|-----------|---|
| Prof. m | Rp kg/cm² | Rp/Ri (-) | Natura Litol. | Y Vm³ | p'vo kg/cm² | Cu kg/cm² | OCR (-) | Eu50 kg/cm² | Eu25 kg/cm² | Mo kg/cm² | Dr % | a1s (°) | a2s (°) | a3s (°) | a4s (°) | adm (°) | amy (°) | Amax/g (-) | E'50 kg/cm² | E'25 kg/cm² | Mo kg/cm² | |
| 0,20 | - | - | ??? | 1,85 | 0,04 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,40 | - | - | ??? | 1,85 | 0,07 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,60 | - | - | ??? | 1,85 | 0,11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0,80 | 25 | 21 | 4/f | 1,85 | 0,15 | 0,91 | 60,7 | 155 | 232 | 75 | 71 | 38 | 40 | 42 | 44 | 39 | 28 | 0,162 | 42 | 63 | 75 | |
| 1,00 | 27 | 31 | 3/iii | 1,85 | 0,19 | - | - | - | - | - | 68 | 38 | 39 | 41 | 43 | 39 | 28 | 0,154 | 45 | 68 | 81 | |
| 1,20 | 24 | 19 | 4/f | 1,85 | 0,22 | 0,99 | 35,6 | 151 | 227 | 72 | 60 | 36 | 38 | 41 | 43 | 37 | 28 | 0,130 | 40 | 60 | 72 | |
| 1,40 | 26 | 17 | 4/f | 1,85 | 0,26 | 0,93 | 31,0 | 158 | 237 | 78 | 59 | 36 | 38 | 40 | 43 | 37 | 28 | 0,127 | 43 | 65 | 78 | |
| 1,60 | 20 | 13 | 4/f | 1,85 | 0,30 | 0,90 | 21,8 | 136 | 204 | 60 | 46 | 34 | 37 | 39 | 42 | 35 | 27 | 0,095 | 33 | 50 | 60 | |
| 1,80 | 16 | 20 | 2/iii | 1,85 | 0,33 | 0,70 | 15,8 | 118 | 177 | 52 | - | - | - | - | - | - | - | - | - | - | - | |
| 2,00 | 17 | 17 | 2/iii | 1,85 | 0,37 | 0,72 | 14,5 | 123 | 184 | 54 | - | - | - | - | - | - | - | - | - | - | - | |
| 2,20 | 19 | 18 | 2/iii | 1,85 | 0,41 | 0,78 | 14,1 | 132 | 198 | 58 | - | - | - | - | - | - | - | - | - | - | - | |
| 2,40 | 17 | 14 | 2/iii | 1,85 | 0,44 | 0,72 | 11,6 | 123 | 184 | 54 | - | - | - | - | - | - | - | - | - | - | - | |
| 2,60 | 19 | 14 | 2/iii | 1,85 | 0,48 | 0,78 | 11,4 | 132 | 198 | 58 | - | - | - | - | - | - | - | - | - | - | - | |
| 2,80 | 20 | 13 | 4/f | 1,85 | 0,52 | 0,90 | 10,8 | 136 | 204 | 60 | 33 | 33 | 35 | 38 | 41 | 32 | 27 | 0,064 | 33 | 50 | 60 | |
| 3,00 | 22 | 12 | 4/f | 1,85 | 0,55 | 0,85 | 10,6 | 144 | 216 | 66 | 34 | 33 | 35 | 38 | 41 | 32 | 28 | 0,067 | 37 | 55 | 66 | |
| 3,20 | 20 | 15 | 4/f | 1,85 | 0,59 | 0,90 | 9,1 | 141 | 211 | 60 | 29 | 32 | 35 | 37 | 40 | 31 | 27 | 0,057 | 33 | 50 | 60 | |
| 3,40 | 21 | 15 | 4/f | 1,85 | 0,63 | 0,82 | 8,8 | 149 | 223 | 63 | 30 | 32 | 35 | 37 | 40 | 31 | 27 | 0,057 | 35 | 53 | 63 | |
| 3,60 | 22 | 19 | 4/f | 1,85 | 0,67 | 0,85 | 8,5 | 158 | 237 | 66 | 30 | 32 | 35 | 38 | 40 | 31 | 28 | 0,058 | 37 | 55 | 66 | |
| 3,80 | 27 | 18 | 4/f | 1,85 | 0,70 | 0,95 | 9,1 | 167 | 250 | 81 | 36 | 33 | 36 | 38 | 41 | 32 | 28 | 0,070 | 45 | 68 | 81 | |
| 4,00 | 17 | 17 | 2/iii | 1,85 | 0,74 | 0,72 | 6,1 | 195 | 292 | 54 | - | - | - | - | - | - | - | - | - | - | - | |
| 4,20 | 13 | 28 | 2/iii | 1,85 | 0,78 | 0,60 | 4,6 | 216 | 325 | 47 | - | - | - | - | - | - | - | - | - | - | - | |
| 4,40 | 13 | 28 | 2/iii | 1,85 | 0,81 | 0,60 | 4,3 | 227 | 341 | 47 | - | - | - | - | - | - | - | - | - | - | - | |
| 4,60 | 13 | 24 | 2/iii | 1,85 | 0,85 | 0,60 | 4,1 | 238 | 356 | 47 | - | - | - | - | - | - | - | - | - | - | - | |
| 4,80 | 14 | 26 | 2/iii | 1,85 | 0,89 | 0,64 | 4,1 | 248 | 372 | 48 | - | - | - | - | - | - | - | - | - | - | - | |
| 5,00 | 23 | 27 | 4/f | 1,85 | 0,93 | 0,87 | 5,8 | 247 | 371 | 69 | 23 | 31 | 34 | 37 | 40 | 29 | 28 | 0,044 | 38 | 58 | 69 | |
| 5,20 | 26 | 19 | 4/f | 1,85 | 0,96 | 0,93 | 6,0 | 255 | 382 | 78 | 27 | 32 | 34 | 37 | 40 | 30 | 28 | 0,051 | 43 | 65 | 78 | |
| 5,40 | 28 | 16 | 4/f | 1,85 | 1,00 | 0,97 | 6,0 | 264 | 396 | 84 | 28 | 32 | 35 | 37 | 40 | 30 | 28 | 0,054 | 47 | 70 | 84 | |
| 5,60 | 26 | 18 | 4/f | 1,85 | 1,04 | 0,93 | 5,5 | 281 | 422 | 78 | 25 | 31 | 34 | 37 | 40 | 29 | 28 | 0,047 | 43 | 65 | 78 | |
| 5,80 | 26 | 21 | 4/f | 1,85 | 1,07 | 0,93 | 5,2 | 294 | 441 | 78 | 24 | 31 | 34 | 37 | 40 | 29 | 28 | 0,046 | 43 | 65 | 78 | |
| 6,00 | 16 | 20 | 2/iii | 1,85 | 1,11 | 0,70 | 3,5 | 313 | 469 | 52 | - | - | - | - | - | - | - | - | - | - | - | |
| 6,20 | 18 | 22 | 2/iii | 1,85 | 1,15 | 0,75 | 3,7 | 324 | 486 | 56 | - | - | - | - | - | - | - | - | - | - | - | |
| 6,40 | 24 | 20 | 4/f | 1,85 | 1,18 | 0,89 | 4,4 | 331 | 496 | 72 | 19 | 31 | 34 | 36 | 40 | 28 | 28 | 0,036 | 40 | 60 | 72 | |
| 6,60 | 23 | 19 | 4/f | 1,85 | 1,22 | 0,87 | 4,1 | 341 | 511 | 69 | 17 | 30 | 33 | 36 | 39 | 28 | 28 | 0,032 | 38 | 58 | 69 | |
| 6,80 | 17 | 20 | 2/iii | 1,85 | 1,26 | 0,72 | 3,1 | 348 | 523 | 54 | - | - | - | - | - | - | - | - | - | - | - | |
| 7,00 | 20 | 18 | 4/f | 1,85 | 1,30 | 0,90 | 3,4 | 365 | 547 | 60 | 10 | 29 | 32 | 36 | 39 | 27 | 27 | 0,021 | 33 | 50 | 60 | |
| 7,20 | 22 | 17 | 4/f | 1,85 | 1,33 | 0,85 | 3,6 | 376 | 564 | 66 | 13 | 30 | 33 | 36 | 39 | 27 | 28 | 0,025 | 37 | 55 | 66 | |
| 7,40 | 23 | 16 | 4/f | 1,85 | 1,37 | 0,87 | 3,6 | 386 | 580 | 69 | 14 | 30 | 33 | 36 | 39 | 27 | 28 | 0,027 | 38 | 58 | 69 | |
| 7,60 | 25 | 15 | 4/f | 1,85 | 1,41 | 0,91 | 3,6 | 397 | 595 | 75 | 16 | 30 | 33 | 36 | 39 | 27 | 28 | 0,031 | 42 | 63 | 75 | |
| 7,80 | 31 | 16 | 4/f | 1,85 | 1,44 | 1,03 | 4,1 | 403 | 604 | 93 | 23 | 31 | 34 | 37 | 40 | 28 | 29 | 0,043 | 52 | 78 | 93 | |
| 8,00 | 30 | 15 | 4/f | 1,85 | 1,48 | 1,00 | 3,8 | 416 | 624 | 90 | 21 | 31 | 34 | 37 | 40 | 28 | 29 | 0,040 | 50 | 75 | 90 | |
| 8,20 | 30 | 16 | 4/f | 1,85 | 1,52 | 1,00 | 3,7 | 428 | 642 | 90 | 20 | 31 | 34 | 37 | 40 | 28 | 29 | 0,039 | 50 | 75 | 90 | |
| 8,40 | 26 | 15 | 4/f | 1,85 | 1,55 | 0,93 | 3,3 | 435 | 652 | 78 | 15 | 30 | 33 | 36 | 39 | 27 | 28 | 0,029 | 43 | 65 | 78 | |
| 8,60 | 29 | 19 | 4/f | 1,85 | 1,59 | 0,98 | 3,4 | 448 | 672 | 87 | 18 | 31 | 33 | 36 | 39 | 27 | 29 | 0,035 | 48 | 73 | 87 | |
| 8,80 | 30 | 18 | 4/f | 1,85 | 1,63 | 1,00 | 3,4 | 458 | 687 | 90 | 19 | 31 | 33 | 36 | 39 | 28 | 29 | 0,036 | 50 | 75 | 90 | |
| 9,00 | 26 | 15 | 4/f | 1,85 | 1,66 | 0,93 | 3,0 | 456 | 684 | 78 | 13 | 30 | 33 | 36 | 39 | 27 | 28 | 0,026 | 43 | 65 | 78 | |
| 9,20 | 18 | 19 | 2/iii | 1,85 | 1,70 | 0,75 | 2,3 | 409 | 614 | 56 | - | - | - | - | - | - | - | - | - | - | - | |
| 9,40 | 18 | 34 | 4/f | 1,85 | 1,74 | 0,75 | 2,2 | 412 | 618 | 56 | - | 28 | 31 | 35 | 38 | 25 | 27 | - | 30 | 45 | 54 | |
| 9,60 | 17 | 51 | 4/f | 1,85 | 1,78 | 0,72 | 2,0 | 403 | 605 | 54 | - | 28 | 31 | 35 | 38 | 25 | 27 | - | 28 | 43 | 51 | |
| 9,80 | 16 | 40 | 4/f | 1,85 | 1,81 | 0,70 | 1,9 | 393 | 590 | 52 | - | 28 | 31 | 35 | 38 | 25 | 27 | - | 27 | 40 | 48 | |
| 10,00 | 17 | 32 | 4/f | 1,85 | 1,85 | 0,72 | 1,9 | 407 | 611 | 54 | - | 28 | 31 | 35 | 38 | 25 | 27 | - | 28 | 43 | 51 | |
| 10,20 | 15 | 32 | 4/f | 1,85 | 1,89 | 0,67 | 1,7 | 383 | 574 | 50 | - | 28 | 31 | 35 | 38 | 25 | 27 | - | 25 | 38 | 45 | |
| 10,40 | 17 | 28 | 2/iii | 1,85 | 1,92 | 0,72 | 1,8 | 411 | 616 | 54 | - | - | - | - | - | - | - | - | - | - | - | |
| 10,60 | 23 | 43 | 3/iii | 1,85 | 1,96 | - | - | - | - | - | 5 | 29 | 32 | 35 | 38 | 25 | 28 | 0,013 | 38 | 58 | 69 | |
| 10,80 | 19 | 41 | 4/f | 1,85 | 2,00 | 0,78 | 1,9 | 437 | 656 | 58 | - | 28 | 31 | 35 | 38 | 25 | 27 | - | 32 | 48 | 57 | |
| 11,00 | 19 | 36 | 4/f | 1,85 | 2,03 | 0,78 | 1,9 | 439 | 659 | 58 | - | 28 | 31 | 35 | 38 | 25 | 27 | - | 32 | 48 | 57 | |
| 11,20 | 13 | 32 | 4/f | 1,85 | 2,07 | 0,60 | 1,3 | 356 | 534 | 47 | - | 28 | 31 | 35 | 38 | 25 | 26 | - | 22 | 33 | 39 | |
| 11,40 | 13 | 28 | 2/iii | 1,85 | 2,11 | 0,60 | 1,3 | 357 | 535 | 47 | - | - | - | - | - | - | - | - | - | - | - | |
| 11,60 | 16 | 40 | 4/f | 1,85 | 2,15 | 0,70 | 1,5 | 405 | 607 | 52 | - | 28 | 31 | 35 | 38 | 25 | 27 | - | 27 | 40 | 48 | |
| 11,80 | 11 | 41 | 4/f | 1,85 | 2,18 | 0,54 | 1,1 | 321 | 491 | 42 | - | 28 | 31 | 35 | 38 | 25 | 26 | - | 18 | 28 | 33 | |
| 12,00 | 12 | - | 2/iii | 1,85 | 2,22 | 0,57 | 1,2 | 340 | 511 | 45 | - | - | - | - | - | - | - | - | - | - | - | |

PROVE PENETROMETRICHE s.r.l.
 ELABORAZIONE DATI
 IL TECNICO

PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 3

3.010496-043

- committente: Geo Group srl
- lavoro: Studio terreno di fondazione
- località: Nonantola (MO)
- resp. cantiere: Dott. Emilio Guerzoni
- assist. cantiere: Sig. Giuseppe Colucci

- data prova: 01/06/2005
- quota inizio: Piano Campagna
- prof. falda: 2,00 m da quota inizio

- data emiss.: 07/06/2005
- pagina n°: 1/4

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | --- | 0,07 | --- | 6,20 | 26,0 | 33,0 | 26,0 | 1,13 | 23,0 |
| 0,40 | --- | 1,0 | --- | 0,07 | --- | 6,40 | 24,0 | 41,0 | 24,0 | 1,60 | 15,0 |
| 0,60 | --- | 1,0 | --- | 0,80 | --- | 6,60 | 20,0 | 44,0 | 20,0 | 1,20 | 17,0 |
| 0,80 | 13,0 | 25,0 | 13,0 | 0,87 | 15,0 | 6,80 | 16,0 | 34,0 | 16,0 | 0,87 | 18,0 |
| 1,00 | 6,0 | 19,0 | 6,0 | 0,47 | 13,0 | 7,00 | 20,0 | 33,0 | 20,0 | 1,33 | 15,0 |
| 1,20 | 5,0 | 12,0 | 5,0 | 0,33 | 15,0 | 7,20 | 18,0 | 38,0 | 18,0 | 1,20 | 15,0 |
| 1,40 | 4,0 | 9,0 | 4,0 | 0,53 | 7,0 | 7,40 | 17,0 | 35,0 | 17,0 | 1,33 | 13,0 |
| 1,60 | 10,0 | 18,0 | 10,0 | 0,40 | 25,0 | 7,60 | 27,0 | 47,0 | 27,0 | 1,40 | 19,0 |
| 1,80 | 15,0 | 21,0 | 15,0 | 0,60 | 25,0 | 7,80 | 33,0 | 54,0 | 33,0 | 2,00 | 16,0 |
| 2,00 | 8,0 | 17,0 | 8,0 | 0,53 | 15,0 | 8,00 | 32,0 | 62,0 | 32,0 | 1,93 | 17,0 |
| 2,20 | 10,0 | 18,0 | 10,0 | 0,53 | 19,0 | 8,20 | 30,0 | 59,0 | 30,0 | 1,73 | 17,0 |
| 2,40 | 15,0 | 23,0 | 15,0 | 1,00 | 15,0 | 8,40 | 31,0 | 57,0 | 31,0 | 1,87 | 17,0 |
| 2,60 | 19,0 | 34,0 | 19,0 | 1,40 | 14,0 | 8,60 | 27,0 | 55,0 | 27,0 | 1,60 | 17,0 |
| 2,80 | 20,0 | 41,0 | 20,0 | 1,40 | 14,0 | 8,80 | 29,0 | 53,0 | 29,0 | 1,60 | 18,0 |
| 3,00 | 20,0 | 41,0 | 20,0 | 1,20 | 17,0 | 9,00 | 31,0 | 55,0 | 31,0 | 1,73 | 18,0 |
| 3,20 | 16,0 | 34,0 | 16,0 | 1,13 | 14,0 | 9,20 | 24,0 | 50,0 | 24,0 | 1,40 | 17,0 |
| 3,40 | 17,0 | 34,0 | 17,0 | 1,20 | 14,0 | 9,40 | 20,0 | 41,0 | 20,0 | 1,07 | 19,0 |
| 3,60 | 19,0 | 37,0 | 19,0 | 1,20 | 16,0 | 9,60 | 21,0 | 37,0 | 21,0 | 0,80 | 26,0 |
| 3,80 | 15,0 | 33,0 | 15,0 | 0,73 | 20,0 | 9,80 | 16,0 | 28,0 | 16,0 | 0,80 | 20,0 |
| 4,00 | 11,0 | 22,0 | 11,0 | 0,60 | 18,0 | 10,00 | 14,0 | 26,0 | 14,0 | 0,47 | 30,0 |
| 4,20 | 11,0 | 20,0 | 11,0 | 0,47 | 24,0 | 10,20 | 14,0 | 21,0 | 14,0 | 0,53 | 26,0 |
| 4,40 | 18,0 | 25,0 | 18,0 | 0,60 | 30,0 | 10,40 | 11,0 | 19,0 | 11,0 | 0,67 | 16,0 |
| 4,60 | 32,0 | 41,0 | 32,0 | 1,40 | 23,0 | 10,60 | 15,0 | 25,0 | 15,0 | 0,60 | 25,0 |
| 4,80 | 25,0 | 46,0 | 25,0 | 1,60 | 16,0 | 10,80 | 17,0 | 26,0 | 17,0 | 0,73 | 23,0 |
| 5,00 | 27,0 | 51,0 | 27,0 | 1,47 | 18,0 | 11,00 | 17,0 | 28,0 | 17,0 | 0,53 | 32,0 |
| 5,20 | 30,0 | 52,0 | 30,0 | 1,80 | 17,0 | 11,20 | 15,0 | 23,0 | 15,0 | 0,67 | 22,0 |
| 5,40 | 30,0 | 57,0 | 30,0 | 1,60 | 19,0 | 11,40 | 10,0 | 20,0 | 10,0 | 0,73 | 14,0 |
| 5,60 | 26,0 | 50,0 | 26,0 | 1,47 | 18,0 | 11,60 | 11,0 | 22,0 | 11,0 | 0,47 | 24,0 |
| 5,80 | 15,0 | 37,0 | 15,0 | 0,93 | 16,0 | 11,80 | 11,0 | 18,0 | 11,0 | 0,53 | 21,0 |
| 6,00 | 15,0 | 29,0 | 15,0 | 0,47 | 32,0 | 12,00 | 17,0 | 25,0 | 17,0 | --- | --- |

PROVE PENETROMETRICHE srl
ELABORAZIONE DATI
IL TECNICO

- PENETROMETRO STATICO tipo PAGANI da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann ø = 35.7 mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

Software by: Dr.D.Merlin - 0425/640820

penetrometrie statiche e dinamiche - sondaggi a carotaggio - piezometri - inclinometri - sondaggi elettrici e sismici - prove di permeabilità in sito - laboratorio

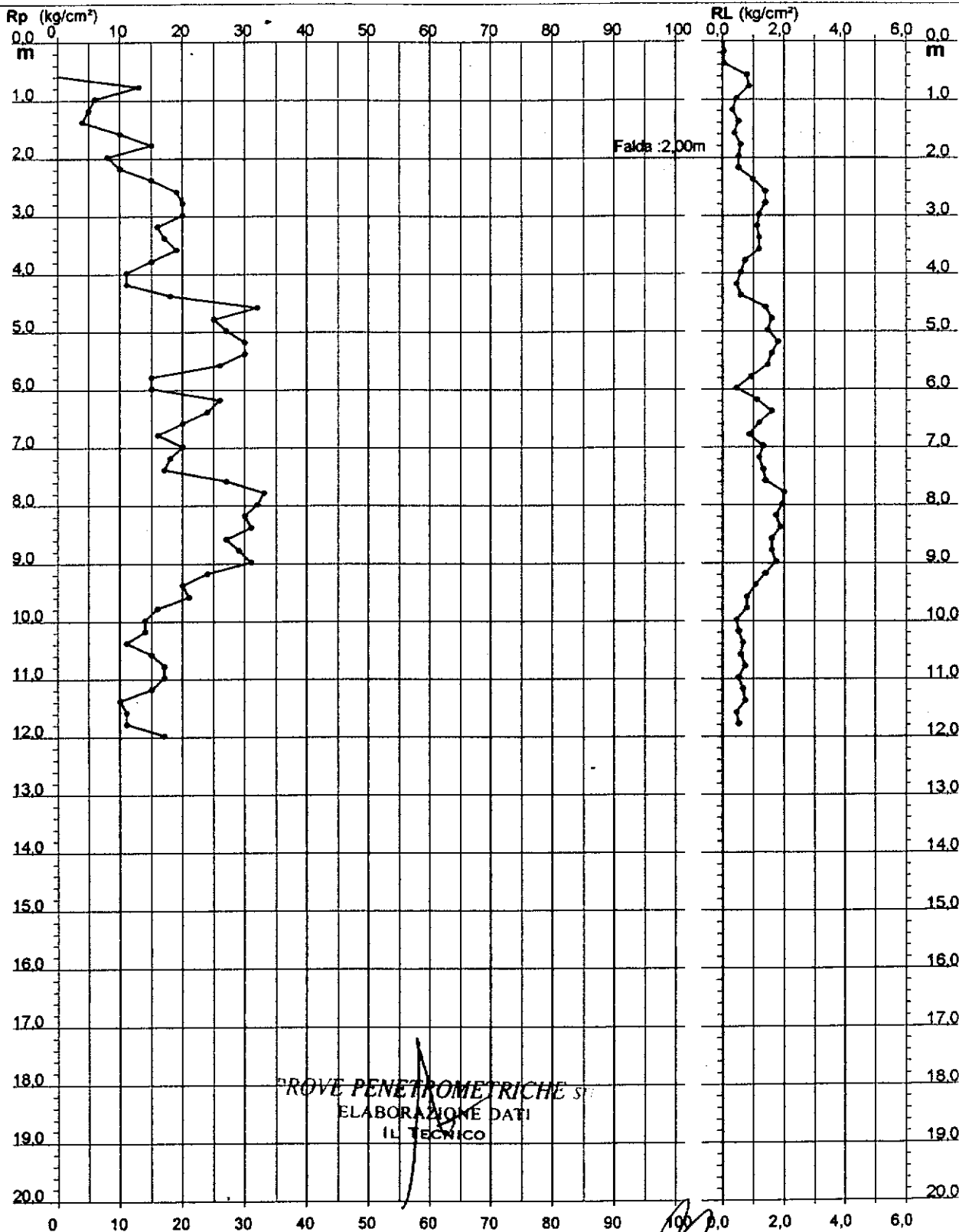
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 3

3.010496-043

- committente: Geo Group srl
 - lavoro: Studio terreno di fondazione
 - località: Nonantola (MO)
 - resp. cantiere: Dott. Emilio Guerzoni
 - assist. cantiere: Sig. Giuseppe Colucci

- data prova : 01/06/2005
 - quota inizio : Piano Campagna
 - prof. falda : 2,00 m da quota inizio
 - scala vert. : 1 : 100
 - data emiss. : 07/06/2005
 - pagina n°:



PROVE PENETROMETRICHE ST
 ELABORAZIONE DATI
 IL TECNICO

[Handwritten signatures and initials]

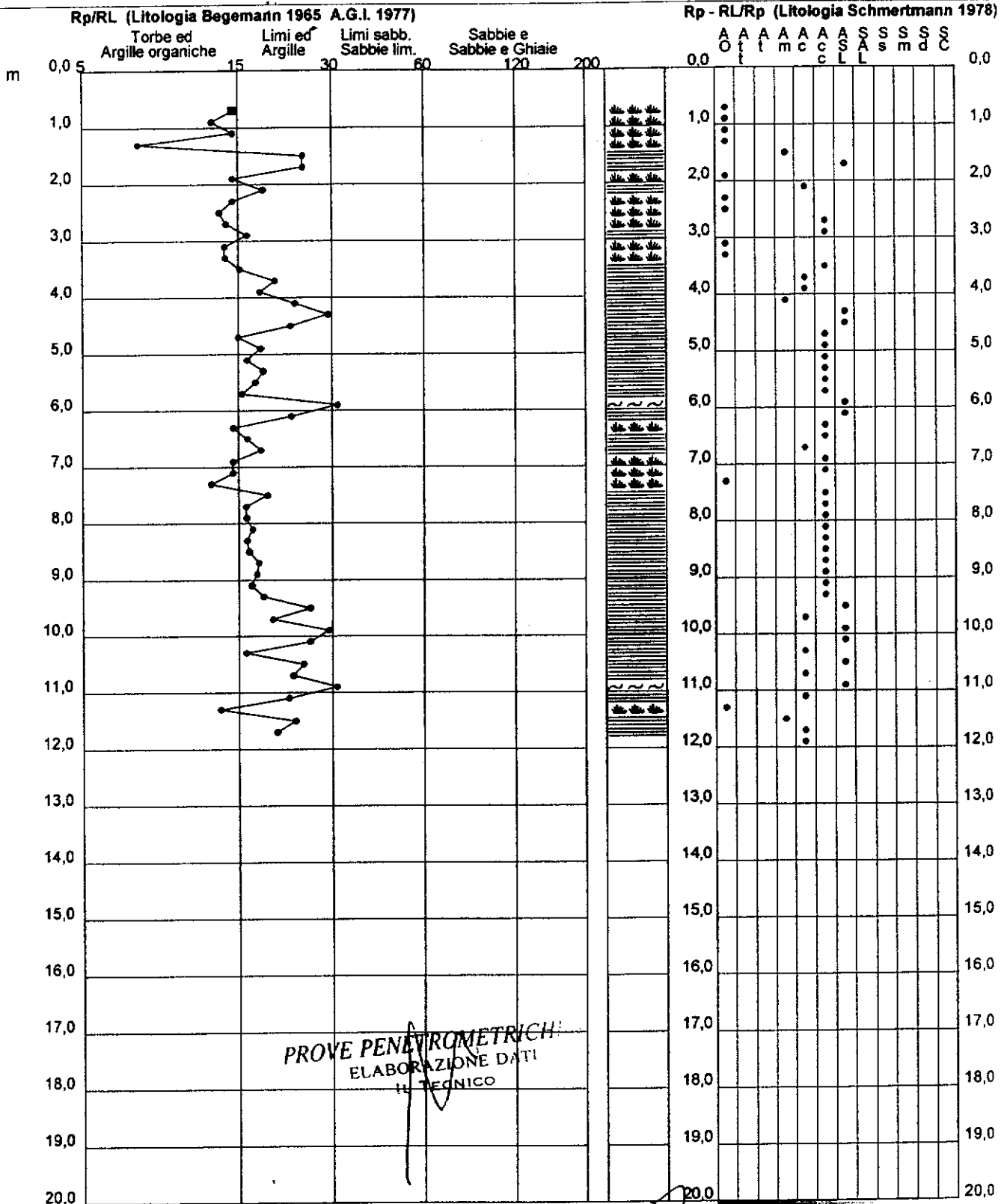
**PROVA PENETROMETRICA STATICA
 VALUTAZIONI LITOLOGICHE**

CPT 3

3.010496-043

- committente: Geo Group srl
 - lavoro: Studio terreno di fondazione
 - località: Nonantola (MO)
 - resp. cantiere: Dott. Emilio Guerzoni
 - assist. cantiere: Sig. Giuseppe Colucci

- data prova: 01/06/2005
 - quota inizio: Piano Campagna
 - prof. falda: 2,00 m da quota inizio
 - scala vert.: 1 : 100
 - data emiss.: 07/06/2005
 - pagina n°: 3/4



PROVA PENETROMETRICA STATICA

CPT 4

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

3.010496-043

- committente: Geo Group srl
- lavoro: Studio terreno di foncazione
- località: Nonantola (MO)
- resp. cantiere: Dott. Emilio Guerzoni
- assist. cantiere: Sig. Giuseppe Colucci
- note: Foro chiuso a -12.00

- data prova : 01/06/2005
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata

- data emiss. : 07/06/2005
- pagina n°: 1/4

| prf | LP | LL | Rp | RL | Rp/RI | prf | LP | LL | Rp | RL | Rp/RI |
|------|--------------------|--------------------|--------------------|--------------------|-------|-------|--------------------|--------------------|--------------------|--------------------|-------|
| m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - | m | Kg/cm ² | Kg/cm ² | Kg/cm ² | Kg/cm ² | - |
| 0,20 | --- | 1,0 | --- | 0,07 | --- | 6,20 | 17,0 | 34,0 | 17,0 | 1,00 | 17,0 |
| 0,40 | --- | 1,0 | --- | 0,07 | --- | 6,40 | 15,0 | 30,0 | 15,0 | 1,00 | 15,0 |
| 0,60 | --- | 1,0 | --- | 0,93 | --- | 6,60 | 22,0 | 37,0 | 22,0 | 1,53 | 14,0 |
| 0,80 | 9,0 | 23,0 | 9,0 | 0,40 | 22,0 | 6,80 | 26,0 | 49,0 | 26,0 | 1,53 | 17,0 |
| 1,00 | 12,0 | 18,0 | 12,0 | 0,47 | 26,0 | 7,00 | 24,0 | 47,0 | 24,0 | 1,40 | 17,0 |
| 1,20 | 11,0 | 18,0 | 11,0 | 0,87 | 13,0 | 7,20 | 30,0 | 51,0 | 30,0 | 1,87 | 16,0 |
| 1,40 | 11,0 | 24,0 | 11,0 | 0,53 | 21,0 | 7,40 | 32,0 | 60,0 | 32,0 | 1,80 | 18,0 |
| 1,60 | 14,0 | 22,0 | 14,0 | 0,60 | 23,0 | 7,60 | 35,0 | 62,0 | 35,0 | 2,00 | 18,0 |
| 1,80 | 14,0 | 23,0 | 14,0 | 0,67 | 21,0 | 7,80 | 32,0 | 62,0 | 32,0 | 1,93 | 17,0 |
| 2,00 | 16,0 | 26,0 | 16,0 | 1,13 | 14,0 | 8,00 | 33,0 | 62,0 | 33,0 | 2,07 | 16,0 |
| 2,20 | 19,0 | 36,0 | 19,0 | 1,40 | 14,0 | 8,20 | 30,0 | 61,0 | 30,0 | 1,80 | 17,0 |
| 2,40 | 19,0 | 40,0 | 19,0 | 1,13 | 17,0 | 8,40 | 29,0 | 56,0 | 29,0 | 1,73 | 17,0 |
| 2,60 | 15,0 | 32,0 | 15,0 | 0,60 | 25,0 | 8,60 | 34,0 | 60,0 | 34,0 | 1,67 | 20,0 |
| 2,80 | 13,0 | 22,0 | 13,0 | 0,67 | 19,0 | 8,80 | 27,0 | 52,0 | 27,0 | 1,60 | 17,0 |
| 3,00 | 16,0 | 26,0 | 16,0 | 0,73 | 22,0 | 9,00 | 26,0 | 50,0 | 26,0 | 1,47 | 18,0 |
| 3,20 | 19,0 | 30,0 | 19,0 | 0,87 | 22,0 | 9,20 | 25,0 | 47,0 | 25,0 | 1,40 | 18,0 |
| 3,40 | 16,0 | 29,0 | 16,0 | 0,80 | 20,0 | 9,40 | 29,0 | 50,0 | 29,0 | 1,53 | 19,0 |
| 3,60 | 12,0 | 24,0 | 12,0 | 0,47 | 26,0 | 9,60 | 26,0 | 49,0 | 26,0 | 1,53 | 17,0 |
| 3,80 | 13,0 | 20,0 | 13,0 | 0,67 | 19,0 | 9,80 | 22,0 | 45,0 | 22,0 | 1,13 | 19,0 |
| 4,00 | 23,0 | 33,0 | 23,0 | 1,07 | 22,0 | 10,00 | 22,0 | 39,0 | 22,0 | 1,13 | 19,0 |
| 4,20 | 28,0 | 44,0 | 28,0 | 1,40 | 20,0 | 10,20 | 17,0 | 34,0 | 17,0 | 0,93 | 18,0 |
| 4,40 | 28,0 | 49,0 | 28,0 | 1,33 | 21,0 | 10,40 | 20,0 | 34,0 | 20,0 | 0,93 | 21,0 |
| 4,60 | 26,0 | 46,0 | 26,0 | 1,13 | 23,0 | 10,60 | 19,0 | 33,0 | 19,0 | 0,93 | 20,0 |
| 4,80 | 26,0 | 43,0 | 26,0 | 1,07 | 24,0 | 10,80 | 13,0 | 27,0 | 13,0 | 0,67 | 19,0 |
| 5,00 | 26,0 | 42,0 | 26,0 | 1,53 | 17,0 | 11,00 | 11,0 | 21,0 | 11,0 | 0,40 | 27,0 |
| 5,20 | 29,0 | 52,0 | 29,0 | 1,40 | 21,0 | 11,20 | 15,0 | 21,0 | 15,0 | 0,60 | 25,0 |
| 5,40 | 27,0 | 48,0 | 27,0 | 1,20 | 22,0 | 11,40 | 10,0 | 19,0 | 10,0 | 0,53 | 19,0 |
| 5,60 | 25,0 | 43,0 | 25,0 | 1,33 | 19,0 | 11,60 | 9,0 | 17,0 | 9,0 | 0,60 | 15,0 |
| 5,80 | 23,0 | 43,0 | 23,0 | 1,00 | 23,0 | 11,80 | 10,0 | 19,0 | 10,0 | 0,60 | 17,0 |
| 6,00 | 23,0 | 38,0 | 23,0 | 1,13 | 20,0 | 12,00 | 16,0 | 25,0 | 16,0 | --- | --- |

PROVE PENETROMETRICHE s.r.l.
ELABORAZIONE DATI
IL TECNICO

- PENETROMETRO STATICO tipo PAGANI da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 10 - Velocità Avanzamento punta 2 cm/s
- punta meccanica tipo Begemann ø = 35.7 mm (area punta 10 cm² - apertura 60°)
- manicotto laterale (superficie 150 cm²)

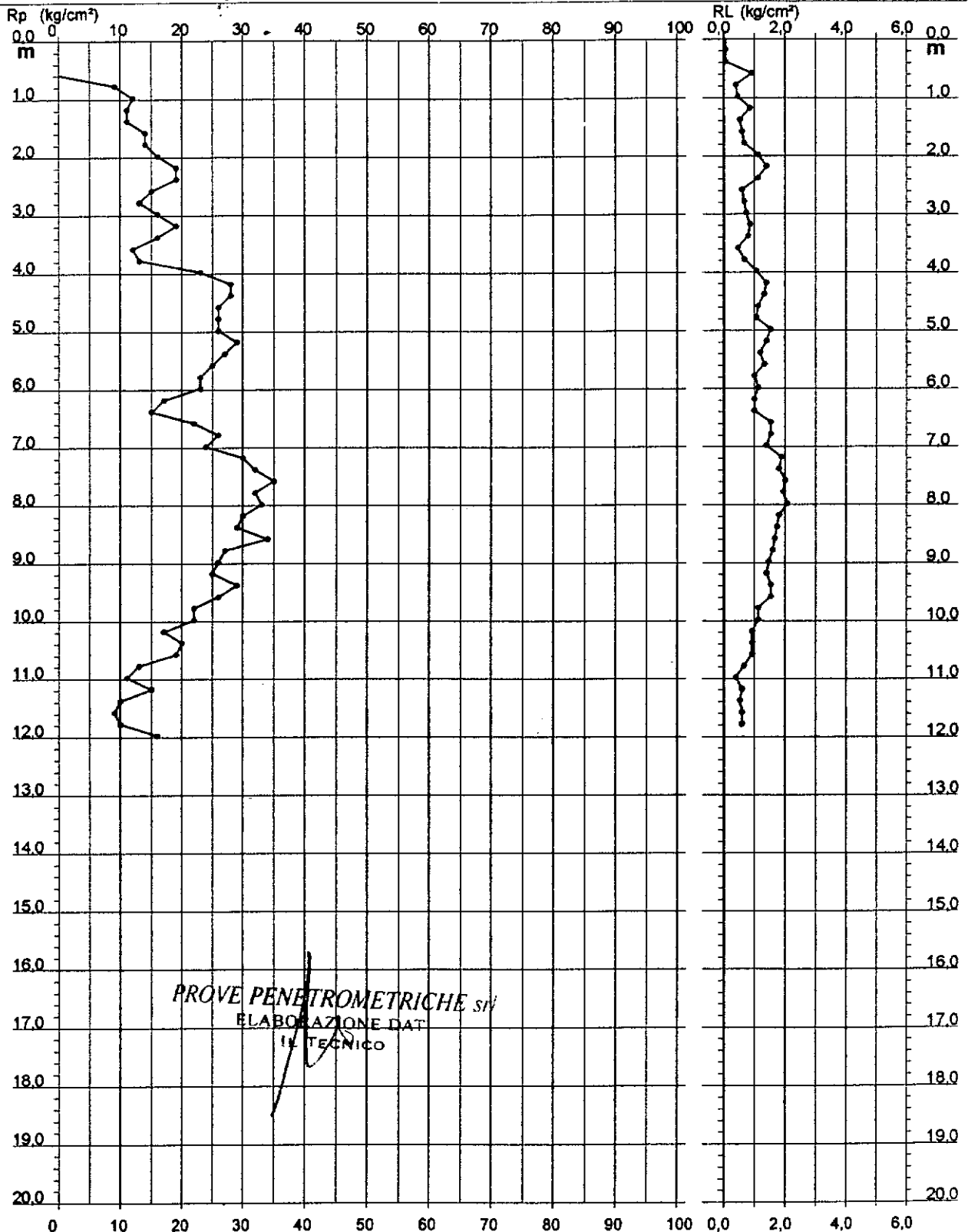
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 4

3.010496-043

- committente: Geo Group srl
 - lavoro: Studio terreno di fondazione
 - località: Nonantola (MO)
 - resp. cantiere: Dott. Emilio Guerzoni
 - assist. cantiere: Sig. Giuseppe Colucci
 - note: Foro chiuso a -12.00

- data prova : 01/06/2005
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - scala vert. : 1 : 100
 - data emiss. : 07/06/2005
 - pagina n° : 2/4



[Handwritten signatures and stamps]

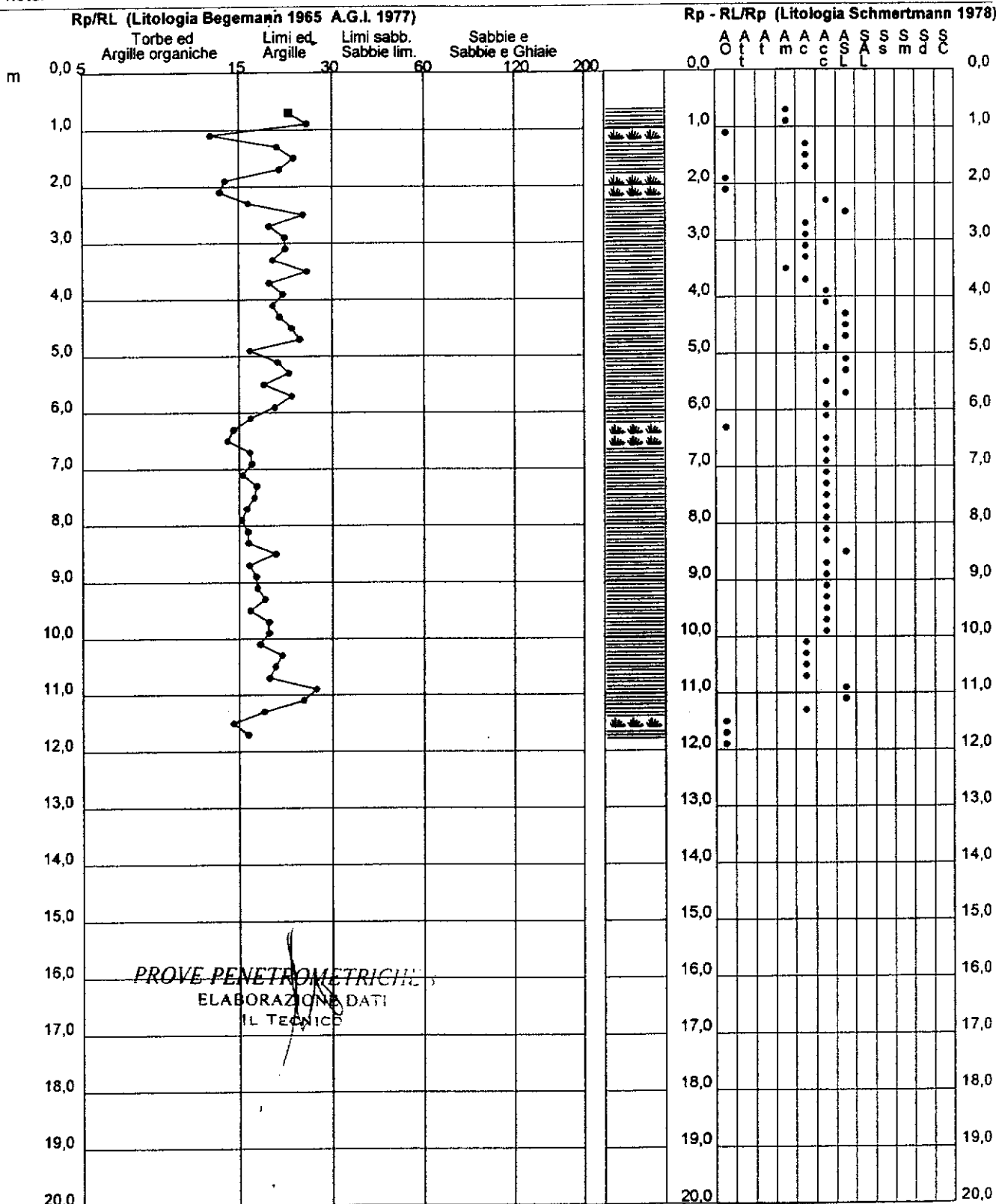
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 4

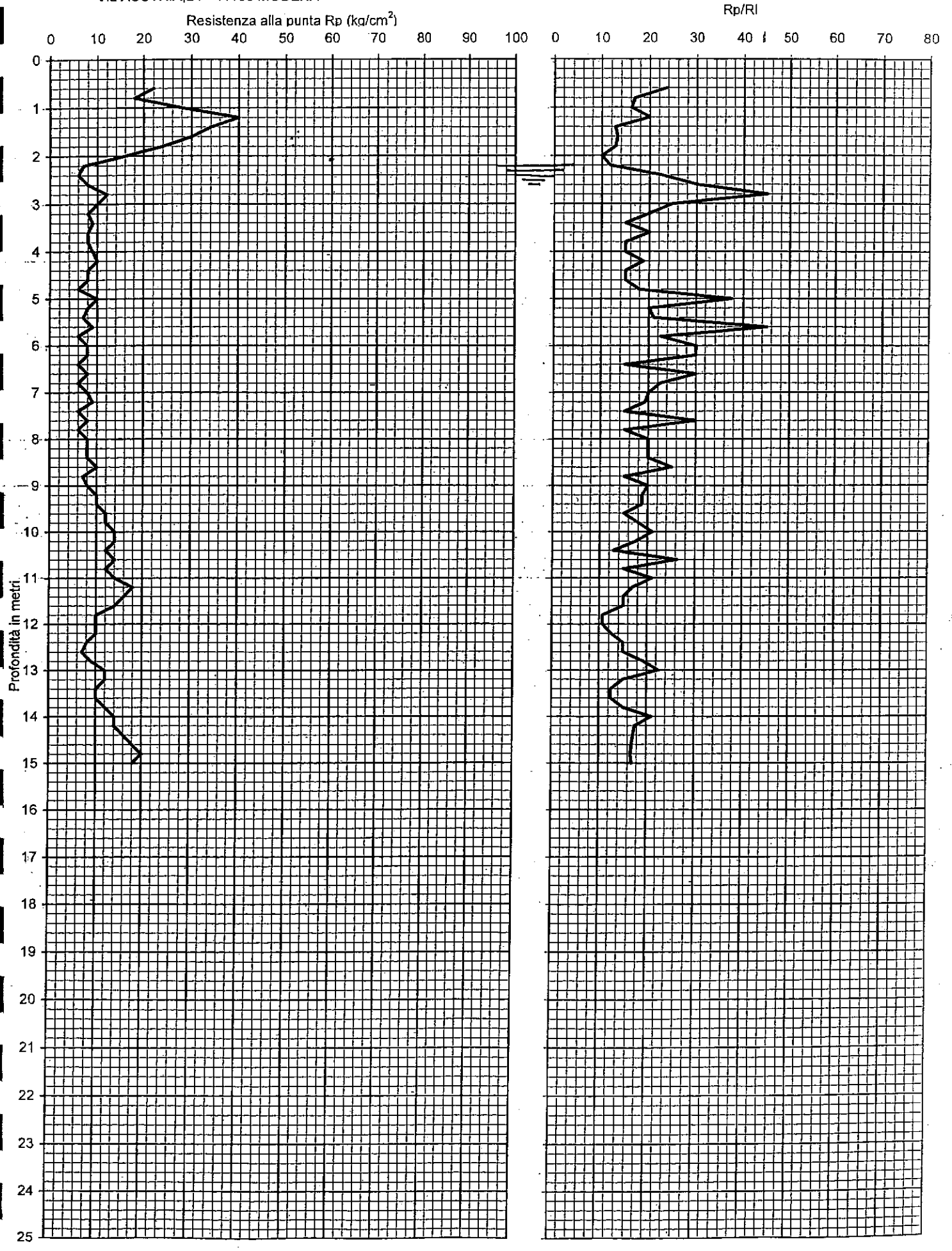
3.010496-043

- committente: Geo Group srl
 - lavoro: Studio terreno di fondazione
 - località: Nonantola (MO)
 - resp. cantiere: Dott. Emilio Guerzoni
 - assist. cantiere: Sig. Giuseppe Colucci
 - note: Foro chiuso a -12.00

- data prova: 01/06/2005
 - quota inizio: Piano Campagna
 - prof. falda: Falda non rilevata
 - scala vert.: 1 : 100
 - data emiss.: 07/06/2005
 - pagina n°: 3/4



Via AUSTRIA, 24 - 41100 MODENA





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

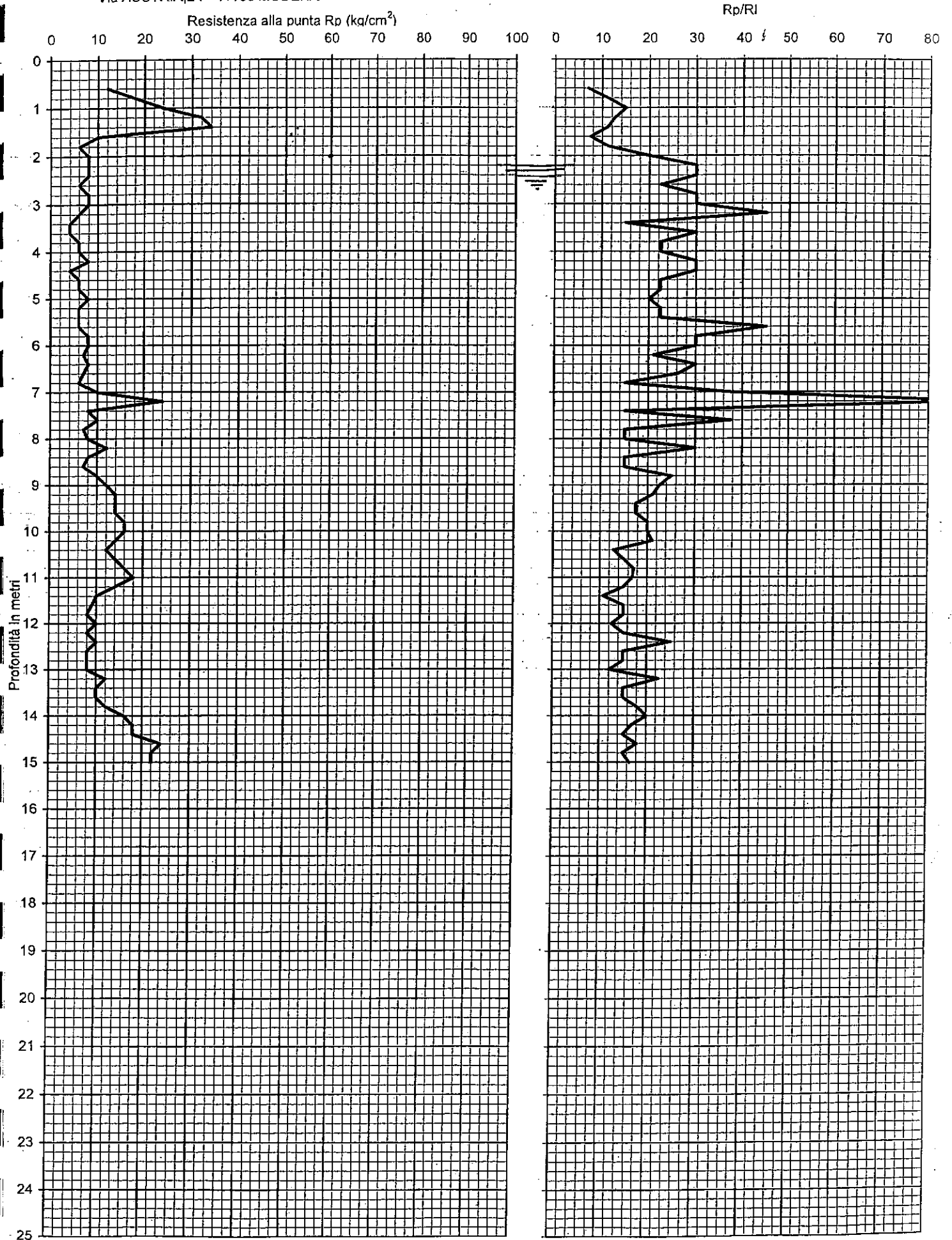
Penetrometro Gouda

Committente : ABITCOOP
Località : CASSETTE-NONANTOLA
Prova numero : 1
Data : 16/11/2001
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 22 | 36 | 22 | 0,93 | 23,57 |
| 0,80 | 18 | 34 | 18 | 1,07 | 16,88 |
| 1,00 | 28 | 54 | 28 | 1,73 | 16,15 |
| 1,20 | 40 | 70 | 40 | 2,00 | 20,00 |
| 1,40 | 34 | 74 | 34 | 2,67 | 12,75 |
| 1,60 | 30 | 64 | 30 | 2,27 | 13,24 |
| 1,80 | 24 | 52 | 24 | 1,87 | 12,86 |
| 2,00 | 16 | 40 | 16 | 1,60 | 10,00 |
| 2,20 | 7 | 16 | 7 | 0,60 | 11,67 |
| 2,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 2,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,80 | 12 | 16 | 12 | 0,27 | 45,00 |
| 3,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 3,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 3,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 4,00 | 9 | 18 | 9 | 0,60 | 15,00 |
| 4,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 4,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 4,80 | 6 | 11 | 6 | 0,33 | 18,00 |
| 5,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 5,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,40 | 7 | 12 | 7 | 0,33 | 21,00 |
| 5,60 | 9 | 12 | 9 | 0,20 | 45,00 |
| 5,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 6,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,20 | 9 | 16 | 9 | 0,47 | 19,29 |
| 7,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 7,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 8,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,80 | 7 | 14 | 7 | 0,47 | 15,00 |
| 9,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 9,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,60 | 12 | 24 | 12 | 0,80 | 15,00 |
| 9,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 10,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 10,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 10,40 | 12 | 26 | 12 | 0,93 | 12,86 |
| 10,60 | 14 | 22 | 14 | 0,53 | 26,25 |
| 10,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 11,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 11,20 | 18 | 34 | 18 | 1,07 | 16,88 |
| 11,40 | 16 | 32 | 16 | 1,07 | 15,00 |
| 11,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 11,80 | 10 | 24 | 10 | 0,93 | 10,71 |
| 12,00 | 10 | 24 | 10 | 0,93 | 10,71 |
| 12,20 | 10 | 22 | 10 | 0,80 | 12,50 |
| 12,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,60 | 7 | 14 | 7 | 0,47 | 15,00 |
| 12,80 | 9 | 16 | 9 | 0,47 | 19,29 |
| 13,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 13,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 13,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 13,80 | 12 | 24 | 12 | 0,80 | 15,00 |
| 14,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 14,20 | 14 | 26 | 14 | 0,80 | 17,50 |
| 14,40 | 16 | 30 | 16 | 0,93 | 17,14 |
| 14,60 | 18 | 34 | 18 | 1,07 | 16,88 |
| 14,80 | 20 | 38 | 20 | 1,20 | 16,67 |
| 15,00 | 18 | 34 | 18 | 1,07 | 16,88 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|-----------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via AUSTRIA,24 - 41100 MODENA





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : ABITCOOP
Località : CASSETTE-NONANTOLA
Prova numero : 2
Data : 16/11/2001
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 12 | 38 | 12 | 1,73 | 6,92 |
| 0,80 | 18 | 42 | 18 | 1,60 | 11,25 |
| 1,00 | 24 | 48 | 24 | 1,60 | 15,00 |
| 1,20 | 32 | 70 | 32 | 2,53 | 12,63 |
| 1,40 | 34 | 80 | 34 | 3,07 | 11,09 |
| 1,60 | 10 | 30 | 10 | 1,33 | 7,50 |
| 1,80 | 6 | 14 | 6 | 0,53 | 11,25 |
| 2,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 2,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,20 | 6 | 8 | 6 | 0,13 | 45,00 |
| 3,40 | 4 | 8 | 4 | 0,27 | 15,00 |
| 3,60 | 4 | 6 | 4 | 0,13 | 30,00 |
| 3,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,00 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,40 | 4 | 6 | 4 | 0,13 | 30,00 |
| 4,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,20 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,60 | 6 | 8 | 6 | 0,13 | 45,00 |
| 5,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,20 | 7 | 12 | 7 | 0,33 | 21,00 |
| 6,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,60 | 7 | 11 | 7 | 0,27 | 26,25 |
| 6,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 7,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 7,20 | 24 | 28 | 24 | 0,27 | 90,00 |
| 7,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 7,60 | 10 | 14 | 10 | 0,27 | 37,50 |
| 7,80 | 7 | 14 | 7 | 0,47 | 15,00 |
| 8,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 8,20 | 12 | 18 | 12 | 0,40 | 30,00 |
| 8,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 8,60 | 7 | 14 | 7 | 0,47 | 15,00 |
| 8,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 9,40 | 14 | 26 | 14 | 0,80 | 17,50 |
| 9,60 | 14 | 26 | 14 | 0,80 | 17,50 |
| 9,80 | 16 | 28 | 16 | 0,80 | 20,00 |
| 10,00 | 16 | 28 | 16 | 0,80 | 20,00 |
| 10,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 10,40 | 12 | 26 | 12 | 0,93 | 12,86 |
| 10,60 | 14 | 28 | 14 | 0,93 | 15,00 |
| 10,80 | 16 | 30 | 16 | 0,93 | 17,14 |
| 11,00 | 18 | 34 | 18 | 1,07 | 16,88 |
| 11,20 | 14 | 28 | 14 | 0,93 | 15,00 |
| 11,40 | 10 | 24 | 10 | 0,93 | 10,71 |
| 11,60 | 9 | 18 | 9 | 0,60 | 15,00 |
| 11,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,00 | 10 | 22 | 10 | 0,80 | 12,50 |
| 12,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 12,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 13,00 | 8 | 18 | 8 | 0,67 | 12,00 |
| 13,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 13,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 14,00 | 16 | 28 | 16 | 0,80 | 20,00 |
| 14,20 | 18 | 34 | 18 | 1,07 | 16,88 |
| 14,40 | 18 | 36 | 18 | 1,20 | 15,00 |
| 14,60 | 24 | 44 | 24 | 1,33 | 18,00 |
| 14,80 | 22 | 44 | 22 | 1,47 | 15,00 |
| 15,00 | 22 | 42 | 22 | 1,33 | 16,50 |

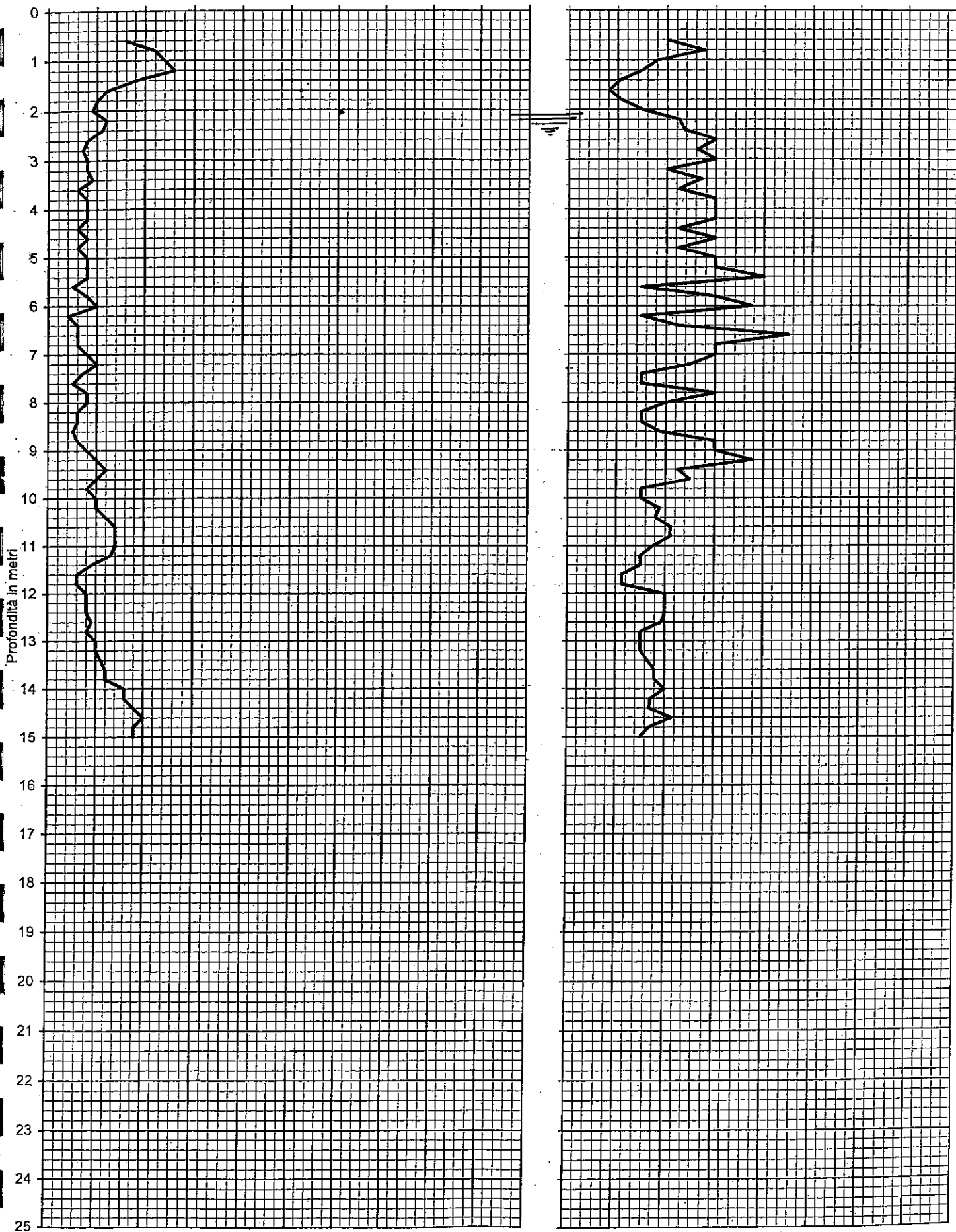
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
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| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
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| 20,40 | | | | | |
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| 20,80 | | | | | |
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| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
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| 22,40 | | | | | |
| 22,60 | | | | | |
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| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via AUSTRIA,24 - 41100 MODENA

Resistenza alla punta R_p (kg/cm²)

R_p/RI

0 10 20 30 40 50 60 70 80 90 100 0 10 20 30 40 50 60 70 80





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : ABITCOOP
Località : CASSETTE-NONANTOLA
Prova numero : 3
Data : 16/11/2001
Operatore : DR. REBECCHI
Quota : P.C.

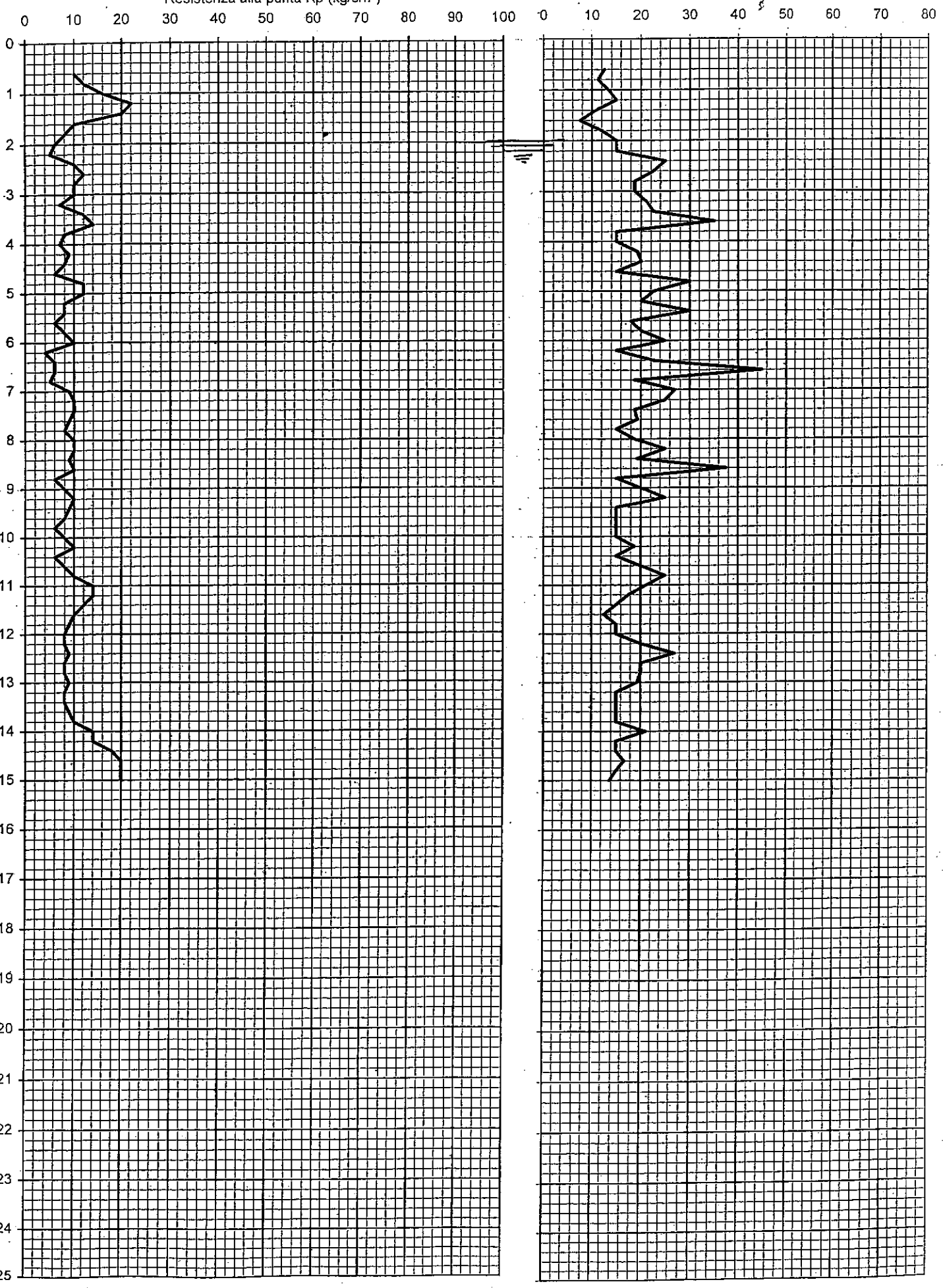
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 16 | 28 | 16 | 0,80 | 20,00 |
| 0,80 | 22 | 34 | 22 | 0,80 | 27,50 |
| 1,00 | 24 | 44 | 24 | 1,33 | 18,00 |
| 1,20 | 26 | 52 | 26 | 1,73 | 15,00 |
| 1,40 | 18 | 44 | 18 | 1,73 | 10,38 |
| 1,60 | 12 | 34 | 12 | 1,47 | 8,18 |
| 1,80 | 10 | 24 | 10 | 0,93 | 10,71 |
| 2,00 | 9 | 18 | 9 | 0,60 | 15,00 |
| 2,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 2,40 | 11 | 18 | 11 | 0,47 | 23,57 |
| 2,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,80 | 7 | 11 | 7 | 0,27 | 26,25 |
| 3,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,40 | 9 | 14 | 9 | 0,33 | 27,00 |
| 3,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 5,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,40 | 8 | 11 | 8 | 0,20 | 40,00 |
| 5,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 5,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 6,20 | 4 | 8 | 4 | 0,27 | 15,00 |
| 6,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,60 | 6 | 8 | 6 | 0,13 | 45,00 |
| 6,80 | 6 | 9 | 6 | 0,20 | 30,00 |
| 7,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,40 | 7 | 14 | 7 | 0,47 | 15,00 |
| 7,60 | 5 | 10 | 5 | 0,33 | 15,00 |
| 7,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 8,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 8,60 | 5 | 9 | 5 | 0,27 | 18,75 |
| 8,80 | 6 | 9 | 6 | 0,20 | 30,00 |
| 9,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 9,20 | 10 | 14 | 10 | 0,27 | 37,50 |
| 9,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 10,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 10,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 10,40 | 12 | 22 | 12 | 0,67 | 18,00 |
| 10,60 | 14 | 24 | 14 | 0,67 | 21,00 |
| 10,80 | 14 | 24 | 14 | 0,67 | 21,00 |
| 11,00 | 14 | 26 | 14 | 0,80 | 17,50 |
| 11,20 | 13 | 26 | 13 | 0,87 | 15,00 |
| 11,40 | 9 | 18 | 9 | 0,60 | 15,00 |
| 11,60 | 6 | 14 | 6 | 0,53 | 11,25 |
| 11,80 | 6 | 14 | 6 | 0,53 | 11,25 |
| 12,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,60 | 9 | 16 | 9 | 0,47 | 19,29 |
| 12,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 13,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,20 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,40 | 11 | 21 | 11 | 0,67 | 16,50 |
| 13,60 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 14,00 | 16 | 28 | 16 | 0,80 | 20,00 |
| 14,20 | 16 | 30 | 16 | 0,93 | 17,14 |
| 14,40 | 18 | 34 | 18 | 1,07 | 16,88 |
| 14,60 | 20 | 34 | 20 | 0,93 | 21,43 |
| 14,80 | 18 | 34 | 18 | 1,07 | 16,88 |
| 15,00 | 18 | 36 | 18 | 1,20 | 15,00 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
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| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via AUSTRIA,24 - 41100 MODENA

Resistenza alla punta Rp (kg/cm²)

Rp/Rl





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : ABITCOOP
Località : CASSETTE-NONANTOLA
Prova numero : 4
Data : 16/11/01
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0.20 | | | | | |
| 0.40 | | | | | |
| 0.60 | 10 | 22 | 10 | 0.80 | 12.50 |
| 0.80 | 12 | 28 | 12 | 1.07 | 11.25 |
| 1.00 | 16 | 34 | 16 | 1.20 | 13.33 |
| 1.20 | 22 | 44 | 22 | 1.47 | 15.00 |
| 1.40 | 20 | 48 | 20 | 1.87 | 10.71 |
| 1.60 | 10 | 30 | 10 | 1.33 | 7.50 |
| 1.80 | 8 | 18 | 8 | 0.67 | 12.00 |
| 2.00 | 6 | 12 | 6 | 0.40 | 15.00 |
| 2.20 | 5 | 10 | 5 | 0.33 | 15.00 |
| 2.40 | 10 | 16 | 10 | 0.40 | 25.00 |
| 2.60 | 12 | 20 | 12 | 0.53 | 22.50 |
| 2.80 | 10 | 18 | 10 | 0.53 | 18.75 |
| 3.00 | 10 | 18 | 10 | 0.53 | 18.75 |
| 3.20 | 7 | 12 | 7 | 0.33 | 21.00 |
| 3.40 | 12 | 20 | 12 | 0.53 | 22.50 |
| 3.60 | 14 | 20 | 14 | 0.40 | 35.00 |
| 3.80 | 8 | 16 | 8 | 0.53 | 15.00 |
| 4.00 | 7 | 14 | 7 | 0.47 | 15.00 |
| 4.20 | 9 | 16 | 9 | 0.47 | 19.29 |
| 4.40 | 8 | 14 | 8 | 0.40 | 20.00 |
| 4.60 | 6 | 12 | 6 | 0.40 | 15.00 |
| 4.80 | 12 | 18 | 12 | 0.40 | 30.00 |
| 5.00 | 12 | 20 | 12 | 0.53 | 22.50 |
| 5.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 5.40 | 8 | 12 | 8 | 0.27 | 30.00 |
| 5.60 | 6 | 11 | 6 | 0.33 | 18.00 |
| 5.80 | 8 | 14 | 8 | 0.40 | 20.00 |
| 6.00 | 10 | 16 | 10 | 0.40 | 25.00 |
| 6.20 | 4 | 8 | 4 | 0.27 | 15.00 |
| 6.40 | 6 | 10 | 6 | 0.27 | 22.50 |
| 6.60 | 6 | 8 | 6 | 0.13 | 45.00 |
| 6.80 | 5 | 9 | 5 | 0.27 | 18.75 |
| 7.00 | 9 | 14 | 9 | 0.33 | 27.00 |
| 7.20 | 10 | 16 | 10 | 0.40 | 25.00 |
| 7.40 | 10 | 18 | 10 | 0.53 | 18.75 |
| 7.60 | 9 | 16 | 9 | 0.47 | 19.29 |
| 7.80 | 8 | 16 | 8 | 0.53 | 15.00 |
| 8.00 | 10 | 18 | 10 | 0.53 | 18.75 |
| 8.20 | 10 | 16 | 10 | 0.40 | 25.00 |
| 8.40 | 9 | 16 | 9 | 0.47 | 19.29 |
| 8.60 | 10 | 14 | 10 | 0.27 | 37.50 |
| 8.80 | 6 | 12 | 6 | 0.40 | 15.00 |
| 9.00 | 8 | 14 | 8 | 0.40 | 20.00 |
| 9.20 | 10 | 16 | 10 | 0.40 | 25.00 |
| 9.40 | 9 | 18 | 9 | 0.60 | 15.00 |
| 9.60 | 8 | 16 | 8 | 0.53 | 15.00 |
| 9.80 | 6 | 12 | 6 | 0.40 | 15.00 |
| 10.00 | 8 | 16 | 8 | 0.53 | 15.00 |
| 10.20 | 10 | 18 | 10 | 0.53 | 18.75 |
| 10.40 | 6 | 12 | 6 | 0.40 | 15.00 |
| 10.60 | 8 | 14 | 8 | 0.40 | 20.00 |
| 10.80 | 10 | 16 | 10 | 0.40 | 25.00 |
| 11.00 | 14 | 24 | 14 | 0.67 | 21.00 |
| 11.20 | 14 | 26 | 14 | 0.80 | 17.50 |
| 11.40 | 12 | 24 | 12 | 0.80 | 15.00 |
| 11.60 | 10 | 22 | 10 | 0.80 | 12.50 |
| 11.80 | 9 | 18 | 9 | 0.60 | 15.00 |
| 12.00 | 8 | 16 | 8 | 0.53 | 15.00 |
| 12.20 | 8 | 14 | 8 | 0.40 | 20.00 |
| 12.40 | 9 | 14 | 9 | 0.33 | 27.00 |
| 12.60 | 8 | 14 | 8 | 0.40 | 20.00 |
| 12.80 | 8 | 14 | 8 | 0.40 | 20.00 |
| 13.00 | 9 | 16 | 9 | 0.47 | 19.29 |
| 13.20 | 8 | 16 | 8 | 0.53 | 15.00 |
| 13.40 | 8 | 16 | 8 | 0.53 | 15.00 |
| 13.60 | 9 | 18 | 9 | 0.60 | 15.00 |
| 13.80 | 10 | 20 | 10 | 0.67 | 15.00 |
| 14.00 | 14 | 24 | 14 | 0.67 | 21.00 |
| 14.20 | 14 | 28 | 14 | 0.93 | 15.00 |
| 14.40 | 18 | 36 | 18 | 1.20 | 15.00 |
| 14.60 | 20 | 38 | 20 | 1.20 | 16.67 |
| 14.80 | 20 | 40 | 20 | 1.33 | 15.00 |
| 15.00 | 20 | 42 | 20 | 1.47 | 13.64 |

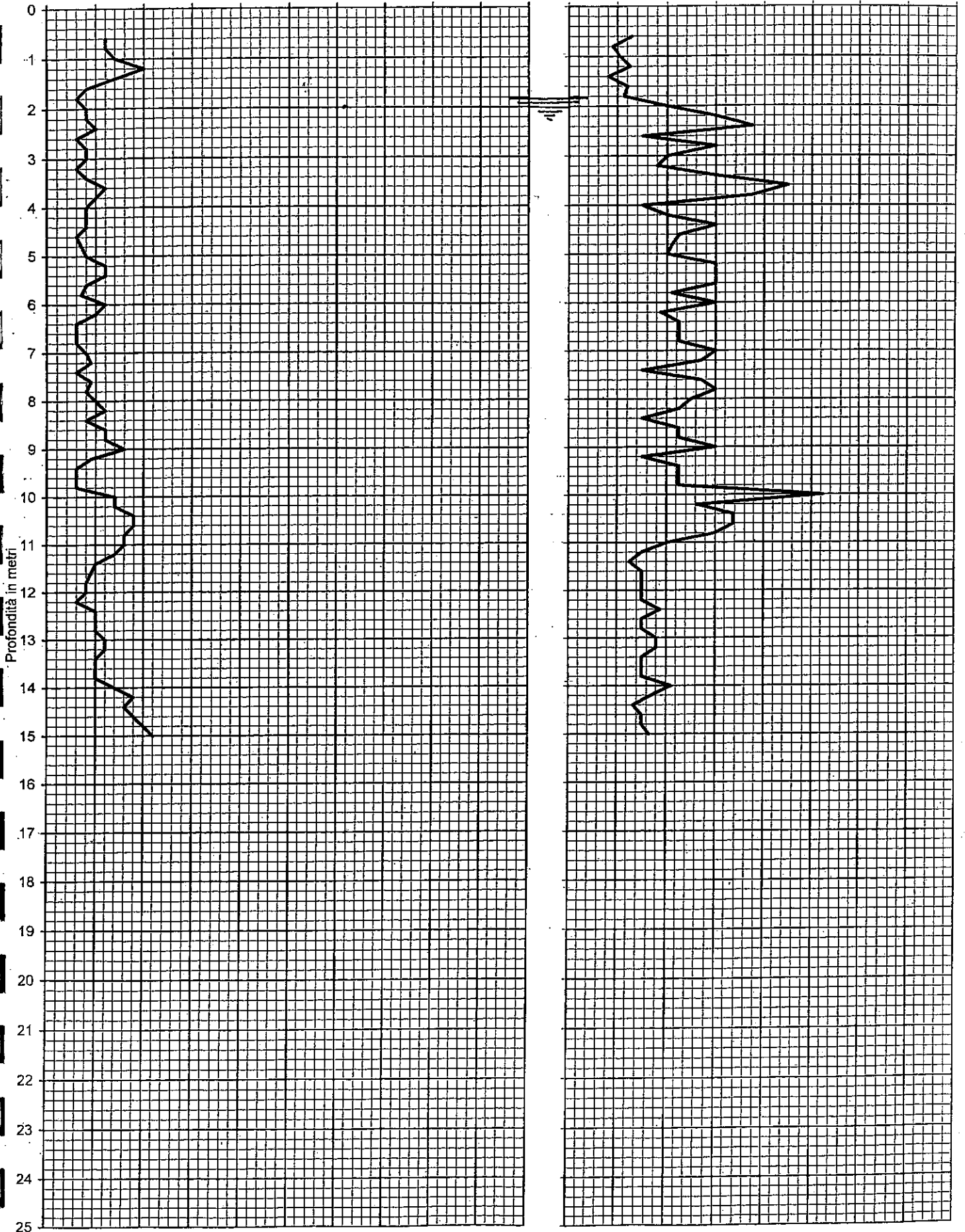
| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15.20 | | | | | |
| 15.40 | | | | | |
| 15.60 | | | | | |
| 15.80 | | | | | |
| 16.00 | | | | | |
| 16.20 | | | | | |
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| 18.40 | | | | | |
| 18.60 | | | | | |
| 18.80 | | | | | |
| 19.00 | | | | | |
| 19.20 | | | | | |
| 19.40 | | | | | |
| 19.60 | | | | | |
| 19.80 | | | | | |
| 20.00 | | | | | |
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| 20.40 | | | | | |
| 20.60 | | | | | |
| 20.80 | | | | | |
| 21.00 | | | | | |
| 21.20 | | | | | |
| 21.40 | | | | | |
| 21.60 | | | | | |
| 21.80 | | | | | |
| 22.00 | | | | | |
| 22.20 | | | | | |
| 22.40 | | | | | |
| 22.60 | | | | | |
| 22.80 | | | | | |
| 23.00 | | | | | |
| 23.20 | | | | | |
| 23.40 | | | | | |
| 23.60 | | | | | |
| 23.80 | | | | | |
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| 24.40 | | | | | |
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| 24.80 | | | | | |
| 25.00 | | | | | |
| 25.20 | | | | | |
| 25.40 | | | | | |
| 25.60 | | | | | |
| 25.80 | | | | | |
| 26.00 | | | | | |
| 26.20 | | | | | |
| 26.40 | | | | | |
| 26.60 | | | | | |
| 26.80 | | | | | |
| 27.00 | | | | | |
| 27.20 | | | | | |
| 27.40 | | | | | |
| 27.60 | | | | | |
| 27.80 | | | | | |
| 28.00 | | | | | |
| 28.20 | | | | | |
| 28.40 | | | | | |
| 28.60 | | | | | |
| 28.80 | | | | | |
| 29.00 | | | | | |
| 29.20 | | | | | |
| 29.40 | | | | | |
| 29.60 | | | | | |
| 29.80 | | | | | |
| 30.00 | | | | | |

Via AUSTRIA,24 - 41100 MODENA

Resistenza alla punta R_p (kg/cm²)

Rp/RI

0 10 20 30 40 50 60 70 80 90 100 0 10 20 30 40 50 60 70 80





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : ABITCOOP
Località : CASSETTE-NONANTOLA
Prova numero : 5
Data : 16/11/2001
Operatore : DR. REBECCHI
Quota : P.C.

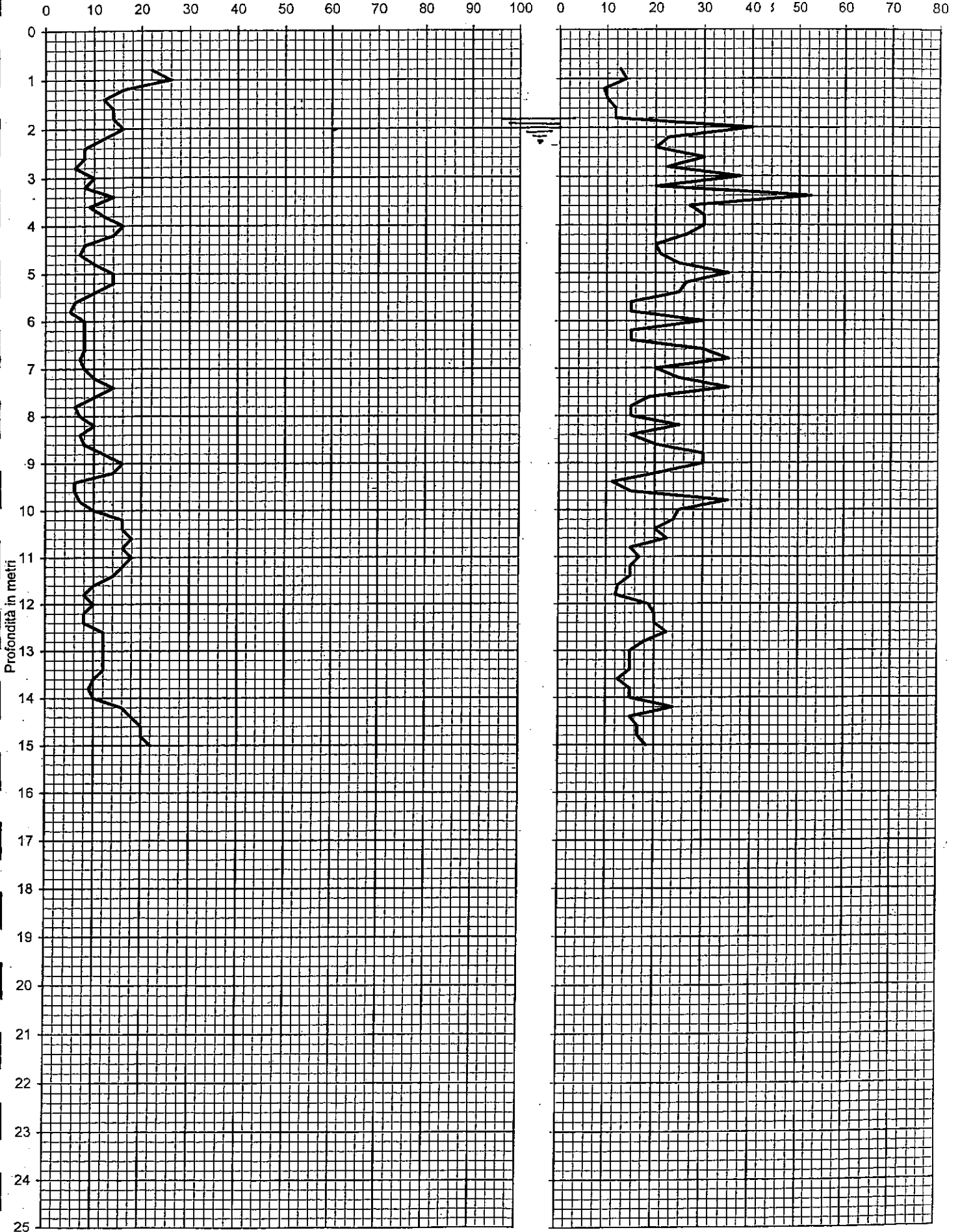
| Prof. (m) | P (kg/cm ²) | P+L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|---------------------------|--------------------------|--------------------------|-----------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 12 | 26 | 12 | 0,93 | 12,86 |
| 0,80 | 12 | 32 | 12 | 1,33 | 9,00 |
| 1,00 | 14 | 34 | 14 | 1,33 | 10,50 |
| 1,20 | 20 | 44 | 20 | 1,60 | 12,50 |
| 1,40 | 14 | 40 | 14 | 1,73 | 8,08 |
| 1,60 | 8 | 18 | 8 | 0,67 | 12,00 |
| 1,80 | 6 | 14 | 6 | 0,53 | 11,25 |
| 2,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 2,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 2,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,20 | 6 | 11 | 6 | 0,33 | 18,00 |
| 3,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 3,60 | 12 | 16 | 12 | 0,27 | 45,00 |
| 3,80 | 10 | 14 | 10 | 0,27 | 37,50 |
| 4,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 4,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,40 | 8 | 12 | 8 | 0,27 | 30,00 |
| 4,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 4,80 | 7 | 12 | 7 | 0,33 | 21,00 |
| 5,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 5,20 | 12 | 18 | 12 | 0,40 | 30,00 |
| 5,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 5,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 5,80 | 7 | 12 | 7 | 0,33 | 21,00 |
| 6,00 | 12 | 18 | 12 | 0,40 | 30,00 |
| 6,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 6,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 6,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 7,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,20 | 9 | 14 | 9 | 0,33 | 27,00 |
| 7,40 | 6 | 12 | 6 | 0,40 | 15,00 |
| 7,60 | 9 | 14 | 9 | 0,33 | 27,00 |
| 7,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 8,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 8,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 8,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 8,80 | 12 | 20 | 12 | 0,53 | 22,50 |
| 9,00 | 16 | 24 | 16 | 0,53 | 30,00 |
| 9,20 | 9 | 18 | 9 | 0,60 | 15,00 |
| 9,40 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,60 | 6 | 10 | 6 | 0,27 | 22,50 |
| 9,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 10,00 | 14 | 18 | 14 | 0,27 | 52,50 |
| 10,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 10,40 | 18 | 26 | 18 | 0,53 | 33,75 |
| 10,60 | 18 | 26 | 18 | 0,53 | 33,75 |
| 10,80 | 16 | 24 | 16 | 0,53 | 30,00 |
| 11,00 | 16 | 28 | 16 | 0,80 | 20,00 |
| 11,20 | 14 | 28 | 14 | 0,93 | 15,00 |
| 11,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 11,60 | 9 | 18 | 9 | 0,60 | 15,00 |
| 11,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,00 | 8 | 16 | 8 | 0,53 | 15,00 |
| 12,20 | 6 | 12 | 6 | 0,40 | 15,00 |
| 12,40 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 12,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,40 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 13,80 | 10 | 20 | 10 | 0,67 | 15,00 |
| 14,00 | 14 | 24 | 14 | 0,67 | 21,00 |
| 14,20 | 18 | 34 | 18 | 1,07 | 16,88 |
| 14,40 | 16 | 34 | 16 | 1,20 | 13,33 |
| 14,60 | 18 | 36 | 18 | 1,20 | 15,00 |
| 14,80 | 20 | 40 | 20 | 1,33 | 15,00 |
| 15,00 | 22 | 42 | 22 | 1,33 | 16,50 |

| Prof. (m) | P (kg/cm ²) | P+L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|-----------|-------------------------|---------------------------|--------------------------|--------------------------|-----------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |

Via AUSTRIA,24 - 41100 MODENA

Resistenza alla punta R_p (kg/cm²)

R_p/RI





Via AUSTRIA, 24 - 41100 MODENA

Telefono 059/313999

Telefax 059/454827

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : ABITCOOP
Località : CASSETTE-NONANTOLA
Prova numero : 6
Data : 16/11/2001
Operatore : DR. REBECCHI
Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P+L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | | | | | |
| 0,80 | 22 | 48 | 22 | 1,73 | 12,69 |
| 1,00 | 26 | 54 | 26 | 1,87 | 13,93 |
| 1,20 | 16 | 42 | 16 | 1,73 | 9,23 |
| 1,40 | 12 | 30 | 12 | 1,20 | 10,00 |
| 1,60 | 14 | 32 | 14 | 1,20 | 11,67 |
| 1,80 | 14 | 32 | 14 | 1,20 | 11,67 |
| 2,00 | 16 | 22 | 16 | 0,40 | 40,00 |
| 2,20 | 12 | 20 | 12 | 0,53 | 22,50 |
| 2,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 2,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 2,80 | 6 | 10 | 6 | 0,27 | 22,50 |
| 3,00 | 10 | 14 | 10 | 0,27 | 37,50 |
| 3,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 3,40 | 14 | 18 | 14 | 0,27 | 52,50 |
| 3,60 | 9 | 14 | 9 | 0,33 | 27,00 |
| 3,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 4,00 | 16 | 24 | 16 | 0,53 | 30,00 |
| 4,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 4,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,60 | 7 | 12 | 7 | 0,33 | 21,00 |
| 4,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,00 | 14 | 20 | 14 | 0,40 | 35,00 |
| 5,20 | 14 | 22 | 14 | 0,53 | 26,25 |
| 5,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 5,80 | 5 | 10 | 5 | 0,33 | 15,00 |
| 6,00 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,20 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,40 | 8 | 16 | 8 | 0,53 | 15,00 |
| 6,60 | 8 | 12 | 8 | 0,27 | 30,00 |
| 6,80 | 7 | 10 | 7 | 0,20 | 35,00 |
| 7,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 7,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 7,40 | 14 | 20 | 14 | 0,40 | 35,00 |
| 7,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 7,80 | 6 | 12 | 6 | 0,40 | 15,00 |
| 8,00 | 7 | 14 | 7 | 0,47 | 15,00 |
| 8,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 8,40 | 7 | 14 | 7 | 0,47 | 15,00 |
| 8,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 8,80 | 12 | 18 | 12 | 0,40 | 30,00 |
| 9,00 | 16 | 24 | 16 | 0,53 | 30,00 |
| 9,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 9,40 | 6 | 14 | 6 | 0,53 | 11,25 |
| 9,60 | 6 | 12 | 6 | 0,40 | 15,00 |
| 9,80 | 7 | 10 | 7 | 0,20 | 35,00 |
| 10,00 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,20 | 16 | 26 | 16 | 0,67 | 24,00 |
| 10,40 | 16 | 28 | 16 | 0,80 | 20,00 |
| 10,60 | 18 | 30 | 18 | 0,80 | 22,50 |
| 10,80 | 16 | 32 | 16 | 1,07 | 15,00 |
| 11,00 | 18 | 34 | 18 | 1,07 | 16,88 |
| 11,20 | 16 | 32 | 16 | 1,07 | 15,00 |
| 11,40 | 14 | 28 | 14 | 0,93 | 15,00 |
| 11,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 11,80 | 8 | 18 | 8 | 0,67 | 12,00 |
| 12,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 12,20 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,40 | 8 | 14 | 8 | 0,40 | 20,00 |
| 12,60 | 12 | 20 | 12 | 0,53 | 22,50 |
| 12,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 13,00 | 12 | 24 | 12 | 0,80 | 15,00 |
| 13,20 | 12 | 24 | 12 | 0,80 | 15,00 |
| 13,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 13,60 | 10 | 22 | 10 | 0,80 | 12,50 |
| 13,80 | 9 | 18 | 9 | 0,60 | 15,00 |
| 14,00 | 10 | 20 | 10 | 0,67 | 15,00 |
| 14,20 | 16 | 26 | 16 | 0,67 | 24,00 |
| 14,40 | 18 | 36 | 18 | 1,20 | 15,00 |
| 14,60 | 20 | 38 | 20 | 1,20 | 16,67 |
| 14,80 | 20 | 38 | 20 | 1,20 | 16,67 |
| 15,00 | 22 | 40 | 22 | 1,20 | 18,33 |

| Prof. (m) | P (kg/cm ²) | P+L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |



intergeo s.r.l.

41100 MODENA - VIA A. NARDI, 35 - TEL. (059) 225504 - FAX (059) 220738

prova n° 1 quota P.C.
località VIA DI MEZZO 114 NONANTOLA
committente C/O GEOM. FREGNI
data 16.05.1989 operatore DR. REBECCHI

PENETROMETRO STATICO GOUDA

resistenza laterale totale



resistenza alla punta (Rp)

kg/cm²

Rp/rl

p.c.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24 m

intergeo s.r.l.

Via Nardi, 35 - Tel. 059/225504 - Modena

INTERGEO s.r.l.

VIA A. NARDI 35 41100 MODENA tel. 059/225504

PROVA PENETROMETRICA

PENETROMETRO GOUDA 10 TON.

COMMITTENTE : C/O GEOM. FREGNI
LOCALITA' : VIA DI MEZZO 114 NONANTOLA
PROVA No. : 1
DATA : 16.05.1989
OPERATORE : DR. REBECCHI
QUOTA : P.C.

| PROFONDITA' m | P Kg/cmq | P+L Kg/cmq | Rp Kg/cmq | R1 Kg/cmq | Rp/R1 | Rt Kg | NOTE |
|------------------|-------------|---------------|--------------|--------------|-------|----------|------|
| .2 | | | | | | | |
| .4 | | | | | | | |
| .6 | | | | | | | |
| .8 | | | | | | | |
| 1 | 28 | 38 | 28 | .66 | 42 | | |
| 1.2 | 24 | 38 | 24 | .93 | 26 | | |
| 1.4 | 22 | 52 | 22 | 2 | 11 | | |
| 1.6 | 18 | 52 | 18 | 2.26 | 8 | | |
| 1.8 | 16 | 40 | 16 | 1.6 | 10 | | |
| 2 | 14 | 36 | 14 | 1.46 | 10 | | |
| 2.2 | 12 | 30 | 12 | 1.2 | 10 | | |
| 2.4 | 12 | 24 | 12 | .8 | 15 | | |
| 2.6 | 12 | 24 | 12 | .8 | 15 | | |
| 2.8 | 14 | 26 | 14 | .8 | 18 | | |
| 3 | 16 | 28 | 16 | .8 | 20 | | |
| 3.2 | 16 | 32 | 16 | 1.06 | 15 | | |
| 3.4 | 12 | 32 | 12 | 1.33 | 9 | | |
| 3.6 | 10 | 20 | 10 | .66 | 15 | | |
| 3.8 | 8 | 16 | 8 | .53 | 15 | | |
| 4 | 6 | 12 | 6 | .4 | 15 | | |
| 4.2 | 8 | 14 | 8 | .4 | 20 | | |
| 4.4 | 8 | 12 | 8 | .26 | 30 | | |
| 4.6 | 4 | 8 | 4 | .26 | 15 | | |
| 4.8 | 8 | 12 | 8 | .26 | 30 | | |
| 5 | 8 | 12 | 8 | .26 | 30 | | |
| 5.2 | 8 | 12 | 8 | .26 | 30 | | |
| 5.4 | 18 | 24 | 18 | .4 | 45 | | |
| 5.6 | 8 | 12 | 8 | .26 | 30 | | |
| 5.8 | 12 | 20 | 12 | .53 | 22 | | |
| 6 | 28 | 38 | 28 | .66 | 42 | | |
| 6.2 | 20 | 32 | 20 | .8 | 25 | | |
| 6.4 | 28 | 32 | 28 | .26 | 105 | | |
| 6.6 | 24 | 36 | 24 | .8 | 30 | | |
| 6.8 | 24 | 34 | 24 | .66 | 36 | | |
| 7 | 24 | 44 | 24 | 1.33 | 18 | | |
| 7.2 | 14 | 32 | 14 | 1.2 | 12 | | |
| 7.4 | 12 | 24 | 12 | .8 | 15 | | |
| 7.6 | 16 | 28 | 16 | .8 | 20 | | |
| 7.8 | 14 | 28 | 14 | .93 | 15 | | |
| 8 | 14 | 26 | 14 | .8 | 18 | | |
| 8.2 | 16 | 28 | 16 | .8 | 20 | | |
| 8.4 | 20 | 32 | 20 | .8 | 25 | | |
| 8.6 | 42 | 56 | 42 | .93 | 45 | | |
| 8.8 | 32 | 44 | 32 | .8 | 40 | | |
| 9 | 34 | 42 | 34 | .53 | 64 | | |
| 9.2 | 12 | 24 | 12 | .8 | 15 | | |

| PROFONDITA' | P | P+L | Rp | R1 | Rp/R1 | Rt | NOTE |
|-------------|--------|--------|--------|--------|-------|----|------|
| m | Kg/cmq | Kg/cmq | Kg/cmq | Kg/cmq | | Kg | |
| 9.4 | 14 | 20 | 14 | .4 | 35 | | |
| 9.6 | 6 | 16 | 6 | .66 | 9 | | |
| 9.8 | 10 | 16 | 10 | .4 | 25 | | |
| 10 | 12 | 20 | 12 | .53 | 22 | | |
| 10.2 | 14 | 24 | 14 | .66 | 21 | | |
| 10.4 | 16 | 28 | 16 | .8 | 20 | | |
| 10.6 | 14 | 30 | 14 | 1.06 | 13 | | |
| 10.8 | 14 | 28 | 14 | .93 | 15 | | |
| 11 | 18 | 28 | 18 | .66 | 27 | | |
| 11.2 | 20 | 38 | 20 | 1.2 | 17 | | |
| 11.4 | 22 | 40 | 22 | 1.2 | 18 | | |
| 11.6 | 20 | 36 | 20 | 1.06 | 19 | | |
| 11.8 | 16 | 32 | 16 | 1.06 | 15 | | |
| 12 | 18 | 32 | 18 | .93 | 19 | | |
| 12.2 | 14 | 28 | 14 | .93 | 15 | | |
| 12.4 | 12 | 20 | 12 | .53 | 22 | | |
| 12.6 | 8 | 16 | 8 | .53 | 15 | | |
| 12.8 | 10 | 16 | 10 | .4 | 25 | | |
| 13 | 8 | 16 | 8 | .53 | 15 | | |
| 13.2 | 12 | 18 | 12 | .4 | 30 | | |
| 13.4 | 12 | 20 | 12 | .53 | 22 | | |
| 13.6 | 16 | 24 | 16 | .53 | 30 | | |
| 13.8 | 20 | 30 | 20 | .66 | 30 | | |
| 14 | 20 | 38 | 20 | 1.2 | 17 | | |
| 14.2 | 22 | 40 | 22 | 1.2 | 18 | | |
| 14.4 | 24 | 42 | 24 | 1.2 | 20 | | |
| 14.6 | 26 | 48 | 26 | 1.46 | 18 | | |
| 14.8 | 28 | 48 | 28 | 1.33 | 21 | | |
| 15 | 26 | 46 | 26 | 1.33 | 20 | | |

INTERGEO s.r.l. VIA A. NARDI 41100 MODENA Tel. 059/225504



intergeo s.r.l.

41100 MODENA - VIA A. NARDI, 35 - TEL. (059) 225504 - FAX (059) 220738

prova n° 2 quota P.C.
località VIA DI MEZZO 114 NONANTOLA
committente C/O GEOM. FREGNI
data 16.05.1989 operatore DR. REBECCHI

PENETROMETRO STATICO GOUDA

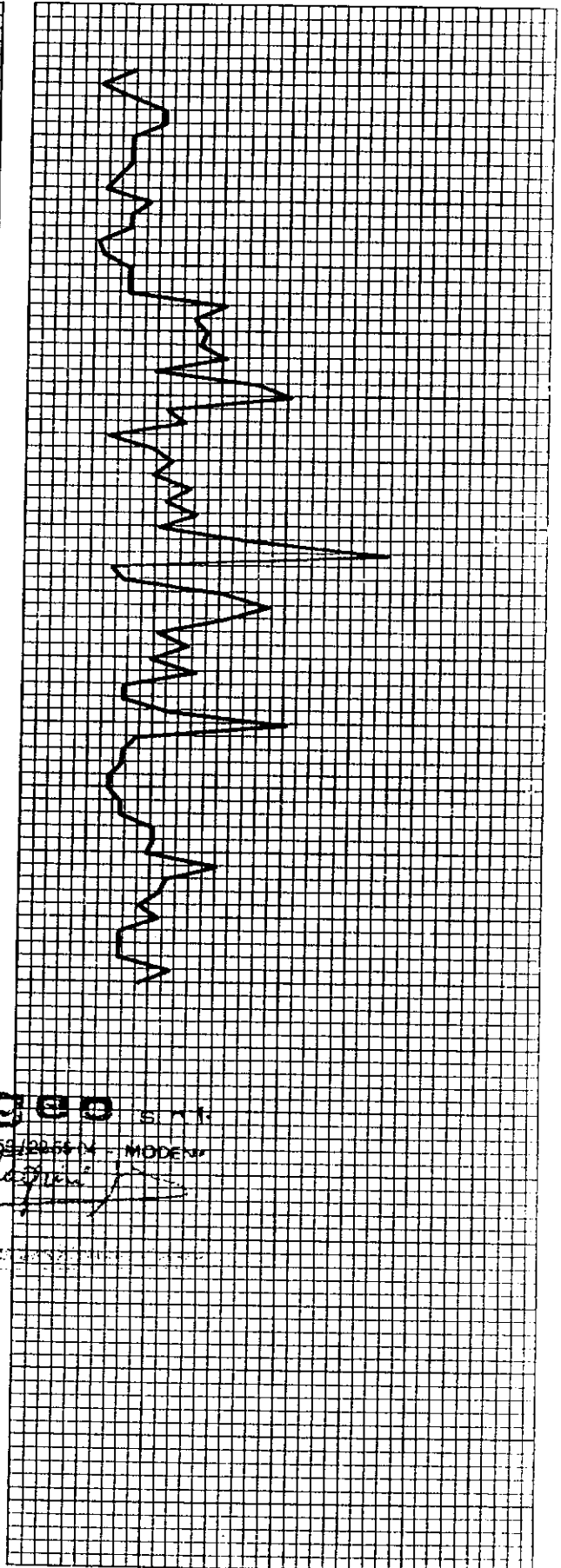
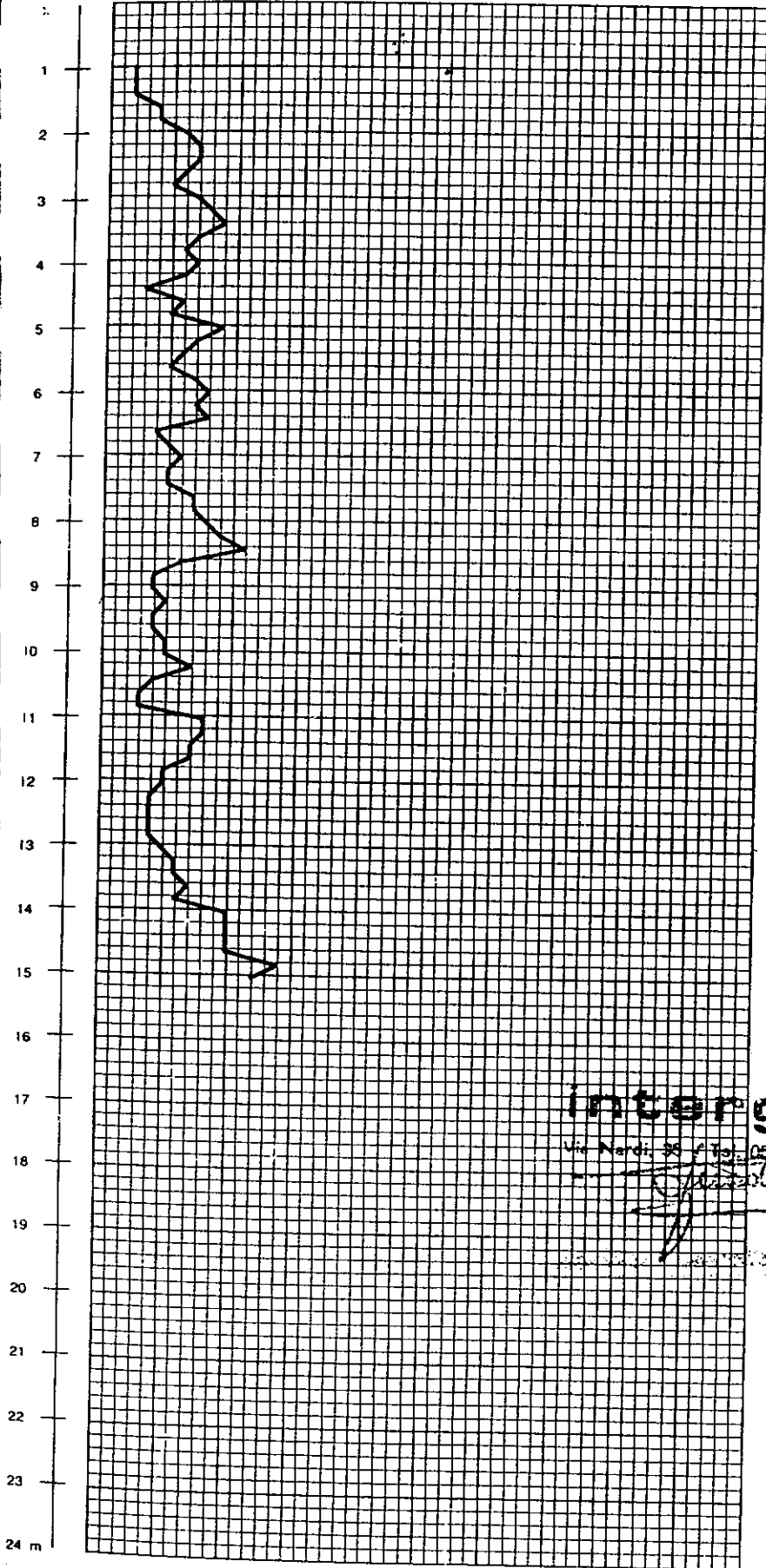
resistenza laterale totale



resistenza alla punta (Rp)

kg/cm²

Rp/rl



intergeo s.r.l.

Via Nardi, 35 - Tel. 059/225504 - MODENA

[Signature]

INTERGEO s.p.a.

VIA A. NARDI 35 41100 MODENA tel. 059/225504

PROVA PENETROMETRICA

PENETROMETRO GOUDA 10 TON.

COMMITTENTE : C/O GEOM. FREGNI
LOCALITA' : VIA DI MEZZO 114 NONANTOLA
PROVA No. : 2
DATA : 16.05.1989
OPERATORE : DR. REBECCHI
QUOTA : P.C.

| PROFONDITA' m | P Kg/cm ² | P+L Kg/cm ² | Rp Kg/cm ² | R1 Kg/cm ² | Rp/R1 | Rt Kg | NOTE |
|------------------|-------------------------|---------------------------|--------------------------|--------------------------|-------|----------|------|
| .2 | | | | | | | |
| .4 | | | | | | | |
| .6 | | | | | | | |
| .8 | | | | | | | |
| 1 | 4 | 8 | 4 | .26 | 15 | | |
| 1.2 | 4 | 10 | 4 | .4 | 10 | | |
| 1.4 | 4 | 8 | 4 | .26 | 15 | | |
| 1.6 | 8 | 14 | 8 | .4 | 20 | | |
| 1.8 | 8 | 14 | 8 | .4 | 20 | | |
| 2 | 12 | 24 | 12 | .8 | 15 | | |
| 2.2 | 14 | 28 | 14 | .93 | 15 | | |
| 2.4 | 14 | 28 | 14 | .93 | 15 | | |
| 2.6 | 12 | 26 | 12 | .93 | 13 | | |
| 2.8 | 10 | 24 | 10 | .93 | 11 | | |
| 3 | 14 | 26 | 14 | .8 | 18 | | |
| 3.2 | 16 | 32 | 16 | 1.06 | 15 | | |
| 3.4 | 18 | 36 | 18 | 1.2 | 15 | | |
| 3.6 | 14 | 36 | 14 | 1.46 | 10 | | |
| 3.8 | 12 | 28 | 12 | 1.06 | 11 | | |
| 4 | 14 | 28 | 14 | .93 | 15 | | |
| 4.2 | 12 | 24 | 12 | .8 | 15 | | |
| 4.4 | 6 | 12 | 6 | .4 | 15 | | |
| 4.6 | 12 | 18 | 12 | .4 | 30 | | |
| 4.8 | 10 | 16 | 10 | .4 | 25 | | |
| 5 | 18 | 28 | 18 | .66 | 27 | | |
| 5.2 | 14 | 22 | 14 | .53 | 26 | | |
| 5.4 | 12 | 18 | 12 | .4 | 30 | | |
| 5.6 | 10 | 18 | 10 | .53 | 19 | | |
| 5.8 | 14 | 20 | 14 | .4 | 35 | | |
| 6 | 16 | 22 | 16 | .4 | 40 | | |
| 6.2 | 14 | 24 | 14 | .66 | 21 | | |
| 6.4 | 16 | 26 | 16 | .66 | 24 | | |
| 6.6 | 8 | 18 | 8 | .66 | 12 | | |
| 6.8 | 10 | 18 | 10 | .53 | 19 | | |
| 7 | 12 | 20 | 12 | .53 | 22 | | |
| 7.2 | 10 | 18 | 10 | .53 | 19 | | |
| 7.4 | 10 | 16 | 10 | .4 | 25 | | |
| 7.6 | 14 | 24 | 14 | .66 | 21 | | |
| 7.8 | 14 | 22 | 14 | .53 | 26 | | |
| 8 | 16 | 28 | 16 | .8 | 20 | | |
| 8.2 | 18 | 26 | 18 | .53 | 34 | | |
| 8.4 | 22 | 28 | 22 | .4 | 55 | | |
| 8.6 | 12 | 26 | 12 | .93 | 13 | | |
| 8.8 | 8 | 16 | 8 | .53 | 15 | | |
| 9 | 8 | 12 | 8 | .26 | 30 | | |
| 9.2 | 10 | 14 | 10 | .26 | 37 | | |

| PROFONDITA' m | P Kg/cm ² | P+L Kg/cm ² | Rp Kg/cm ² | R1 Kg/cm ² | Rp/R1 | Rt Kg | NOTE |
|------------------|-------------------------|---------------------------|--------------------------|--------------------------|-------|----------|------|
| 9.4 | 8 | 12 | 8 | .26 | 30 | | |
| 9.6 | 8 | 14 | 8 | .4 | 20 | | |
| 9.8 | 10 | 16 | 10 | .4 | 25 | | |
| 10 | 10 | 18 | 10 | .53 | 19 | | |
| 10.2 | 14 | 22 | 14 | .53 | 26 | | |
| 10.4 | 8 | 16 | 8 | .53 | 15 | | |
| 10.6 | 6 | 12 | 6 | .4 | 15 | | |
| 10.8 | 6 | 10 | 6 | .26 | 22 | | |
| 11 | 16 | 22 | 16 | .4 | 40 | | |
| 11.2 | 16 | 30 | 16 | .93 | 17 | | |
| 11.4 | 14 | 28 | 14 | .93 | 15 | | |
| 11.6 | 14 | 28 | 14 | .93 | 15 | | |
| 11.8 | 10 | 22 | 10 | .8 | 13 | | |
| 12 | 10 | 22 | 10 | .8 | 13 | | |
| 12.2 | 8 | 16 | 8 | .53 | 15 | | |
| 12.4 | 8 | 16 | 8 | .53 | 15 | | |
| 12.6 | 8 | 14 | 8 | .4 | 20 | | |
| 12.8 | 8 | 14 | 8 | .4 | 20 | | |
| 13 | 10 | 18 | 10 | .53 | 19 | | |
| 13.2 | 12 | 18 | 12 | .4 | 30 | | |
| 13.4 | 12 | 20 | 12 | .53 | 22 | | |
| 13.6 | 14 | 24 | 14 | .66 | 21 | | |
| 13.8 | 12 | 22 | 12 | .66 | 18 | | |
| 14 | 20 | 34 | 20 | .93 | 21 | | |
| 14.2 | 20 | 40 | 20 | 1.33 | 15 | | |
| 14.4 | 20 | 40 | 20 | 1.33 | 15 | | |
| 14.6 | 20 | 40 | 20 | 1.33 | 15 | | |
| 14.8 | 28 | 46 | 28 | 1.2 | 23 | | |
| 15 | 24 | 44 | 24 | 1.33 | 18 | | |

INTERGEO s.r.l. VIA A. NARDI 41100 MODENA Tel. 059/225504

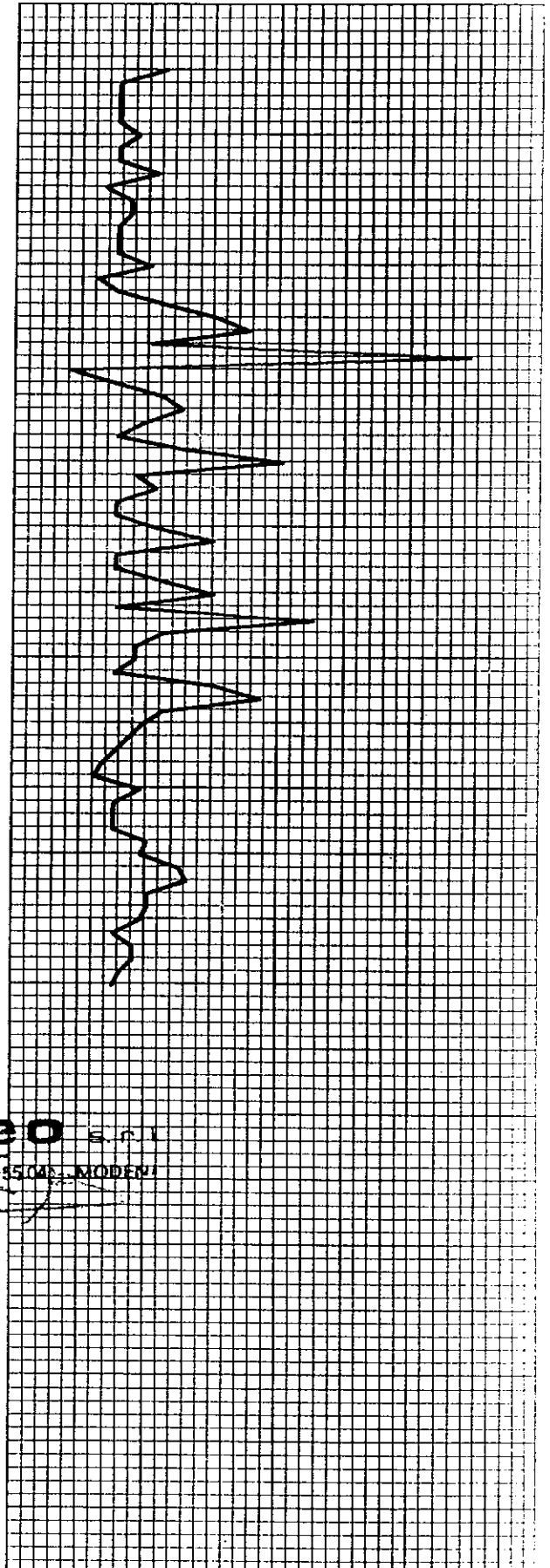
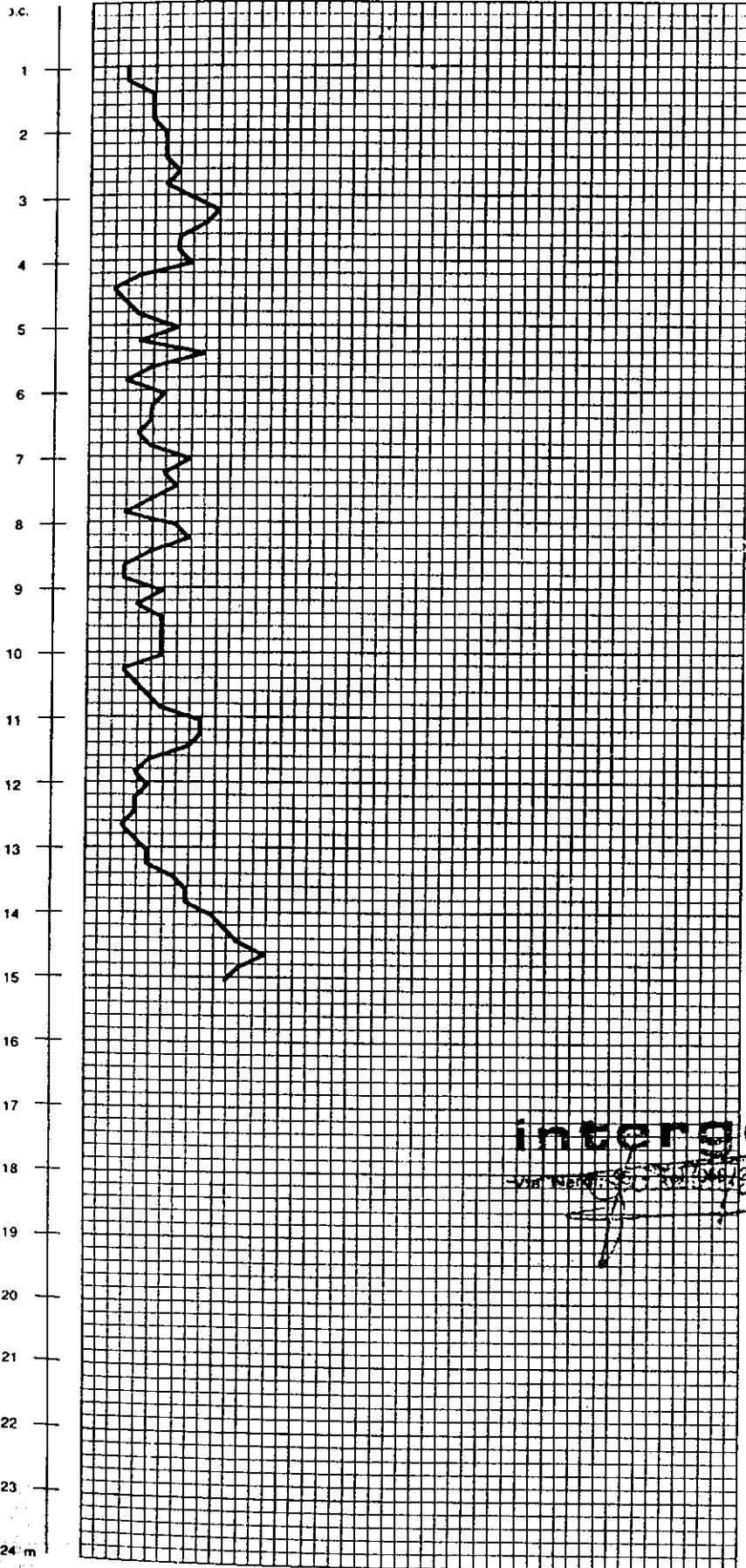
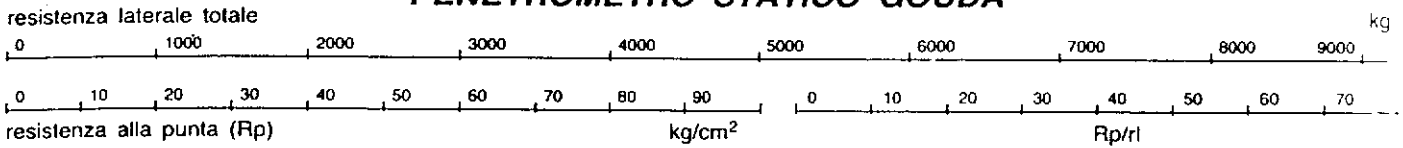


intergeo s.r.l.

41100 MODENA - VIA A. NARDI, 35 - TEL. (059) 225504 - FAX (059) 220738

prova n° 3 quota P.C.
località VIA DI MEZZO 114 NONANTOLA
committente C/O GEOM. FREGNI
data 16.05.1989 operatore DR. REBECCHI

PENETROMETRO STATICO GOUDA



intergeo s.r.l.

VIA A. NARDI, 35 - 41100 MODENA - TEL. (059) 225504

• INTERGEO s.r.l.

VIA A. NARDI 35 41100 MODENA tel. 059/225504

PROVA PENETROMETRICA

PENETROMETRO GOUDA 10 TON.

COMMITTENTE : C/O GEOM. FREGNI
LOCALITA' : VIA DI MEZZO 114 NONANTOLA
PROVA No. : 3
DATA : 16.05.1989
OPERATORE : DR. REBECCHI
QUOTA : P.C.

| PROFONDITA' m | P Kg/cm ² | P+L Kg/cm ² | Rp Kg/cm ² | R1 Kg/cm ² | Rp/R1 | Rt Kg | NOTE |
|------------------|-------------------------|---------------------------|--------------------------|--------------------------|-------|----------|------|
| .2 | | | | | | | |
| .4 | | | | | | | |
| .6 | | | | | | | |
| .8 | | | | | | | |
| 1 | 6 | 10 | 6 | .26 | 22 | | |
| 1.2 | 6 | 12 | 6 | .4 | 15 | | |
| 1.4 | 10 | 20 | 10 | .66 | 15 | | |
| 1.6 | 10 | 20 | 10 | .66 | 15 | | |
| 1.8 | 10 | 20 | 10 | .66 | 15 | | |
| 2 | 12 | 22 | 12 | .66 | 18 | | |
| 2.2 | 12 | 24 | 12 | .8 | 15 | | |
| 2.4 | 12 | 24 | 12 | .8 | 15 | | |
| 2.6 | 14 | 24 | 14 | .66 | 21 | | |
| 2.8 | 12 | 26 | 12 | .93 | 13 | | |
| 3 | 16 | 30 | 16 | .93 | 17 | | |
| 3.2 | 20 | 38 | 20 | 1.2 | 17 | | |
| 3.4 | 18 | 36 | 18 | 1.2 | 15 | | |
| 3.6 | 14 | 28 | 14 | .93 | 15 | | |
| 3.8 | 14 | 28 | 14 | .93 | 15 | | |
| 4 | 16 | 28 | 16 | .8 | 20 | | |
| 4.2 | 8 | 18 | 8 | .66 | 12 | | |
| 4.4 | 4 | 8 | 4 | .26 | 15 | | |
| 4.6 | 6 | 10 | 6 | .26 | 22 | | |
| 4.8 | 8 | 12 | 8 | .26 | 30 | | |
| 5 | 14 | 20 | 14 | .4 | 35 | | |
| 5.2 | 8 | 14 | 8 | .4 | 20 | | |
| 5.4 | 18 | 22 | 18 | .26 | 68 | | |
| 5.6 | 10 | 28 | 10 | 1.2 | 8 | | |
| 5.8 | 6 | 12 | 6 | .4 | 15 | | |
| 6 | 12 | 20 | 12 | .53 | 22 | | |
| 6.2 | 10 | 16 | 10 | .4 | 25 | | |
| 6.4 | 10 | 18 | 10 | .53 | 19 | | |
| 6.6 | 8 | 16 | 8 | .53 | 15 | | |
| 6.8 | 10 | 16 | 10 | .4 | 25 | | |
| 7 | 16 | 22 | 16 | .4 | 40 | | |
| 7.2 | 12 | 22 | 12 | .66 | 18 | | |
| 7.4 | 14 | 24 | 14 | .66 | 21 | | |
| 7.6 | 10 | 20 | 10 | .66 | 15 | | |
| 7.8 | 6 | 12 | 6 | .4 | 15 | | |
| 8 | 14 | 24 | 14 | .66 | 21 | | |
| 8.2 | 16 | 24 | 16 | .53 | 30 | | |
| 8.4 | 10 | 20 | 10 | .66 | 15 | | |
| 8.6 | 6 | 12 | 6 | .4 | 15 | | |
| 8.8 | 6 | 10 | 6 | .26 | 22 | | |
| 9 | 12 | 18 | 12 | .4 | 30 | | |
| 9.2 | 8 | 16 | 8 | .53 | 15 | | |

| PROFONDITA' m | P Kg/cmq | P+L Kg/cmq | Rp Kg/cmq | R1 Kg/cmq | Rp/R1 | Rt Kg | NOTE |
|------------------|-------------|---------------|--------------|--------------|-------|----------|------|
| 9.4 | 12 | 16 | 12 | .26 | 45 | | |
| 9.6 | 12 | 20 | 12 | .53 | 22 | | |
| 9.8 | 12 | 22 | 12 | .66 | 18 | | |
| 10 | 12 | 22 | 12 | .66 | 18 | | |
| 10.2 | 6 | 12 | 6 | .4 | 15 | | |
| 10.4 | 8 | 12 | 8 | .26 | 30 | | |
| 10.6 | 10 | 14 | 10 | .26 | 37 | | |
| 10.8 | 12 | 20 | 12 | .53 | 22 | | |
| 11 | 18 | 32 | 18 | .93 | 19 | | |
| 11.2 | 18 | 34 | 18 | 1.06 | 17 | | |
| 11.4 | 16 | 32 | 16 | 1.06 | 15 | | |
| 11.6 | 10 | 22 | 10 | .8 | 13 | | |
| 11.8 | 8 | 18 | 8 | .66 | 12 | | |
| 12 | 10 | 18 | 10 | .53 | 19 | | |
| 12.2 | 8 | 16 | 8 | .53 | 15 | | |
| 12.4 | 8 | 16 | 8 | .53 | 15 | | |
| 12.6 | 6 | 12 | 6 | .4 | 15 | | |
| 12.8 | 8 | 14 | 8 | .4 | 20 | | |
| 13 | 10 | 18 | 10 | .53 | 19 | | |
| 13.2 | 10 | 16 | 10 | .4 | 25 | | |
| 13.4 | 14 | 22 | 14 | .53 | 26 | | |
| 13.6 | 16 | 28 | 16 | .8 | 20 | | |
| 13.8 | 16 | 28 | 16 | .8 | 20 | | |
| 14 | 20 | 36 | 20 | 1.06 | 19 | | |
| 14.2 | 22 | 44 | 22 | 1.46 | 15 | | |
| 14.4 | 24 | 44 | 24 | 1.33 | 18 | | |
| 14.6 | 28 | 52 | 28 | 1.6 | 18 | | |
| 14.8 | 24 | 46 | 24 | 1.46 | 16 | | |
| 15 | 22 | 44 | 22 | 1.46 | 15 | | |

INTERGEO s.r.l. VIA A. NARDI 41100 MODENA Tel. 059/225504



intergeo s.r.l.

41100 MODENA - VIA A. NARDI, 35 - TEL. (059) 225504 - FAX (059) 220738

prova n° 4 quota P.C.
località VIA DI MEZZO 114 NONANTOLA
committente C/O GEOM. FREGNI
data 16.05.1989 operatore DR. REBECCHI

PENETROMETRO STATICO GOUDA

resistenza laterale totale



resistenza alla punta (Rp)

kg/cm²

Rp/rl

p.c.

1

2

3

4

5

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22

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24 m

intergeo s.r.l.
VIA NARDI, 35 - 41100 MODENA
TEL. (059) 225504 - FAX (059) 220738

INTERGEO s.r.l.

VIA A. NARDI 35 41100 MODENA tel. 059/225504

PROVA PENETROMETRICA

PENETROMETRO GOUDA 10 TON.

COMMITTENTE : C/O GEOM. FREGNI
LOCALITA' : VIA DI MEZZO 114 NONANTOLA
PROVA No. : 4
DATA : 16.05.1989
OPERATORE : DR. REBECCHI
QUOTA : P.C.

| PROFONDITA' | P | P+L | Rp | R1 | Rp/R1 | Rt | NOTE |
|-------------|--------|--------|--------|--------|-------|----|------|
| m | Kg/cmq | Kg/cmq | Kg/cmq | Kg/cmq | | Kg | |
| .2 | | | | | | | |
| .4 | | | | | | | |
| .6 | | | | | | | |
| .8 | | | | | | | |
| 1 | 6 | 16 | 6 | .66 | 9 | | |
| 1.2 | 12 | 24 | 12 | .8 | 15 | | |
| 1.4 | 12 | 28 | 12 | 1.06 | 11 | | |
| 1.6 | 12 | 28 | 12 | 1.06 | 11 | | |
| 1.8 | 10 | 28 | 10 | 1.2 | 8 | | |
| 2 | 12 | 28 | 12 | 1.06 | 11 | | |
| 2.2 | 10 | 24 | 10 | .93 | 11 | | |
| 2.4 | 10 | 20 | 10 | .66 | 15 | | |
| 2.6 | 12 | 22 | 12 | .66 | 18 | | |
| 2.8 | 12 | 26 | 12 | .93 | 13 | | |
| 3 | 14 | 28 | 14 | .93 | 15 | | |
| 3.2 | 14 | 28 | 14 | .93 | 15 | | |
| 3.4 | 14 | 28 | 14 | .93 | 15 | | |
| 3.6 | 14 | 22 | 14 | .53 | 26 | | |
| 3.8 | 6 | 18 | 6 | .8 | 8 | | |
| 4 | 8 | 12 | 8 | .26 | 30 | | |
| 4.2 | 8 | 12 | 8 | .26 | 30 | | |
| 4.4 | 6 | 10 | 6 | .26 | 22 | | |
| 4.6 | 14 | 22 | 14 | .53 | 26 | | |
| 4.8 | 8 | 12 | 8 | .26 | 30 | | |
| 5 | 6 | 12 | 6 | .4 | 15 | | |
| 5.2 | 6 | 10 | 6 | .26 | 22 | | |
| 5.4 | 10 | 14 | 10 | .26 | 37 | | |
| 5.6 | 8 | 12 | 8 | .26 | 30 | | |
| 5.8 | 8 | 16 | 8 | .53 | 15 | | |
| 6 | 16 | 20 | 16 | .26 | 60 | | |
| 6.2 | 18 | 20 | 18 | .13 | 135 | | |
| 6.4 | 12 | 18 | 12 | .4 | 30 | | |
| 6.6 | 12 | 18 | 12 | .4 | 30 | | |
| 6.8 | 10 | 16 | 10 | .4 | 25 | | |
| 7 | 8 | 16 | 8 | .53 | 15 | | |
| 7.2 | 14 | 20 | 14 | .4 | 35 | | |
| 7.4 | 16 | 20 | 16 | .26 | 60 | | |
| 7.6 | 12 | 20 | 12 | .53 | 22 | | |
| 7.8 | 12 | 22 | 12 | .66 | 18 | | |
| 8 | 14 | 26 | 14 | .8 | 18 | | |
| 8.2 | 12 | 22 | 12 | .66 | 18 | | |
| 8.4 | 10 | 24 | 10 | .93 | 11 | | |
| 8.6 | 16 | 20 | 16 | .26 | 60 | | |
| 8.8 | 8 | 16 | 8 | .53 | 15 | | |
| 9 | 6 | 12 | 6 | .4 | 15 | | |
| 9.2 | 10 | 16 | 10 | .4 | 25 | | |

| PROFONDITA' | P | P+L | Rp | R1 | Rp/R1 | Rt | NOTE |
|-------------|--------|--------|--------|--------|-------|----|------|
| m | Kg/cmq | Kg/cmq | Kg/cmq | Kg/cmq | | Kg | |
| 9.4 | 10 | 14 | 10 | .26 | 37 | | |
| 9.6 | 8 | 12 | 8 | .26 | 30 | | |
| 9.8 | 12 | 18 | 12 | .4 | 30 | | |
| 10 | 12 | 24 | 12 | .8 | 15 | | |
| 10.2 | 14 | 24 | 14 | .66 | 21 | | |
| 10.4 | 12 | 24 | 12 | .8 | 15 | | |
| 10.6 | 16 | 28 | 16 | .8 | 20 | | |
| 10.8 | 20 | 36 | 20 | 1.06 | 19 | | |
| 11 | 20 | 40 | 20 | 1.33 | 15 | | |
| 11.2 | 22 | 40 | 22 | 1.2 | 18 | | |
| 11.4 | 18 | 36 | 18 | 1.2 | 15 | | |
| 11.6 | 14 | 28 | 14 | .93 | 15 | | |
| 11.8 | 10 | 24 | 10 | .93 | 11 | | |
| 12 | 8 | 18 | 8 | .66 | 12 | | |
| 12.2 | 8 | 16 | 8 | .53 | 15 | | |
| 12.4 | 8 | 16 | 8 | .53 | 15 | | |
| 12.6 | 8 | 16 | 8 | .53 | 15 | | |
| 12.8 | 8 | 16 | 8 | .53 | 15 | | |
| 13 | 8 | 16 | 8 | .53 | 15 | | |
| 13.2 | 12 | 20 | 12 | .53 | 22 | | |
| 13.4 | 16 | 28 | 16 | .8 | 20 | | |
| 13.6 | 20 | 32 | 20 | .8 | 25 | | |
| 13.8 | 20 | 38 | 20 | 1.2 | 17 | | |
| 14 | 18 | 40 | 18 | 1.46 | 12 | | |
| 14.2 | 22 | 44 | 22 | 1.46 | 15 | | |
| 14.4 | 24 | 46 | 24 | 1.46 | 16 | | |
| 14.6 | 20 | 44 | 20 | 1.6 | 13 | | |
| 14.8 | 22 | 44 | 22 | 1.46 | 15 | | |
| 15 | 24 | 48 | 24 | 1.6 | 15 | | |

INTERGEO s.r.l. VIA A. NARDI 41100 MODENA Tel. 059/225504



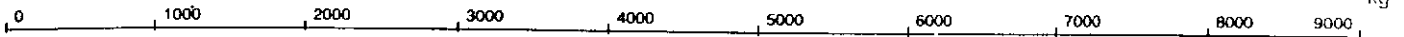
intergeo s.r.l.

41100 MODENA - VIA A. NARDI, 35 - TEL. (059) 225504 - FAX (059) 220738

prova n° 5 quota P.C.
località VIA DI MEZZO 114 NONANTOLA
committente C/O GEOM. FREGNI
data 16.05.1989 operatore DR. REBECCHI

PENETROMETRO STATICO GOUDA

resistenza laterale totale



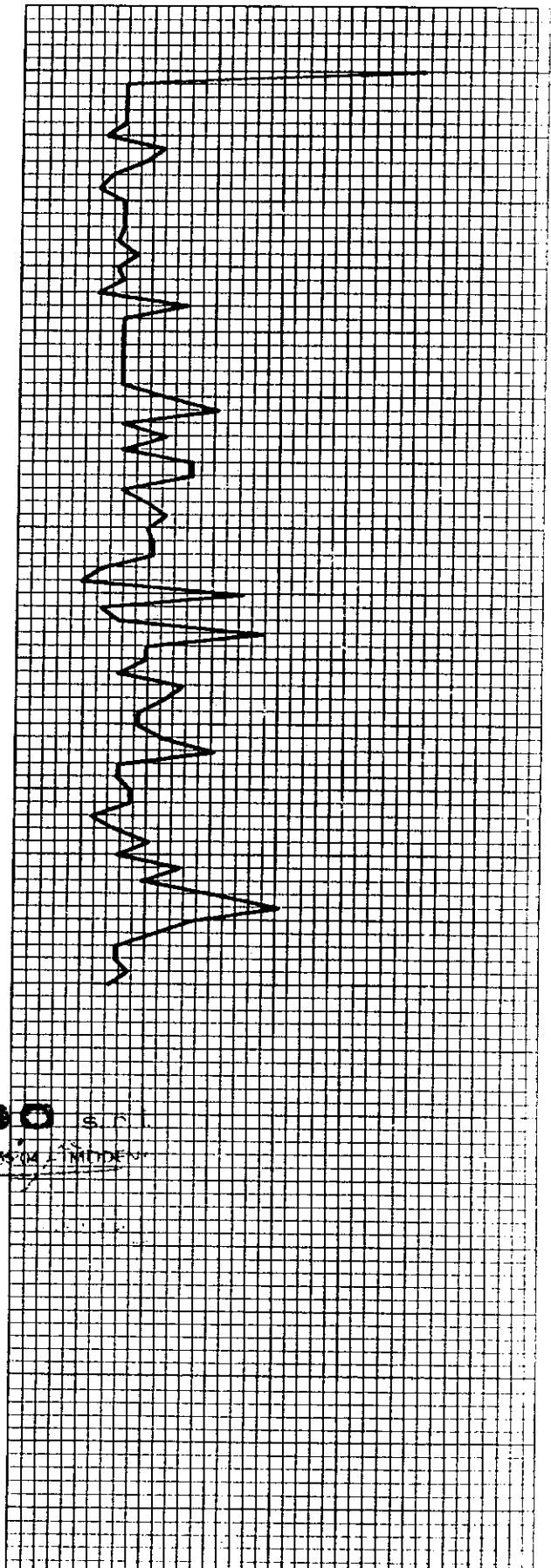
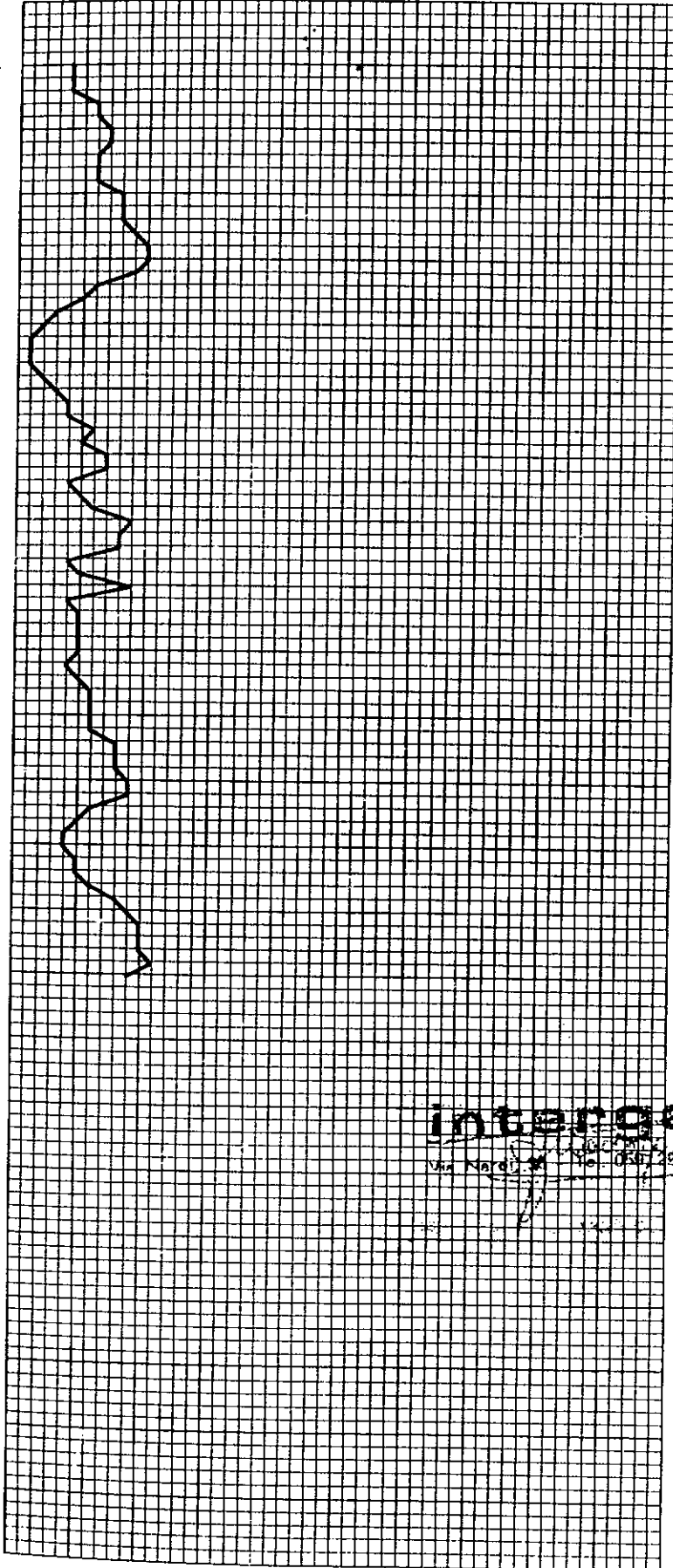
resistenza alla punta (Rp)

kg/cm²

Rp/rt

s.c.

1
2
3
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16
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18
19
20
21
22
23
24 m



intergeo s.r.l.
Via Nardi, 35 - Tel. (059) 225504 - Modena

INTERGEO s.r.l.

VIA A. NARDI 35 41100 MODENA tel. 059/225504

PROVA PENETROMETRICA

PENETROMETRO GOUDA 10 TON.

COMMITTENTE : C/O GEOM. FREGNI
LOCALITA' : VIA DI MEZZO 114 NONANTOLA
PROVA No. : 5
DATA : 16.05.1989
OPERATORE : DR. REBECCHI
QUOTA : P.C.

| PROFONDITA' m | P Kg/cmq | P+L Kg/cmq | ; | Rp Kg/cmq | R1 Kg/cmq | Rp/R1 | Rt Kg | NOTE |
|------------------|-------------|---------------|---|--------------|--------------|-------|----------|------|
| .2 | | | | | | | | |
| .4 | | | | | | | | |
| .6 | | | | | | | | |
| .8 | | | | | | | | |
| 1 | 8 | 10 | | 8 | .13 | 60 | | |
| 1.2 | 8 | 16 | | 8 | .53 | 15 | | |
| 1.4 | 8 | 16 | | 8 | .53 | 15 | | |
| 1.6 | 12 | 24 | | 12 | .8 | 15 | | |
| 1.8 | 12 | 24 | | 12 | .8 | 15 | | |
| 2 | 14 | 32 | | 14 | 1.2 | 12 | | |
| 2.2 | 14 | 24 | | 14 | .66 | 21 | | |
| 2.4 | 12 | 22 | | 12 | .66 | 18 | | |
| 2.6 | 12 | 26 | | 12 | .93 | 13 | | |
| 2.8 | 12 | 28 | | 12 | 1.06 | 11 | | |
| 3 | 16 | 32 | | 16 | 1.06 | 15 | | |
| 3.2 | 16 | 32 | | 16 | 1.06 | 15 | | |
| 3.4 | 16 | 32 | | 16 | 1.06 | 15 | | |
| 3.6 | 18 | 38 | | 18 | 1.33 | 14 | | |
| 3.8 | 20 | 38 | | 20 | 1.2 | 17 | | |
| 4 | 20 | 42 | | 20 | 1.46 | 14 | | |
| 4.2 | 18 | 36 | | 18 | 1.2 | 15 | | |
| 4.4 | 12 | 28 | | 12 | 1.06 | 11 | | |
| 4.6 | 10 | 16 | | 10 | .4 | 25 | | |
| 4.8 | 6 | 12 | | 6 | .4 | 15 | | |
| 5 | 4 | 8 | | 4 | .26 | 15 | | |
| 5.2 | 2 | 4 | | 2 | .13 | 15 | | |
| 5.4 | 2 | 4 | | 2 | .13 | 15 | | |
| 5.6 | 2 | 4 | | 2 | .13 | 15 | | |
| 5.8 | 4 | 8 | | 4 | .26 | 15 | | |
| 6 | 6 | 10 | | 6 | .26 | 22 | | |
| 6.2 | 8 | 12 | | 8 | .26 | 30 | | |
| 6.4 | 8 | 16 | | 8 | .53 | 15 | | |
| 6.6 | 12 | 20 | | 12 | .53 | 22 | | |
| 6.8 | 10 | 20 | | 10 | .66 | 15 | | |
| 7 | 14 | 22 | | 14 | .53 | 26 | | |
| 7.2 | 14 | 22 | | 14 | .53 | 26 | | |
| 7.4 | 8 | 16 | | 8 | .53 | 15 | | |
| 7.6 | 10 | 18 | | 10 | .53 | 19 | | |
| 7.8 | 12 | 20 | | 12 | .53 | 22 | | |
| 8 | 18 | 32 | | 18 | .93 | 19 | | |
| 8.2 | 16 | 28 | | 16 | .8 | 20 | | |
| 8.4 | 16 | 28 | | 16 | .8 | 20 | | |
| 8.6 | 8 | 18 | | 8 | .66 | 12 | | |
| 8.8 | 10 | 26 | | 10 | 1.06 | 9 | | |
| 9 | 18 | 26 | | 18 | .53 | 34 | | |
| 9.2 | 8 | 18 | | 8 | .66 | 12 | | |

| PROFONDITA' m | P Kg/cm ² | P+L Kg/cm ² | Rp Kg/cm ² | R1 Kg/cm ² | Rp/R1 | Rt Kg | NOTE |
|------------------|-------------------------|---------------------------|--------------------------|--------------------------|-------|----------|------|
| 9.4 | 10 | 20 | 10 | .66 | 15 | | |
| 9.6 | 10 | 14 | 10 | .26 | 37 | | |
| 9.8 | 10 | 18 | 10 | .53 | 19 | | |
| 10 | 10 | 18 | 10 | .53 | 19 | | |
| 10.2 | 8 | 16 | 8 | .53 | 15 | | |
| 10.4 | 10 | 16 | 10 | .4 | 25 | | |
| 10.6 | 12 | 20 | 12 | .53 | 22 | | |
| 10.8 | 12 | 22 | 12 | .66 | 18 | | |
| 11 | 12 | 22 | 12 | .66 | 18 | | |
| 11.2 | 12 | 20 | 12 | .53 | 22 | | |
| 11.4 | 16 | 24 | 16 | .53 | 30 | | |
| 11.6 | 16 | 32 | 16 | 1.06 | 15 | | |
| 11.8 | 16 | 32 | 16 | 1.06 | 15 | | |
| 12 | 18 | 34 | 18 | 1.06 | 17 | | |
| 12.2 | 18 | 34 | 18 | 1.06 | 17 | | |
| 12.4 | 12 | 28 | 12 | 1.06 | 11 | | |
| 12.6 | 10 | 20 | 10 | .66 | 15 | | |
| 12.8 | 8 | 14 | 8 | .4 | 20 | | |
| 13 | 8 | 16 | 8 | .53 | 15 | | |
| 13.2 | 10 | 16 | 10 | .4 | 25 | | |
| 13.4 | 10 | 18 | 10 | .53 | 19 | | |
| 13.6 | 12 | 18 | 12 | .4 | 30 | | |
| 13.8 | 16 | 22 | 16 | .4 | 40 | | |
| 14 | 18 | 28 | 18 | .66 | 27 | | |
| 14.2 | 20 | 34 | 20 | .93 | 21 | | |
| 14.4 | 20 | 40 | 20 | 1.33 | 15 | | |
| 14.6 | 20 | 40 | 20 | 1.33 | 15 | | |
| 14.8 | 22 | 42 | 22 | 1.33 | 17 | | |
| 15 | 18 | 38 | 18 | 1.33 | 14 | | |

INTERGEO s.r.l. VIA A. NARDI 41100 MODENA Tel. 059/225504

Committente COOP ESTENSE S.C.A R.L.
 Lavoro NONANTOLA (MO) - ex Cantina Sociale
 Localita' NONANTOLA (MO)
 Attrezzo Paganì 20 t.

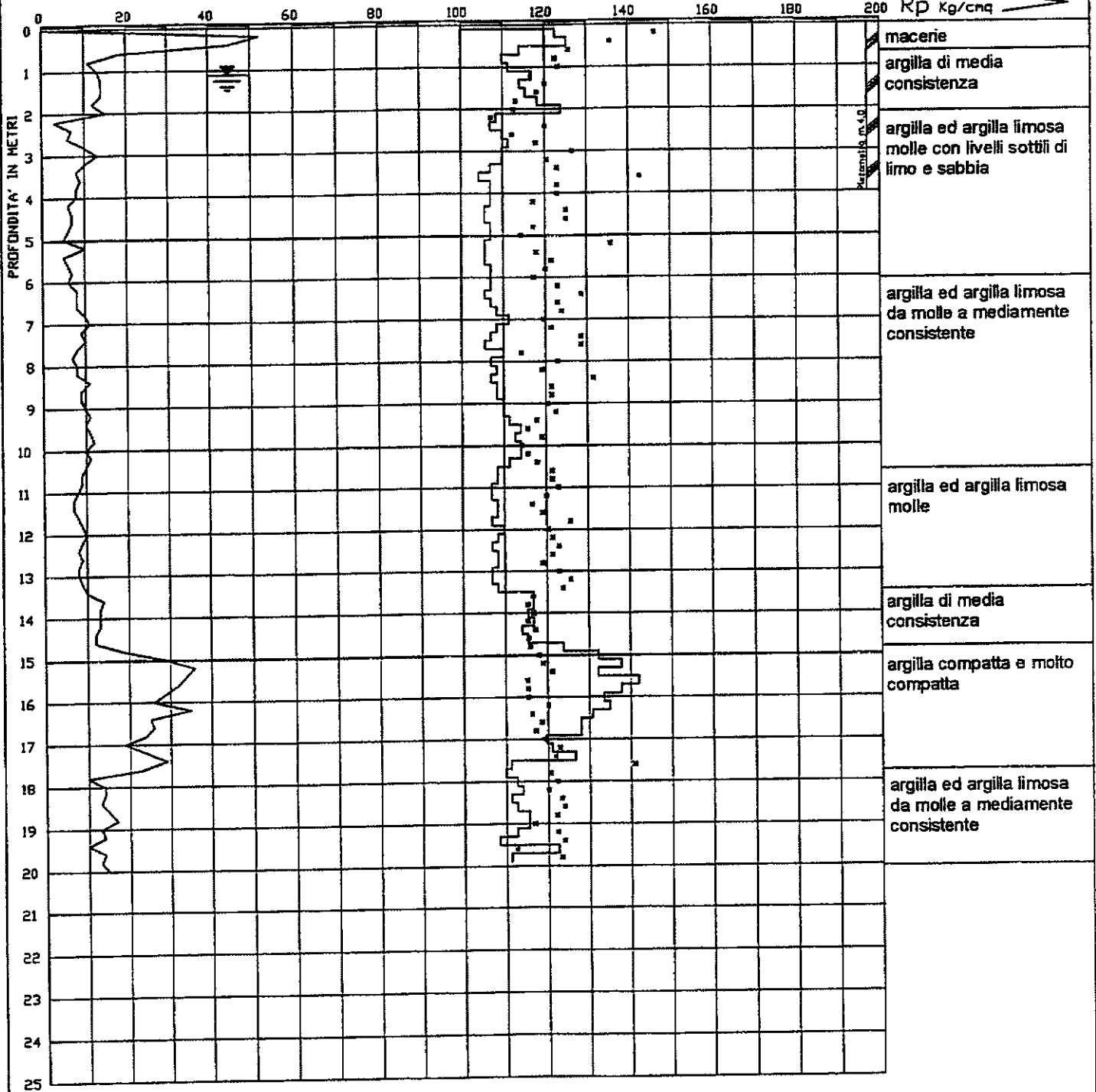
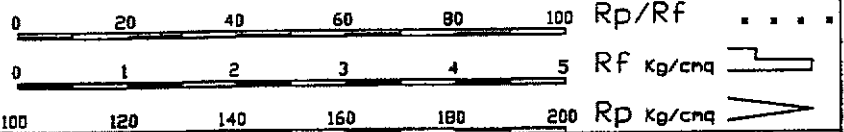
Dott. ANGELO ANGELI
 geologo
 CESENA, Via P. Genocchi, 222

Data 03/05/05

PROVA STATICA N. 1

QUOTA : p.c.

LIV. ACQUA : 1.10



Committente COOP ESTENSE S.C.A R.L.
 Lavoro NONANTOLA (MO) - ex Cantina Sociale
 Localita' NONANTOLA (MO)
 Attrezzo Pagani 20 t.

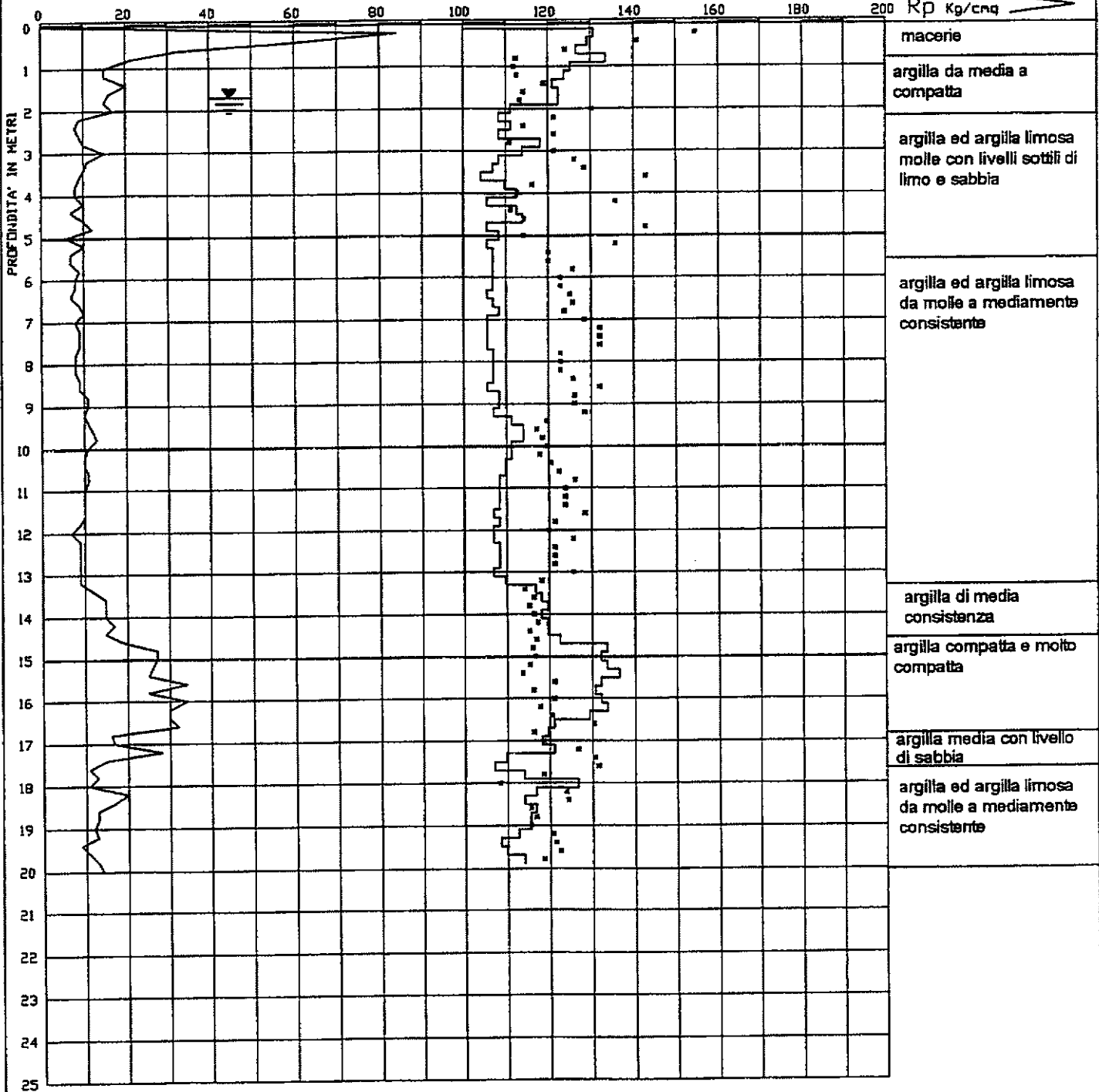
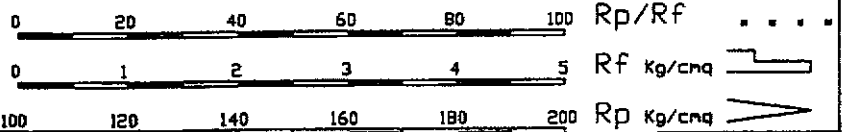
Dott. ANGELO ANGELI
 geologo
 CESENA, Via P. Genocchi, 222

Data 03/05/05

PROVA STATICA N. 2

QUOTA : p.c.

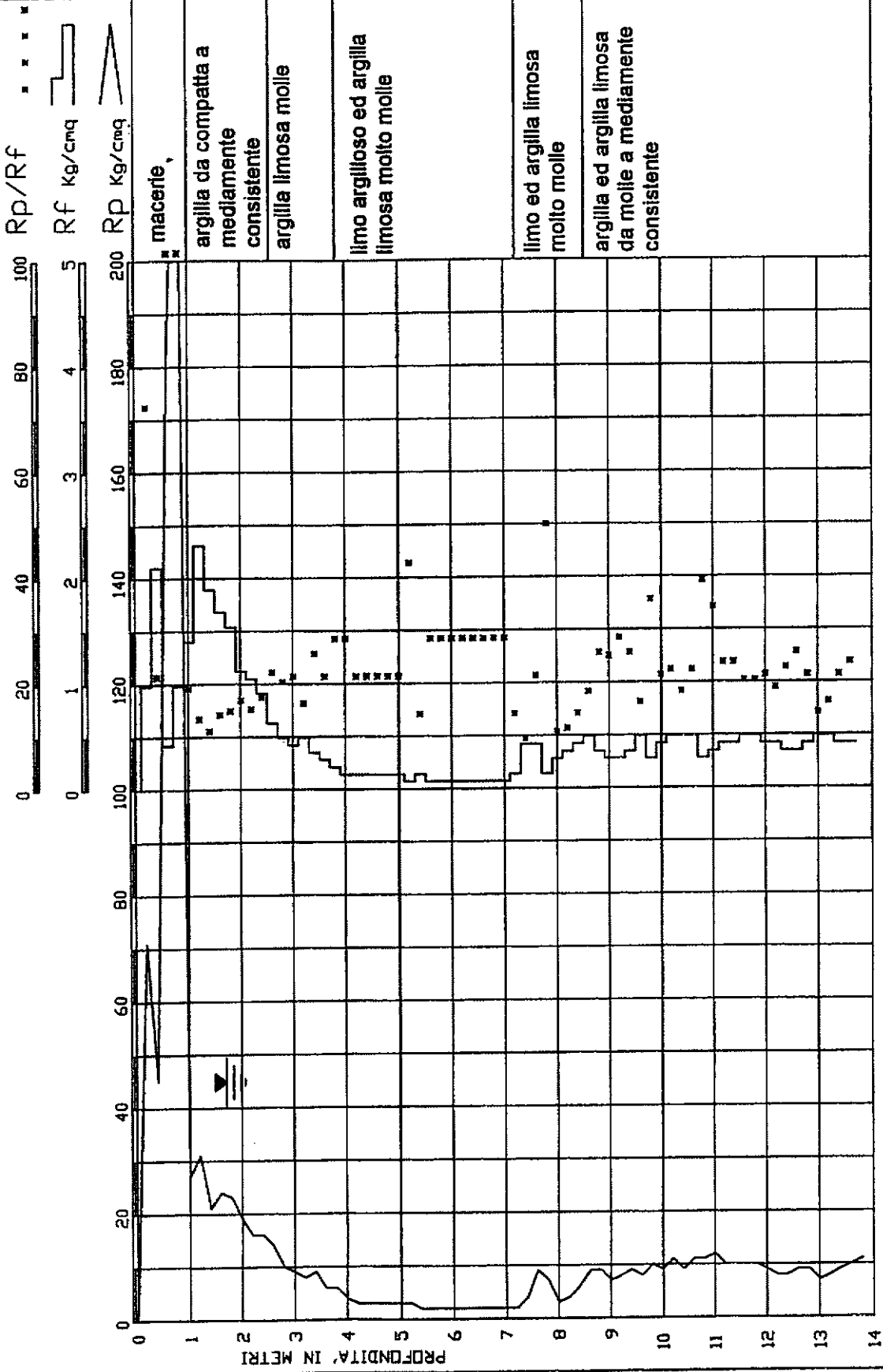
LIV. ACQUA : 1.70



Comittente COOP ESTENSE S.C.A R.L.
 Lavoro NONANTOLA (MO) - ex Cantina Sociale
 Localita' NONANTOLA
 Attrezzo Pagoni 20 t. Data 03/05/05

Dott. ANGELO ANGELI
 geologo
 CESENA, Via P. Genocchi, 222

PROVA STATICA N. 3 QUOTA : p.c. LIV. ACQUA : 1.70



Committente
Lavoro
Localita'
Attrezzatura

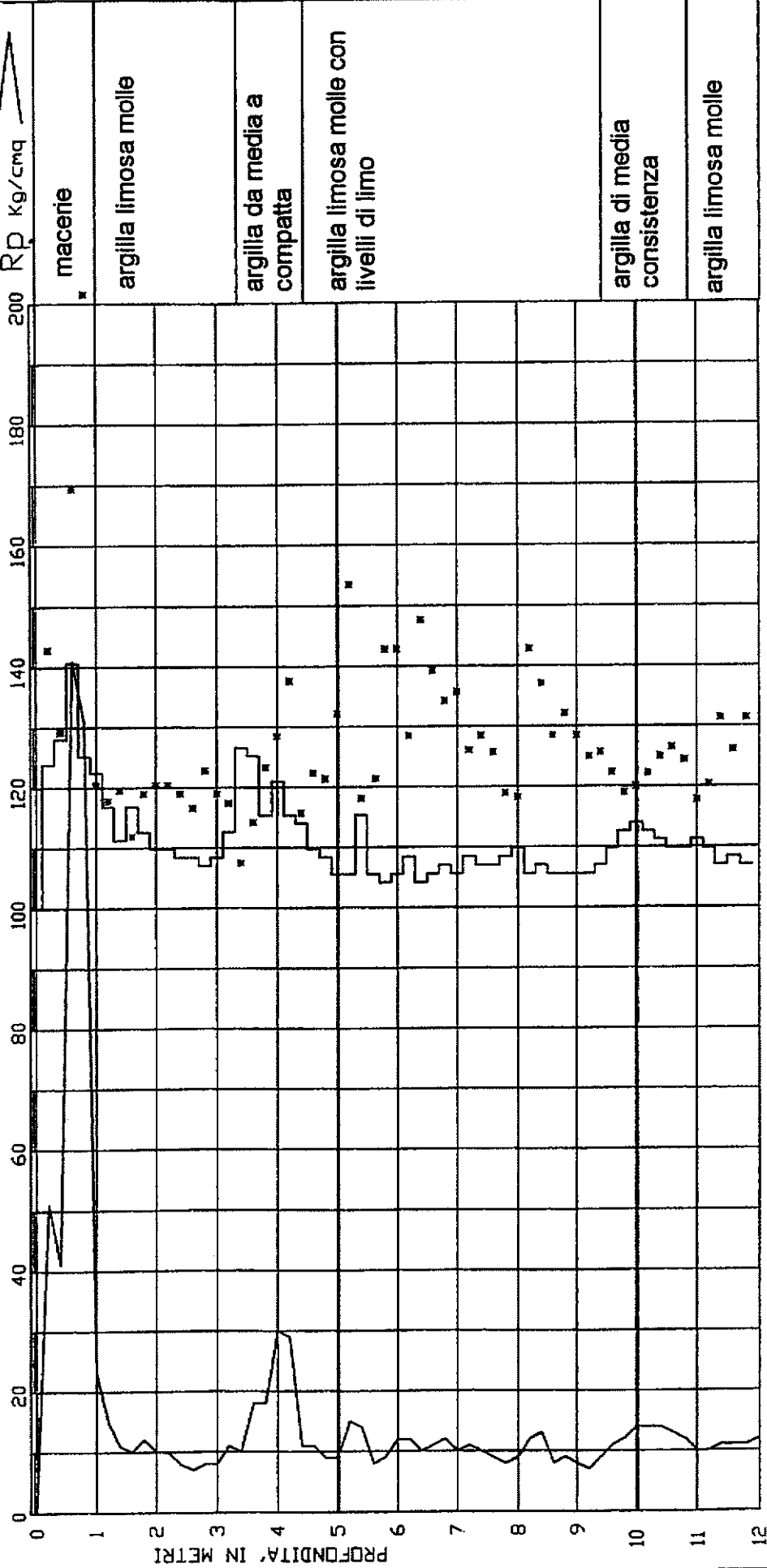
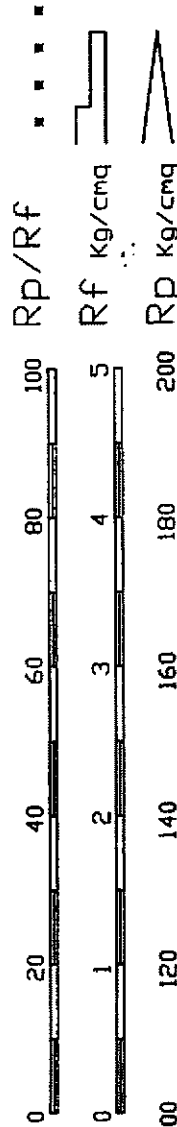
COOP ESTENSE S.C.A R.L.
NONANTOLA (MO) - ex Cantina Sociale
NONANTOLA
Pagani 20 t. Data 03/05/05

Dott. ANGELO ANGELI
geologo
CESENA, Via P. Genocchi, 222

PROVA STATICA N. 4

QUOTA : p.c.

LIV. ACQUA :



Committente **COOP ESTENSE S.C.A R.L.**
 Lavoro **NONANTOLA (MO) - ex Cantina Sociale**
 Localita' **NONANTOLA**
 Attrezzo **Pagani 20 t.**

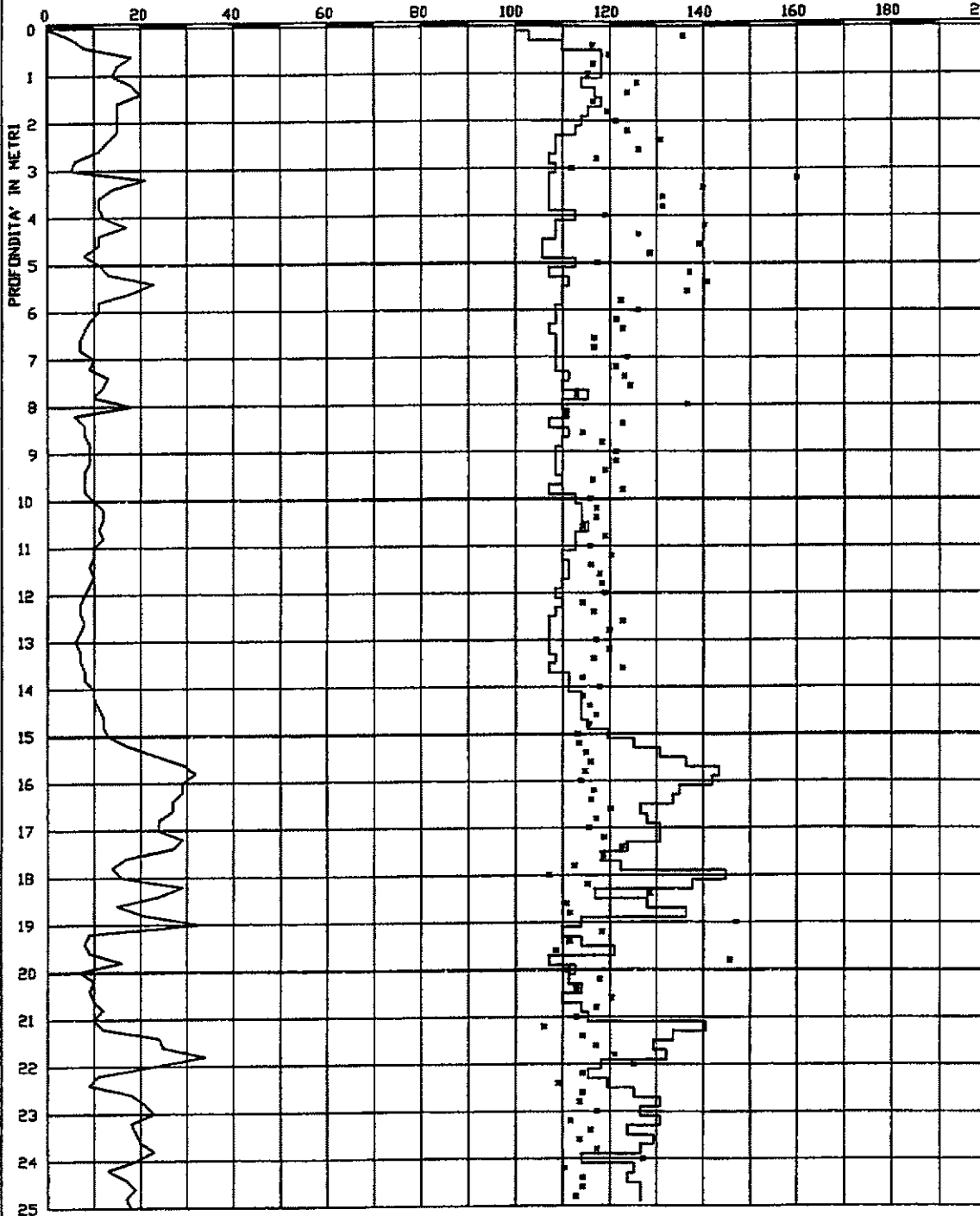
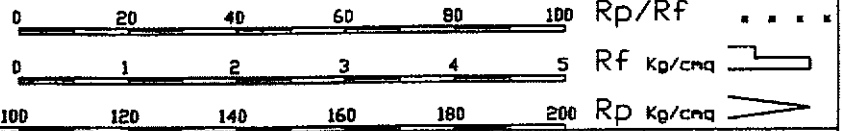
Dott. **ANGELO ANGELI**
 geologo
 CESENA, Via P. Genocchi, 222

Data **03/05/05**

PROVA STATICA N. 5

QUOTA : p.c.

LIV. ACQUA :



argilla da media a compatta
 argilla limosa molle con livelli di sabbia e limo
 argilla ed argilla limosa in prevalenza molle
 argilla da molle a media
 argilla compatta e molto compatta
 livelli alternati di sabbia limosa ed argilla
 argilla limosa molle con vene di limo e sabbia
 argilla compatta
 argilla molle
 argilla ed argilla limosa in prevalenza compatta

Committente
Lavoro
Localita'
Attrezzatura

COOP ESTENSE S.C.A R.L.
NONANTOLA (MO) - ex Cantina Sociale
NONANTOLA
Pagani 20 t.

Data 03/05/05

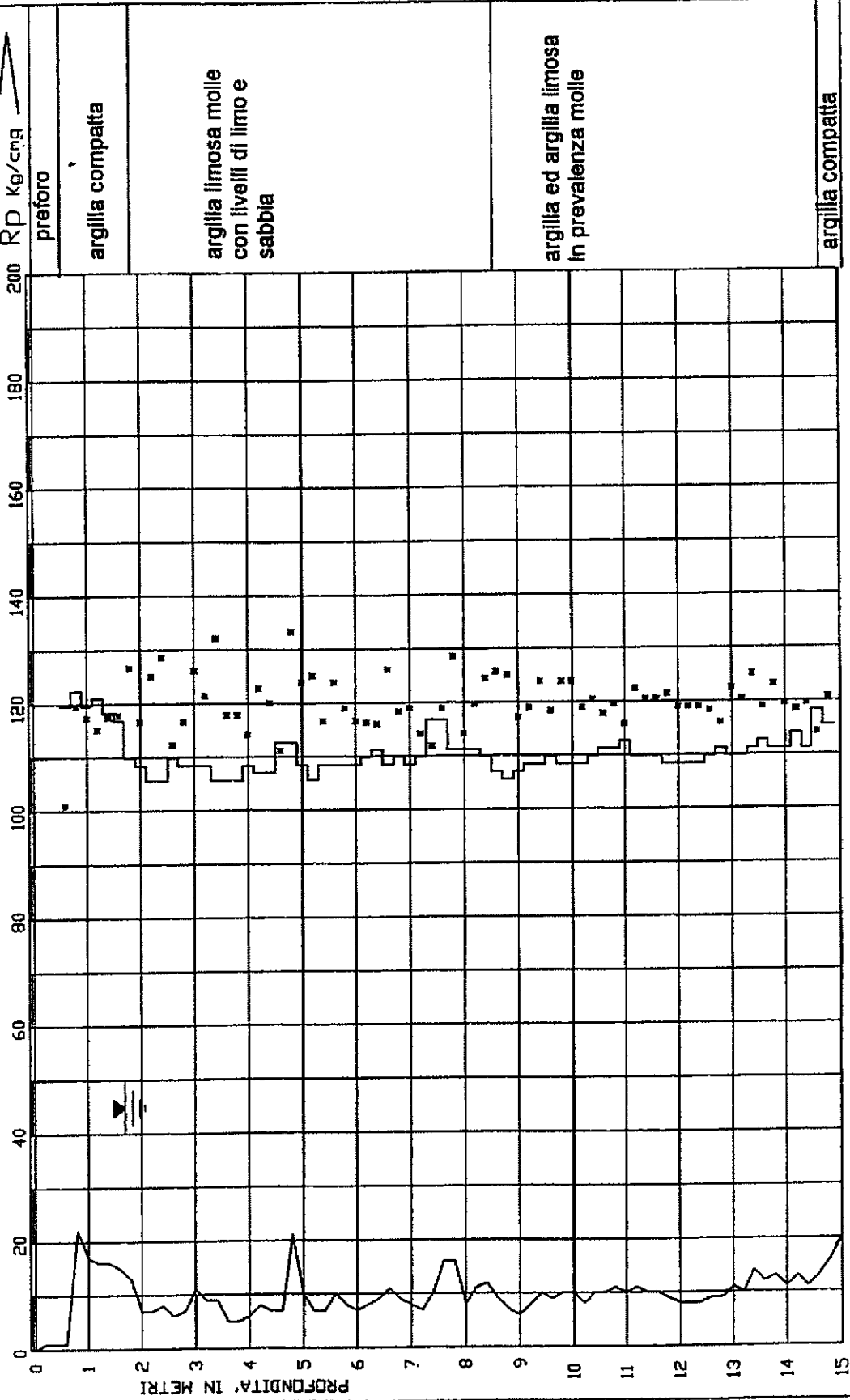
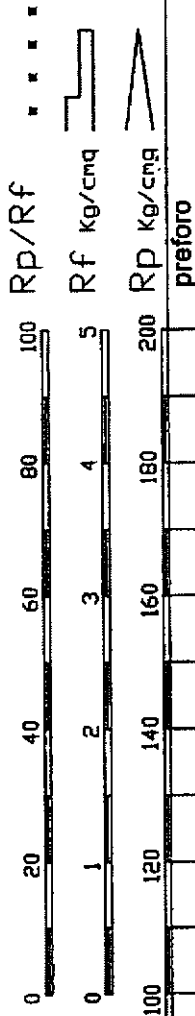
Dott. ANGELO ANGELI
geologo

CESENA, Via P. Genocchi, 222

PROVA STATICA N. 6

QUOTA : p.c.

LIV. ACQUA : 1.70



Committente COOP ESTENSE S.C.A R.L.
 Lavoro NONANTOLA (MO) - ex Cantina Sociale
 Localita' NONANTOLA (MO)
 Attrezzo Pagani 20 t.

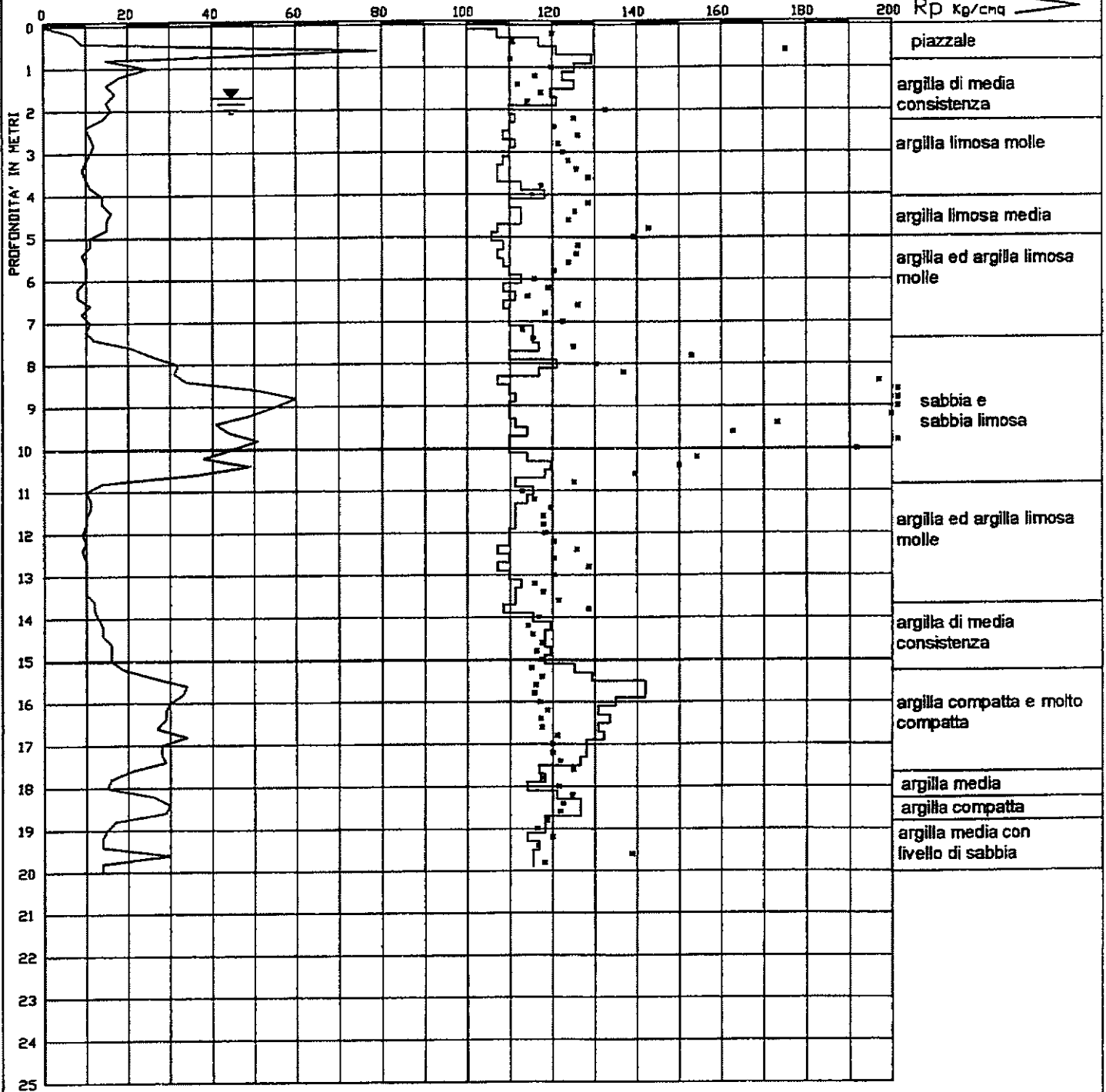
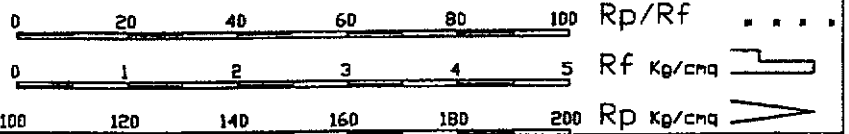
Dott. ANGELO ANGELI
 geologo
 CESENA, Via P. Genocchi, 222

Data 04/05/05

PROVA STATICA N. 7

QUOTA : p.c.

LIV. ACQUA : 1.70



Committente COOP ESTENSE S.C.A R.L.
 Lavoro NONANTOLA (MO) - ex Cantina Sociale
 Localita' NONANTOLA (MO)
 Attrezzo Pagani 20 t.

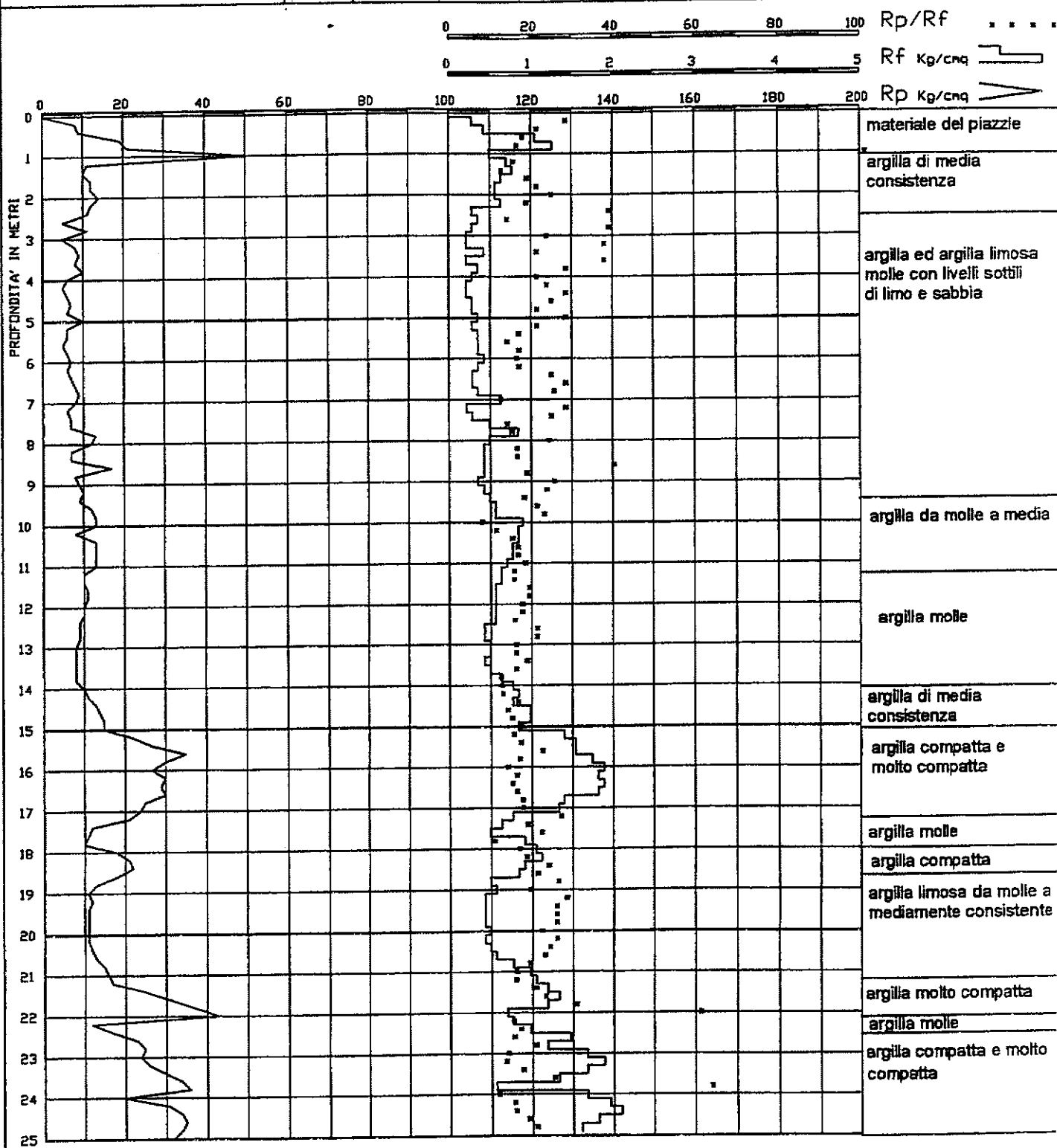
Dott. ANGELO ANGELI
 geologo
 CESENA, Via P. Genocchi, 222

Data 04/05/05

PROVA STATICA N. 8

QUOTA : p.c.

LIV. ACQUA :



Committente COOP ESTENSE S.C.A R.L.
 Lavoro NONANTOLA (MO) - ex Cantina Sociale
 Localita' NONANTOLA (MO)
 Attrezzo Pagani 20 t.

Data 04/05/05

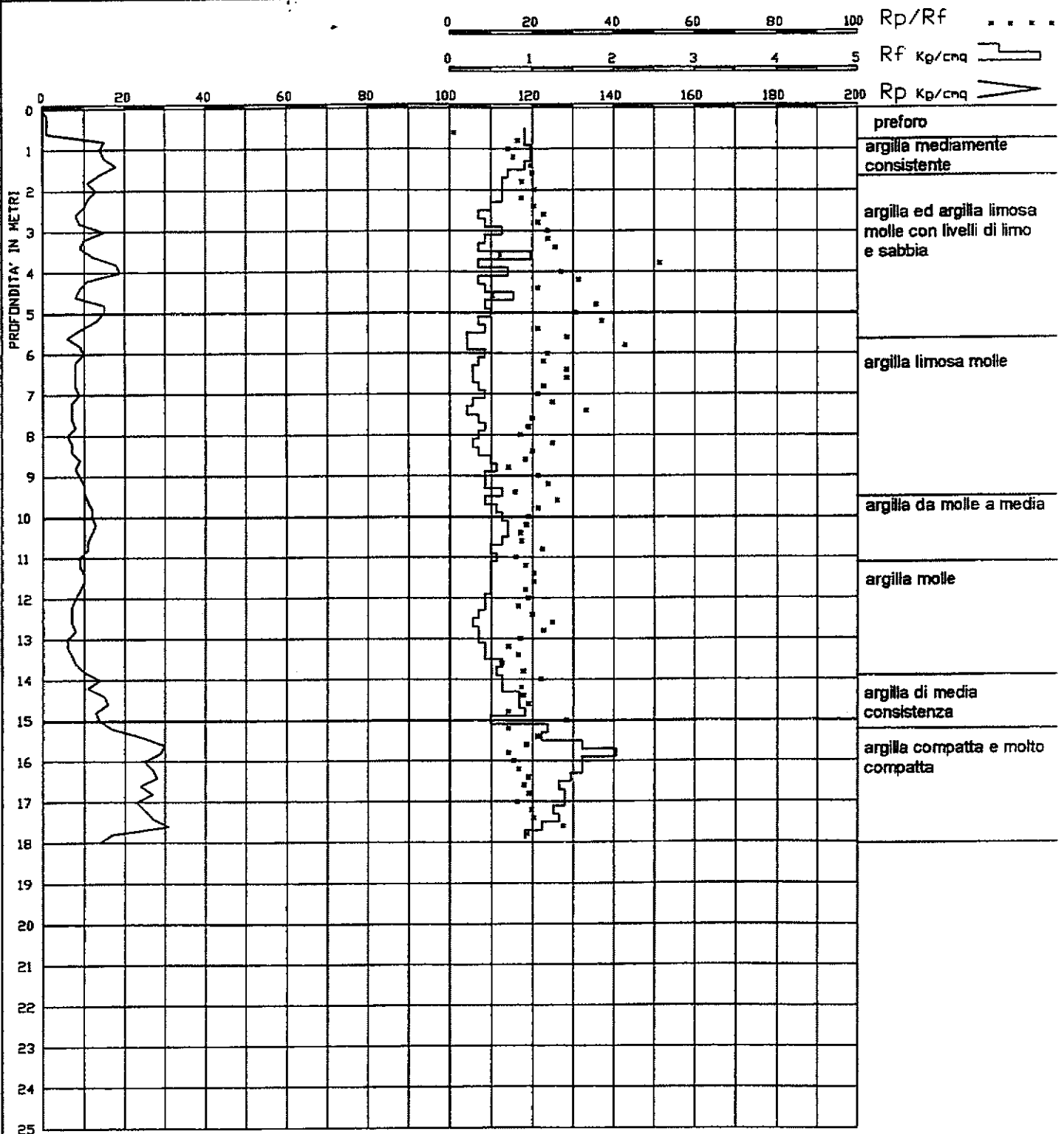
Dott. ANGELO ANGELI
geologo

CESENA, Via P. Genocchi, 222

PROVA STATICA N. 9

QUOTA : p.c.

LIV. ACQUA :



Committente COOP ESTENSE S.C.A R.L.
 Lavoro NONANTOLA (MO) - ex Cantina Sociale
 Localita' NONANTOLA (MO)
 Attrezzo Paganì 20 t.

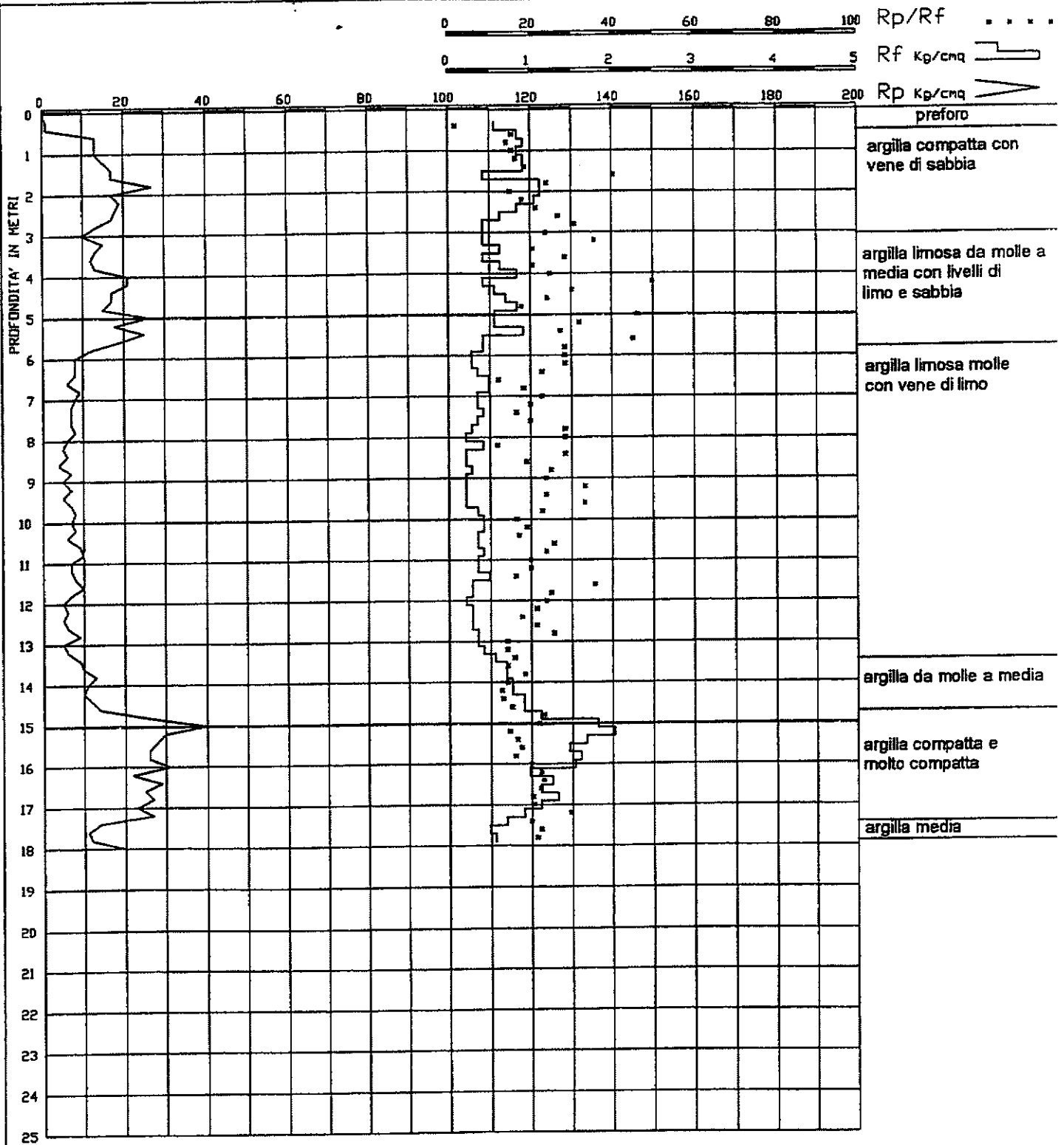
Dott. ANGELD ANGELI
 geologo
 CESENA, Via P. Genocchi, 222

Data 04/05/05

PROVA STATICA N. 10

QUOTA : p.c.

LIV. ACQUA :



Committente **COOP ESTENSE S.C.A R.L.**
 Lavoro **NONANTOLA (MO) - ex Cantina Sociale**
 Localita' **NONANTOLA (MO)**
 Attrezzo **Paganì 20 t.**

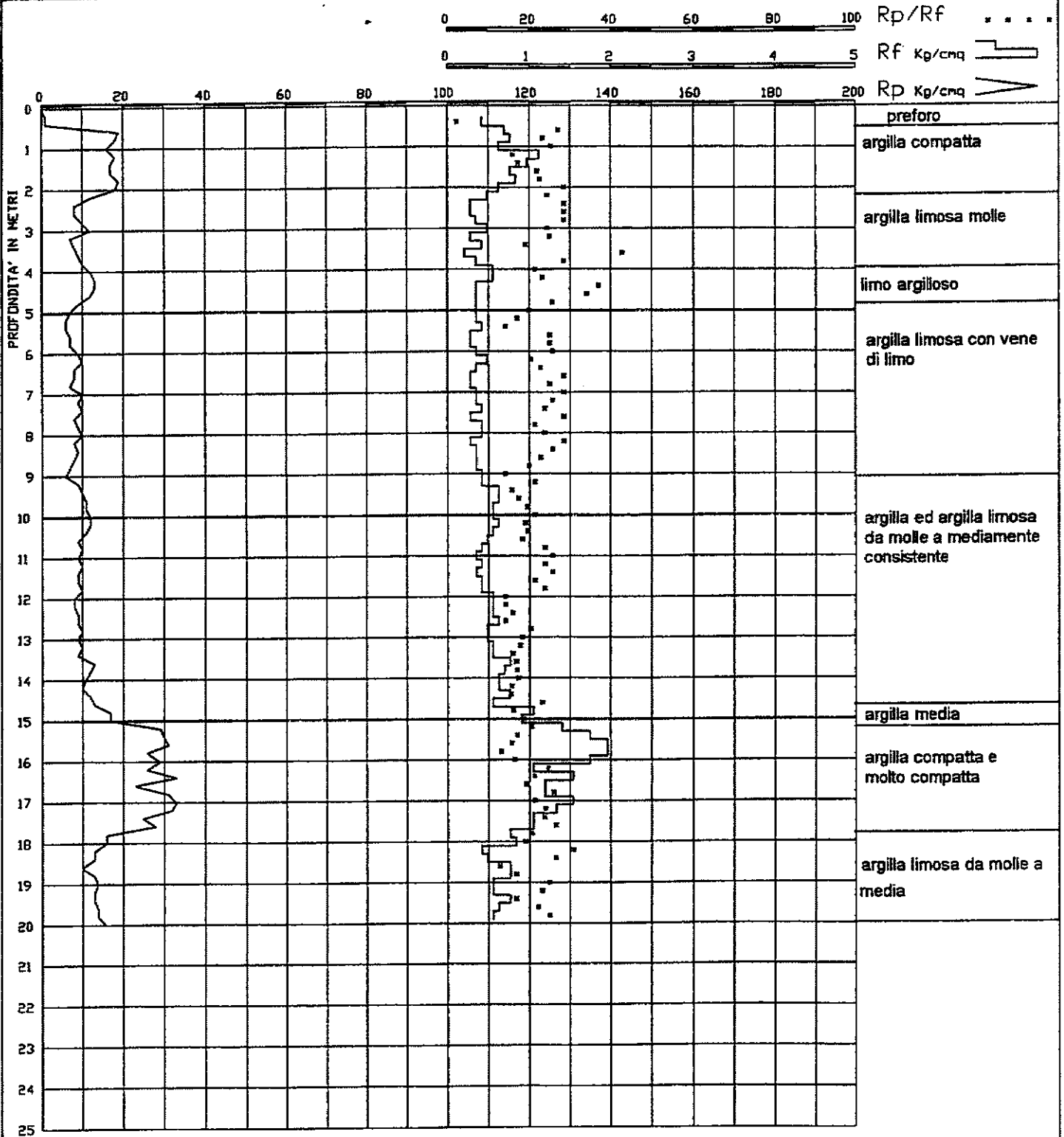
Dott. **ANGELO ANGELI**
 geologo
 CESENA, Via P. Genocchi, 222

Data **04/05/05**

PROVA STATICA N. 11

QUOTA : p.c.

LIV. ACQUA :



Committente COOP ESTENSE S.C.A R.L.
 Lavoro NONANTOLA (MO) - ex Cantina Sociale
 Localita' NONANTOLA (MO)
 Attrezzo Pagani 20 t.

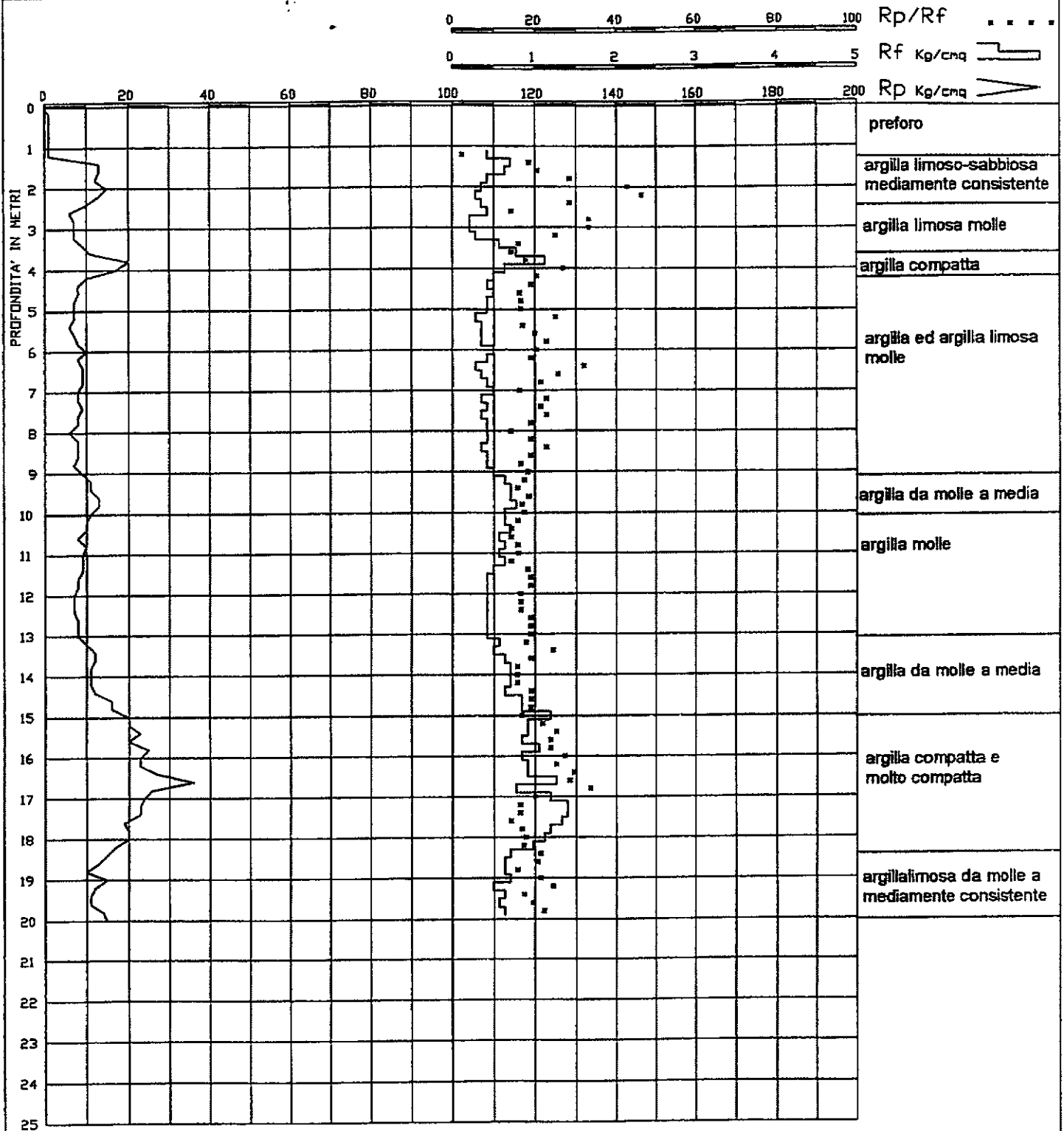
Dott. ANGELO ANGELI
 geologo
 CESENA, Via P. Genocchi, 222

Data 04/05/05

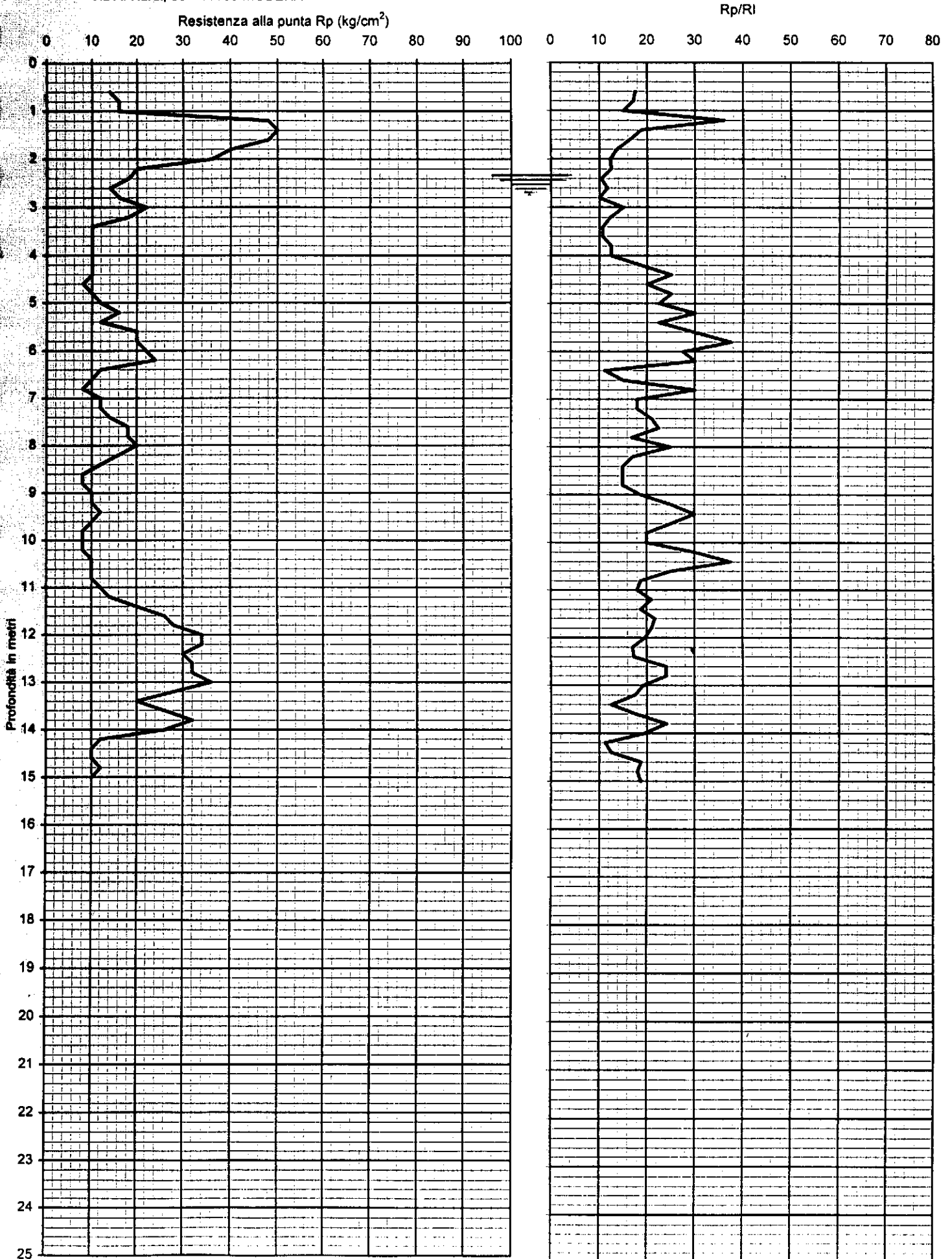
PROVA STATICA N. 12

QUOTA : p.c.

LIV. ACQUA :



Via A. Nardi, 35 - 41100 MODENA





Via A. Nardi, 35 - 41100 MODENA

Telefono 059/225504

Telefax 059/220738

PROVA PENETROMETRICA STATICA

Penetrometro Gouda

Committente : C/O GEOM. MAGNONI

Località : NONANTOLA

Prova numero : 1

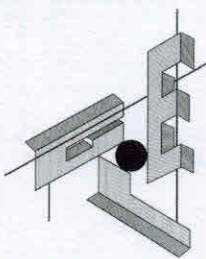
Data : 15/07/98

Operatore : DR. REBECCHI

Quota : P.C.

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 0,20 | | | | | |
| 0,40 | | | | | |
| 0,60 | 14 | 26 | 14 | 0,80 | 17,50 |
| 0,80 | 16 | 30 | 16 | 0,93 | 17,14 |
| 1,00 | 16 | 32 | 16 | 1,07 | 15,00 |
| 1,20 | 48 | 68 | 48 | 1,33 | 36,00 |
| 1,40 | 50 | 90 | 50 | 2,67 | 18,75 |
| 1,60 | 48 | 92 | 48 | 2,93 | 16,36 |
| 1,80 | 40 | 84 | 40 | 2,93 | 13,64 |
| 2,00 | 36 | 80 | 36 | 2,93 | 12,27 |
| 2,20 | 20 | 44 | 20 | 1,60 | 12,50 |
| 2,40 | 18 | 44 | 18 | 1,73 | 10,38 |
| 2,60 | 14 | 32 | 14 | 1,20 | 11,67 |
| 2,80 | 16 | 40 | 16 | 1,60 | 10,00 |
| 3,00 | 22 | 44 | 22 | 1,47 | 15,00 |
| 3,20 | 18 | 40 | 18 | 1,47 | 12,27 |
| 3,40 | 10 | 24 | 10 | 0,93 | 10,71 |
| 3,60 | 10 | 24 | 10 | 0,93 | 10,71 |
| 3,80 | 10 | 22 | 10 | 0,80 | 12,50 |
| 4,00 | 10 | 22 | 10 | 0,80 | 12,50 |
| 4,20 | 10 | 18 | 10 | 0,53 | 18,75 |
| 4,40 | 10 | 16 | 10 | 0,40 | 25,00 |
| 4,60 | 8 | 14 | 8 | 0,40 | 20,00 |
| 4,80 | 10 | 16 | 10 | 0,40 | 25,00 |
| 5,00 | 12 | 20 | 12 | 0,53 | 22,50 |
| 5,20 | 16 | 24 | 16 | 0,53 | 30,00 |
| 5,40 | 12 | 20 | 12 | 0,53 | 22,50 |
| 5,60 | 20 | 30 | 20 | 0,67 | 30,00 |
| 5,80 | 20 | 28 | 20 | 0,53 | 37,50 |
| 6,00 | 22 | 34 | 22 | 0,80 | 27,50 |
| 6,20 | 24 | 36 | 24 | 0,80 | 30,00 |
| 6,40 | 12 | 28 | 12 | 1,07 | 11,25 |
| 6,60 | 10 | 20 | 10 | 0,67 | 15,00 |
| 6,80 | 8 | 12 | 8 | 0,27 | 30,00 |
| 7,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 7,20 | 12 | 22 | 12 | 0,67 | 18,00 |
| 7,40 | 14 | 24 | 14 | 0,67 | 21,00 |
| 7,60 | 18 | 30 | 18 | 0,80 | 22,50 |
| 7,80 | 18 | 34 | 18 | 1,07 | 16,88 |
| 8,00 | 20 | 32 | 20 | 0,80 | 25,00 |
| 8,20 | 16 | 30 | 16 | 0,93 | 17,14 |
| 8,40 | 12 | 24 | 12 | 0,80 | 15,00 |
| 8,60 | 8 | 16 | 8 | 0,53 | 15,00 |
| 8,80 | 8 | 16 | 8 | 0,53 | 15,00 |
| 9,00 | 10 | 18 | 10 | 0,53 | 18,75 |
| 9,20 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,40 | 12 | 18 | 12 | 0,40 | 30,00 |
| 9,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 9,80 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,00 | 8 | 14 | 8 | 0,40 | 20,00 |
| 10,20 | 8 | 12 | 8 | 0,27 | 30,00 |
| 10,40 | 10 | 14 | 10 | 0,27 | 37,50 |
| 10,60 | 10 | 16 | 10 | 0,40 | 25,00 |
| 10,80 | 10 | 18 | 10 | 0,53 | 18,75 |
| 11,00 | 12 | 22 | 12 | 0,67 | 18,00 |
| 11,20 | 14 | 24 | 14 | 0,67 | 21,00 |
| 11,40 | 20 | 36 | 20 | 1,07 | 18,75 |
| 11,60 | 28 | 44 | 28 | 1,20 | 21,67 |
| 11,80 | 28 | 48 | 28 | 1,33 | 21,00 |
| 12,00 | 34 | 60 | 34 | 1,73 | 19,62 |
| 12,20 | 34 | 64 | 34 | 2,00 | 17,00 |
| 12,40 | 30 | 56 | 30 | 1,73 | 17,31 |
| 12,60 | 32 | 52 | 32 | 1,33 | 24,00 |
| 12,80 | 32 | 52 | 32 | 1,33 | 24,00 |
| 13,00 | 36 | 64 | 36 | 1,87 | 19,29 |
| 13,20 | 28 | 52 | 28 | 1,60 | 17,50 |
| 13,40 | 20 | 44 | 20 | 1,60 | 12,50 |
| 13,60 | 26 | 48 | 26 | 1,47 | 17,73 |
| 13,80 | 32 | 52 | 32 | 1,33 | 24,00 |
| 14,00 | 26 | 46 | 26 | 1,33 | 19,50 |
| 14,20 | 12 | 28 | 12 | 1,07 | 11,25 |
| 14,40 | 10 | 22 | 10 | 0,80 | 12,50 |
| 14,60 | 10 | 18 | 10 | 0,53 | 18,75 |
| 14,80 | 12 | 22 | 12 | 0,67 | 18,00 |
| 15,00 | 10 | 18 | 10 | 0,53 | 18,75 |

| Prof. (m) | P (kg/cm ²) | P + L (kg/cm ²) | Rp (kg/cm ²) | RI (kg/cm ²) | Rp/RI [-] |
|--------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------|
| 15,20 | | | | | |
| 15,40 | | | | | |
| 15,60 | | | | | |
| 15,80 | | | | | |
| 16,00 | | | | | |
| 16,20 | | | | | |
| 16,40 | | | | | |
| 16,60 | | | | | |
| 16,80 | | | | | |
| 17,00 | | | | | |
| 17,20 | | | | | |
| 17,40 | | | | | |
| 17,60 | | | | | |
| 17,80 | | | | | |
| 18,00 | | | | | |
| 18,20 | | | | | |
| 18,40 | | | | | |
| 18,60 | | | | | |
| 18,80 | | | | | |
| 19,00 | | | | | |
| 19,20 | | | | | |
| 19,40 | | | | | |
| 19,60 | | | | | |
| 19,80 | | | | | |
| 20,00 | | | | | |
| 20,20 | | | | | |
| 20,40 | | | | | |
| 20,60 | | | | | |
| 20,80 | | | | | |
| 21,00 | | | | | |
| 21,20 | | | | | |
| 21,40 | | | | | |
| 21,60 | | | | | |
| 21,80 | | | | | |
| 22,00 | | | | | |
| 22,20 | | | | | |
| 22,40 | | | | | |
| 22,60 | | | | | |
| 22,80 | | | | | |
| 23,00 | | | | | |
| 23,20 | | | | | |
| 23,40 | | | | | |
| 23,60 | | | | | |
| 23,80 | | | | | |
| 24,00 | | | | | |
| 24,20 | | | | | |
| 24,40 | | | | | |
| 24,60 | | | | | |
| 24,80 | | | | | |
| 25,00 | | | | | |
| 25,20 | | | | | |
| 25,40 | | | | | |
| 25,60 | | | | | |
| 25,80 | | | | | |
| 26,00 | | | | | |
| 26,20 | | | | | |
| 26,40 | | | | | |
| 26,60 | | | | | |
| 26,80 | | | | | |
| 27,00 | | | | | |
| 27,20 | | | | | |
| 27,40 | | | | | |
| 27,60 | | | | | |
| 27,80 | | | | | |
| 28,00 | | | | | |
| 28,20 | | | | | |
| 28,40 | | | | | |
| 28,60 | | | | | |
| 28,80 | | | | | |
| 29,00 | | | | | |
| 29,20 | | | | | |
| 29,40 | | | | | |
| 29,60 | | | | | |
| 29,80 | | | | | |
| 30,00 | | | | | |



LABORATORIO TECNOLOGICO EMILIANO S.R.L.

Laboratorio Autorizzato ai sensi dell'art.59 del DPR n. 380/2001

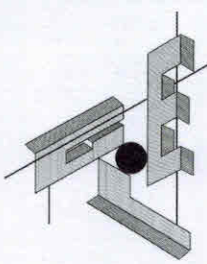
LABORATORIO E SEDE AMMINISTRATIVA:
VIA DEI CARPENTIERI, 44 - 41122 MODENA
TEL. 059.285521 - FAX 059.285529
modena@laboratoriemiliani.com
www.laboratoriemiliani.com

| PROVA PENETROMETRICA STATICA MECCANICA | | | | | | | | CPT | | 1 | | | | | |
|---|-----|-----|----|--------------------|--------------------|--------------------------|------|------------------------|----|----|----|--------------------|--------------------|-----|------|
| LETTURE CAMPAGNA E VALORI TRASFORMATI | | | | | | | | riferimento | | | | | | | |
| Cantiere: VIA VALLUZZA, 14 - MAGAZZINO COMUNALE | | | | | | U.M.: kg/cm ² | | Data exec.: 30/08/2012 | | | | | | | |
| Località: NONANTOLA (MO) | | | | | | Elaborato: | | Faida: -1,70 m | | | | | | | |
| H | L1 | L2 | Lt | qc | fs | F | Rf | H | L1 | L2 | Lt | qc | fs | F | Rf |
| m | - | - | - | kg/cm ² | kg/cm ² | - | % | m | - | - | - | kg/cm ² | kg/cm ² | - | % |
| 0,20 | 0 | 0 | 0 | 50,0 | 2,27 | 0 | | 15,20 | 17 | 39 | | 17,0 | 1,73 | 10 | 10,2 |
| 0,40 | 50 | 84 | | 50,0 | 0,87 | 57 | 1,7 | 15,40 | 18 | 44 | | 18,0 | 1,00 | 18 | 5,6 |
| 0,60 | 117 | 130 | | 117,0 | 1,93 | 61 | 1,6 | 15,60 | 16 | 31 | | 16,0 | 1,47 | 11 | 9,2 |
| 0,80 | 25 | 54 | | 25,0 | 1,87 | 13 | 7,5 | 15,80 | 18 | 40 | | 18,0 | 0,93 | 19 | 5,2 |
| 1,00 | 54 | 82 | | 54,0 | 2,73 | 20 | 5,1 | 16,00 | 59 | 83 | | 69,0 | 1,40 | 49 | 2,0 |
| 1,20 | 54 | 95 | | 54,0 | 4,13 | 13 | 7,6 | 16,20 | 69 | 90 | | 69,0 | 2,47 | 28 | 3,6 |
| 1,40 | 67 | 129 | | 67,0 | 4,00 | 17 | 6,0 | 16,40 | 59 | 87 | | 80,0 | 0,53 | 94 | 1,1 |
| 1,60 | 95 | 155 | | 95,0 | 4,00 | 24 | 4,2 | 16,60 | 65 | 73 | | 65,0 | 1,00 | 65 | 1,5 |
| 1,80 | 76 | 136 | | 76,0 | 2,20 | 35 | 2,9 | 16,80 | 39 | 54 | | 39,0 | 1,33 | 206 | 0,5 |
| 2,00 | 33 | 66 | | 33,0 | 2,07 | 16 | 6,3 | 17,00 | 68 | 85 | | 68,0 | 0,33 | 73 | 1,4 |
| 2,20 | 16 | 47 | | 16,0 | 1,20 | 13 | 7,5 | 17,20 | 68 | 73 | | 68,0 | 0,53 | 73 | 1,4 |
| 2,40 | 14 | 32 | | 14,0 | 1,07 | 13 | 7,6 | 17,40 | 55 | 69 | | 55,0 | 0,67 | 62 | 1,2 |
| 2,60 | 10 | 26 | | 10,0 | 0,80 | 13 | 8,0 | 17,60 | 11 | 21 | | 11,0 | 1,00 | 11 | 9,1 |
| 2,80 | 10 | 22 | | 10,0 | 0,93 | 11 | 9,3 | 17,80 | 21 | 36 | | 21,0 | 0,87 | 24 | 4,1 |
| 3,00 | 9 | 23 | | 9,0 | 0,80 | 11 | 8,9 | 18,00 | 12 | 25 | | 12,0 | 0,80 | 15 | 6,7 |
| 3,20 | 9 | 21 | | 9,0 | 0,87 | 10 | 9,7 | 18,20 | 10 | 22 | | 10,0 | 0,73 | 14 | 7,3 |
| 3,40 | 9 | 22 | | 9,0 | 0,87 | 10 | 9,7 | 18,40 | 10 | 21 | | 10,0 | 0,60 | 17 | 6,0 |
| 3,60 | 11 | 24 | | 11,0 | 0,87 | 13 | 7,9 | 18,60 | 11 | 20 | | 11,0 | 0,67 | 16 | 5,1 |
| 3,80 | 13 | 26 | | 13,0 | 1,13 | 12 | 9,7 | 18,80 | 11 | 21 | | 11,0 | 0,60 | 18 | 5,5 |
| 4,00 | 14 | 31 | | 14,0 | 1,07 | 13 | 7,5 | 19,00 | 11 | 20 | | 11,0 | 0,73 | 15 | 6,6 |
| 4,20 | 7 | 23 | | 7,0 | 0,73 | 10 | 10,4 | 19,20 | 10 | 21 | | 10,0 | 0,73 | 14 | 7,3 |
| 4,40 | 9 | 20 | | 9,0 | 1,00 | 9 | 11,1 | 19,40 | 13 | 24 | | 13,0 | 1,33 | 10 | 10,2 |
| 4,60 | 11 | 26 | | 11,0 | 1,00 | 11 | 9,1 | 19,60 | 18 | 38 | | 18,0 | 1,40 | 13 | 7,8 |
| 4,80 | 9 | 24 | | 9,0 | 0,80 | 11 | 8,9 | 19,80 | 28 | 49 | | 28,0 | 1,47 | 19 | 5,3 |
| 5,00 | 9 | 21 | | 9,0 | 0,73 | 12 | 8,1 | 20,00 | 25 | 47 | | 25,0 | | | |
| 5,20 | 9 | 19 | | 9,0 | 0,80 | 10 | 10,0 | | | | | | | | |
| 5,40 | 9 | 21 | | 9,0 | 0,73 | 12 | 8,1 | | | | | | | | |
| 5,60 | 9 | 20 | | 9,0 | 0,80 | 11 | 8,9 | | | | | | | | |
| 5,80 | 12 | 34 | | 12,0 | 0,67 | 18 | 5,6 | | | | | | | | |
| 6,00 | 13 | 33 | | 13,0 | 0,73 | 18 | 5,6 | | | | | | | | |
| 6,20 | 14 | 33 | | 14,0 | 0,80 | 18 | 5,7 | | | | | | | | |
| 6,40 | 12 | 34 | | 12,0 | 0,80 | 18 | 5,7 | | | | | | | | |
| 6,60 | 9 | 21 | | 9,0 | 0,87 | 10 | 9,7 | | | | | | | | |
| 6,80 | 10 | 23 | | 10,0 | 0,87 | 11 | 8,7 | | | | | | | | |
| 7,00 | 11 | 24 | | 11,0 | 0,93 | 12 | 8,5 | | | | | | | | |
| 7,20 | 14 | 28 | | 14,0 | 0,67 | 21 | 4,8 | | | | | | | | |
| 7,40 | 9 | 19 | | 9,0 | 0,60 | 15 | 6,7 | | | | | | | | |
| 7,60 | 11 | 20 | | 11,0 | 0,53 | 21 | 4,8 | | | | | | | | |
| 7,80 | 12 | 20 | | 12,0 | 0,73 | 16 | 6,1 | | | | | | | | |
| 8,00 | 10 | 21 | | 10,0 | 0,73 | 14 | 7,3 | | | | | | | | |
| 8,20 | 10 | 21 | | 10,0 | 0,67 | 15 | 6,7 | | | | | | | | |
| 8,40 | 11 | 21 | | 11,0 | 0,73 | 15 | 5,6 | | | | | | | | |
| 8,60 | 11 | 22 | | 11,0 | 0,67 | 16 | 6,1 | | | | | | | | |
| 8,80 | 12 | 22 | | 12,0 | 0,73 | 16 | 6,1 | | | | | | | | |
| 9,00 | 9 | 20 | | 9,0 | 0,67 | 13 | 7,4 | | | | | | | | |
| 9,20 | 10 | 20 | | 10,0 | 0,80 | 13 | 8,0 | | | | | | | | |
| 9,40 | 14 | 26 | | 14,0 | 1,07 | 13 | 7,6 | | | | | | | | |
| 9,60 | 16 | 32 | | 16,0 | 1,20 | 13 | 7,5 | | | | | | | | |
| 9,80 | 13 | 31 | | 13,0 | 1,20 | 11 | 9,2 | | | | | | | | |
| 10,00 | 15 | 33 | | 15,0 | 1,27 | 12 | 8,5 | | | | | | | | |
| 10,20 | 17 | 36 | | 17,0 | 1,40 | 12 | 8,2 | | | | | | | | |
| 10,40 | 18 | 39 | | 18,0 | 1,40 | 13 | 7,8 | | | | | | | | |
| 10,60 | 17 | 38 | | 17,0 | 1,53 | 11 | 9,0 | | | | | | | | |
| 10,80 | 19 | 42 | | 19,0 | 1,47 | 13 | 7,7 | | | | | | | | |
| 11,00 | 17 | 39 | | 17,0 | 1,13 | 15 | 6,5 | | | | | | | | |
| 11,20 | 15 | 32 | | 15,0 | 0,73 | 21 | 4,9 | | | | | | | | |
| 11,40 | 16 | 27 | | 16,0 | 0,93 | 17 | 5,8 | | | | | | | | |
| 11,60 | 10 | 24 | | 10,0 | 0,80 | 13 | 8,0 | | | | | | | | |
| 11,80 | 12 | 24 | | 12,0 | 0,80 | 15 | 6,7 | | | | | | | | |
| 12,00 | 11 | 23 | | 11,0 | 0,87 | 13 | 7,9 | | | | | | | | |
| 12,20 | 12 | 25 | | 12,0 | 0,93 | 13 | 7,8 | | | | | | | | |
| 12,40 | 13 | 27 | | 13,0 | 1,20 | 11 | 9,2 | | | | | | | | |
| 12,60 | 16 | 34 | | 16,0 | 1,27 | 13 | 7,9 | | | | | | | | |
| 12,80 | 17 | 35 | | 17,0 | 1,80 | 9 | 10,6 | | | | | | | | |
| 13,00 | 17 | 44 | | 17,0 | 1,47 | 12 | 8,5 | | | | | | | | |
| 13,20 | 15 | 37 | | 15,0 | 1,20 | 13 | 8,0 | | | | | | | | |
| 13,40 | 18 | 36 | | 18,0 | 1,53 | 12 | 8,5 | | | | | | | | |
| 13,60 | 20 | 43 | | 20,0 | 1,60 | 13 | 8,0 | | | | | | | | |
| 13,80 | 23 | 47 | | 23,0 | 1,40 | 16 | 6,1 | | | | | | | | |
| 14,00 | 22 | 43 | | 22,0 | 2,13 | 10 | 9,7 | | | | | | | | |
| 14,20 | 25 | 57 | | 25,0 | 2,33 | 11 | 9,3 | | | | | | | | |
| 14,40 | 27 | 62 | | 27,0 | 2,20 | 12 | 8,1 | | | | | | | | |
| 14,60 | 26 | 59 | | 26,0 | 1,47 | 18 | 5,7 | | | | | | | | |
| 14,80 | 22 | 44 | | 22,0 | 1,53 | 14 | 7,0 | | | | | | | | |
| 15,00 | 22 | 45 | | 22,0 | 1,47 | 15 | 6,7 | | | | | | | | |

H = profondità
L1 = prima lettura (punta)
L2 = seconda lettura (punta + laterale)
Lt = terza lettura (totale)
CT = 10,00 costante di trasformazione

qc = resistenza di punta
fs = resistenza laterale calcolata
0,20 m sopra quota qc
F = rapporto Begemann (qc / fs)
Rf = rapporto Schmertmann (fs / qc) * 100

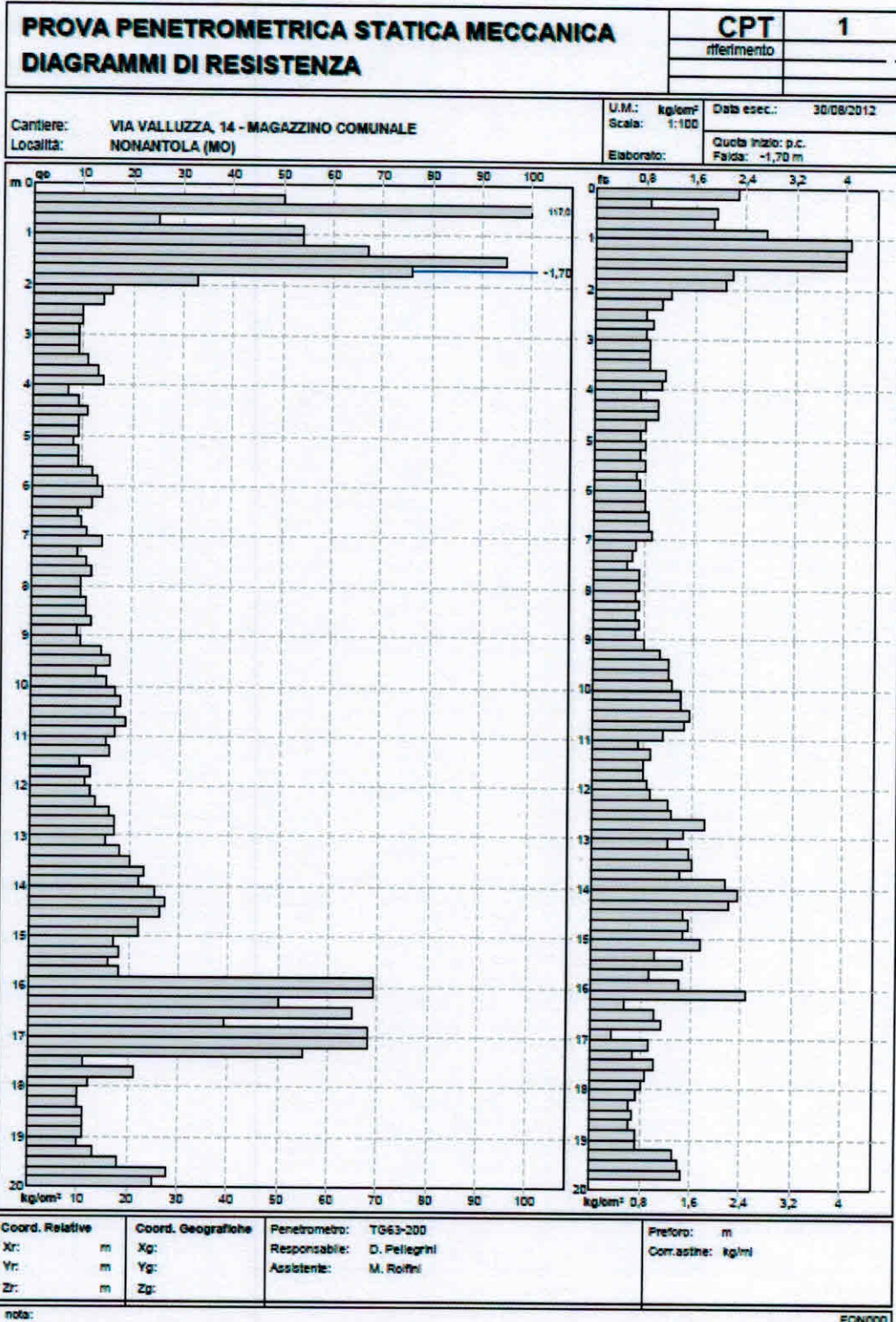
LA DIREZIONE
(Dott. Ing. Michele Cela)

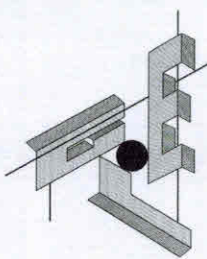


LABORATORIO TECNOLOGICO EMILIANO S.R.L.

Laboratorio Autorizzato ai sensi dell'art.59 del DPR n. 380/2001

LABORATORIO E SEDE AMMINISTRATIVA:
 VIA DEI CARPENTIERI, 44 - 41122 MODENA
 TEL. 059.285521 - FAX 059.285529
 modena@laboratoriemiliani.com
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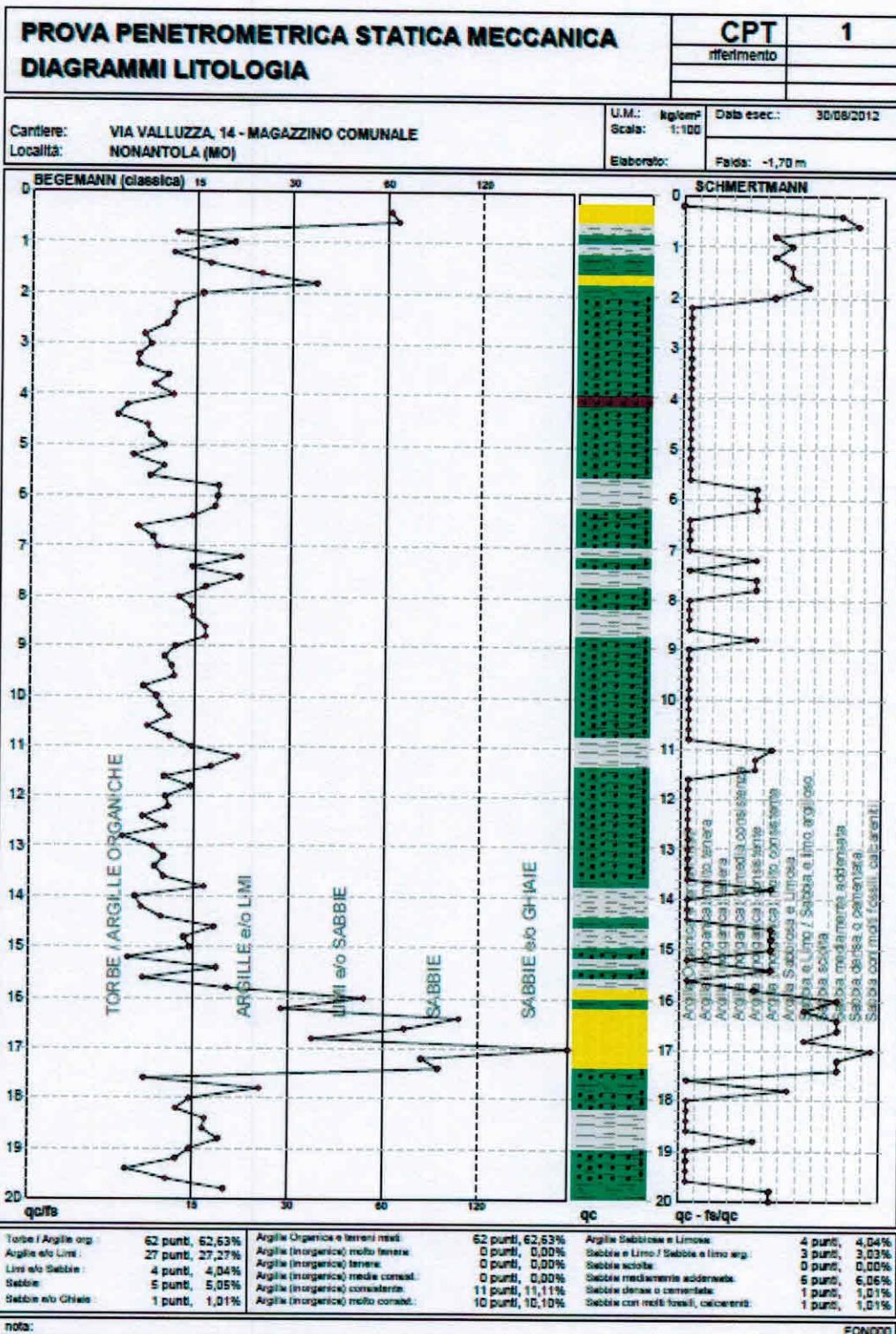


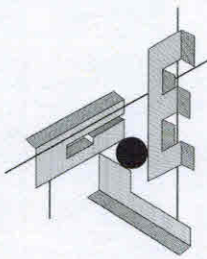


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LABORATORIO TECNOLOGICO EMILIANO S.R.L.

Laboratorio Autorizzato ai sensi dell'art.59 del DPR n. 380/2001

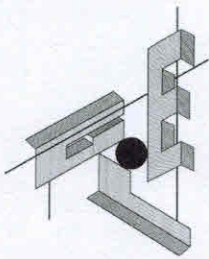
LABORATORIO E SEDE AMMINISTRATIVA:
 VIA DEI CARPENTIERI, 44 - 41122 MODENA
 TEL. 059.285521 - FAX 059.285529
 modena@laboratoriemiliani.com
 www.laboratoriemiliani.com

| PROVA PENETROMETRICA STATICA MECCANICA | | | | | | | | CPT | | 2 | | | | | |
|---|-----|-----|----|--------------------|--------------------|--------------------------|-----|------------------------|----|----|----|--------------------|--------------------|----|------|
| LETTURE CAMPAGNA E VALORI TRASFORMATI | | | | | | | | riferimento | | | | | | | |
| Cantiere: VIA VALLUZZA, 14 - MAGAZZINO COMUNALE | | | | | | U.M.: kg/cm ² | | Data exec.: 30/08/2012 | | | | | | | |
| Località: NONANTOLA (MO) | | | | | | Elaborato: | | Falda: -1,80 m | | | | | | | |
| H | L1 | L2 | Lt | qc | fs | F | Rf | H | L1 | L2 | Lt | qc | fs | F | Rf |
| m | - | - | - | kg/cm ² | kg/cm ² | - | % | m | - | - | - | kg/cm ² | kg/cm ² | - | % |
| 0,20 | 0 | 0 | - | 0,0 | 2,07 | 0 | - | 15,20 | 26 | 45 | - | 26,0 | 1,60 | 16 | 6,2 |
| 0,40 | 122 | 153 | - | 122,0 | 1,07 | 114 | 0,9 | 15,40 | 22 | 46 | - | 22,0 | 1,73 | 13 | 7,9 |
| 0,60 | 195 | 211 | - | 195,0 | 4,00 | 49 | 2,1 | 15,60 | 24 | 50 | - | 22,0 | 1,53 | 16 | 6,4 |
| 0,80 | 93 | 153 | - | 93,0 | 3,67 | 25 | 3,9 | 15,80 | 22 | 45 | - | 22,0 | 1,60 | 14 | 7,3 |
| 1,00 | 21 | 75 | - | 21,0 | 1,07 | 20 | 5,1 | 16,00 | 23 | 47 | - | 23,0 | 1,40 | 16 | 6,1 |
| 1,20 | 19 | 35 | - | 19,0 | 0,93 | 20 | 4,9 | 16,20 | 19 | 40 | - | 19,0 | 1,47 | 13 | 7,7 |
| 1,40 | 19 | 33 | - | 19,0 | 0,87 | 22 | 4,6 | 16,40 | 11 | 33 | - | 11,0 | 0,67 | 16 | 6,1 |
| 1,60 | 21 | 34 | - | 21,0 | 0,60 | 35 | 2,9 | 16,60 | 10 | 20 | - | 10,0 | 0,60 | 17 | 6,0 |
| 1,80 | 17 | 26 | - | 17,0 | 0,80 | 21 | 4,7 | 16,80 | 10 | 19 | - | 10,0 | 0,33 | 30 | 3,3 |
| 2,00 | 13 | 25 | - | 13,0 | 0,73 | 18 | 5,6 | 17,00 | 12 | 17 | - | 12,0 | 1,13 | 11 | 9,4 |
| 2,20 | 14 | 25 | - | 14,0 | 0,73 | 19 | 5,2 | 17,20 | 14 | 31 | - | 14,0 | 1,47 | 10 | 10,5 |
| 2,40 | 12 | 23 | - | 12,0 | 0,67 | 18 | 5,6 | 17,40 | 51 | 73 | - | 51,0 | 1,00 | 51 | 2,0 |
| 2,60 | 10 | 20 | - | 10,0 | 0,60 | 17 | 6,0 | 17,60 | 54 | 69 | - | 54,0 | 1,27 | 43 | 2,4 |
| 2,80 | 10 | 20 | - | 10,0 | 0,40 | 28 | 3,6 | 17,80 | 38 | 57 | - | 38,0 | 1,00 | 38 | 2,6 |
| 3,00 | 10 | 20 | - | 10,0 | 0,47 | 21 | 4,7 | 18,00 | 13 | 28 | - | 13,0 | 0,87 | 15 | 6,7 |
| 3,20 | 10 | 17 | - | 10,0 | 0,53 | 17 | 5,9 | 18,20 | 12 | 25 | - | 12,0 | 0,67 | 18 | 5,6 |
| 3,40 | 9 | 17 | - | 9,0 | 0,53 | 17 | 5,9 | 18,40 | 11 | 21 | - | 11,0 | 0,67 | 16 | 6,1 |
| 3,60 | 10 | 18 | - | 10,0 | 0,60 | 17 | 6,0 | 18,60 | 11 | 21 | - | 11,0 | 0,67 | 16 | 6,1 |
| 3,80 | 11 | 20 | - | 11,0 | 0,80 | 14 | 7,3 | 18,80 | 9 | 19 | - | 9,0 | 0,73 | 12 | 8,1 |
| 4,00 | 9 | 21 | - | 9,0 | 0,67 | 13 | 7,4 | 19,00 | 11 | 22 | - | 11,0 | 0,93 | 12 | 8,5 |
| 4,20 | 8 | 18 | - | 8,0 | 0,60 | 13 | 7,5 | 19,20 | 10 | 24 | - | 10,0 | 0,87 | 11 | 8,7 |
| 4,40 | 7 | 16 | - | 7,0 | 0,67 | 10 | 9,6 | 19,40 | 11 | 24 | - | 11,0 | 0,80 | 14 | 7,3 |
| 4,60 | 9 | 19 | - | 9,0 | 0,47 | 19 | 5,2 | 19,60 | 19 | 31 | - | 19,0 | 0,80 | 24 | 4,2 |
| 4,80 | 13 | 20 | - | 13,0 | 0,73 | 18 | 5,6 | 19,80 | 17 | 29 | - | 17,0 | 0,80 | 21 | 4,7 |
| 5,00 | 8 | 19 | - | 8,0 | 0,73 | 11 | 9,1 | 20,00 | 29 | 41 | - | 29,0 | - | - | - |
| 5,20 | 9 | 18 | - | 9,0 | 0,67 | 12 | 8,4 | | | | | | | | |
| 5,40 | 9 | 18 | - | 9,0 | 0,53 | 15 | 6,6 | | | | | | | | |
| 5,60 | 9 | 17 | - | 9,0 | 0,53 | 17 | 5,9 | | | | | | | | |
| 5,80 | 10 | 18 | - | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | |
| 6,00 | 9 | 18 | - | 9,0 | 0,40 | 23 | 4,4 | | | | | | | | |
| 6,20 | 9 | 15 | - | 9,0 | 0,67 | 13 | 7,4 | | | | | | | | |
| 6,40 | 9 | 18 | - | 9,0 | 0,67 | 12 | 8,4 | | | | | | | | |
| 6,60 | 9 | 19 | - | 9,0 | 0,67 | 13 | 7,4 | | | | | | | | |
| 6,80 | 10 | 20 | - | 10,0 | 0,67 | 15 | 6,7 | | | | | | | | |
| 7,00 | 10 | 20 | - | 10,0 | 0,67 | 15 | 6,7 | | | | | | | | |
| 7,20 | 10 | 20 | - | 10,0 | 0,80 | 13 | 8,0 | | | | | | | | |
| 7,40 | 9 | 21 | - | 9,0 | 0,80 | 11 | 8,9 | | | | | | | | |
| 7,60 | 8 | 20 | - | 8,0 | 0,60 | 13 | 7,5 | | | | | | | | |
| 7,80 | 7 | 16 | - | 7,0 | 0,53 | 13 | 7,6 | | | | | | | | |
| 8,00 | 10 | 18 | - | 10,0 | 0,47 | 21 | 4,7 | | | | | | | | |
| 8,20 | 11 | 18 | - | 11,0 | 0,60 | 18 | 5,6 | | | | | | | | |
| 8,40 | 12 | 21 | - | 12,0 | 0,73 | 16 | 6,1 | | | | | | | | |
| 8,60 | 14 | 25 | - | 14,0 | 0,80 | 18 | 5,7 | | | | | | | | |
| 8,80 | 11 | 23 | - | 11,0 | 0,67 | 16 | 6,1 | | | | | | | | |
| 9,00 | 9 | 19 | - | 9,0 | 0,60 | 15 | 6,7 | | | | | | | | |
| 9,20 | 8 | 17 | - | 8,0 | 0,60 | 13 | 7,5 | | | | | | | | |
| 9,40 | 10 | 19 | - | 10,0 | 0,67 | 15 | 6,7 | | | | | | | | |
| 9,60 | 10 | 20 | - | 10,0 | 0,73 | 14 | 7,3 | | | | | | | | |
| 9,80 | 15 | 26 | - | 15,0 | 0,73 | 21 | 4,9 | | | | | | | | |
| 10,00 | 12 | 23 | - | 12,0 | 0,87 | 14 | 7,3 | | | | | | | | |
| 10,20 | 16 | 29 | - | 16,0 | 0,87 | 18 | 5,4 | | | | | | | | |
| 10,40 | 17 | 30 | - | 17,0 | 0,87 | 20 | 5,1 | | | | | | | | |
| 10,60 | 18 | 31 | - | 18,0 | 0,93 | 19 | 5,2 | | | | | | | | |
| 10,80 | 16 | 30 | - | 16,0 | 0,60 | 27 | 3,8 | | | | | | | | |
| 11,00 | 10 | 19 | - | 10,0 | 0,80 | 13 | 8,0 | | | | | | | | |
| 11,20 | 12 | 24 | - | 12,0 | 0,80 | 15 | 6,7 | | | | | | | | |
| 11,40 | 11 | 23 | - | 11,0 | 0,47 | 23 | 4,3 | | | | | | | | |
| 11,60 | 10 | 17 | - | 10,0 | 0,40 | 25 | 4,0 | | | | | | | | |
| 11,80 | 10 | 16 | - | 10,0 | 0,47 | 21 | 4,7 | | | | | | | | |
| 12,00 | 9 | 16 | - | 9,0 | 0,40 | 23 | 4,4 | | | | | | | | |
| 12,20 | 13 | 19 | - | 13,0 | 0,60 | 22 | 4,6 | | | | | | | | |
| 12,40 | 11 | 20 | - | 11,0 | 0,53 | 21 | 4,8 | | | | | | | | |
| 12,60 | 11 | 19 | - | 11,0 | 0,80 | 14 | 7,3 | | | | | | | | |
| 12,80 | 9 | 21 | - | 9,0 | 0,80 | 11 | 8,9 | | | | | | | | |
| 13,00 | 9 | 21 | - | 9,0 | 0,80 | 11 | 8,9 | | | | | | | | |
| 13,20 | 12 | 24 | - | 12,0 | 0,93 | 13 | 7,8 | | | | | | | | |
| 13,40 | 12 | 26 | - | 12,0 | 0,80 | 15 | 6,7 | | | | | | | | |
| 13,60 | 13 | 25 | - | 13,0 | 0,93 | 14 | 7,2 | | | | | | | | |
| 13,80 | 14 | 28 | - | 14,0 | 1,00 | 14 | 7,1 | | | | | | | | |
| 14,00 | 16 | 31 | - | 16,0 | 1,20 | 13 | 7,5 | | | | | | | | |
| 14,20 | 18 | 36 | - | 18,0 | 1,40 | 13 | 7,8 | | | | | | | | |
| 14,40 | 19 | 40 | - | 19,0 | 1,33 | 12 | 8,1 | | | | | | | | |
| 14,60 | 20 | 43 | - | 20,0 | 1,73 | 12 | 8,7 | | | | | | | | |
| 14,80 | 28 | 54 | - | 28,0 | 1,93 | 15 | 6,9 | | | | | | | | |
| 16,00 | 30 | 59 | - | 30,0 | 1,27 | 24 | 4,2 | | | | | | | | |

H = profondità
 L1 = prima lettura (punta)
 L2 = seconda lettura (punta + laterale)
 Lt = terza lettura (totale)
 CT = 10,00 costante di trasformazione

qc = resistenza di punta
 fs = resistenza laterale calcolata
 0,20 m sopra quota qc
 F = rapporto Begemann (qc / fs)
 Rf = rapporto Schmetmann (fs / qc) * 100

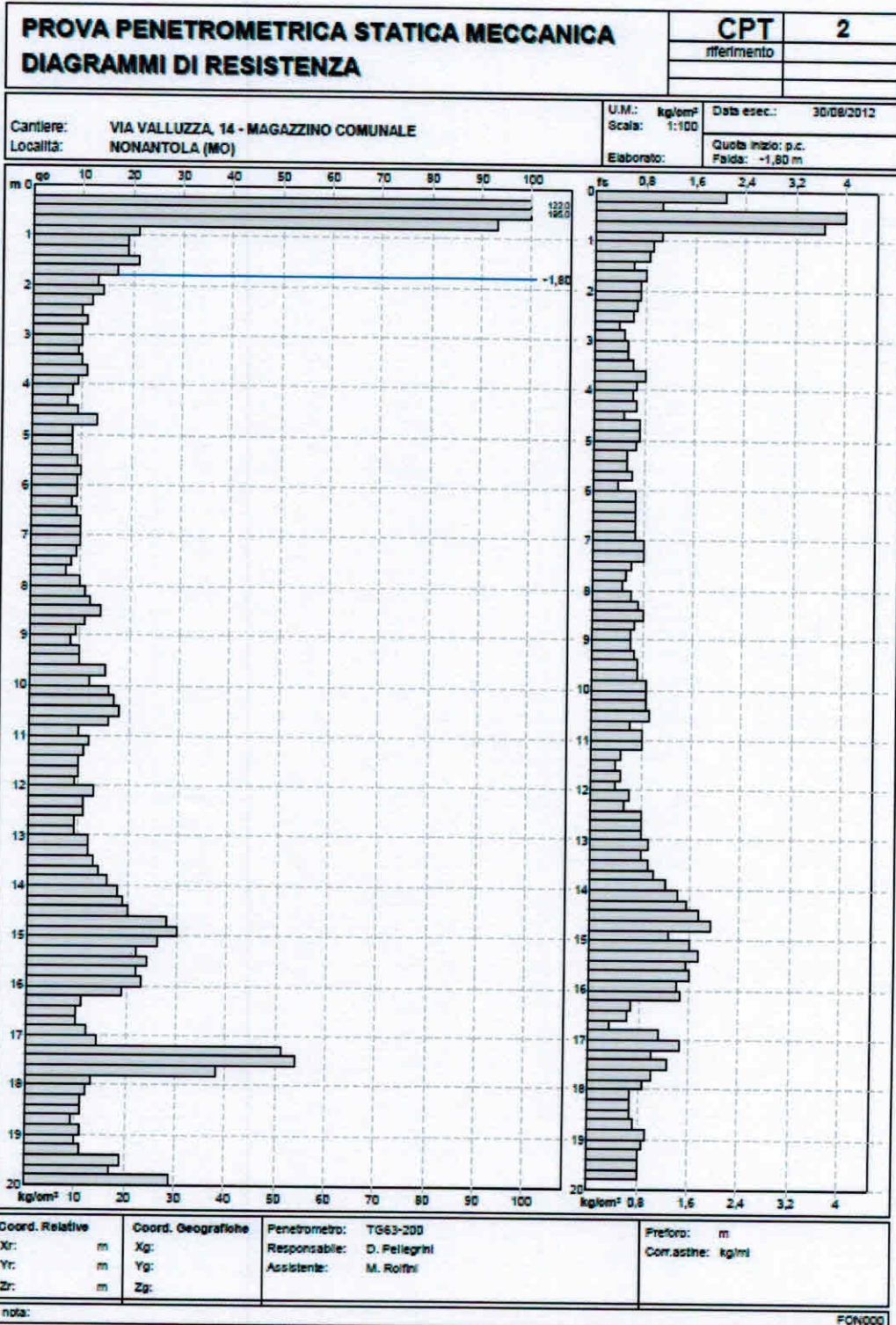
LA DIREZIONE
 (Dott. Ing. Michele Cela)

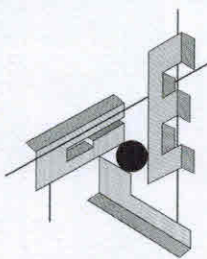


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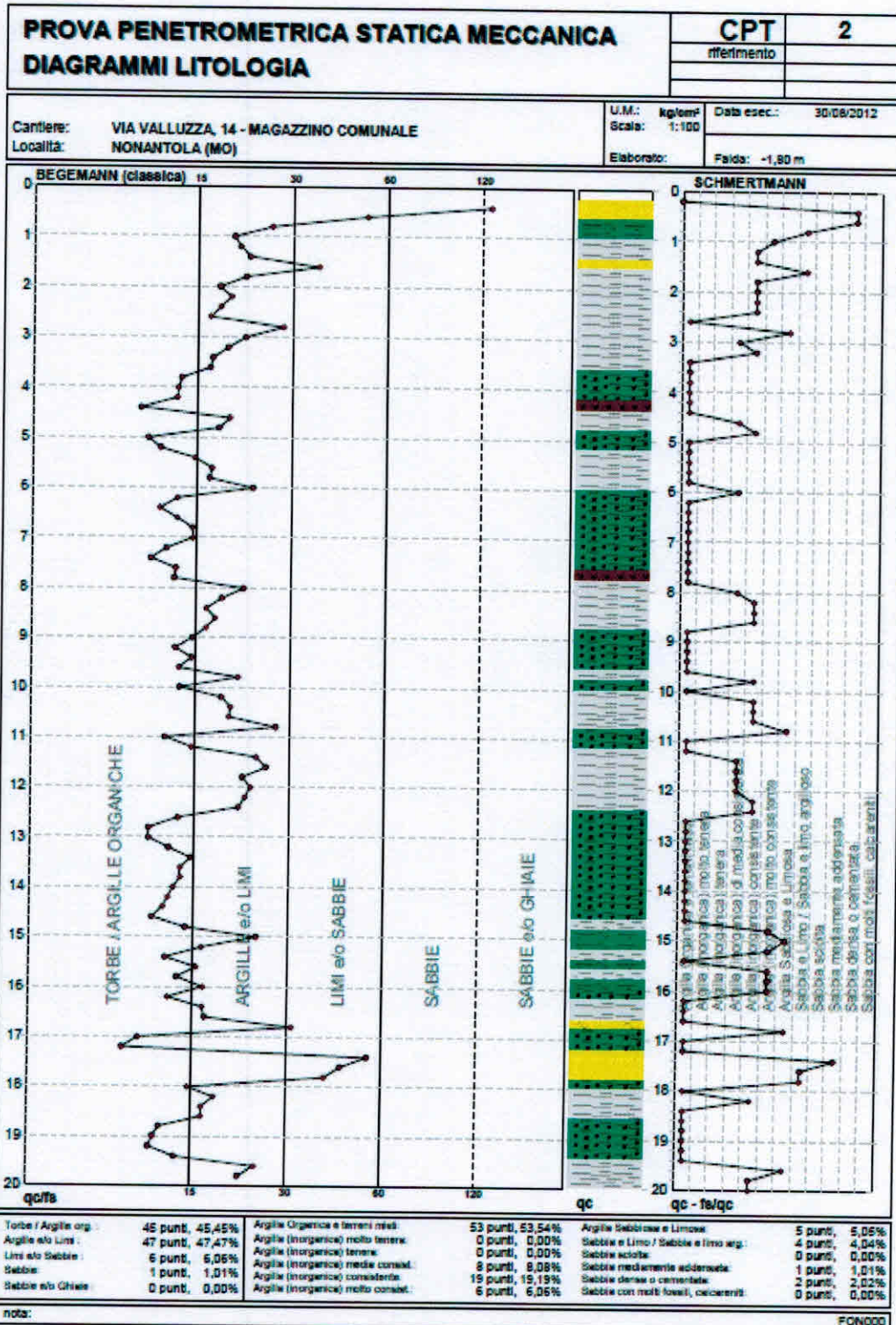


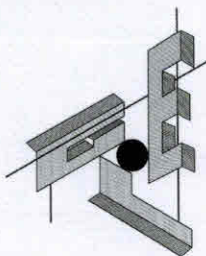


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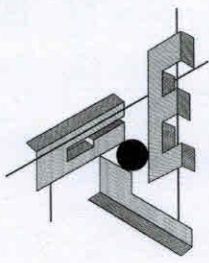
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| PROVA PENETROMETRICA STATICA MECCANICA | | | | | | | | | | | | | | CPT | |
|--|----|-----|----|--------------------|--------------------|----|-----|-------|----|--------------------------|----|------------------------|--------------------|-------------|-----|
| LETTURE CAMPAGNA E VALORI TRASFORMATI | | | | | | | | | | | | | | 1 | |
| | | | | | | | | | | | | | | riferimento | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Cantiere: VIA GRIECO - PALESTRA SCUOLA DANTE ALIGHIERI | | | | | | | | | | U.M.: kg/cm ² | | Data exec.: 30/08/2012 | | | |
| Località: NONANTOLA (MO) | | | | | | | | | | Elaborato: | | Falda: -3,00 m | | | |
| H | L1 | L2 | Lt | qc | fs | F | Rf | H | L1 | L2 | Lt | qc | fs | F | Rf |
| m | - | - | - | kg/cm ² | kg/cm ² | - | % | m | - | - | - | kg/cm ² | kg/cm ² | - | % |
| 0,20 | 0 | 0 | | 0,0 | 2,33 | 0 | | 15,20 | 12 | 22 | | 12,0 | 0,67 | 18 | 5,6 |
| 0,40 | 52 | 87 | | 52,0 | 2,20 | 24 | 4,2 | 15,40 | 12 | 22 | | 12,0 | 0,67 | 18 | 5,5 |
| 0,60 | 33 | 66 | | 33,0 | 1,60 | 21 | 4,8 | 15,60 | 13 | 23 | | 13,0 | 0,80 | 16 | 6,2 |
| 0,80 | 59 | 83 | | 59,0 | 1,40 | 42 | 2,4 | 15,80 | 13 | 25 | | 13,0 | 0,80 | 16 | 6,2 |
| 1,00 | 58 | 89 | | 58,0 | 3,40 | 20 | 5,0 | 16,00 | 14 | 26 | | 14,0 | 0,73 | 19 | 5,2 |
| 1,20 | 55 | 106 | | 55,0 | 4,57 | 12 | 8,5 | 16,20 | 18 | 29 | | 18,0 | 1,20 | 15 | 6,7 |
| 1,40 | 58 | 128 | | 58,0 | 4,80 | 12 | 8,3 | 16,40 | 20 | 38 | | 20,0 | 1,47 | 14 | 7,4 |
| 1,60 | 84 | 156 | | 84,0 | 4,53 | 19 | 5,4 | 16,60 | 32 | 44 | | 22,0 | 1,60 | 14 | 7,3 |
| 1,80 | 79 | 147 | | 79,0 | 2,87 | 28 | 3,6 | 16,80 | 33 | 47 | | 23,0 | 1,60 | 14 | 7,0 |
| 2,00 | 51 | 94 | | 51,0 | 2,47 | 21 | 4,8 | 17,00 | 37 | 51 | | 27,0 | 1,60 | 17 | 5,9 |
| 2,20 | 14 | 51 | | 14,0 | 1,00 | 14 | 7,1 | 17,20 | 34 | 48 | | 24,0 | 1,33 | 18 | 5,5 |
| 2,40 | 10 | 25 | | 10,0 | 0,60 | 17 | 6,0 | 17,40 | 33 | 43 | | 23,0 | 1,27 | 18 | 5,5 |
| 2,60 | 13 | 22 | | 13,0 | 0,67 | 19 | 5,2 | 17,60 | 30 | 39 | | 20,0 | 1,20 | 17 | 6,0 |
| 2,80 | 14 | 24 | | 14,0 | 0,60 | 23 | 4,3 | 17,80 | 33 | 41 | | 23,0 | 1,20 | 19 | 5,2 |
| 3,00 | 16 | 25 | | 16,0 | 0,67 | 24 | 4,2 | 18,00 | 21 | 39 | | 21,0 | 1,40 | 15 | 6,7 |
| 3,20 | 12 | 22 | | 12,0 | 0,53 | 23 | 4,4 | 18,20 | 21 | 42 | | 21,0 | 1,27 | 17 | 6,0 |
| 3,40 | 9 | 16 | | 9,0 | 0,47 | 17 | 5,9 | 18,40 | 11 | 30 | | 11,0 | 0,60 | 18 | 5,5 |
| 3,60 | 11 | 18 | | 11,0 | 0,80 | 14 | 7,3 | 18,60 | 12 | 21 | | 12,0 | 0,53 | 23 | 4,4 |
| 3,80 | 9 | 21 | | 9,0 | 0,67 | 13 | 7,4 | 18,80 | 13 | 21 | | 13,0 | 0,53 | 25 | 4,1 |
| 4,00 | 8 | 18 | | 8,0 | 0,40 | 20 | 5,0 | 19,00 | 11 | 19 | | 11,0 | 0,53 | 21 | 4,8 |
| 4,20 | 8 | 14 | | 8,0 | 0,47 | 17 | 5,9 | 19,20 | 19 | 27 | | 19,0 | 0,93 | 20 | 4,9 |
| 4,40 | 11 | 18 | | 11,0 | 0,60 | 18 | 5,5 | 19,40 | 16 | 30 | | 16,0 | 0,93 | 17 | 5,8 |
| 4,60 | 8 | 17 | | 8,0 | 0,40 | 20 | 5,0 | 19,60 | 17 | 31 | | 17,0 | 0,93 | 18 | 5,5 |
| 4,80 | 10 | 16 | | 10,0 | 0,47 | 21 | 4,7 | 19,80 | 19 | 33 | | 19,0 | 0,87 | 22 | 4,6 |
| 5,00 | 7 | 14 | | 7,0 | 0,47 | 15 | 6,7 | 20,00 | 16 | 29 | | 16,0 | | | |
| 5,20 | 5 | 12 | | 5,0 | 0,33 | 15 | 6,6 | | | | | | | | |
| 5,40 | 6 | 11 | | 6,0 | 0,27 | 22 | 4,5 | | | | | | | | |
| 5,60 | 7 | 11 | | 7,0 | 0,40 | 18 | 5,7 | | | | | | | | |
| 5,80 | 6 | 12 | | 6,0 | 0,33 | 18 | 5,5 | | | | | | | | |
| 6,00 | 8 | 13 | | 8,0 | 0,40 | 20 | 5,0 | | | | | | | | |
| 6,20 | 7 | 13 | | 7,0 | 0,47 | 15 | 6,7 | | | | | | | | |
| 6,40 | 7 | 14 | | 7,0 | 0,53 | 13 | 7,6 | | | | | | | | |
| 6,60 | 17 | 25 | | 17,0 | 0,53 | 32 | 3,1 | | | | | | | | |
| 6,80 | 8 | 16 | | 8,0 | 0,40 | 20 | 5,0 | | | | | | | | |
| 7,00 | 6 | 12 | | 6,0 | 0,33 | 18 | 5,5 | | | | | | | | |
| 7,20 | 8 | 13 | | 8,0 | 0,40 | 20 | 5,0 | | | | | | | | |
| 7,40 | 7 | 13 | | 7,0 | 0,47 | 15 | 6,7 | | | | | | | | |
| 7,60 | 8 | 15 | | 8,0 | 0,40 | 20 | 5,0 | | | | | | | | |
| 7,80 | 8 | 14 | | 8,0 | 0,33 | 24 | 4,1 | | | | | | | | |
| 8,00 | 8 | 13 | | 8,0 | 0,33 | 24 | 4,1 | | | | | | | | |
| 8,20 | 9 | 14 | | 9,0 | 0,47 | 19 | 5,2 | | | | | | | | |
| 8,40 | 10 | 17 | | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | |
| 8,60 | 10 | 19 | | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | |
| 8,80 | 10 | 19 | | 10,0 | 0,67 | 15 | 6,7 | | | | | | | | |
| 9,00 | 9 | 19 | | 9,0 | 0,60 | 15 | 6,7 | | | | | | | | |
| 9,20 | 10 | 19 | | 10,0 | 0,53 | 19 | 5,3 | | | | | | | | |
| 9,40 | 11 | 19 | | 11,0 | 0,60 | 18 | 5,5 | | | | | | | | |
| 9,60 | 10 | 19 | | 10,0 | 0,47 | 21 | 4,7 | | | | | | | | |
| 9,80 | 10 | 17 | | 10,0 | 0,67 | 15 | 6,7 | | | | | | | | |
| 10,00 | 10 | 20 | | 10,0 | 0,67 | 15 | 6,7 | | | | | | | | |
| 10,20 | 11 | 21 | | 11,0 | 0,60 | 18 | 5,5 | | | | | | | | |
| 10,40 | 13 | 22 | | 13,0 | 0,73 | 18 | 5,6 | | | | | | | | |
| 10,60 | 10 | 21 | | 10,0 | 0,67 | 15 | 6,7 | | | | | | | | |
| 10,80 | 11 | 21 | | 11,0 | 0,60 | 18 | 5,5 | | | | | | | | |
| 11,00 | 13 | 22 | | 13,0 | 0,73 | 18 | 5,6 | | | | | | | | |
| 11,20 | 14 | 25 | | 14,0 | 0,80 | 18 | 5,7 | | | | | | | | |
| 11,40 | 11 | 23 | | 11,0 | 0,73 | 15 | 6,6 | | | | | | | | |
| 11,60 | 10 | 21 | | 10,0 | 0,73 | 14 | 7,3 | | | | | | | | |
| 11,80 | 12 | 23 | | 12,0 | 0,73 | 16 | 6,1 | | | | | | | | |
| 12,00 | 13 | 24 | | 13,0 | 0,73 | 18 | 5,6 | | | | | | | | |
| 12,20 | 13 | 24 | | 13,0 | 0,67 | 19 | 5,2 | | | | | | | | |
| 12,40 | 13 | 23 | | 13,0 | 0,87 | 15 | 6,7 | | | | | | | | |
| 12,60 | 11 | 24 | | 11,0 | 0,80 | 14 | 7,3 | | | | | | | | |
| 12,80 | 10 | 22 | | 10,0 | 0,80 | 13 | 8,0 | | | | | | | | |
| 13,00 | 10 | 22 | | 10,0 | 0,67 | 15 | 6,7 | | | | | | | | |
| 13,20 | 10 | 20 | | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | |
| 13,40 | 10 | 19 | | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | |
| 13,60 | 9 | 18 | | 9,0 | 0,60 | 15 | 6,7 | | | | | | | | |
| 13,80 | 9 | 18 | | 9,0 | 0,60 | 15 | 6,7 | | | | | | | | |
| 14,00 | 10 | 19 | | 10,0 | 0,53 | 19 | 5,3 | | | | | | | | |
| 14,20 | 10 | 18 | | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | |
| 14,40 | 10 | 19 | | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | |
| 14,60 | 11 | 20 | | 11,0 | 0,53 | 21 | 4,8 | | | | | | | | |
| 14,80 | 15 | 23 | | 15,0 | 0,60 | 25 | 4,0 | | | | | | | | |
| 16,00 | 13 | 22 | | 13,0 | 0,67 | 19 | 5,2 | | | | | | | | |

H = profondità
L1 = prima lettura (punta)
L2 = seconda lettura (punta + laterale)
Lt = terza lettura (totale)
CT = 10,00 costante di trasformazione

qc = resistenza di punta
fs = resistenza laterale calcolata
0,20 m sopra quota qc
F = rapporto Begemann (qc / fs)
Rf = rapporto Schmetmann (fs / qc) * 100

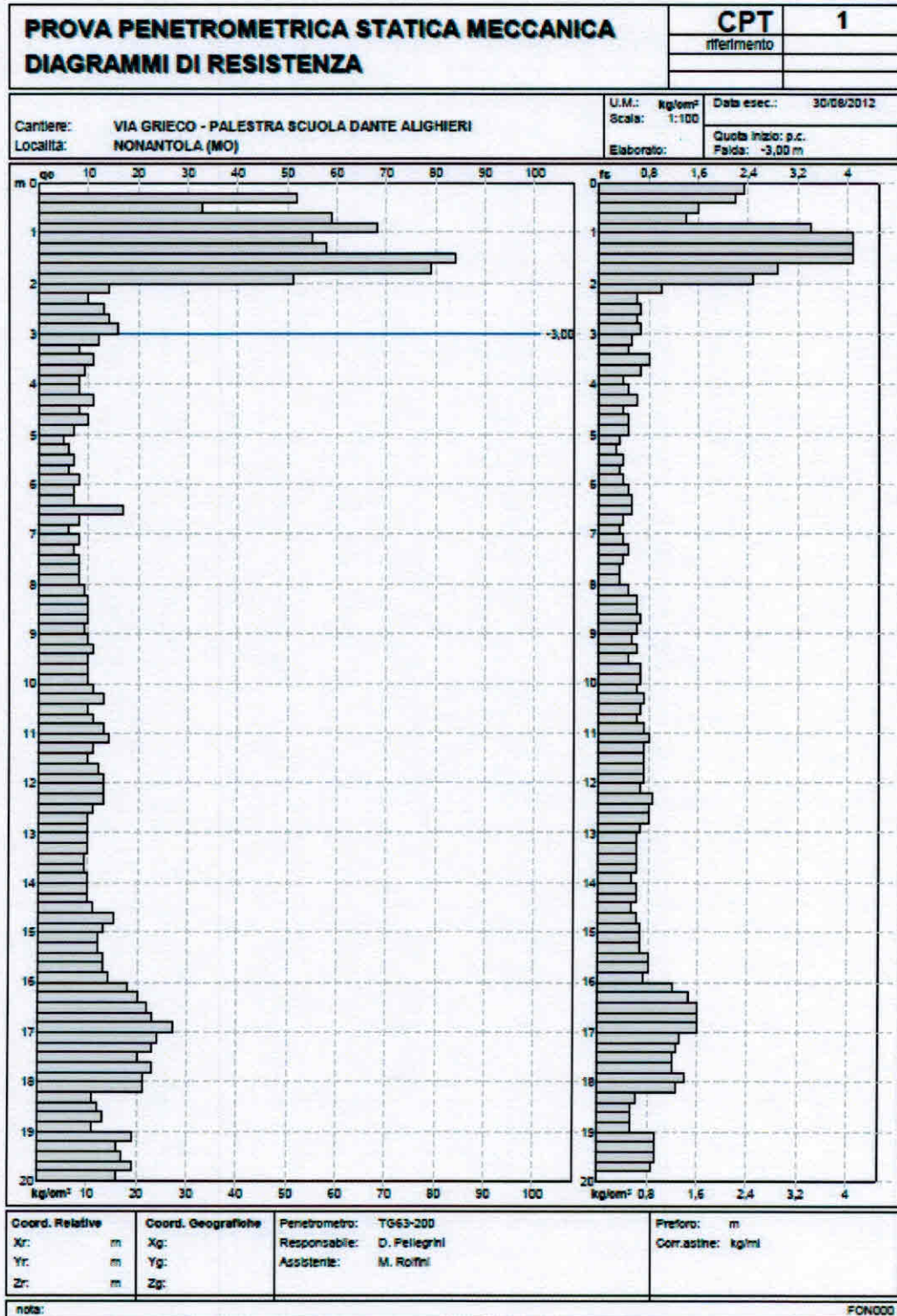
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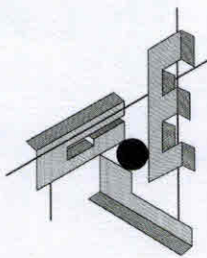


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Laboratorio Autorizzato ai sensi dell'art.59 del DPR n. 380/2001

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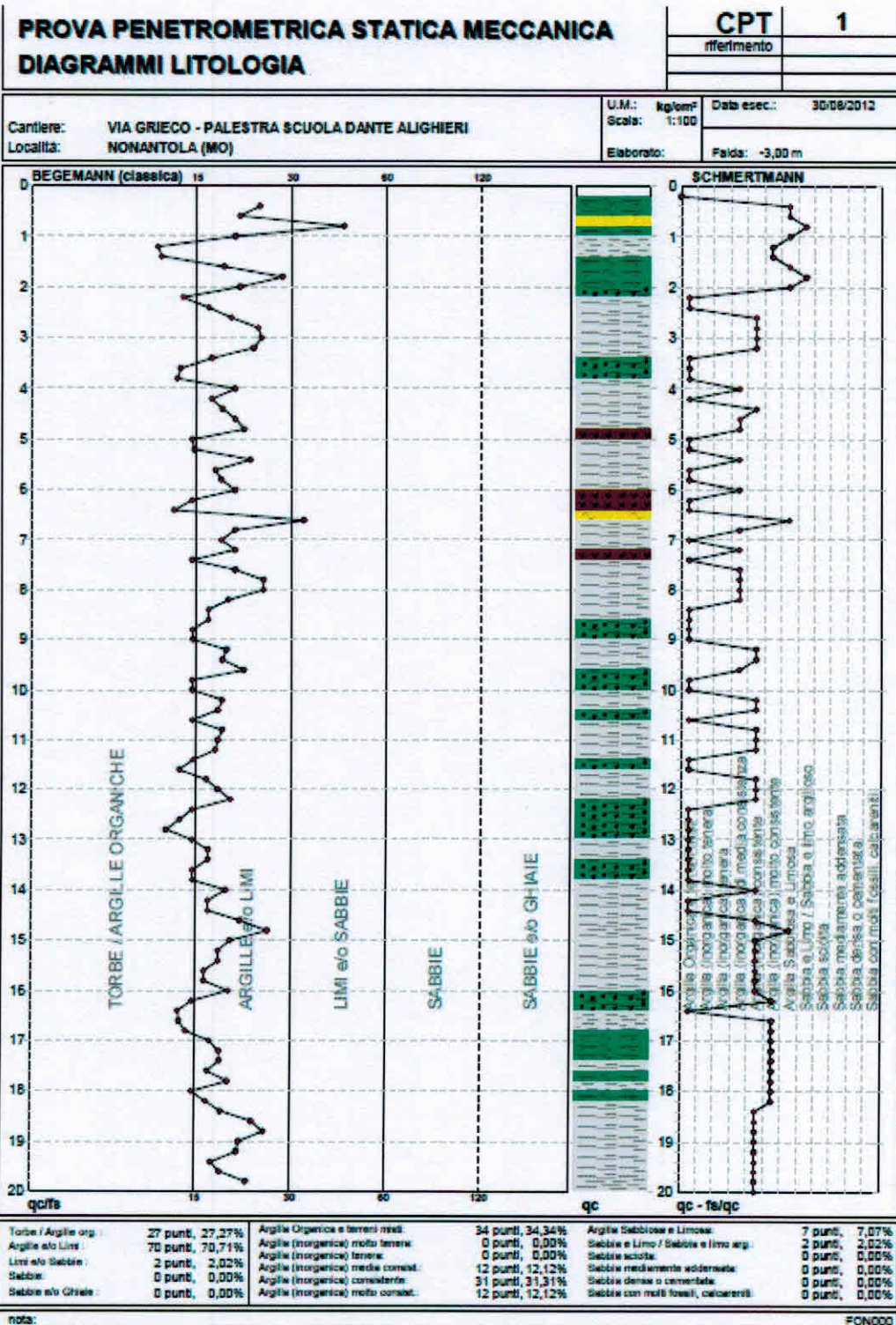


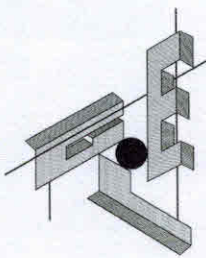


LABORATORIO TECNOLOGICO EMILIANO S.R.L.

Laboratorio Autorizzato ai sensi dell'art.59 del DPR n. 380/2001

LABORATORIO E SEDE AMMINISTRATIVA:
 VIA DEI CARPENTIERI, 44 - 41122 MODENA
 TEL. 059.285521 - FAX 059.285529
 modena@laboratoriemiliani.com
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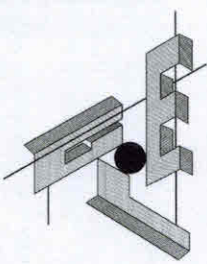
LABORATORIO E SEDE AMMINISTRATIVA:
VIA DEI CARPENTIERI, 44 - 41122 MODENA
TEL. 059.285521 - FAX 059.285529
modena@laboratoriemiliani.com
www.laboratoriemiliani.com

| PROVA PENETROMETRICA STATICA MECCANICA | | | | | | | | | | | | | CPT | | | |
|--|----|----|------|--------------------|--------------------|-----|----|-------|----|----|------|--------------------|--------------------------|-----|------------------------|--|
| LETTURE CAMPAGNA E VALORI TRASFORMATI | | | | | | | | | | | | | 2 | | | |
| | | | | | | | | | | | | | meritamento | | | |
| | | | | | | | | | | | | | | | | |
| Cantiere: VIA GRIECO - PALESTRA SCUOLA DANTE ALIGHIERI | | | | | | | | | | | | | U.M.: kg/cm ² | | Data exec.: 30/08/2012 | |
| Località: NONANTOLA (MO) | | | | | | | | | | | | | Elaborato: | | Faida: -3,20 m | |
| H | L1 | L2 | Lt | qc | fs | F | Rf | H | L1 | L2 | Lt | qc | fs | F | Rf | |
| m | - | - | - | kg/cm ² | kg/cm ² | - | % | m | - | - | - | kg/cm ² | kg/cm ² | - | % | |
| 0,20 | 0 | 0 | 0,0 | 0,20 | 0 | 0 | | 15,20 | 13 | 20 | 13,0 | 0,73 | 18 | 5,6 | | |
| 0,40 | 27 | 30 | 27,0 | 1,67 | 16 | 6,2 | | 15,40 | 13 | 24 | 13,0 | 0,80 | 16 | 6,2 | | |
| 0,60 | 46 | 71 | 46,0 | 0,87 | 53 | 1,9 | | 15,60 | 13 | 25 | 13,0 | 0,87 | 15 | 6,7 | | |
| 0,80 | 47 | 60 | 47,0 | 2,60 | 18 | 5,5 | | 15,80 | 15 | 28 | 15,0 | 1,13 | 13 | 7,5 | | |
| 1,00 | 30 | 69 | 30,0 | 1,73 | 17 | 5,8 | | 16,00 | 15 | 32 | 15,0 | 1,27 | 12 | 8,5 | | |
| 1,20 | 34 | 60 | 34,0 | 2,27 | 15 | 6,7 | | 16,20 | 14 | 33 | 14,0 | 1,20 | 12 | 8,6 | | |
| 1,40 | 28 | 62 | 28,0 | 2,20 | 13 | 7,9 | | 16,40 | 15 | 33 | 15,0 | 1,07 | 14 | 7,1 | | |
| 1,60 | 22 | 55 | 22,0 | 2,13 | 10 | 9,7 | | 16,60 | 19 | 35 | 19,0 | 1,27 | 15 | 6,7 | | |
| 1,80 | 15 | 47 | 15,0 | 1,07 | 14 | 7,1 | | 16,80 | 21 | 40 | 21,0 | 1,47 | 14 | 7,0 | | |
| 2,00 | 12 | 28 | 12,0 | 0,60 | 20 | 5,0 | | 17,00 | 21 | 43 | 21,0 | 1,67 | 13 | 8,0 | | |
| 2,20 | 10 | 19 | 10,0 | 0,53 | 19 | 5,3 | | 17,20 | 23 | 48 | 23,0 | 1,87 | 12 | 8,1 | | |
| 2,40 | 11 | 19 | 11,0 | 0,40 | 28 | 3,6 | | 17,40 | 23 | 51 | 23,0 | 1,73 | 13 | 7,5 | | |
| 2,60 | 13 | 19 | 13,0 | 0,53 | 25 | 4,1 | | 17,60 | 26 | 52 | 26,0 | 1,87 | 14 | 7,2 | | |
| 2,80 | 13 | 21 | 13,0 | 0,67 | 19 | 5,2 | | 17,80 | 27 | 55 | 27,0 | 1,93 | 14 | 7,1 | | |
| 3,00 | 10 | 20 | 10,0 | 0,80 | 13 | 8,0 | | 18,00 | 27 | 56 | 27,0 | 1,73 | 16 | 5,4 | | |
| 3,20 | 11 | 23 | 11,0 | 0,73 | 15 | 6,6 | | 18,20 | 32 | 58 | 32,0 | 1,93 | 17 | 6,0 | | |
| 3,40 | 12 | 23 | 12,0 | 0,60 | 20 | 5,0 | | 18,40 | 25 | 54 | 25,0 | 1,47 | 17 | 5,9 | | |
| 3,60 | 8 | 17 | 8,0 | 0,47 | 17 | 5,9 | | 18,60 | 18 | 40 | 18,0 | 1,40 | 13 | 7,8 | | |
| 3,80 | 11 | 18 | 11,0 | 0,47 | 23 | 4,3 | | 18,80 | 20 | 41 | 20,0 | 0,87 | 23 | 4,4 | | |
| 4,00 | 9 | 16 | 9,0 | 0,47 | 19 | 5,2 | | 19,00 | 16 | 29 | 16,0 | 0,73 | 22 | 4,6 | | |
| 4,20 | 8 | 15 | 8,0 | 0,53 | 15 | 6,6 | | 19,20 | 12 | 23 | 12,0 | 0,60 | 20 | 5,0 | | |
| 4,40 | 9 | 17 | 9,0 | 0,47 | 19 | 5,2 | | 19,40 | 8 | 17 | 8,0 | 0,53 | 15 | 6,6 | | |
| 4,60 | 8 | 16 | 8,0 | 0,40 | 20 | 5,0 | | 19,60 | 8 | 16 | 8,0 | 0,60 | 13 | 7,5 | | |
| 4,80 | 11 | 17 | 11,0 | 0,33 | 33 | 3,0 | | 19,80 | 15 | 24 | 15,0 | 0,60 | 25 | 4,0 | | |
| 5,00 | 10 | 15 | 10,0 | 0,47 | 21 | 4,7 | | 20,00 | 18 | 27 | 18,0 | | | | | |
| 5,20 | 10 | 17 | 10,0 | 0,67 | 15 | 6,7 | | | | | | | | | | |
| 5,40 | 7 | 17 | 7,0 | 0,47 | 15 | 6,7 | | | | | | | | | | |
| 5,60 | 7 | 14 | 7,0 | 0,40 | 18 | 5,7 | | | | | | | | | | |
| 5,80 | 8 | 14 | 8,0 | 0,40 | 20 | 5,0 | | | | | | | | | | |
| 6,00 | 10 | 16 | 10,0 | 0,40 | 25 | 4,0 | | | | | | | | | | |
| 6,20 | 8 | 14 | 8,0 | 0,40 | 20 | 5,0 | | | | | | | | | | |
| 6,40 | 8 | 14 | 8,0 | 0,40 | 20 | 5,0 | | | | | | | | | | |
| 6,60 | 6 | 12 | 6,0 | 0,40 | 15 | 6,7 | | | | | | | | | | |
| 6,80 | 6 | 12 | 6,0 | 0,40 | 15 | 6,7 | | | | | | | | | | |
| 7,00 | 7 | 13 | 7,0 | 0,47 | 15 | 6,7 | | | | | | | | | | |
| 7,20 | 7 | 14 | 7,0 | 0,40 | 18 | 5,7 | | | | | | | | | | |
| 7,40 | 8 | 14 | 8,0 | 0,47 | 17 | 5,9 | | | | | | | | | | |
| 7,60 | 9 | 16 | 9,0 | 0,60 | 15 | 6,7 | | | | | | | | | | |
| 7,80 | 9 | 16 | 9,0 | 0,47 | 19 | 6,2 | | | | | | | | | | |
| 8,00 | 8 | 15 | 8,0 | 0,47 | 17 | 5,9 | | | | | | | | | | |
| 8,20 | 8 | 15 | 8,0 | 0,47 | 17 | 5,9 | | | | | | | | | | |
| 8,40 | 11 | 18 | 11,0 | 0,53 | 21 | 4,8 | | | | | | | | | | |
| 8,60 | 12 | 20 | 12,0 | 0,53 | 23 | 4,4 | | | | | | | | | | |
| 8,80 | 12 | 20 | 12,0 | 0,67 | 18 | 5,6 | | | | | | | | | | |
| 9,00 | 10 | 20 | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | | | |
| 9,20 | 10 | 19 | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | | | |
| 9,40 | 12 | 21 | 12,0 | 0,73 | 16 | 6,1 | | | | | | | | | | |
| 9,60 | 12 | 23 | 12,0 | 0,60 | 20 | 5,0 | | | | | | | | | | |
| 9,80 | 11 | 20 | 11,0 | 0,47 | 23 | 4,3 | | | | | | | | | | |
| 10,00 | 11 | 18 | 11,0 | 0,60 | 18 | 5,5 | | | | | | | | | | |
| 10,20 | 11 | 20 | 11,0 | 0,47 | 23 | 4,3 | | | | | | | | | | |
| 10,40 | 13 | 20 | 13,0 | 0,60 | 22 | 4,6 | | | | | | | | | | |
| 10,60 | 12 | 21 | 12,0 | 0,60 | 20 | 5,0 | | | | | | | | | | |
| 10,80 | 12 | 21 | 12,0 | 0,60 | 20 | 5,0 | | | | | | | | | | |
| 11,00 | 13 | 22 | 13,0 | 0,73 | 18 | 5,6 | | | | | | | | | | |
| 11,20 | 13 | 24 | 13,0 | 0,73 | 18 | 5,6 | | | | | | | | | | |
| 11,40 | 13 | 24 | 13,0 | 0,73 | 18 | 5,6 | | | | | | | | | | |
| 11,60 | 12 | 23 | 12,0 | 0,67 | 18 | 5,6 | | | | | | | | | | |
| 11,80 | 12 | 23 | 12,0 | 0,67 | 18 | 5,6 | | | | | | | | | | |
| 12,00 | 12 | 22 | 12,0 | 0,60 | 20 | 5,0 | | | | | | | | | | |
| 12,20 | 12 | 21 | 12,0 | 0,60 | 20 | 5,0 | | | | | | | | | | |
| 12,40 | 12 | 21 | 12,0 | 0,60 | 20 | 5,0 | | | | | | | | | | |
| 12,60 | 13 | 22 | 13,0 | 0,73 | 18 | 5,6 | | | | | | | | | | |
| 12,80 | 13 | 24 | 13,0 | 0,87 | 15 | 6,7 | | | | | | | | | | |
| 13,00 | 11 | 24 | 11,0 | 0,67 | 16 | 6,1 | | | | | | | | | | |
| 13,20 | 12 | 22 | 12,0 | 0,67 | 18 | 5,6 | | | | | | | | | | |
| 13,40 | 11 | 21 | 11,0 | 0,73 | 15 | 6,6 | | | | | | | | | | |
| 13,60 | 10 | 21 | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | | | |
| 13,80 | 10 | 19 | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | | | |
| 14,00 | 10 | 19 | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | | | |
| 14,20 | 10 | 19 | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | | | |
| 14,40 | 10 | 19 | 10,0 | 0,60 | 17 | 6,0 | | | | | | | | | | |
| 14,60 | 10 | 19 | 10,0 | 0,53 | 19 | 5,3 | | | | | | | | | | |
| 14,80 | 12 | 20 | 12,0 | 0,53 | 23 | 4,4 | | | | | | | | | | |
| 15,00 | 12 | 20 | 12,0 | 0,47 | 26 | 3,9 | | | | | | | | | | |

H = profondità
L1 = prima lettura (punta)
L2 = seconda lettura (punta + laterale)
Lt = terza lettura (totale)
CT = 10,00 costante di trasformazione

qc = resistenza di punta
fs = resistenza laterale calcolata
0,20 m sopra quota qc
F = rapporto Begemann (qc / fs)
Rf = rapporto Schmertmann (fs / qc) * 100

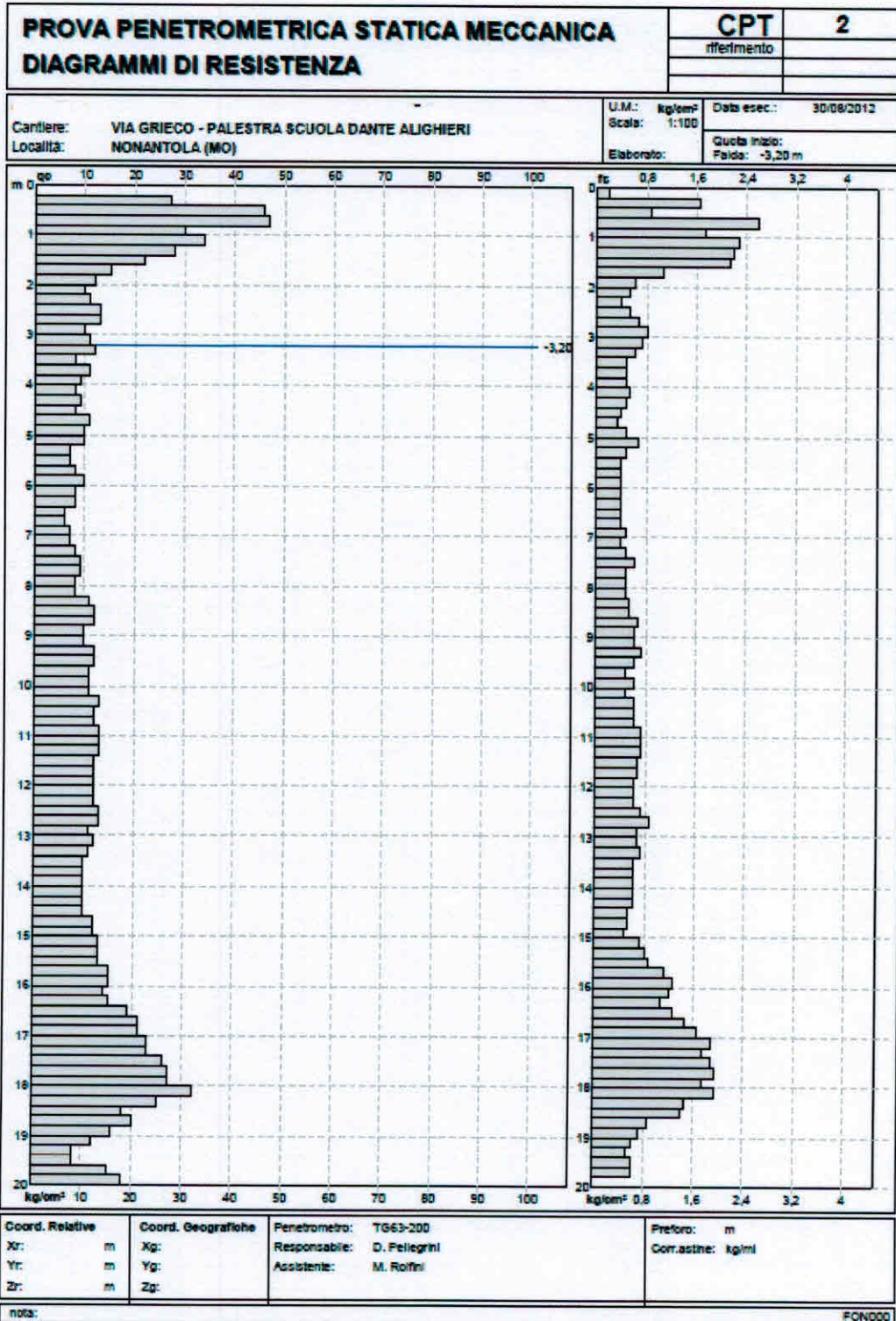
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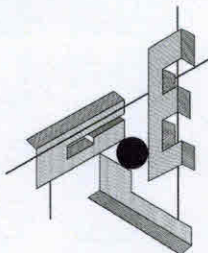


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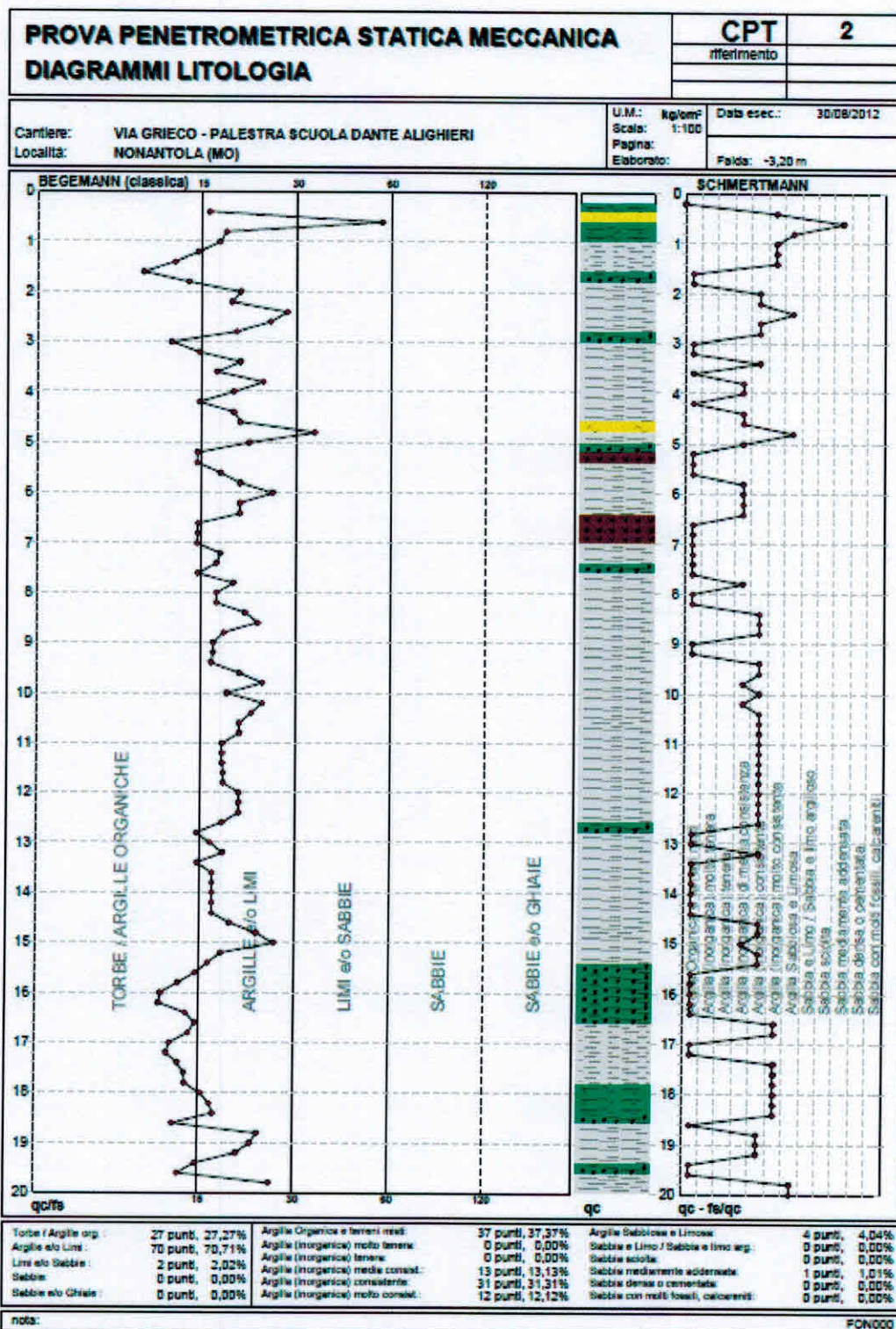
LABORATORIO E SEDE AMMINISTRATIVA:

VIA DEI CARPENTIERI, 44 - 41122 MODENA

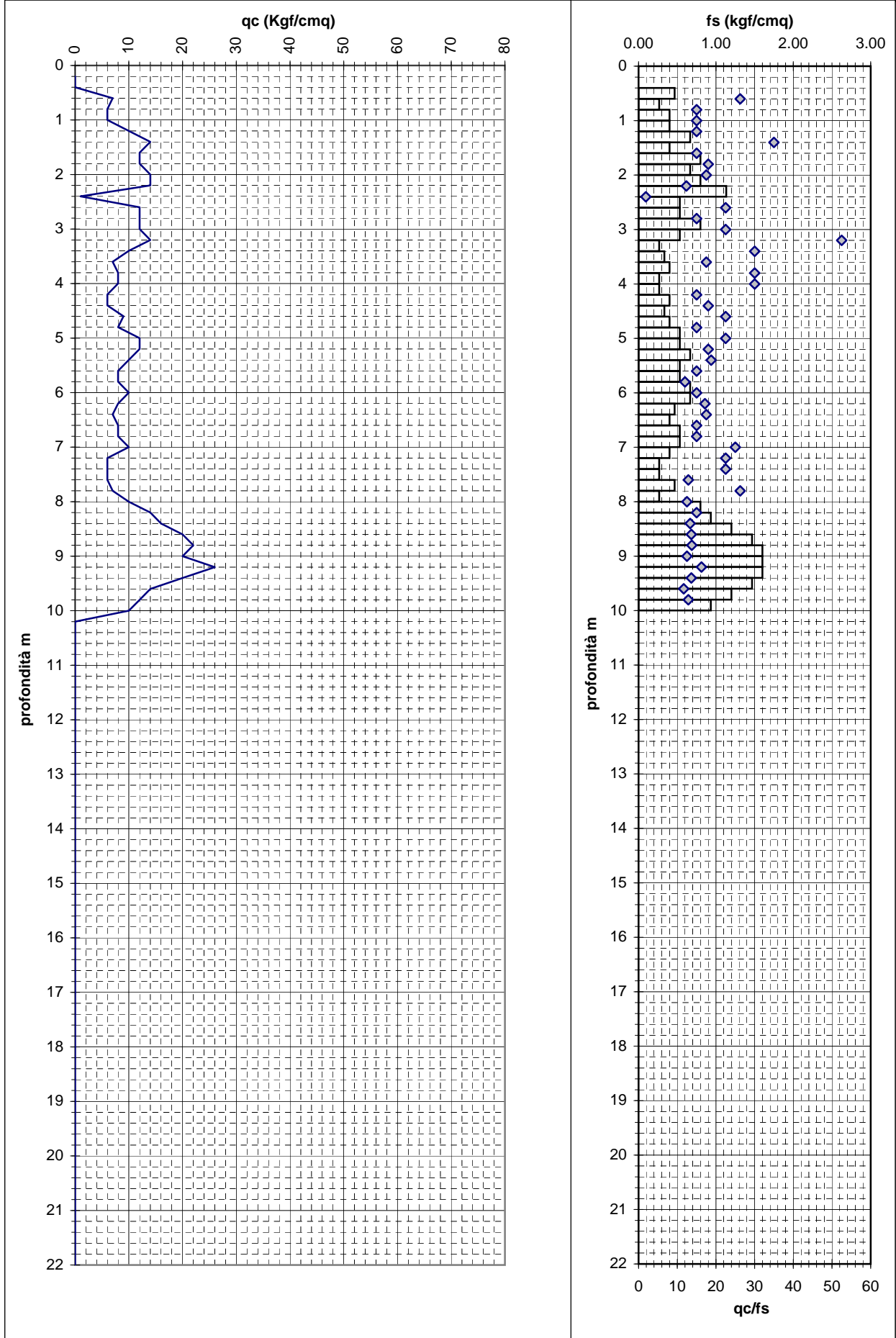
TEL. 059.285521 - FAX 059.285529

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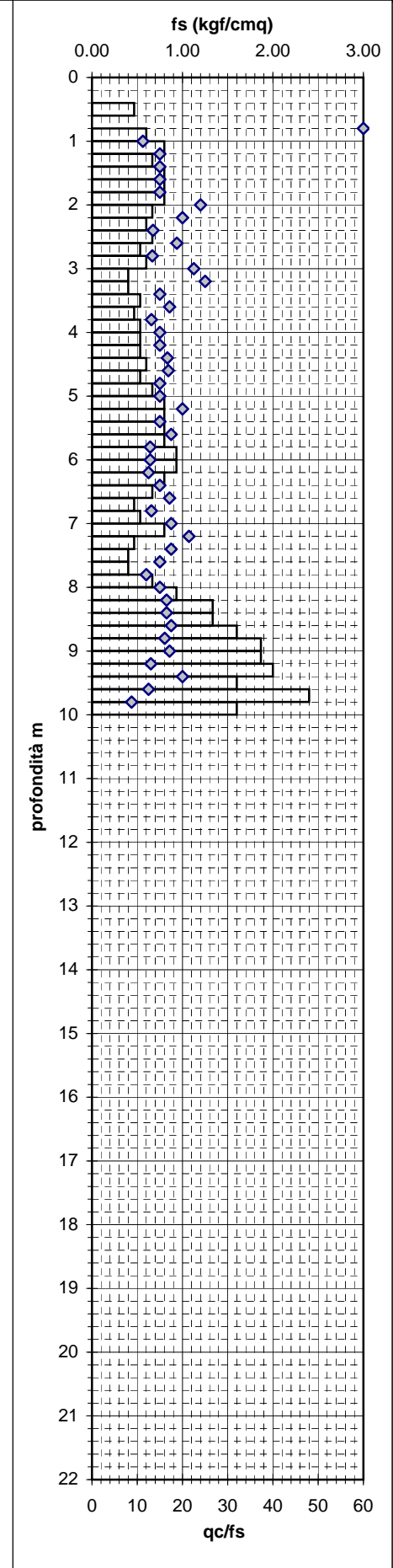
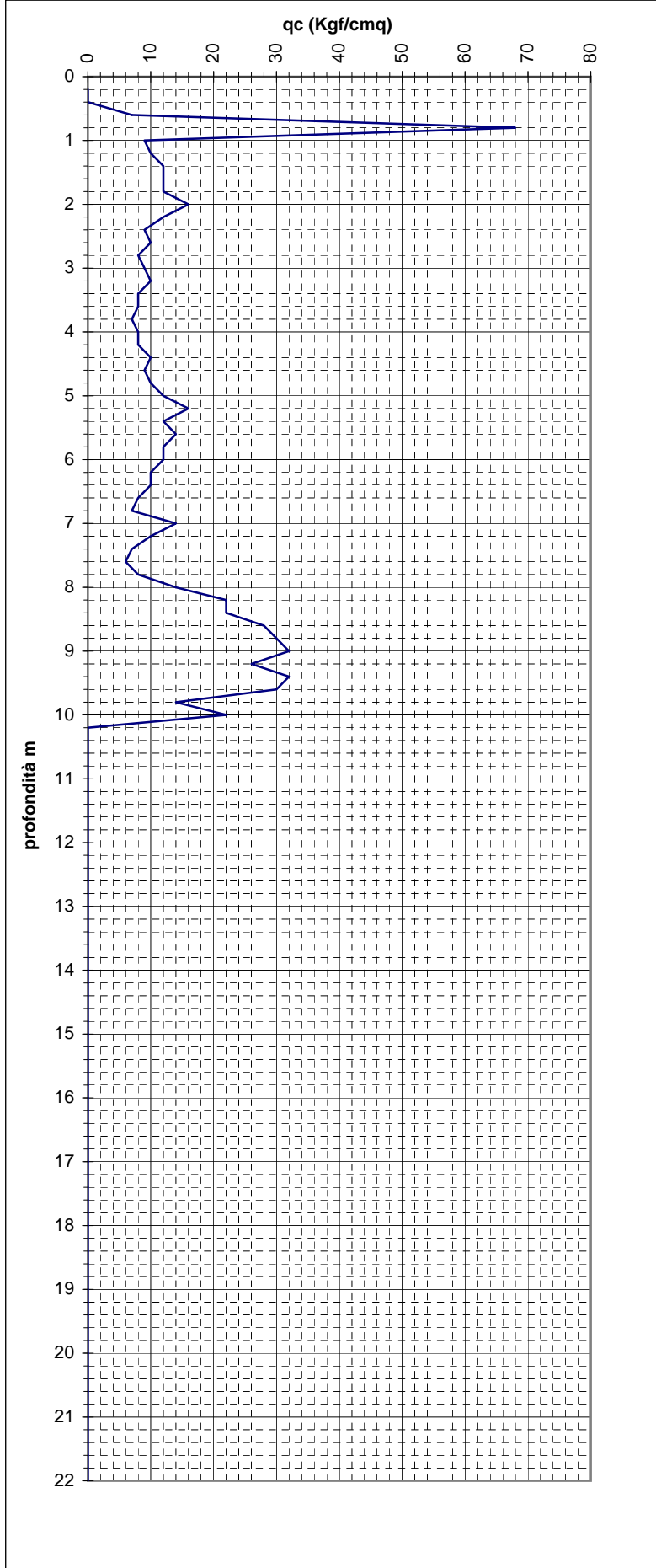
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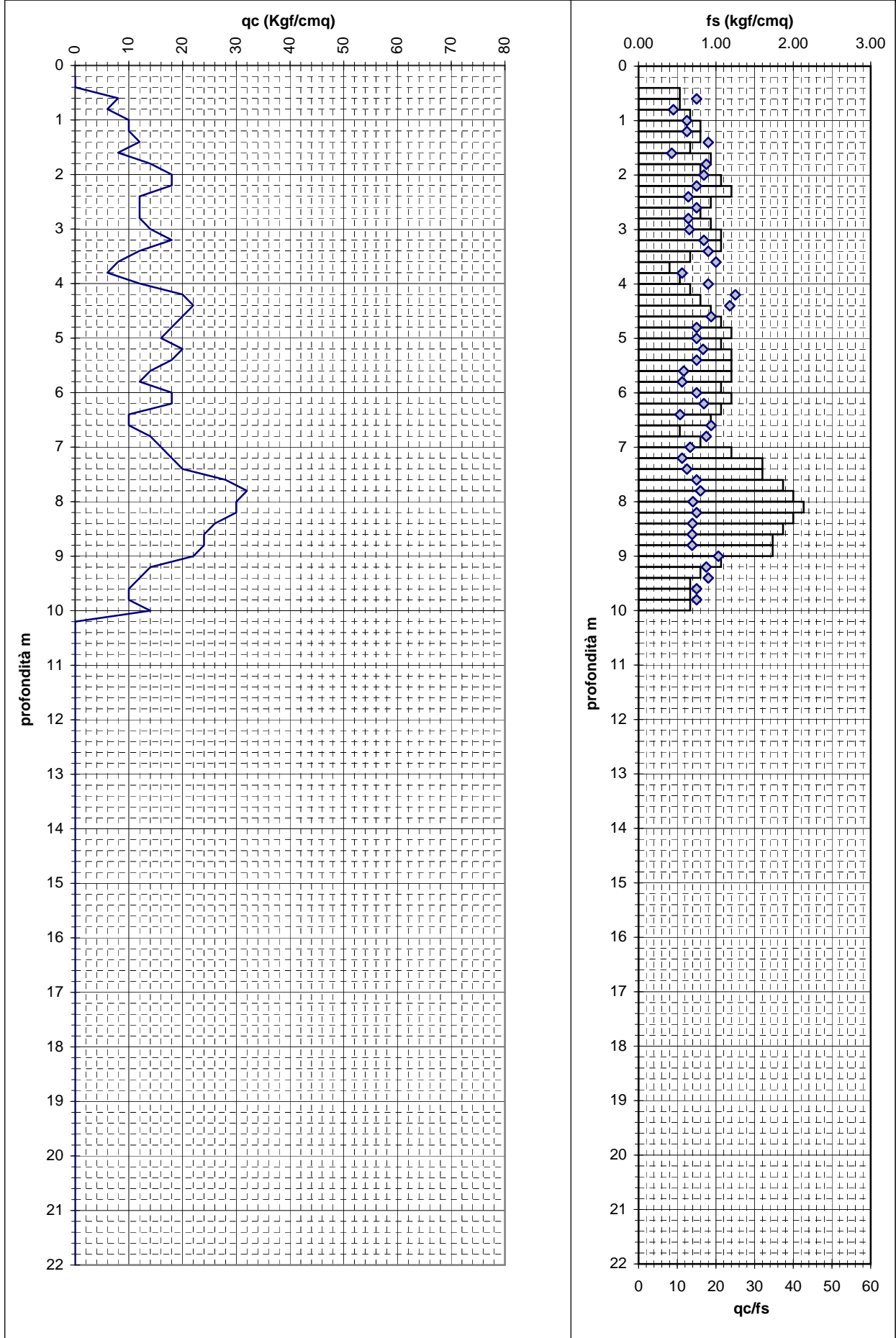
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P1 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



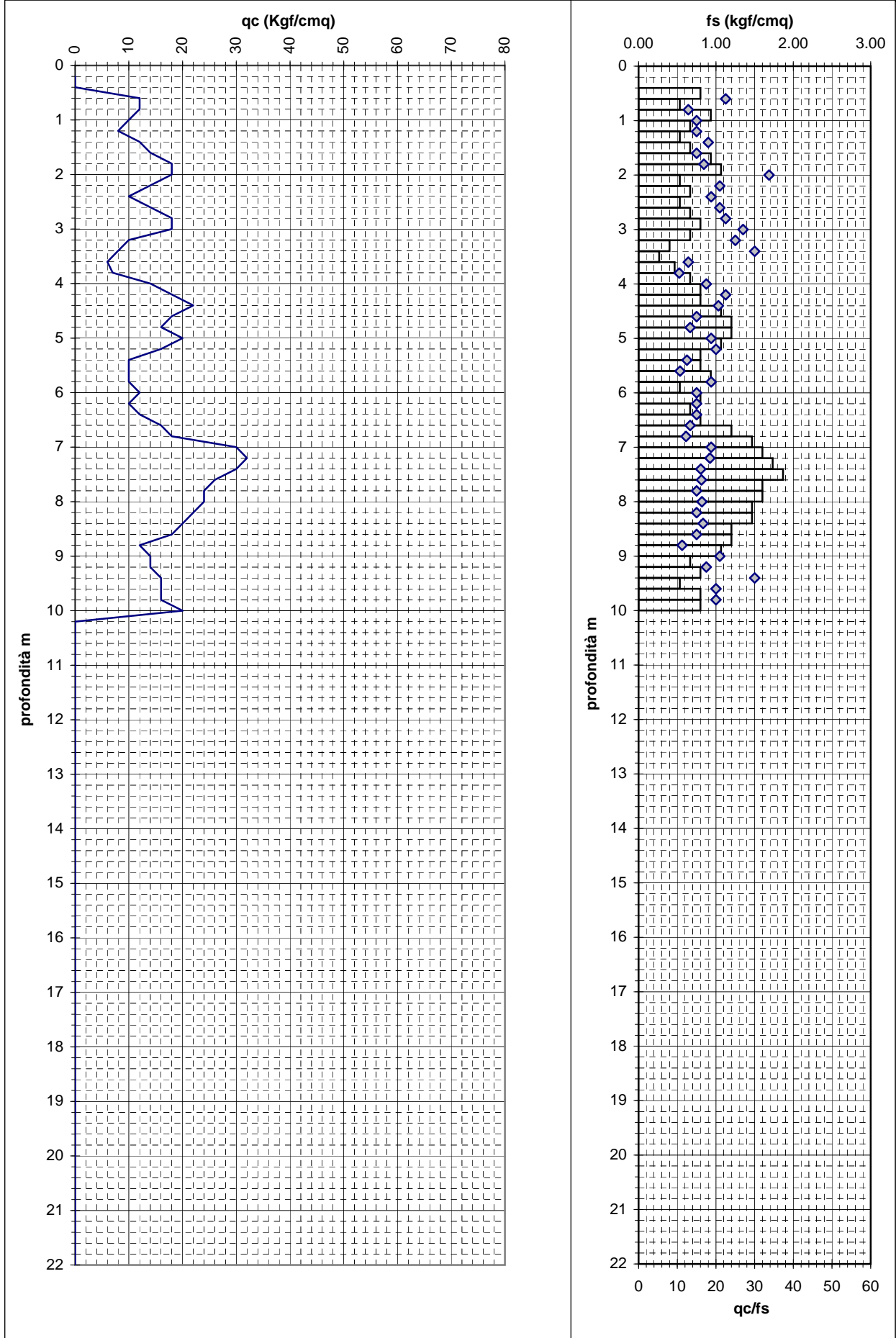
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P2 | COMMITTENTE: Amm. Comunale |
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| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



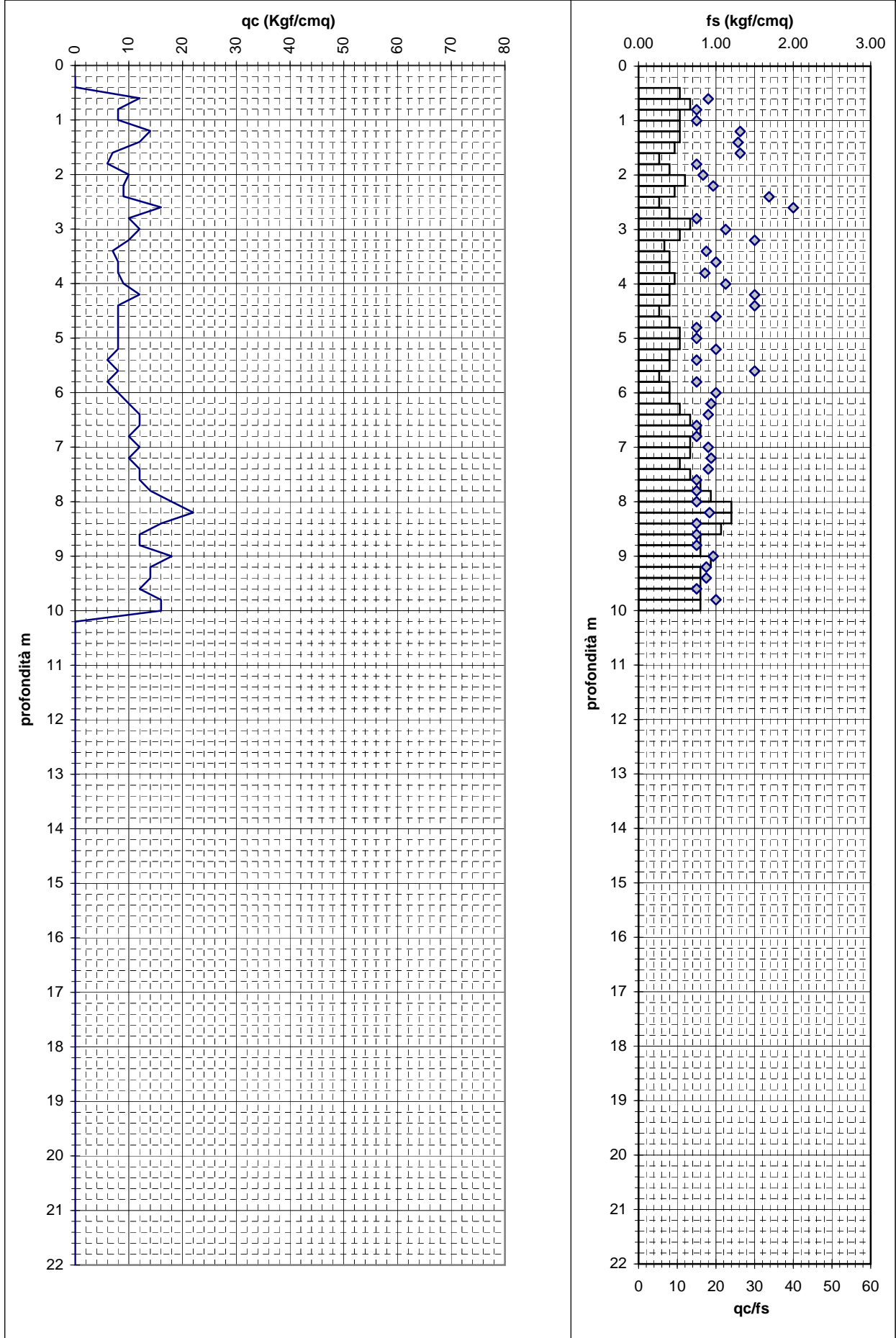
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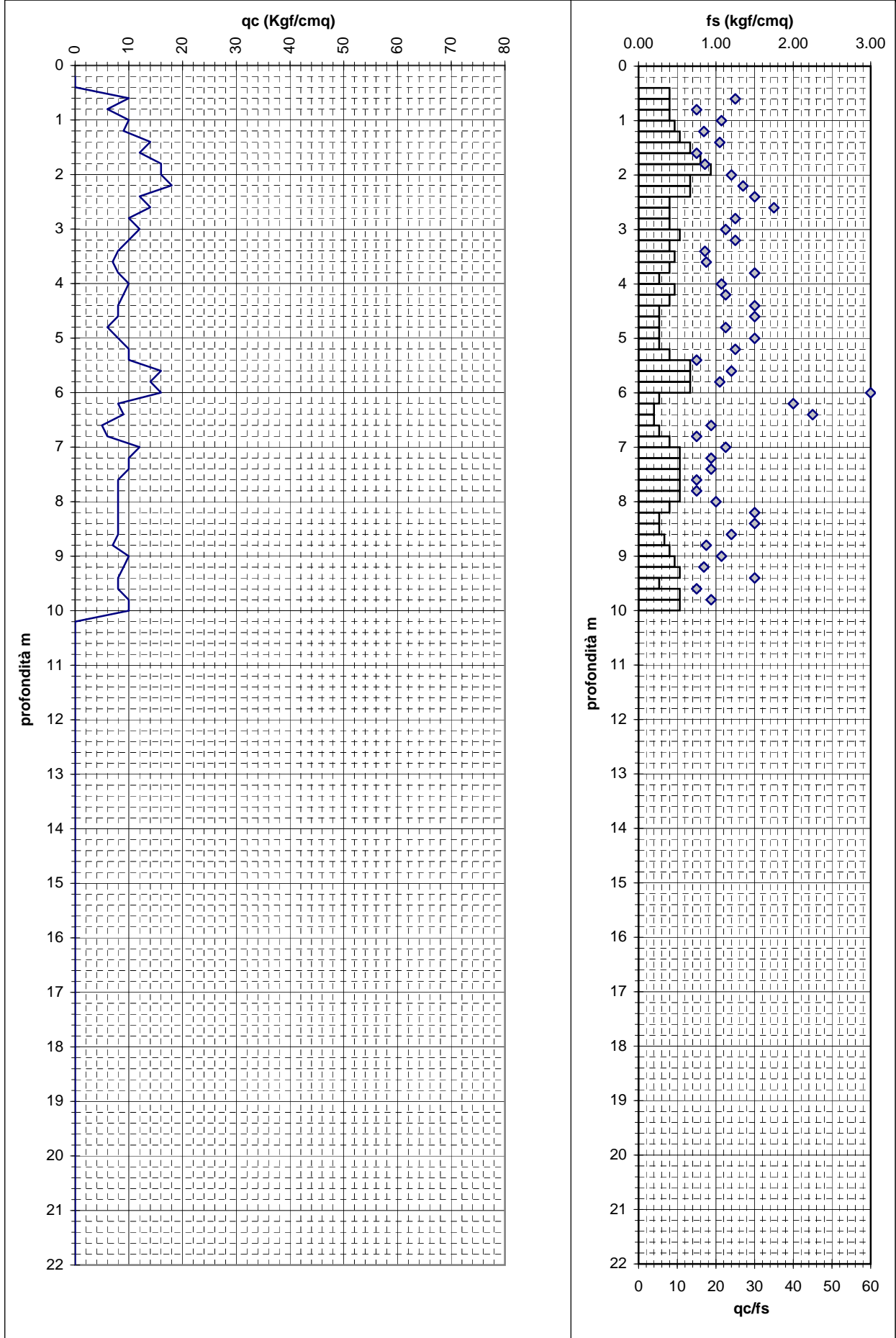
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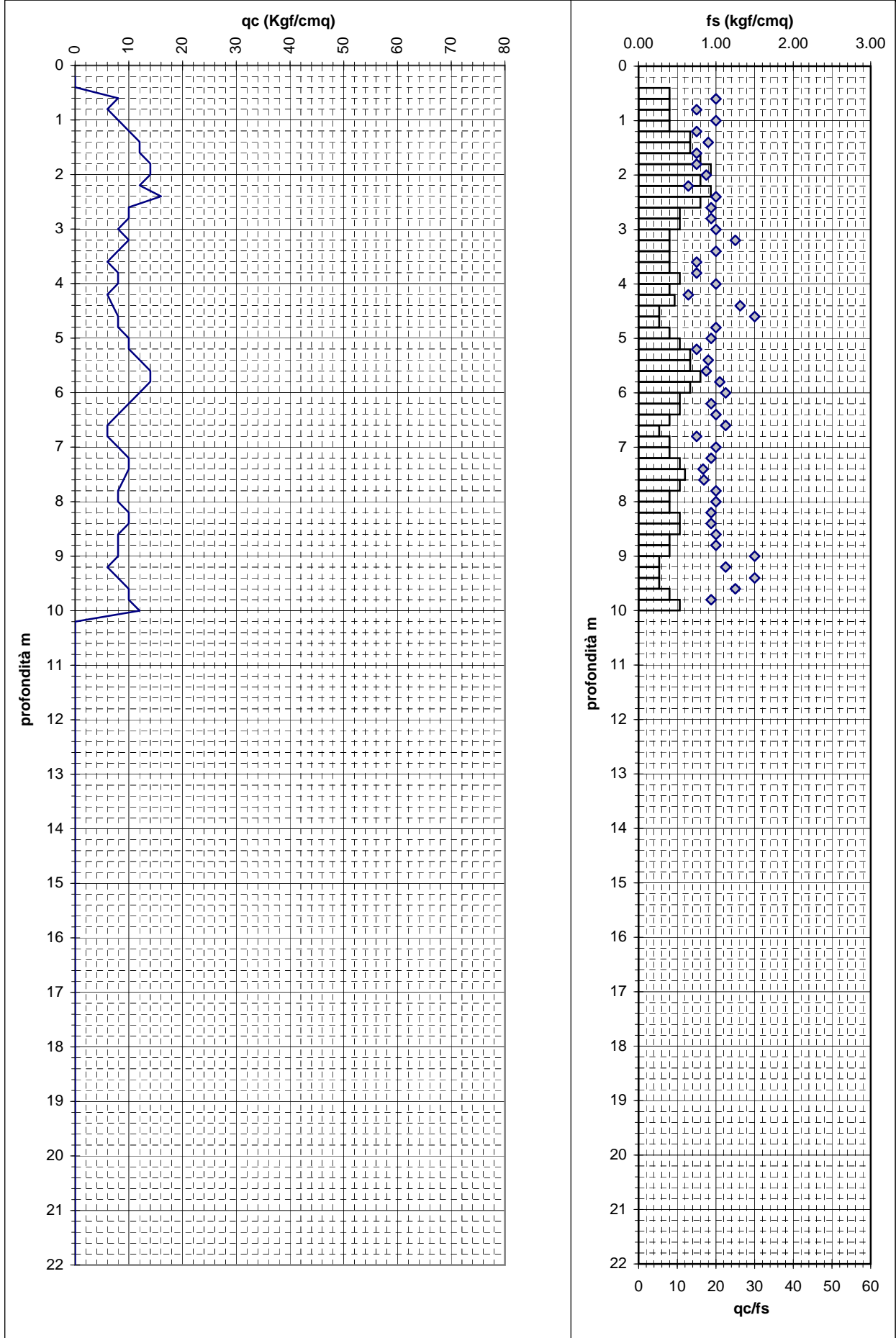
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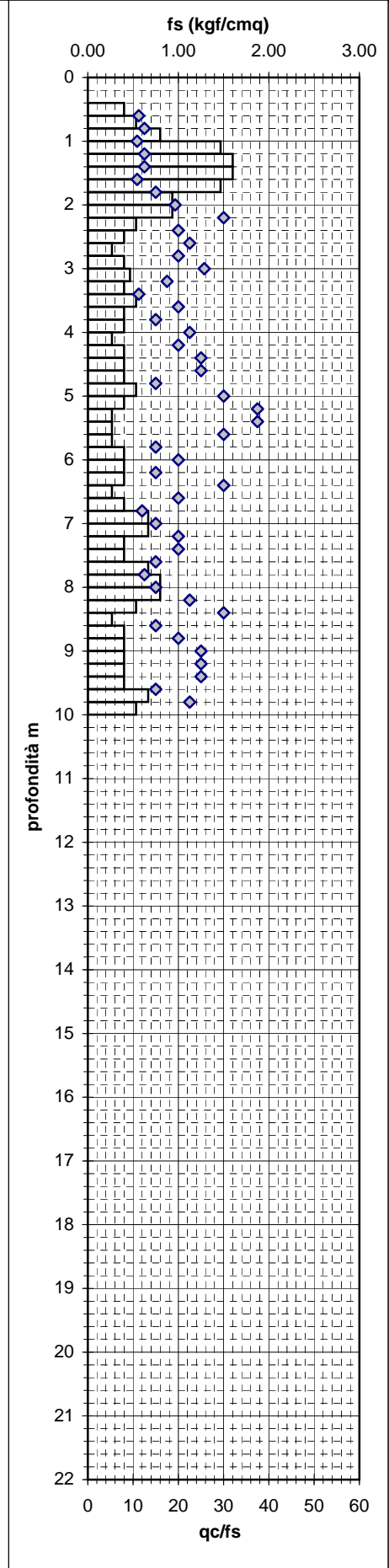
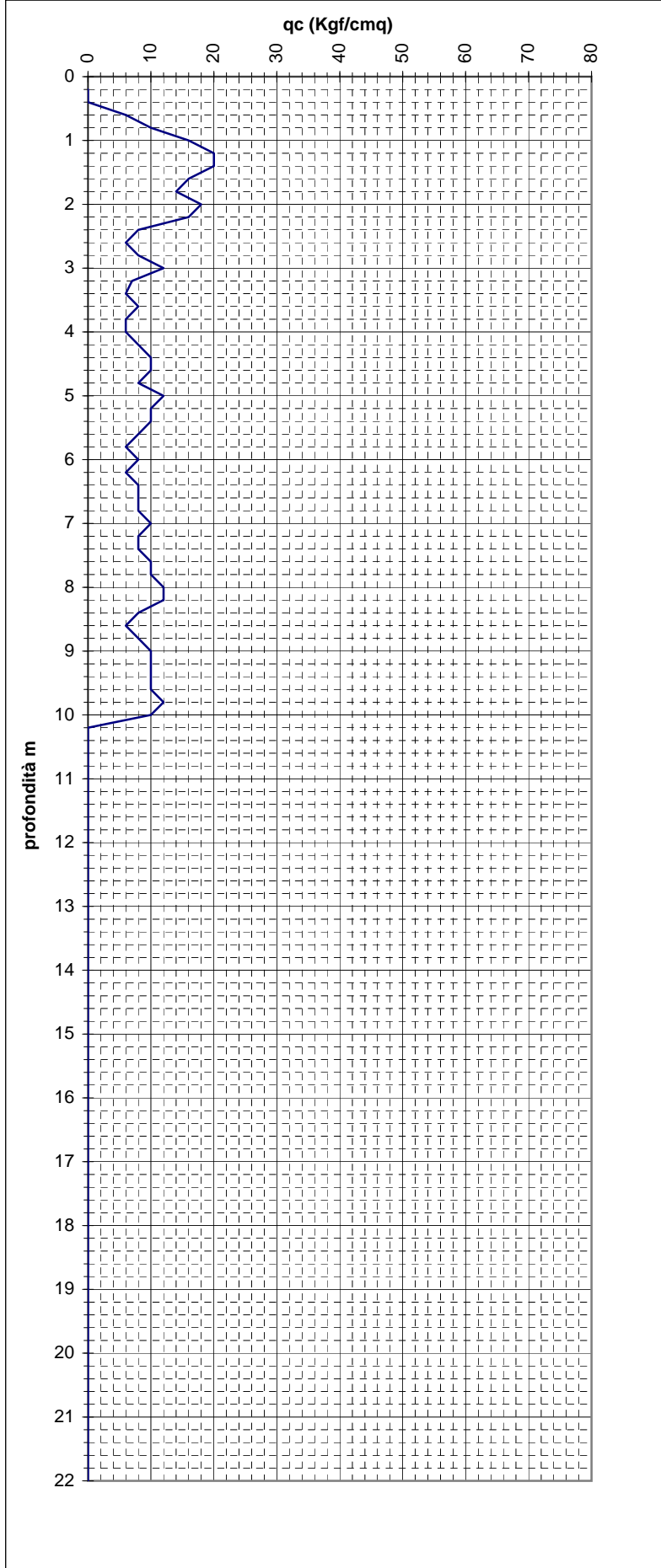
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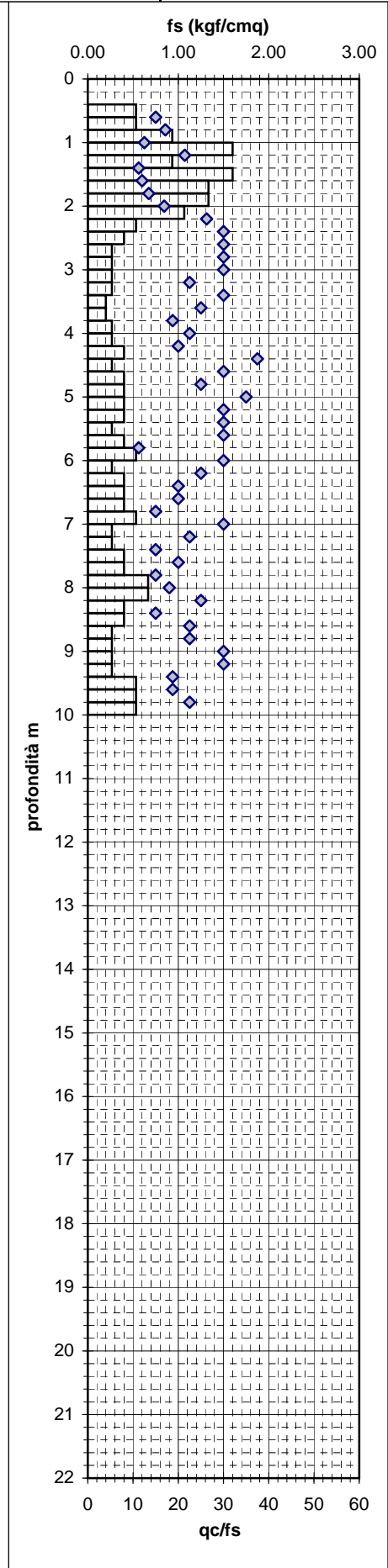
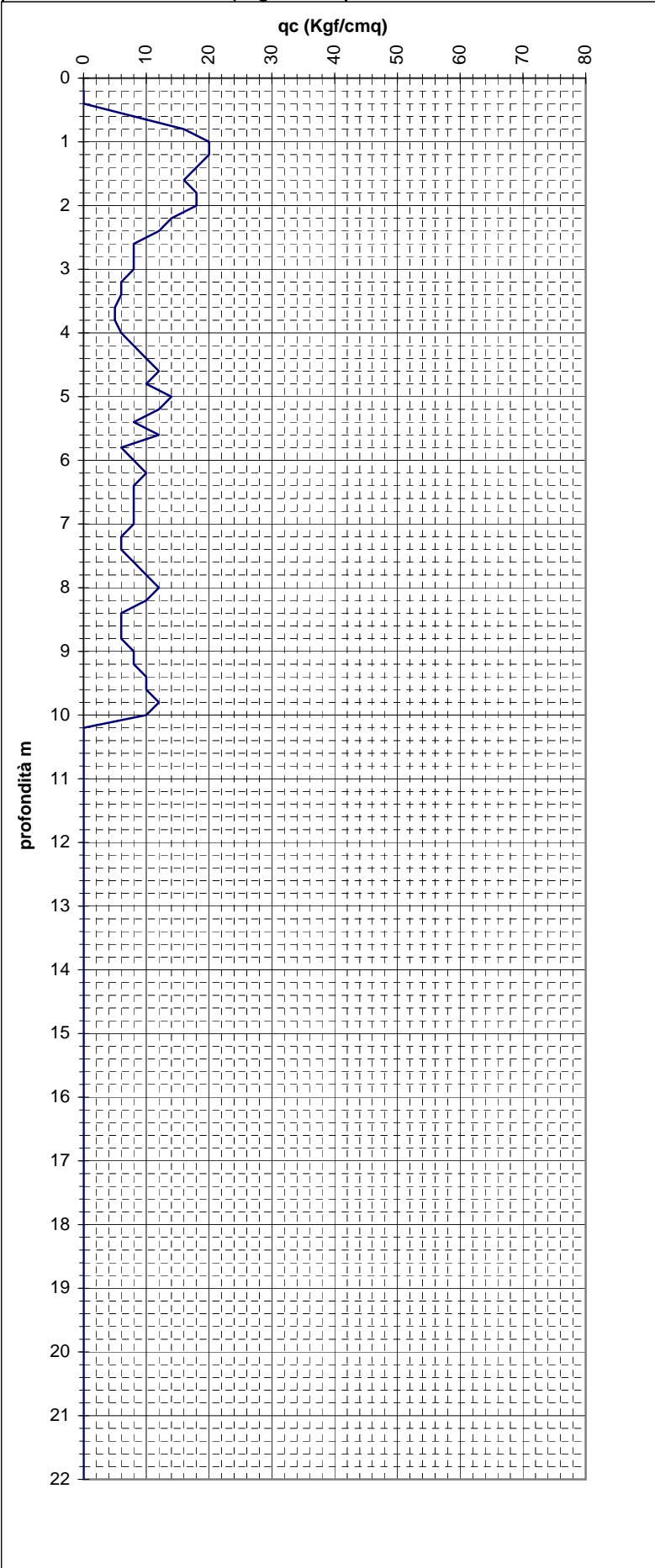
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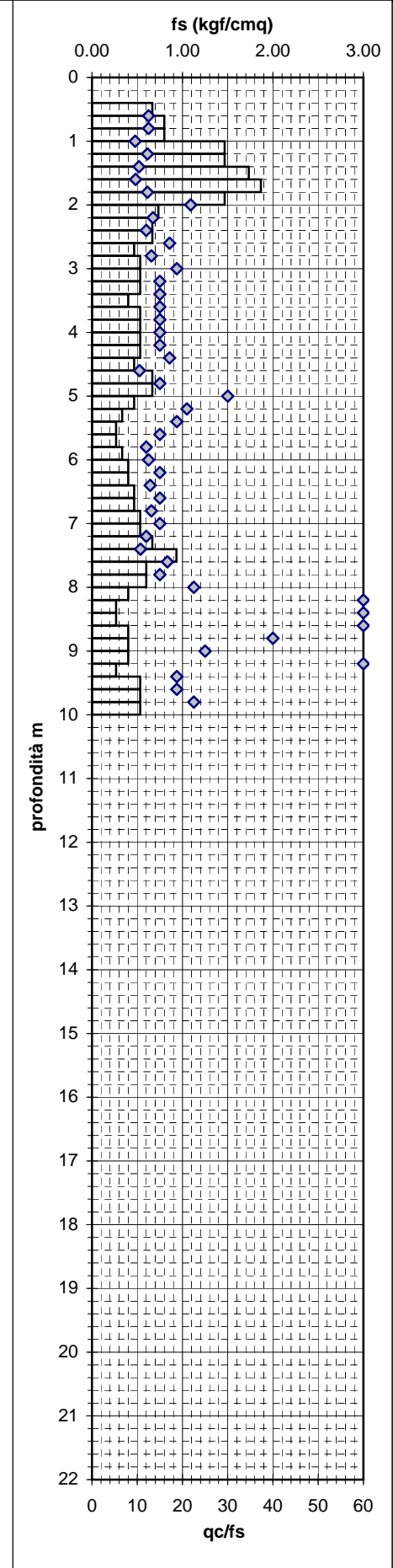
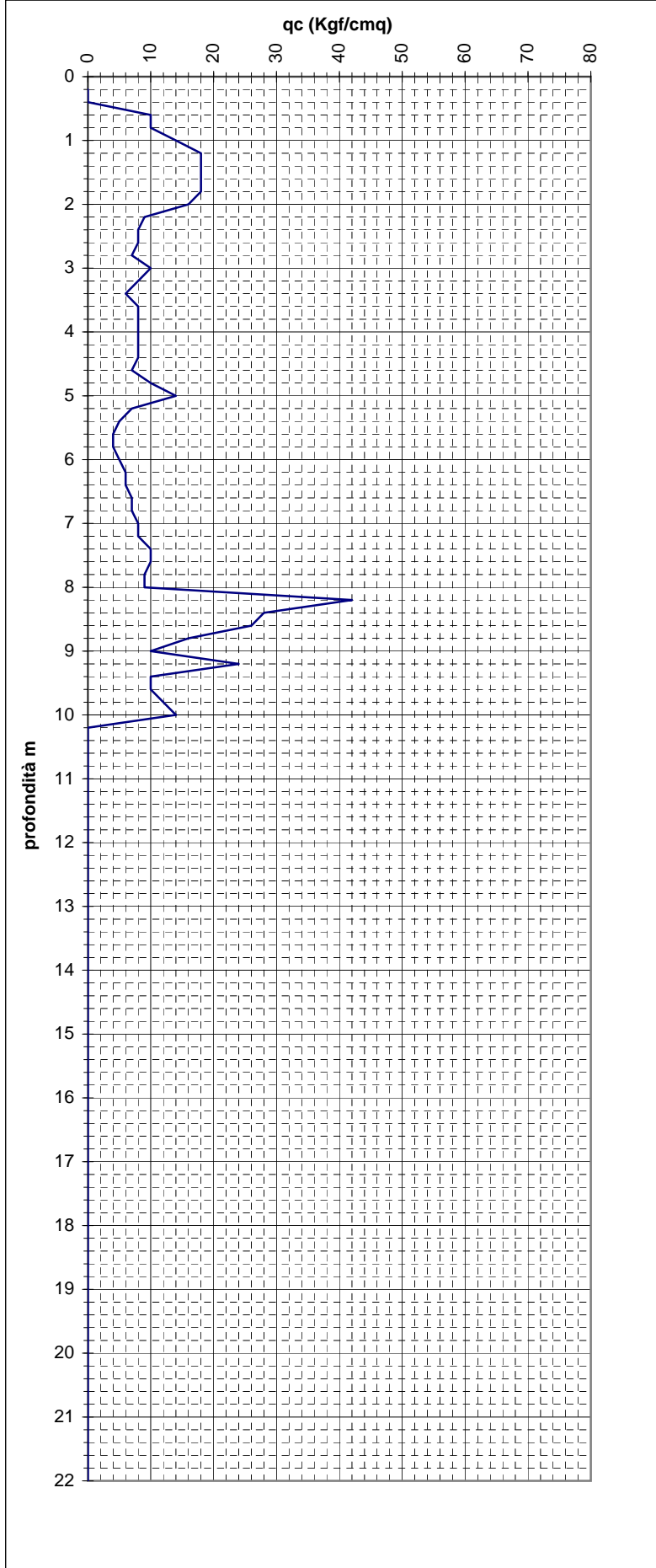
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P8 | COMMITTENTE: Amm. Comunale |
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| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



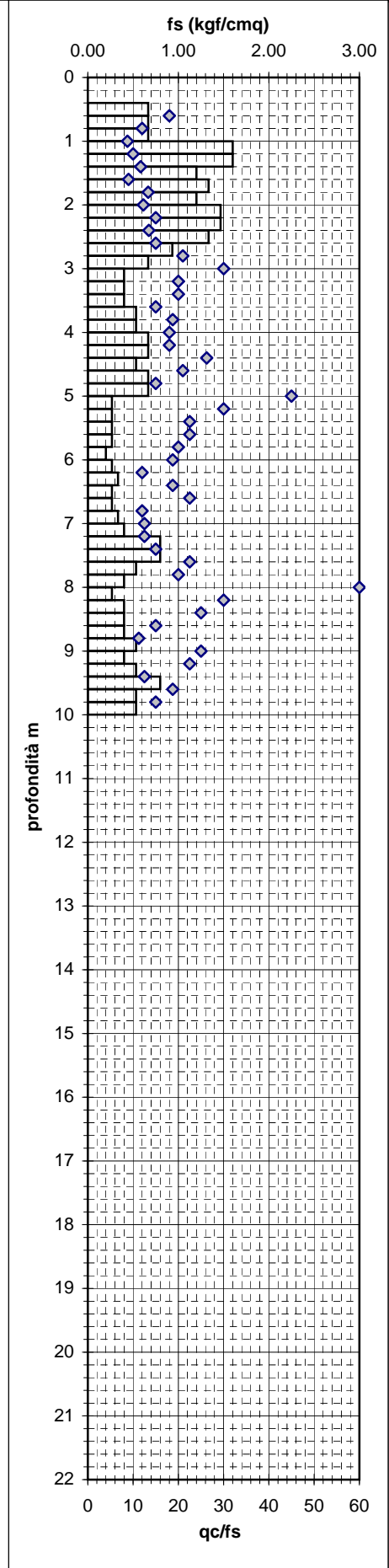
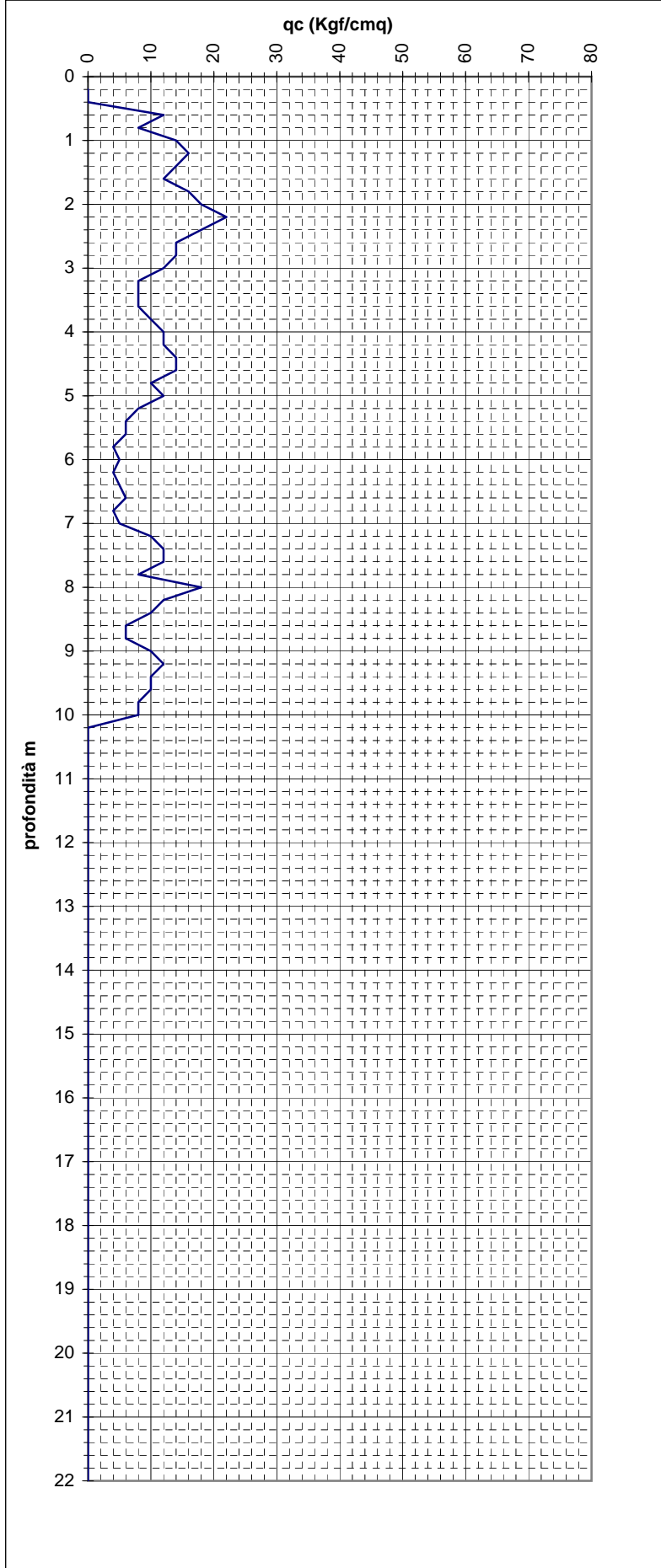
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P9 | COMMITTENTE: Amm. Comunale |
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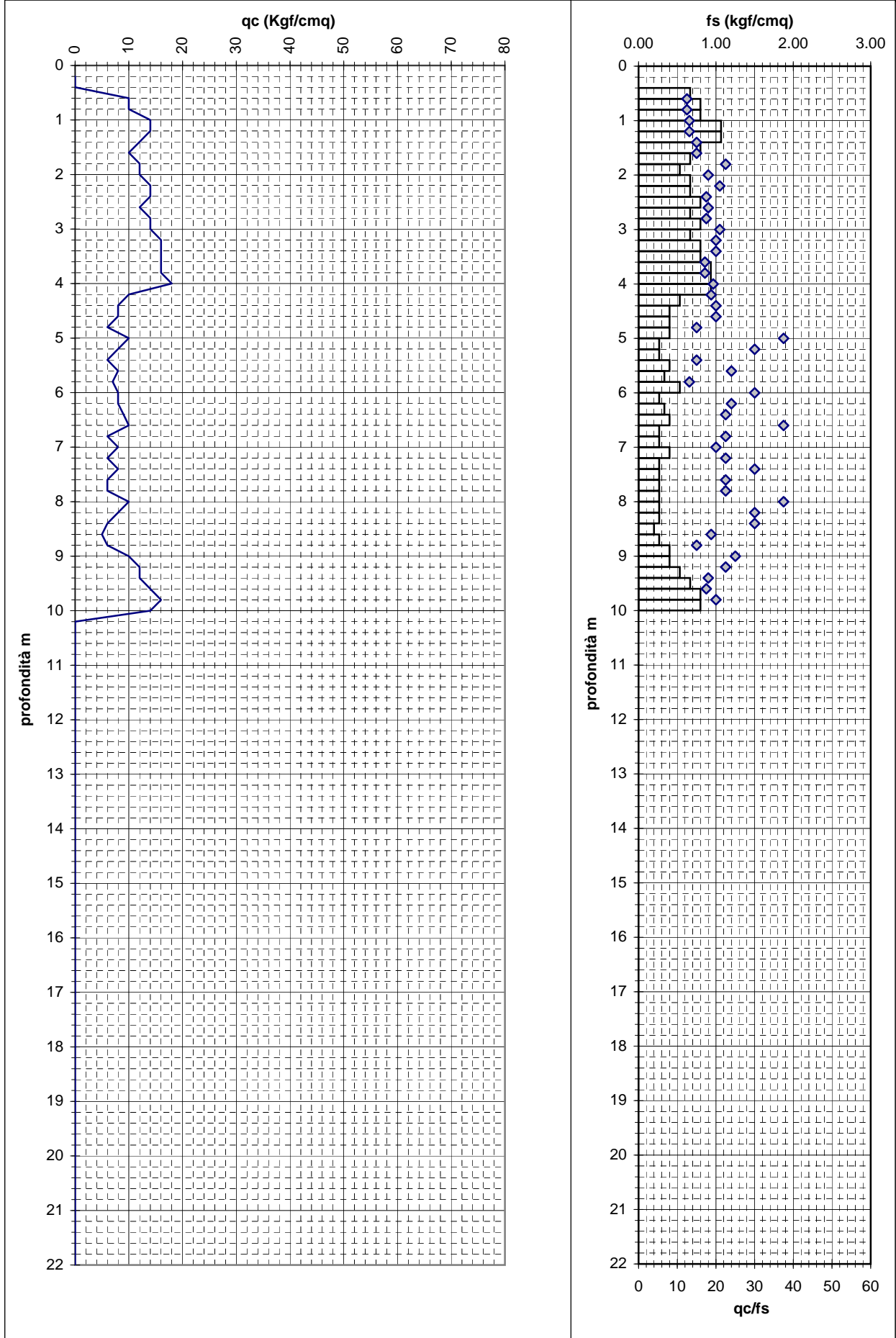
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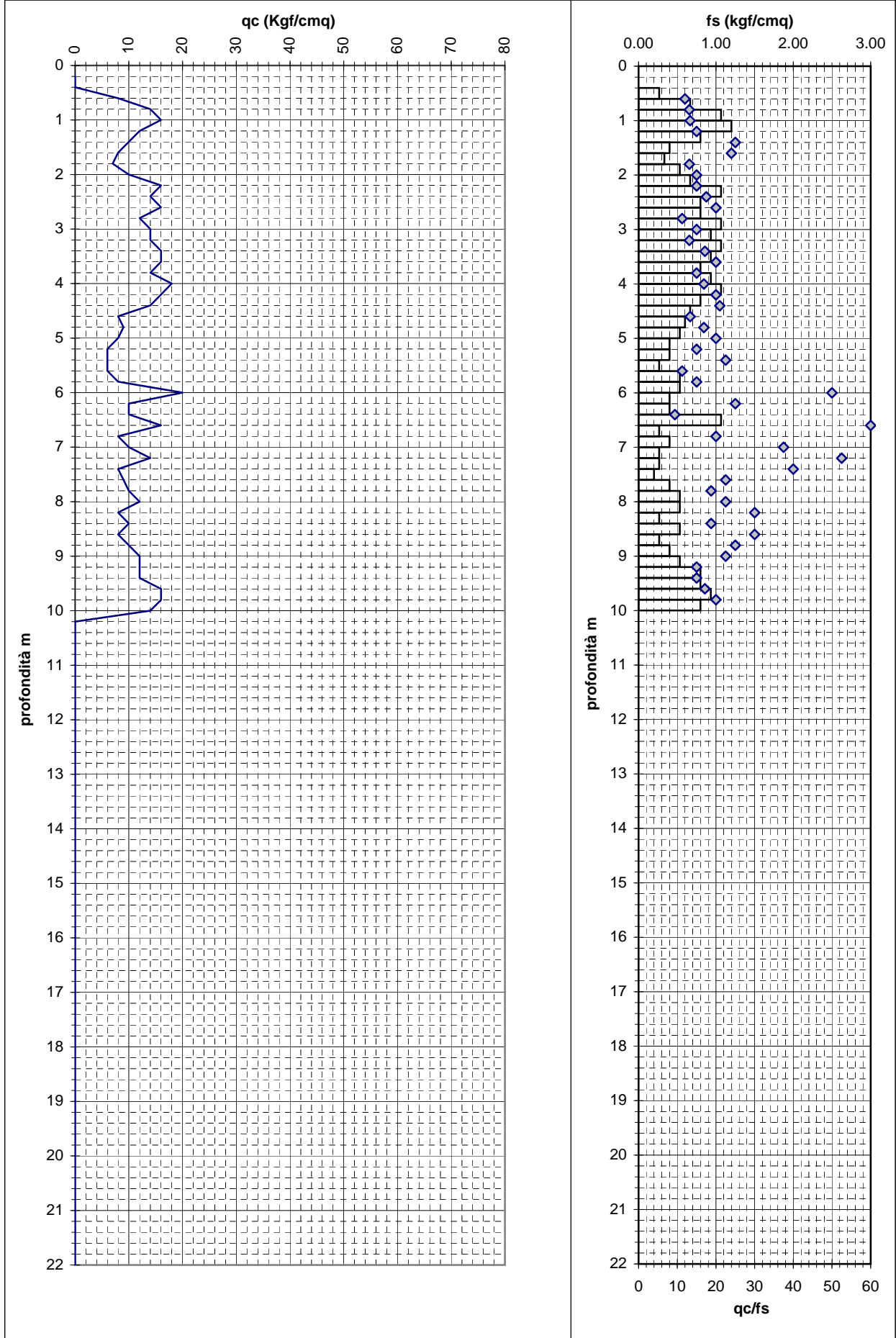
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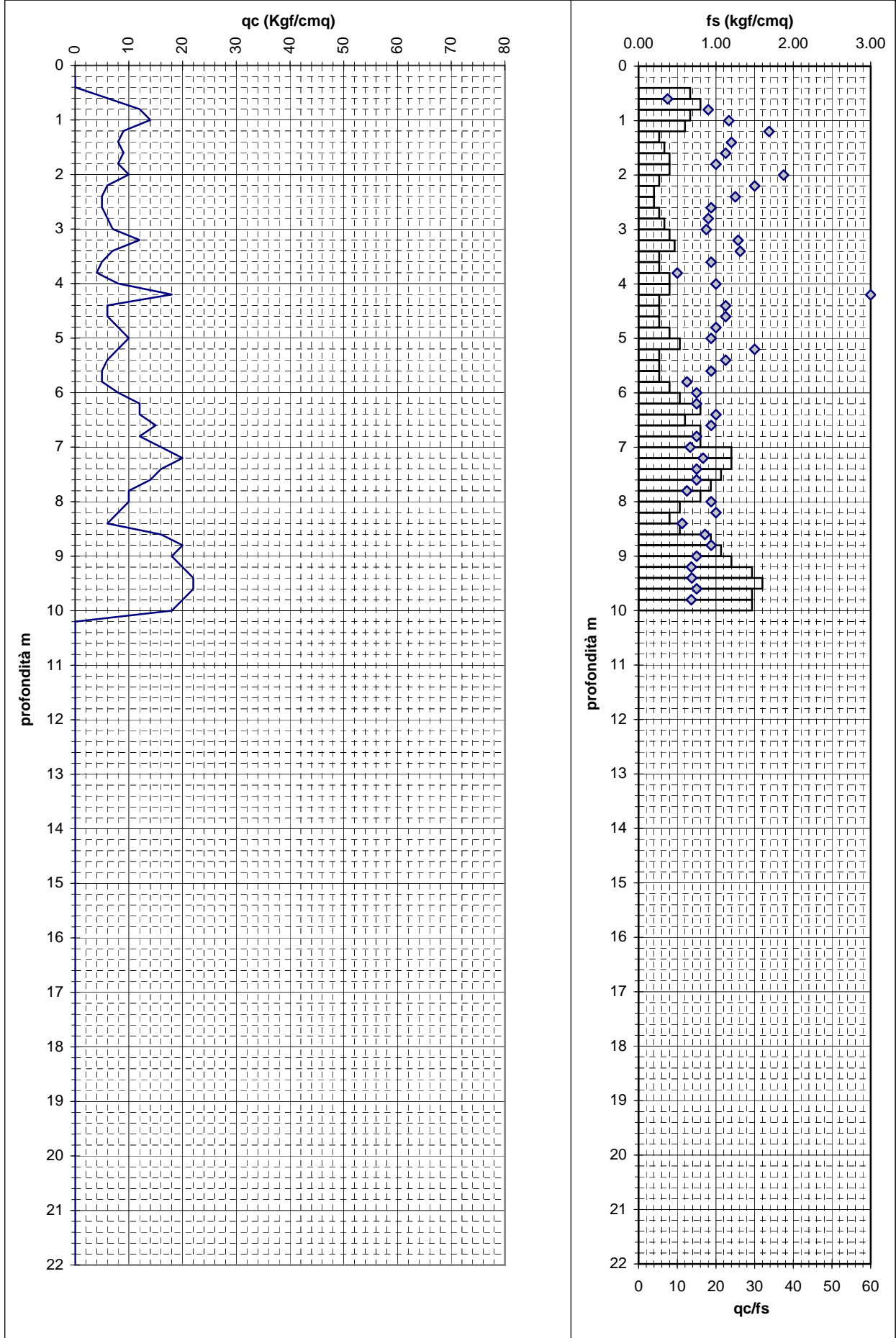
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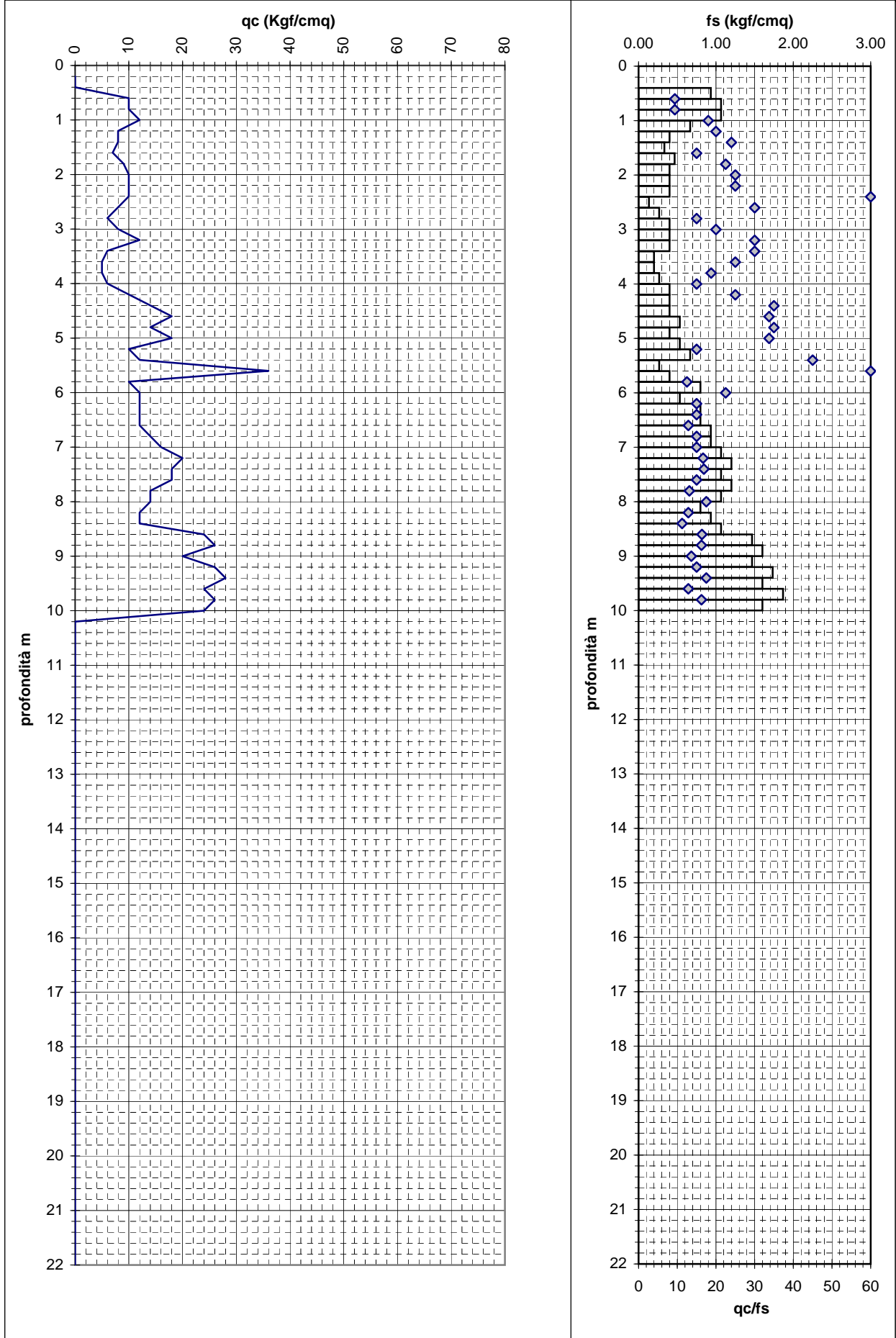
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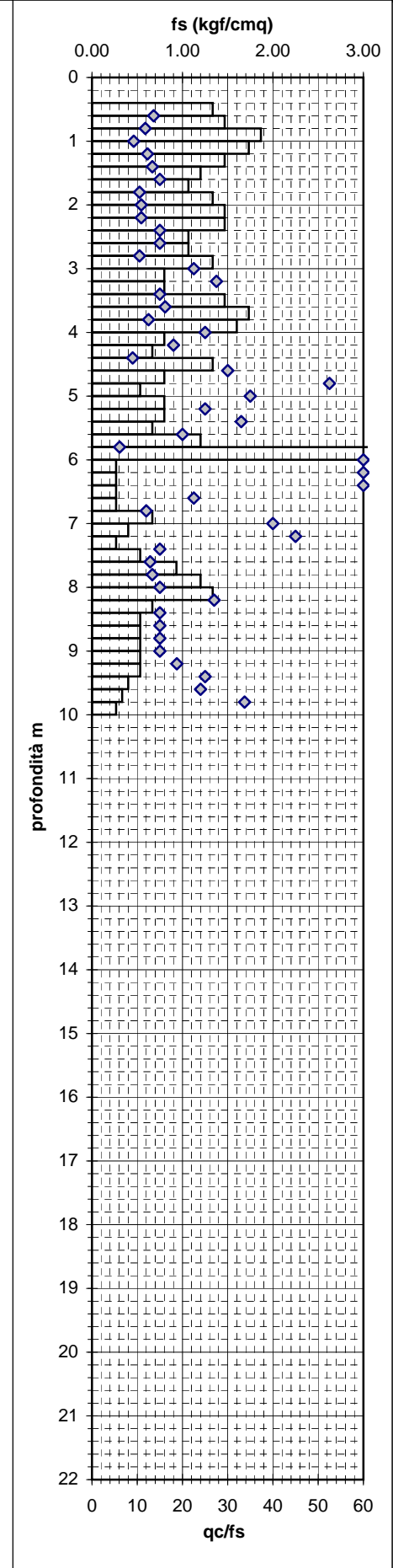
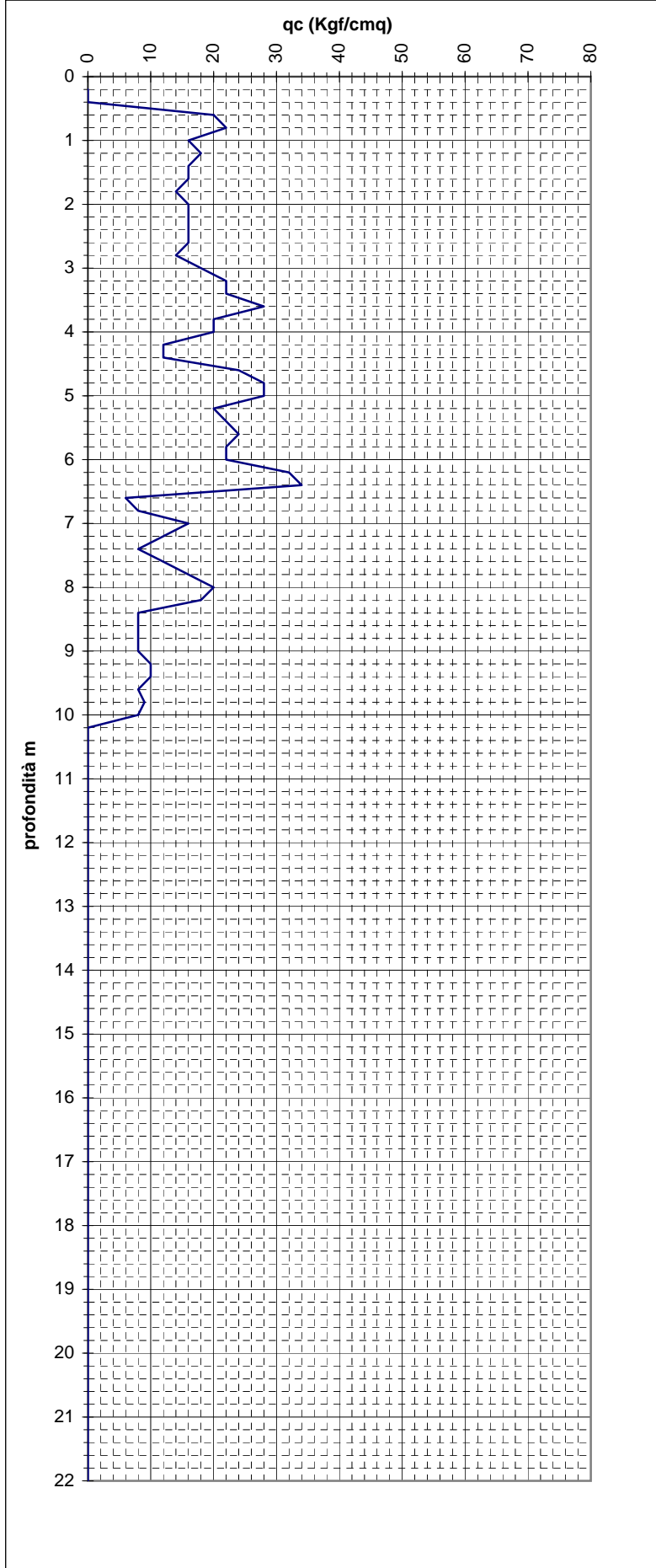
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P15 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



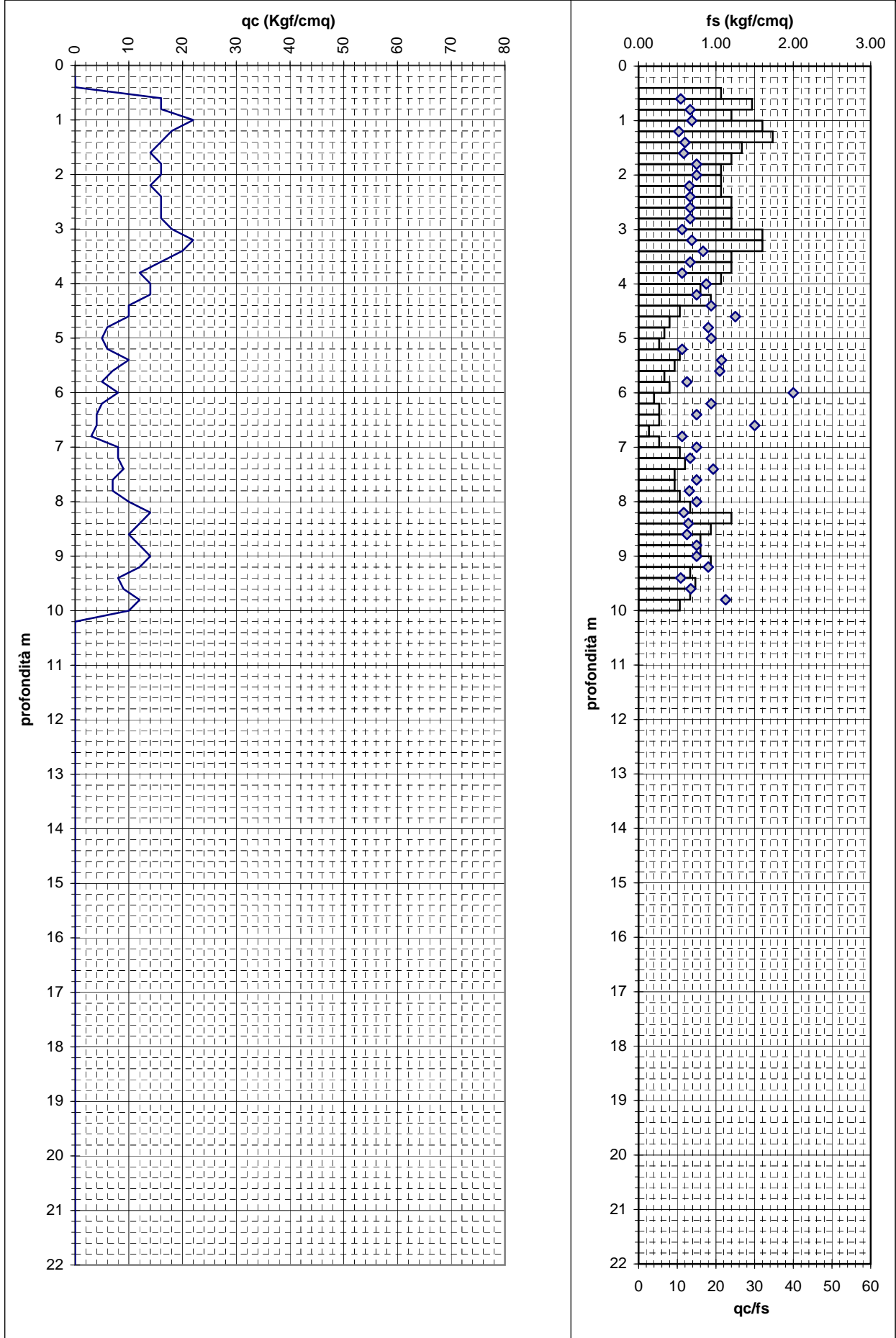
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P16 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



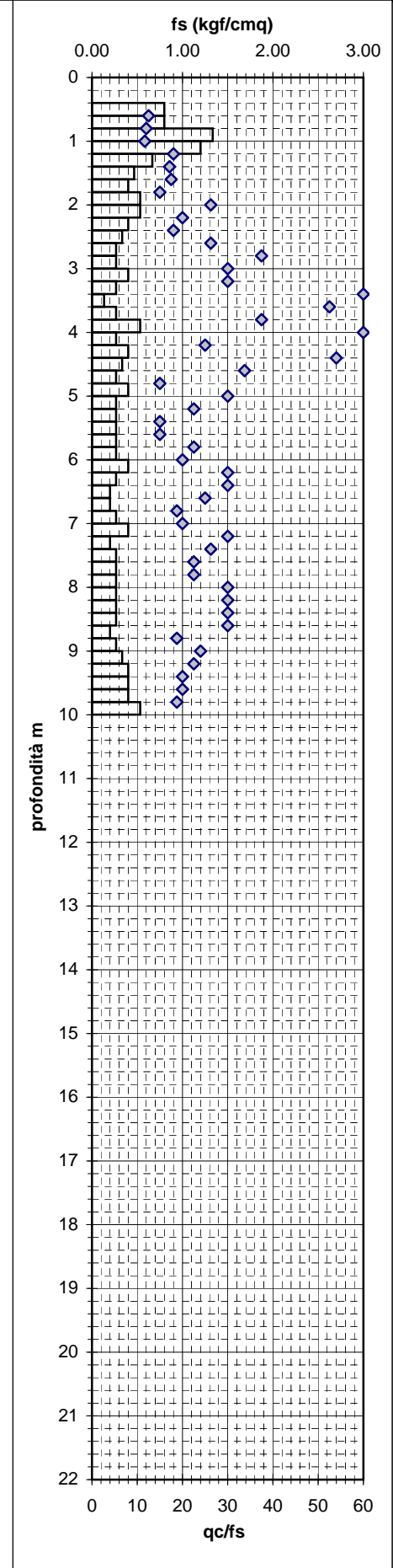
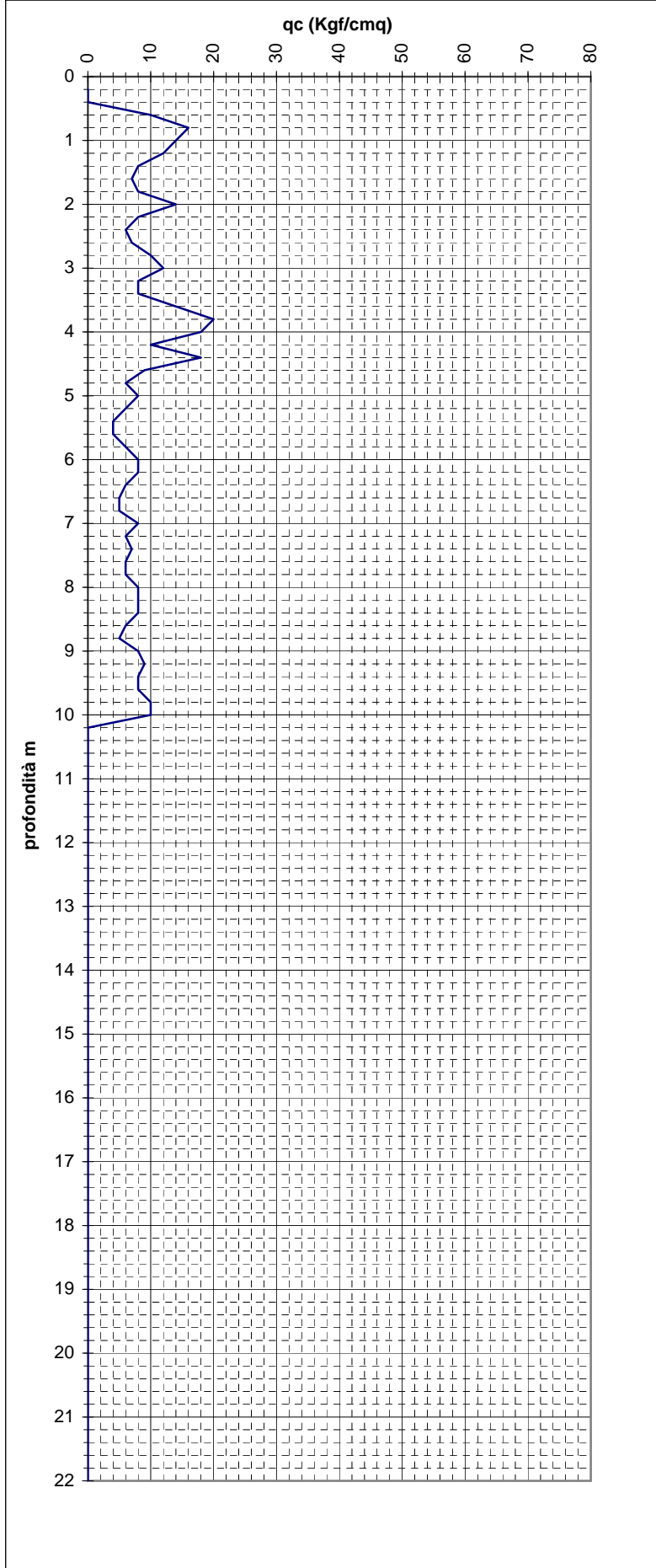
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P17 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



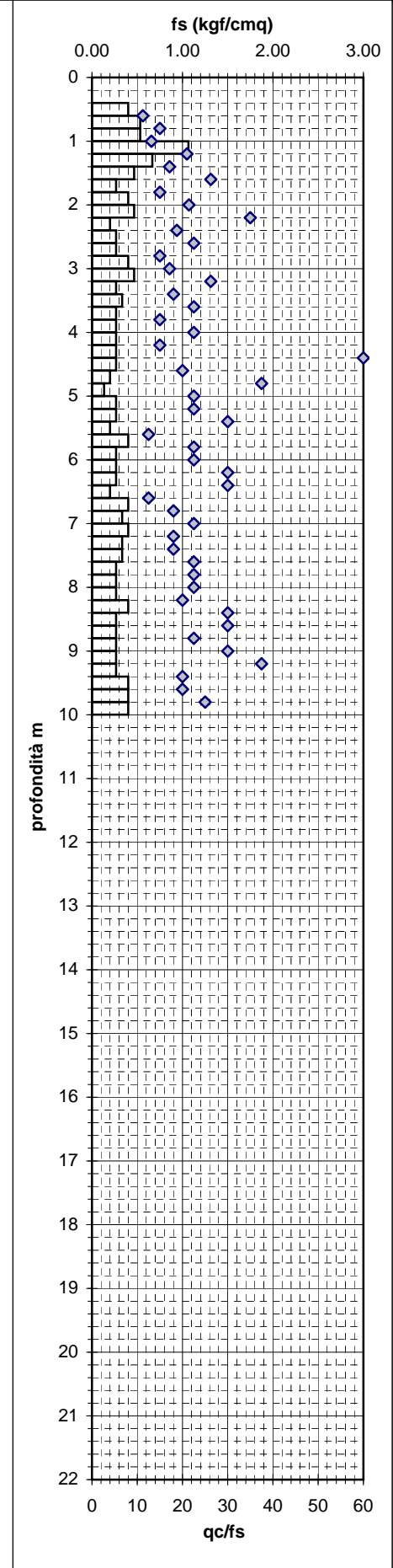
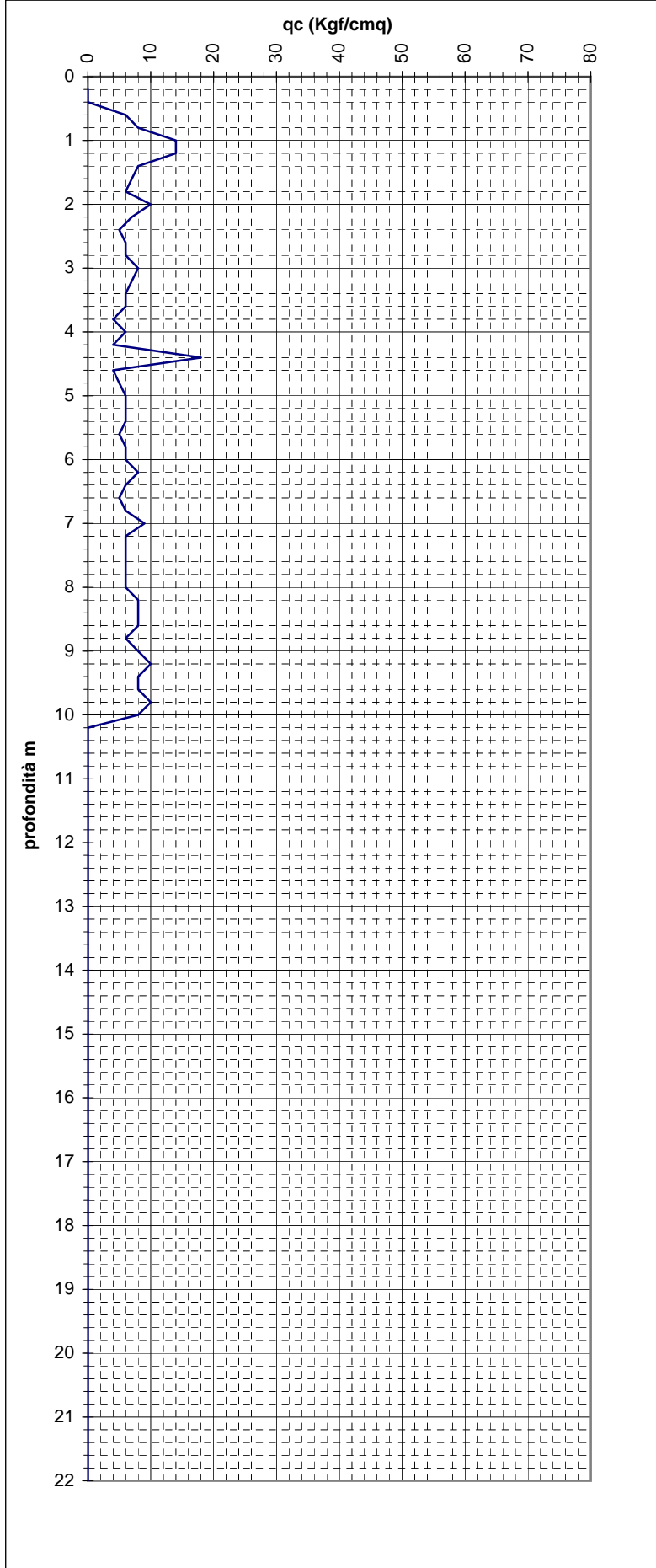
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P18 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



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|---|--|---------------------------------------|
| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P19 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |

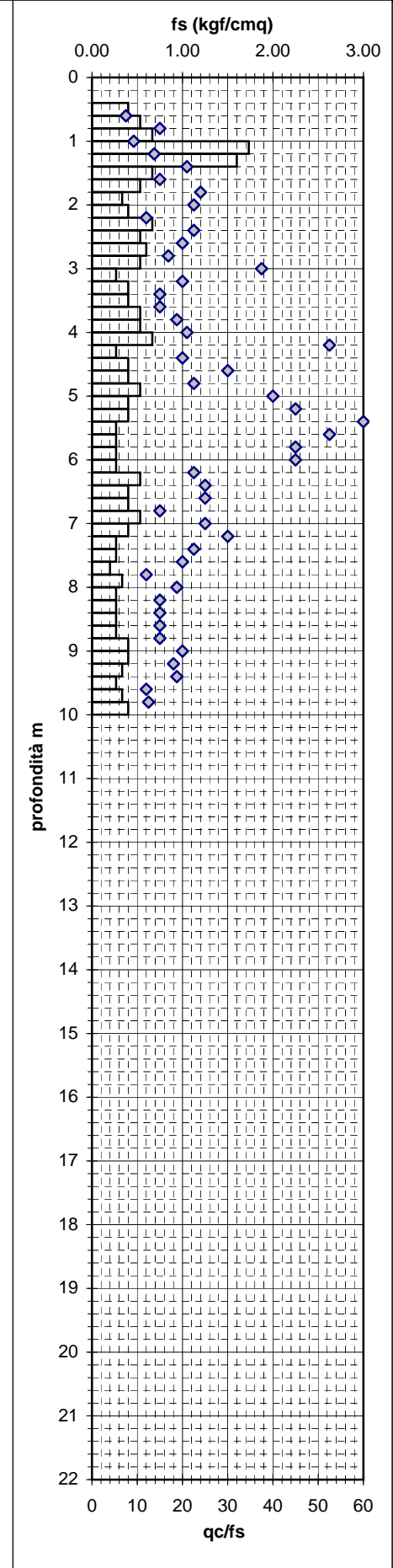
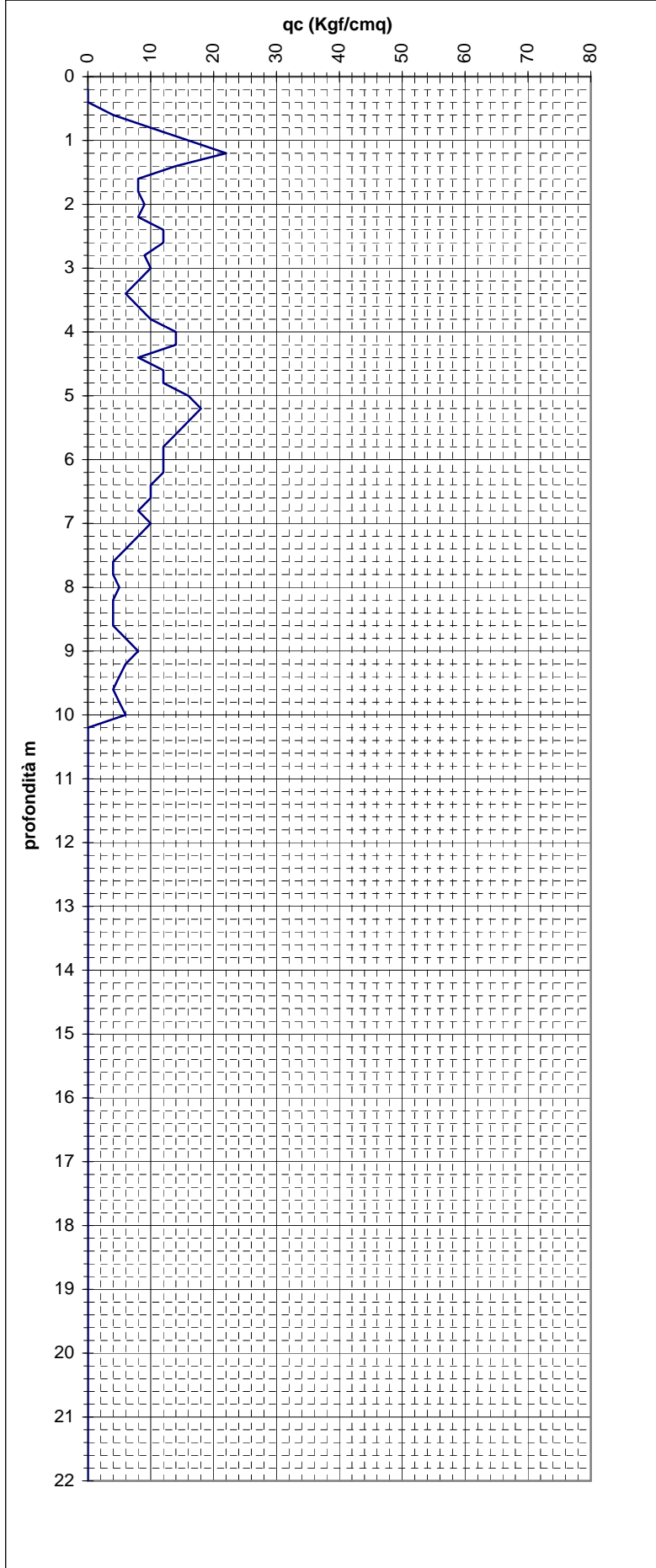


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| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |

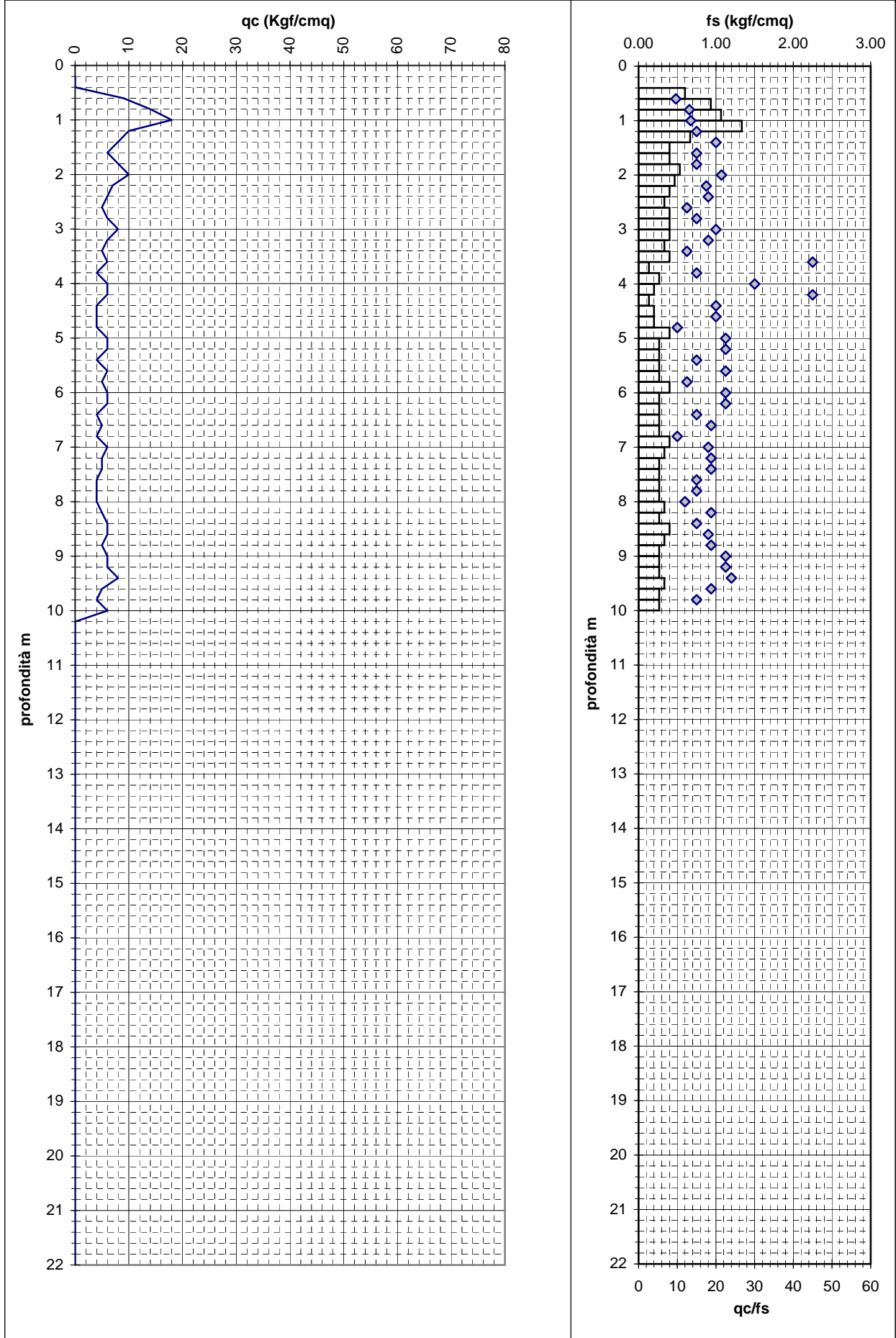


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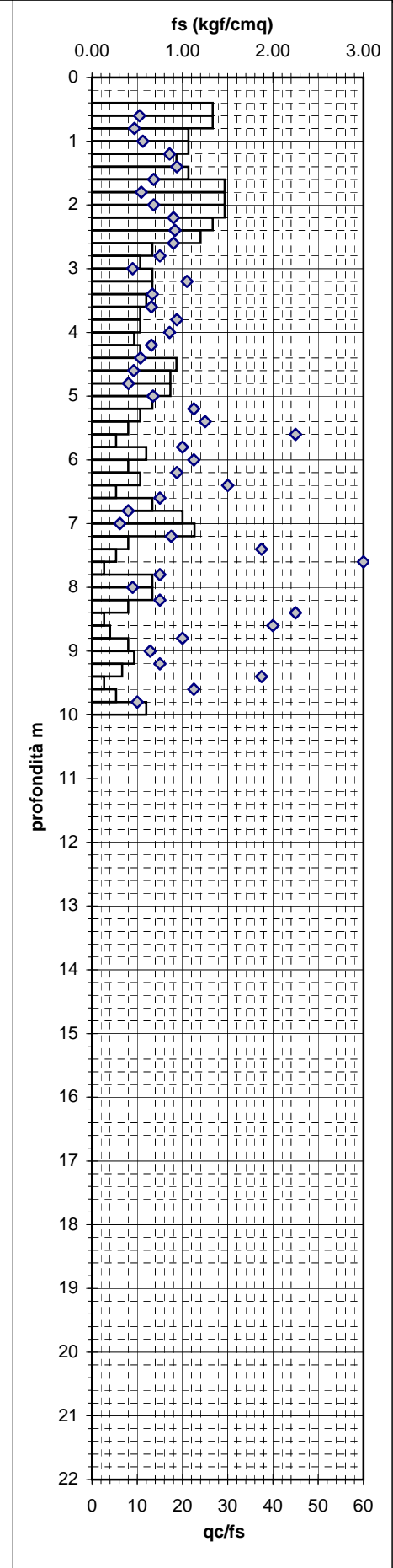
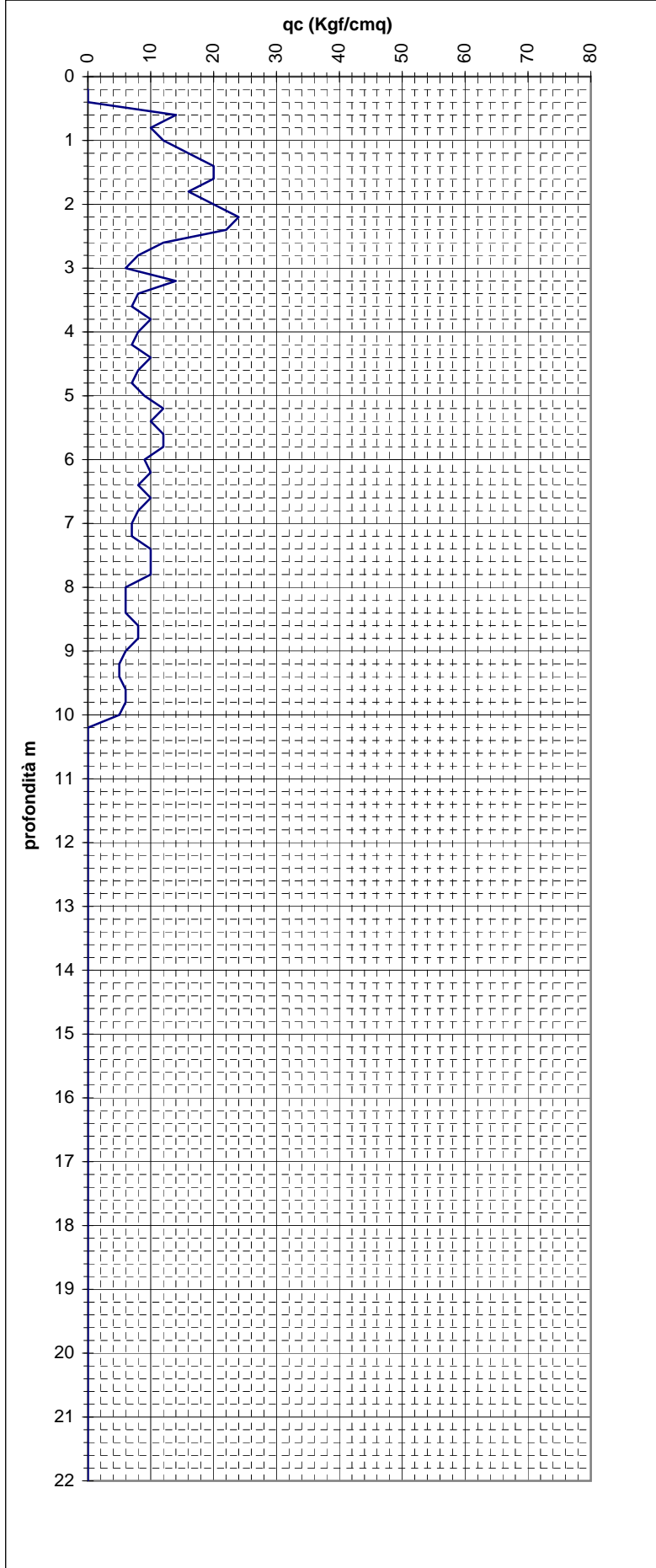
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| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



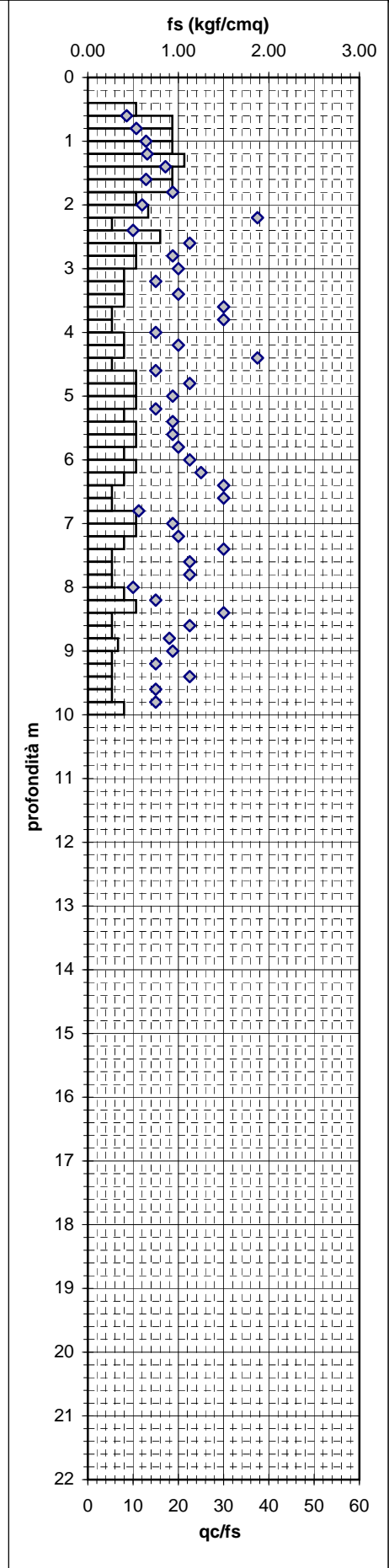
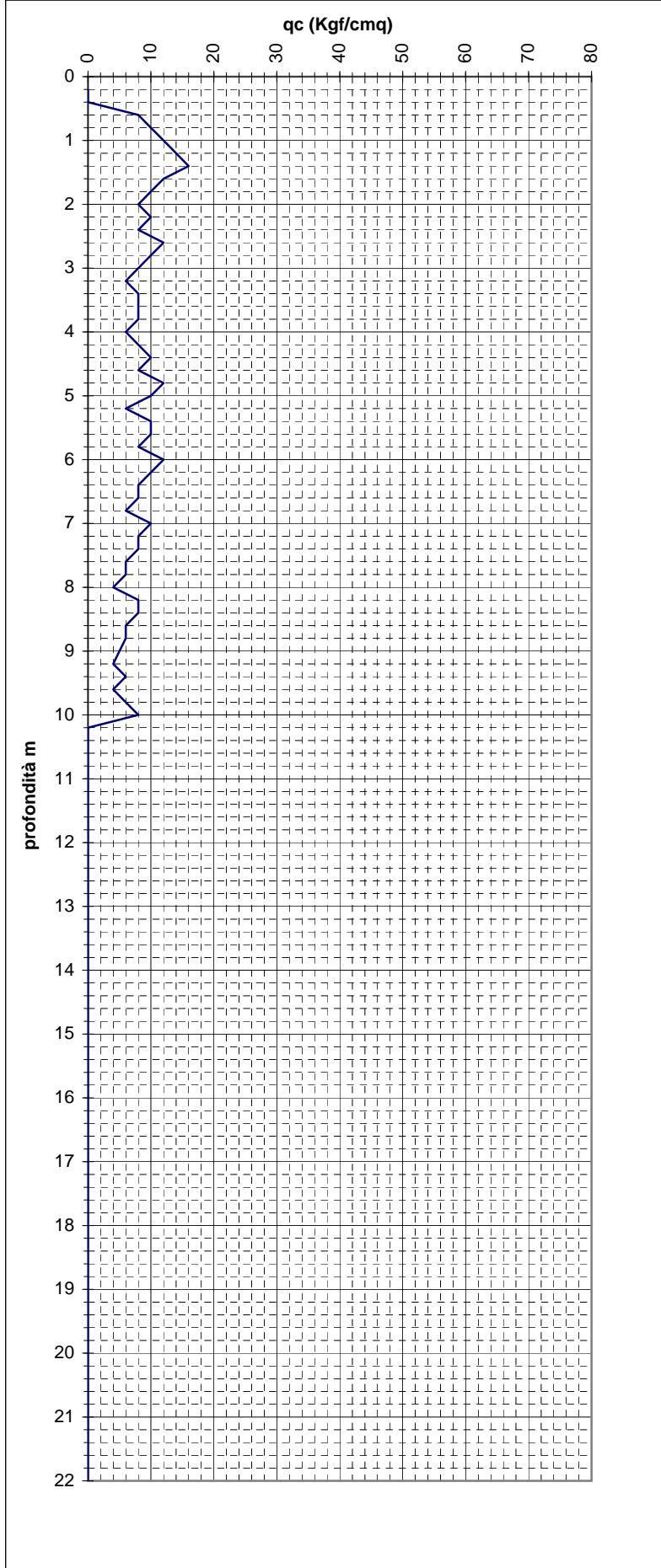
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P22 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



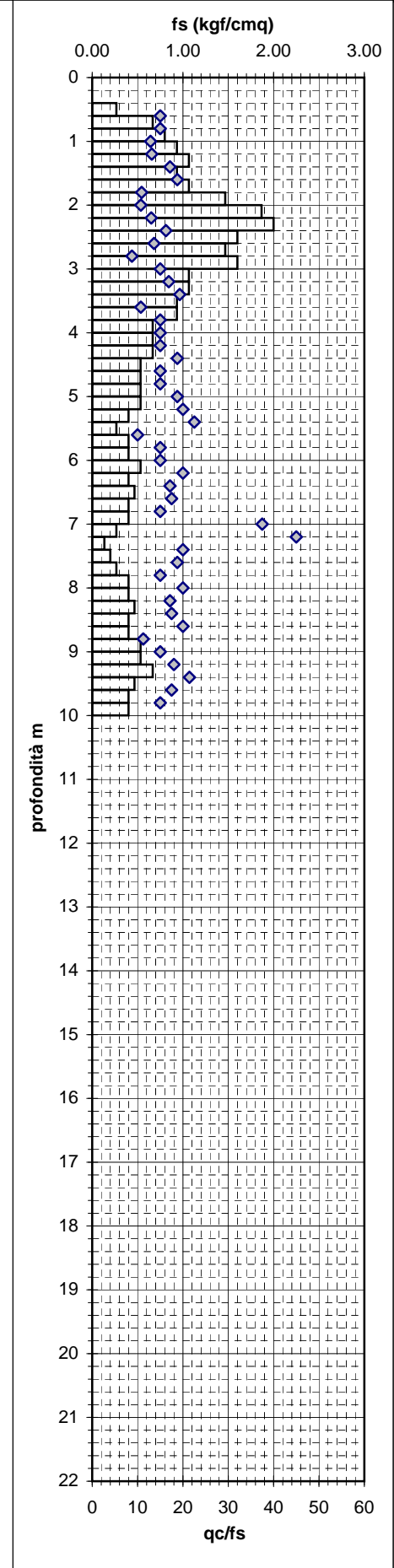
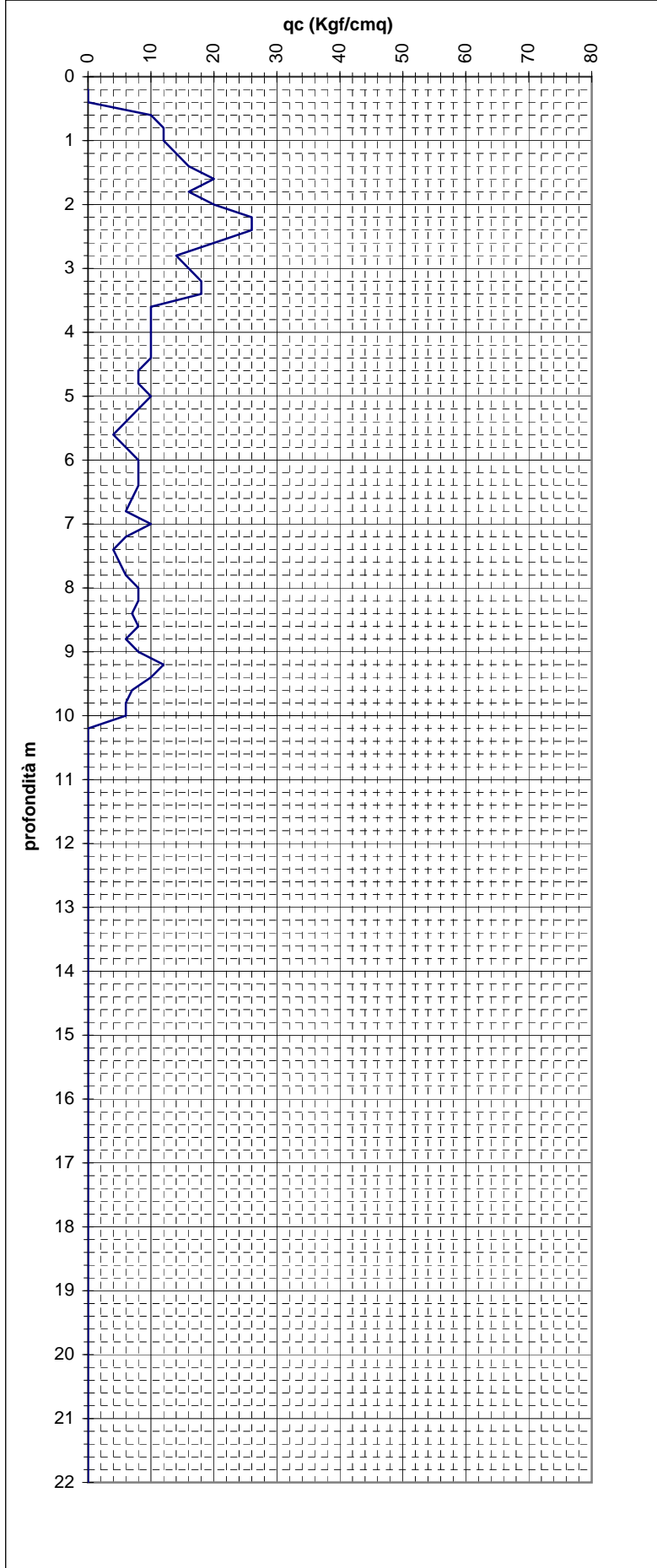
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P23 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



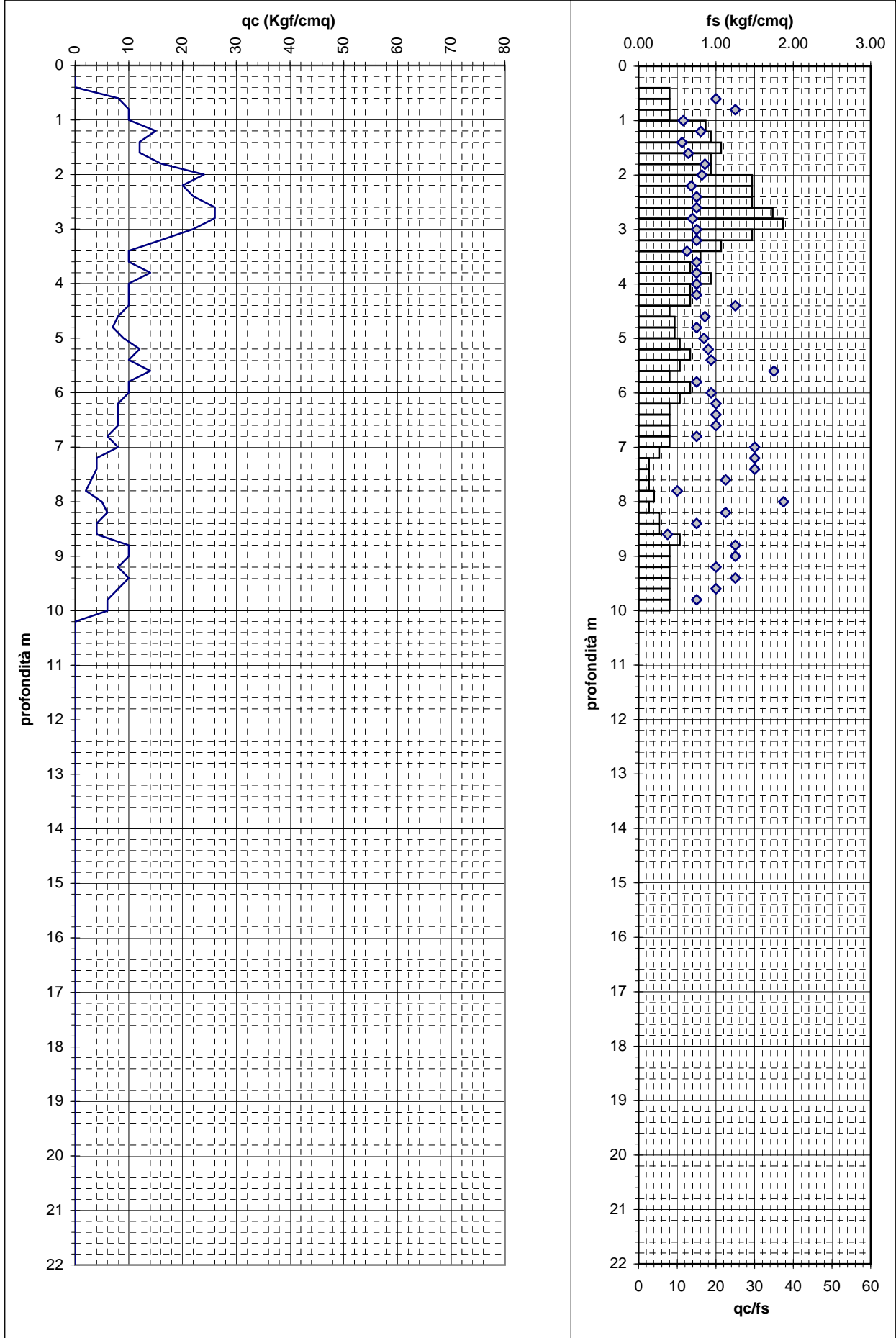
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P24 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



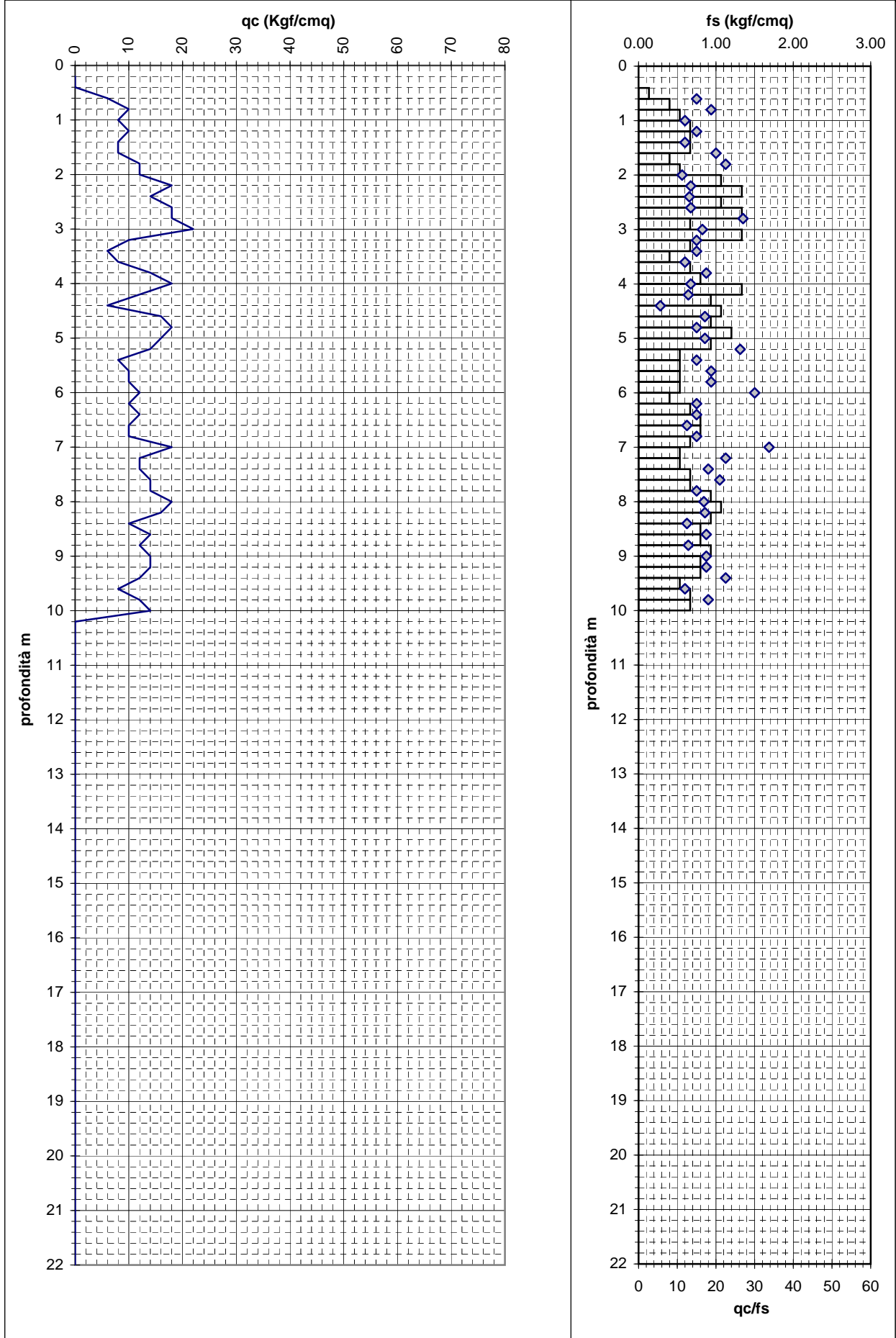
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P25 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



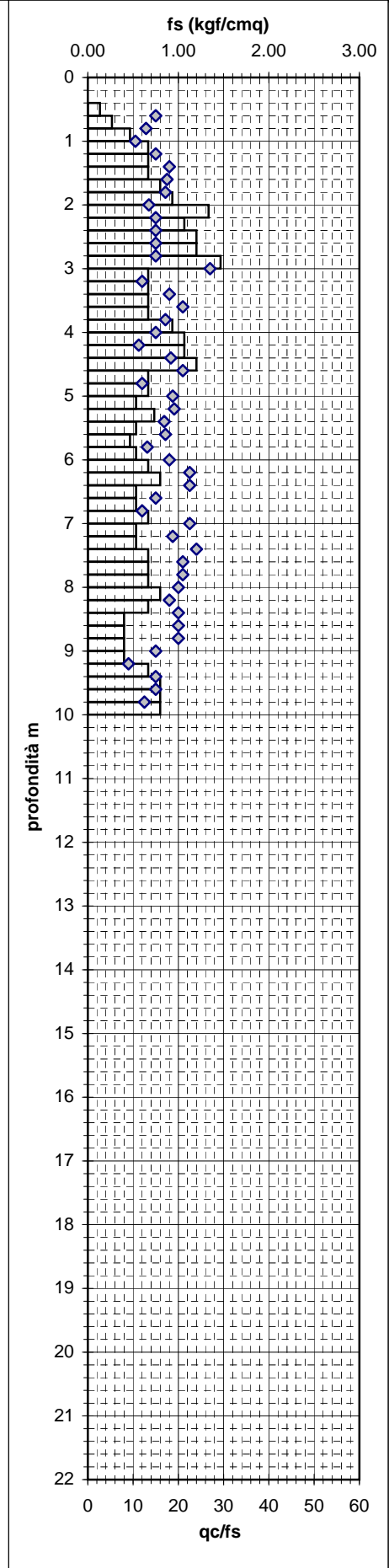
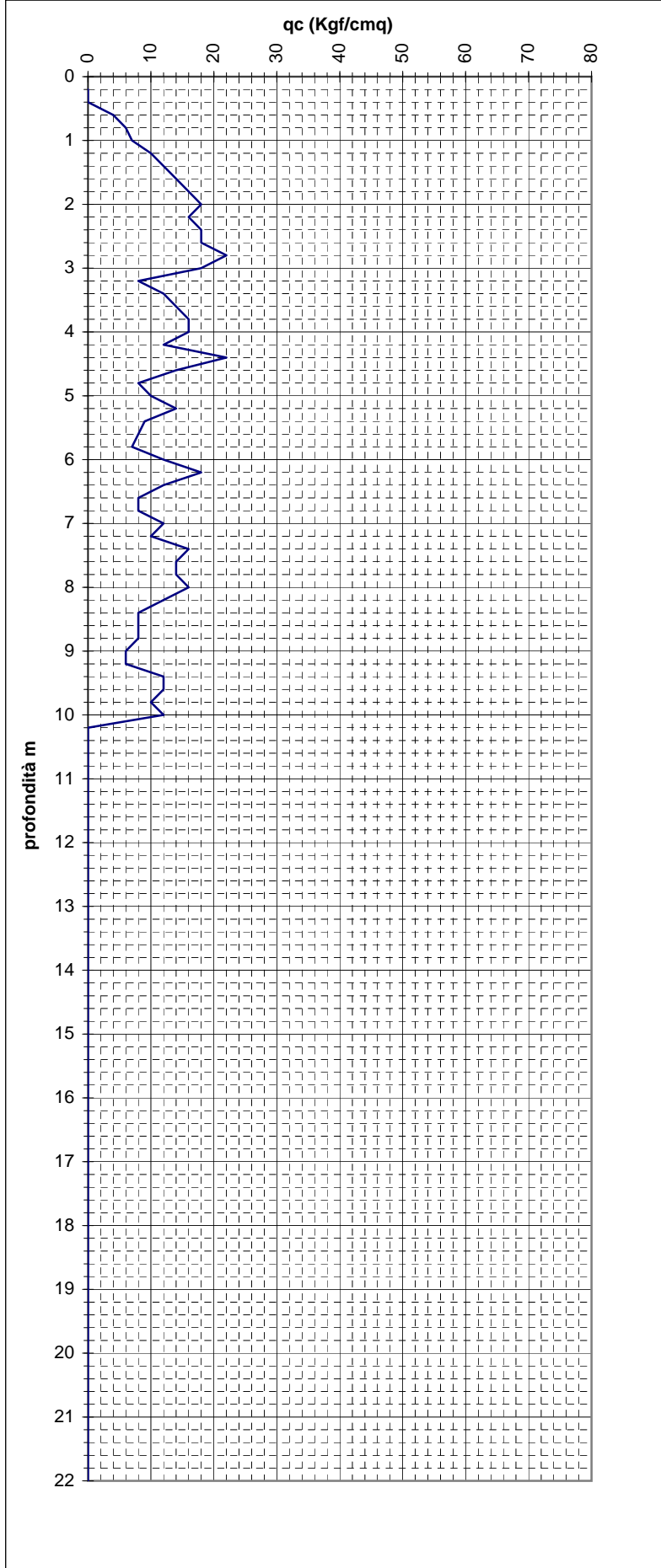
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P26 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



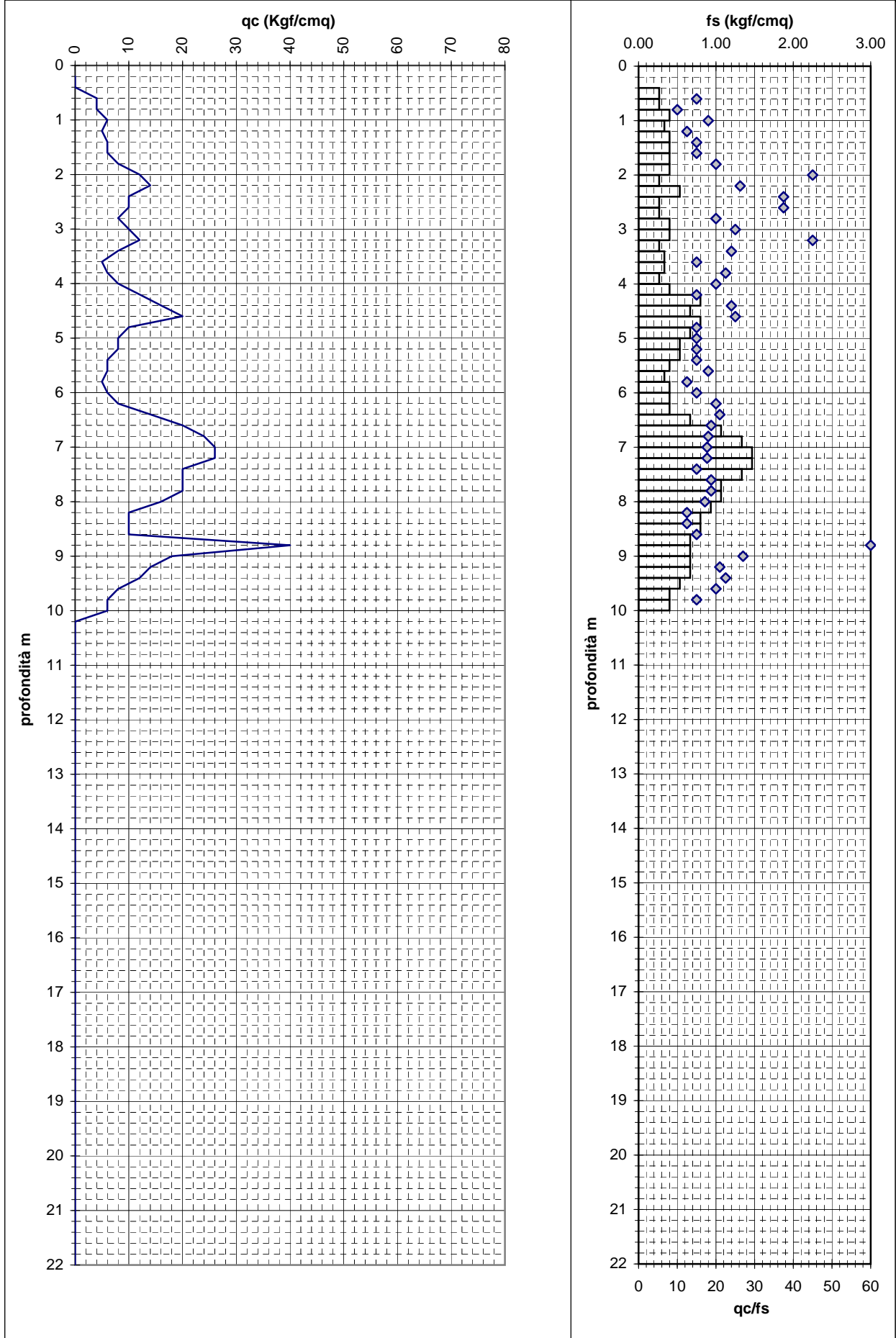
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P27 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



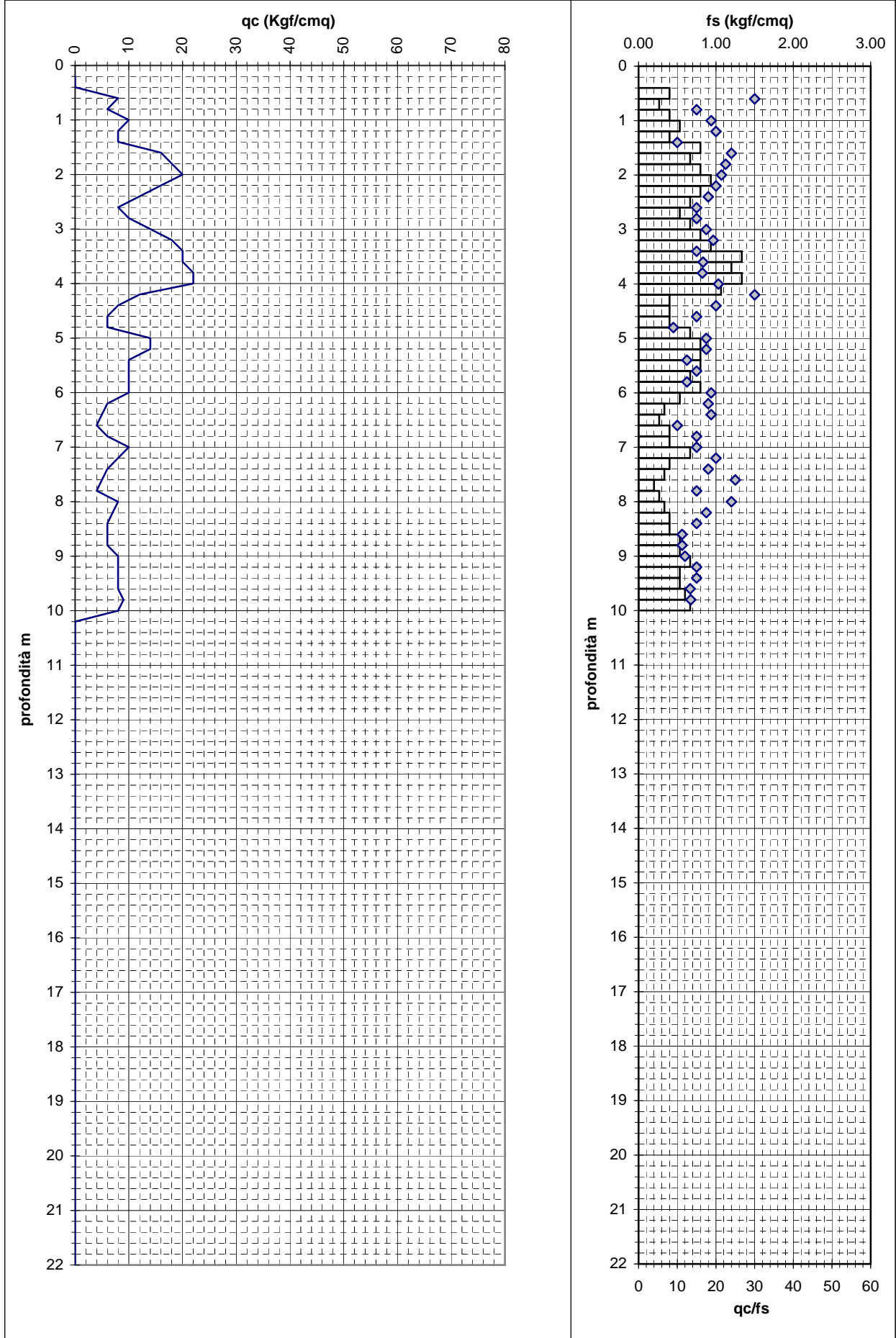
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P28 | COMMITTENTE: Amm. Comunale |
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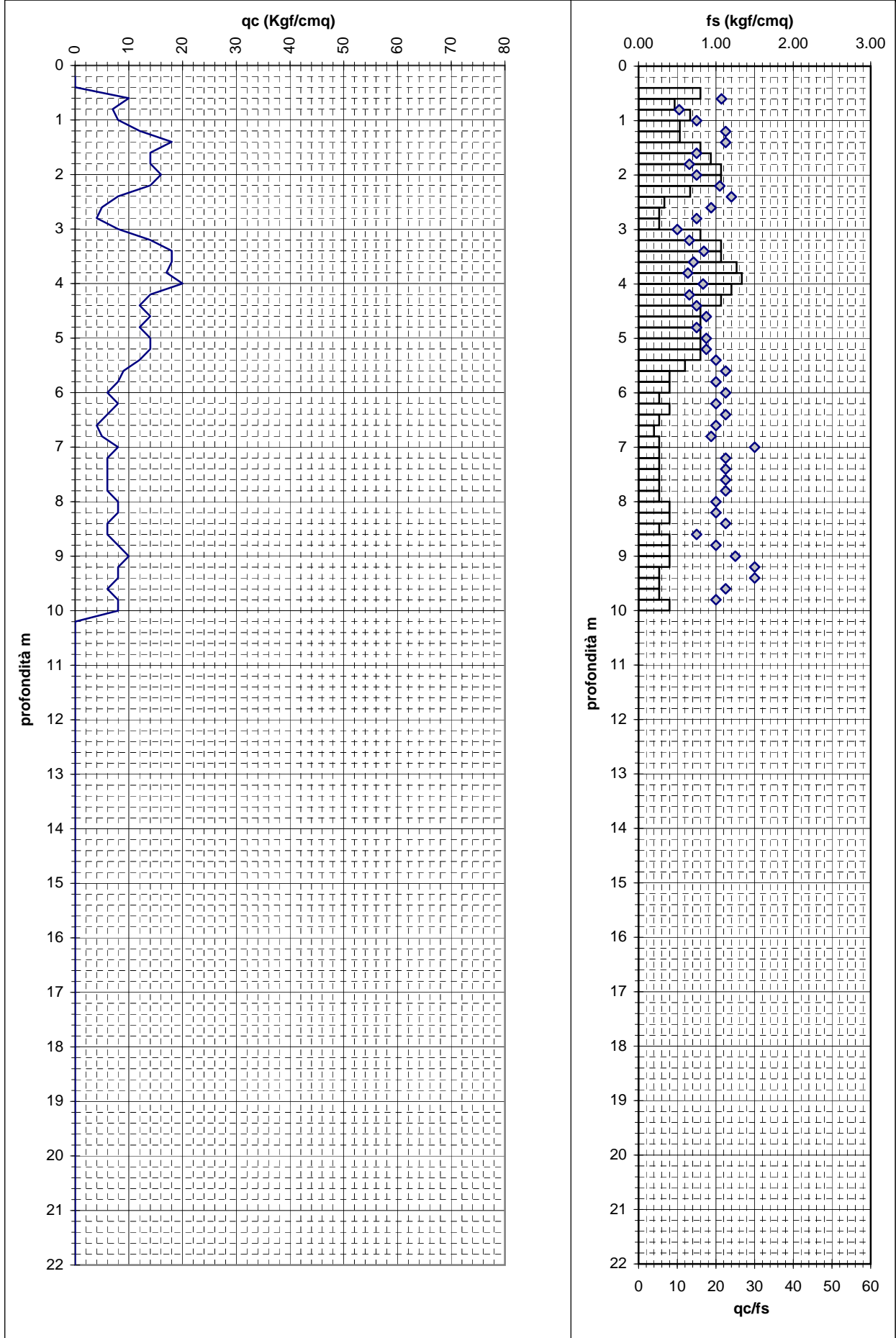
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P29 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



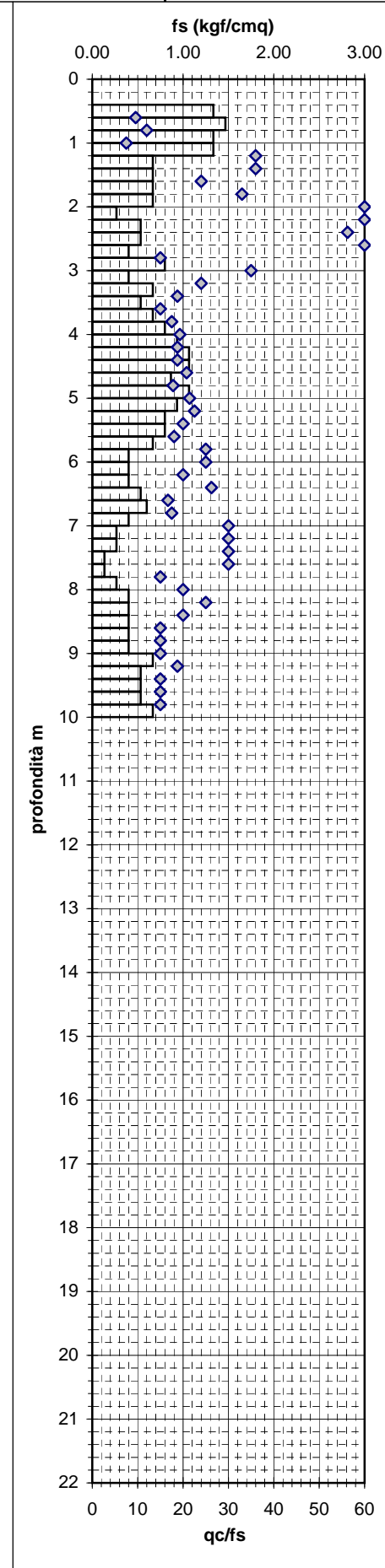
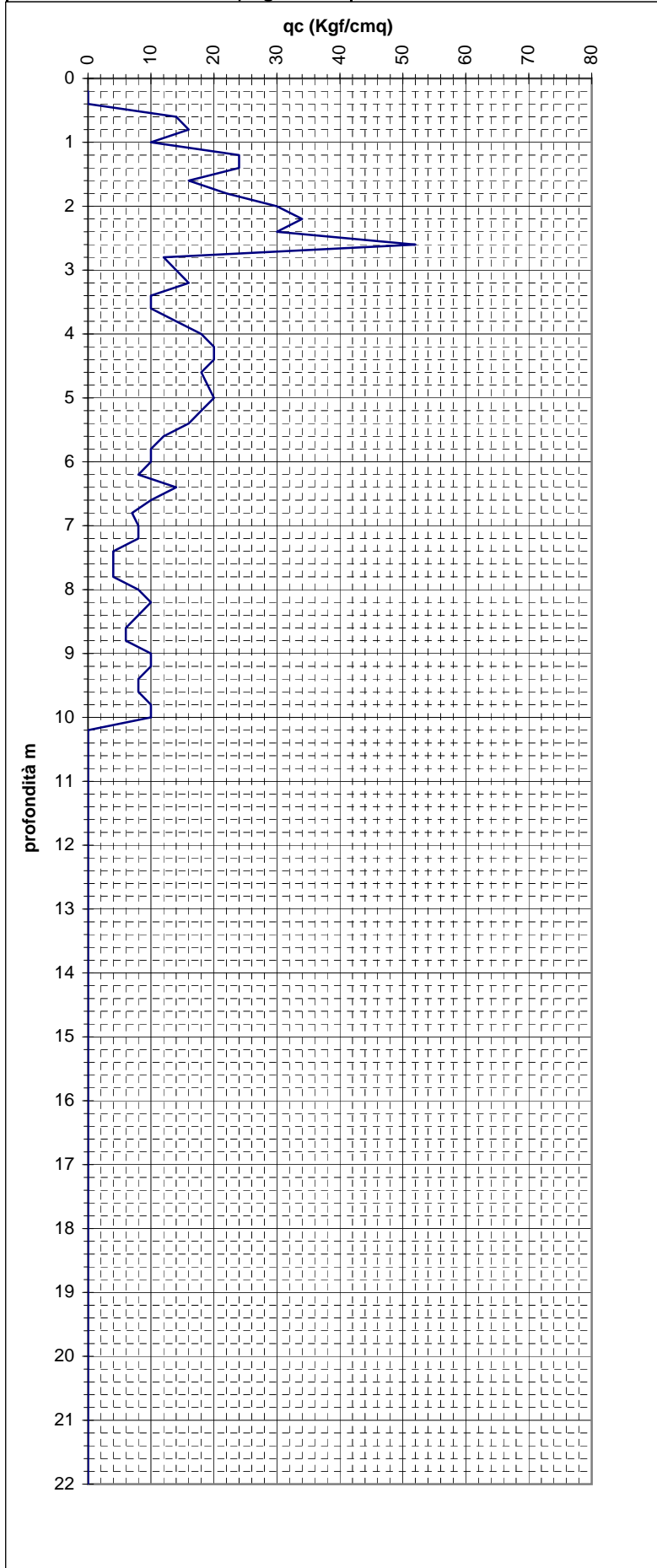
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P30 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



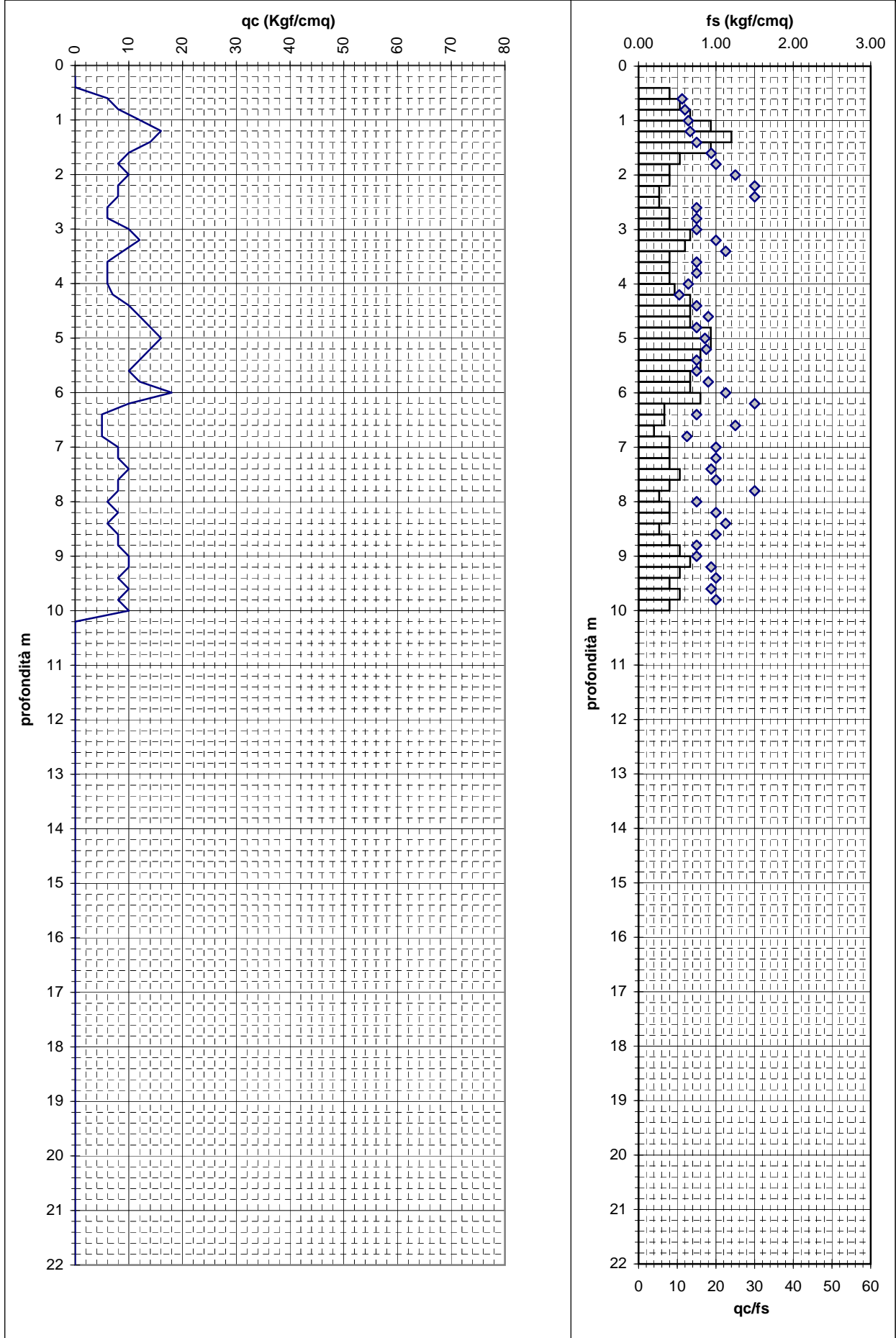
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P31 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



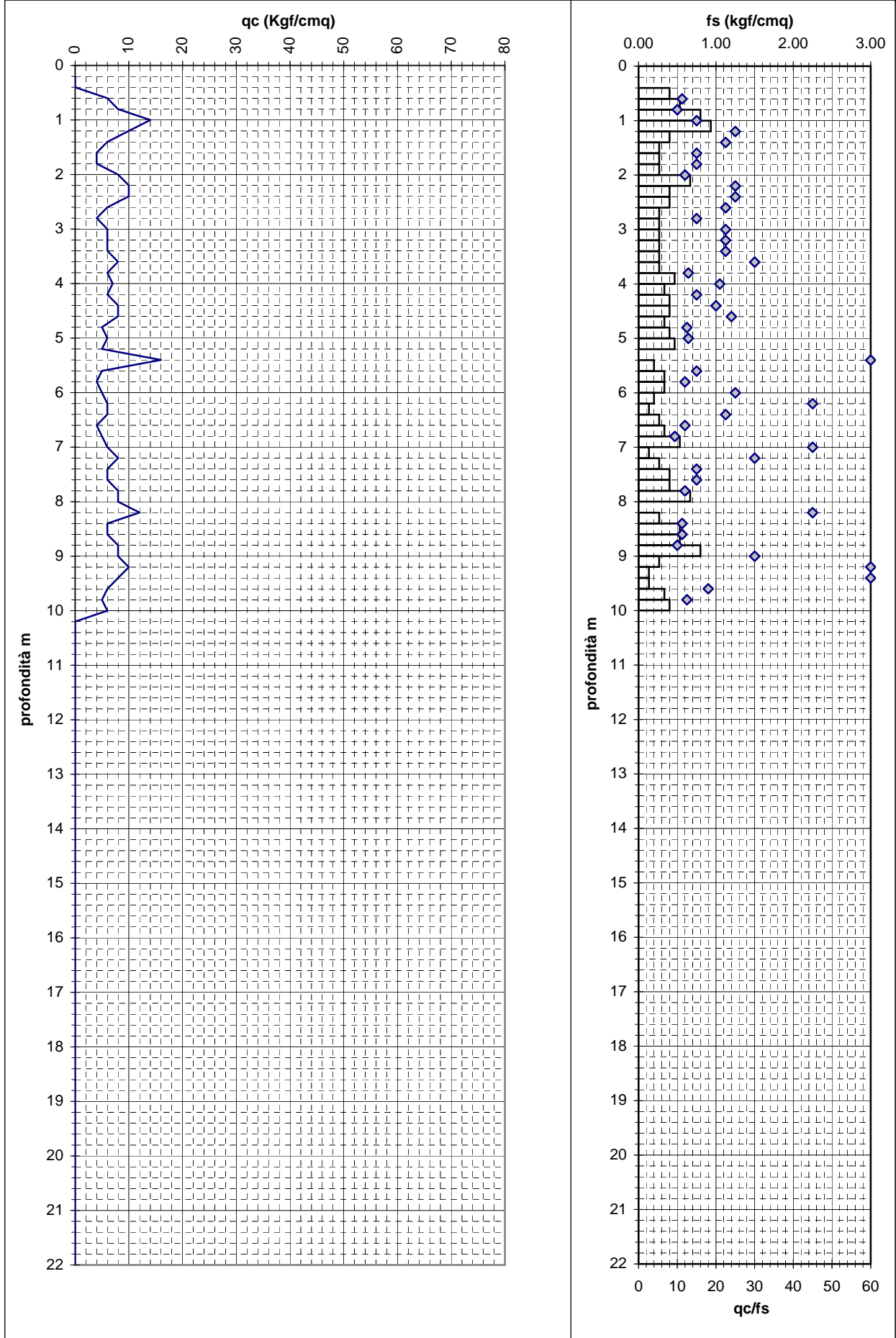
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P32 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



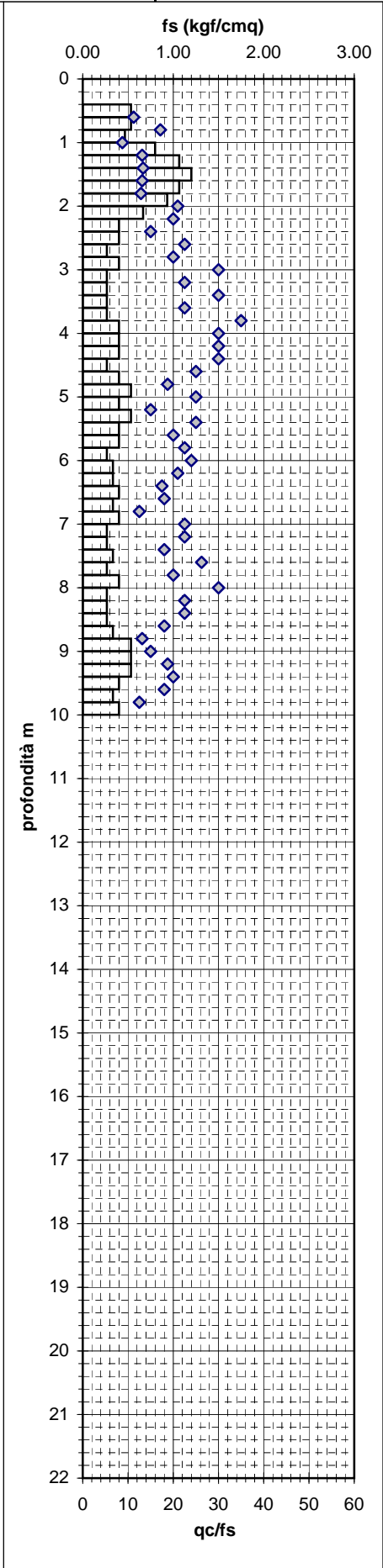
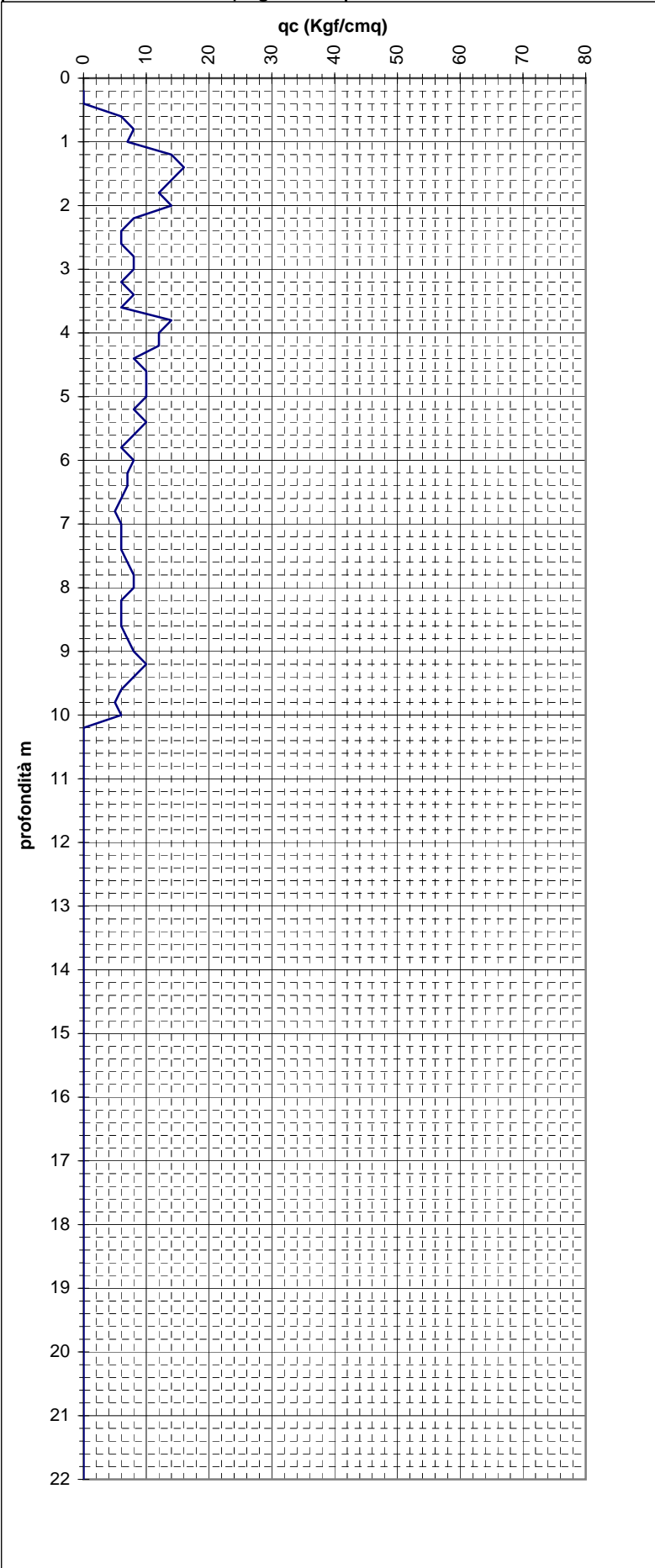
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| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



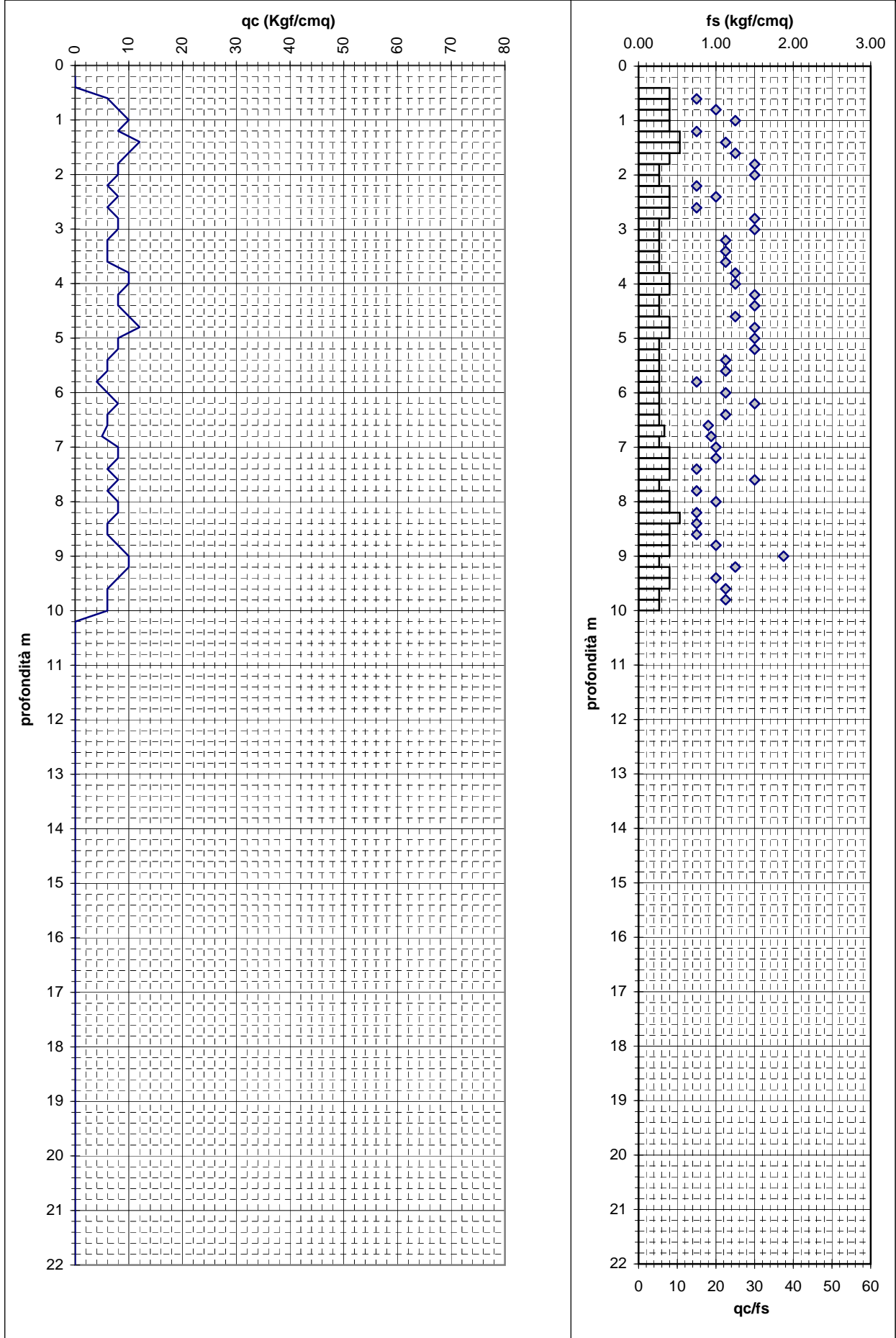
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P34 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



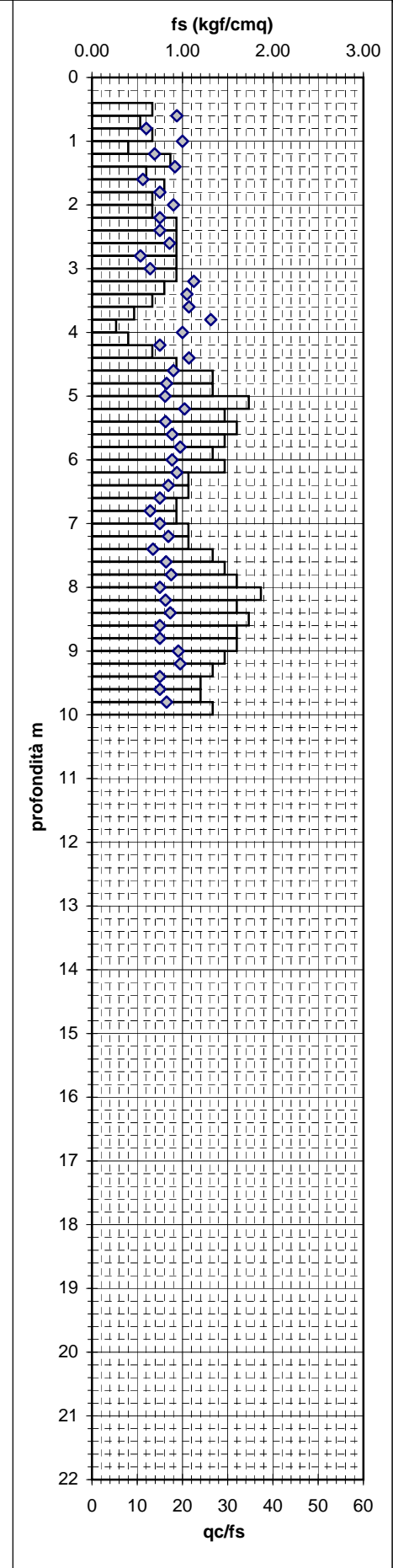
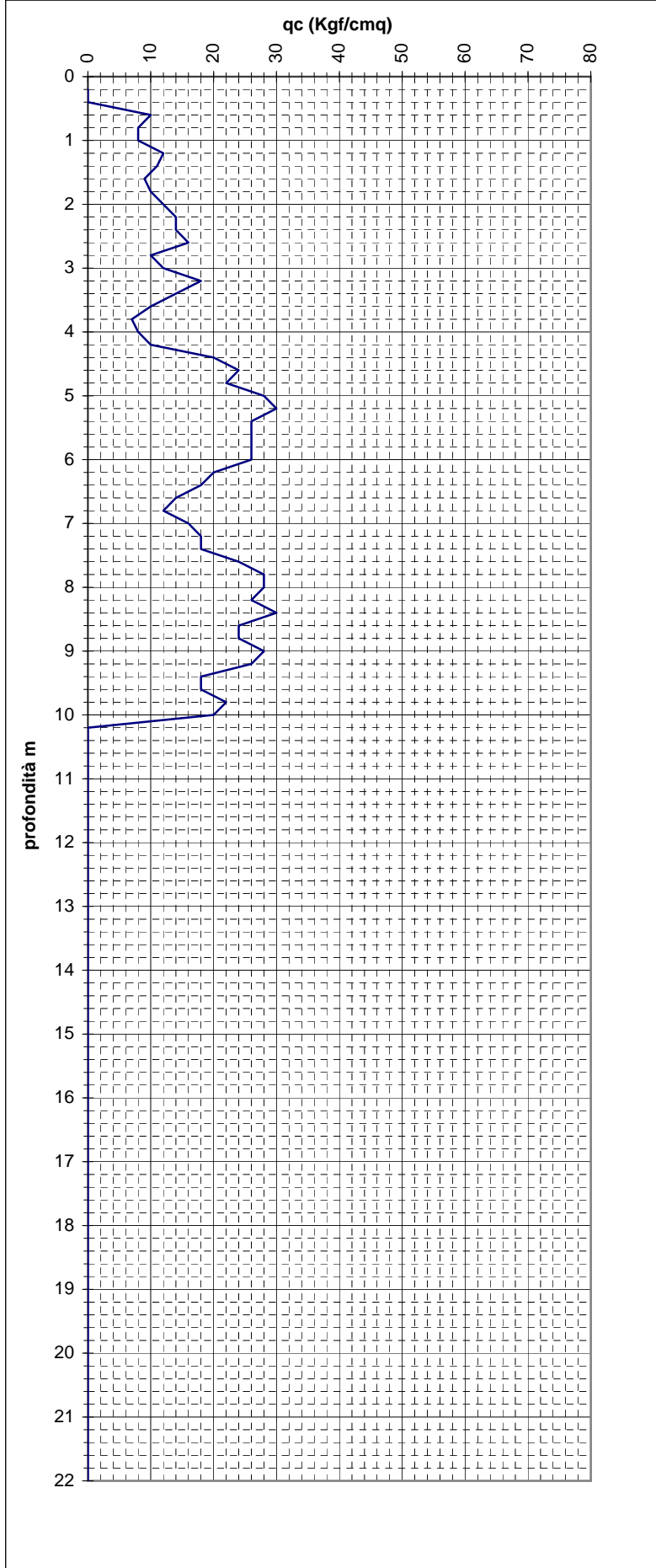
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| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



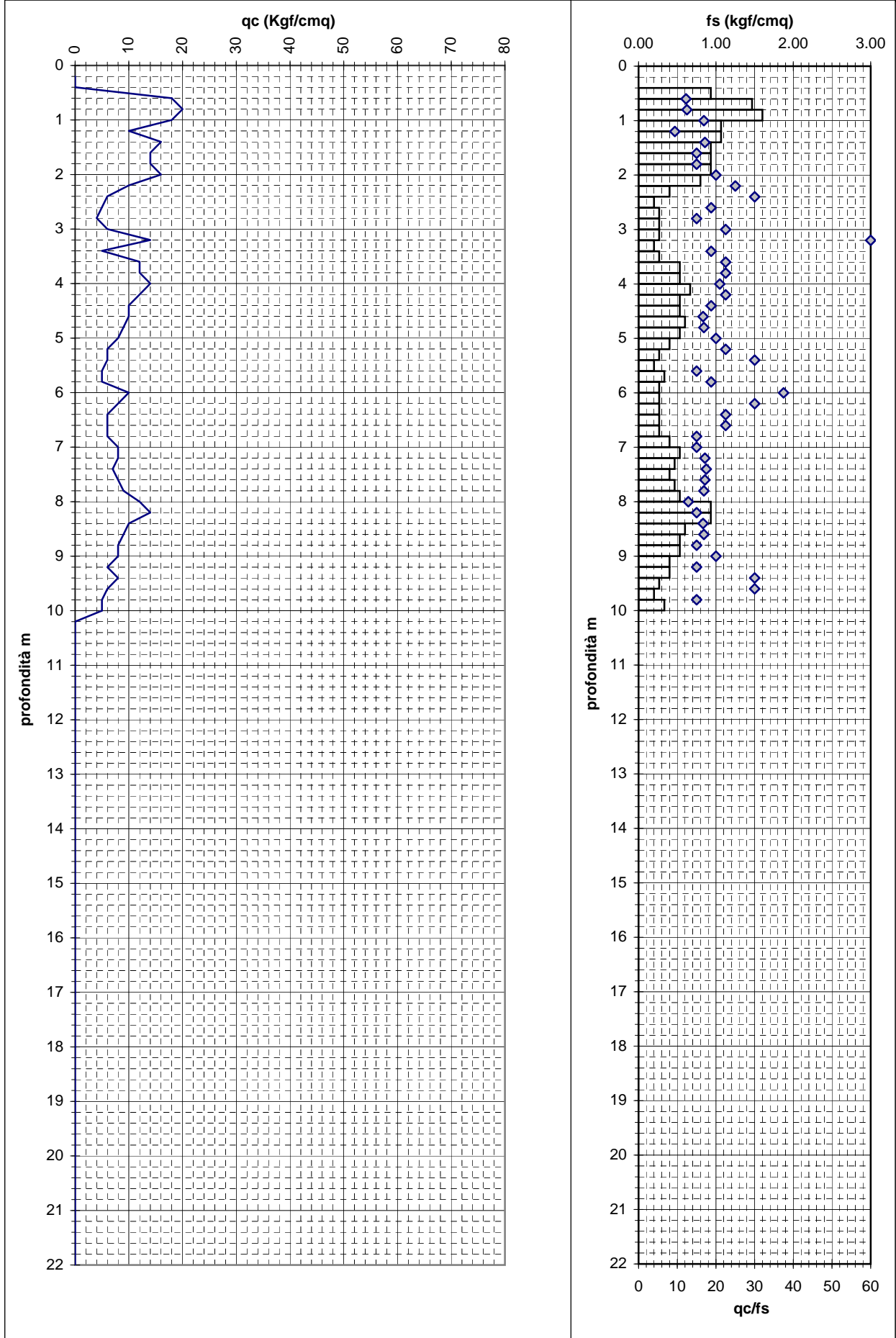
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P36 | COMMITTENTE: Amm. Comunale |
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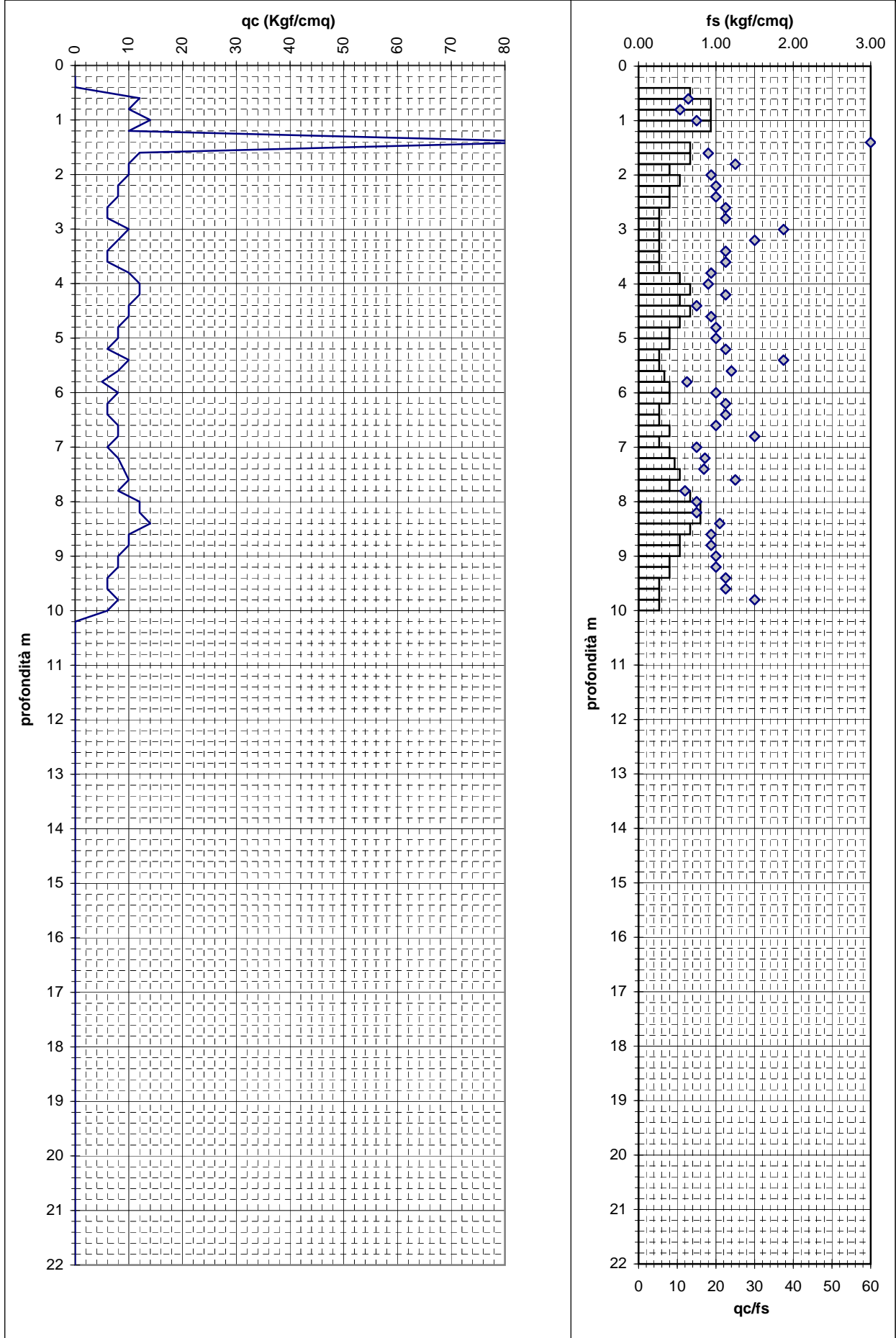
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P37 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
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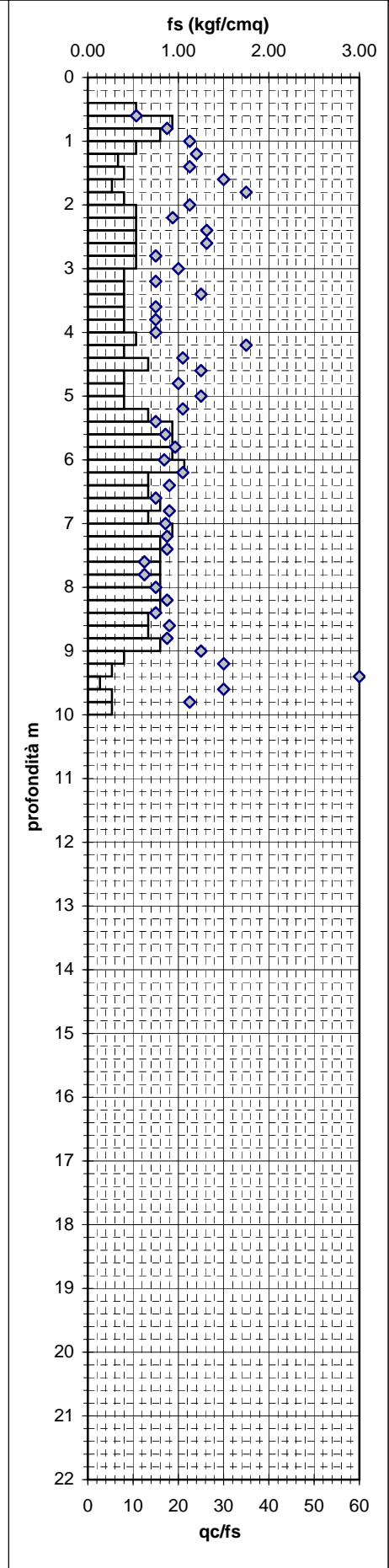
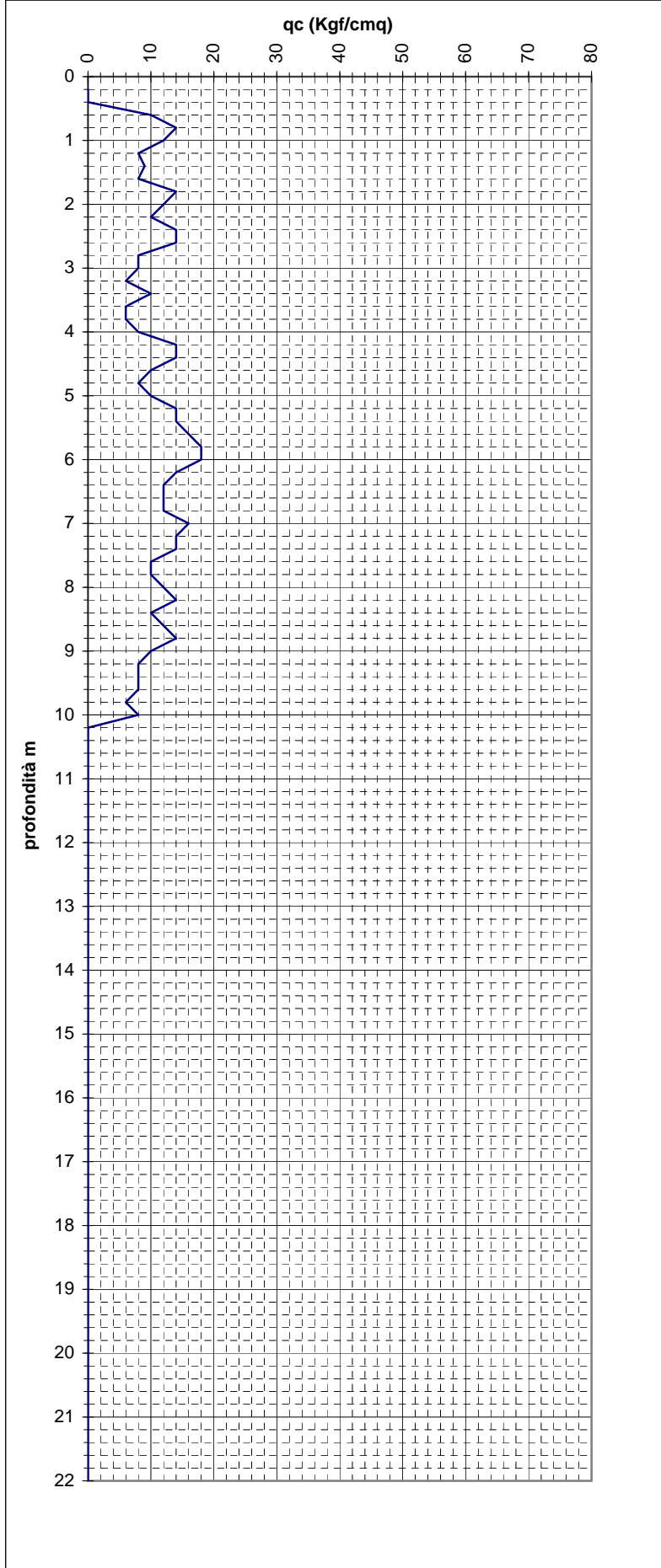
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° P38 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
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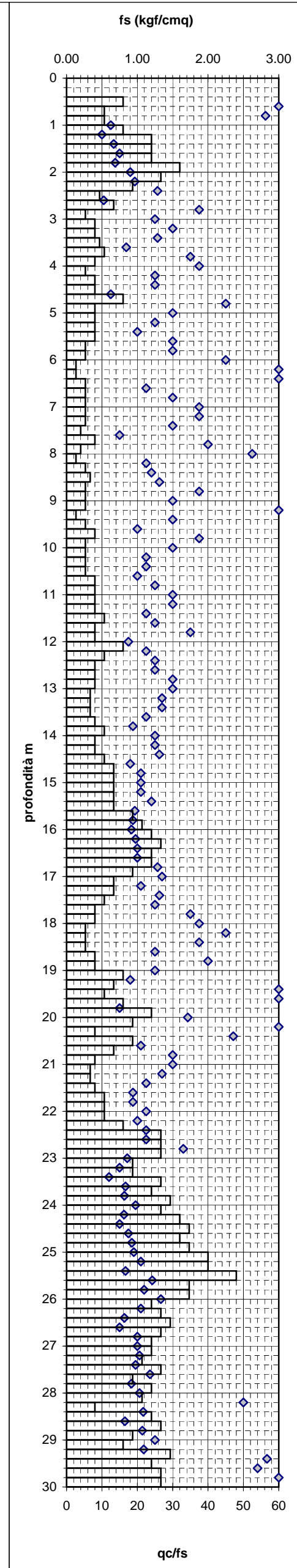
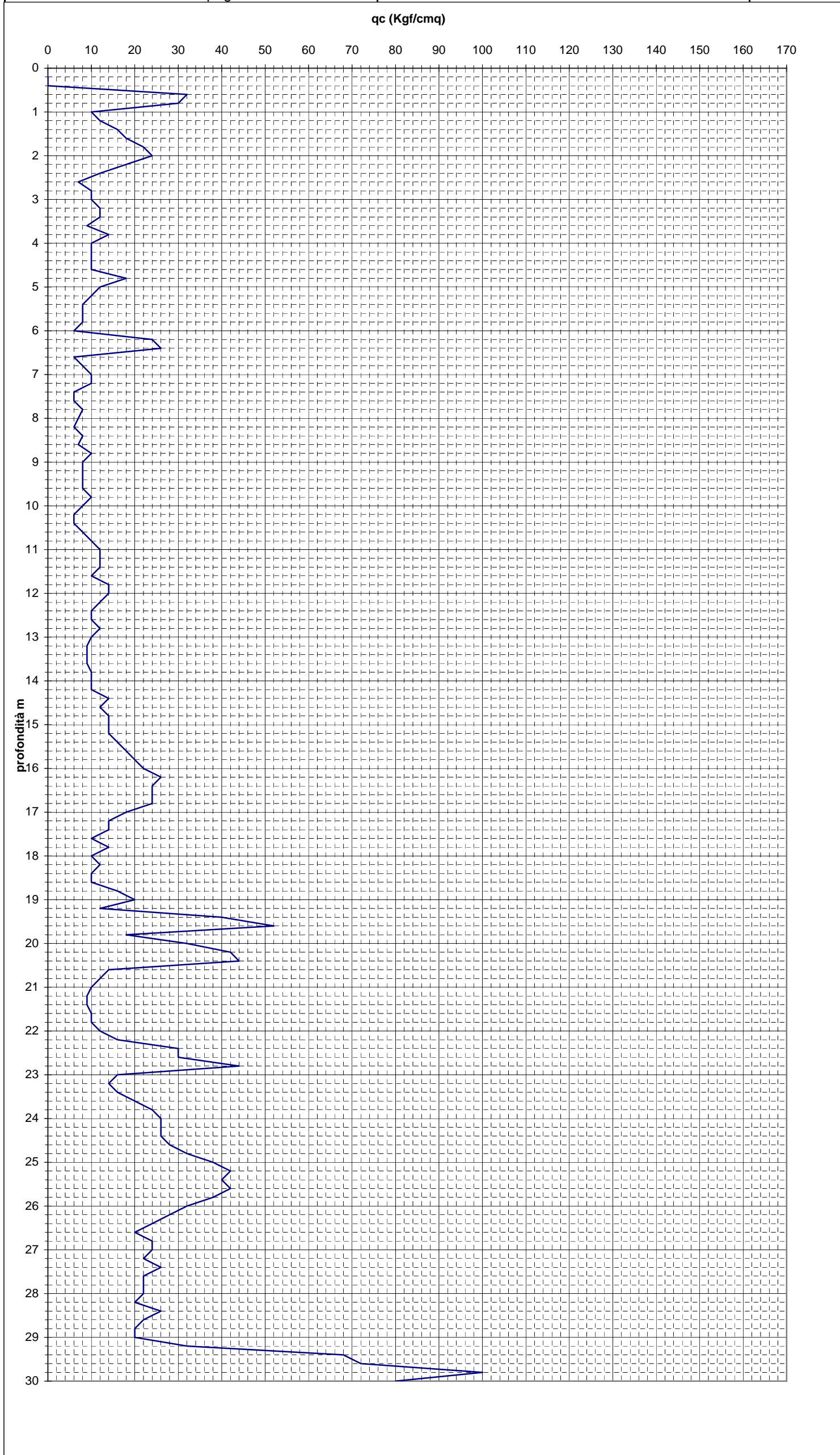
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| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola VAR. PRG. 2004 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



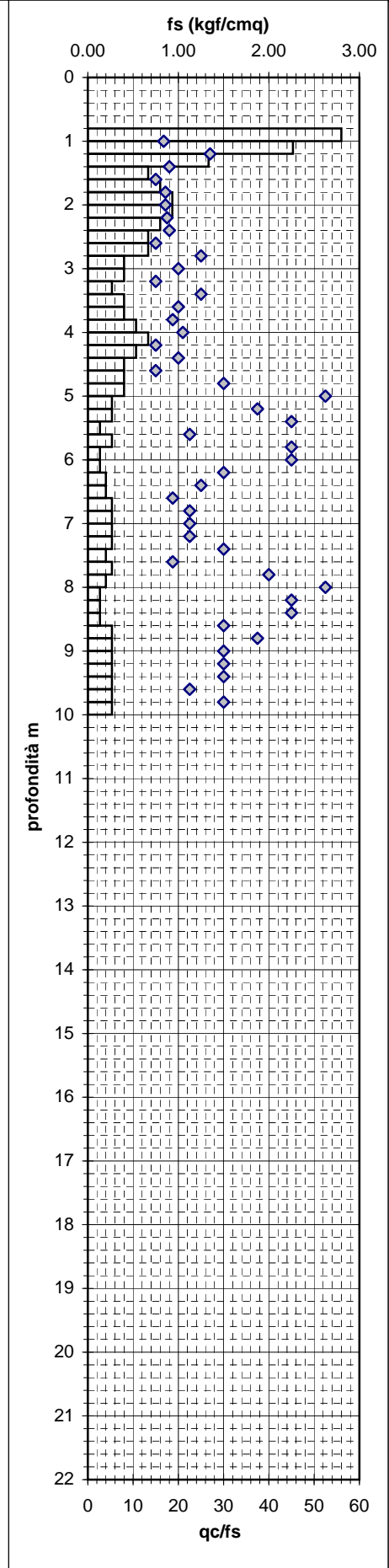
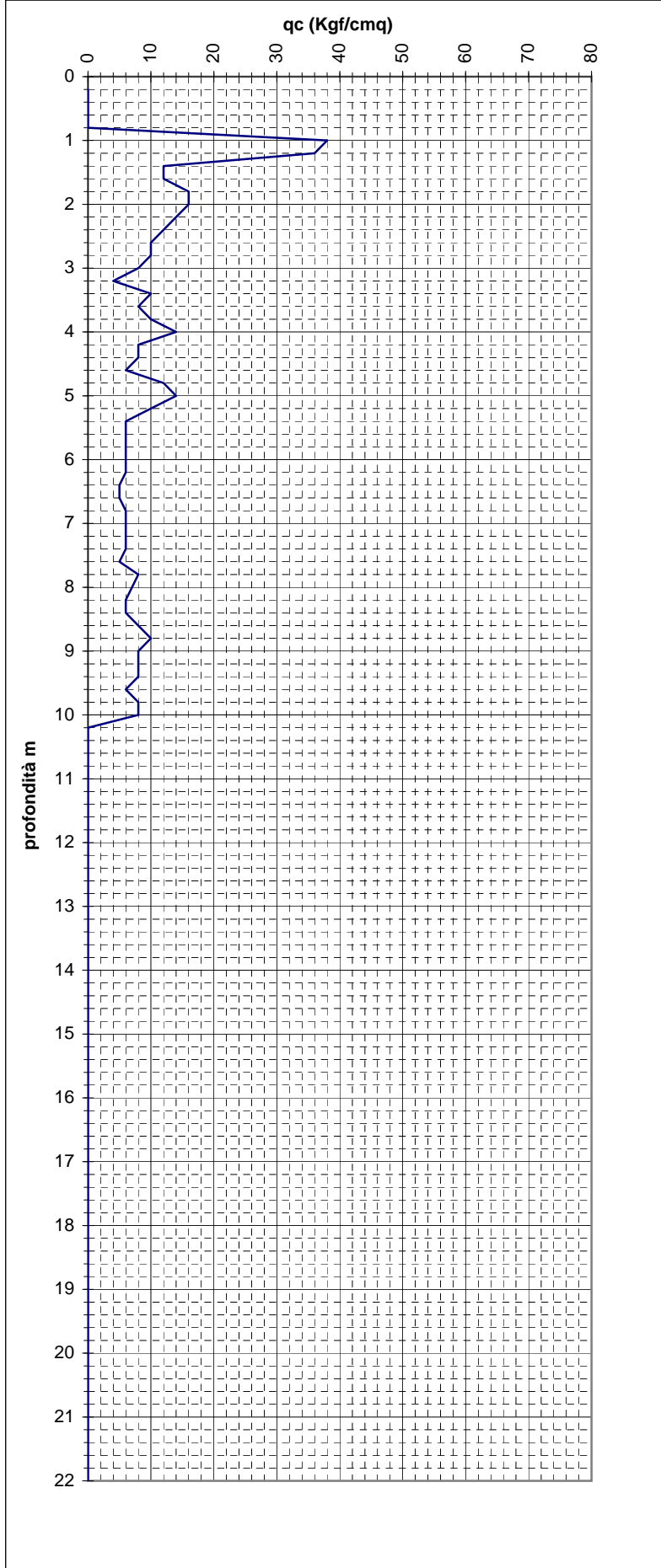
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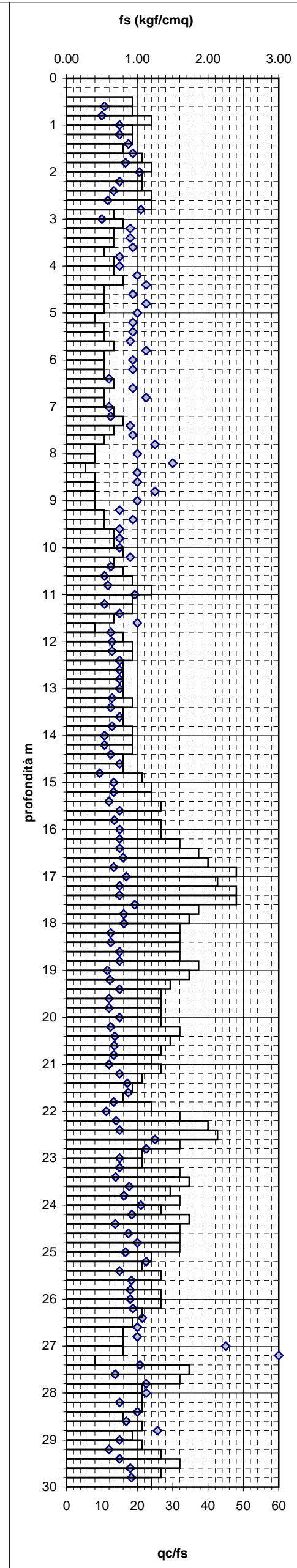
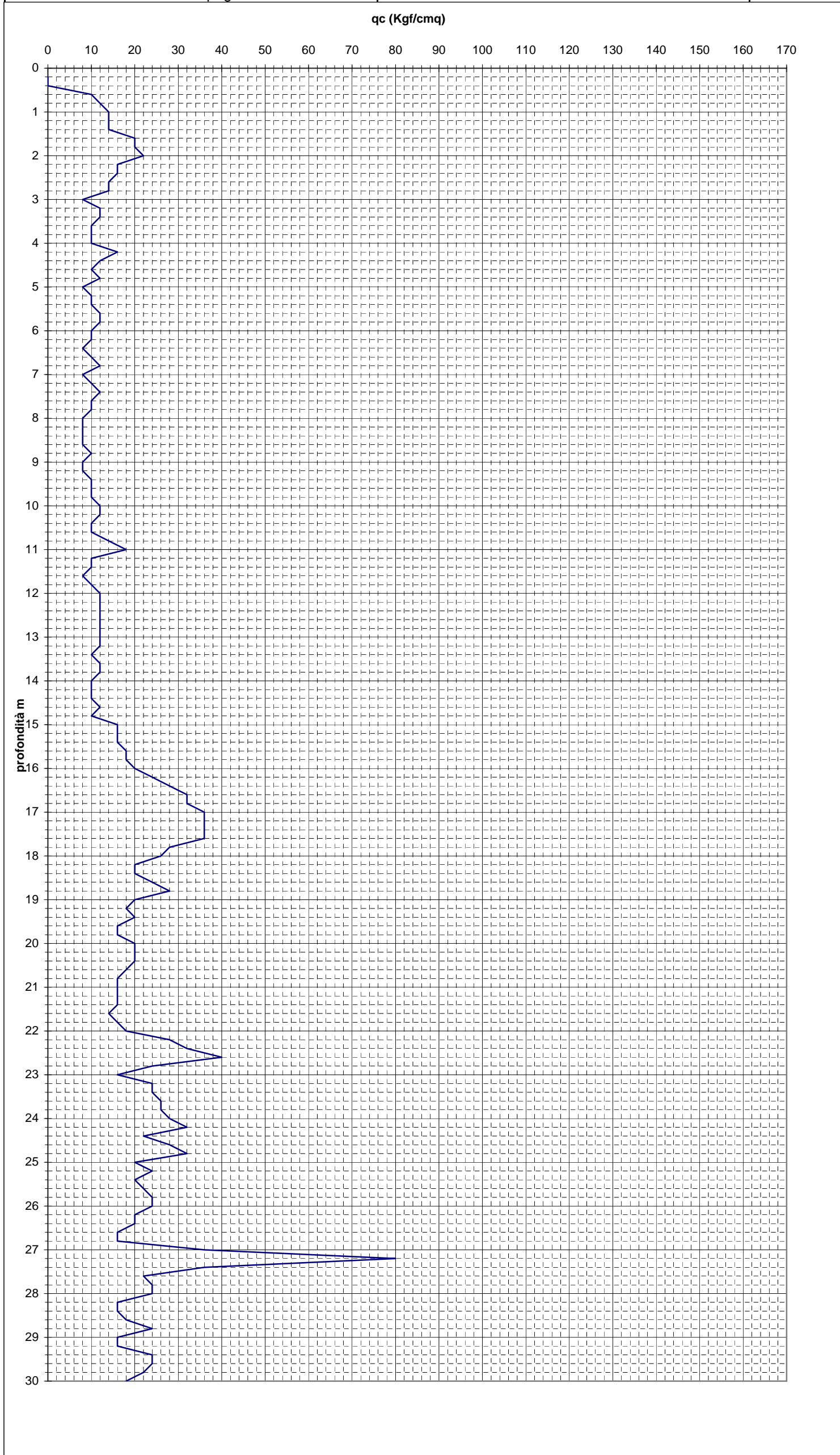
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° 1 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



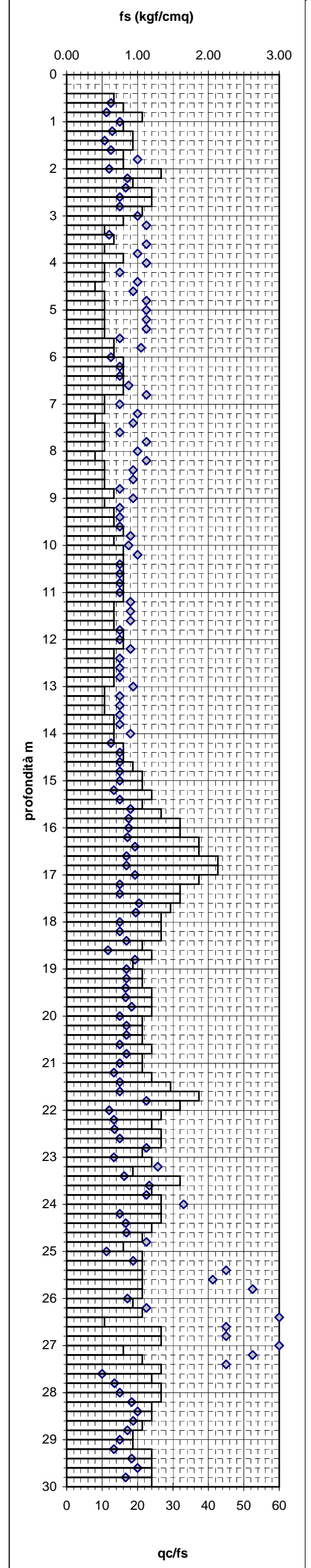
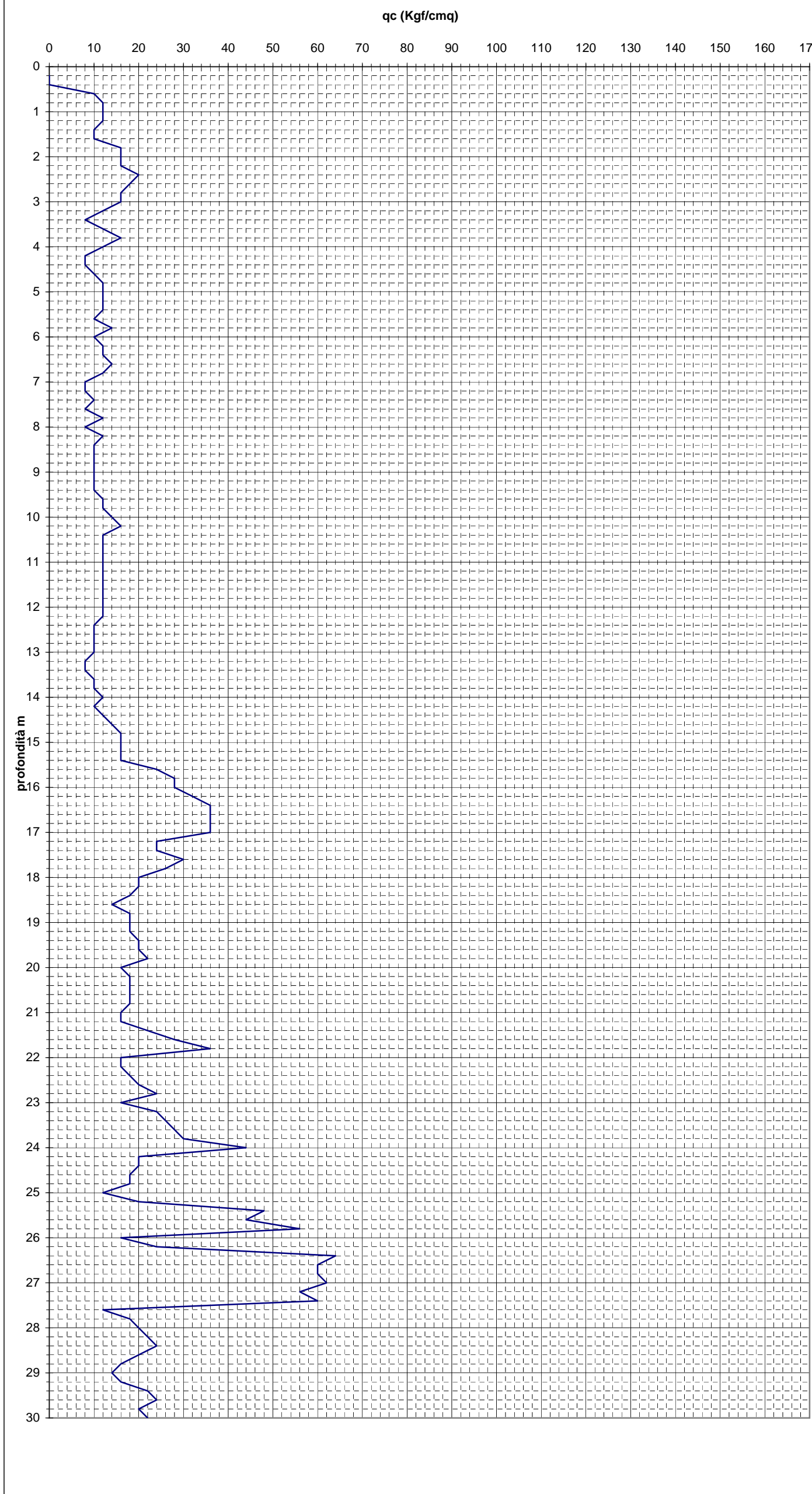
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° 2 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola PPIP Borgo Riviera |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



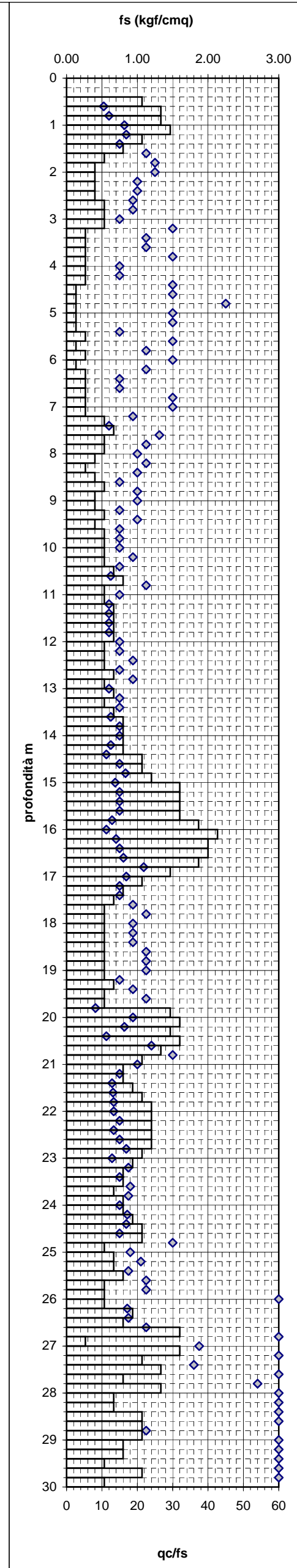
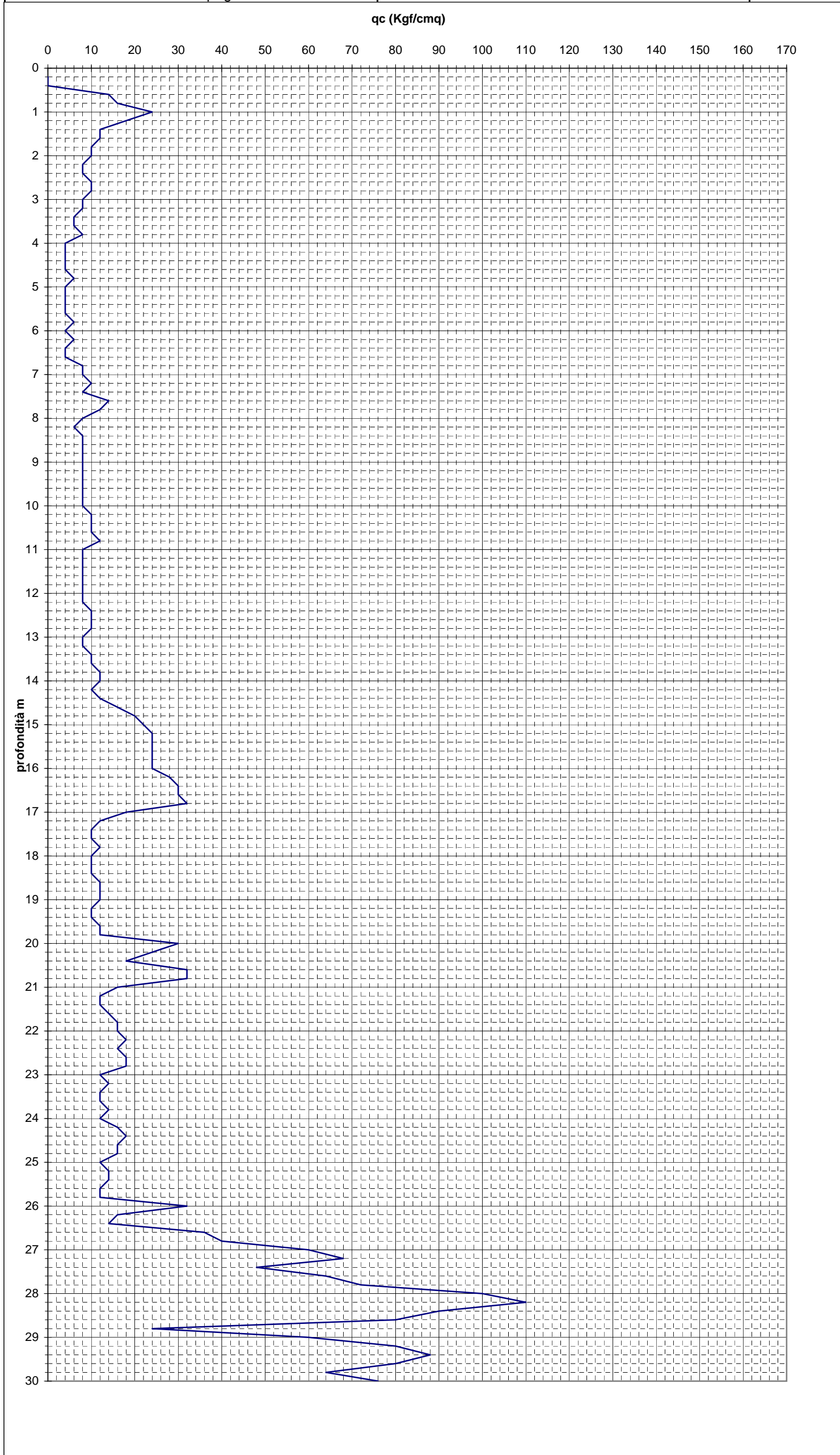
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° 1 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. Statico | CANTIERE: VAR spec 09 |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



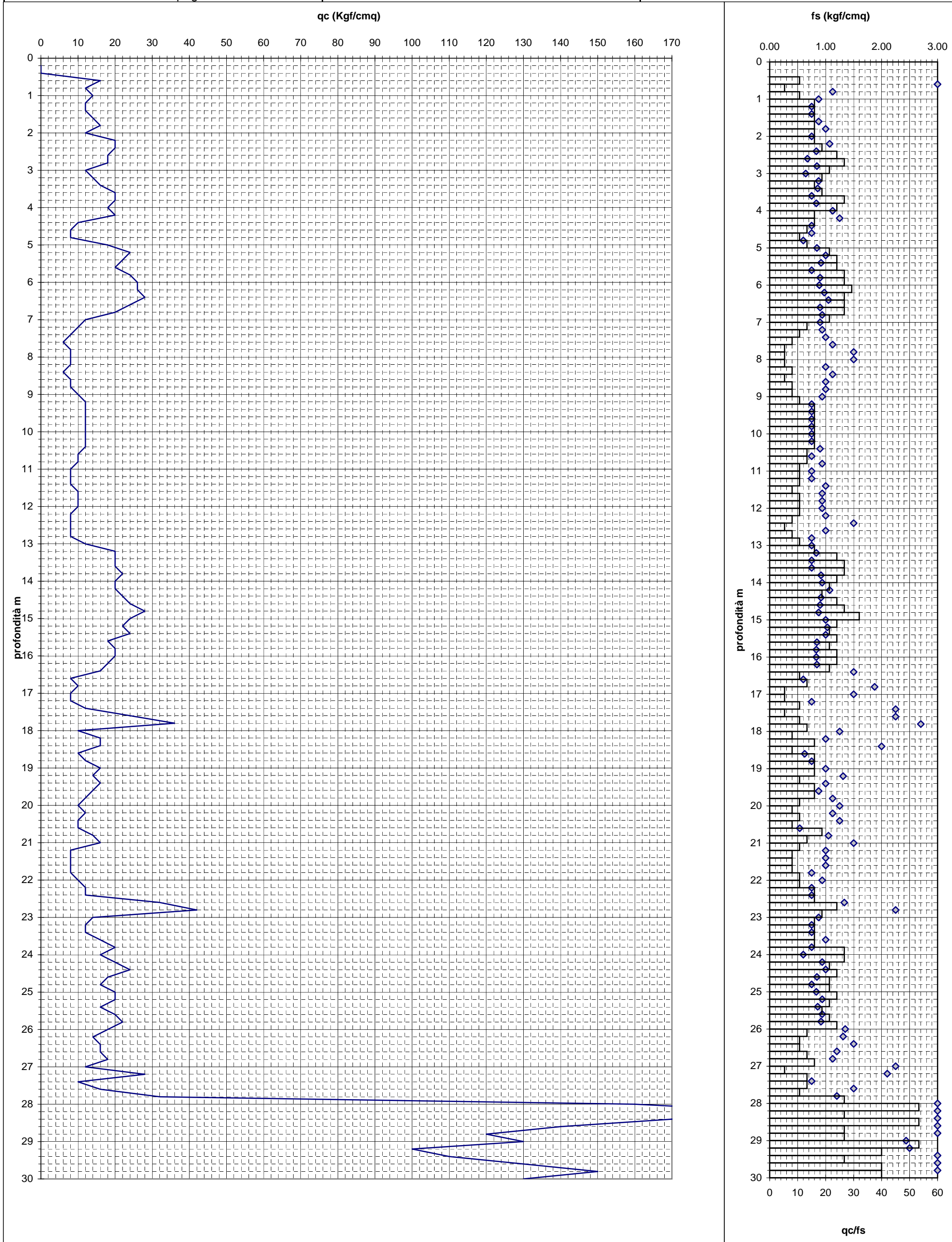
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° 2 | COMMITTENTE: Amm. Comunale |
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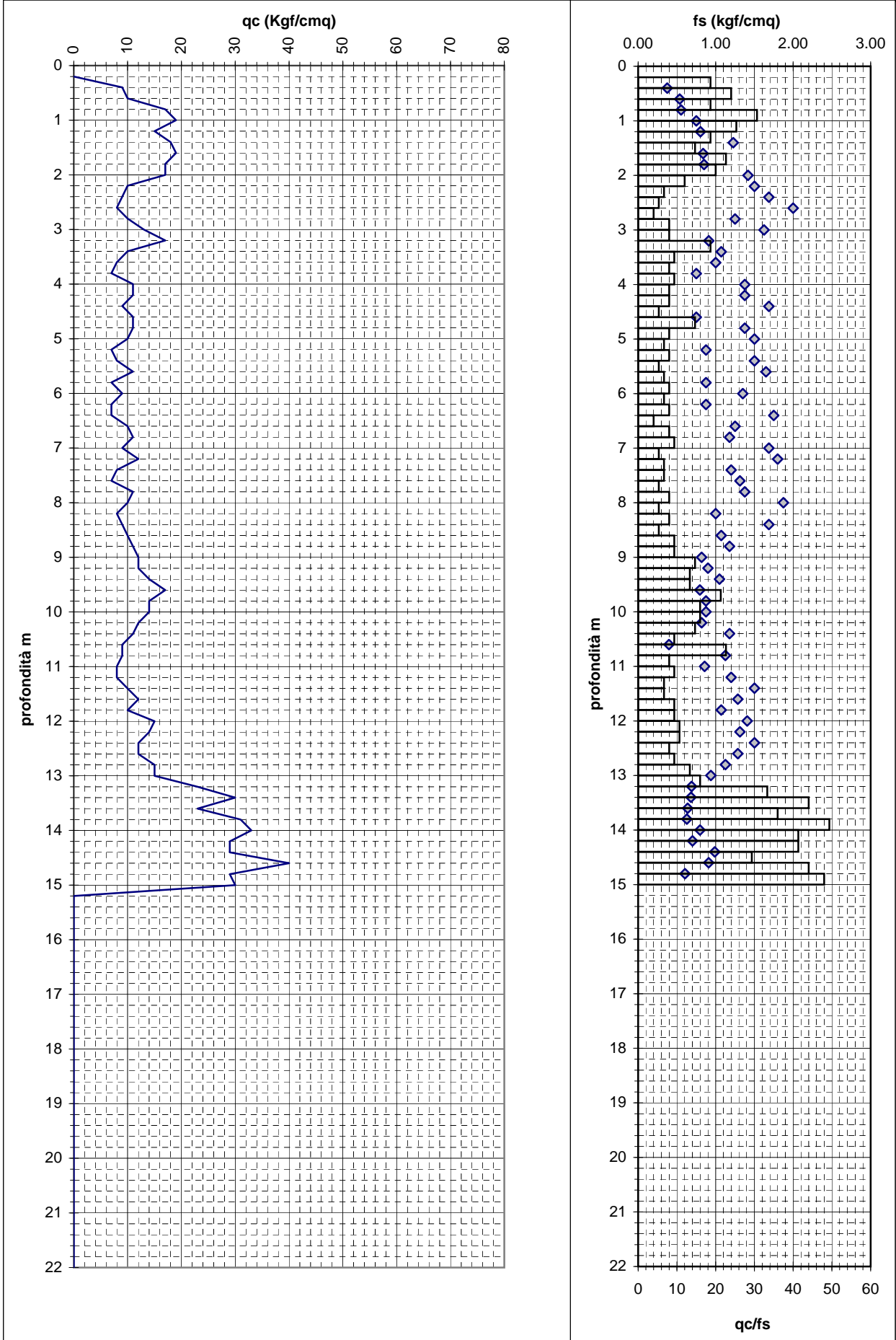
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° 4 | COMMITTENTE: Amm. Comunale |
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| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



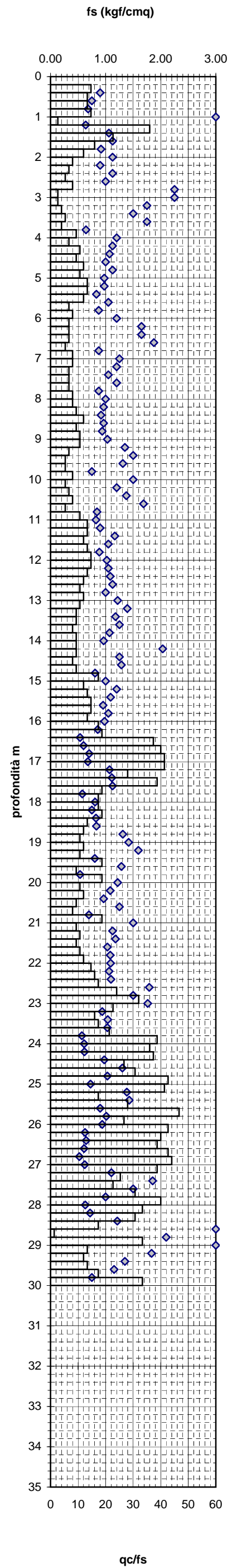
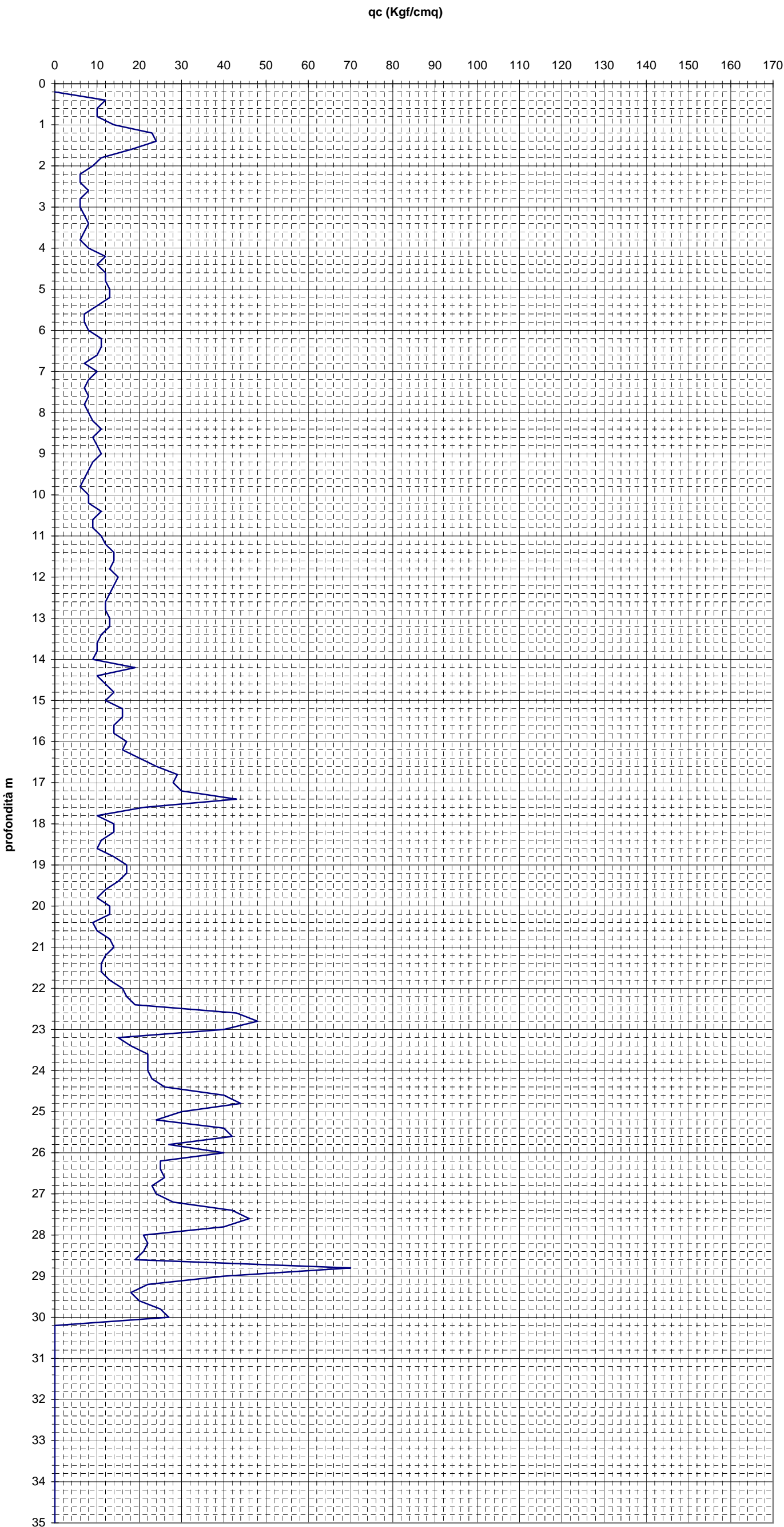
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| AMM. COM. NONANTOLA Via Marconi, 11 - Nonantola (MO) | PROVA PENETROMETRICA C.P.T. N° 6 | COMMITTENTE: Amm. Comunale |
| OPERATORE: - | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola |
| QUOTA: Piano Campagna | Profondità falda: - | DATA: - |



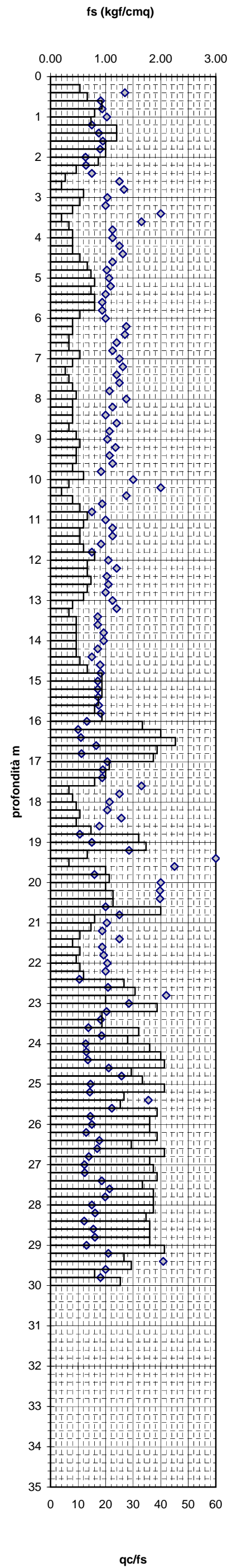
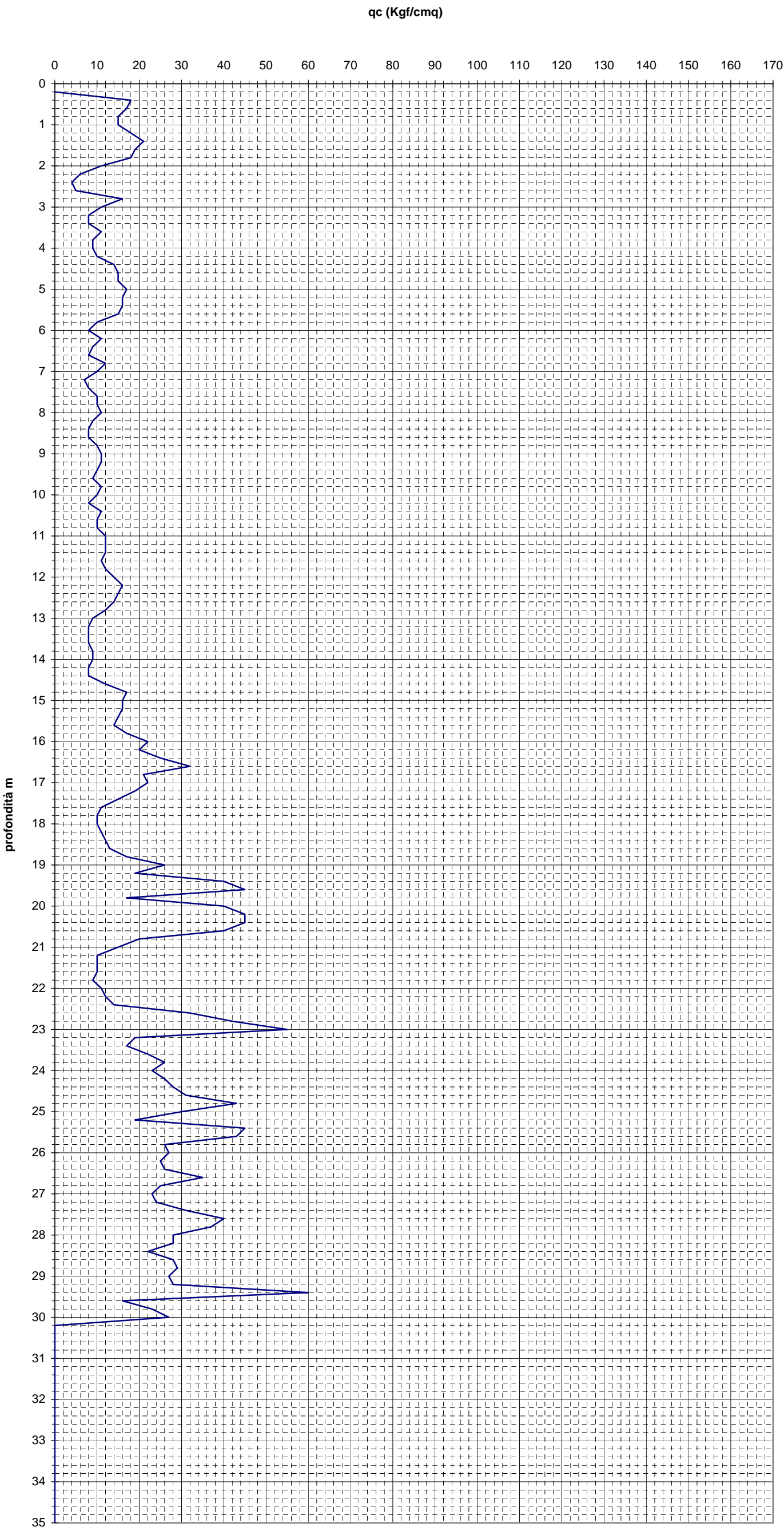
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|---|--|---|--|
| CENTROGEO Correggio (RE) Piazza S. Quirino n° 6 Tel 0522 641001 - fax. 0522 632162 | | PROVA PENETROMETRICA C.P.T. N° 2 | COMMITTENTE: NONAGINTA |
| OPERATORE: M. Mazzetti - Dr. A. Arbizzi | | ATTREZZO: Pen. statico TM16 | CANTIERE: NONANTOLA (MO) NONANTOLA |
| QUOTA: piano campagna | | Profondità falda: chiuso - 2,30 m | DATA: 03/03/08 |



| | | |
|---|-------------------------------------|-------------------------------|
| STUDIO GEOLOGICO CENTROGEO Correggio (RE) P.zza S. Quirino n° 6 tel. 0522/641001 | PROVA PENETROMETRICA C.P.T. N° 6 | COMMITTENTE: NONAGINTA SRL |
| OPERATORE: M. Mazzetti - Dr. A. Arbizzi | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola (Mo) |
| QUOTA: piano campagna | Profondità falda: -2,74 m pc. | DATA: 10/04/07 |



| | | |
|---|-------------------------------------|-------------------------------|
| STUDIO GEOLOGICO CENTROGEO Correggio (RE) P.zza S. Quirino n° 6 tel. 0522/641001 | PROVA PENETROMETRICA C.P.T. N° 7 | COMMITTENTE: NONAGINTA SRL |
| OPERATORE: M. Mazzetti - Dr. A. Arbizzi | ATTREZZO: Pen. statico TM16 | CANTIERE: Nonantola (Mo) |
| QUOTA: piano campagna | Profondità falda: -1,80 m pc | DATA: 10/04/07 |



PROVE
PENETROMETRICHE
STATICHE
CPTU

STUDIO GEOLOGICO CENTROGEO

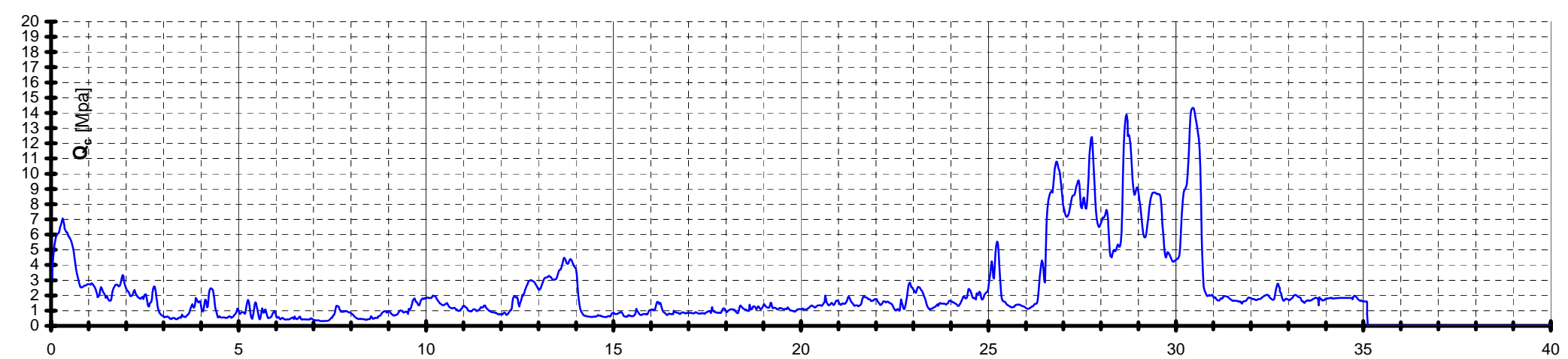
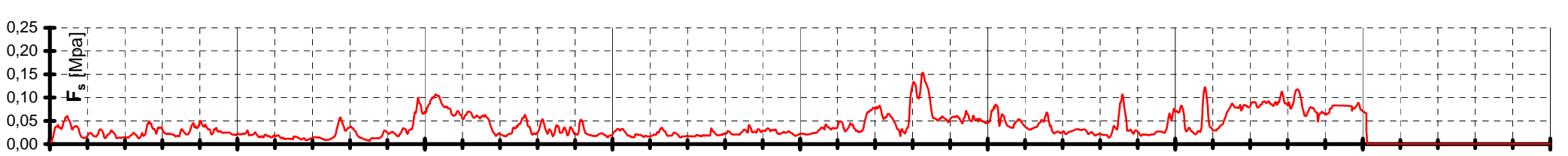
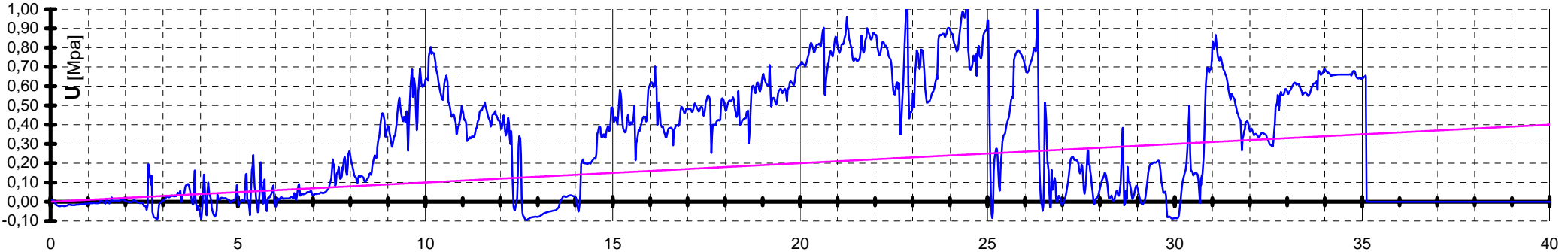
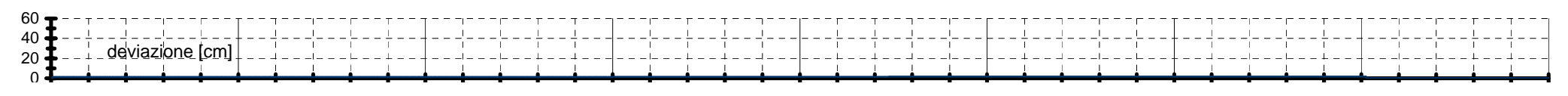
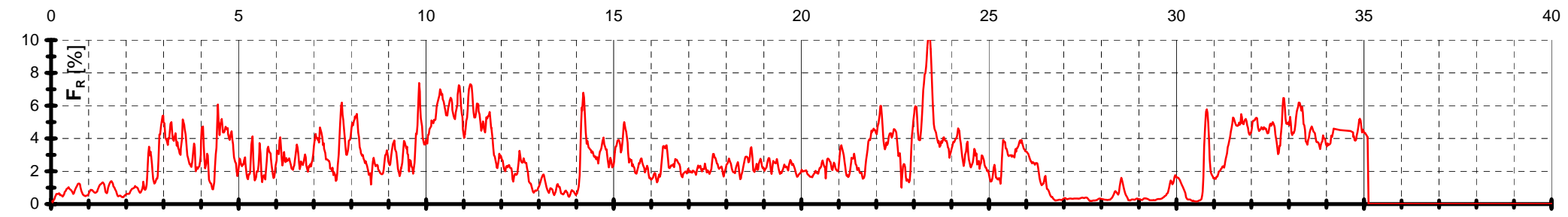
42015 Correggio (RE) - Piazza S. Quirino, 6 - tel 0522/641001 - Fax: 632162

cptu 502

CTR: 202060

09/12/2001

Falda non segnalata

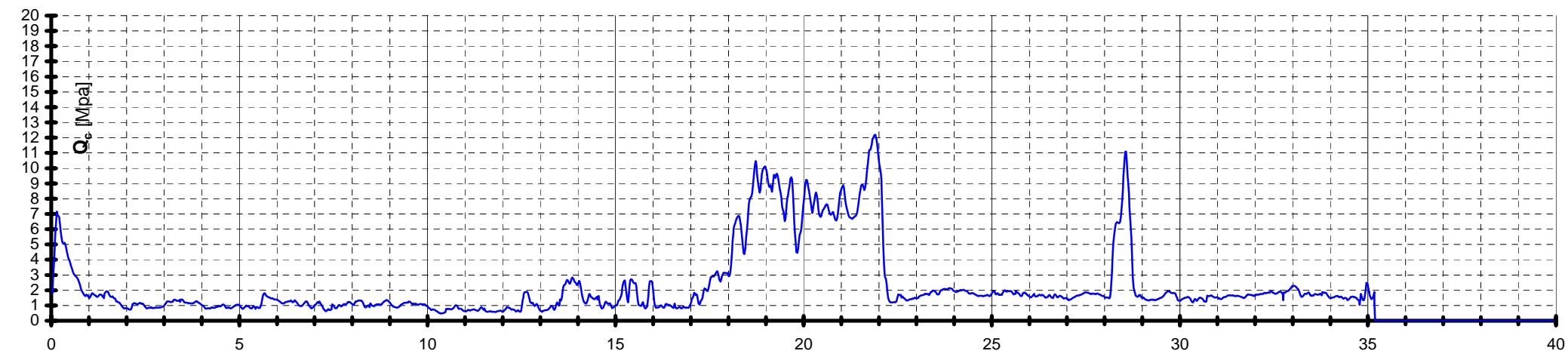
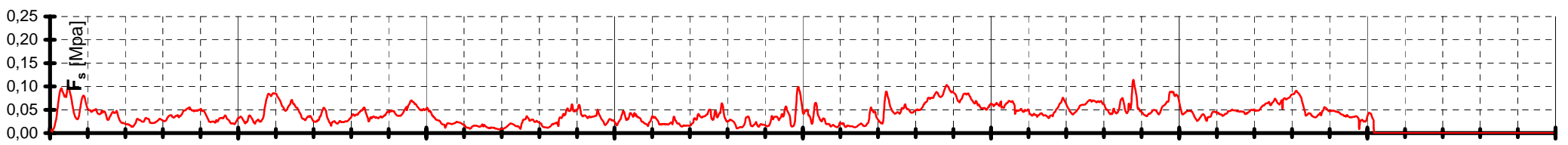
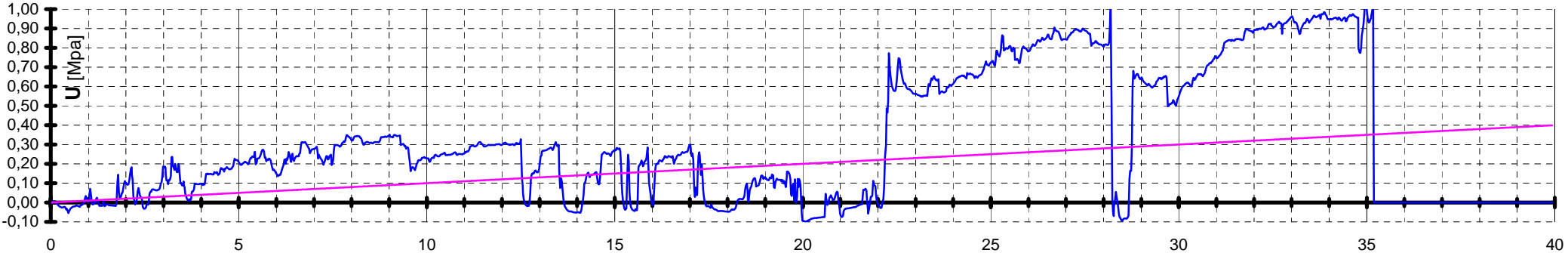
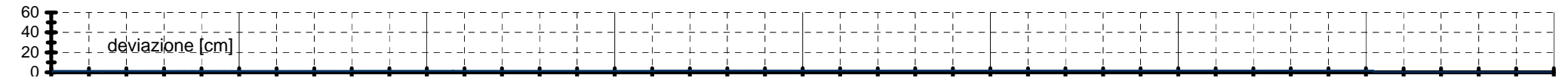
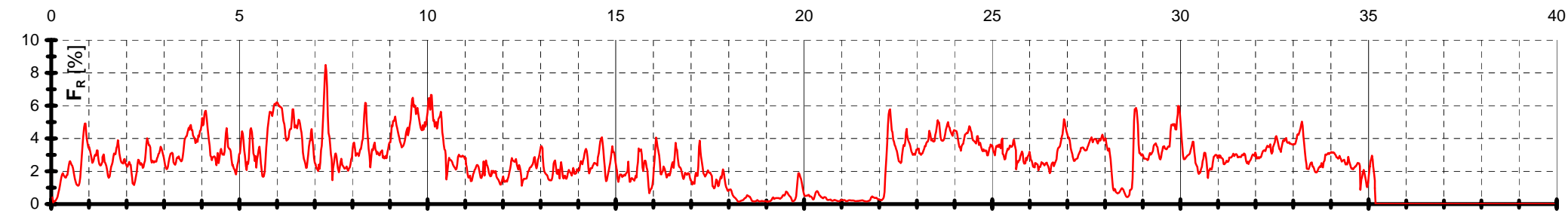


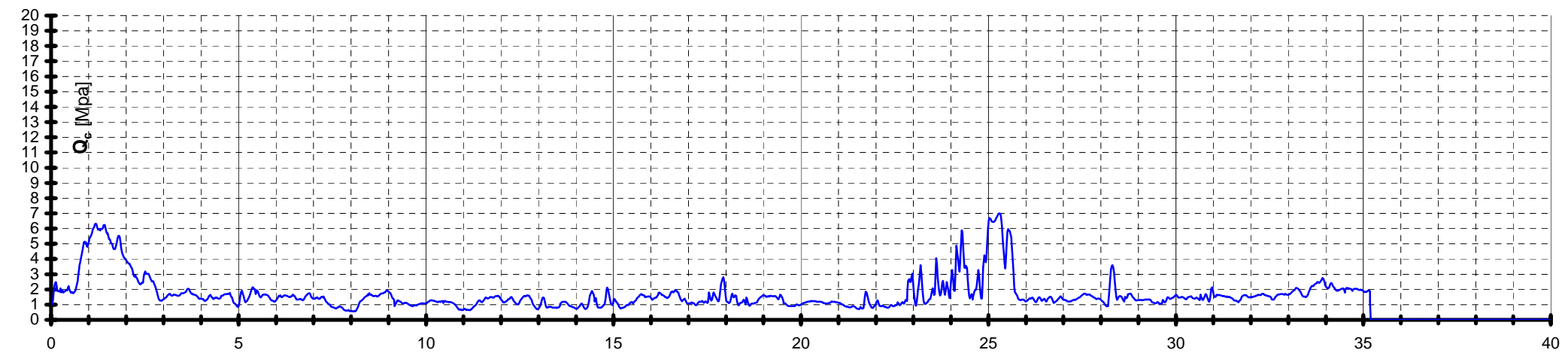
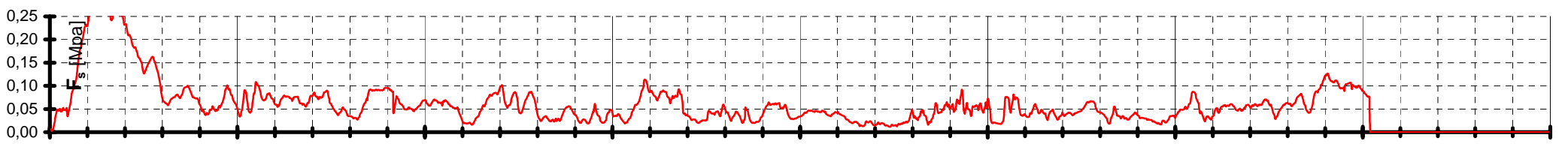
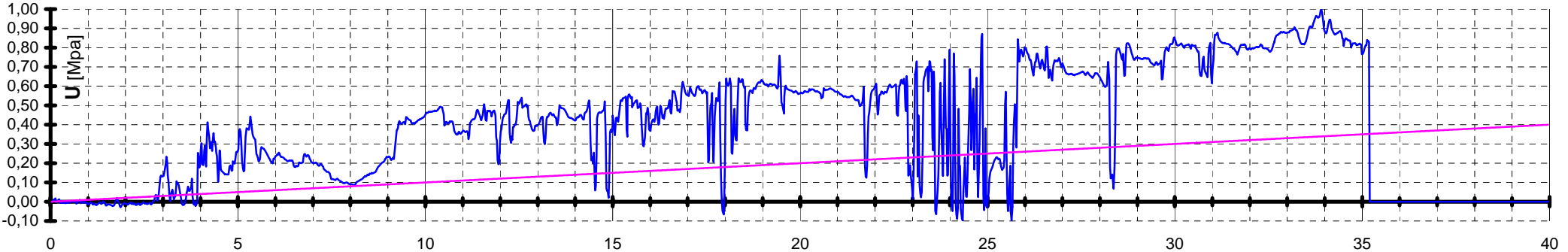
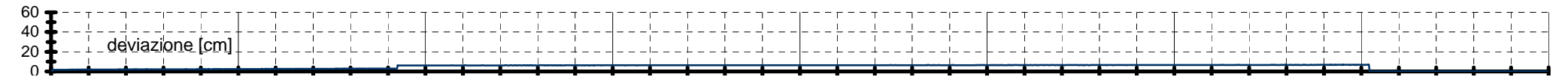
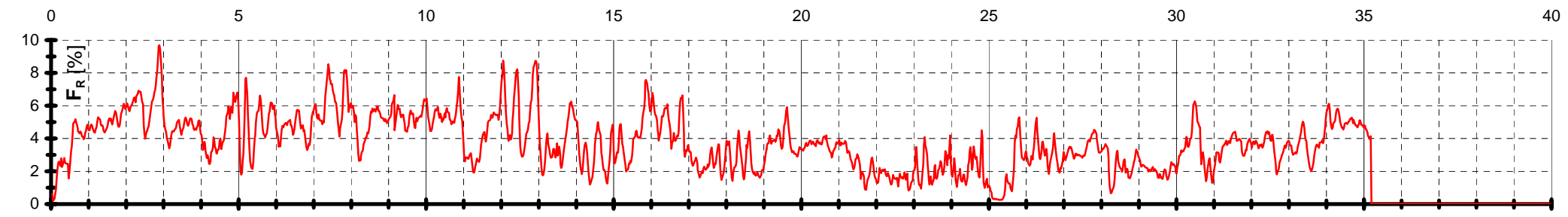
cptu 502

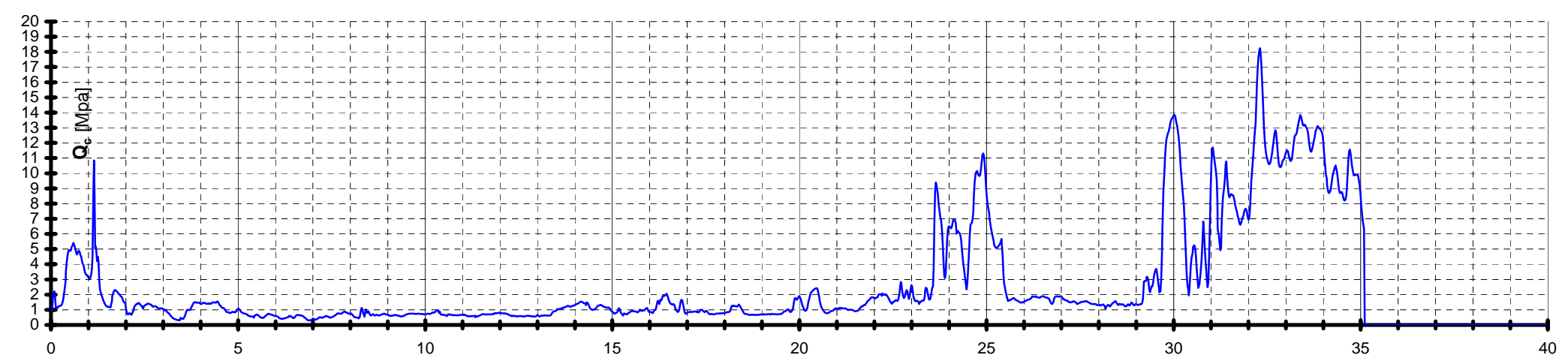
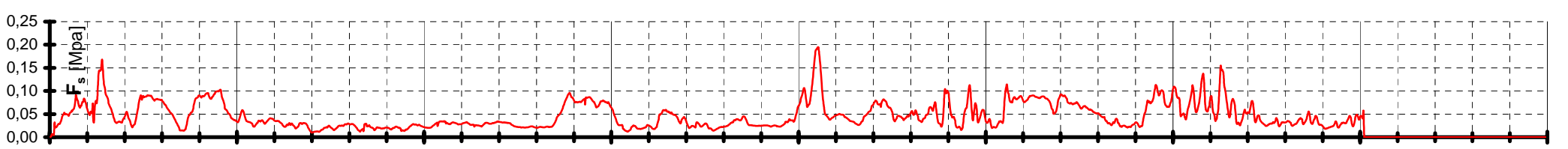
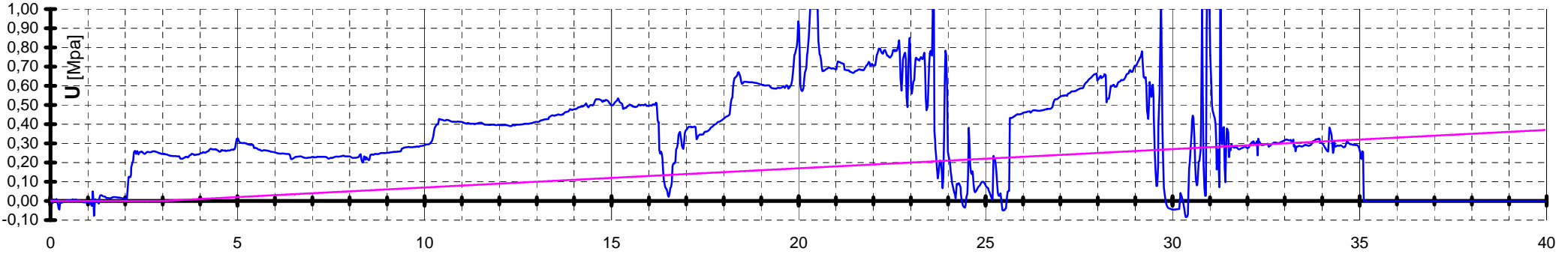
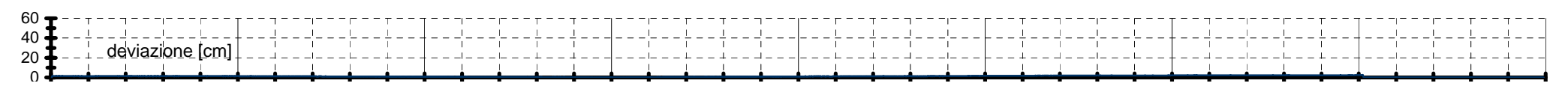
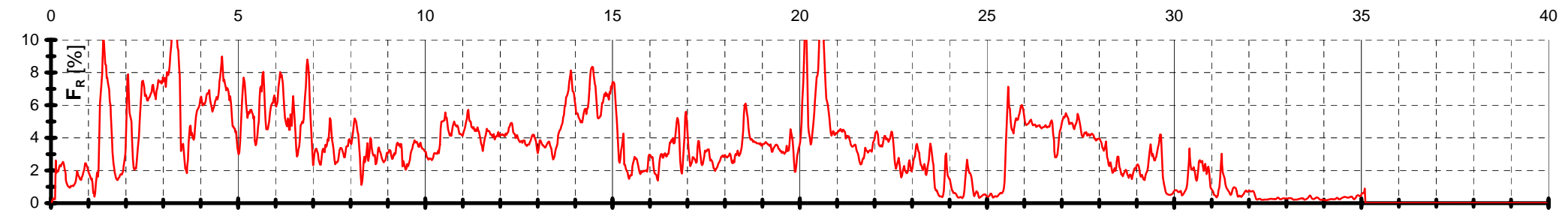
CTR: 202050

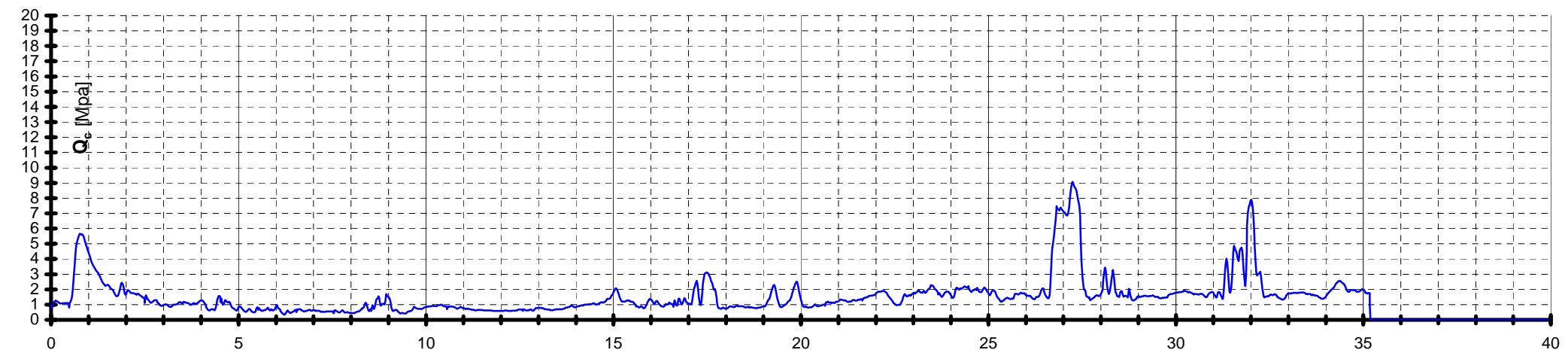
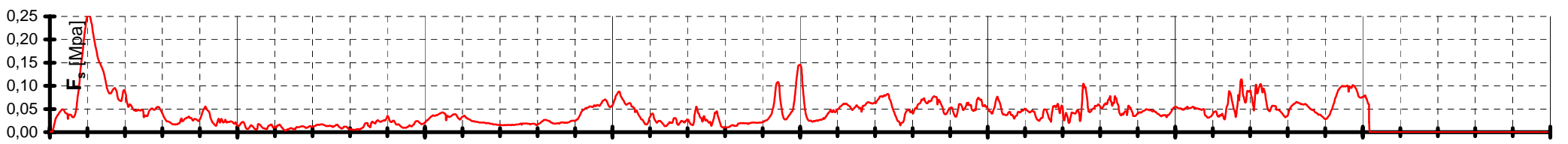
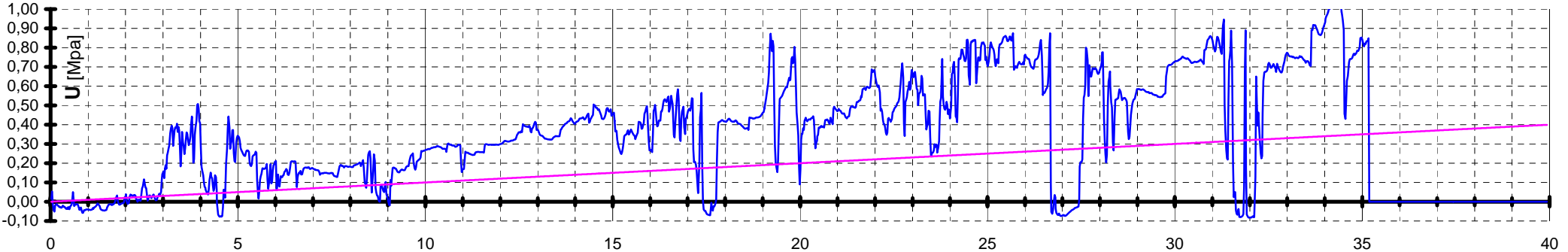
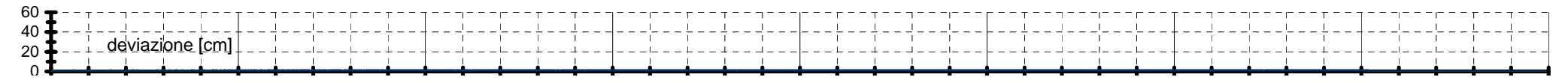
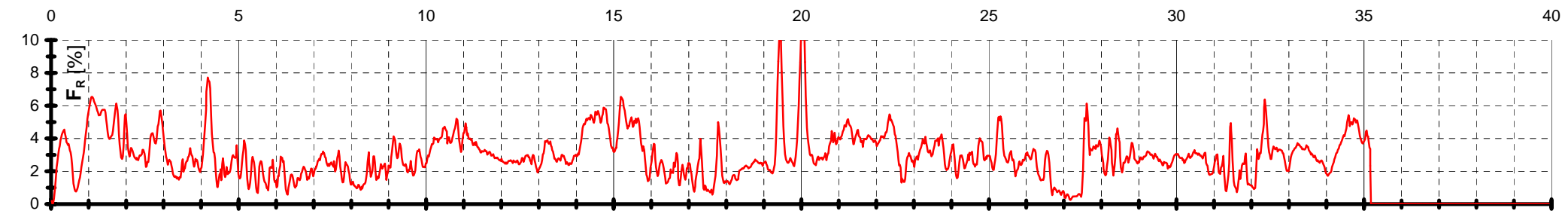
09/12/2001

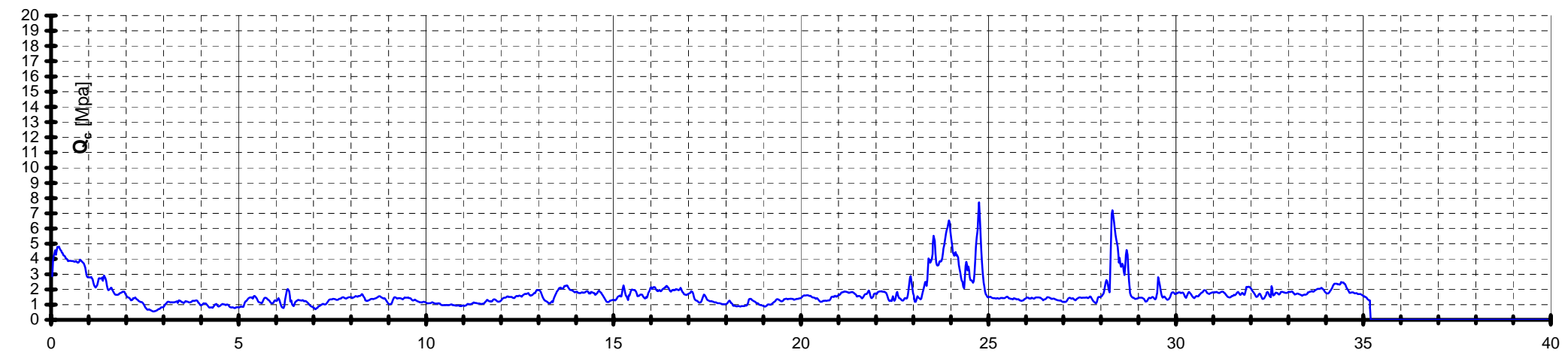
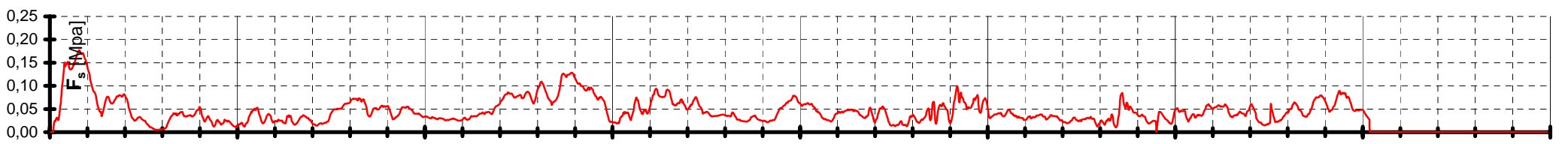
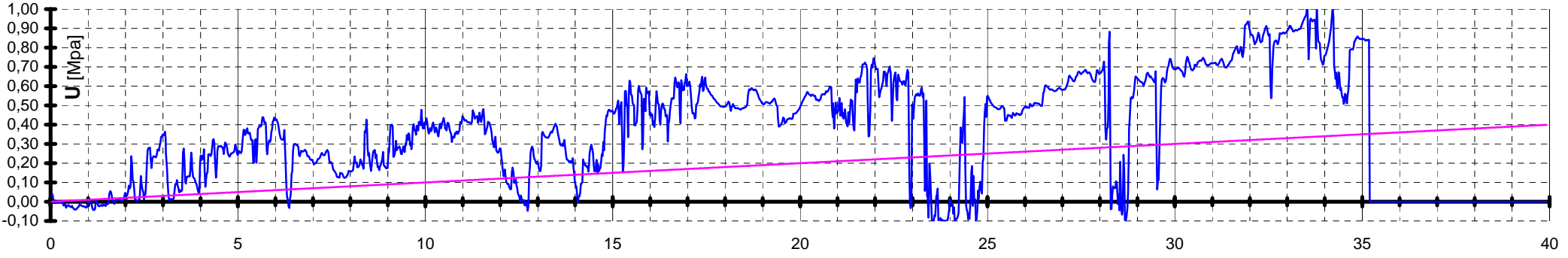
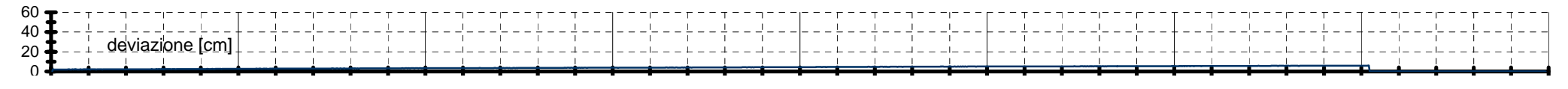
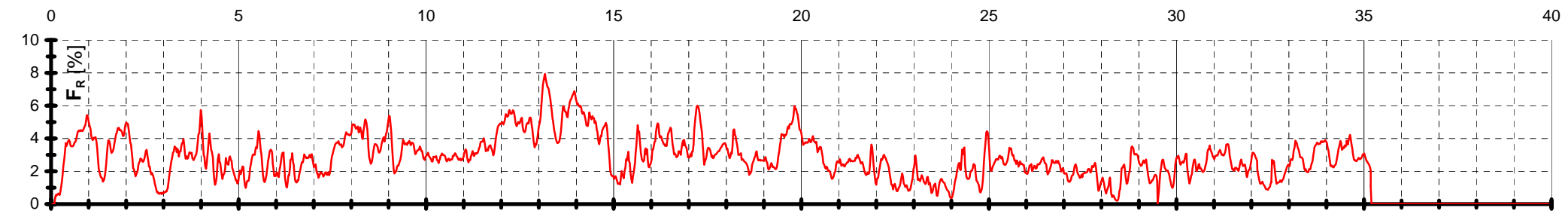
Falda non segnalata









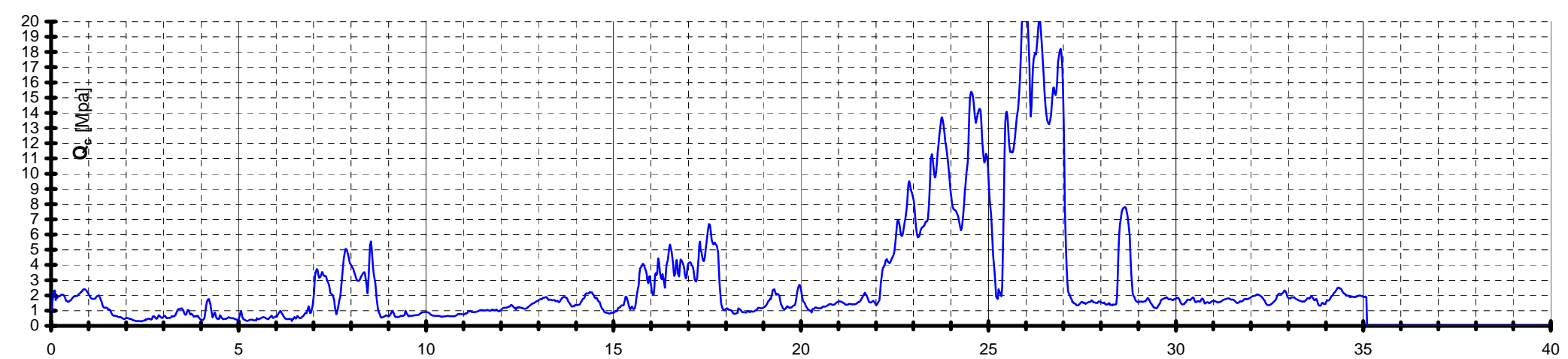
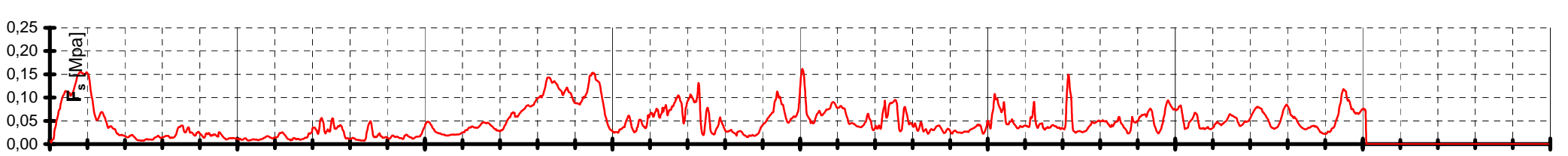
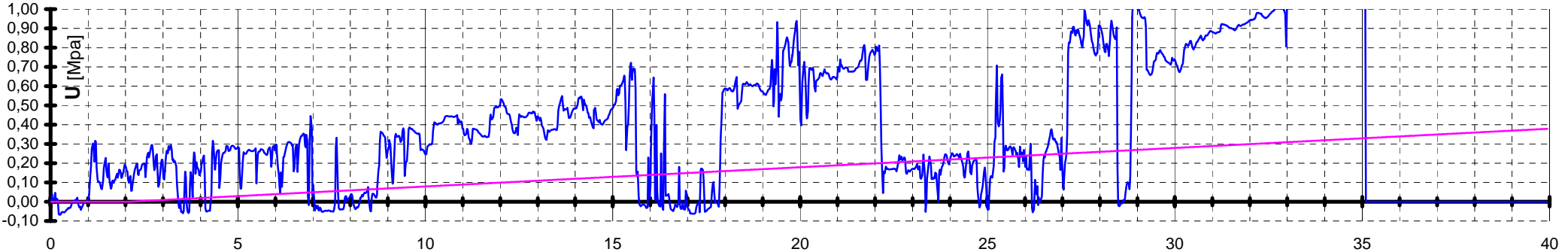
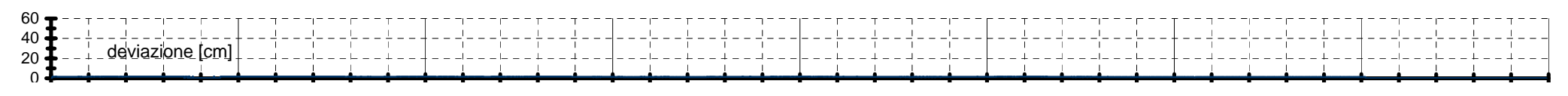
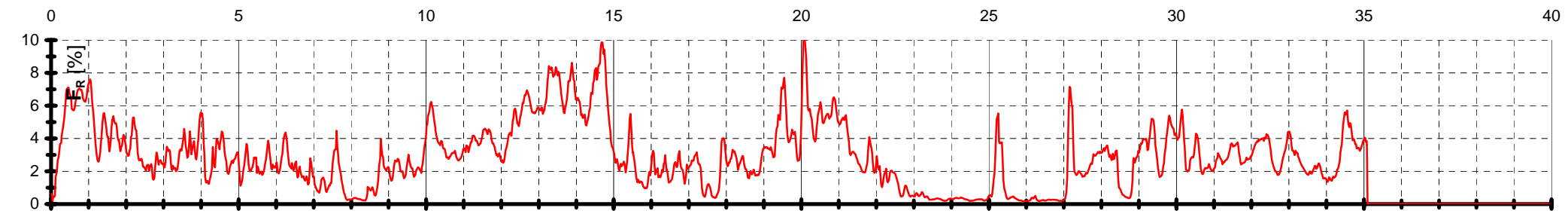


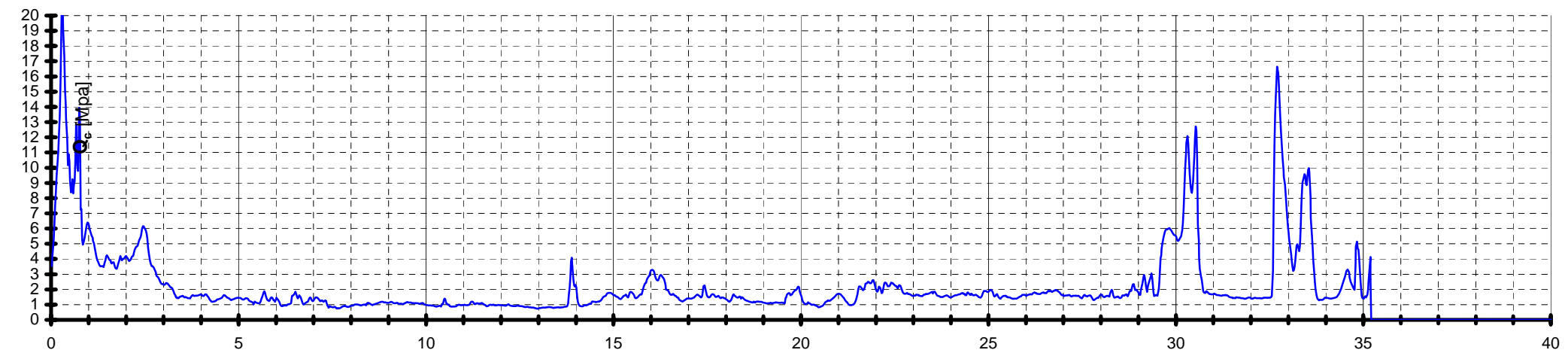
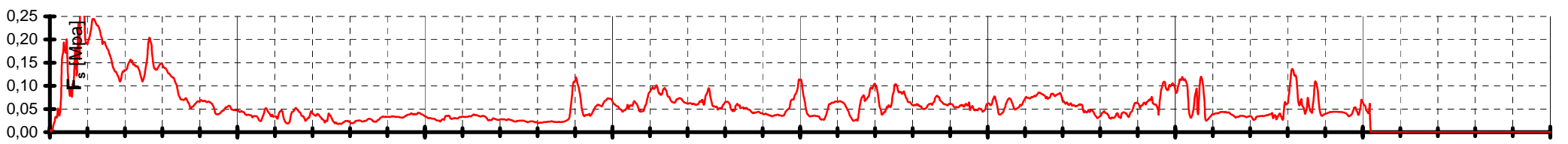
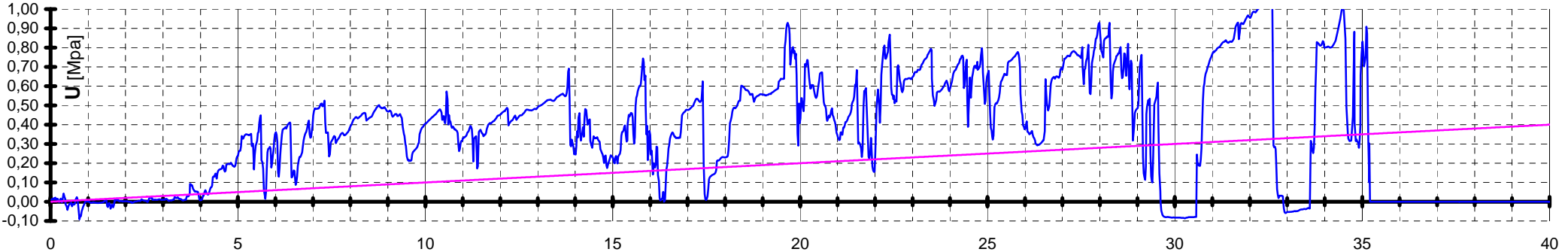
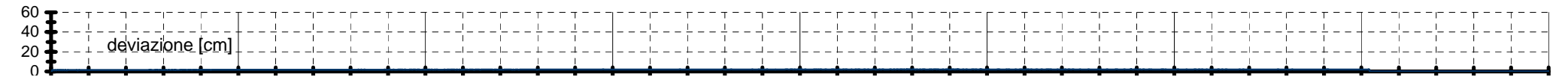
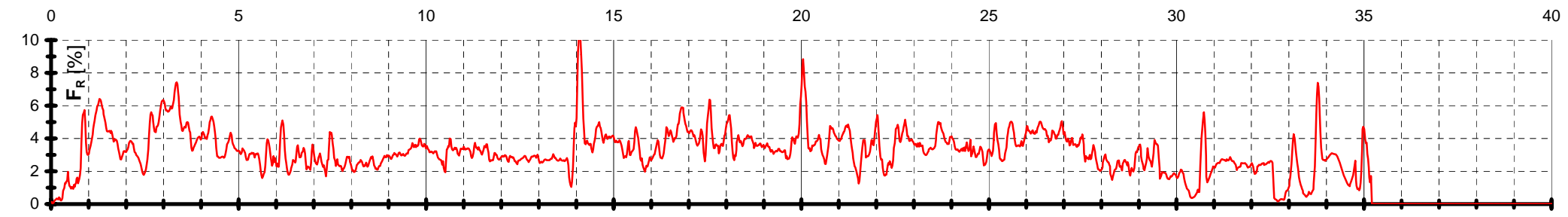
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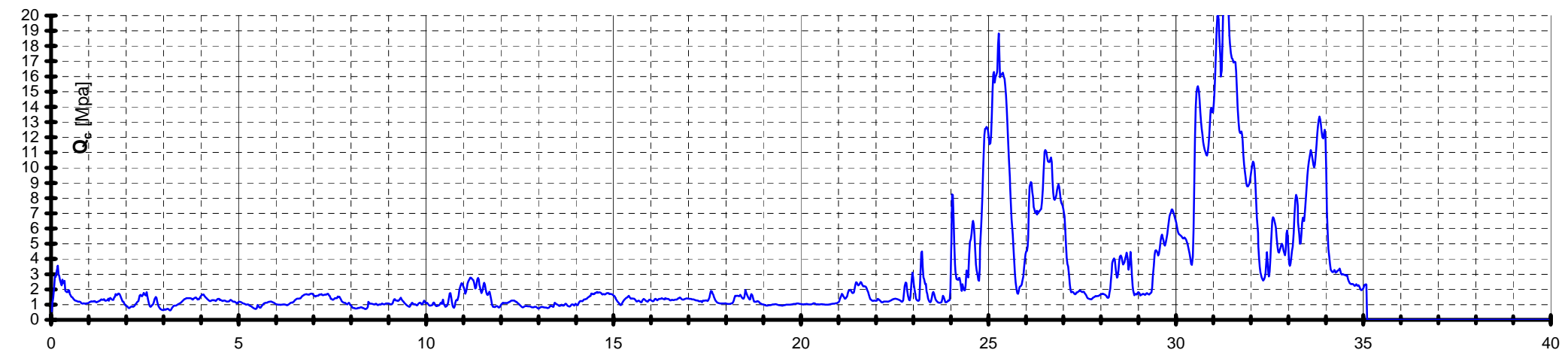
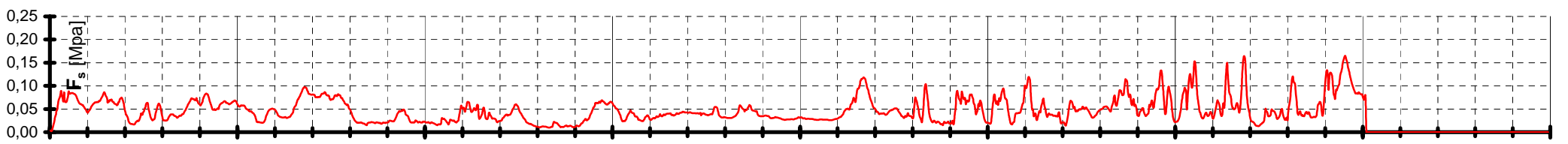
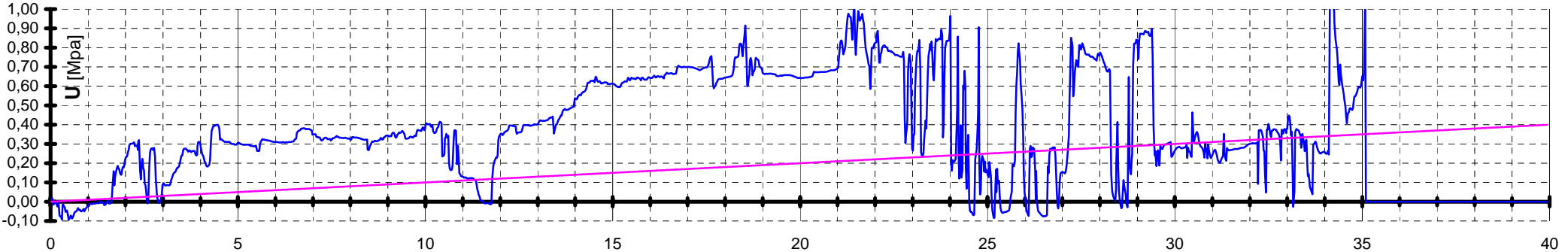
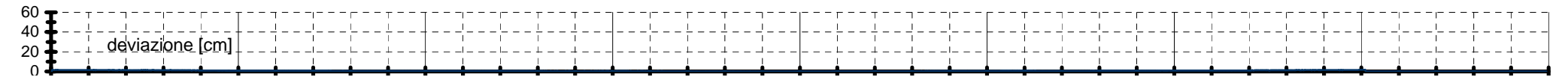
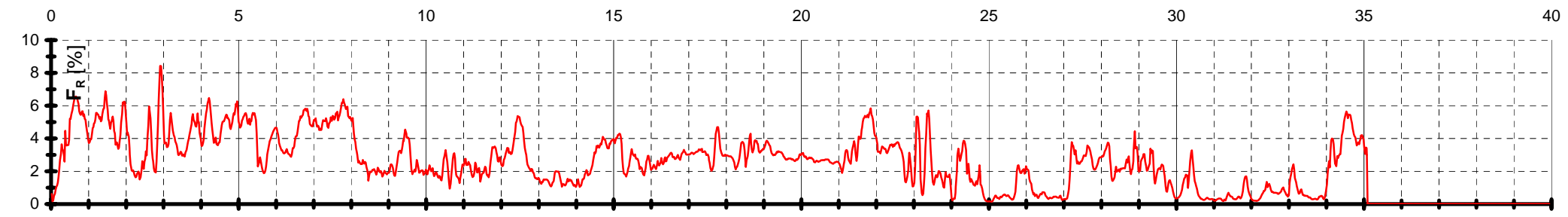
CTR: 202090

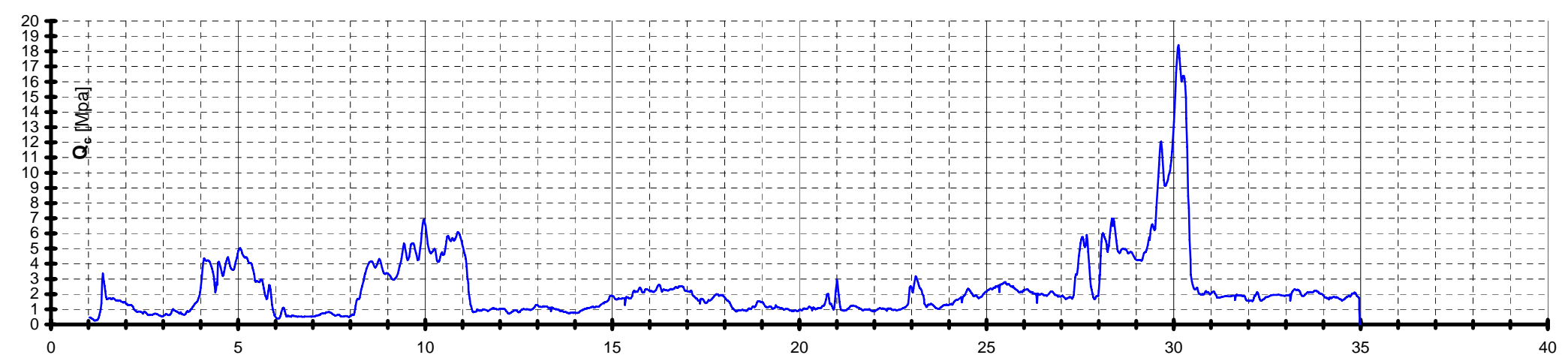
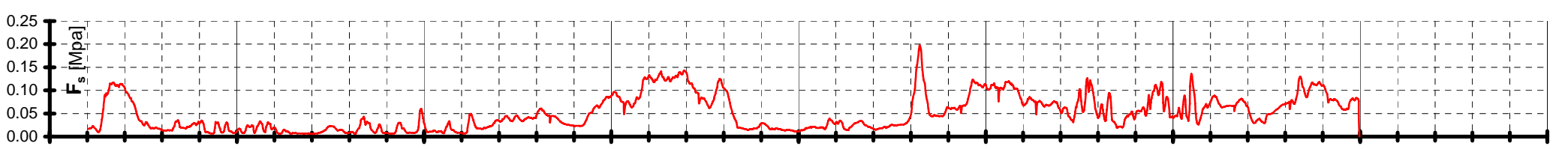
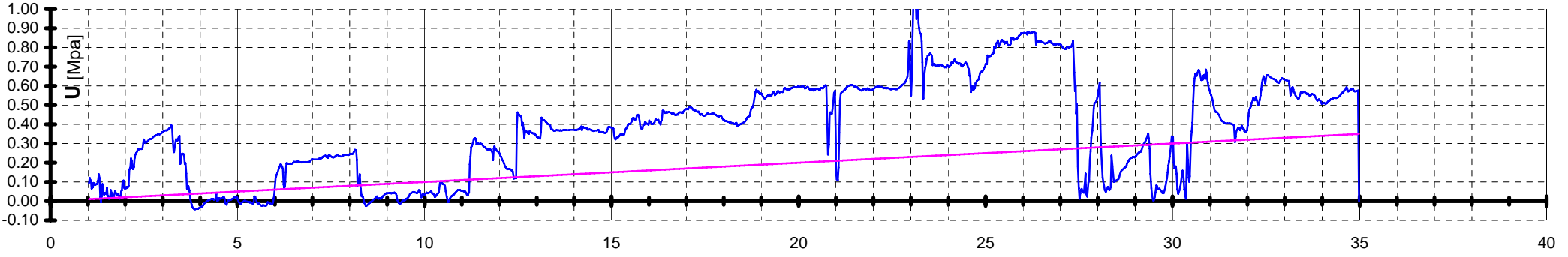
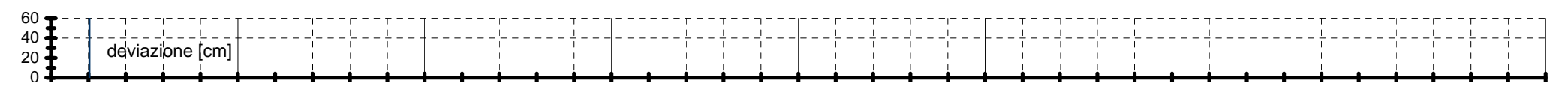
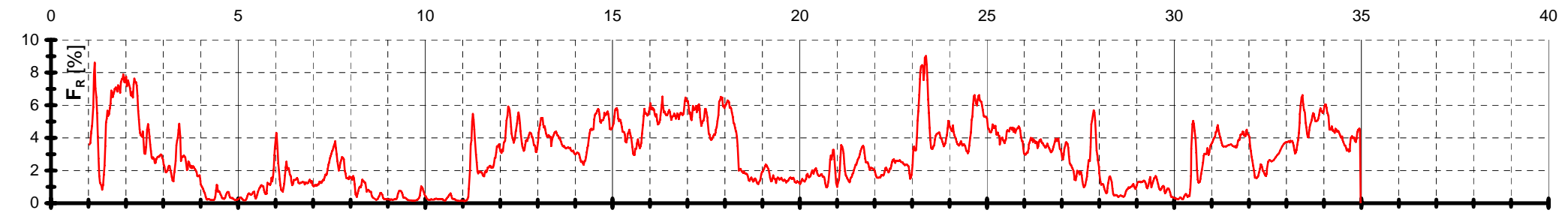
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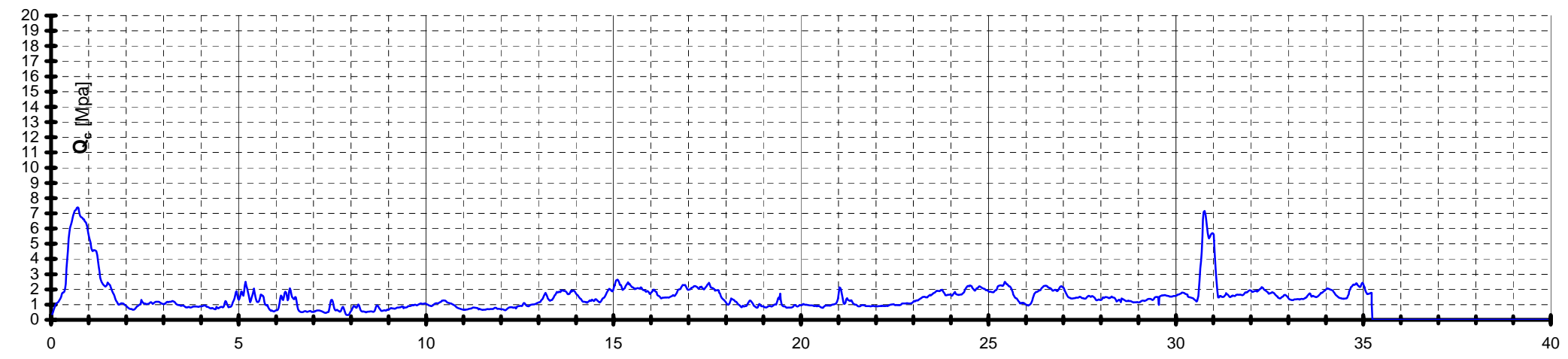
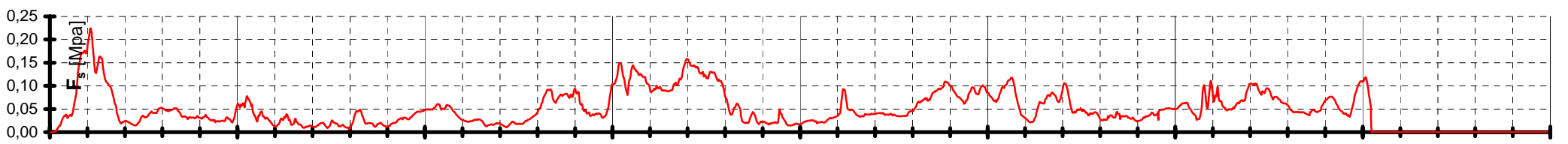
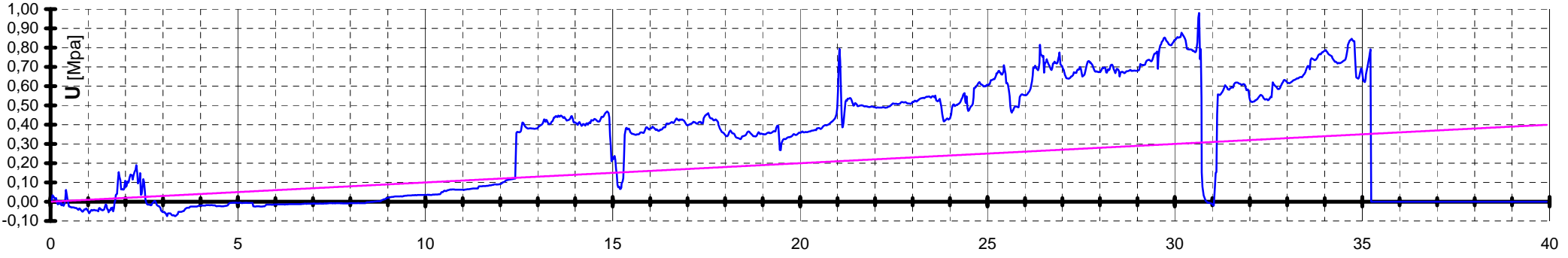
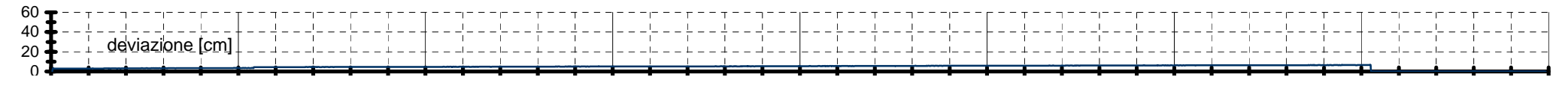
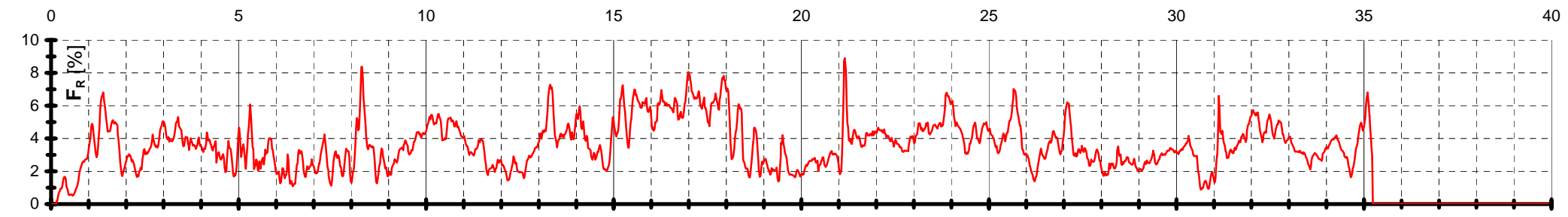
Prof. falda: 2,1 m









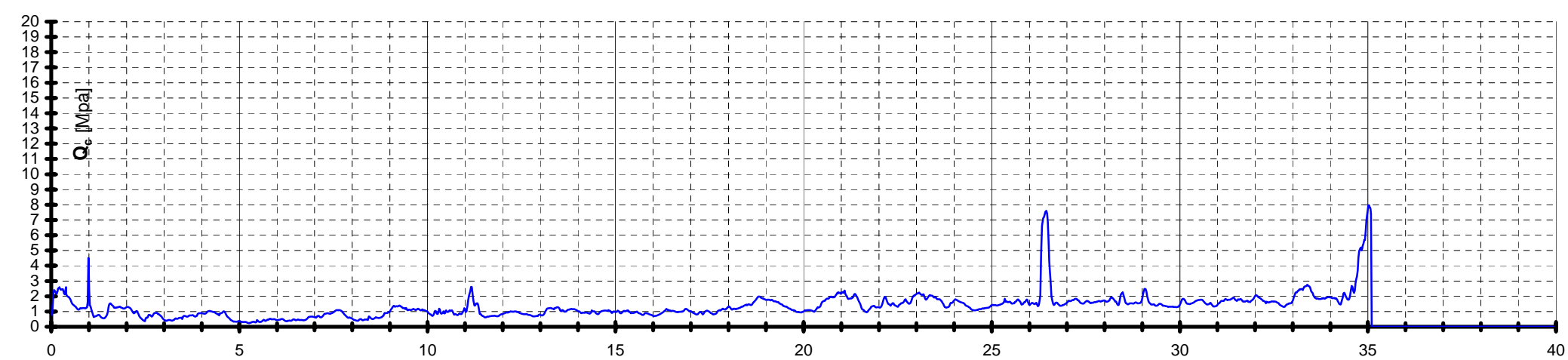
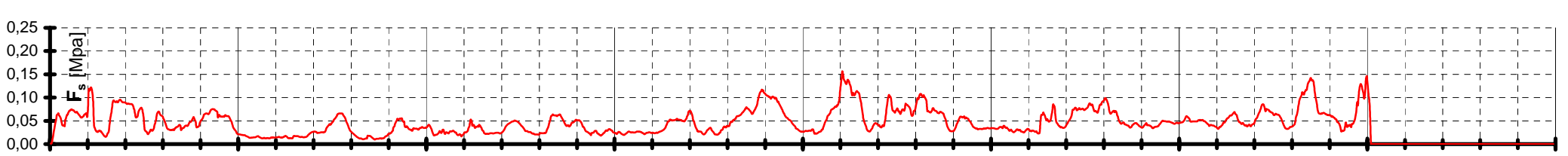
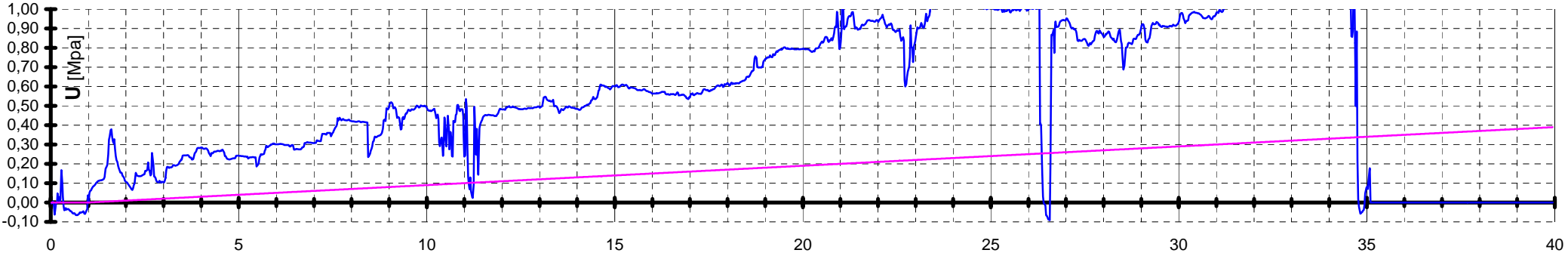
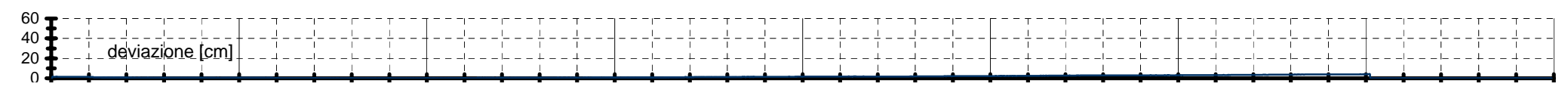
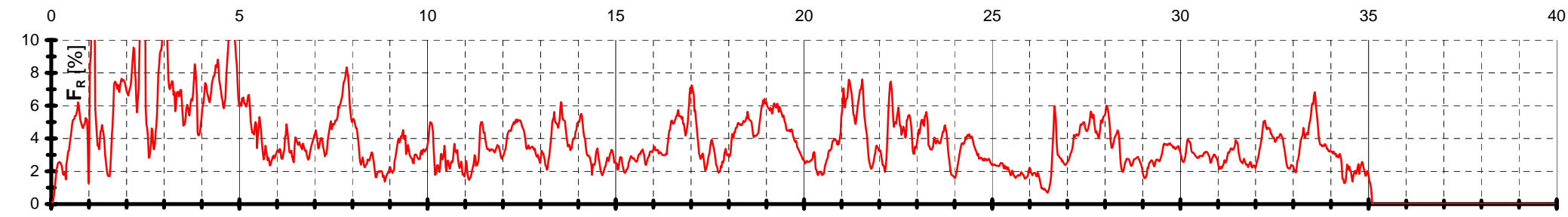


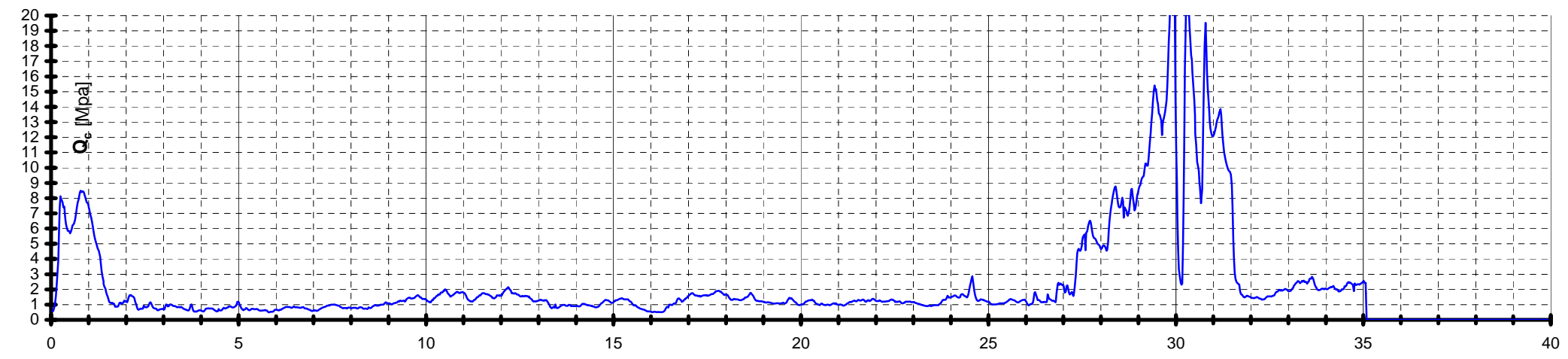
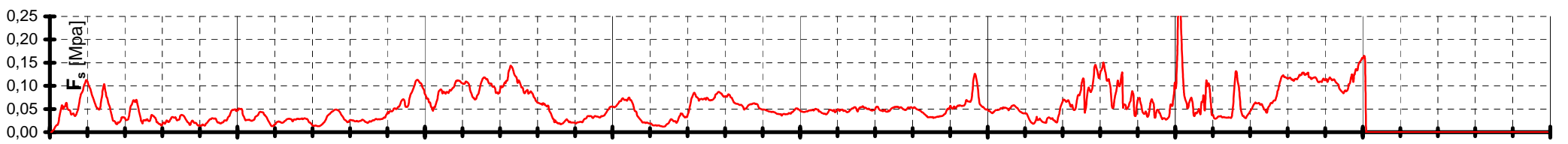
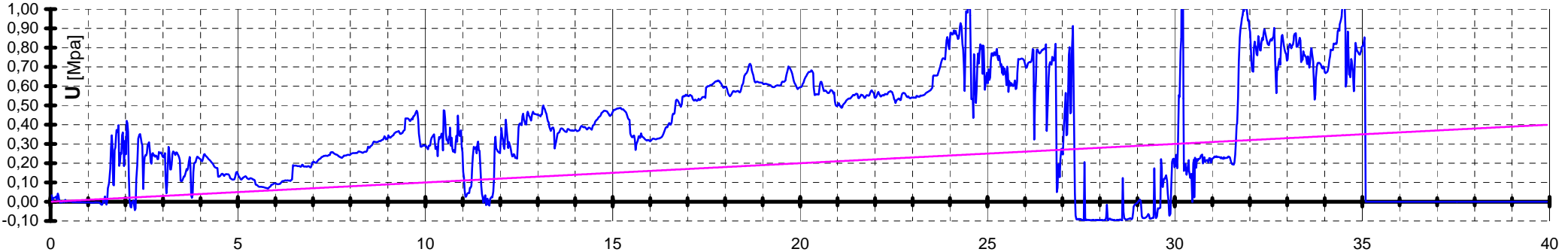
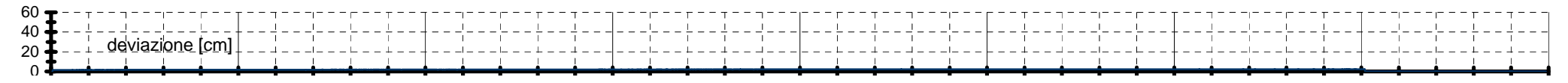
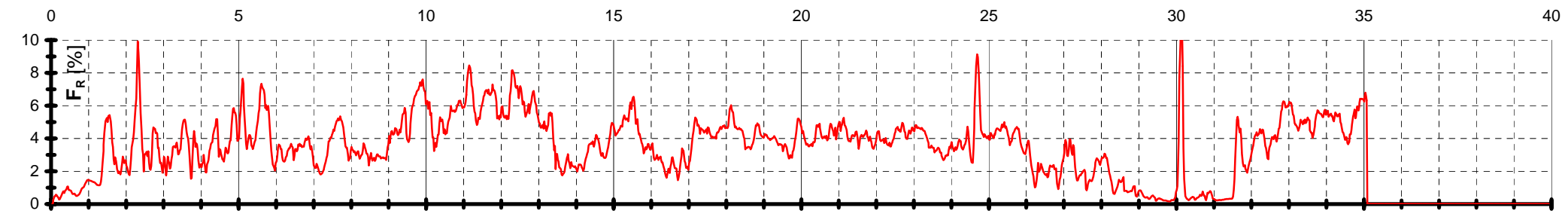
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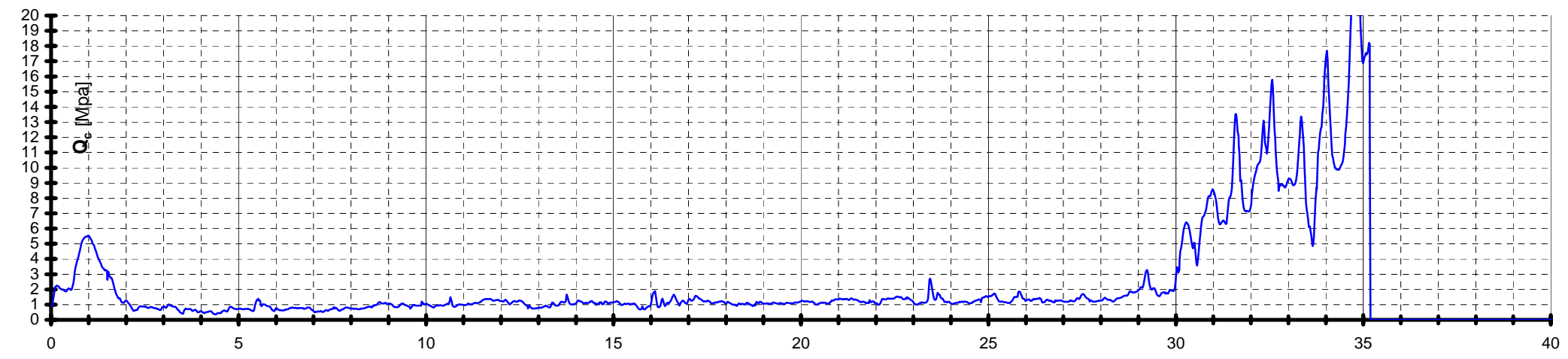
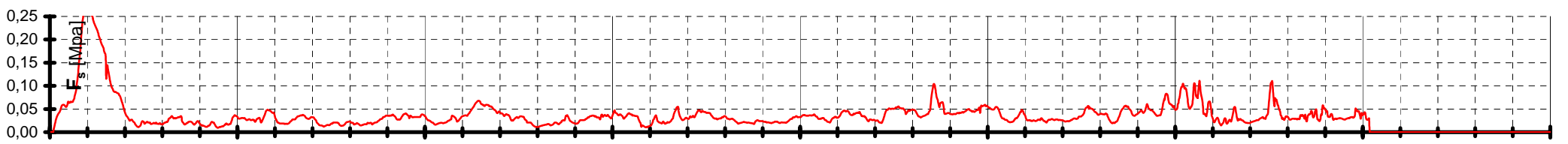
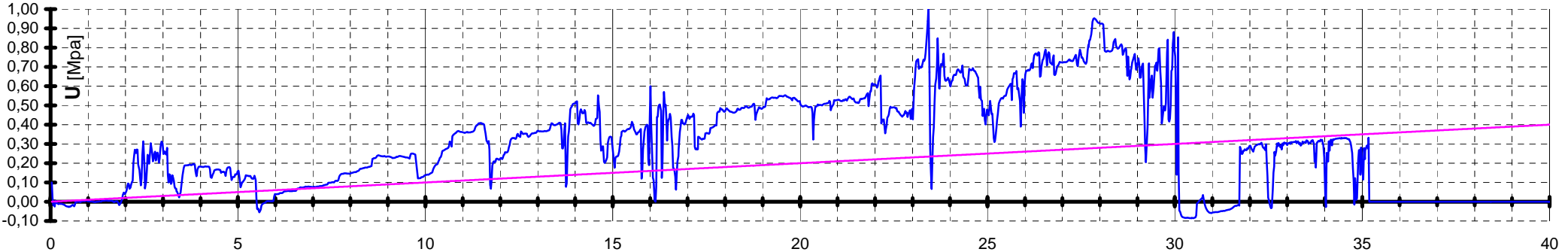
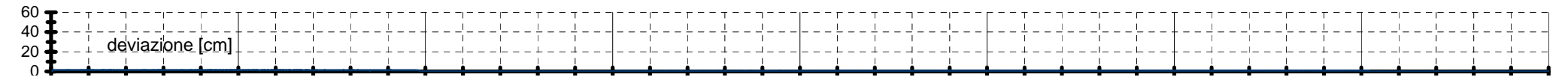
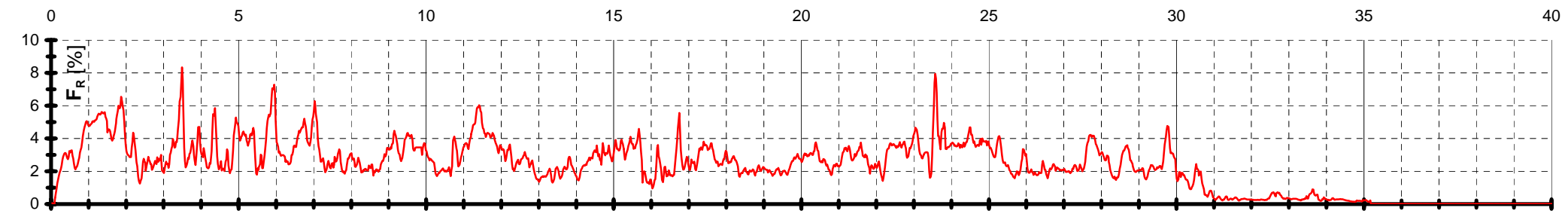
CTR: 202090

12/04/2003

Prof. falda: 1 m







SONDAGGI MECCANICI

STUDIO GEOLOGICO CENTROGEO

42015 Correggio (RE) - Piazza S. Quirino, 6 - tel 0522/641001 - Fax: 632162

