

**ELABORATO ADOTTATO
CON DELIBERAZIONE**

Giunta Comunale

Consiglio Comunale

n° 40 ..del.. **25 MAG. 2006**

**COMUNI DI
PISA E CASCINA**



**RELAZIONE GEOLOGICA E GEOTECNICA
A SUPPORTO DEL PROGETTO
"PIANO ATTUATIVO PER L'AMPLIAMENTO
DELLA ZONA PRODUTTIVA DI OSPEDALETTO"
PROTOCOLLO DI INTESA TRA I
COMUNI DI PISA E CASCINA**

ALLEGATO 1- PROVE PENETROMETRICHE



ACQUA E TERRA

★ STUDIO ASSOCIATO DI GEOLOGIA
56122 PISA - Via T. Rook, 12
Tel./Fax: +39 050 525027
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INDAGINI PENETROMETRICHE STATICHE

**Ampliamento area industriale Ospedaletto
Comune di Cascina-Comune di Pisa**

Contenuti:

- **Lecture di campagna**
- **Diagramma di resistenza**
- **Valutazioni litologiche**
- **Parametri geotecnici**

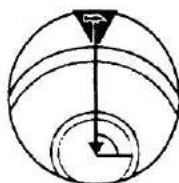
Committenti

Geostudio e Studio Geologico Dott. M. Ghigliotti

Per la Geotirreno


GEOTIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

Febbraio 2002



GeoTirreno S.r.l.
Via Cervara 101 – Massa (cap 54100)
Tel. e Fax: 0585 / 42141
e-mail: geotirreno@geologi.it

P.IVA 00713690451

LEGENDA VALORI DI RESISTENZA

Strumento utilizzato:

PENETROMETRO STATICO OLANDESE tipo GOUDA (tipo meccanico).

Caratteristiche:

- punta conica meccanica \varnothing 35.7 mm, angolo di apertura $\alpha = 60^\circ$ - (area punta $A_p = 10 \text{ cm}^2$)
- manicotto laterale di attrito tipo 'Begemann' (\varnothing 35.7 mm - h 133 mm - sup. lat. Am. = 150 cm^2)
- velocità di avanzamento costante $V = 2 \text{ cm / sec}$ ($\pm 0,5 \text{ cm / sec}$)
- spinta max nominale dello strumento S_{max} variabile a seconda del tipo
- costante di trasformazione (lett. \Rightarrow Spinta) $C_t = \text{SPINTA (Kg)} / \text{LETTURA DI CAMPAGNA}$

fase 1 - resistenza alla punta $R_p \text{ (Kg / cm}^2\text{)} = (\text{L. punta}) C_t / 10$

fase 2 - resistenza laterale locale $R_L \text{ (Kg / cm}^2\text{)} = [(\text{L. laterale}) - (\text{L. punta})] C_t / 150$

fase 3 - resistenza totale $R_t \text{ (Kg)} = (\text{L. totale}) C_t$

$R_p / R_L = \text{'rapporto Begemann'}$

- L. punta = lettura di campagna durante l' infissione della sola punta (fase 1)
- L. laterale = lettura di campagna relativa all'infissione di punta e manicotto (fase 2)
- L. totale = lettura di campagna relativa all'infissione delle aste esterne (fase 3)

N.B. : la spinta $S \text{ (Kg)}$, corrispondente a ciascuna fase, si ottiene moltiplicando la corrispondente lettura di campagna L per la costante di trasformazione C_t .

N.B. : causa la distanza intercorrente (20 cm circa) fra il manicotto laterale e la punta conica del penetrometro, la resistenza laterale locale R_L viene computata 20 cm sopra la punta.

CONVERSIONI

1 kN (kiloNewton) = 1000 N \approx 100 kg = 0,1 t - 1MN (megaNewton) = 1000 kN = 1000000 N \approx 100 t

1 kPa (kiloPascal) = 1 kN/m² = 0,001 MN/m² = 0,001 MPa \approx 0,1 t/m² = 0,01 kg/cm²

1 MPa (MegaPascal) = 1 MN/m² = 1000 kN/m² = 1000 kPa \approx 100 t / m² = 10 kg/cm²

kg/cm² = 10 t/m² \approx 100 kN/m² = 100 kPa = 0,1 MN/m² = 0,1 Mpa

1 t = 1000 kg \approx 10 kN

PROVA PENETROMETRICA STATICA

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 1

2010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,70 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	2,0	2,0	4,0	0,27	15,0	10,20	10,0	11,0	20,0	0,27	75,0
0,40	4,0	6,0	8,0	0,53	15,0	10,40	7,0	9,0	14,0	0,53	26,0
0,60	6,0	10,0	12,0	0,67	18,0	10,60	18,0	22,0	36,0	0,80	45,0
0,80	5,0	10,0	10,0	0,53	19,0	10,80	13,0	19,0	26,0	0,53	49,0
1,00	6,0	10,0	12,0	0,80	15,0	11,00	22,0	26,0	44,0	0,80	55,0
1,20	5,0	11,0	10,0	0,67	15,0	11,20	8,0	14,0	16,0	0,67	24,0
1,40	8,0	13,0	16,0	0,93	17,0	11,40	2,0	7,0	4,0	0,20	20,0
1,60	7,0	14,0	14,0	0,80	17,0	11,60	2,5	4,0	5,0	0,20	25,0
1,80	8,0	14,0	16,0	0,80	20,0	11,80	2,0	3,5	4,0	0,13	30,0
2,00	8,0	14,0	16,0	0,73	22,0	12,00	3,0	4,0	6,0	0,07	90,0
2,20	7,5	13,0	15,0	0,93	16,0	12,20	3,5	4,0	7,0	0,07	105,0
2,40	8,0	15,0	16,0	0,93	17,0	12,40	3,5	4,0	7,0	0,27	26,0
2,60	9,0	16,0	18,0	0,80	22,0	12,60	3,0	5,0	6,0	0,20	30,0
2,80	7,0	13,0	14,0	0,80	17,0	12,80	3,5	5,0	7,0	0,20	35,0
3,00	9,0	15,0	18,0	0,80	22,0	13,00	3,5	5,0	7,0	0,20	35,0
3,20	8,0	14,0	16,0	0,80	20,0	13,20	3,0	4,5	6,0	0,13	45,0
3,40	6,0	12,0	12,0	0,73	16,0	13,40	3,0	4,0	6,0	0,20	30,0
3,60	4,5	10,0	9,0	0,73	12,0	13,60	3,0	4,5	6,0	0,20	30,0
3,80	4,5	10,0	9,0	0,40	22,0	13,80	3,0	4,5	6,0	0,20	30,0
4,00	4,0	7,0	8,0	0,53	15,0	14,00	3,5	5,0	7,0	0,27	26,0
4,20	4,0	8,0	8,0	0,53	15,0	14,20	3,5	5,5	7,0	0,20	35,0
4,40	4,0	8,0	8,0	0,40	20,0	14,40	3,5	5,0	7,0	0,20	35,0
4,60	5,0	8,0	10,0	0,47	21,0	14,60	3,5	5,0	7,0	0,20	35,0
4,80	4,5	8,0	9,0	0,67	13,0	14,80	3,5	5,0	7,0	0,20	35,0
5,00	4,0	9,0	8,0	0,40	20,0	15,00	3,5	5,0	7,0	0,27	26,0
5,20	3,0	6,0	6,0	0,27	22,0	15,20	4,0	6,0	8,0	0,27	30,0
5,40	3,0	5,0	6,0	0,27	22,0	15,40	4,0	6,0	8,0	0,27	30,0
5,60	2,5	4,5	5,0	0,53	9,0	15,60	4,0	6,0	8,0	0,27	30,0
5,80	2,5	6,5	5,0	0,40	12,0	15,80	4,0	6,0	8,0	0,40	20,0
6,00	9,0	12,0	18,0	0,67	27,0	16,00	8,0	11,0	16,0	0,53	30,0
6,20	15,0	20,0	30,0	0,67	45,0	16,20	8,0	12,0	16,0	0,40	40,0
6,40	18,0	23,0	36,0	0,80	45,0	16,40	3,0	6,0	6,0	0,20	30,0
6,60	8,0	14,0	16,0	0,67	24,0	16,60	3,5	5,0	7,0	0,20	35,0
6,80	4,0	9,0	8,0	0,27	30,0	16,80	3,5	5,0	7,0	0,40	17,0
7,00	2,0	4,0	4,0	0,20	20,0	17,00	6,0	9,0	12,0	0,67	18,0
7,20	1,5	3,0	3,0	0,13	22,0	17,20	10,0	15,0	20,0	0,93	21,0
7,40	2,0	3,0	4,0	0,20	20,0	17,40	13,0	20,0	26,0	1,33	19,0
7,60	1,5	3,0	3,0	0,20	15,0	17,60	13,0	23,0	26,0	1,33	19,0
7,80	1,5	3,0	3,0	0,20	15,0	17,80	16,0	26,0	32,0	1,33	24,0
8,00	1,5	3,0	3,0	0,13	22,0	18,00	14,0	24,0	28,0	1,47	19,0
8,20	2,0	3,0	4,0	0,20	20,0	18,20	14,0	25,0	28,0	1,60	17,0
8,40	1,5	3,0	3,0	0,13	22,0	18,40	13,0	25,0	26,0	1,73	15,0
8,60	2,0	3,0	4,0	0,13	30,0	18,60	12,0	25,0	24,0	1,33	18,0
8,80	2,0	3,0	4,0	0,13	30,0	18,80	12,0	22,0	24,0	1,20	20,0
9,00	2,0	3,0	4,0	0,13	30,0	19,00	17,0	26,0	34,0	1,47	23,0
9,20	2,0	3,0	4,0	0,13	30,0	19,20	14,0	25,0	28,0	0,93	30,0
9,40	2,0	3,0	4,0	0,13	30,0	19,40	9,0	16,0	18,0	0,93	19,0
9,60	2,0	3,0	4,0	0,13	30,0	19,60	13,0	20,0	26,0	1,47	18,0
9,80	2,0	3,0	4,0	0,13	30,0	19,80	16,0	27,0	32,0	1,60	20,0
10,00	2,0	3,0	4,0	0,13	30,0	20,00	18,0	30,0	36,0	2,27	16,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

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PROVA PENETROMETRICA STATICA

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 1

2040496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,70 m da quota inizio
 - pagina : 2

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	-
20,20	15,0	32,0	30,0	1,33	22,0	22,40	10,0	17,0	20,0	1,33	15,0
20,40	15,0	25,0	30,0	0,80	37,0	22,60	15,0	25,0	30,0	1,60	19,0
20,60	9,0	15,0	18,0	0,40	45,0	22,80	14,0	26,0	28,0	1,60	17,0
20,80	9,0	12,0	18,0	0,53	34,0	23,00	15,0	27,0	30,0	1,73	17,0
21,00	11,0	15,0	22,0	1,20	18,0	23,20	17,0	30,0	34,0	3,20	11,0
21,20	13,0	22,0	26,0	1,20	22,0	23,40	21,0	45,0	42,0	2,67	16,0
21,40	14,0	23,0	28,0	1,33	21,0	23,60	40,0	60,0	80,0	6,67	12,0
21,60	13,0	23,0	26,0	1,33	19,0	23,80	100,0	150,0	200,0	5,33	37,0
21,80	11,0	21,0	22,0	1,07	21,0	24,00	120,0	160,0	240,0	---	---
22,00	7,0	15,0	14,0	0,93	15,0	24,20	200,0	200,0	400,0	---	---
22,20	9,0	16,0	18,0	0,93	19,0						

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

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PROVA PENETROMETRICA STATICA LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 2

2.010496-018

- committente : Studio Geoprogetti e Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - 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	2,0	2,0	4,0	0,27	15,0	10,20	6,5	9,0	13,0	0,20	65,0
0,40	3,0	5,0	6,0	0,40	15,0	10,40	5,5	7,0	11,0	0,67	16,0
0,60	5,0	8,0	10,0	0,40	25,0	10,60	10,0	15,0	20,0	0,67	30,0
0,80	5,0	8,0	10,0	0,53	19,0	10,80	20,0	25,0	40,0	0,53	75,0
1,00	4,0	8,0	8,0	0,40	20,0	11,00	11,0	15,0	22,0	0,40	55,0
1,20	9,0	12,0	18,0	0,67	27,0	11,20	8,0	11,0	16,0	0,53	30,0
1,40	6,0	11,0	12,0	0,67	18,0	11,40	4,0	8,0	8,0	0,27	30,0
1,60	8,0	13,0	16,0	0,73	22,0	11,60	3,0	5,0	6,0	0,27	22,0
1,80	6,0	11,5	12,0	0,67	18,0	11,80	6,0	8,0	12,0	0,27	45,0
2,00	4,0	9,0	8,0	0,53	15,0	12,00	3,0	5,0	6,0	0,20	30,0
2,20	4,0	8,0	8,0	0,47	17,0	12,20	3,0	4,5	6,0	0,20	30,0
2,40	4,5	8,0	9,0	0,67	13,0	12,40	3,0	4,5	6,0	0,27	22,0
2,60	8,0	13,0	16,0	0,80	20,0	12,60	3,0	5,0	6,0	0,27	22,0
2,80	11,0	17,0	22,0	0,93	24,0	12,80	4,0	6,0	8,0	0,13	60,0
3,00	10,0	17,0	20,0	0,93	21,0	13,00	3,0	4,0	6,0	0,27	22,0
3,20	9,0	16,0	18,0	0,93	19,0	13,20	3,0	5,0	6,0	0,20	30,0
3,40	8,0	15,0	16,0	0,80	20,0	13,40	4,0	5,5	8,0	0,27	30,0
3,60	7,0	13,0	14,0	0,73	19,0	13,60	3,5	5,5	7,0	0,27	26,0
3,80	5,5	11,0	11,0	0,67	16,0	13,80	4,0	6,0	8,0	0,20	40,0
4,00	5,0	10,0	10,0	0,67	15,0	14,00	3,5	5,0	7,0	0,27	26,0
4,20	6,0	11,0	12,0	0,67	18,0	14,20	3,5	5,5	7,0	0,27	26,0
4,40	8,0	13,0	16,0	0,53	30,0	14,40	3,5	5,5	7,0	0,27	26,0
4,60	8,0	12,0	16,0	0,73	22,0	14,60	4,0	6,0	8,0	0,20	40,0
4,80	5,5	11,0	11,0	0,80	14,0	14,80	3,5	5,0	7,0	0,27	26,0
5,00	5,0	11,0	10,0	0,73	14,0	15,00	4,0	6,0	8,0	0,33	24,0
5,20	4,5	10,0	9,0	0,47	19,0	15,20	4,0	6,5	8,0	0,27	30,0
5,40	3,5	7,0	7,0	0,33	21,0	15,40	4,0	6,0	8,0	0,13	60,0
5,60	2,5	5,0	5,0	0,27	19,0	15,60	4,5	5,5	9,0	0,33	27,0
5,80	14,0	16,0	28,0	0,27	105,0	15,80	4,0	6,5	8,0	0,33	24,0
6,00	14,0	16,0	28,0	0,80	35,0	16,00	4,0	6,5	8,0	0,20	40,0
6,20	12,0	18,0	24,0	0,53	45,0	16,20	3,5	5,0	7,0	0,20	35,0
6,40	12,0	16,0	24,0	0,53	45,0	16,40	4,5	6,0	9,0	0,40	22,0
6,60	7,0	11,0	14,0	0,40	35,0	16,60	8,0	11,0	16,0	0,67	24,0
6,80	4,0	7,0	8,0	0,27	30,0	16,80	10,0	15,0	20,0	0,67	30,0
7,00	2,0	4,0	4,0	0,27	15,0	17,00	11,0	16,0	22,0	0,80	27,0
7,20	2,0	4,0	4,0	0,27	15,0	17,20	9,0	15,0	18,0	0,80	22,0
7,40	2,0	4,0	4,0	0,27	15,0	17,40	17,0	23,0	34,0	1,20	28,0
7,60	2,0	4,0	4,0	0,13	30,0	17,60	15,0	24,0	30,0	1,47	20,0
7,80	2,0	3,0	4,0	0,13	30,0	17,80	11,0	22,0	22,0	0,80	27,0
8,00	2,0	3,0	4,0	0,13	30,0	18,00	10,0	16,0	20,0	0,80	25,0
8,20	2,0	3,0	4,0	0,20	20,0	18,20	12,0	18,0	24,0	0,93	26,0
8,40	1,5	3,0	3,0	0,20	15,0	18,40	12,0	19,0	24,0	1,20	20,0
8,60	2,0	3,5	4,0	0,27	15,0	18,60	13,0	22,0	26,0	0,93	28,0
8,80	2,0	4,0	4,0	0,07	60,0	18,80	10,0	17,0	20,0	1,20	17,0
9,00	2,5	3,0	5,0	0,20	25,0	19,00	15,0	24,0	30,0	1,60	19,0
9,20	2,5	4,0	5,0	0,33	15,0	19,20	14,0	26,0	28,0	1,33	21,0
9,40	2,5	5,0	5,0	0,20	25,0	19,40	15,0	25,0	30,0	1,20	25,0
9,60	2,5	4,0	5,0	0,20	25,0	19,60	13,0	22,0	26,0	1,20	22,0
9,80	3,0	4,5	6,0	0,27	22,0	19,80	17,0	26,0	34,0	1,33	25,0
10,00	3,0	5,0	6,0	0,33	18,0	20,00	17,0	27,0	34,0	1,60	21,0

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

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 2

2-010498-018

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 - prof. falda : 2,00 m da quota inizio
 - pagina : 2

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 -
20,20	18,0	30,0	36,0	1,73	21,0	22,40	15,0	24,0	30,0	1,73	17,0
20,40	17,0	30,0	34,0	0,93	36,0	22,60	16,0	29,0	32,0	1,60	20,0
20,60	11,0	18,0	22,0	0,80	27,0	22,80	15,0	27,0	30,0	1,60	19,0
20,80	10,0	16,0	20,0	0,80	25,0	23,00	18,0	30,0	36,0	2,00	18,0
21,00	12,0	18,0	24,0	1,33	18,0	23,20	20,0	35,0	40,0	1,47	27,0
21,20	14,0	24,0	28,0	1,20	23,0	23,40	17,0	28,0	34,0	2,13	16,0
21,40	13,0	22,0	26,0	1,33	19,0	23,60	22,0	38,0	44,0	2,67	16,0
21,60	15,0	25,0	30,0	1,20	25,0	23,80	50,0	70,0	100,0	6,67	15,0
21,80	14,0	23,0	28,0	0,93	30,0	24,00	90,0	140,0	180,0	10,67	17,0
22,00	10,0	17,0	20,0	1,07	19,0	24,20	120,0	200,0	240,0	---	---
22,20	10,0	18,0	20,0	1,20	17,0						

27,80

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
 Via Carrara, 101
 54100 MASSA
 Part. IVA 00713690451

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

CPT 3

2.010498-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- 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	3,0	3,0	6,0	0,53	11,0	10,20	3,5	5,5	7,0	0,40	17,0
0,40	5,0	9,0	10,0	0,67	15,0	10,40	15,0	18,0	30,0	0,67	45,0
0,60	9,0	14,0	18,0	1,07	17,0	10,60	13,0	18,0	26,0	0,93	28,0
0,80	9,0	17,0	18,0	1,20	15,0	10,80	8,0	15,0	16,0	1,33	12,0
1,00	6,0	15,0	12,0	0,93	13,0	11,00	5,0	15,0	10,0	0,40	25,0
1,20	9,0	16,0	18,0	0,93	19,0	11,20	7,0	10,0	14,0	0,80	17,0
1,40	10,0	17,0	20,0	1,07	19,0	11,40	4,0	10,0	8,0	0,27	30,0
1,60	10,0	18,0	20,0	1,13	18,0	11,60	3,5	5,5	7,0	0,27	26,0
1,80	10,0	18,5	20,0	1,20	17,0	11,80	3,0	5,0	6,0	0,27	22,0
2,00	10,0	19,0	20,0	1,07	19,0	12,00	3,0	5,0	6,0	0,27	22,0
2,20	9,0	17,0	18,0	0,93	19,0	12,20	3,5	5,5	7,0	0,27	26,0
2,40	10,0	17,0	20,0	1,00	20,0	12,40	3,5	5,5	7,0	0,20	35,0
2,60	9,5	17,0	19,0	1,07	18,0	12,60	3,5	5,0	7,0	0,20	35,0
2,80	9,0	17,0	18,0	1,07	17,0	12,80	3,5	5,0	7,0	0,27	26,0
3,00	11,0	19,0	22,0	1,33	16,0	13,00	3,0	5,0	6,0	0,20	30,0
3,20	12,0	22,0	24,0	1,33	18,0	13,20	3,5	5,0	7,0	0,20	35,0
3,40	11,0	21,0	22,0	1,33	16,0	13,40	4,0	5,5	8,0	0,20	40,0
3,60	10,0	20,0	20,0	0,93	21,0	13,60	4,0	5,5	8,0	0,27	30,0
3,80	11,0	18,0	22,0	0,93	24,0	13,80	4,0	6,0	8,0	0,27	30,0
4,00	9,0	16,0	18,0	0,93	19,0	14,00	4,0	6,0	8,0	0,20	40,0
4,20	8,0	15,0	16,0	0,93	17,0	14,20	4,5	6,0	9,0	0,27	34,0
4,40	7,0	14,0	14,0	0,93	15,0	14,40	4,0	6,0	8,0	0,20	40,0
4,60	6,0	13,0	12,0	0,67	18,0	14,60	4,0	5,5	8,0	0,27	30,0
4,80	6,0	11,0	12,0	0,60	20,0	14,80	4,0	6,0	8,0	0,27	30,0
5,00	5,5	10,0	11,0	0,53	21,0	15,00	4,0	6,0	8,0	0,20	40,0
5,20	5,0	9,0	10,0	0,40	25,0	15,20	4,5	6,0	9,0	0,20	45,0
5,40	4,0	7,0	8,0	0,27	30,0	15,40	5,0	6,5	10,0	0,27	37,0
5,60	4,0	6,0	8,0	0,33	24,0	15,60	4,5	6,5	9,0	0,27	34,0
5,80	4,0	6,5	8,0	0,27	30,0	15,80	4,5	6,5	9,0	0,20	45,0
6,00	4,0	6,0	8,0	0,53	15,0	16,00	5,0	6,5	10,0	0,27	37,0
6,20	10,0	14,0	20,0	0,40	50,0	16,20	4,0	6,0	8,0	0,40	20,0
6,40	14,0	17,0	28,0	0,53	52,0	16,40	7,0	10,0	14,0	0,40	35,0
6,60	5,0	9,0	10,0	0,27	37,0	16,60	12,0	15,0	24,0	0,80	30,0
6,80	5,0	7,0	10,0	0,27	37,0	16,80	16,0	22,0	32,0	1,33	24,0
7,00	6,0	8,0	12,0	0,27	45,0	17,00	20,0	30,0	40,0	2,27	18,0
7,20	3,0	5,0	6,0	0,20	30,0	17,20	18,0	35,0	36,0	1,60	22,0
7,40	3,0	4,5	6,0	0,20	30,0	17,40	24,0	36,0	48,0	1,73	28,0
7,60	3,0	4,5	6,0	0,27	22,0	17,60	18,0	31,0	36,0	2,13	17,0
7,80	3,0	5,0	6,0	0,20	30,0	17,80	12,0	28,0	24,0	1,07	22,0
8,00	3,0	4,5	6,0	0,20	30,0	18,00	6,0	14,0	12,0	0,53	22,0
8,20	3,0	4,5	6,0	0,20	30,0	18,20	10,0	14,0	20,0	1,07	19,0
8,40	3,0	4,5	6,0	0,20	30,0	18,40	12,0	20,0	24,0	0,93	26,0
8,60	3,5	5,0	7,0	0,20	35,0	18,60	11,0	18,0	22,0	1,20	18,0
8,80	3,0	4,5	6,0	0,27	22,0	18,80	8,0	17,0	16,0	0,67	24,0
9,00	3,0	5,0	6,0	0,27	22,0	19,00	9,0	14,0	18,0	0,80	22,0
9,20	3,0	5,0	6,0	0,20	30,0	19,20	8,0	14,0	16,0	0,80	20,0
9,40	3,0	4,5	6,0	0,27	22,0	19,40	9,0	15,0	18,0	0,67	27,0
9,60	3,0	5,0	6,0	0,27	22,0	19,60	9,0	14,0	18,0	1,07	17,0
9,80	3,0	5,0	6,0	0,53	11,0	19,80	12,0	20,0	24,0	1,73	14,0
10,00	6,0	10,0	12,0	0,27	45,0	20,00	15,0	28,0	30,0	1,33	22,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

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

CPT 3

2.010498-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,90 m da quota inizio
- pagina : 2

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 -
20,20	17,0	27,0	34,0	0,93	36,0	22,20	20,0	40,0	40,0	1,33	30,0
20,40	11,0	18,0	22,0	0,67	33,0	22,40	10,0	20,0	20,0	0,80	25,0
20,60	10,0	15,0	20,0	0,67	30,0	22,60	10,0	16,0	20,0	0,67	30,0
20,80	12,0	17,0	24,0	0,80	30,0	22,80	9,0	14,0	18,0	0,80	22,0
21,00	13,0	19,0	26,0	1,20	22,0	23,00	8,0	14,0	16,0	0,93	17,0
21,20	15,0	24,0	30,0	1,07	28,0	23,20	12,0	19,0	24,0	1,87	13,0
21,40	12,0	20,0	24,0	1,33	18,0	23,40	21,0	35,0	42,0	1,33	31,0
21,60	11,0	21,0	22,0	0,67	33,0	23,60	30,0	40,0	60,0	2,67	22,0
21,80	35,0	40,0	70,0	1,33	52,0	23,80	70,0	90,0	140,0	6,67	21,0
22,00	40,0	50,0	80,0	2,67	30,0	24,00	110,0	160,0	220,0	---	---

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

PROVA PENETROMETRICA STATICA

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 4

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - 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	2,5	2,5	5,0	0,60	8,0	10,20	3,0	3,5	6,0	0,20	30,0
0,40	4,5	9,0	9,0	0,53	17,0	10,40	3,5	5,0	7,0	0,13	52,0
0,60	4,0	8,0	8,0	0,53	15,0	10,60	2,5	3,5	5,0	0,07	75,0
0,80	4,0	8,0	8,0	0,53	15,0	10,80	2,5	3,0	5,0	0,13	37,0
1,00	7,5	11,5	15,0	0,73	20,0	11,00	2,5	3,5	5,0	0,13	37,0
1,20	7,5	13,0	15,0	0,67	22,0	11,20	3,0	4,0	6,0	0,13	45,0
1,40	7,0	12,0	14,0	0,67	21,0	11,40	3,0	4,0	6,0	0,13	45,0
1,60	7,0	12,0	14,0	0,67	21,0	11,60	3,0	4,0	6,0	0,33	18,0
1,80	7,0	12,0	14,0	0,73	19,0	11,80	6,0	8,5	12,0	0,47	26,0
2,00	5,5	11,0	11,0	0,67	16,0	12,00	7,5	11,0	15,0	0,53	28,0
2,20	7,0	12,0	14,0	0,80	17,0	12,20	9,0	13,0	18,0	1,20	15,0
2,40	11,0	17,0	22,0	1,33	16,0	12,40	11,0	20,0	22,0	1,20	18,0
2,60	10,0	20,0	20,0	1,40	14,0	12,60	10,0	19,0	20,0	1,20	17,0
2,80	11,5	22,0	23,0	1,47	16,0	12,80	11,0	20,0	22,0	1,27	17,0
3,00	11,0	22,0	22,0	0,93	24,0	13,00	11,5	21,0	23,0	1,20	19,0
3,20	11,0	18,0	22,0	0,67	33,0	13,20	18,0	27,0	36,0	1,20	30,0
3,40	10,0	15,0	20,0	0,73	27,0	13,40	18,0	27,0	36,0	1,53	23,0
3,60	8,5	14,0	17,0	0,80	21,0	13,60	16,5	28,0	33,0	1,73	19,0
3,80	7,0	13,0	14,0	0,67	21,0	13,80	17,0	30,0	34,0	1,87	18,0
4,00	7,5	12,5	15,0	0,80	19,0	14,00	14,0	28,0	28,0	1,60	17,0
4,20	6,5	12,5	13,0	0,67	19,0	14,20	14,0	26,0	28,0	1,73	16,0
4,40	5,0	10,0	10,0	0,40	25,0	14,40	17,0	30,0	34,0	1,47	23,0
4,60	3,0	6,0	6,0	0,27	22,0	14,60	14,0	25,0	28,0	1,33	21,0
4,80	2,5	4,5	5,0	0,27	19,0	14,80	11,0	21,0	22,0	0,93	24,0
5,00	2,5	4,5	5,0	0,27	19,0	15,00	18,0	25,0	36,0	1,33	27,0
5,20	4,0	6,0	8,0	0,13	60,0	15,20	8,0	18,0	16,0	1,00	16,0
5,40	3,0	4,0	6,0	0,13	45,0	15,40	7,5	15,0	15,0	0,60	25,0
5,60	2,0	3,0	4,0	0,07	60,0	15,60	7,5	12,0	15,0	0,60	25,0
5,80	5,0	5,5	10,0	0,20	50,0	15,80	10,5	15,0	21,0	1,73	12,0
6,00	2,0	3,5	4,0	0,07	60,0	16,00	17,0	30,0	34,0	1,60	21,0
6,20	2,0	2,5	4,0	0,13	30,0	16,20	14,0	26,0	28,0	0,80	35,0
6,40	2,0	3,0	4,0	0,13	30,0	16,40	15,0	21,0	30,0	1,33	22,0
6,60	2,0	3,0	4,0	0,13	30,0	16,60	13,0	23,0	26,0	1,33	19,0
6,80	2,0	3,0	4,0	0,13	30,0	16,80	20,0	30,0	40,0	1,33	30,0
7,00	1,5	2,5	3,0	0,13	22,0	17,00	35,0	45,0	70,0	2,27	31,0
7,20	2,0	3,0	4,0	0,13	30,0	17,20	28,0	45,0	56,0	1,73	32,0
7,40	2,0	3,0	4,0	0,13	30,0	17,40	13,0	26,0	26,0	0,73	35,0
7,60	2,0	3,0	4,0	0,13	30,0	17,60	7,5	13,0	15,0	0,47	32,0
7,80	1,5	2,5	3,0	0,13	22,0	17,80	7,0	10,5	14,0	0,40	35,0
8,00	2,0	3,0	4,0	0,13	30,0	18,00	6,0	9,0	12,0	0,60	20,0
8,20	2,0	3,0	4,0	0,13	30,0	18,20	8,5	13,0	17,0	0,67	25,0
8,40	2,0	3,0	4,0	0,13	30,0	18,40	8,0	13,0	16,0	0,73	22,0
8,60	2,0	3,0	4,0	0,13	30,0	18,60	8,5	14,0	17,0	0,73	23,0
8,80	2,0	3,0	4,0	0,13	30,0	18,80	7,5	13,0	15,0	0,53	28,0
9,00	2,0	3,0	4,0	0,13	30,0	19,00	7,0	11,0	14,0	0,67	21,0
9,20	5,5	6,5	11,0	0,33	33,0	19,20	40,0	45,0	80,0	1,47	55,0
9,40	5,5	8,0	11,0	0,40	27,0	19,40	33,0	44,0	66,0	1,33	49,0
9,60	3,0	6,0	6,0	0,07	90,0	19,60	37,0	47,0	74,0	1,07	69,0
9,80	2,5	3,0	5,0	0,07	75,0	19,80	42,0	50,0	84,0	1,73	48,0
10,00	2,5	3,0	5,0	0,07	75,0	20,00	35,0	48,0	70,0	2,27	31,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

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

CPT 4

2.010498-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,60 m da quota inizio
- pagina : 2

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 -
20,20	27,0	44,0	54,0	2,00	27,0	22,40	70,0	85,0	140,0	2,00	70,0
20,40	25,0	40,0	50,0	1,33	37,0	22,60	85,0	100,0	170,0	2,67	64,0
20,60	37,0	47,0	74,0	1,33	55,0	22,80	100,0	120,0	200,0	4,67	43,0
20,80	40,0	50,0	80,0	0,67	120,0	23,00	100,0	135,0	200,0	3,33	60,0
21,00	45,0	50,0	90,0	2,00	45,0	23,20	110,0	135,0	220,0	4,67	47,0
21,20	40,0	55,0	80,0	3,33	24,0	23,40	95,0	130,0	190,0	4,00	48,0
21,40	65,0	90,0	130,0	2,67	49,0	23,60	150,0	180,0	300,0	4,00	75,0
21,60	60,0	80,0	120,0	2,00	60,0	23,80	150,0	180,0	300,0	3,33	90,0
21,80	45,0	60,0	90,0	1,60	56,0	24,00	130,0	155,0	260,0	6,67	39,0
22,00	38,0	50,0	76,0	2,00	38,0	24,20	200,0	250,0	400,0	---	---
22,20	55,0	70,0	110,0	2,00	55,0						

26,80 --- --- --- ---

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

PROVA PENETROMETRICA STATICA

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 5

2010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Oisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - 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	2,0	2,0	4,0	0,47	9,0	10,20	18,0	23,0	36,0	0,40	90,0
0,40	3,0	6,5	6,0	0,40	15,0	10,40	18,0	21,0	36,0	0,67	54,0
0,60	5,0	8,0	10,0	1,07	9,0	10,60	11,0	16,0	22,0	0,53	41,0
0,80	6,0	14,0	12,0	1,33	9,0	10,80	3,0	7,0	6,0	0,33	18,0
1,00	6,0	16,0	12,0	0,67	18,0	11,00	3,5	6,0	7,0	0,07	105,0
1,20	9,0	14,0	18,0	1,60	11,0	11,20	2,5	3,0	5,0	0,07	75,0
1,40	9,0	21,0	18,0	1,47	12,0	11,40	2,5	3,0	5,0	0,07	75,0
1,60	7,0	18,0	14,0	1,60	9,0	11,60	2,5	3,0	5,0	0,07	75,0
1,80	7,0	19,0	14,0	1,47	10,0	11,80	2,5	3,0	5,0	0,07	75,0
2,00	7,0	18,0	14,0	1,20	12,0	12,00	2,5	3,0	5,0	0,13	37,0
2,20	7,0	16,0	14,0	0,93	15,0	12,20	3,0	4,0	6,0	0,07	90,0
2,40	7,5	14,5	15,0	0,93	16,0	12,40	3,5	4,0	7,0	0,27	26,0
2,60	6,0	13,0	12,0	0,87	14,0	12,60	3,0	5,0	6,0	0,13	45,0
2,80	5,5	12,0	11,0	0,73	15,0	12,80	4,0	5,0	8,0	---	---
3,00	6,0	11,5	12,0	0,87	14,0	13,00	4,5	4,0	9,0	0,13	67,0
3,20	7,5	14,0	15,0	0,80	19,0	13,20	4,0	5,0	8,0	0,27	30,0
3,40	5,0	11,0	10,0	0,47	21,0	13,40	8,0	10,0	16,0	0,40	40,0
3,60	4,5	8,0	9,0	0,20	45,0	13,60	3,0	6,0	6,0	0,20	30,0
3,80	5,5	7,0	11,0	0,47	24,0	13,80	3,5	5,0	7,0	0,40	17,0
4,00	4,0	7,5	8,0	0,13	60,0	14,00	7,0	10,0	14,0	0,53	26,0
4,20	6,5	7,5	13,0	0,27	49,0	14,20	9,0	13,0	18,0	0,80	22,0
4,40	4,0	6,0	8,0	0,33	24,0	14,40	9,0	15,0	18,0	0,80	22,0
4,60	3,5	6,0	7,0	0,27	26,0	14,60	9,0	15,0	18,0	0,67	27,0
4,80	3,0	5,0	6,0	0,20	30,0	14,80	10,0	15,0	20,0	1,07	19,0
5,00	2,5	4,0	5,0	0,20	25,0	15,00	12,0	20,0	24,0	1,73	14,0
5,20	2,5	4,0	5,0	0,13	37,0	15,20	14,0	27,0	28,0	0,53	52,0
5,40	2,5	3,5	5,0	0,07	75,0	15,40	20,0	24,0	40,0	0,80	50,0
5,60	4,5	5,0	9,0	0,13	67,0	15,60	27,0	33,0	54,0	1,07	51,0
5,80	5,5	6,5	11,0	0,13	82,0	15,80	9,0	17,0	18,0	0,20	90,0
6,00	5,0	6,0	10,0	0,27	37,0	16,00	4,5	6,0	9,0	0,27	34,0
6,20	3,0	5,0	6,0	0,27	22,0	16,20	6,0	8,0	12,0	0,47	26,0
6,40	2,0	4,0	4,0	0,07	60,0	16,40	9,5	13,0	19,0	0,40	47,0
6,60	1,5	2,0	3,0	0,07	45,0	16,60	10,0	13,0	20,0	0,67	30,0
6,80	1,0	1,5	2,0	0,07	30,0	16,80	11,0	16,0	22,0	0,73	30,0
7,00	1,5	2,0	3,0	0,07	45,0	17,00	8,5	14,0	17,0	0,80	21,0
7,20	1,5	2,0	3,0	0,07	45,0	17,20	10,0	16,0	20,0	0,67	30,0
7,40	1,5	2,0	3,0	0,07	45,0	17,40	11,0	16,0	22,0	0,67	33,0
7,60	1,5	2,0	3,0	0,07	45,0	17,60	10,0	15,0	20,0	0,60	33,0
7,80	1,5	2,0	3,0	0,07	45,0	17,80	8,5	13,0	17,0	0,60	28,0
8,00	1,5	2,0	3,0	0,07	45,0	18,00	9,5	14,0	19,0	0,67	28,0
8,20	1,5	2,0	3,0	0,07	45,0	18,20	15,0	20,0	30,0	0,80	37,0
8,40	1,5	2,0	3,0	0,07	45,0	18,40	15,0	21,0	30,0	0,93	32,0
8,60	1,5	2,0	3,0	0,07	45,0	18,60	15,0	22,0	30,0	1,13	26,0
8,80	1,5	2,0	3,0	0,07	45,0	18,80	9,5	18,0	19,0	1,60	12,0
9,00	1,5	2,0	3,0	0,07	45,0	19,00	15,0	27,0	30,0	1,33	22,0
9,20	2,0	2,5	4,0	0,07	60,0	19,20	35,0	45,0	70,0	1,33	52,0
9,40	1,5	2,0	3,0	0,20	15,0	19,40	30,0	40,0	60,0	2,40	25,0
9,60	4,5	6,0	9,0	0,27	34,0	19,60	15,0	33,0	30,0	1,27	24,0
9,80	14,0	16,0	28,0	1,47	19,0	19,80	7,5	17,0	15,0	0,80	19,0
10,00	4,0	15,0	8,0	0,67	12,0	20,00	11,0	17,0	22,0	0,80	27,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE C1 = 20 - 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)

GEO TIRRENO s.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

PROVA PENETROMETRICA STATICA

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 5

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Oisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - pagina : 2

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	-
20,20	12,0	18,0	24,0	0,67	36,0	22,00	12,0	20,0	24,0	1,60	15,0
20,40	10,0	15,0	20,0	0,67	30,0	22,20	14,0	26,0	28,0	2,00	14,0
20,60	10,0	15,0	20,0	0,67	30,0	22,40	17,0	32,0	34,0	2,67	13,0
20,80	14,0	19,0	28,0	0,93	30,0	22,60	20,0	40,0	40,0	2,00	20,0
21,00	17,0	24,0	34,0	1,33	25,0	22,80	35,0	50,0	70,0	3,33	21,0
21,20	15,0	25,0	30,0	1,40	21,0	23,00	95,0	120,0	190,0	2,67	71,0
21,40	13,5	24,0	27,0	1,13	24,0	23,20	130,0	150,0	260,0	6,67	39,0
21,60	11,5	20,0	23,0	1,00	23,0	23,40	200,0	250,0	400,0	—	—
21,80	6,5	14,0	13,0	1,07	12,0						

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

PROVA PENETROMETRICA STATICA LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 6

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- 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	3,0	6,0	0,40	15,0	10,20	3,0	5,0	6,0	0,27	22,0
0,40	3,0	6,0	6,0	0,53	11,0	10,40	3,0	5,0	6,0	0,27	22,0
0,60	7,0	11,0	14,0	0,80	17,0	10,60	3,0	5,0	6,0	0,27	22,0
0,80	6,0	12,0	12,0	1,07	11,0	10,80	7,0	9,0	14,0	0,53	26,0
1,00	7,0	15,0	14,0	1,20	12,0	11,00	3,0	7,0	6,0	0,20	30,0
1,20	9,0	18,0	18,0	1,20	15,0	11,20	4,0	5,5	8,0	0,27	30,0
1,40	6,0	15,0	12,0	1,07	11,0	11,40	3,0	5,0	6,0	0,20	30,0
1,60	5,0	13,0	10,0	0,73	14,0	11,60	3,5	5,0	7,0	0,20	35,0
1,80	6,5	12,0	13,0	0,80	16,0	11,80	3,5	5,0	7,0	0,27	26,0
2,00	7,0	13,0	14,0	1,00	14,0	12,00	3,0	5,0	6,0	0,53	11,0
2,20	7,5	15,0	15,0	1,13	13,0	12,20	3,0	7,0	6,0	0,40	15,0
2,40	8,5	17,0	17,0	1,13	15,0	12,40	3,0	6,0	6,0	0,47	13,0
2,60	8,5	17,0	17,0	1,13	15,0	12,60	3,0	6,5	6,0	0,27	22,0
2,80	8,5	17,0	17,0	0,93	18,0	12,80	2,0	4,0	4,0	0,27	15,0
3,00	9,0	16,0	18,0	1,07	17,0	13,00	3,5	5,5	7,0	0,60	12,0
3,20	8,0	16,0	16,0	0,80	20,0	13,20	4,5	9,0	9,0	0,80	11,0
3,40	6,0	12,0	12,0	0,67	18,0	13,40	8,0	14,0	16,0	0,60	27,0
3,60	5,0	10,0	10,0	0,53	19,0	13,60	4,5	9,0	9,0	0,40	22,0
3,80	5,0	9,0	10,0	0,67	15,0	13,80	5,0	8,0	10,0	0,80	12,0
4,00	5,0	10,0	10,0	0,80	12,0	14,00	7,0	13,0	14,0	0,80	17,0
4,20	6,0	12,0	12,0	0,80	15,0	14,20	8,0	14,0	16,0	0,93	17,0
4,40	5,0	11,0	10,0	0,60	17,0	14,40	10,0	17,0	20,0	1,07	19,0
4,60	4,5	9,0	9,0	0,47	19,0	14,60	10,0	18,0	20,0	1,20	17,0
4,80	4,5	8,0	9,0	0,40	22,0	14,80	11,0	20,0	22,0	1,47	15,0
5,00	4,0	7,0	8,0	0,33	24,0	15,00	15,0	26,0	30,0	1,73	17,0
5,20	3,5	6,0	7,0	0,27	26,0	15,20	22,0	35,0	44,0	2,27	19,0
5,40	3,0	5,0	6,0	0,13	45,0	15,40	18,0	35,0	36,0	---	---
5,60	3,0	4,0	6,0	0,27	22,0	15,60	21,0	17,0	42,0	2,13	20,0
5,80	6,0	8,0	12,0	0,80	15,0	15,80	24,0	40,0	48,0	2,00	24,0
6,00	8,0	14,0	16,0	0,27	60,0	16,00	25,0	40,0	50,0	2,53	20,0
6,20	6,0	8,0	12,0	0,33	36,0	16,20	21,0	40,0	42,0	2,40	17,0
6,40	3,0	5,5	6,0	0,20	30,0	16,40	20,0	38,0	40,0	1,60	25,0
6,60	2,5	4,0	5,0	0,27	19,0	16,60	23,0	35,0	46,0	1,73	27,0
6,80	2,0	4,0	4,0	0,20	20,0	16,80	20,0	33,0	40,0	1,73	23,0
7,00	2,0	3,5	4,0	0,13	30,0	17,00	17,0	30,0	34,0	0,93	36,0
7,20	2,0	3,0	4,0	0,07	60,0	17,20	12,0	19,0	24,0	0,80	30,0
7,40	3,5	4,0	7,0	0,13	52,0	17,40	12,0	18,0	24,0	0,53	45,0
7,60	2,0	3,0	4,0	0,20	20,0	17,60	13,0	17,0	26,0	0,67	39,0
7,80	2,5	4,0	5,0	0,40	12,0	17,80	15,0	20,0	30,0	1,47	20,0
8,00	2,0	5,0	4,0	0,27	15,0	18,00	11,0	22,0	22,0	1,07	21,0
8,20	2,0	4,0	4,0	0,33	12,0	18,20	14,0	22,0	28,0	0,93	30,0
8,40	2,5	5,0	5,0	0,40	12,0	18,40	12,0	19,0	24,0	2,80	9,0
8,60	2,0	5,0	4,0	0,20	20,0	18,60	21,0	42,0	42,0	4,67	9,0
8,80	2,5	4,0	5,0	0,33	15,0	18,80	25,0	60,0	50,0	0,80	62,0
9,00	2,5	5,0	5,0	0,27	19,0	19,00	8,0	14,0	16,0	0,27	60,0
9,20	3,0	5,0	6,0	0,27	22,0	19,20	9,0	11,0	18,0	0,60	30,0
9,40	3,5	5,5	7,0	0,40	17,0	19,40	8,5	13,0	17,0	1,33	13,0
9,60	3,0	6,0	6,0	0,13	45,0	19,60	12,0	22,0	24,0	2,67	9,0
9,80	3,0	4,0	6,0	0,27	22,0	19,80	35,0	55,0	70,0	2,00	35,0
10,00	3,0	5,0	6,0	0,27	22,0	20,00	35,0	50,0	70,0	2,53	28,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 6

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- pagina : 2

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	-
20,20	16,0	35,0	32,0	1,20	27,0	22,40	8,0	18,0	16,0	0,80	20,0
20,40	10,0	19,0	20,0	0,53	37,0	22,60	9,0	15,0	18,0	1,07	17,0
20,60	9,0	13,0	18,0	0,80	22,0	22,80	9,0	17,0	18,0	1,20	15,0
20,80	9,0	15,0	18,0	1,60	11,0	23,00	12,0	21,0	24,0	1,87	13,0
21,00	17,0	29,0	34,0	1,20	28,0	23,20	16,0	30,0	32,0	1,87	17,0
21,20	16,0	25,0	32,0	1,33	24,0	23,40	15,0	29,0	30,0	2,00	15,0
21,40	12,0	22,0	24,0	1,47	16,0	23,60	25,0	40,0	50,0	7,33	7,0
21,60	10,0	21,0	20,0	1,20	17,0	23,80	45,0	100,0	90,0	6,67	14,0
21,80	9,0	18,0	18,0	1,07	17,0	24,00	100,0	150,0	200,0	8,00	25,0
22,00	7,0	15,0	14,0	1,60	9,0	24,20	120,0	180,0	240,0	—	—
22,20	8,0	20,0	16,0	1,33	12,0						

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 7

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,10 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	3,0	6,0	0,27	22,0	10,20	20,0	25,0	40,0	0,80	50,0
0,40	5,0	7,0	10,0	0,53	19,0	10,40	9,0	15,0	18,0	0,27	67,0
0,60	6,0	10,0	12,0	0,73	16,0	10,60	14,0	16,0	28,0	0,67	42,0
0,80	6,5	12,0	13,0	0,67	19,0	10,80	14,0	19,0	28,0	0,40	70,0
1,00	6,0	11,0	12,0	0,67	18,0	11,00	13,0	16,0	26,0	0,60	43,0
1,20	8,0	13,0	16,0	0,53	30,0	11,20	4,0	8,5	8,0	0,27	30,0
1,40	8,0	12,0	16,0	0,80	20,0	11,40	3,0	5,0	6,0	0,27	22,0
1,60	9,0	15,0	18,0	0,53	34,0	11,60	3,0	5,0	6,0	0,20	30,0
1,80	8,0	12,0	16,0	0,67	24,0	11,80	3,5	5,0	7,0	0,20	35,0
2,00	8,0	13,0	16,0	0,80	20,0	12,00	3,5	5,0	7,0	0,27	26,0
2,20	10,0	16,0	20,0	0,80	25,0	12,20	4,0	6,0	8,0	0,27	30,0
2,40	9,0	15,0	18,0	0,67	27,0	12,40	3,5	5,5	7,0	0,27	26,0
2,60	10,0	15,0	20,0	0,80	25,0	12,60	3,0	5,0	6,0	0,33	18,0
2,80	10,0	16,0	20,0	0,67	30,0	12,80	3,5	6,0	7,0	0,33	21,0
3,00	10,0	15,0	20,0	0,93	21,0	13,00	4,0	6,5	8,0	0,33	24,0
3,20	11,0	18,0	22,0	0,93	24,0	13,20	4,0	6,5	8,0	0,27	30,0
3,40	9,0	16,0	18,0	0,93	19,0	13,40	4,0	6,0	8,0	0,33	24,0
3,60	8,0	15,0	16,0	0,93	17,0	13,60	5,0	7,5	10,0	0,53	19,0
3,80	8,0	15,0	16,0	0,93	17,0	13,80	7,0	11,0	14,0	0,53	26,0
4,00	9,0	16,0	18,0	1,07	17,0	14,00	4,0	8,0	8,0	0,53	15,0
4,20	9,0	17,0	18,0	0,93	19,0	14,20	7,0	11,0	14,0	0,67	21,0
4,40	9,0	16,0	18,0	0,93	19,0	14,40	9,0	14,0	18,0	0,93	19,0
4,60	8,0	15,0	16,0	0,87	18,0	14,60	8,0	15,0	16,0	1,20	13,0
4,80	6,5	13,0	13,0	0,67	19,0	14,80	9,0	18,0	18,0	1,07	17,0
5,00	8,0	13,0	16,0	0,53	30,0	15,00	9,0	17,0	18,0	0,93	19,0
5,20	6,0	10,0	12,0	0,47	26,0	15,20	10,0	17,0	20,0	1,20	17,0
5,40	4,0	7,5	8,0	0,40	20,0	15,40	10,0	19,0	20,0	1,47	14,0
5,60	13,0	16,0	26,0	0,40	65,0	15,60	9,0	20,0	18,0	1,33	13,0
5,80	17,0	20,0	34,0	0,40	85,0	15,80	10,0	20,0	20,0	1,33	15,0
6,00	12,0	15,0	24,0	0,93	26,0	16,00	10,0	20,0	20,0	1,60	12,0
6,20	11,0	18,0	22,0	0,53	41,0	16,20	12,0	24,0	24,0	1,47	16,0
6,40	10,0	14,0	20,0	0,67	30,0	16,40	11,0	22,0	22,0	1,73	13,0
6,60	4,0	9,0	8,0	0,33	24,0	16,60	11,0	24,0	22,0	1,20	18,0
6,80	2,5	5,0	5,0	0,20	25,0	16,80	14,0	23,0	28,0	1,47	19,0
7,00	3,0	4,5	6,0	0,20	30,0	17,00	14,0	25,0	28,0	1,73	16,0
7,20	3,0	4,5	6,0	0,20	30,0	17,20	12,0	25,0	24,0	2,00	12,0
7,40	3,0	4,5	6,0	0,27	22,0	17,40	11,0	26,0	22,0	1,87	12,0
7,60	3,0	5,0	6,0	0,27	22,0	17,60	10,0	24,0	20,0	1,60	12,0
7,80	3,0	5,0	6,0	0,20	30,0	17,80	10,0	22,0	20,0	1,33	15,0
8,00	3,0	4,5	6,0	0,27	22,0	18,00	9,0	19,0	18,0	1,20	15,0
8,20	3,0	5,0	6,0	0,27	22,0	18,20	8,0	17,0	16,0	0,93	17,0
8,40	3,0	5,0	6,0	0,20	30,0	18,40	7,0	14,0	14,0	0,80	17,0
8,60	3,0	4,5	6,0	0,20	30,0	18,60	8,0	14,0	16,0	1,07	15,0
8,80	3,0	4,5	6,0	0,20	30,0	18,80	7,0	15,0	14,0	0,93	15,0
9,00	3,0	4,5	6,0	0,20	30,0	19,00	8,0	15,0	16,0	1,07	15,0
9,20	3,5	5,0	7,0	0,20	35,0	19,20	10,0	18,0	20,0	1,60	12,0
9,40	3,5	5,0	7,0	0,20	35,0	19,40	8,0	20,0	16,0	1,07	15,0
9,60	3,5	5,0	7,0	0,20	35,0	19,60	10,0	18,0	20,0	2,00	10,0
9,80	3,5	5,0	7,0	0,27	26,0	19,80	25,0	40,0	50,0	1,33	37,0
10,00	15,0	17,0	30,0	0,67	45,0	20,00	35,0	45,0	70,0	0,93	75,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 7

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,10 m da quota inizio
- pagina : 2

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 -
20,20	18,0	25,0	36,0	0,93	39,0	22,40	22,0	45,0	44,0	0,93	47,0
20,40	10,0	17,0	20,0	0,80	25,0	22,60	15,0	22,0	30,0	0,80	37,0
20,60	12,0	18,0	24,0	0,67	36,0	22,80	14,0	20,0	28,0	0,67	42,0
20,80	12,0	17,0	24,0	0,93	26,0	23,00	10,0	15,0	20,0	0,80	25,0
21,00	15,0	22,0	30,0	1,07	28,0	23,20	12,0	18,0	24,0	0,93	26,0
21,20	16,0	24,0	32,0	0,93	34,0	23,40	12,0	19,0	24,0	1,07	22,0
21,40	14,0	21,0	28,0	1,33	21,0	23,60	22,0	30,0	44,0	1,33	33,0
21,60	11,0	21,0	22,0	1,33	16,0	23,80	35,0	45,0	70,0	2,67	26,0
21,80	35,0	45,0	70,0	1,33	52,0	24,00	60,0	80,0	120,0	8,13	15,0
22,00	35,0	45,0	70,0	2,67	26,0	24,20	112,0	173,0	224,0	8,00	28,0
22,20	20,0	40,0	40,0	3,07	13,0	24,40	120,0	180,0	240,0	---	---

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 8

2.010496-013

- committente : Studio geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- 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	2,5	2,5	5,0	0,20	25,0	10,20	4,5	10,0	9,0	0,13	67,0
0,40	4,0	5,5	8,0	0,40	20,0	10,40	10,0	11,0	20,0	0,67	30,0
0,60	4,5	7,5	9,0	0,40	22,0	10,60	7,0	12,0	14,0	0,33	42,0
0,80	4,5	7,5	9,0	0,53	17,0	10,80	5,5	8,0	11,0	0,40	27,0
1,00	7,0	11,0	14,0	1,00	14,0	11,00	3,0	6,0	6,0	0,33	18,0
1,20	10,0	17,5	20,0	1,00	20,0	11,20	3,0	5,5	6,0	0,33	18,0
1,40	8,0	15,5	16,0	0,93	17,0	11,40	3,0	5,5	6,0	0,33	18,0
1,60	8,0	15,0	16,0	0,93	17,0	11,60	3,0	5,5	6,0	0,40	15,0
1,80	8,0	15,0	16,0	1,07	15,0	11,80	3,0	6,0	6,0	0,40	15,0
2,00	8,0	16,0	16,0	0,93	17,0	12,00	3,0	6,0	6,0	0,33	18,0
2,20	8,0	15,0	16,0	0,87	18,0	12,20	3,5	6,0	7,0	0,33	21,0
2,40	8,5	15,0	17,0	1,00	17,0	12,40	3,5	6,0	7,0	0,40	17,0
2,60	10,5	18,0	21,0	1,20	17,0	12,60	3,0	6,0	6,0	0,27	22,0
2,80	10,0	19,0	20,0	1,47	14,0	12,80	3,5	5,5	7,0	0,20	35,0
3,00	9,0	20,0	18,0	1,20	15,0	13,00	3,5	5,0	7,0	0,27	26,0
3,20	10,0	19,0	20,0	1,07	19,0	13,20	4,0	6,0	8,0	0,20	40,0
3,40	7,0	15,0	14,0	0,93	15,0	13,40	4,0	5,5	8,0	0,33	24,0
3,60	6,0	13,0	12,0	0,87	14,0	13,60	3,5	6,0	7,0	0,33	21,0
3,80	5,5	12,0	11,0	0,67	16,0	13,80	3,5	6,0	7,0	0,27	26,0
4,00	5,0	10,0	10,0	0,67	15,0	14,00	4,0	6,0	8,0	0,27	30,0
4,20	5,0	10,0	10,0	0,60	17,0	14,20	4,0	6,0	8,0	0,33	24,0
4,40	5,5	10,0	11,0	0,47	24,0	14,40	4,0	6,5	8,0	0,27	30,0
4,60	4,5	8,0	9,0	0,47	19,0	14,60	8,0	10,0	16,0	0,27	60,0
4,80	4,0	7,5	8,0	0,33	24,0	14,80	3,5	5,5	7,0	0,20	35,0
5,00	3,5	6,0	7,0	0,40	17,0	15,00	5,0	6,5	10,0	0,13	75,0
5,20	4,0	7,0	8,0	0,40	20,0	15,20	7,5	8,5	15,0	0,20	75,0
5,40	3,5	6,5	7,0	0,33	21,0	15,40	7,5	9,0	15,0	0,27	56,0
5,60	3,0	5,5	6,0	0,27	22,0	15,60	8,0	10,0	16,0	0,60	27,0
5,80	7,0	9,0	14,0	0,27	52,0	15,80	8,5	13,0	17,0	0,93	18,0
6,00	5,0	7,0	10,0	0,27	37,0	16,00	10,0	17,0	20,0	1,07	19,0
6,20	10,0	12,0	20,0	0,33	60,0	16,20	11,0	19,0	22,0	1,07	21,0
6,40	4,5	7,0	9,0	0,20	45,0	16,40	10,0	18,0	20,0	1,07	19,0
6,60	3,5	5,0	7,0	0,13	52,0	16,60	10,0	18,0	20,0	0,93	21,0
6,80	2,5	3,5	5,0	0,13	37,0	16,80	13,0	20,0	26,0	1,47	18,0
7,00	2,5	3,5	5,0	0,20	25,0	17,00	12,0	23,0	24,0	1,47	16,0
7,20	2,5	4,0	5,0	0,20	25,0	17,20	12,0	23,0	24,0	1,33	18,0
7,40	2,0	3,5	4,0	0,27	15,0	17,40	11,0	21,0	22,0	1,27	17,0
7,60	2,0	4,0	4,0	0,20	20,0	17,60	9,5	19,0	19,0	1,27	15,0
7,80	3,0	4,5	6,0	0,27	22,0	17,80	8,5	18,0	17,0	1,07	16,0
8,00	2,5	4,5	5,0	0,20	25,0	18,00	7,5	15,5	15,0	0,80	19,0
8,20	2,5	4,0	5,0	0,20	25,0	18,20	8,5	14,5	17,0	0,93	18,0
8,40	2,5	4,0	5,0	0,20	25,0	18,40	7,0	14,0	14,0	0,93	15,0
8,60	2,5	4,0	5,0	0,20	25,0	18,60	7,0	14,0	14,0	0,87	16,0
8,80	3,0	4,5	6,0	0,20	30,0	18,80	8,0	14,5	16,0	0,93	17,0
9,00	2,5	4,0	5,0	0,27	19,0	19,00	7,0	14,0	14,0	0,87	16,0
9,20	3,0	5,0	6,0	0,20	30,0	19,20	7,5	14,0	15,0	0,93	16,0
9,40	2,5	4,0	5,0	0,13	37,0	19,40	9,0	16,0	18,0	0,93	19,0
9,60	5,0	6,0	10,0	0,27	37,0	19,60	8,0	15,0	16,0	0,93	17,0
9,80	8,0	10,0	16,0	0,27	60,0	19,80	7,0	14,0	14,0	1,07	13,0
10,00	8,0	10,0	16,0	0,73	22,0	20,00	7,0	15,0	14,0	0,67	21,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

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

CPT 8

2.040496-018

- committente : Studio geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,00 m da quota inizio
- pagina : 2

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 -
20,20	13,0	18,0	26,0	1,60	16,0	23,00	12,0	17,0	24,0	0,80	30,0
20,40	30,0	42,0	60,0	1,20	50,0	23,20	11,0	17,0	22,0	0,93	24,0
20,60	20,0	29,0	40,0	1,20	33,0	23,40	18,0	25,0	36,0	2,00	18,0
20,80	11,0	20,0	22,0	0,67	33,0	23,60	25,0	40,0	50,0	1,33	37,0
21,00	18,0	23,0	36,0	1,20	30,0	23,80	50,0	60,0	100,0	2,00	50,0
21,20	11,0	20,0	22,0	1,07	21,0	24,00	80,0	95,0	160,0	2,67	60,0
21,40	7,0	15,0	14,0	0,67	21,0	24,20	100,0	120,0	200,0	2,00	100,0
21,60	10,0	15,0	20,0	0,67	30,0	24,40	110,0	125,0	220,0	2,00	110,0
21,80	8,0	13,0	16,0	0,80	20,0	24,60	85,0	100,0	170,0	2,00	85,0
22,00	7,0	13,0	14,0	0,80	17,0	24,80	90,0	105,0	180,0	2,00	90,0
22,20	10,0	16,0	20,0	0,67	30,0	25,00	120,0	135,0	240,0	2,67	90,0
22,40	10,0	15,0	20,0	0,67	30,0	25,20	150,0	170,0	300,0	4,00	75,0
22,60	10,0	15,0	20,0	0,93	21,0	25,40	200,0	230,0	400,0	—	—
22,80	16,0	23,0	32,0	0,67	48,0						

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEOTIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 9

2.010498-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,45 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	2,5	2,5	5,0	0,67	7,0	10,20	8,0	9,0	16,0	0,53	30,0
0,40	6,5	11,5	13,0	0,93	14,0	10,40	1,0	5,0	2,0	0,13	15,0
0,60	6,5	13,5	13,0	1,07	12,0	10,60	2,0	3,0	4,0	0,20	20,0
0,80	8,0	16,0	16,0	1,07	15,0	10,80	1,5	3,0	3,0	0,20	15,0
1,00	7,0	15,0	14,0	1,00	14,0	11,00	1,5	3,0	3,0	0,20	15,0
1,20	7,5	15,0	15,0	1,13	13,0	11,20	2,0	3,5	4,0	0,13	30,0
1,40	5,0	13,5	10,0	0,73	14,0	11,40	2,0	3,0	4,0	0,13	30,0
1,60	7,0	12,5	14,0	0,80	17,0	11,60	2,0	3,0	4,0	0,13	30,0
1,80	6,5	12,5	13,0	0,80	16,0	11,80	6,0	7,0	12,0	0,20	60,0
2,00	5,5	11,5	11,0	0,87	13,0	12,00	2,0	3,5	4,0	0,20	20,0
2,20	7,0	13,5	14,0	1,27	11,0	12,20	2,5	4,0	5,0	0,13	37,0
2,40	5,5	15,0	11,0	1,07	10,0	12,40	5,0	6,0	10,0	0,33	30,0
2,60	5,5	13,5	11,0	0,87	13,0	12,60	7,0	9,5	14,0	0,47	30,0
2,80	5,5	12,0	11,0	0,80	14,0	12,80	11,5	15,0	23,0	0,93	25,0
3,00	5,0	11,0	10,0	0,73	14,0	13,00	12,0	19,0	24,0	0,67	36,0
3,20	5,5	11,0	11,0	0,80	14,0	13,20	14,0	19,0	28,0	1,53	18,0
3,40	7,0	13,0	14,0	0,87	16,0	13,40	13,5	25,0	27,0	2,13	13,0
3,60	6,5	13,0	13,0	0,87	15,0	13,60	14,0	30,0	28,0	1,73	16,0
3,80	6,0	12,5	12,0	0,73	16,0	13,80	14,0	27,0	28,0	1,73	16,0
4,00	5,5	11,0	11,0	0,47	24,0	14,00	12,0	25,0	24,0	1,07	22,0
4,20	6,5	10,0	13,0	0,60	22,0	14,20	15,0	23,0	30,0	1,33	22,0
4,40	4,5	9,0	9,0	0,47	19,0	14,40	8,0	18,0	16,0	1,07	15,0
4,60	3,5	7,0	7,0	0,47	15,0	14,60	15,0	23,0	30,0	1,33	22,0
4,80	4,0	7,5	8,0	0,40	20,0	14,80	15,0	25,0	30,0	1,47	20,0
5,00	3,0	6,0	6,0	0,40	15,0	15,00	13,0	24,0	26,0	2,27	11,0
5,20	2,5	5,5	5,0	0,33	15,0	15,20	11,0	28,0	22,0	1,07	21,0
5,40	2,0	4,5	4,0	0,27	15,0	15,40	13,0	21,0	26,0	1,13	23,0
5,60	1,5	3,5	3,0	0,20	15,0	15,60	9,5	18,0	19,0	1,07	18,0
5,80	1,5	3,0	3,0	0,20	15,0	15,80	12,0	20,0	24,0	0,80	30,0
6,00	1,5	3,0	3,0	0,20	15,0	16,00	15,0	21,0	30,0	1,73	17,0
6,20	1,0	2,5	2,0	0,13	15,0	16,20	10,0	23,0	20,0	0,93	21,0
6,40	1,0	2,0	2,0	0,07	30,0	16,40	7,0	14,0	14,0	0,53	26,0
6,60	1,0	1,5	2,0	0,07	30,0	16,60	10,0	14,0	20,0	0,80	25,0
6,80	1,0	1,5	2,0	0,07	30,0	16,80	10,0	16,0	20,0	2,27	9,0
7,00	1,0	1,5	2,0	0,13	15,0	17,00	25,0	42,0	50,0	1,87	27,0
7,20	1,0	2,0	2,0	0,07	30,0	17,20	12,0	26,0	24,0	0,93	26,0
7,40	1,0	1,5	2,0	0,07	30,0	17,40	10,0	17,0	20,0	0,80	25,0
7,60	1,0	1,5	2,0	0,07	30,0	17,60	13,0	19,0	26,0	1,13	23,0
7,80	1,0	1,5	2,0	0,07	30,0	17,80	8,5	17,0	17,0	0,87	20,0
8,00	1,0	1,5	2,0	0,13	15,0	18,00	11,5	18,0	23,0	1,13	20,0
8,20	1,0	2,0	2,0	0,13	15,0	18,20	12,5	21,0	25,0	1,20	21,0
8,40	1,0	2,0	2,0	0,07	30,0	18,40	15,0	24,0	30,0	1,60	19,0
8,60	1,0	1,5	2,0	0,13	15,0	18,60	16,0	28,0	32,0	1,73	18,0
8,80	1,0	2,0	2,0	0,13	15,0	18,80	12,0	25,0	24,0	1,40	17,0
9,00	1,0	2,0	2,0	0,07	30,0	19,00	7,5	18,0	15,0	1,00	15,0
9,20	1,5	2,0	3,0	0,07	45,0	19,20	5,0	12,5	10,0	0,67	15,0
9,40	7,5	8,0	15,0	0,40	37,0	19,40	8,5	13,5	17,0	0,47	36,0
9,60	8,0	11,0	16,0	0,40	40,0	19,60	9,5	13,0	19,0	0,73	26,0
9,80	2,5	5,5	5,0	0,27	19,0	19,80	5,0	10,5	10,0	0,47	21,0
10,00	2,0	4,0	4,0	0,13	30,0	20,00	8,5	12,0	17,0	—	—

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

PROVA PENETROMETRICA STATICA

CPT 10

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- 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	3,0	3,0	6,0	0,67	9,0	10,20	7,0	12,0	14,0	0,27	52,0
0,40	4,0	9,0	8,0	0,73	11,0	10,40	12,0	14,0	24,0	0,40	60,0
0,60	6,0	11,5	12,0	0,93	13,0	10,60	4,0	7,0	8,0	0,27	30,0
0,80	6,0	13,0	12,0	0,80	15,0	10,80	3,0	5,0	6,0	0,27	22,0
1,00	8,0	14,0	16,0	0,67	24,0	11,00	3,0	5,0	6,0	0,33	18,0
1,20	9,0	14,0	18,0	0,53	34,0	11,20	3,5	6,0	7,0	0,40	17,0
1,40	11,0	15,0	22,0	0,73	30,0	11,40	3,0	6,0	6,0	0,33	18,0
1,60	9,5	15,0	19,0	0,67	28,0	11,60	2,5	5,0	5,0	0,27	19,0
1,80	8,0	13,0	16,0	0,80	20,0	11,80	3,0	5,0	6,0	0,27	22,0
2,00	7,0	13,0	14,0	0,93	15,0	12,00	3,0	5,0	6,0	0,27	22,0
2,20	8,0	15,0	16,0	1,07	15,0	12,20	3,5	5,5	7,0	0,27	26,0
2,40	6,5	14,5	13,0	0,93	14,0	12,40	4,0	6,0	8,0	0,33	24,0
2,60	6,0	13,0	12,0	0,80	15,0	12,60	4,5	7,0	9,0	0,40	22,0
2,80	5,0	11,0	10,0	0,67	15,0	12,80	5,0	8,0	10,0	0,20	50,0
3,00	7,0	12,0	14,0	1,07	13,0	13,00	3,5	5,0	7,0	0,40	17,0
3,20	9,0	17,0	18,0	1,07	17,0	13,20	5,0	8,0	10,0	0,47	21,0
3,40	10,0	18,0	20,0	1,20	17,0	13,40	8,5	12,0	17,0	0,80	21,0
3,60	7,0	16,0	14,0	0,93	15,0	13,60	9,0	15,0	18,0	0,67	27,0
3,80	7,0	14,0	14,0	0,80	17,0	13,80	10,0	15,0	20,0	0,93	21,0
4,00	7,0	13,0	14,0	0,87	16,0	14,00	11,0	18,0	22,0	0,80	27,0
4,20	7,5	14,0	15,0	0,67	22,0	14,20	12,0	18,0	24,0	1,07	22,0
4,40	8,0	13,0	16,0	0,67	24,0	14,40	12,0	20,0	24,0	0,80	30,0
4,60	7,0	12,0	14,0	0,60	23,0	14,60	16,0	22,0	32,0	1,73	18,0
4,80	5,5	10,0	11,0	0,40	27,0	14,80	14,0	27,0	28,0	1,60	17,0
5,00	6,0	9,0	12,0	0,33	36,0	15,00	11,0	23,0	22,0	1,87	12,0
5,20	5,5	8,0	11,0	0,40	27,0	15,20	16,0	30,0	32,0	2,13	15,0
5,40	5,0	8,0	10,0	0,53	19,0	15,40	19,0	35,0	38,0	2,40	16,0
5,60	16,0	20,0	32,0	0,40	80,0	15,60	17,0	35,0	34,0	2,27	15,0
5,80	13,0	16,0	26,0	0,27	97,0	15,80	17,0	34,0	34,0	2,00	17,0
6,00	8,0	10,0	16,0	0,27	60,0	16,00	15,0	30,0	30,0	1,87	16,0
6,20	10,0	12,0	20,0	0,27	75,0	16,20	14,0	28,0	28,0	1,60	17,0
6,40	4,0	6,0	8,0	0,13	60,0	16,40	13,0	25,0	26,0	1,60	16,0
6,60	4,0	5,0	8,0	0,20	40,0	16,60	11,0	23,0	22,0	1,60	14,0
6,80	3,0	4,5	6,0	0,33	18,0	16,80	10,0	22,0	20,0	1,73	12,0
7,00	2,0	4,5	4,0	0,27	15,0	17,00	10,0	23,0	20,0	1,60	12,0
7,20	2,0	4,0	4,0	0,27	15,0	17,20	8,0	20,0	16,0	1,33	12,0
7,40	2,0	4,0	4,0	0,27	15,0	17,40	10,0	20,0	20,0	1,33	15,0
7,60	2,0	4,0	4,0	0,13	30,0	17,60	30,0	40,0	60,0	1,60	37,0
7,80	3,0	4,0	6,0	0,20	30,0	17,80	10,0	22,0	20,0	1,33	15,0
8,00	3,0	4,5	6,0	0,53	11,0	18,00	10,0	20,0	20,0	0,93	21,0
8,20	4,0	8,0	8,0	0,47	17,0	18,20	11,0	18,0	22,0	0,67	33,0
8,40	4,0	7,5	8,0	0,27	30,0	18,40	8,0	13,0	16,0	0,67	24,0
8,60	3,0	5,0	6,0	0,20	30,0	18,60	10,0	15,0	20,0	1,07	19,0
8,80	3,0	4,5	6,0	0,20	30,0	18,80	12,0	20,0	24,0	0,80	30,0
9,00	3,0	4,5	6,0	0,53	11,0	19,00	12,0	18,0	24,0	1,33	18,0
9,20	4,0	8,0	8,0	0,40	20,0	19,20	12,0	22,0	24,0	1,47	16,0
9,40	4,0	7,0	8,0	0,40	20,0	19,40	15,0	26,0	30,0	1,47	20,0
9,60	9,0	12,0	18,0	0,40	45,0	19,60	15,0	26,0	30,0	1,33	22,0
9,80	21,0	24,0	42,0	0,40	105,0	19,80	12,0	22,0	24,0	1,60	15,0
10,00	12,0	15,0	24,0	0,67	36,0	20,00	10,0	22,0	20,0	0,80	25,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

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

CPT 10

2.010498-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 2,20 m da quota inizio
 - pagina : 2

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	-
20,20	12,0	18,0	24,0	1,33	18,0	22,40	18,0	32,0	36,0	2,00	18,0
20,40	15,0	25,0	30,0	1,33	22,0	22,60	20,0	35,0	40,0	2,27	18,0
20,60	18,0	28,0	36,0	1,47	25,0	22,80	18,0	35,0	36,0	2,00	18,0
20,80	15,0	26,0	30,0	1,47	20,0	23,00	20,0	35,0	40,0	2,13	19,0
21,00	13,0	24,0	26,0	1,60	16,0	23,20	22,0	38,0	44,0	2,40	18,0
21,20	18,0	30,0	36,0	1,73	21,0	23,40	20,0	38,0	40,0	2,00	20,0
21,40	17,0	30,0	34,0	1,73	20,0	23,60	30,0	45,0	60,0	2,27	26,0
21,60	15,0	28,0	30,0	1,47	20,0	23,80	28,0	45,0	56,0	1,33	42,0
21,80	14,0	25,0	28,0	1,60	17,0	24,00	50,0	60,0	100,0	2,40	42,0
22,00	18,0	30,0	36,0	1,73	21,0	24,20	72,0	90,0	144,0	2,67	54,0
22,20	17,0	30,0	34,0	1,87	18,0	24,40	100,0	120,0	200,0	---	---

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

PROVA PENETROMETRICA STATICA LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 11

2-010496-013

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 3,00 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	3,0	3,0	6,0	0,13	45,0	10,20	18,0	28,0	36,0	1,07	34,0
0,40	4,0	5,0	8,0	0,40	20,0	10,40	10,0	18,0	20,0	0,80	25,0
0,60	7,0	10,0	14,0	1,07	13,0	10,60	6,0	12,0	12,0	0,40	30,0
0,80	5,0	13,0	10,0	0,53	19,0	10,80	5,0	8,0	10,0	0,27	37,0
1,00	7,0	11,0	14,0	0,80	17,0	11,00	4,0	6,0	8,0	0,27	30,0
1,20	9,0	15,0	18,0	1,07	17,0	11,20	3,5	5,5	7,0	0,13	52,0
1,40	13,0	21,0	26,0	1,67	16,0	11,40	3,0	4,0	6,0	0,20	30,0
1,60	9,5	22,0	19,0	0,87	22,0	11,60	3,0	4,5	6,0	0,20	30,0
1,80	6,0	12,5	12,0	0,60	20,0	11,80	3,5	5,0	7,0	0,27	26,0
2,00	5,5	10,0	11,0	0,80	14,0	12,00	3,0	5,0	6,0	0,27	22,0
2,20	5,0	11,0	10,0	0,73	14,0	12,20	3,0	5,0	6,0	0,13	45,0
2,40	6,0	11,5	12,0	0,93	13,0	12,40	3,5	4,5	7,0	0,27	26,0
2,60	6,0	13,0	12,0	0,80	15,0	12,60	3,0	5,0	6,0	0,20	30,0
2,80	5,0	11,0	10,0	0,73	14,0	12,80	4,0	5,5	8,0	0,33	24,0
3,00	6,0	11,5	12,0	0,80	15,0	13,00	3,5	6,0	7,0	0,33	21,0
3,20	9,0	15,0	18,0	1,07	17,0	13,20	4,0	6,5	8,0	0,33	24,0
3,40	8,0	16,0	16,0	1,20	13,0	13,40	3,5	6,0	7,0	0,33	21,0
3,60	6,0	15,0	12,0	1,20	10,0	13,60	3,5	6,0	7,0	0,40	17,0
3,80	7,0	16,0	14,0	1,60	9,0	13,80	4,0	7,0	8,0	0,67	12,0
4,00	7,0	19,0	14,0	---	---	14,00	5,0	10,0	10,0	0,27	37,0
4,20	8,0	7,0	16,0	1,20	13,0	14,20	4,0	6,0	8,0	0,40	20,0
4,40	7,0	16,0	14,0	1,07	13,0	14,40	5,0	8,0	10,0	0,67	15,0
4,60	7,0	15,0	14,0	0,93	15,0	14,60	8,0	13,0	16,0	0,67	24,0
4,80	8,0	15,0	16,0	0,87	18,0	14,80	9,0	14,0	18,0	0,80	22,0
5,00	5,5	12,0	11,0	0,67	16,0	15,00	9,0	15,0	18,0	1,07	17,0
5,20	5,0	10,0	10,0	0,67	15,0	15,20	10,0	18,0	20,0	1,33	15,0
5,40	5,0	10,0	10,0	0,53	19,0	15,40	10,0	20,0	20,0	1,40	14,0
5,60	5,0	9,0	10,0	0,67	15,0	15,60	11,5	22,0	23,0	1,60	14,0
5,80	4,0	9,0	8,0	0,40	20,0	15,80	12,0	24,0	24,0	1,60	15,0
6,00	8,0	11,0	16,0	0,67	24,0	16,00	12,0	24,0	24,0	1,33	18,0
6,20	7,0	12,0	14,0	0,53	26,0	16,20	14,0	24,0	28,0	1,33	21,0
6,40	5,0	9,0	10,0	0,60	17,0	16,40	10,0	20,0	20,0	1,20	17,0
6,60	3,5	8,0	7,0	0,40	17,0	16,60	7,0	16,0	14,0	0,40	35,0
6,80	4,0	7,0	8,0	0,33	24,0	16,80	11,0	14,0	22,0	0,67	33,0
7,00	2,5	5,0	5,0	0,33	15,0	17,00	17,0	22,0	34,0	1,47	23,0
7,20	2,0	4,5	4,0	0,27	15,0	17,20	15,0	26,0	30,0	1,07	28,0
7,40	3,0	5,0	6,0	0,33	18,0	17,40	20,0	28,0	40,0	1,73	23,0
7,60	2,0	4,5	4,0	0,13	30,0	17,60	25,0	38,0	50,0	1,33	37,0
7,80	3,0	4,0	6,0	0,20	30,0	17,80	20,0	30,0	40,0	1,33	30,0
8,00	2,5	4,0	5,0	0,40	12,0	18,00	14,0	24,0	28,0	2,13	13,0
8,20	2,0	5,0	4,0	0,20	20,0	18,20	12,0	28,0	24,0	1,87	13,0
8,40	2,5	4,0	5,0	0,20	25,0	18,40	18,0	32,0	36,0	1,60	22,0
8,60	3,0	4,5	6,0	0,33	18,0	18,60	30,0	42,0	60,0	1,33	45,0
8,80	2,0	4,5	4,0	0,20	20,0	18,80	35,0	45,0	70,0	1,33	52,0
9,00	2,5	4,0	5,0	0,13	37,0	19,00	35,0	45,0	70,0	1,60	44,0
9,20	3,0	4,0	6,0	0,33	18,0	19,20	28,0	40,0	56,0	1,33	42,0
9,40	2,0	4,5	4,0	0,27	15,0	19,40	35,0	45,0	70,0	2,00	35,0
9,60	2,5	4,5	5,0	0,33	15,0	19,60	40,0	55,0	80,0	1,60	50,0
9,80	4,0	6,5	8,0	0,27	30,0	19,80	28,0	40,0	56,0	2,67	21,0
10,00	9,0	11,0	18,0	1,33	13,0	20,00	15,0	35,0	30,0	2,27	13,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRENO s.r.l.

Via Cervara, 101
54100 MASSA

Part. IVA 00713690451

PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 11

2.010498-016

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 3,00 m da quota inizio
- pagina : 2

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 -
20,20	15,0	32,0	30,0	2,27	13,0	22,40	20,0	35,0	40,0	2,00	20,0
20,40	18,0	35,0	36,0	2,67	13,0	22,60	20,0	35,0	40,0	2,40	17,0
20,60	20,0	40,0	40,0	1,73	23,0	22,80	22,0	40,0	44,0	2,67	16,0
20,80	15,0	28,0	30,0	1,87	16,0	23,00	25,0	45,0	50,0	1,87	27,0
21,00	16,0	30,0	32,0	1,60	20,0	23,20	21,0	35,0	42,0	1,33	31,0
21,20	15,0	27,0	30,0	1,60	19,0	23,40	30,0	40,0	60,0	1,60	37,0
21,40	18,0	30,0	36,0	2,00	18,0	23,60	48,0	60,0	96,0	1,60	60,0
21,60	20,0	35,0	40,0	1,47	27,0	23,80	60,0	72,0	120,0	2,00	60,0
21,80	16,0	27,0	32,0	1,60	20,0	24,00	80,0	95,0	180,0	4,00	40,0
22,00	16,0	28,0	32,0	1,60	20,0	24,20	90,0	120,0	180,0	—	—
22,20	18,0	30,0	36,0	2,00	18,0						

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

PROVA PENETROMETRICA STATICA

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 12

2.010496-038

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 2,80 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	2,5	2,5	5,0	0,20	25,0	10,20	4,5	9,0	9,0	0,27	34,0
0,40	6,5	8,0	13,0	0,40	32,0	10,40	3,5	5,5	7,0	0,20	35,0
0,60	4,5	7,5	9,0	0,13	67,0	10,60	2,5	4,0	5,0	0,13	37,0
0,80	3,5	4,5	7,0	0,13	52,0	10,80	2,5	3,5	5,0	0,13	37,0
1,00	3,5	4,5	7,0	0,53	13,0	11,00	2,5	3,5	5,0	0,20	25,0
1,20	8,0	12,0	16,0	0,80	20,0	11,20	2,5	4,0	5,0	0,20	25,0
1,40	7,0	13,0	14,0	1,13	12,0	11,40	2,5	4,0	5,0	0,20	25,0
1,60	6,5	15,0	13,0	0,93	14,0	11,60	2,5	4,0	5,0	0,20	25,0
1,80	10,0	17,0	20,0	1,33	15,0	11,80	3,0	4,5	6,0	0,20	30,0
2,00	10,0	20,0	20,0	1,33	15,0	12,00	3,0	4,5	6,0	0,27	22,0
2,20	9,0	19,0	18,0	1,27	14,0	12,20	3,0	5,0	6,0	0,27	22,0
2,40	7,0	16,5	14,0	1,20	12,0	12,40	3,0	5,0	6,0	0,27	22,0
2,60	6,0	15,0	12,0	1,20	10,0	12,60	3,5	5,5	7,0	0,33	21,0
2,80	5,0	14,0	10,0	1,07	9,0	12,80	4,0	6,5	8,0	0,33	24,0
3,00	5,0	13,0	10,0	1,07	9,0	13,00	8,0	10,5	16,0	0,67	24,0
3,20	7,0	15,0	14,0	0,93	15,0	13,20	4,0	9,0	8,0	0,27	30,0
3,40	6,0	13,0	12,0	0,87	14,0	13,40	6,0	8,0	12,0	0,60	20,0
3,60	5,5	12,0	11,0	0,87	13,0	13,60	7,5	12,0	15,0	0,80	19,0
3,80	5,5	12,0	11,0	0,87	13,0	13,80	9,0	15,0	18,0	0,93	19,0
4,00	5,5	12,0	11,0	0,73	15,0	14,00	11,0	18,0	22,0	1,47	15,0
4,20	6,5	12,0	13,0	0,80	16,0	14,20	10,0	21,0	20,0	1,60	12,0
4,40	5,0	11,0	10,0	0,73	14,0	14,40	11,0	23,0	22,0	1,33	16,0
4,60	4,5	10,0	9,0	0,53	17,0	14,60	10,0	20,0	20,0	1,40	14,0
4,80	4,0	8,0	8,0	0,33	24,0	14,80	10,5	21,0	21,0	1,47	14,0
5,00	3,5	6,0	7,0	0,33	21,0	15,00	9,0	20,0	18,0	1,53	12,0
5,20	3,0	5,5	6,0	0,27	22,0	15,20	8,5	20,0	17,0	1,33	13,0
5,40	3,0	5,0	6,0	0,13	45,0	15,40	13,0	23,0	26,0	1,47	18,0
5,60	2,5	3,5	5,0	0,73	7,0	15,60	8,5	19,5	17,0	1,20	14,0
5,80	3,5	9,0	7,0	0,40	17,0	15,80	11,0	20,0	22,0	1,20	18,0
6,00	7,0	10,0	14,0	0,47	30,0	16,00	13,0	22,0	26,0	0,80	32,0
6,20	3,0	6,5	6,0	0,07	90,0	16,20	12,0	18,0	24,0	0,80	30,0
6,40	3,0	3,5	6,0	0,13	45,0	16,40	9,0	15,0	18,0	1,00	18,0
6,60	2,5	3,5	5,0	0,13	37,0	16,60	9,5	17,0	19,0	1,20	16,0
6,80	2,5	3,5	5,0	0,20	25,0	16,80	6,0	15,0	12,0	0,60	20,0
7,00	2,0	3,5	4,0	0,20	20,0	17,00	5,5	10,0	11,0	0,80	14,0
7,20	2,5	4,0	5,0	0,20	25,0	17,20	8,0	14,0	16,0	1,00	16,0
7,40	2,5	4,0	5,0	0,20	25,0	17,40	12,0	19,5	24,0	1,20	20,0
7,60	2,5	4,0	5,0	0,20	25,0	17,60	12,0	21,0	24,0	1,20	20,0
7,80	2,5	4,0	5,0	0,20	25,0	17,80	10,0	19,0	20,0	0,93	21,0
8,00	2,5	4,0	5,0	0,20	25,0	18,00	11,0	18,0	22,0	0,93	24,0
8,20	2,5	4,0	5,0	0,20	25,0	18,20	11,0	18,0	22,0	0,27	82,0
8,40	2,5	4,0	5,0	0,20	25,0	18,40	10,0	12,0	20,0	1,33	15,0
8,60	2,5	4,0	5,0	0,20	25,0	18,60	11,0	21,0	22,0	1,73	13,0
8,80	2,5	4,0	5,0	0,20	25,0	18,80	14,0	27,0	28,0	2,40	12,0
9,00	2,5	4,0	5,0	0,20	25,0	19,00	27,0	45,0	54,0	2,27	24,0
9,20	3,0	4,5	6,0	0,27	22,0	19,20	33,0	50,0	66,0	2,67	25,0
9,40	3,0	5,0	6,0	0,20	30,0	19,40	40,0	60,0	80,0	1,60	50,0
9,60	4,5	6,0	9,0	0,13	67,0	19,60	28,0	40,0	56,0	1,60	35,0
9,80	16,0	17,0	32,0	0,80	40,0	19,80	38,0	50,0	76,0	1,60	47,0
10,00	9,0	15,0	18,0	0,60	30,0	20,00	48,0	60,0	96,0	1,73	55,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
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 54100 MASSA
 Part. IVA 00713690451

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

CPT 12

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,80 m da quota inizio
- pagina : 2

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	-
20,20	62,0	75,0	124,0	1,60	77,0	21,40	105,0	120,0	210,0	1,33	157,0
20,40	73,0	85,0	146,0	1,47	100,0	21,60	120,0	130,0	240,0	2,00	120,0
20,60	59,0	70,0	118,0	2,27	52,0	21,80	130,0	145,0	260,0	2,00	130,0
20,80	38,0	55,0	76,0	1,47	52,0	22,00	130,0	145,0	260,0	2,67	97,0
21,00	74,0	85,0	148,0	2,00	74,0	22,20	130,0	150,0	260,0	—	—
21,20	95,0	110,0	190,0	2,00	95,0						

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

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

CPT 13

2.010496-038

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,00 m da quota inizio
- pagina : 1

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	3,0	3,0	6,0	0,27	22,0	10,20	2,5	3,5	5,0	0,13	37,0
0,40	3,0	5,0	6,0	0,67	9,0	10,40	2,5	3,5	5,0	0,13	37,0
0,60	5,0	10,0	10,0	0,67	15,0	10,60	2,5	3,5	5,0	0,13	37,0
0,80	7,0	12,0	14,0	0,67	21,0	10,80	2,5	3,5	5,0	0,13	37,0
1,00	6,5	11,5	13,0	1,07	12,0	11,00	3,0	4,0	6,0	0,13	45,0
1,20	8,0	16,0	16,0	0,93	17,0	11,20	3,0	4,0	6,0	0,13	45,0
1,40	9,0	16,0	18,0	0,87	21,0	11,40	3,5	4,5	7,0	0,13	52,0
1,60	8,5	15,0	17,0	0,80	21,0	11,60	3,0	4,0	6,0	0,13	45,0
1,80	8,0	14,0	16,0	0,67	24,0	11,80	3,0	4,0	6,0	0,13	45,0
2,00	8,0	13,0	16,0	0,93	17,0	12,00	3,0	4,0	6,0	0,20	30,0
2,20	7,0	14,0	14,0	0,80	17,0	12,20	3,5	5,0	7,0	0,27	26,0
2,40	7,0	13,0	14,0	0,53	26,0	12,40	4,0	6,0	8,0	0,27	30,0
2,60	6,0	10,0	12,0	0,87	14,0	12,60	5,0	7,0	10,0	0,33	30,0
2,80	3,5	10,0	7,0	0,67	10,0	12,80	6,5	9,0	13,0	0,47	28,0
3,00	7,0	12,0	14,0	0,93	15,0	13,00	6,5	10,0	13,0	0,80	16,0
3,20	7,0	14,0	14,0	0,60	23,0	13,20	9,0	15,0	18,0	0,93	19,0
3,40	7,5	12,0	15,0	0,60	25,0	13,40	10,0	17,0	20,0	1,20	17,0
3,60	6,5	11,0	13,0	0,53	24,0	13,60	10,0	19,0	20,0	1,20	17,0
3,80	6,0	10,0	12,0	0,53	22,0	13,80	9,0	18,0	18,0	1,13	16,0
4,00	6,0	10,0	12,0	0,67	18,0	14,00	8,5	17,0	17,0	0,80	21,0
4,20	6,0	11,0	12,0	0,47	26,0	14,20	12,0	18,0	24,0	0,80	30,0
4,40	5,5	9,0	11,0	0,47	24,0	14,40	12,0	18,0	24,0	1,07	22,0
4,60	4,0	7,5	8,0	0,33	24,0	14,60	11,0	19,0	22,0	1,07	21,0
4,80	4,0	6,5	8,0	0,33	24,0	14,80	12,0	20,0	24,0	1,33	18,0
5,00	4,0	6,5	8,0	0,27	30,0	15,00	12,0	22,0	24,0	1,47	16,0
5,20	3,0	5,0	6,0	0,27	22,0	15,20	14,0	25,0	28,0	1,20	23,0
5,40	3,5	5,5	7,0	0,27	26,0	15,40	14,0	23,0	28,0	1,20	23,0
5,60	3,0	5,0	6,0	0,20	30,0	15,60	12,0	21,0	24,0	1,07	22,0
5,80	4,0	5,5	8,0	0,27	30,0	15,80	10,0	18,0	20,0	0,80	25,0
6,00	6,0	8,0	12,0	0,40	30,0	16,00	7,0	13,0	14,0	0,67	21,0
6,20	6,0	9,0	12,0	0,33	36,0	16,20	12,0	17,0	24,0	1,33	18,0
6,40	2,5	5,0	5,0	0,20	25,0	16,40	20,0	30,0	40,0	1,33	30,0
6,60	2,0	3,5	4,0	0,13	30,0	16,60	25,0	35,0	50,0	1,33	37,0
6,80	2,0	3,0	4,0	0,13	30,0	16,80	30,0	40,0	60,0	1,33	45,0
7,00	2,5	3,5	5,0	0,13	37,0	17,00	40,0	50,0	80,0	1,20	67,0
7,20	2,5	3,5	5,0	0,13	37,0	17,20	26,0	35,0	52,0	0,80	65,0
7,40	2,5	3,5	5,0	0,13	37,0	17,40	13,0	19,0	26,0	0,80	32,0
7,60	3,0	4,0	6,0	0,13	45,0	17,60	14,0	20,0	28,0	0,80	35,0
7,80	2,5	3,5	5,0	0,13	37,0	17,80	9,0	15,0	18,0	0,93	19,0
8,00	2,5	3,5	5,0	0,13	37,0	18,00	9,0	16,0	18,0	0,53	34,0
8,20	2,5	3,5	5,0	0,13	37,0	18,20	9,0	13,0	18,0	0,53	34,0
8,40	3,0	4,0	6,0	0,20	30,0	18,40	8,0	12,0	16,0	0,53	30,0
8,60	2,0	3,5	4,0	0,13	30,0	18,60	7,0	11,0	14,0	0,53	26,0
8,80	2,5	3,5	5,0	0,20	25,0	18,80	10,0	14,0	20,0	0,67	30,0
9,00	2,5	4,0	5,0	0,13	37,0	19,00	11,0	16,0	22,0	1,20	18,0
9,20	2,5	3,5	5,0	0,13	37,0	19,20	17,0	26,0	34,0	1,07	32,0
9,40	2,5	3,5	5,0	0,13	37,0	19,40	32,0	40,0	64,0	1,33	48,0
9,60	3,0	4,0	6,0	0,20	30,0	19,60	35,0	45,0	70,0	1,33	52,0
9,80	3,5	5,0	7,0	0,13	52,0	19,80	40,0	50,0	80,0	2,00	40,0
10,00	3,0	4,0	6,0	0,13	45,0	20,00	40,0	55,0	80,0	1,33	60,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 13

2-010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,00 m da quota inizio
- pagina : 2

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	-
20,20	35,0	45,0	70,0	1,33	52,0	22,40	20,0	35,0	40,0	1,73	23,0
20,40	20,0	30,0	40,0	1,33	30,0	22,60	22,0	35,0	44,0	2,00	22,0
20,60	18,0	28,0	36,0	1,33	27,0	22,80	25,0	40,0	50,0	1,73	29,0
20,80	18,0	28,0	36,0	1,33	27,0	23,00	22,0	35,0	44,0	2,00	22,0
21,00	20,0	30,0	40,0	1,60	25,0	23,20	25,0	40,0	50,0	2,67	19,0
21,20	20,0	32,0	40,0	1,33	30,0	23,40	25,0	45,0	50,0	2,00	25,0
21,40	15,0	25,0	30,0	1,47	20,0	23,60	30,0	45,0	60,0	2,00	30,0
21,60	16,0	27,0	32,0	1,47	22,0	23,80	35,0	50,0	70,0	1,73	40,0
21,80	15,0	26,0	30,0	1,60	19,0	24,00	60,0	73,0	120,0	1,73	69,0
22,00	18,0	30,0	36,0	1,87	19,0	24,20	85,0	98,0	170,0	2,00	85,0
22,20	18,0	32,0	36,0	2,00	18,0	24,40	100,0	115,0	200,0	---	---

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE C_t = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 14

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,70 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	2,0	2,0	4,0	0,13	30,0	10,20	3,5	6,0	7,0	0,27	26,0
0,40	2,0	3,0	4,0	0,20	20,0	10,40	3,0	5,0	6,0	0,27	22,0
0,60	5,5	7,0	11,0	0,40	27,0	10,60	3,0	5,0	6,0	0,27	22,0
0,80	7,0	10,0	14,0	0,53	26,0	10,80	3,5	5,5	7,0	0,27	26,0
1,00	7,0	11,0	14,0	0,80	17,0	11,00	3,5	5,5	7,0	0,20	35,0
1,20	11,0	17,0	22,0	1,13	19,0	11,20	3,5	5,0	7,0	0,27	26,0
1,40	10,5	19,0	21,0	1,33	16,0	11,40	3,0	5,0	6,0	0,27	22,0
1,60	9,0	19,0	18,0	1,20	15,0	11,60	3,5	5,5	7,0	0,40	17,0
1,80	8,0	17,0	16,0	1,07	15,0	11,80	3,0	6,0	6,0	0,33	18,0
2,00	7,0	15,0	14,0	1,07	13,0	12,00	4,5	7,0	9,0	0,33	27,0
2,20	8,0	16,0	16,0	1,07	15,0	12,20	5,0	7,5	10,0	0,40	25,0
2,40	8,0	16,0	16,0	0,93	17,0	12,40	5,0	8,0	10,0	0,47	21,0
2,60	7,0	14,0	14,0	1,07	13,0	12,60	5,5	9,0	11,0	0,67	16,0
2,80	7,0	15,0	14,0	1,07	13,0	12,80	8,0	13,0	16,0	1,00	16,0
3,00	8,0	16,0	16,0	0,93	17,0	13,00	9,5	17,0	19,0	1,27	15,0
3,20	7,0	14,0	14,0	0,80	17,0	13,20	9,5	19,0	19,0	1,33	14,0
3,40	6,5	12,5	13,0	0,73	18,0	13,40	10,0	20,0	20,0	1,47	14,0
3,60	5,5	11,0	11,0	0,73	15,0	13,60	10,0	21,0	20,0	1,73	12,0
3,80	5,5	11,0	11,0	0,80	14,0	13,80	11,0	24,0	22,0	1,60	14,0
4,00	6,0	12,0	12,0	0,80	15,0	14,00	10,0	22,0	20,0	1,53	13,0
4,20	7,5	13,5	15,0	0,80	19,0	14,20	12,5	24,0	25,0	1,60	16,0
4,40	7,5	13,5	15,0	0,87	17,0	14,40	12,0	24,0	24,0	1,53	16,0
4,60	5,5	12,0	11,0	0,67	16,0	14,60	12,5	24,0	25,0	1,73	14,0
4,80	4,5	9,5	9,0	0,60	15,0	14,80	13,0	26,0	26,0	1,87	14,0
5,00	4,0	8,5	8,0	0,47	17,0	15,00	13,0	27,0	26,0	1,60	16,0
5,20	3,5	7,0	7,0	0,40	17,0	15,20	15,0	27,0	30,0	1,73	17,0
5,40	3,5	6,5	7,0	0,33	21,0	15,40	13,0	26,0	26,0	1,73	15,0
5,60	3,5	6,0	7,0	0,27	26,0	15,60	13,0	26,0	26,0	1,47	18,0
5,80	10,0	12,0	20,0	0,27	75,0	15,80	15,0	26,0	30,0	1,73	17,0
6,00	7,0	9,0	14,0	0,53	26,0	16,00	11,0	24,0	22,0	2,00	11,0
6,20	3,5	7,5	7,0	0,27	26,0	16,20	17,0	32,0	34,0	1,87	18,0
6,40	5,0	7,0	10,0	0,33	30,0	16,40	11,0	25,0	22,0	1,27	17,0
6,60	3,0	5,5	6,0	0,20	30,0	16,60	9,5	19,0	19,0	1,40	14,0
6,80	2,5	4,0	5,0	0,27	19,0	16,80	10,5	21,0	21,0	0,27	79,0
7,00	2,5	4,5	5,0	0,27	19,0	17,00	18,0	20,0	36,0	1,20	30,0
7,20	2,5	4,5	5,0	0,20	25,0	17,20	11,0	20,0	22,0	1,07	21,0
7,40	2,5	4,0	5,0	0,20	25,0	17,40	13,0	21,0	26,0	1,73	15,0
7,60	2,5	4,0	5,0	0,20	25,0	17,60	12,0	25,0	24,0	1,67	14,0
7,80	2,5	4,0	5,0	0,20	25,0	17,80	14,0	26,5	28,0	2,27	12,0
8,00	2,5	4,0	5,0	0,27	19,0	18,00	15,0	32,0	30,0	1,33	22,0
8,20	2,5	4,5	5,0	0,20	25,0	18,20	12,0	22,0	24,0	1,27	19,0
8,40	4,5	6,0	9,0	0,27	34,0	18,40	7,5	17,0	15,0	0,67	22,0
8,60	2,5	4,5	5,0	0,27	19,0	18,60	8,0	13,0	16,0	0,93	17,0
8,80	2,5	4,5	5,0	0,27	19,0	18,80	15,0	22,0	30,0	2,00	15,0
9,00	2,5	4,5	5,0	0,27	19,0	19,00	25,0	40,0	50,0	2,00	25,0
9,20	3,0	5,0	6,0	0,27	22,0	19,20	30,0	45,0	60,0	2,00	30,0
9,40	3,0	5,0	6,0	0,27	22,0	19,40	35,0	50,0	70,0	2,00	35,0
9,60	3,0	5,0	6,0	0,20	30,0	19,60	50,0	65,0	100,0	1,73	58,0
9,80	4,0	5,5	8,0	0,20	40,0	19,80	42,0	55,0	84,0	1,73	48,0
10,00	3,5	5,0	7,0	0,33	21,0	20,00	72,0	85,0	144,0	1,33	108,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

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

CPT 14

~~2.010408.013~~

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,70 m da quota inizio
- pagina : 2

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 -
20,20	65,0	75,0	130,0	2,00	65,0	21,00	89,0	100,0	178,0	2,00	89,0
20,40	44,0	59,0	88,0	0,67	132,0	21,20	100,0	115,0	200,0	2,00	100,0
20,60	85,0	90,0	170,0	1,20	142,0	21,40	100,0	115,0	200,0	2,67	75,0
20,80	66,0	75,0	132,0	1,47	90,0	21,60	150,0	170,0	300,0	—	—

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

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

CPT 15

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- 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	3,0	6,0	0,40	15,0	10,20	3,0	4,0	6,0	0,20	30,0
0,40	3,0	6,0	6,0	0,40	15,0	10,40	4,0	5,5	8,0	0,13	60,0
0,60	5,0	8,0	10,0	0,40	25,0	10,60	2,5	3,5	5,0	0,20	25,0
0,80	7,0	10,0	14,0	0,67	21,0	10,80	3,0	4,5	6,0	0,20	30,0
1,00	8,0	13,0	16,0	0,80	20,0	11,00	4,0	5,5	8,0	0,40	20,0
1,20	10,0	16,0	20,0	0,67	30,0	11,20	3,0	6,0	6,0	0,27	22,0
1,40	10,0	15,0	20,0	0,80	25,0	11,40	5,5	7,5	11,0	0,53	21,0
1,60	7,0	13,0	14,0	0,93	15,0	11,60	6,0	10,0	12,0	0,53	22,0
1,80	5,0	12,0	10,0	0,67	15,0	11,80	7,0	11,0	14,0	0,53	26,0
2,00	6,0	11,0	12,0	0,67	18,0	12,00	7,0	11,0	14,0	0,80	17,0
2,20	5,0	10,0	10,0	0,67	15,0	12,20	6,0	12,0	12,0	0,67	18,0
2,40	6,0	11,0	12,0	0,67	18,0	12,40	10,0	15,0	20,0	0,53	37,0
2,60	5,0	10,0	10,0	0,53	19,0	12,60	11,0	15,0	22,0	0,67	33,0
2,80	5,0	9,0	10,0	0,67	15,0	12,80	12,0	17,0	24,0	1,20	20,0
3,00	4,0	9,0	8,0	0,67	12,0	13,00	15,0	24,0	30,0	1,60	19,0
3,20	5,0	10,0	10,0	0,53	19,0	13,20	13,0	25,0	26,0	1,73	15,0
3,40	5,0	9,0	10,0	0,80	12,0	13,40	13,0	26,0	26,0	1,20	22,0
3,60	7,0	13,0	14,0	0,53	26,0	13,60	14,0	23,0	28,0	1,20	23,0
3,80	6,0	10,0	12,0	0,67	18,0	13,80	11,0	20,0	22,0	1,33	16,0
4,00	7,0	12,0	14,0	0,80	17,0	14,00	10,0	20,0	20,0	1,07	19,0
4,20	7,0	13,0	14,0	0,67	21,0	14,20	10,0	18,0	20,0	1,07	19,0
4,40	6,0	11,0	12,0	0,53	22,0	14,40	10,0	18,0	20,0	1,07	19,0
4,60	5,0	9,0	10,0	0,67	15,0	14,60	8,0	16,0	16,0	1,07	15,0
4,80	7,0	12,0	14,0	0,40	35,0	14,80	8,0	16,0	16,0	1,33	12,0
5,00	4,0	7,0	8,0	0,53	15,0	15,00	10,0	20,0	20,0	1,07	19,0
5,20	4,0	8,0	8,0	0,40	20,0	15,20	9,0	17,0	18,0	1,20	15,0
5,40	7,0	10,0	14,0	0,67	21,0	15,40	8,0	17,0	16,0	1,07	15,0
5,60	7,0	12,0	14,0	0,67	21,0	15,60	9,0	17,0	18,0	1,60	11,0
5,80	10,0	15,0	20,0	0,67	30,0	15,80	12,0	24,0	24,0	1,33	18,0
6,00	11,0	16,0	22,0	0,40	55,0	16,00	14,0	24,0	28,0	1,33	21,0
6,20	5,0	8,0	10,0	0,40	25,0	16,20	12,0	22,0	24,0	1,07	22,0
6,40	3,0	6,0	6,0	0,13	45,0	16,40	10,0	18,0	20,0	0,93	21,0
6,60	2,5	3,5	5,0	0,13	37,0	16,60	7,0	14,0	14,0	0,93	15,0
6,80	1,5	2,5	3,0	0,13	22,0	16,80	6,0	13,0	12,0	0,80	15,0
7,00	1,5	2,5	3,0	0,13	22,0	17,00	6,0	12,0	12,0	0,80	15,0
7,20	1,5	2,5	3,0	0,13	22,0	17,20	8,0	14,0	16,0	0,73	22,0
7,40	2,0	3,0	4,0	0,13	30,0	17,40	7,5	13,0	15,0	0,60	25,0
7,60	2,0	3,0	4,0	0,13	30,0	17,60	7,5	12,0	15,0	0,93	16,0
7,80	2,5	3,5	5,0	0,13	37,0	17,80	8,0	15,0	16,0	0,80	20,0
8,00	2,0	3,0	4,0	0,13	30,0	18,00	8,0	14,0	16,0	0,40	40,0
8,20	1,5	2,5	3,0	0,13	22,0	18,20	6,0	9,0	12,0	0,40	30,0
8,40	1,5	2,5	3,0	0,13	22,0	18,40	6,0	9,0	12,0	0,67	18,0
8,60	2,0	3,0	4,0	0,13	30,0	18,60	5,0	10,0	10,0	1,07	9,0
8,80	3,0	4,0	6,0	0,20	30,0	18,80	12,0	20,0	24,0	1,47	16,0
9,00	3,0	4,5	6,0	0,27	22,0	19,00	15,0	26,0	30,0	1,73	17,0
9,20	2,5	4,5	5,0	0,20	25,0	19,20	15,0	28,0	30,0	1,33	22,0
9,40	3,5	5,0	7,0	0,13	52,0	19,40	20,0	30,0	40,0	1,33	30,0
9,60	2,5	3,5	5,0	0,13	37,0	19,60	20,0	30,0	40,0	1,33	30,0
9,80	2,0	3,0	4,0	0,13	30,0	19,80	25,0	35,0	50,0	0,67	75,0
10,00	2,0	3,0	4,0	0,13	30,0	20,00	30,0	35,0	60,0	2,67	22,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GeoTIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
00713690451

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

CPT 15

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- pagina : 2

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 -
20,20	40,0	60,0	80,0	2,67	30,0	21,00	120,0	135,0	240,0	2,67	90,0
20,40	45,0	65,0	90,0	1,60	56,0	21,20	120,0	140,0	240,0	2,00	120,0
20,60	60,0	72,0	120,0	1,73	69,0	21,40	125,0	140,0	250,0	—	—
20,80	82,0	95,0	164,0	2,00	82,0						

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
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PROVA PENETROMETRICA STATICA

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 16

2-010496016

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - 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	3,0	6,0	0,47	13,0	10,20	2,5	3,5	5,0	0,13	37,0
0,40	3,5	7,0	7,0	0,27	26,0	10,40	2,0	3,0	4,0	0,13	30,0
0,60	4,0	6,0	8,0	0,40	20,0	10,60	2,5	3,5	5,0	0,13	37,0
0,80	7,0	10,0	14,0	0,73	19,0	10,80	3,0	4,0	6,0	0,13	45,0
1,00	7,0	12,5	14,0	0,80	17,0	11,00	3,0	4,0	6,0	0,33	18,0
1,20	10,0	16,0	20,0	1,07	19,0	11,20	3,0	5,5	6,0	0,20	30,0
1,40	7,0	15,0	14,0	0,93	15,0	11,40	5,5	7,0	11,0	0,53	21,0
1,60	5,0	12,0	10,0	0,80	12,0	11,60	7,0	11,0	14,0	0,53	26,0
1,80	5,0	11,0	10,0	0,60	17,0	11,80	11,0	15,0	22,0	0,53	41,0
2,00	5,5	10,0	11,0	0,67	16,0	12,00	13,0	17,0	26,0	1,20	22,0
2,20	5,0	10,0	10,0	0,67	15,0	12,20	15,0	24,0	30,0	0,93	32,0
2,40	5,0	10,0	10,0	0,60	17,0	12,40	20,0	27,0	40,0	1,20	33,0
2,60	4,5	9,0	9,0	0,60	15,0	12,60	16,0	25,0	32,0	1,20	27,0
2,80	4,5	9,0	9,0	0,53	17,0	12,80	14,0	23,0	28,0	1,60	17,0
3,00	5,0	9,0	10,0	0,53	19,0	13,00	13,0	25,0	26,0	1,47	18,0
3,20	5,0	9,0	10,0	0,53	19,0	13,20	13,0	24,0	26,0	1,40	19,0
3,40	6,0	10,0	12,0	0,60	20,0	13,40	12,5	23,0	25,0	1,47	17,0
3,60	6,5	11,0	13,0	0,53	24,0	13,60	11,0	22,0	22,0	1,47	15,0
3,80	6,0	10,0	12,0	0,53	22,0	13,80	10,0	21,0	20,0	1,20	17,0
4,00	5,0	9,0	10,0	0,53	19,0	14,00	9,0	18,0	18,0	1,07	17,0
4,20	6,0	10,0	12,0	0,53	22,0	14,20	9,0	17,0	18,0	1,07	17,0
4,40	4,0	8,0	8,0	0,40	20,0	14,40	8,0	16,0	16,0	1,07	15,0
4,60	4,0	7,0	8,0	0,40	20,0	14,60	9,0	17,0	18,0	1,07	17,0
4,80	3,0	6,0	6,0	0,27	22,0	14,80	16,0	24,0	32,0	1,07	30,0
5,00	5,0	7,0	10,0	0,33	30,0	15,00	14,0	22,0	28,0	0,93	30,0
5,20	6,5	9,0	13,0	0,40	32,0	15,20	13,0	20,0	26,0	1,07	24,0
5,40	10,0	13,0	20,0	0,40	50,0	15,40	7,0	15,0	14,0	0,80	17,0
5,60	16,0	19,0	32,0	0,40	80,0	15,60	7,0	13,0	14,0	0,67	21,0
5,80	4,0	7,0	8,0	0,53	15,0	15,80	7,0	12,0	14,0	0,67	21,0
6,00	2,0	6,0	4,0	0,20	20,0	16,00	7,0	12,0	14,0	0,93	15,0
6,20	1,5	3,0	3,0	0,13	22,0	16,20	7,0	14,0	14,0	0,80	17,0
6,40	2,0	3,0	4,0	0,13	30,0	16,40	6,0	12,0	12,0	0,73	16,0
6,60	1,5	2,5	3,0	0,13	22,0	16,60	7,5	13,0	15,0	0,60	25,0
6,80	1,5	2,5	3,0	0,13	22,0	16,80	7,5	12,0	15,0	0,80	19,0
7,00	1,5	2,5	3,0	0,13	22,0	17,00	8,0	14,0	16,0	0,93	17,0
7,20	1,5	2,5	3,0	0,13	22,0	17,20	8,0	15,0	16,0	0,80	20,0
7,40	1,5	2,5	3,0	0,07	45,0	17,40	5,0	11,0	10,0	0,40	25,0
7,60	1,5	2,0	3,0	0,13	22,0	17,60	4,0	7,0	8,0	0,67	12,0
7,80	1,5	2,5	3,0	0,13	22,0	17,80	5,0	10,0	10,0	0,87	12,0
8,00	1,5	2,5	3,0	0,13	22,0	18,00	8,5	15,0	17,0	1,07	16,0
8,20	1,5	2,5	3,0	0,07	45,0	18,20	13,0	21,0	26,0	2,00	13,0
8,40	1,5	2,0	3,0	0,13	22,0	18,40	15,0	30,0	30,0	2,00	15,0
8,60	1,5	2,5	3,0	0,13	22,0	18,60	25,0	40,0	50,0	2,80	18,0
8,80	1,5	2,5	3,0	0,13	22,0	18,80	24,0	45,0	48,0	3,33	14,0
9,00	1,5	2,5	3,0	0,13	22,0	19,00	40,0	65,0	80,0	1,33	60,0
9,20	2,0	3,0	4,0	0,13	30,0	19,20	55,0	65,0	110,0	2,00	55,0
9,40	2,0	3,0	4,0	0,13	30,0	19,40	65,0	80,0	130,0	2,67	49,0
9,60	2,0	3,0	4,0	0,13	30,0	19,60	85,0	105,0	170,0	2,00	85,0
9,80	2,0	3,0	4,0	0,13	30,0	19,80	90,0	105,0	180,0	1,47	123,0
10,00	2,0	3,0	4,0	0,13	30,0	20,00	59,0	70,0	118,0	2,00	59,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 16

~~2010496018~~

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,50 m da quota inizio
- pagina : 2

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	-
20,20	100,0	115,0	200,0	2,00	100,0	20,60	115,0	130,0	230,0	—	—
20,40	105,0	120,0	210,0	2,00	105,0						

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
Via Cervara, 101
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PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 17

2010498-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,30 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	10,0	10,0	20,0	1,47	14,0	10,20	3,0	4,0	6,0	0,13	45,0
0,40	11,0	22,0	22,0	0,67	33,0	10,40	3,0	4,0	6,0	0,13	45,0
0,60	15,0	20,0	30,0	1,60	19,0	10,60	3,0	4,0	6,0	0,20	30,0
0,80	6,0	18,0	12,0	0,40	30,0	10,80	3,0	4,5	6,0	0,20	30,0
1,00	13,0	16,0	26,0	0,80	32,0	11,00	2,5	4,0	5,0	0,20	25,0
1,20	6,0	12,0	12,0	1,20	10,0	11,20	3,5	5,0	7,0	0,40	17,0
1,40	9,0	18,0	18,0	0,47	39,0	11,40	6,0	9,0	12,0	0,40	30,0
1,60	3,5	7,0	7,0	0,27	26,0	11,60	9,0	12,0	18,0	1,07	17,0
1,80	3,5	5,5	7,0	0,20	35,0	11,80	14,0	22,0	28,0	1,20	23,0
2,00	3,5	5,0	7,0	0,53	13,0	12,00	15,0	24,0	30,0	1,33	22,0
2,20	5,0	9,0	10,0	0,27	37,0	12,20	16,0	26,0	32,0	1,33	24,0
2,40	3,0	5,0	6,0	0,40	15,0	12,40	14,0	24,0	28,0	1,60	17,0
2,60	4,0	7,0	8,0	0,40	20,0	12,60	12,0	24,0	24,0	1,47	16,0
2,80	6,0	9,0	12,0	0,53	22,0	12,80	11,0	22,0	22,0	2,40	9,0
3,00	5,0	9,0	10,0	0,53	19,0	13,00	14,0	32,0	28,0	1,60	17,0
3,20	9,0	13,0	18,0	0,67	27,0	13,20	18,0	30,0	36,0	1,87	19,0
3,40	6,0	11,0	12,0	0,27	45,0	13,40	16,0	30,0	32,0	1,73	18,0
3,60	5,0	7,0	10,0	0,33	30,0	13,60	15,0	28,0	30,0	1,73	17,0
3,80	4,0	6,5	8,0	0,33	24,0	13,80	17,0	30,0	34,0	2,00	17,0
4,00	3,5	6,0	7,0	0,47	15,0	14,00	15,0	30,0	30,0	1,33	22,0
4,20	4,0	7,5	8,0	0,40	20,0	14,20	14,0	24,0	28,0	1,20	23,0
4,40	4,0	7,0	8,0	0,47	17,0	14,40	12,0	21,0	24,0	1,20	20,0
4,60	6,0	9,5	12,0	0,67	18,0	14,60	12,0	21,0	24,0	1,20	20,0
4,80	5,0	10,0	10,0	0,53	19,0	14,80	10,0	19,0	20,0	1,20	17,0
5,00	6,0	10,0	12,0	0,80	15,0	15,00	10,0	19,0	20,0	1,33	15,0
5,20	6,0	12,0	12,0	0,60	20,0	15,20	12,0	22,0	24,0	2,00	12,0
5,40	3,5	8,0	7,0	0,53	13,0	15,40	35,0	50,0	70,0	2,00	35,0
5,60	8,0	12,0	16,0	0,53	30,0	15,60	40,0	55,0	80,0	1,33	60,0
5,80	11,0	15,0	22,0	0,40	55,0	15,80	12,0	22,0	24,0	0,80	30,0
6,00	6,0	9,0	12,0	0,80	15,0	16,00	10,0	16,0	20,0	0,80	25,0
6,20	9,0	15,0	18,0	0,40	45,0	16,20	10,0	16,0	20,0	0,80	25,0
6,40	9,0	12,0	18,0	0,53	34,0	16,40	7,0	13,0	14,0	1,60	9,0
6,60	2,5	6,5	5,0	0,13	37,0	16,60	4,0	16,0	8,0	1,47	5,0
6,80	2,0	3,0	4,0	0,20	20,0	16,80	11,0	22,0	22,0	1,60	14,0
7,00	2,0	3,5	4,0	0,13	30,0	17,00	10,0	22,0	20,0	1,60	12,0
7,20	2,5	3,5	5,0	0,13	37,0	17,20	15,0	27,0	30,0	1,47	20,0
7,40	3,0	4,0	6,0	0,13	45,0	17,40	15,0	26,0	30,0	0,93	32,0
7,60	2,5	3,5	5,0	0,07	75,0	17,60	6,0	13,0	12,0	0,47	26,0
7,80	3,0	3,5	6,0	0,13	45,0	17,80	4,5	8,0	9,0	0,47	19,0
8,00	3,0	4,0	6,0	0,13	45,0	18,00	5,5	9,0	11,0	0,93	12,0
8,20	2,5	3,5	5,0	0,13	37,0	18,20	10,0	17,0	20,0	1,33	15,0
8,40	2,5	3,5	5,0	0,13	37,0	18,40	15,0	25,0	30,0	1,60	19,0
8,60	2,5	3,5	5,0	0,13	37,0	18,60	15,0	27,0	30,0	1,60	19,0
8,80	3,0	4,0	6,0	0,13	45,0	18,80	15,0	27,0	30,0	1,47	20,0
9,00	2,5	3,5	5,0	0,13	37,0	19,00	12,0	23,0	24,0	1,47	16,0
9,20	3,0	4,0	6,0	0,13	45,0	19,20	15,0	26,0	30,0	1,60	19,0
9,40	3,0	4,0	6,0	0,13	45,0	19,40	18,0	30,0	36,0	1,60	22,0
9,60	2,5	3,5	5,0	0,13	37,0	19,60	18,0	30,0	36,0	2,00	18,0
9,80	3,0	4,0	6,0	0,13	45,0	19,80	20,0	35,0	40,0	2,00	20,0
10,00	3,0	4,0	6,0	0,13	45,0	20,00	20,0	35,0	40,0	2,00	20,0

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

GEO TIRRENO s.r.l.
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PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 17

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,30 m da quota inizio
- pagina : 2

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	-
20,20	30,0	45,0	60,0	1,73	35,0	21,20	75,0	90,0	150,0	1,60	94,0
20,40	32,0	45,0	64,0	2,00	32,0	21,40	88,0	100,0	176,0	1,60	110,0
20,60	35,0	50,0	70,0	1,07	66,0	21,60	100,0	112,0	200,0	2,13	94,0
20,80	45,0	53,0	90,0	0,93	96,0	21,80	120,0	136,0	240,0	—	—
21,00	63,0	70,0	126,0	2,00	63,0						

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

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PROVA PENETROMETRICA STATICA

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 18

2.010495-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,70 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	9,5	9,5	19,0	0,27	71,0	10,20	2,5	4,0	5,0	0,53	9,0
0,40	2,5	4,5	5,0	0,33	15,0	10,40	6,0	10,0	12,0	0,53	22,0
0,60	6,5	9,0	13,0	1,00	13,0	10,60	10,0	14,0	20,0	1,07	19,0
0,80	6,5	14,0	13,0	1,07	12,0	10,80	10,0	18,0	20,0	0,87	23,0
1,00	8,0	16,0	16,0	0,80	20,0	11,00	12,5	19,0	25,0	1,00	25,0
1,20	9,0	15,0	18,0	1,13	16,0	11,20	12,5	20,0	25,0	0,87	29,0
1,40	7,5	16,0	15,0	1,07	14,0	11,40	12,5	19,0	25,0	0,93	27,0
1,60	6,0	14,0	12,0	1,20	10,0	11,60	13,0	20,0	26,0	1,07	24,0
1,80	7,0	16,0	14,0	0,93	15,0	11,80	12,0	20,0	24,0	1,27	19,0
2,00	8,0	15,0	16,0	0,93	17,0	12,00	11,5	21,0	23,0	0,93	25,0
2,20	7,0	14,0	14,0	0,93	15,0	12,20	14,0	21,0	28,0	1,07	26,0
2,40	8,0	15,0	16,0	0,80	20,0	12,40	13,0	21,0	26,0	1,33	19,0
2,60	10,0	16,0	20,0	0,80	25,0	12,60	12,0	22,0	24,0	1,33	18,0
2,80	9,0	15,0	18,0	0,87	21,0	12,80	12,0	22,0	24,0	1,33	18,0
3,00	7,5	14,0	15,0	0,67	22,0	13,00	13,0	23,0	26,0	1,20	22,0
3,20	7,0	12,0	14,0	0,67	21,0	13,20	15,0	24,0	30,0	1,07	28,0
3,40	6,0	11,0	12,0	0,67	18,0	13,40	14,0	22,0	28,0	1,07	26,0
3,60	5,0	10,0	10,0	0,53	19,0	13,60	15,0	23,0	30,0	0,80	37,0
3,80	7,0	11,0	14,0	0,73	19,0	13,80	14,0	20,0	28,0	0,80	35,0
4,00	7,0	12,5	14,0	0,93	15,0	14,00	13,0	19,0	26,0	0,67	39,0
4,20	7,5	14,5	15,0	0,93	16,0	14,20	20,0	25,0	40,0	0,53	75,0
4,40	6,0	13,0	12,0	0,67	18,0	14,40	19,0	23,0	38,0	0,67	57,0
4,60	5,0	10,0	10,0	0,40	25,0	14,60	20,0	25,0	40,0	0,53	75,0
4,80	4,0	7,0	8,0	0,67	12,0	14,80	18,0	22,0	36,0	0,80	45,0
5,00	8,0	13,0	16,0	0,80	20,0	15,00	14,0	20,0	28,0	0,80	35,0
5,20	10,0	16,0	20,0	0,53	37,0	15,20	16,0	22,0	32,0	0,67	48,0
5,40	10,0	14,0	20,0	0,40	50,0	15,40	15,0	20,0	30,0	0,80	37,0
5,60	8,0	11,0	16,0	0,27	60,0	15,60	10,0	16,0	20,0	0,93	21,0
5,80	8,0	10,0	16,0	0,60	27,0	15,80	13,0	20,0	26,0	0,67	39,0
6,00	2,5	7,0	5,0	0,20	25,0	16,00	17,0	22,0	34,0	1,33	25,0
6,20	2,0	3,5	4,0	0,13	30,0	16,20	25,0	35,0	50,0	0,93	54,0
6,40	2,5	3,5	5,0	0,07	75,0	16,40	17,0	24,0	34,0	0,80	42,0
6,60	3,5	4,0	7,0	0,20	35,0	16,60	17,0	23,0	34,0	0,93	36,0
6,80	2,5	4,0	5,0	0,13	37,0	16,80	15,0	22,0	30,0	0,93	32,0
7,00	2,5	3,5	5,0	0,13	37,0	17,00	14,0	21,0	28,0	0,93	30,0
7,20	2,5	3,5	5,0	0,13	37,0	17,20	15,0	22,0	30,0	0,93	32,0
7,40	2,5	3,5	5,0	0,13	37,0	17,40	16,0	23,0	32,0	0,67	48,0
7,60	3,0	4,0	6,0	0,20	30,0	17,60	17,0	22,0	34,0	0,53	64,0
7,80	2,5	4,0	5,0	0,13	37,0	17,80	18,0	22,0	36,0	0,53	67,0
8,00	2,5	3,5	5,0	0,13	37,0	18,00	19,0	23,0	38,0	1,07	36,0
8,20	2,5	3,5	5,0	0,13	37,0	18,20	16,0	24,0	32,0	1,60	20,0
8,40	3,0	4,0	6,0	0,20	30,0	18,40	20,0	32,0	40,0	1,20	33,0
8,60	3,0	4,5	6,0	0,13	45,0	18,60	18,0	27,0	36,0	1,60	22,0
8,80	2,5	3,5	5,0	0,13	37,0	18,80	18,0	30,0	36,0	1,60	22,0
9,00	2,0	3,0	4,0	0,13	30,0	19,00	16,0	28,0	32,0	1,47	22,0
9,20	3,0	4,0	6,0	0,13	45,0	19,20	24,0	35,0	48,0	1,07	45,0
9,40	2,5	3,5	5,0	0,20	25,0	19,40	20,0	28,0	40,0	0,93	43,0
9,60	2,5	4,0	5,0	0,13	37,0	19,60	23,0	30,0	46,0	1,33	34,0
9,80	2,5	3,5	5,0	0,13	37,0	19,80	25,0	35,0	50,0	1,33	37,0
10,00	3,0	4,0	6,0	0,20	30,0	20,00	25,0	35,0	50,0	1,07	47,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIPRENO S.R.L.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

PROVA PENETROMETRICA STATICA LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 18

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,70 m da quota inizio
 - pagina : 2

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	-
20,20	22,0	30,0	44,0	1,60	27,0	21,80	42,0	50,0	84,0	0,93	90,0
20,40	26,0	38,0	52,0	1,87	28,0	22,00	35,0	42,0	70,0	0,93	75,0
20,60	26,0	40,0	52,0	2,00	26,0	22,20	73,0	80,0	146,0	1,73	84,0
20,80	25,0	40,0	50,0	1,07	47,0	22,40	92,0	105,0	184,0	1,73	106,0
21,00	30,0	38,0	60,0	1,07	56,0	22,60	100,0	113,0	200,0	1,87	107,0
21,20	42,0	50,0	84,0	1,47	57,0	22,80	120,0	134,0	240,0	2,67	90,0
21,40	59,0	70,0	118,0	1,07	111,0	23,00	120,0	140,0	240,0	—	—
21,60	70,0	78,0	140,0	1,07	131,0						

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIBENO s.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

PROVA PENETROMETRICA STATICA

CPT 19

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

2.610498-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,80 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	3,0	6,0	0,27	22,0	10,20	3,0	4,5	6,0	0,40	15,0
0,40	3,0	5,0	6,0	0,67	9,0	10,40	5,0	8,0	10,0	0,40	25,0
0,60	6,0	11,0	12,0	1,07	11,0	10,60	10,0	13,0	20,0	0,40	50,0
0,80	7,0	15,0	14,0	1,07	13,0	10,80	11,0	14,0	22,0	0,67	33,0
1,00	7,0	15,0	14,0	1,20	12,0	11,00	13,0	18,0	26,0	0,80	32,0
1,20	6,0	15,0	12,0	0,93	13,0	11,20	13,0	19,0	26,0	0,80	32,0
1,40	7,0	14,0	14,0	1,07	13,0	11,40	12,0	18,0	24,0	0,80	30,0
1,60	7,0	15,0	14,0	0,93	15,0	11,60	13,0	19,0	26,0	0,80	32,0
1,80	8,0	15,0	16,0	0,87	18,0	11,80	12,0	18,0	24,0	1,07	22,0
2,00	6,5	13,0	13,0	0,73	18,0	12,00	12,0	20,0	24,0	1,07	22,0
2,20	5,5	11,0	11,0	0,53	21,0	12,20	14,0	22,0	28,0	1,07	26,0
2,40	6,0	10,0	12,0	0,60	20,0	12,40	13,0	21,0	26,0	1,20	22,0
2,60	5,5	10,0	11,0	0,67	16,0	12,60	13,0	22,0	26,0	1,20	22,0
2,80	5,0	10,0	10,0	0,67	15,0	12,80	11,0	20,0	22,0	1,33	16,0
3,00	5,5	10,5	11,0	0,67	16,0	13,00	13,0	23,0	26,0	1,33	19,0
3,20	6,0	11,0	12,0	0,53	22,0	13,20	14,0	24,0	28,0	1,33	21,0
3,40	8,0	12,0	16,0	0,67	24,0	13,40	15,0	25,0	30,0	1,07	28,0
3,60	9,0	14,0	18,0	0,73	25,0	13,60	15,0	23,0	30,0	0,93	32,0
3,80	9,5	15,0	19,0	0,80	24,0	13,80	14,0	21,0	28,0	1,07	26,0
4,00	8,0	14,0	16,0	0,87	18,0	14,00	14,0	22,0	28,0	1,07	26,0
4,20	6,5	13,0	13,0	0,73	18,0	14,20	18,0	26,0	36,0	0,80	45,0
4,40	6,5	12,0	13,0	0,53	24,0	14,40	19,0	25,0	38,0	0,80	47,0
4,60	6,0	10,0	12,0	0,53	22,0	14,60	19,0	25,0	38,0	0,93	41,0
4,80	3,5	7,5	7,0	0,27	26,0	14,80	17,0	24,0	34,0	0,93	36,0
5,00	6,0	8,0	12,0	0,40	30,0	15,00	16,0	23,0	32,0	0,80	40,0
5,20	3,5	6,5	7,0	0,27	26,0	15,20	16,0	22,0	32,0	0,93	34,0
5,40	14,0	16,0	28,0	0,33	84,0	15,40	16,0	23,0	32,0	0,67	48,0
5,60	3,5	6,0	7,0	0,13	52,0	15,60	15,0	20,0	30,0	0,80	37,0
5,80	2,5	3,5	5,0	0,13	37,0	15,80	14,0	20,0	28,0	0,67	42,0
6,00	2,5	3,5	5,0	0,13	37,0	16,00	13,0	18,0	26,0	0,67	39,0
6,20	2,0	3,0	4,0	0,13	30,0	16,20	17,0	22,0	34,0	0,80	42,0
6,40	2,5	3,5	5,0	0,13	37,0	16,40	18,0	24,0	36,0	0,80	45,0
6,60	3,0	4,0	6,0	0,13	45,0	16,60	17,0	23,0	34,0	0,80	42,0
6,80	2,5	3,5	5,0	0,13	37,0	16,80	16,0	22,0	32,0	0,80	40,0
7,00	2,0	3,0	4,0	0,13	30,0	17,00	14,0	20,0	28,0	0,93	30,0
7,20	2,5	3,5	5,0	0,13	37,0	17,20	15,0	22,0	30,0	0,93	32,0
7,40	2,0	3,0	4,0	0,13	30,0	17,40	16,0	23,0	32,0	0,80	40,0
7,60	2,5	3,5	5,0	0,13	37,0	17,60	16,0	22,0	32,0	0,93	34,0
7,80	2,5	3,5	5,0	0,13	37,0	17,80	17,0	24,0	34,0	0,80	42,0
8,00	3,5	4,5	7,0	0,20	35,0	18,00	18,0	24,0	36,0	0,67	54,0
8,20	3,5	5,0	7,0	0,13	52,0	18,20	19,0	24,0	38,0	0,80	47,0
8,40	2,5	3,5	5,0	0,13	37,0	18,40	16,0	22,0	32,0	0,67	48,0
8,60	3,0	4,0	6,0	0,13	45,0	18,60	18,0	23,0	36,0	0,80	45,0
8,80	3,5	4,5	7,0	0,13	52,0	18,80	20,0	26,0	40,0	0,93	43,0
9,00	3,0	4,0	6,0	0,20	30,0	19,00	18,0	25,0	36,0	1,07	34,0
9,20	3,5	5,0	7,0	0,13	52,0	19,20	16,0	24,0	32,0	1,07	30,0
9,40	3,0	4,0	6,0	0,13	45,0	19,40	20,0	28,0	40,0	0,67	60,0
9,60	3,0	4,0	6,0	0,20	30,0	19,60	21,0	26,0	42,0	0,80	52,0
9,80	3,5	5,0	7,0	0,27	26,0	19,80	22,0	28,0	44,0	0,80	55,0
10,00	5,0	7,0	10,0	0,20	50,0	20,00	22,0	28,0	44,0	0,93	47,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
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Part. IVA 00713690451

PROVA PENETROMETRICA STATICA

LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 19

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,80 m da quota inizio
 - pagina : 2

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	-
20,20	23,0	30,0	46,0	1,47	31,0	21,80	26,0	35,0	52,0	1,33	39,0
20,40	24,0	35,0	48,0	1,47	33,0	22,00	30,0	40,0	60,0	0,80	75,0
20,60	24,0	35,0	48,0	1,60	30,0	22,20	39,0	45,0	78,0	1,07	73,0
20,80	26,0	38,0	52,0	1,60	32,0	22,40	35,0	43,0	70,0	0,93	75,0
21,00	30,0	42,0	60,0	2,00	30,0	22,60	48,0	55,0	96,0	1,07	90,0
21,20	30,0	45,0	60,0	0,93	64,0	22,80	62,0	70,0	124,0	1,07	116,0
21,40	28,0	35,0	56,0	0,80	70,0	23,00	85,0	93,0	170,0	2,00	85,0
21,60	26,0	32,0	52,0	1,20	43,0	23,20	100,0	115,0	200,0	—	—

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
 - COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

GEO TIRRENO s.r.l.
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PROVA PENETROMETRICA STATICA
LETTURE DI CAMPAGNA / VALORI DI RESISTENZA

CPT 20

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 4,00 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	3,0	3,0	6,0	0,40	15,0	10,20	7,5	14,0	15,0	1,13	13,0
0,40	5,0	8,0	10,0	0,67	15,0	10,40	9,5	18,0	19,0	1,20	16,0
0,60	5,0	10,0	10,0	0,73	14,0	10,60	8,0	17,0	16,0	1,20	13,0
0,80	7,5	13,0	15,0	0,93	16,0	10,80	10,0	19,0	20,0	1,07	19,0
1,00	9,0	16,0	18,0	0,80	22,0	11,00	11,0	19,0	22,0	1,20	18,0
1,20	10,0	16,0	20,0	0,93	21,0	11,20	11,0	20,0	22,0	1,27	17,0
1,40	11,0	18,0	22,0	1,20	18,0	11,40	10,5	20,0	21,0	1,20	17,0
1,60	10,0	19,0	20,0	1,00	20,0	11,60	10,5	19,5	21,0	1,20	17,0
1,80	7,5	15,0	15,0	1,00	15,0	11,80	11,0	20,0	22,0	1,20	18,0
2,00	6,5	14,0	13,0	1,00	13,0	12,00	11,0	20,0	22,0	1,07	21,0
2,20	6,5	14,0	13,0	0,93	14,0	12,20	12,0	20,0	24,0	1,20	20,0
2,40	6,0	13,0	12,0	0,93	13,0	12,40	13,0	22,0	26,0	1,20	22,0
2,60	6,0	13,0	12,0	0,80	15,0	12,60	11,0	20,0	22,0	1,07	21,0
2,80	7,5	13,5	15,0	0,87	17,0	12,80	12,0	20,0	24,0	1,07	22,0
3,00	8,0	14,5	16,0	0,93	17,0	13,00	13,0	21,0	26,0	1,20	22,0
3,20	8,0	15,0	16,0	1,07	15,0	13,20	13,0	22,0	26,0	1,07	24,0
3,40	7,0	15,0	14,0	0,93	15,0	13,40	14,0	22,0	28,0	1,07	26,0
3,60	5,0	12,0	10,0	1,00	10,0	13,60	15,0	23,0	30,0	1,07	28,0
3,80	4,5	12,0	9,0	0,67	13,0	13,80	15,0	23,0	30,0	0,80	37,0
4,00	5,0	10,0	10,0	0,53	19,0	14,00	14,0	20,0	28,0	1,07	26,0
4,20	6,0	10,0	12,0	0,67	18,0	14,20	16,0	24,0	32,0	0,93	34,0
4,40	5,0	10,0	10,0	0,47	21,0	14,40	16,0	23,0	32,0	0,93	34,0
4,60	4,5	8,0	9,0	0,47	19,0	14,60	17,0	24,0	34,0	0,93	36,0
4,80	3,5	7,0	7,0	0,40	17,0	14,80	18,0	25,0	36,0	0,80	45,0
5,00	3,0	6,0	6,0	0,40	15,0	15,00	15,0	21,0	30,0	0,93	32,0
5,20	3,0	6,0	6,0	0,40	15,0	15,20	14,0	21,0	28,0	0,67	42,0
5,40	7,0	10,0	14,0	0,27	52,0	15,40	14,0	19,0	28,0	0,80	35,0
5,60	4,0	6,0	8,0	0,20	40,0	15,60	14,0	20,0	28,0	0,67	42,0
5,80	3,5	5,0	7,0	0,27	26,0	15,80	15,0	20,0	30,0	0,67	45,0
6,00	2,5	4,5	5,0	0,20	25,0	16,00	13,0	18,0	26,0	0,53	49,0
6,20	2,5	4,0	5,0	0,20	25,0	16,20	12,0	16,0	24,0	0,67	36,0
6,40	2,5	4,0	5,0	0,20	25,0	16,40	12,0	17,0	24,0	0,67	36,0
6,60	3,0	4,5	6,0	0,13	45,0	16,60	13,0	18,0	26,0	0,80	32,0
6,80	3,5	4,5	7,0	0,20	35,0	16,80	14,0	20,0	28,0	0,80	35,0
7,00	2,5	4,0	5,0	0,13	37,0	17,00	14,0	20,0	28,0	0,80	35,0
7,20	3,0	4,0	6,0	0,13	45,0	17,20	16,0	22,0	32,0	0,93	34,0
7,40	2,5	3,5	5,0	0,13	37,0	17,40	16,0	23,0	32,0	0,93	34,0
7,60	2,5	3,5	5,0	0,13	37,0	17,60	16,0	23,0	32,0	0,67	48,0
7,80	3,0	4,0	6,0	0,13	45,0	17,80	17,0	22,0	34,0	0,53	64,0
8,00	3,0	4,0	6,0	0,20	30,0	18,00	18,0	22,0	36,0	0,67	54,0
8,20	2,5	4,0	5,0	0,20	25,0	18,20	19,0	24,0	38,0	0,53	71,0
8,40	3,0	4,5	6,0	0,13	45,0	18,40	19,0	23,0	38,0	0,80	47,0
8,60	2,5	3,5	5,0	0,13	37,0	18,60	18,0	24,0	36,0	0,80	45,0
8,80	2,5	3,5	5,0	0,13	37,0	18,80	16,0	22,0	32,0	1,07	30,0
9,00	2,5	3,5	5,0	0,13	37,0	19,00	16,0	24,0	32,0	1,07	30,0
9,20	2,5	3,5	5,0	0,13	37,0	19,20	18,0	26,0	36,0	1,60	22,0
9,40	2,0	3,0	4,0	0,13	30,0	19,40	18,0	30,0	36,0	1,60	22,0
9,60	2,5	3,5	5,0	0,13	37,0	19,60	16,0	28,0	32,0	1,47	22,0
9,80	3,0	4,0	6,0	0,40	15,0	19,80	16,0	27,0	32,0	1,60	20,0
10,00	6,0	9,0	12,0	0,87	14,0	20,00	18,0	30,0	36,0	1,33	27,0

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

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Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

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

CPT 20

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 4,00 m da quota inizio
- pagina : 2

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 -
20,20	20,0	30,0	40,0	1,33	30,0	22,00	30,0	45,0	60,0	1,73	35,0
20,40	18,0	28,0	36,0	1,33	27,0	22,20	32,0	45,0	64,0	1,60	40,0
20,60	18,0	28,0	36,0	1,33	27,0	22,40	30,0	42,0	60,0	1,33	45,0
20,80	20,0	30,0	40,0	1,07	37,0	22,60	28,0	38,0	56,0	2,00	28,0
21,00	22,0	30,0	44,0	1,73	25,0	22,80	35,0	50,0	70,0	1,73	40,0
21,20	22,0	35,0	44,0	1,47	30,0	23,00	57,0	70,0	114,0	1,07	107,0
21,40	24,0	35,0	48,0	1,60	30,0	23,20	72,0	80,0	144,0	2,00	72,0
21,60	26,0	38,0	52,0	1,87	28,0	23,40	100,0	115,0	200,0	---	---
21,80	26,0	40,0	52,0	2,00	26,0						

- PENETROMETRO STATICO tipo GOUDA da 20 t - (con anello allargatore) -
- COSTANTE DI TRASFORMAZIONE Ct = 20 - 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)

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Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

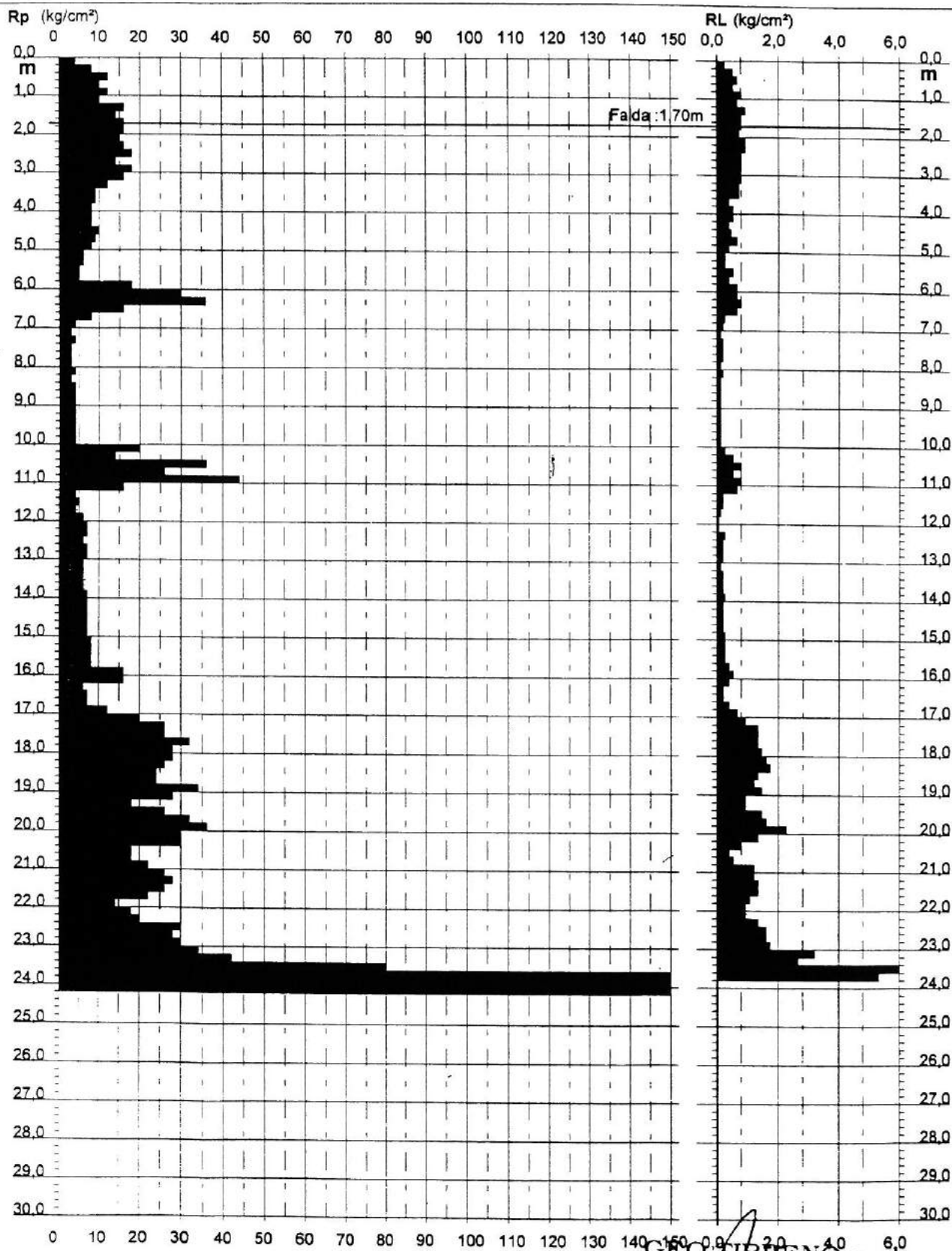
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,70 m da quota inizio
- scala vert.: 1 : 150



GEO TIRRENO S.R.L.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

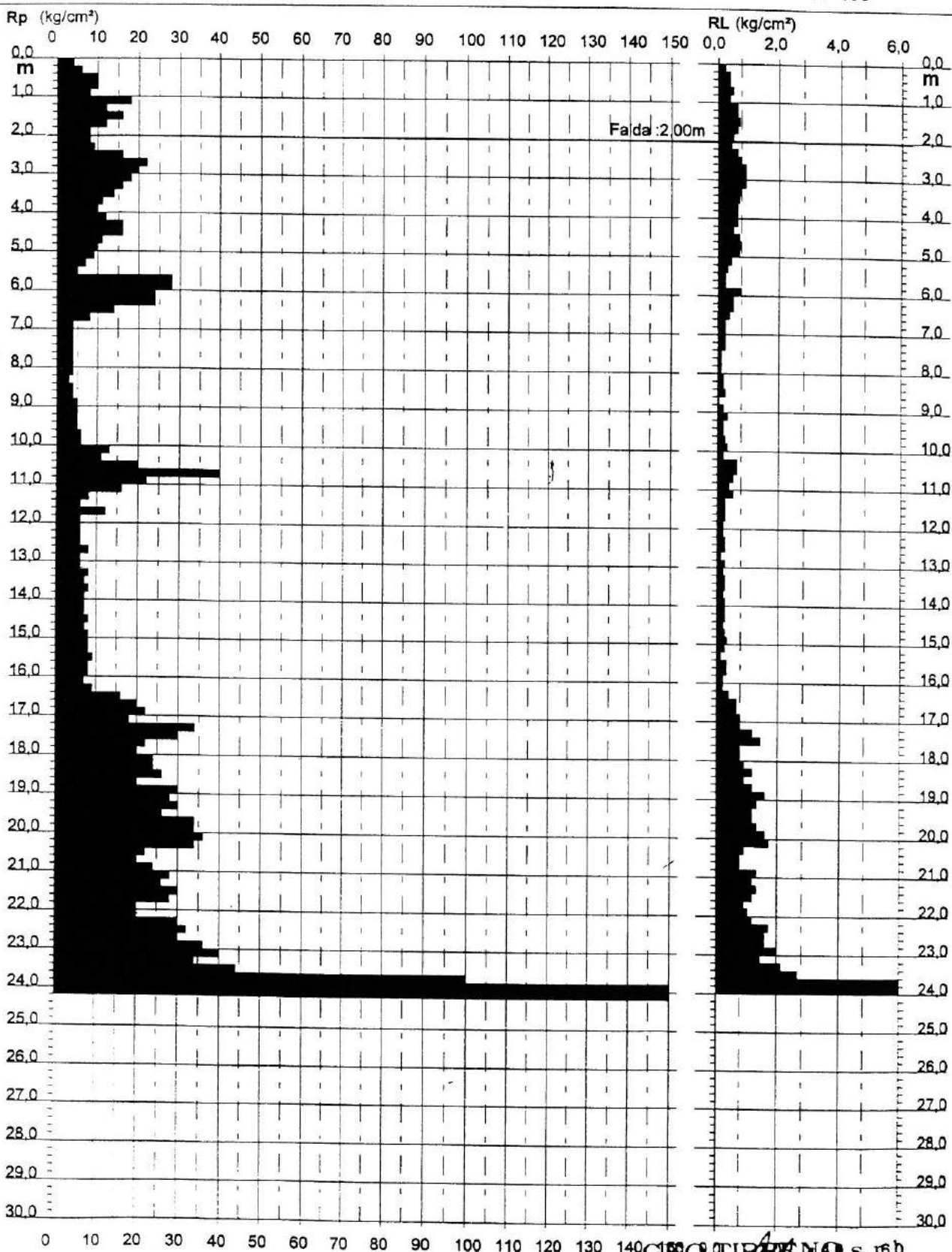
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 2

2.010496.018

- committente : Studio Geoprogetti e Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,00 m da quota inizio
- scala vert.: 1 : 150



GEO TIRRENO S.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

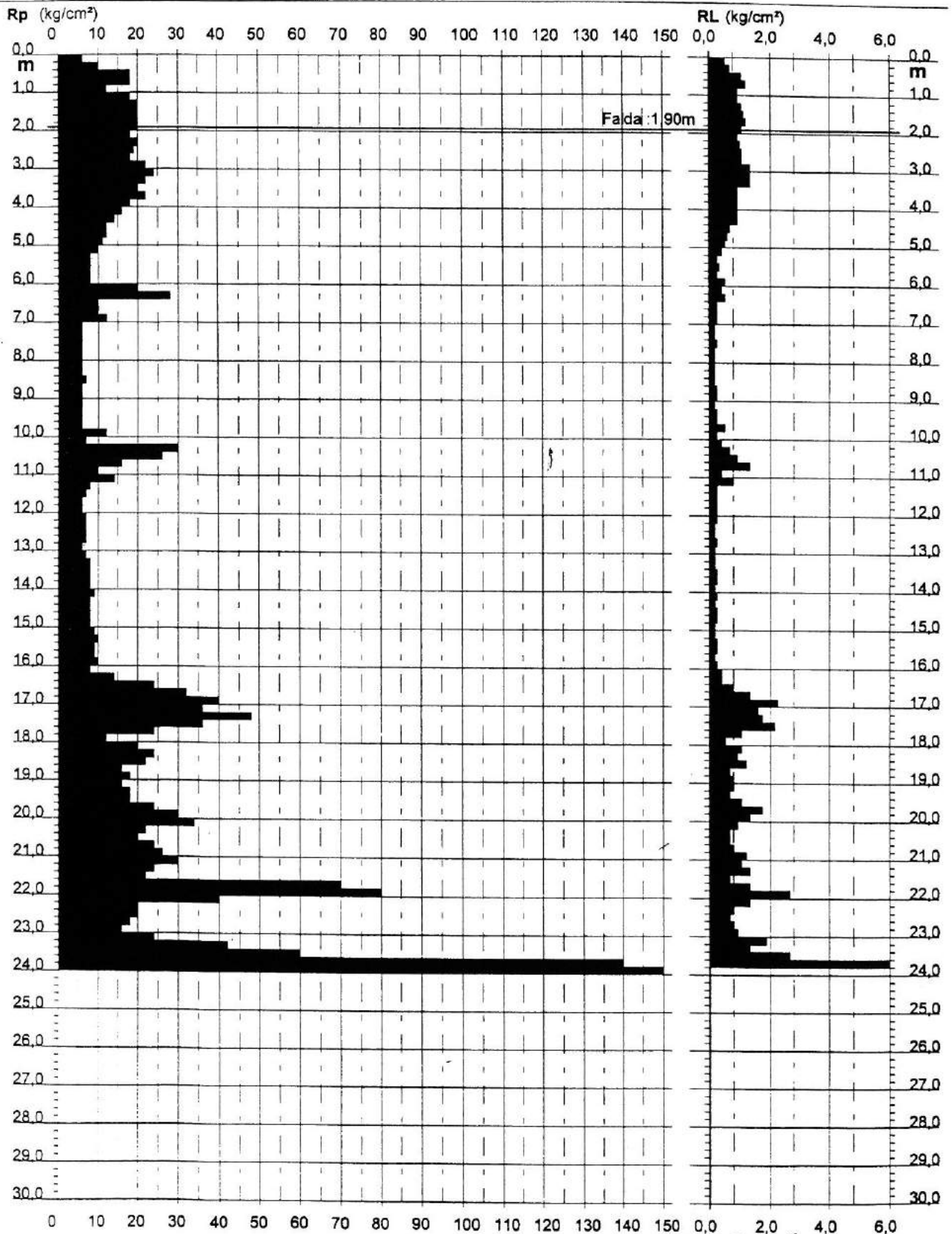
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 3

2012/193-016

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,90 m da quota inizio
- scala vert.: 1 : 150



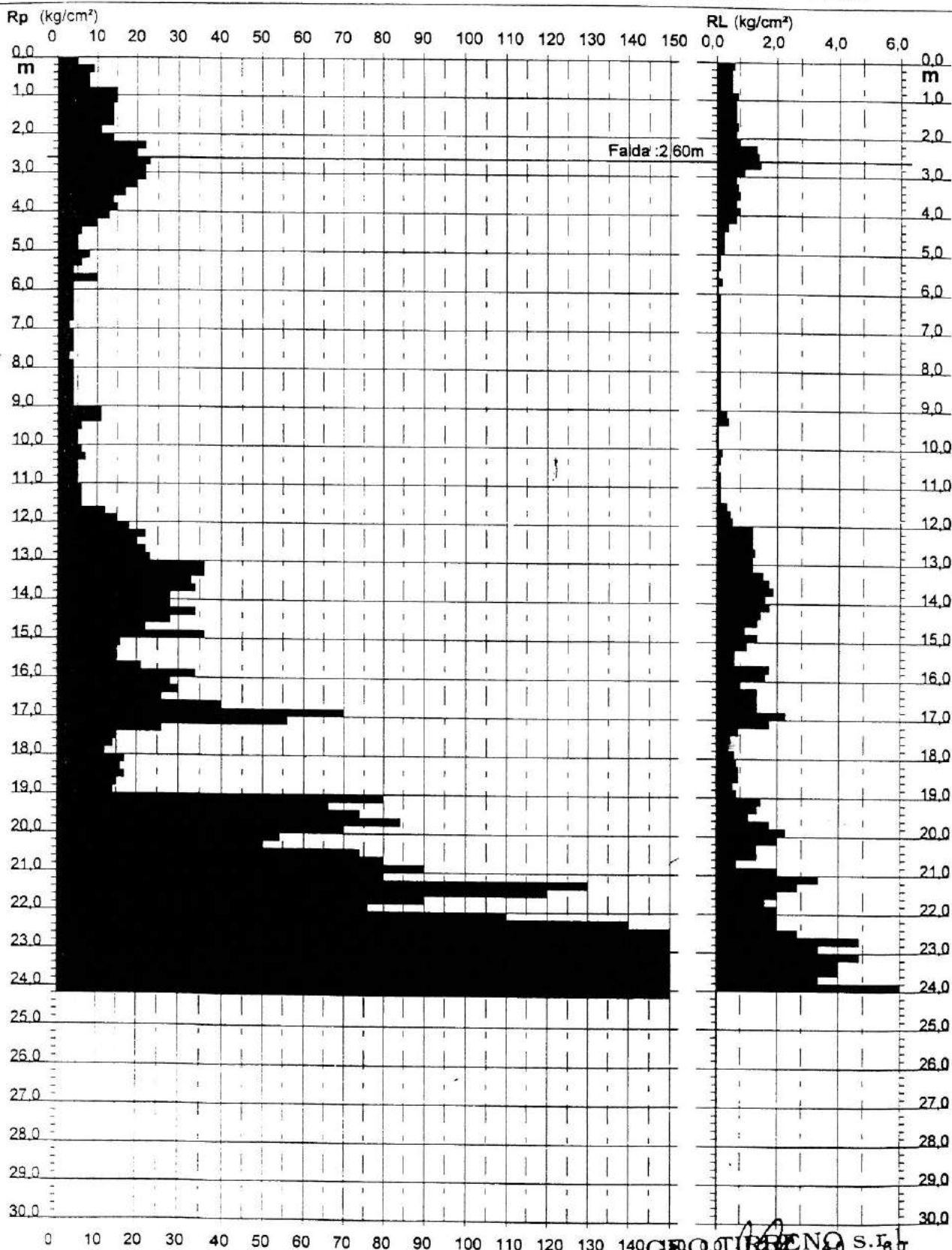
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 4

2.010495-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,60 m da quota inizio
- scala vert.: 1 : 150



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Via Cervara, 101
54100 MASSA
Part IVA 0713690451

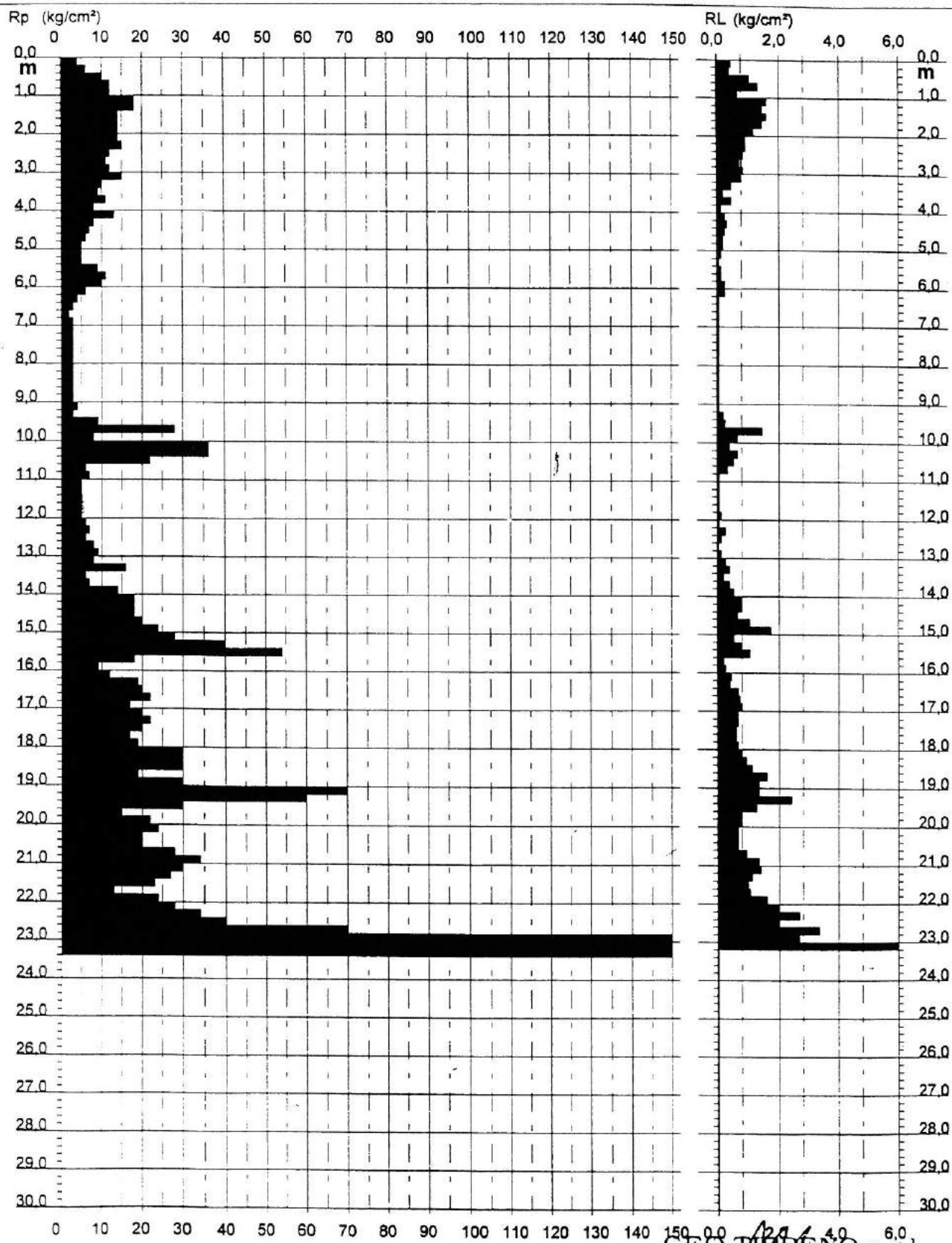
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 5

2-010498-016

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Oisa e di Cascina)

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - scala vert.: 1 : 150



GEO TIRRENO s.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

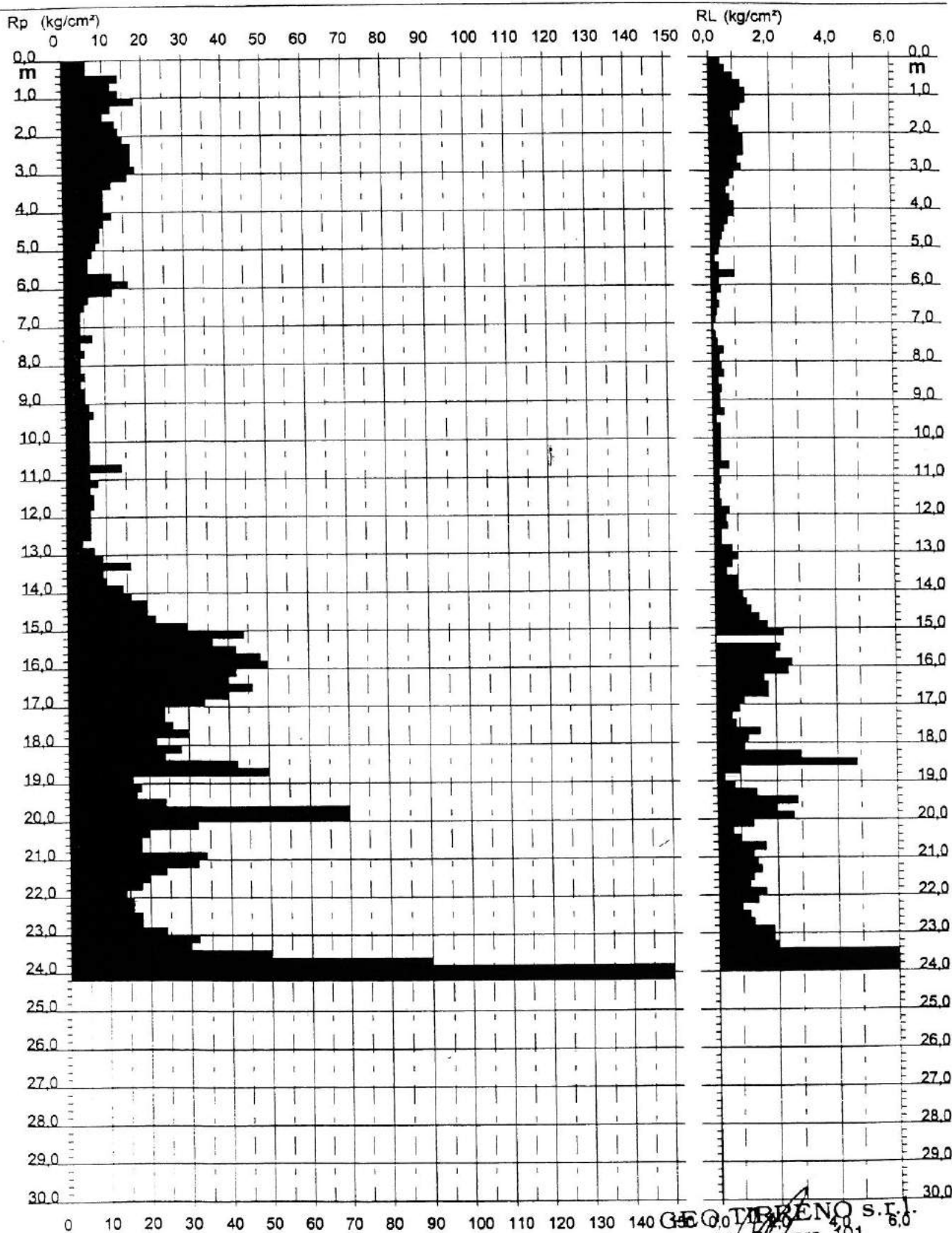
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 6

2010496-019

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- scala vert.: 1 : 150



Geo IRRENO S.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

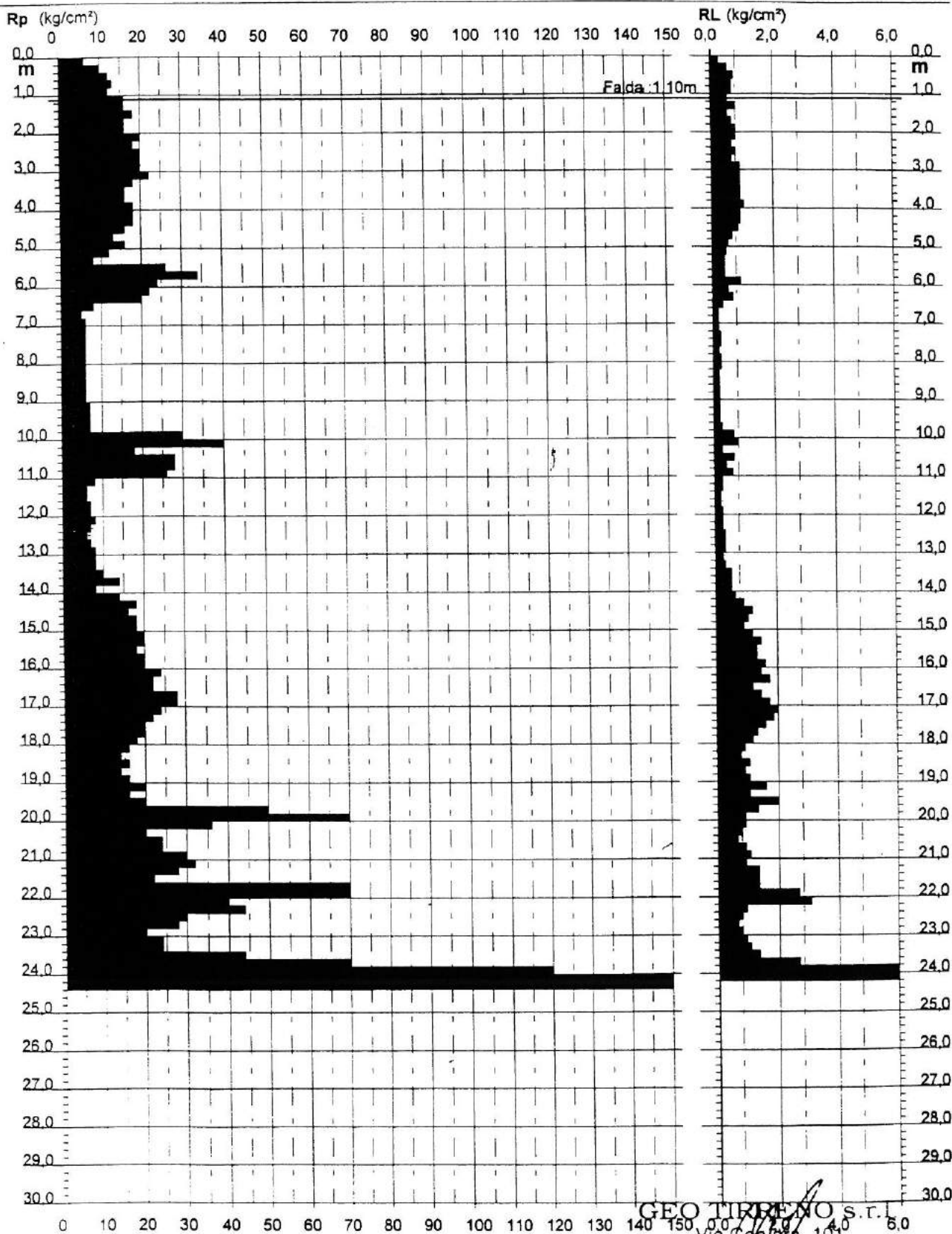
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 7

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,10 m da quota inizio
- scala vert.: 1 : 150



GEO TIRRENO S.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA/0071369045

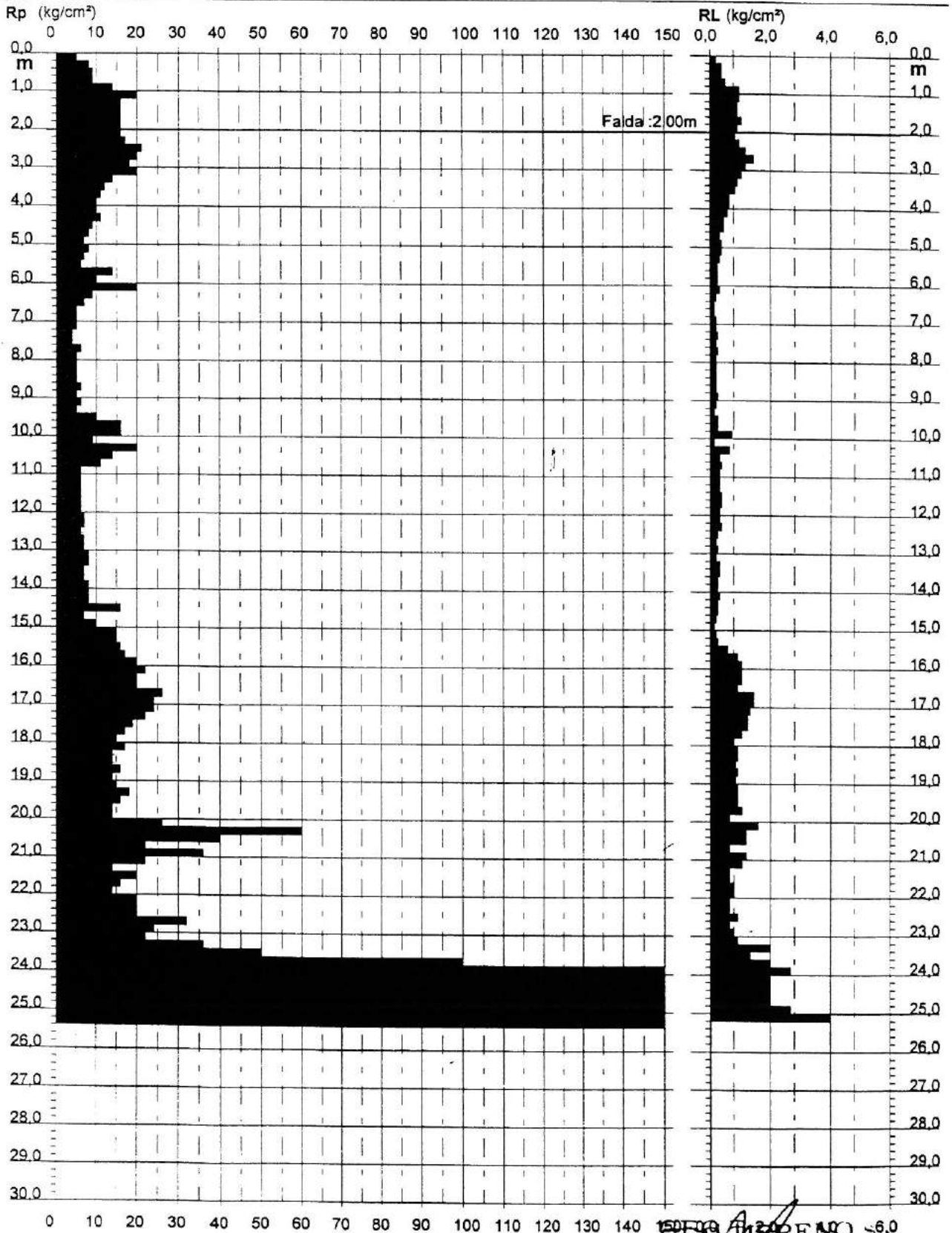
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 8

2.010498-018

- committente : Studio geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,00 m da quota inizio
- scala vert.: 1 : 150



GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690118

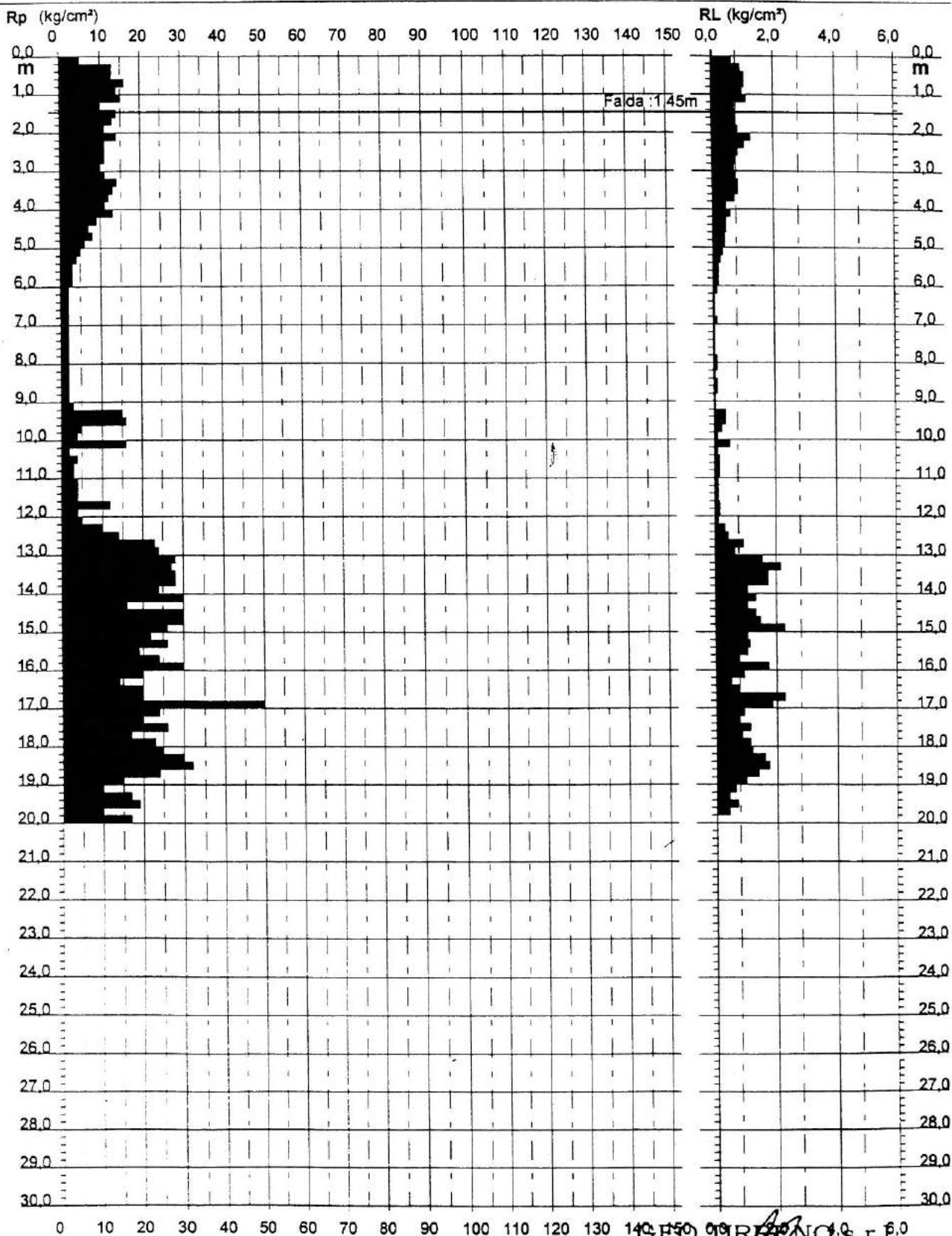
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 9

2010495-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,45 m da quota inizio
- scala vert.: 1 : 150



GEO TIRRENO S.R.L.
Via Cervara, 101
54100 MASSA
Part. IVA n° 00713690451

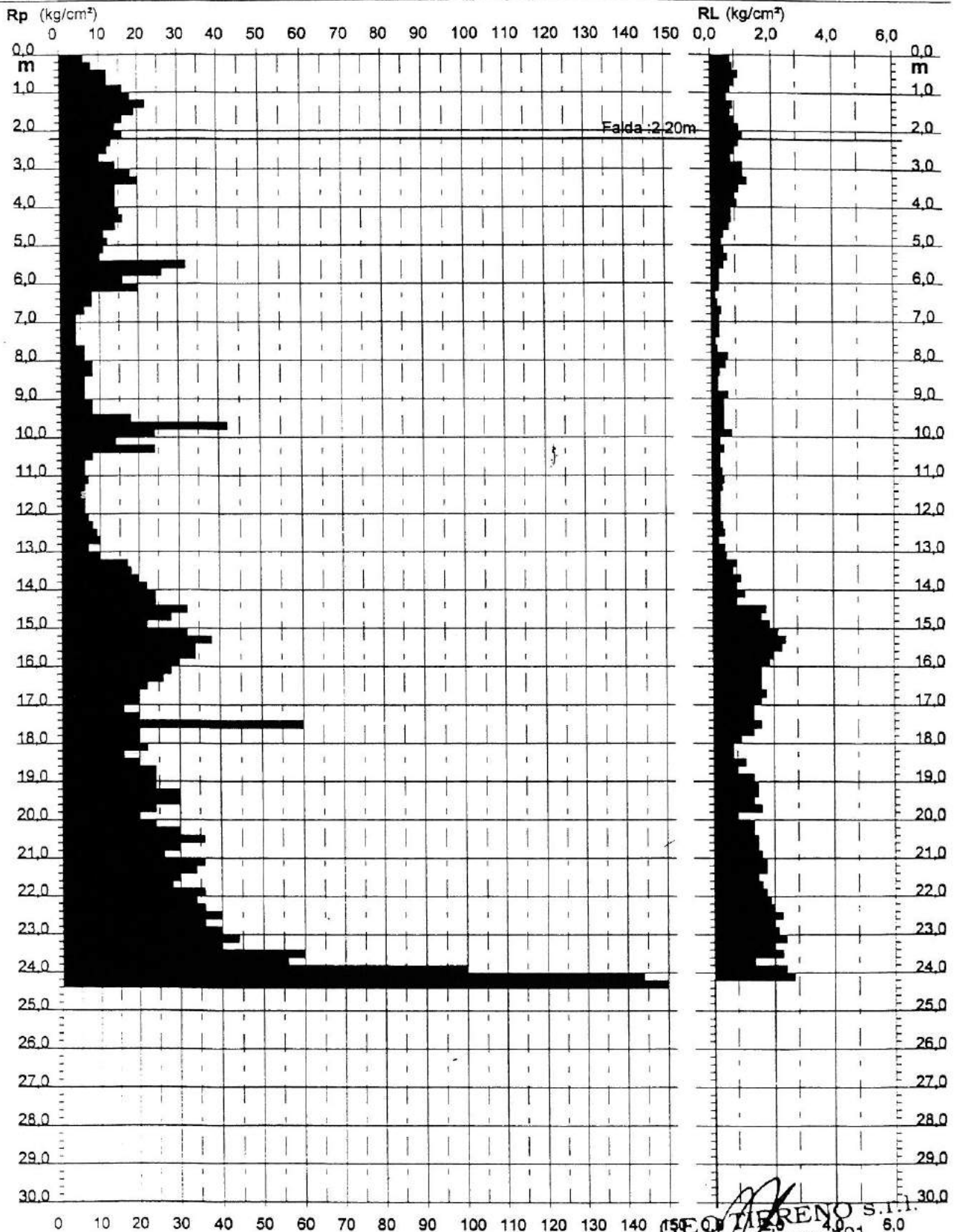
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 10

2.11.2002

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,20 m da quota inizio
- scala vert. : 1 : 150



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Via Cervara, 101
54100 MASSA
part. IVA 0071369045

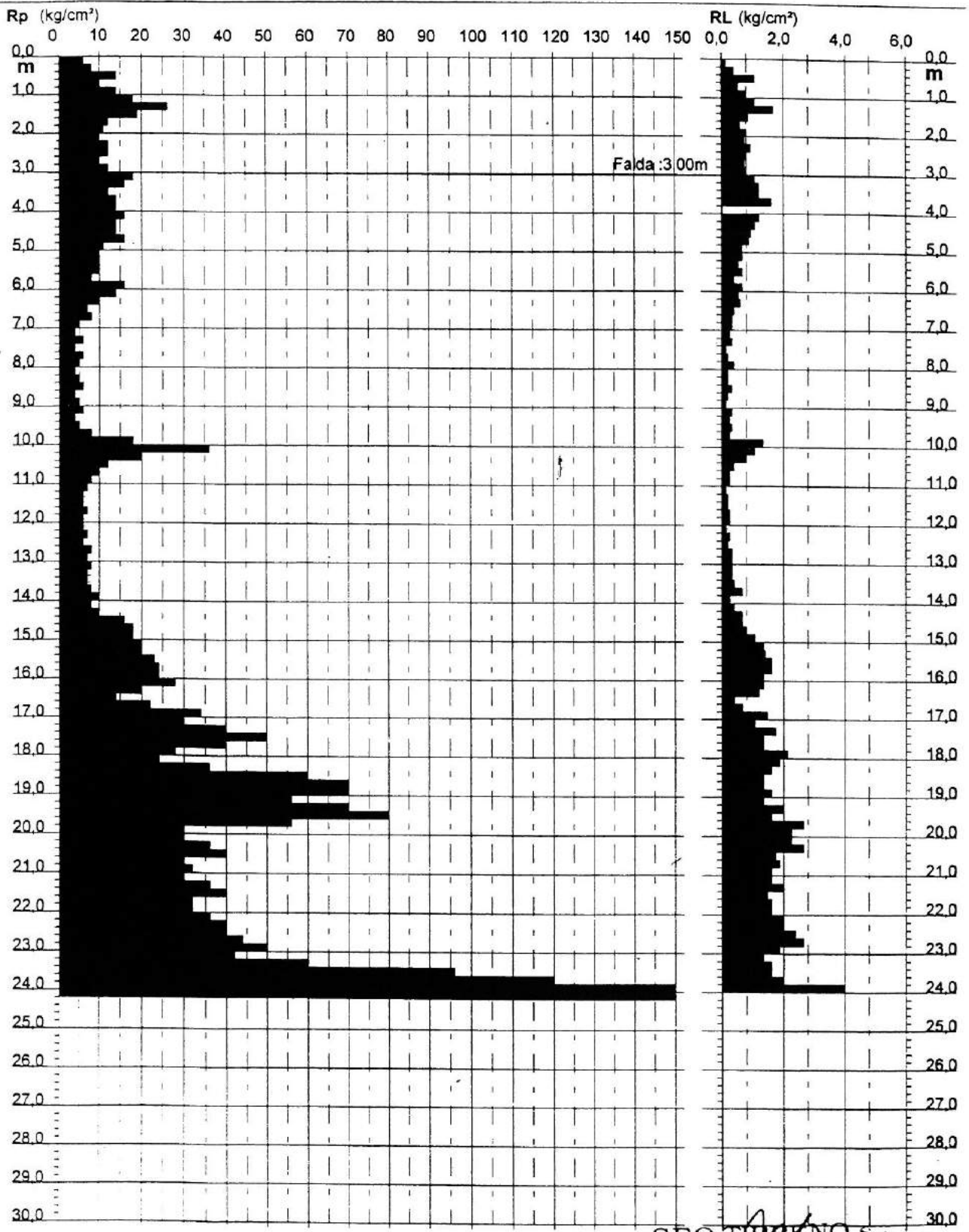
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 11

2010495-013

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 3,00 m da quota inizio
- scala vert.: 1 : 150



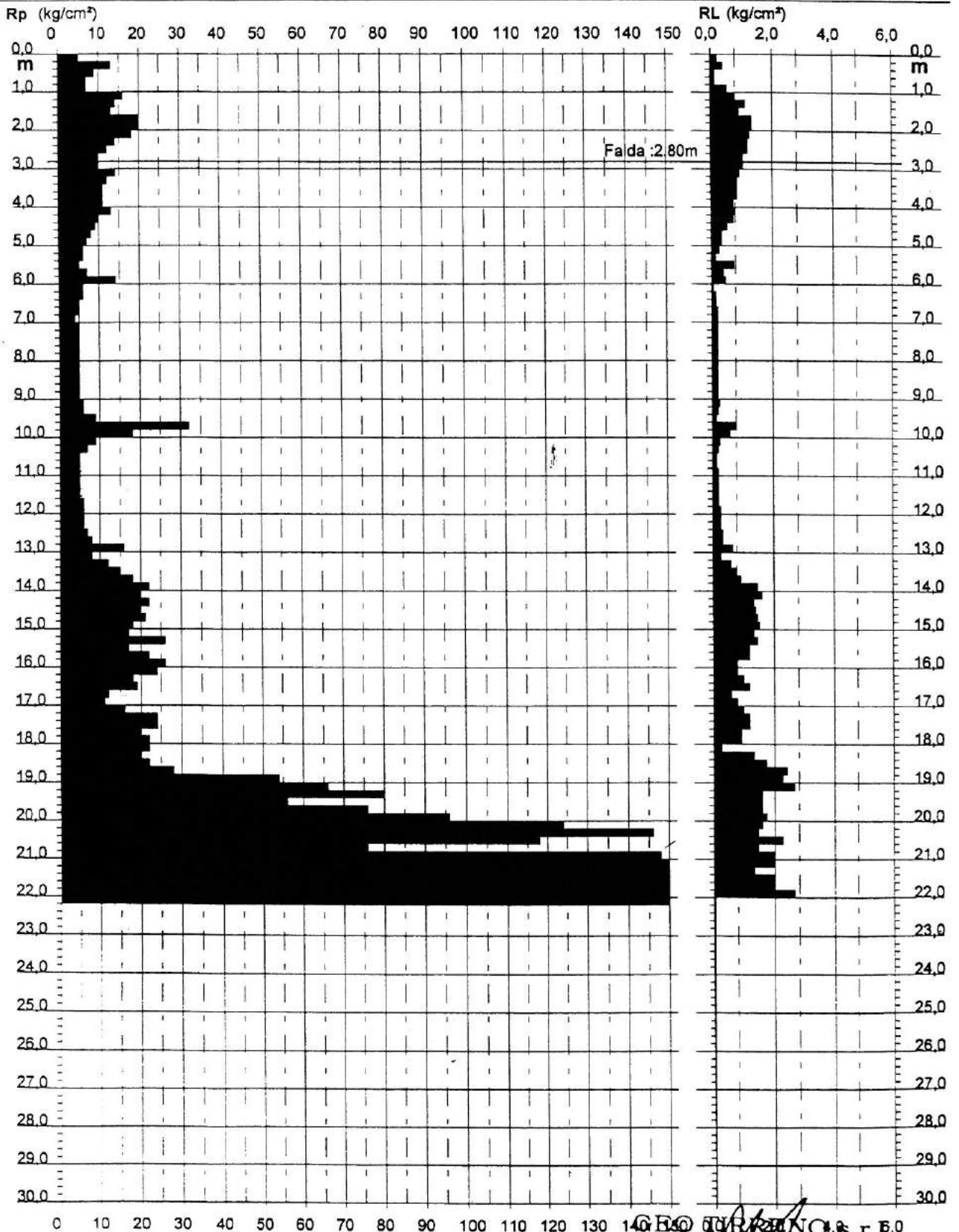
GEO TIRRENO S.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690547

PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 12

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,80 m da quota inizio
- scala vert.: 1 : 150



GeoTirreno S.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

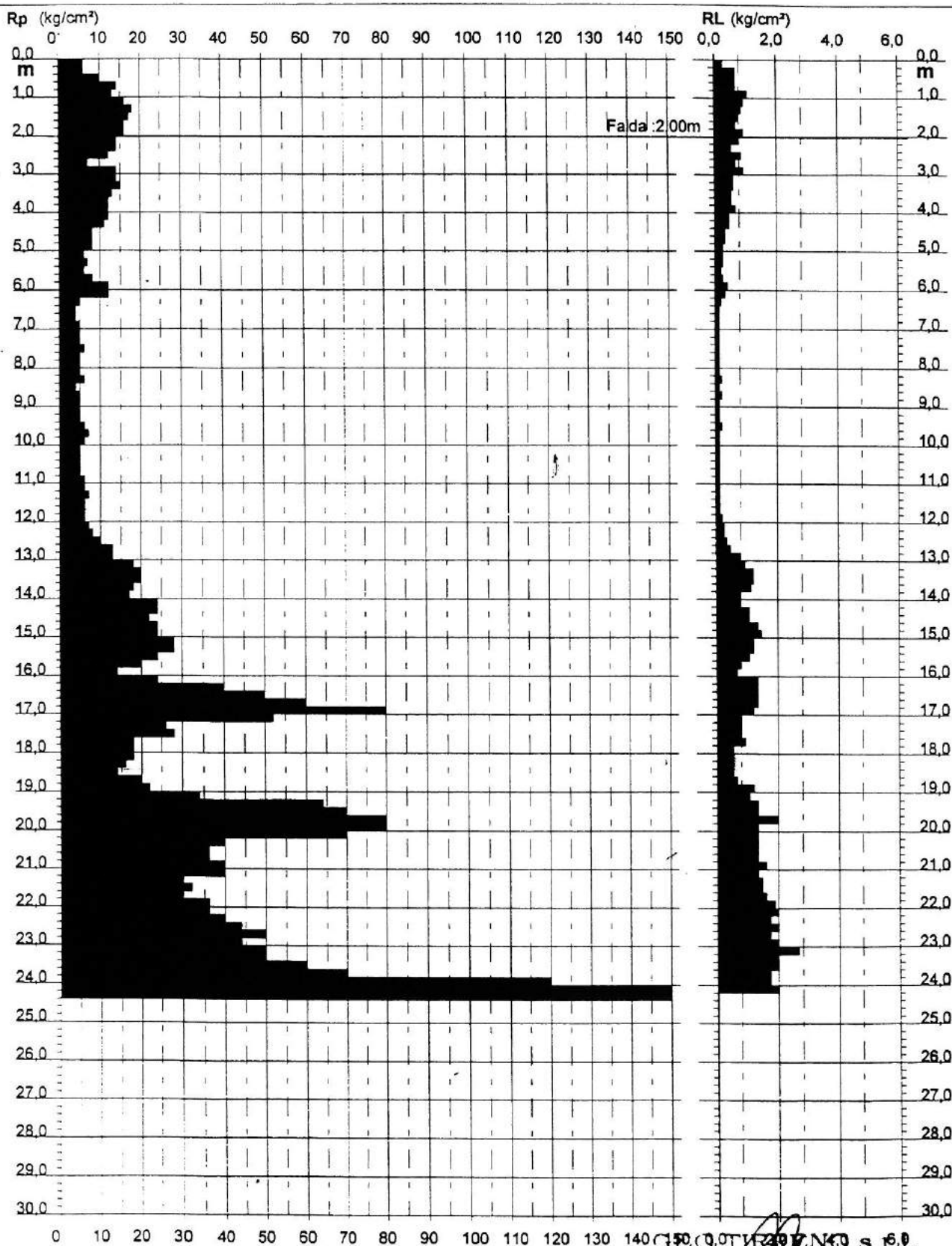
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 13

201909018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,00 m da quota inizio
- scala vert.: 1 : 150



GeoTirreno S.r.l.
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Tel. 0585 43311
Fax 0585 43312

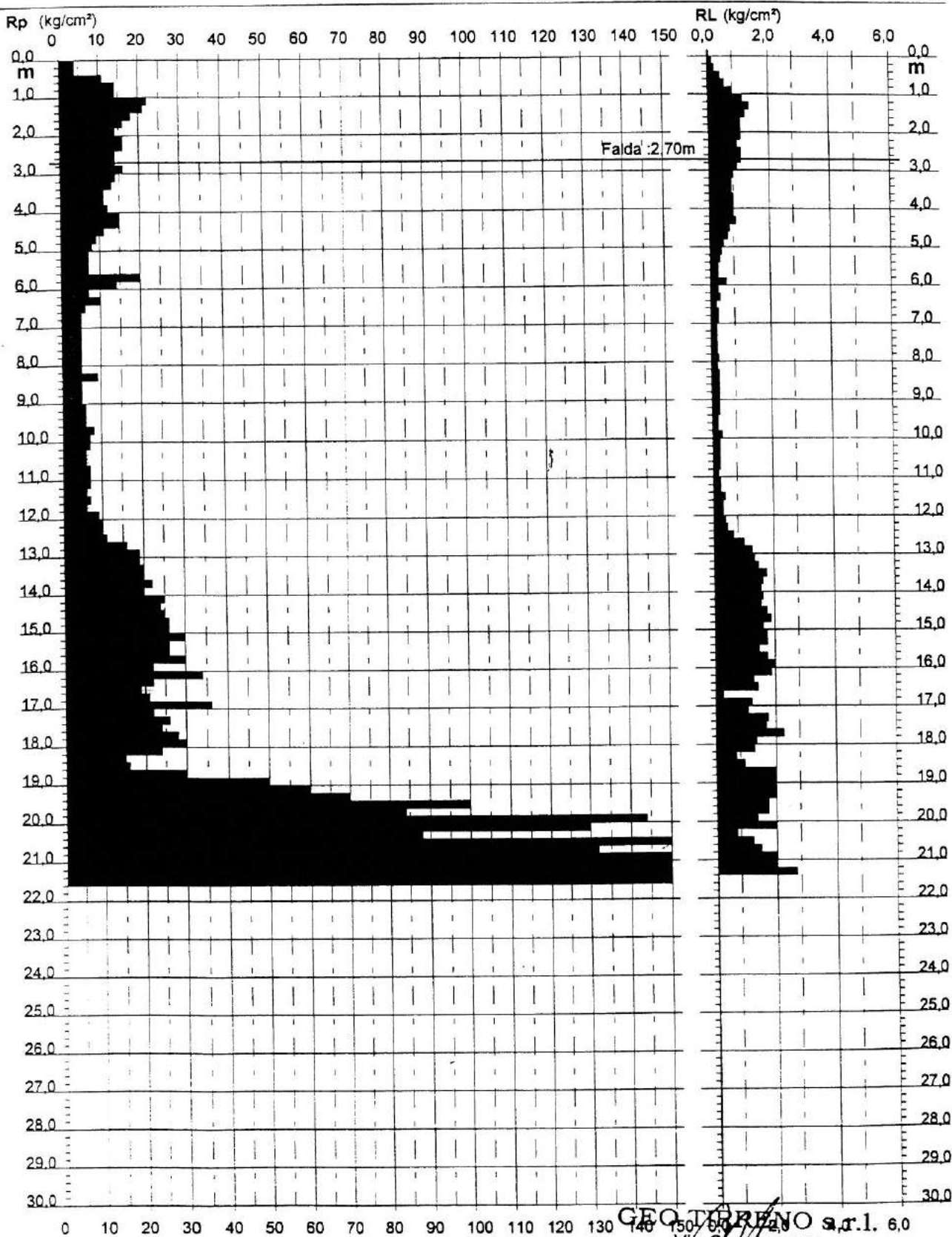
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 14

20020408-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,70 m da quota inizio
- scala vert.: 1 : 150



GEO.TORINO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

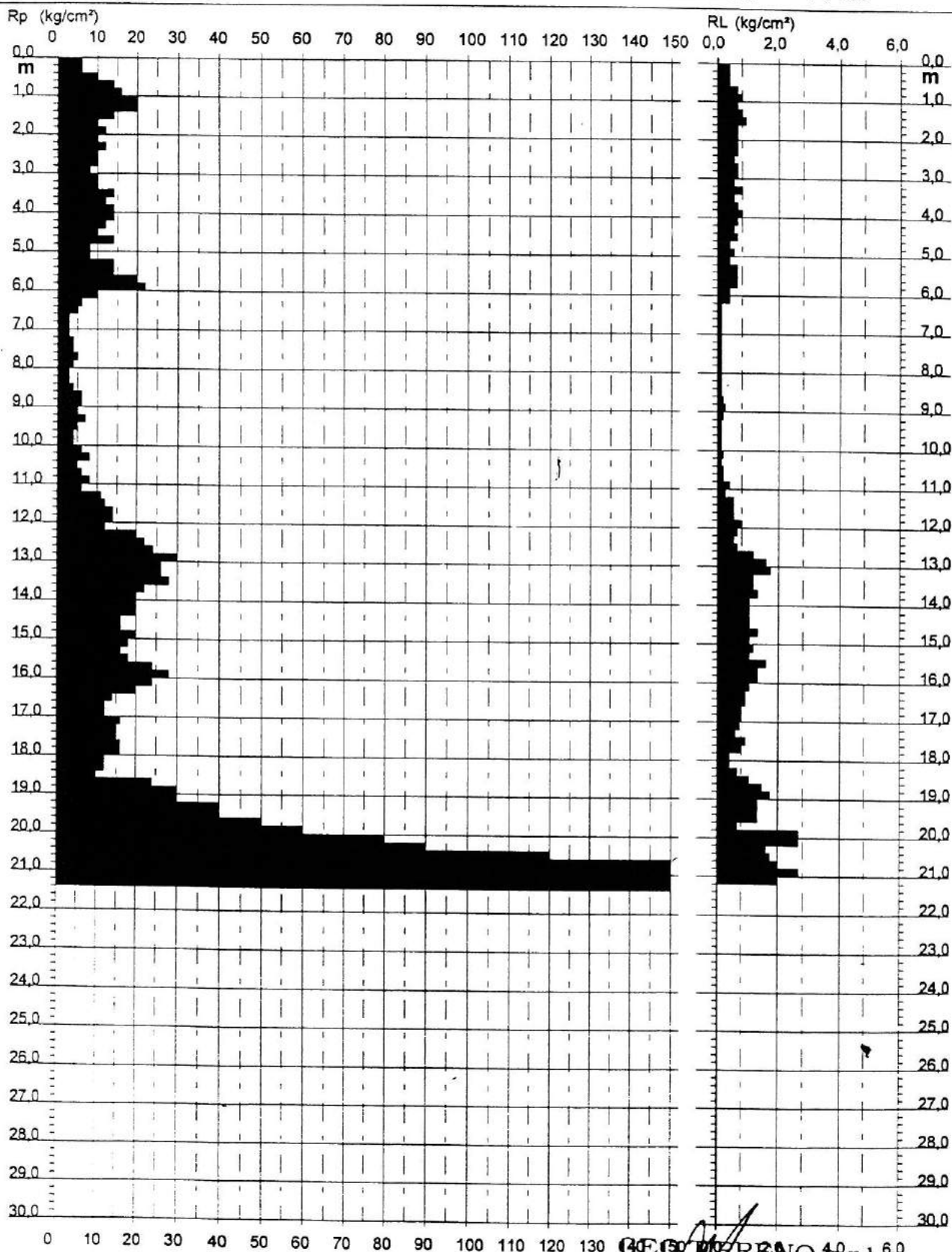
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 15

2012495-013

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- scala vert.: 1 : 150



GEOTIRRENO S.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690454

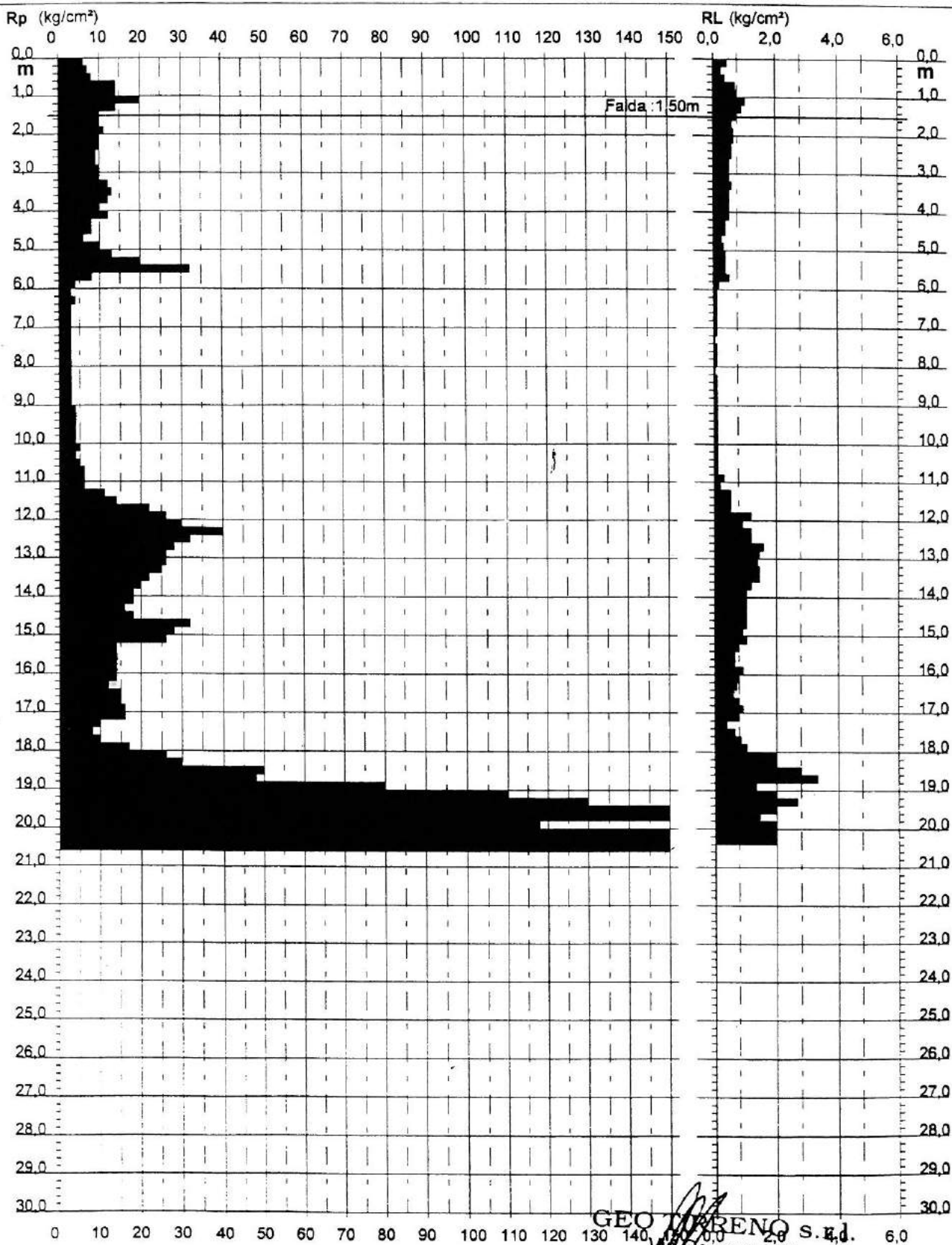
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 16

S.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,50 m da quota inizio
- scala vert. : 1 : 150



GEO TIRENO S.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

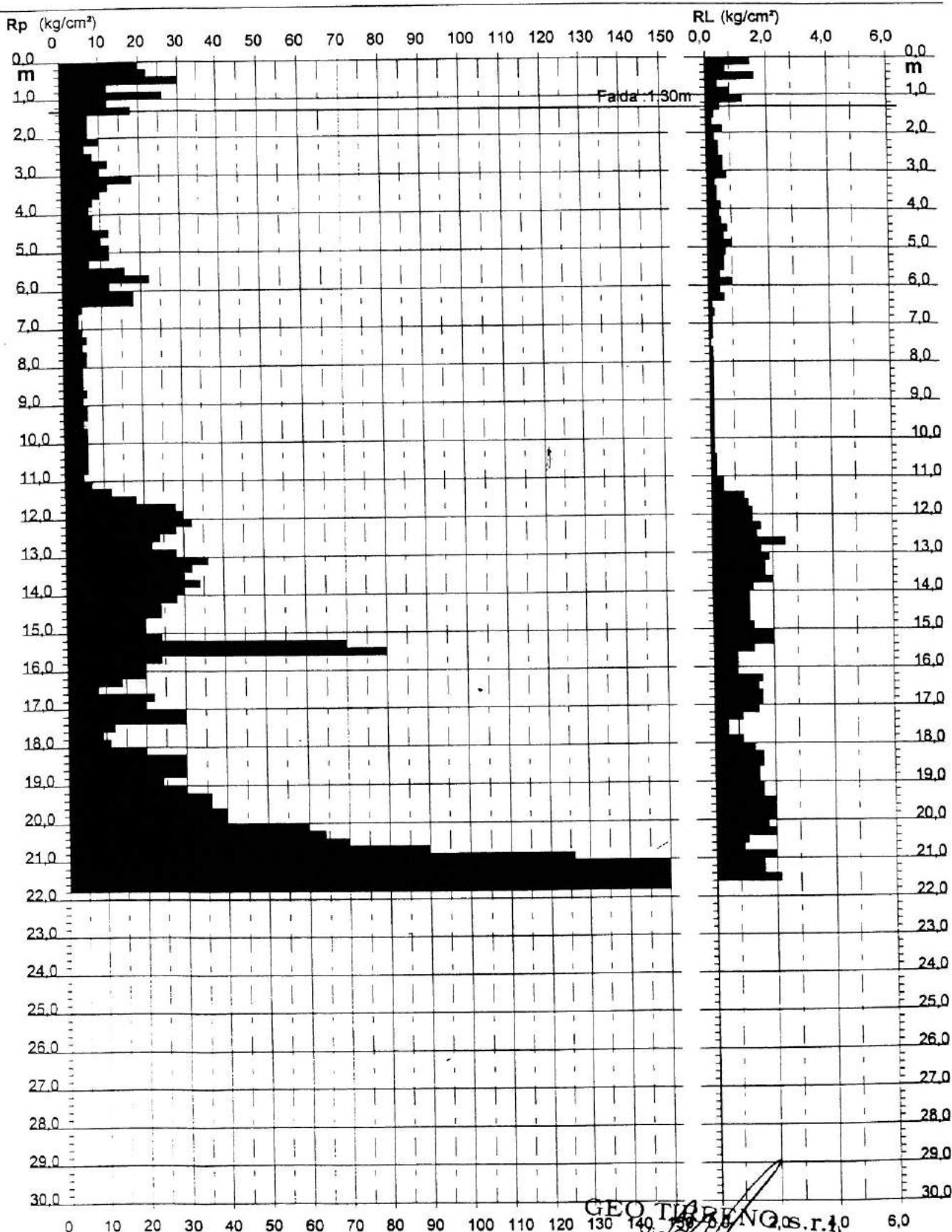
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 17

2013496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,30 m da quota inizio
- scala vert.: 1 : 150



GEO TIRRENO S.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA n° 02713690451

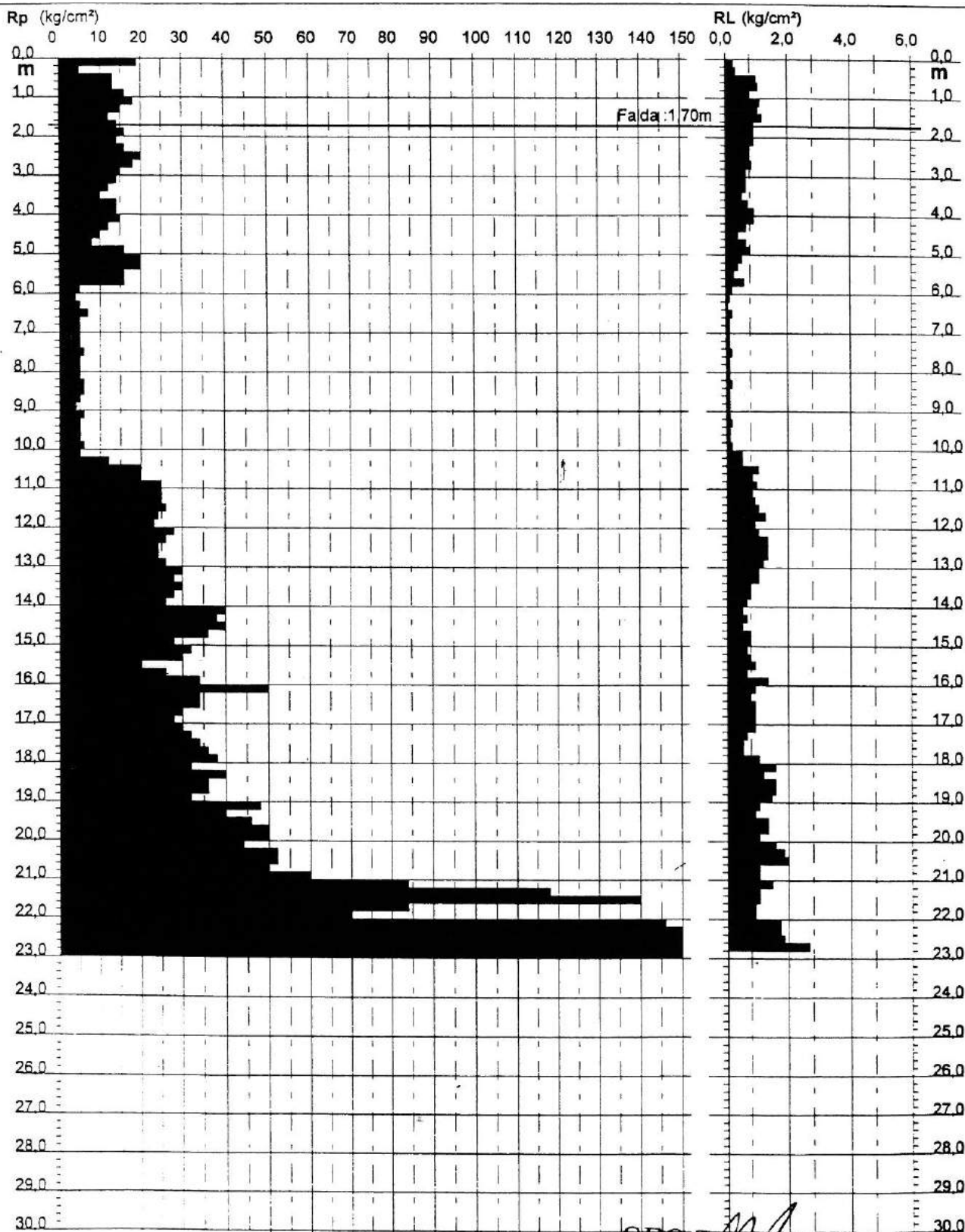
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 18

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,70 m da quota inizio
- scala vert.: 1 : 150



GEO TIRRENO S.r.l. 6,0
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

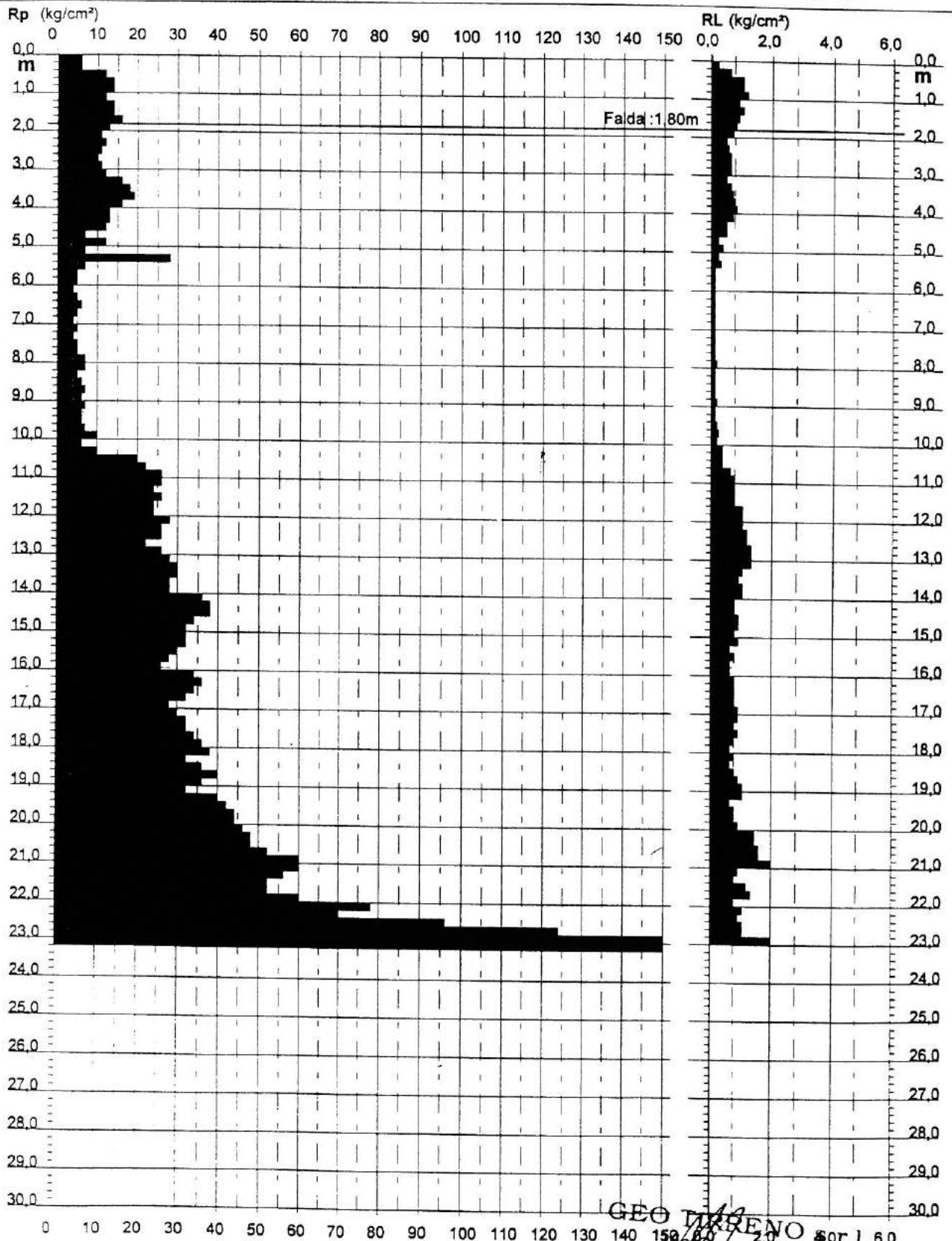
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 19

200409076

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,80 m da quota inizio
- scala vert.: 1 : 150



GEO TARENNO s.r.l. 6.0
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

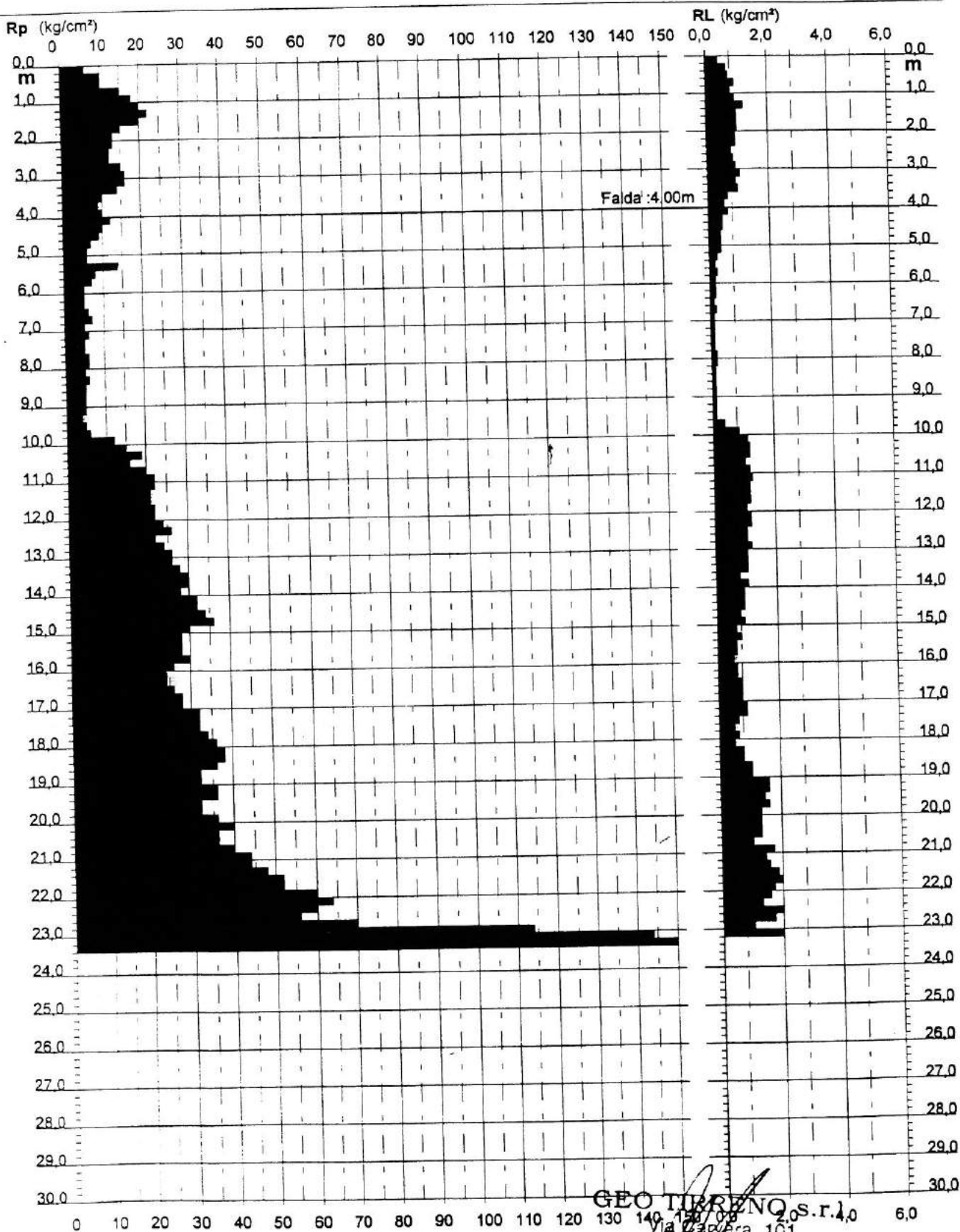
PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 20

21040303

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 4,00 m da quota inizio
 - scala vert.: 1 : 150



GEO TIRRENO S.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

LEGENDA VALUTAZIONI LITOLOGICHE

Valutazioni in base al rapporto: $F = (R_p / R_L)$

(Begemann 1965 - Raccomandazioni A.G.I. 1977)

valide in via approssimata per terreni immersi in falda :

$F = R_p / R_L$	NATURA LITOLOGICA	PROPRIETA'
$F < 15$	TORBE ED ARGILLE ORGANICHE	COESIVE
$15 < F \leq 30$	LIMI ED ARGILLE	COESIVE
$30 < F \leq 60$	LIMI SABBIOSI E SABBIE LIMOSE	GRANULARI
$F > 60$	SABBIE E SABBIE CON GHIAIA	GRANULARI

Vengono inoltre riportate le valutazioni stratigrafiche fornite da Schmertmann (1978), ricavabili in base ai valori di R_p e di $FR = (R_L / R_p) \% :$

- AO = argilla organica e terreni misti
- Att = argilla (inorganica) molto tenera
- At = argilla (inorganica) tenera
- Am = argilla (inorganica) di media consistenza
- Ac = argilla (inorganica) consistente
- Acc = argilla (inorganica) molto consistente
- ASL = argilla sabbiosa e limosa
- SAL = sabbia e limo / sabbia e limo argilloso
- Ss = sabbia sciolta
- Sm = sabbia mediamente addensata
- Sd = sabbia densa o cementata
- SC = sabbia con molti fossili, calcareniti

Secondo Schmertmann il valore della resistenza laterale da usarsi, dovrebbe essere pari a:

- $1/3 \pm 1/2$ di quello misurato , per depositi sabbiosi
- quello misurato (inalterato) , per depositi coesivi.

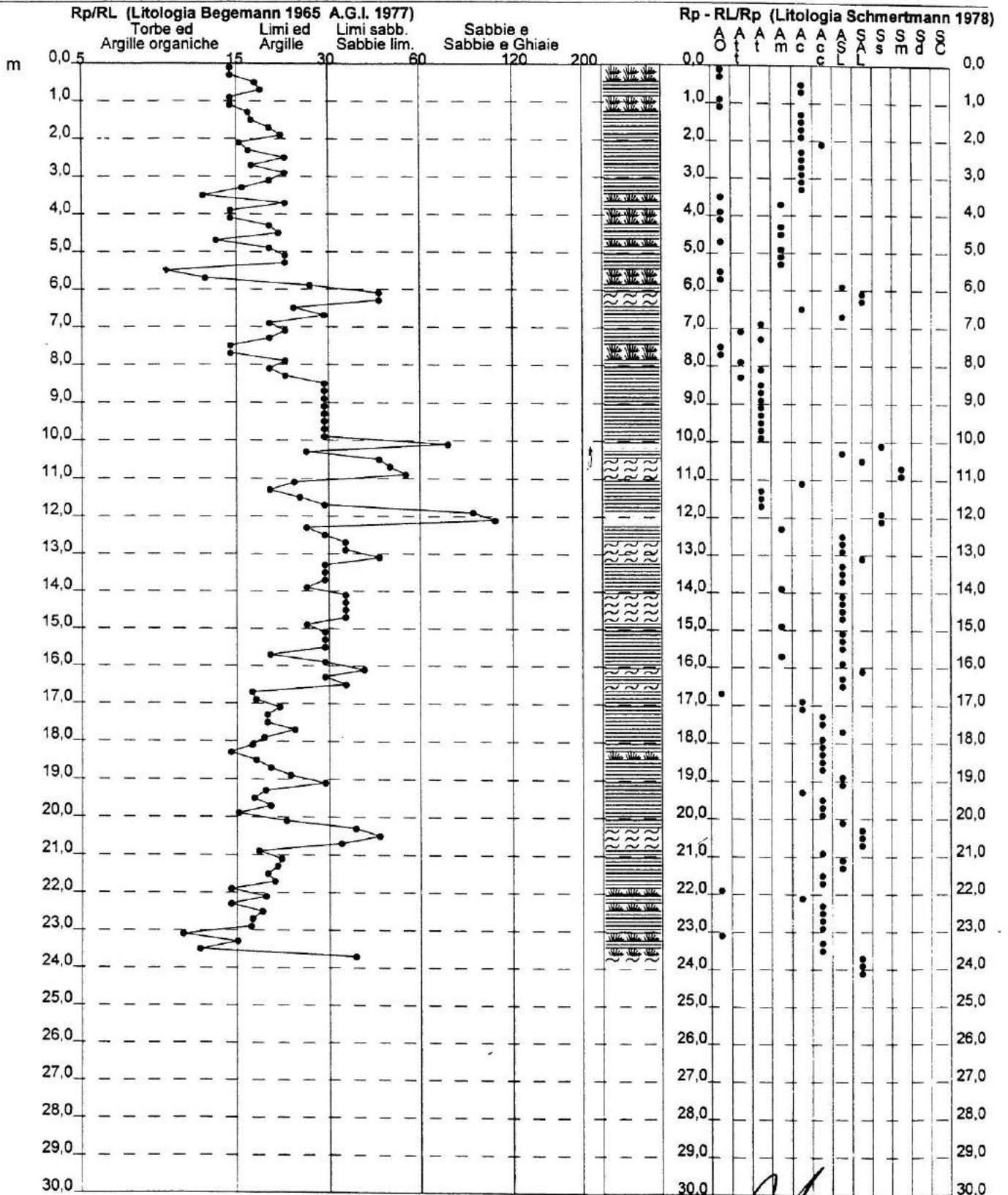
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 1

2310496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,70 m da quota inizio
- scala vert.: 1 : 150



GEOTIRRENO S.R.L.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

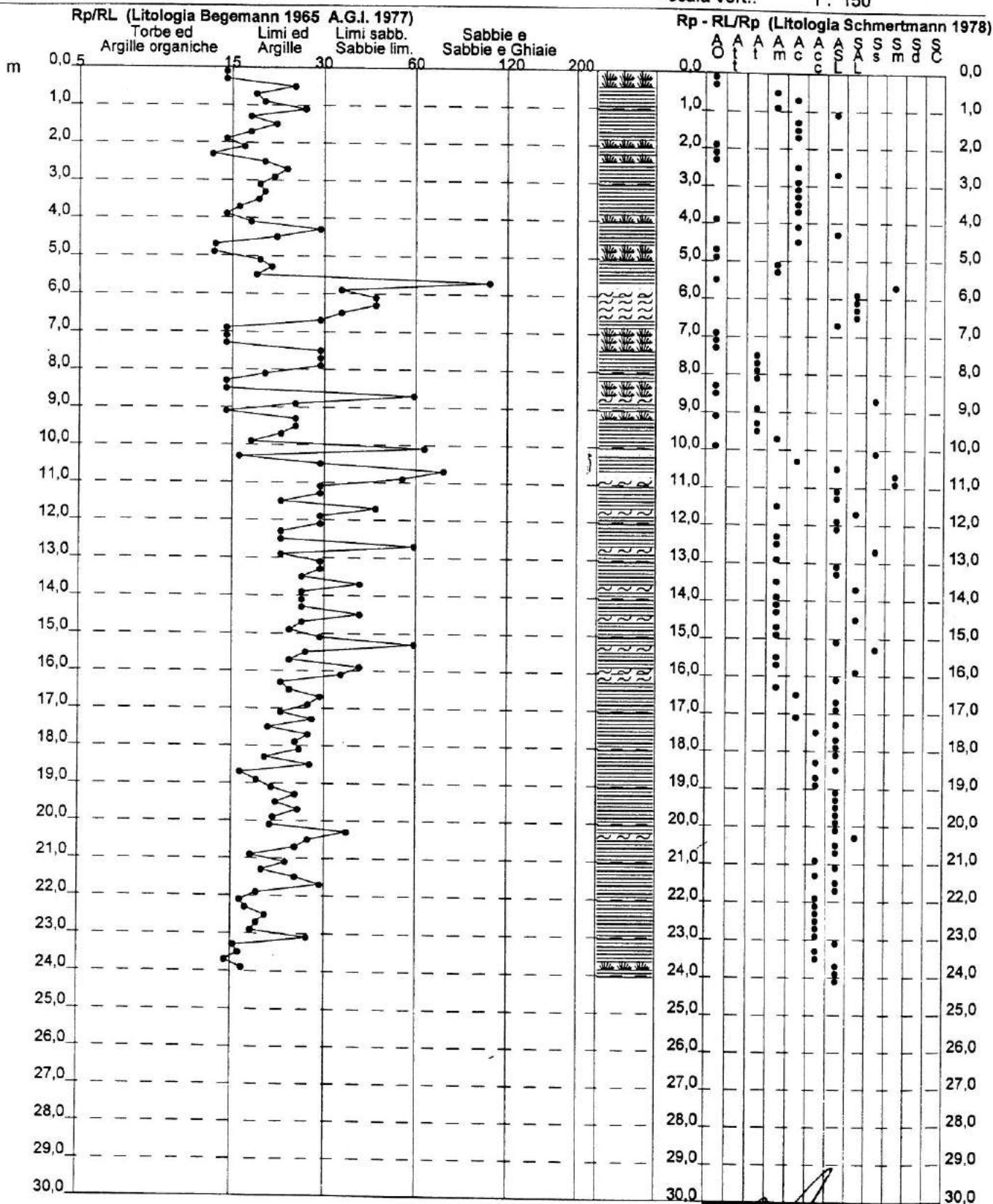
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 2

2010496-016

- committente : Studio Geoprogetti e Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 2,00 m da quota inizio
 - scala vert.: 1 : 150



GEO IRRRENO s.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

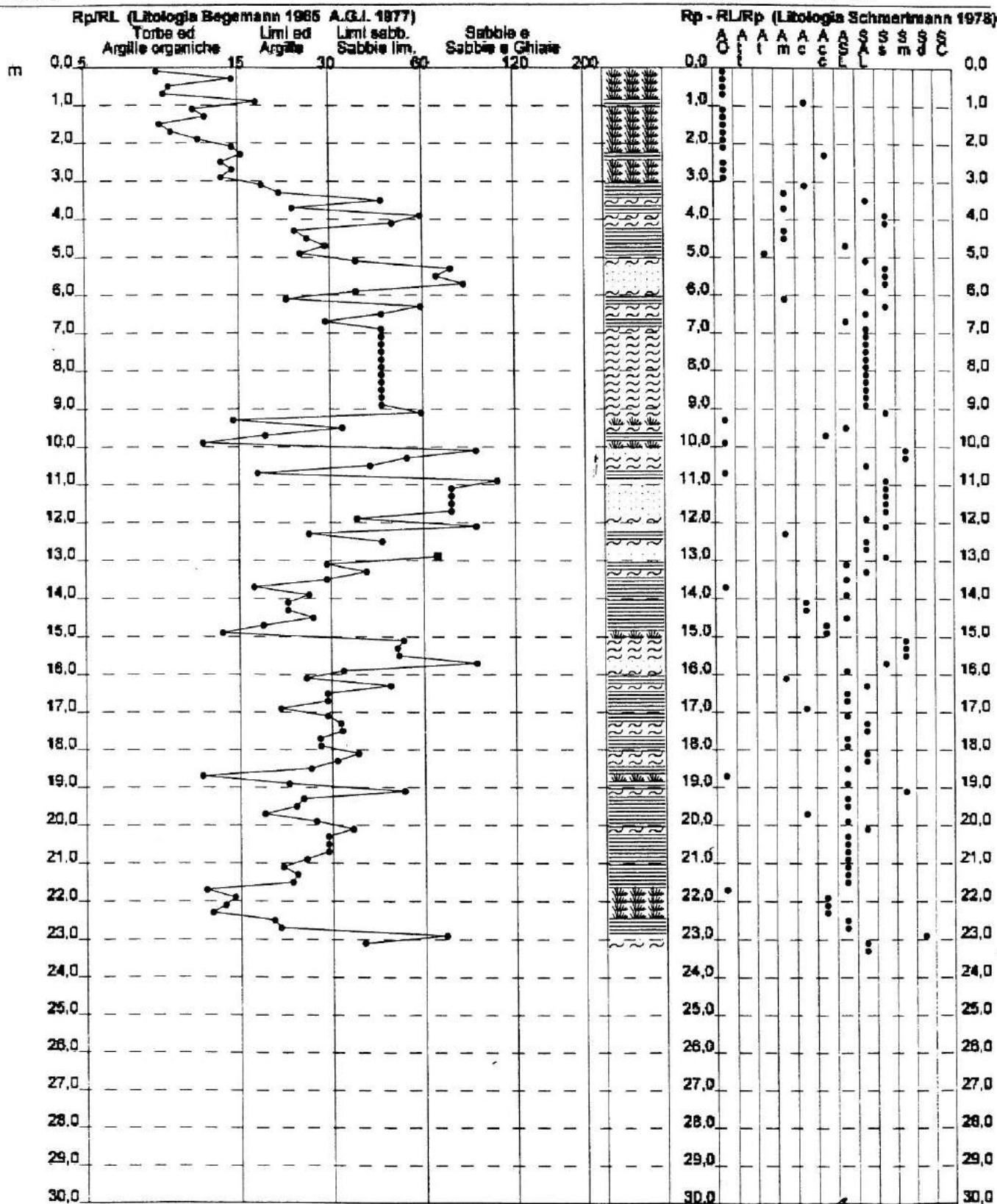
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 5

2110495018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Oisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- scala vert. : 1 : 150



GEO TIRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

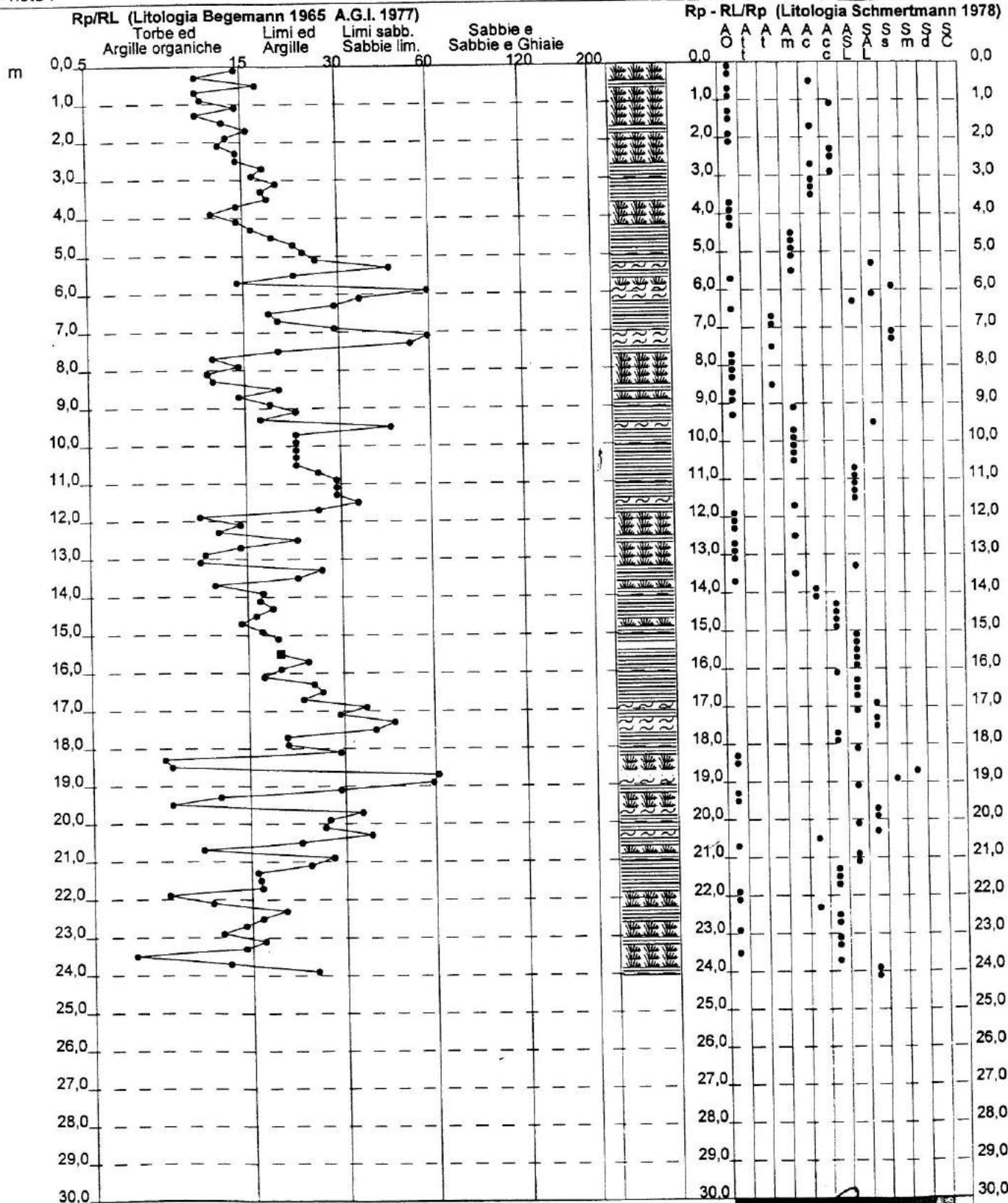
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 6

2-010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- scala vert.: 1 : 150



Geo Irreno S.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

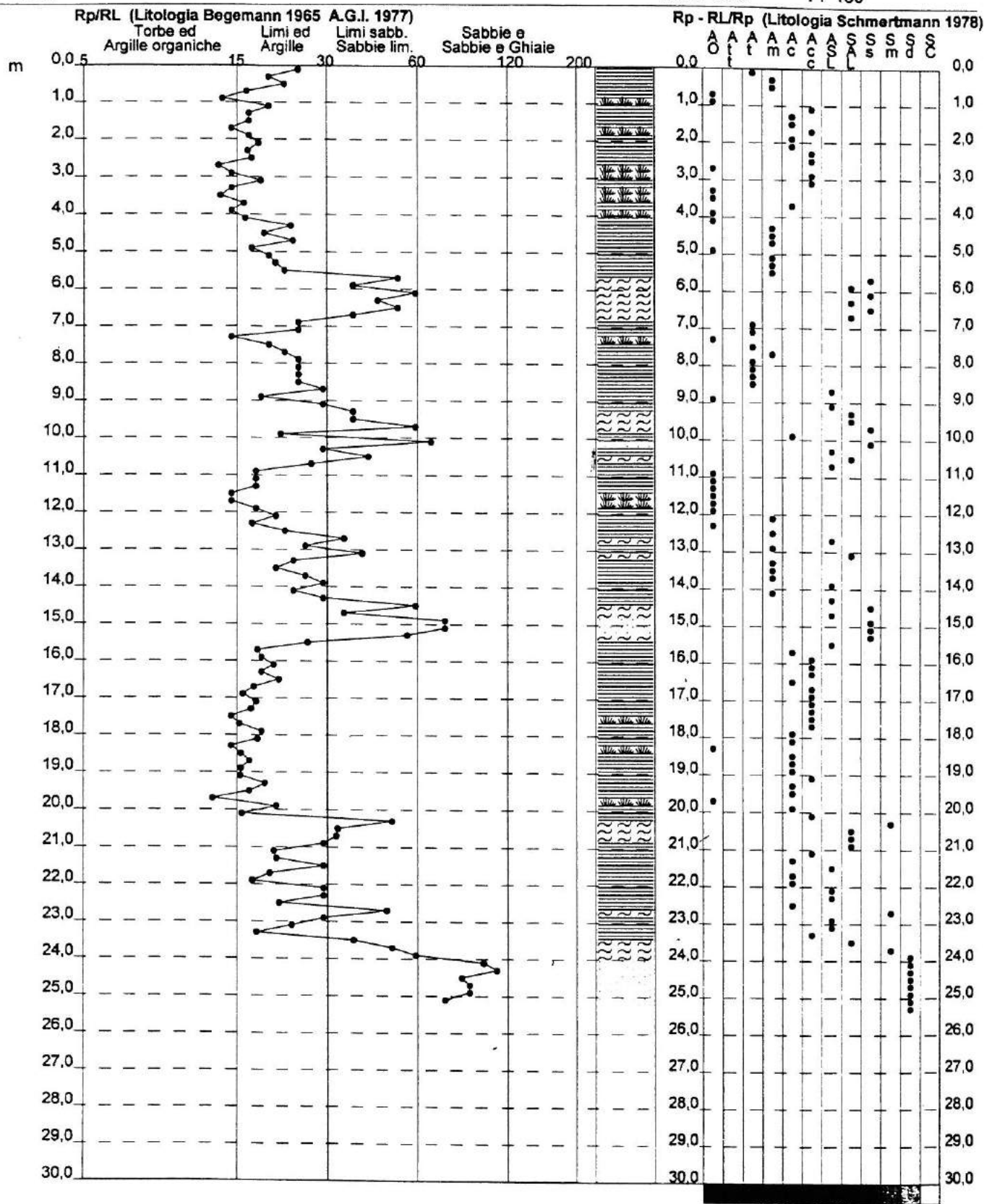
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 8

2.010495-018

- committente : Studio geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 2,00 m da quota inizio
 - scala vert.: 1 : 150



GEO TIRRENO s.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

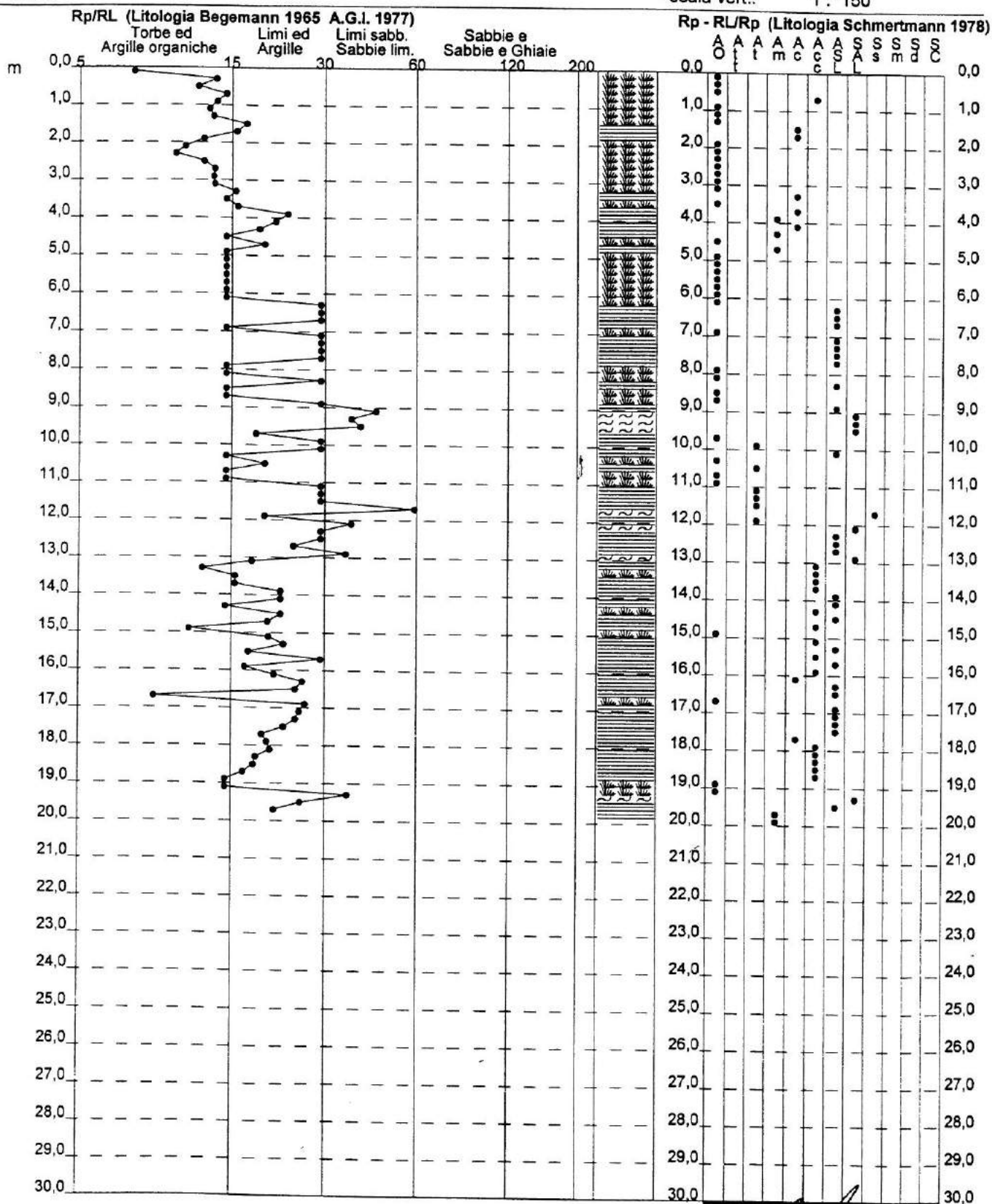
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 9

2-013-02-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,45 m da quota inizio
 - scala vert.: 1 : 150



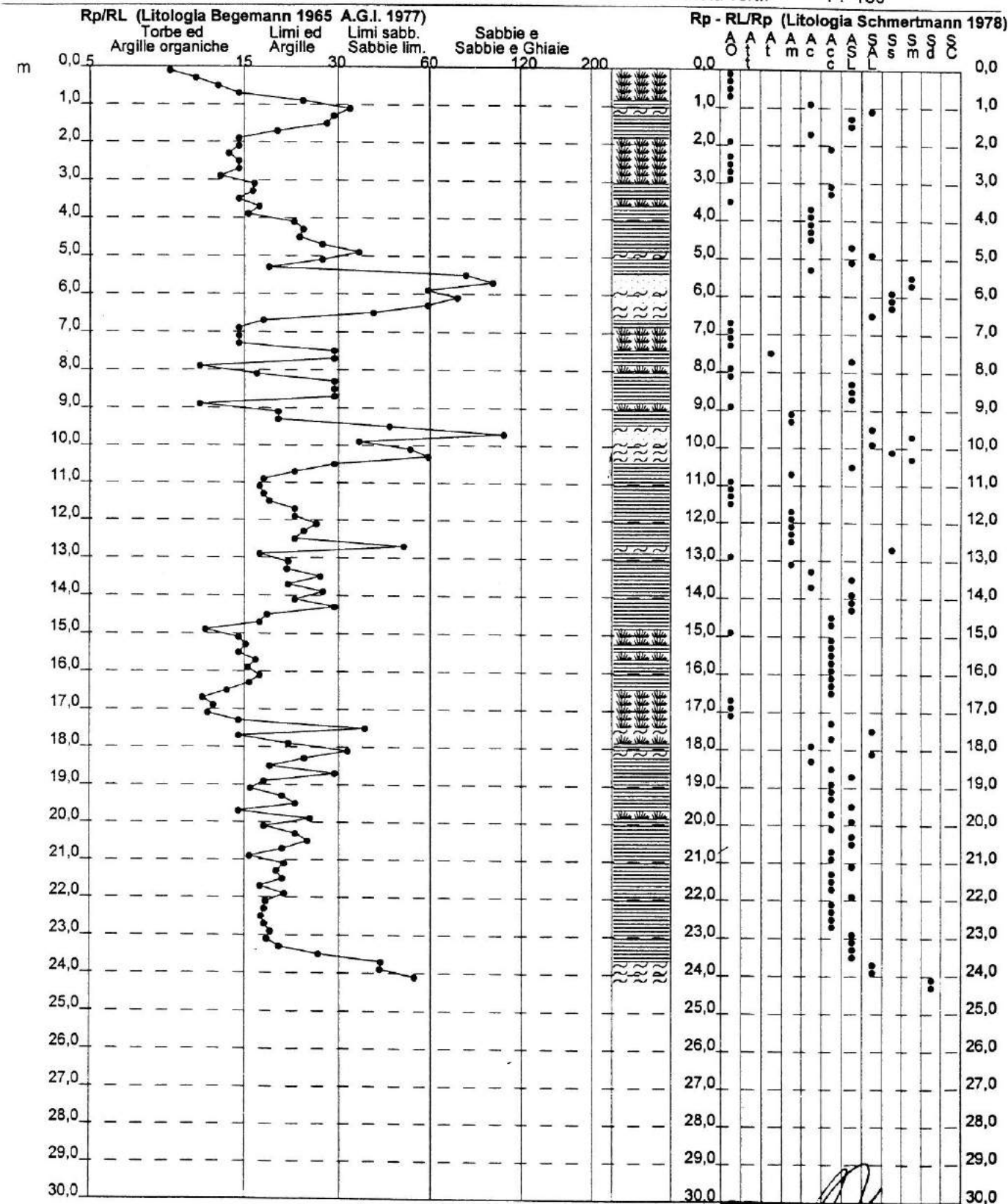
GEO IRENO S.R.L.
 Via Cervara, 101
 54100 MASSA
 Part. n° 00713690101

PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 10

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 2,20 m da quota inizio
 - scala vert.: 1 : 150



Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

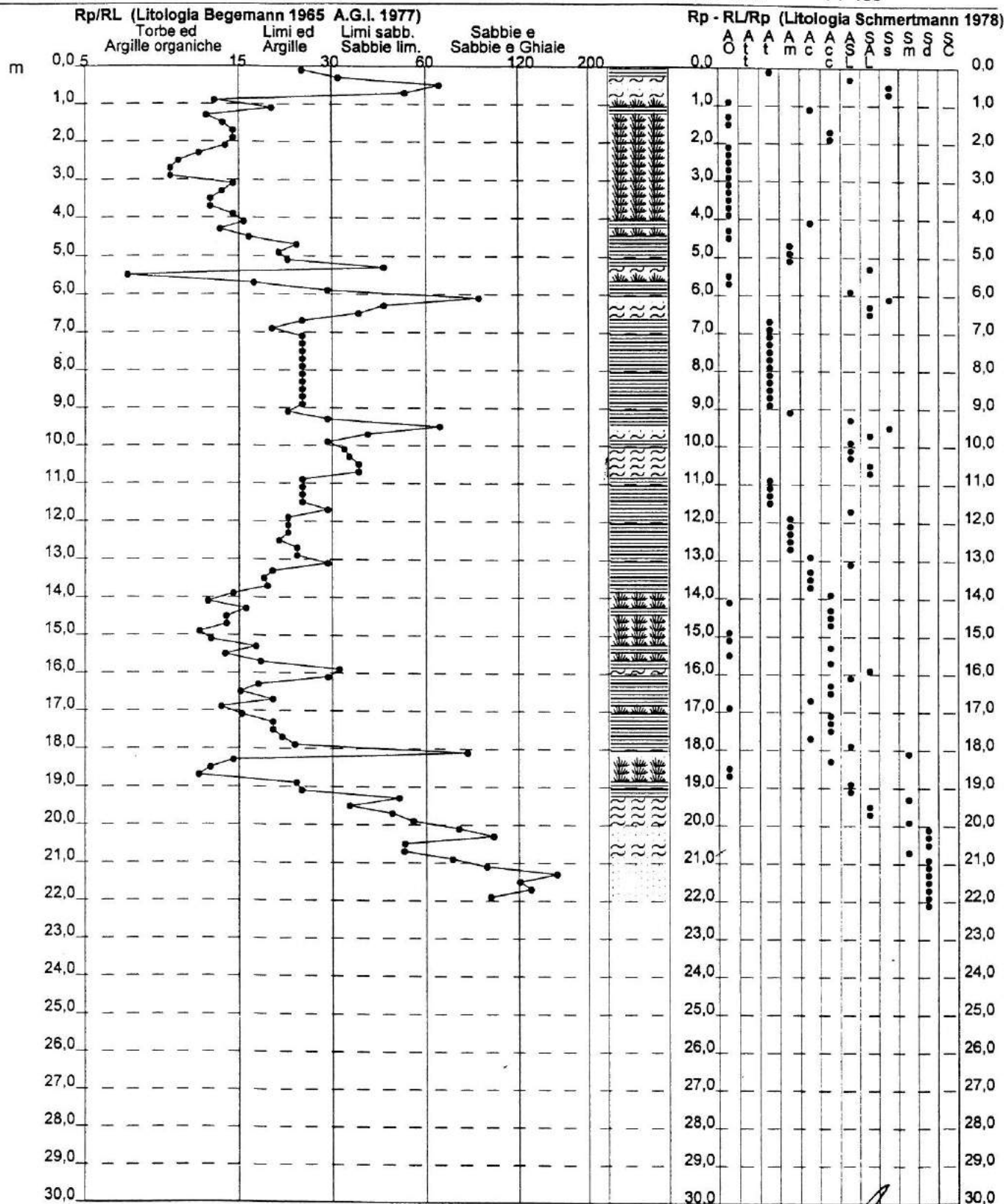
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 12

2015499-013

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 2,80 m da quota inizio
 - scala vert.: 1 : 150



Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

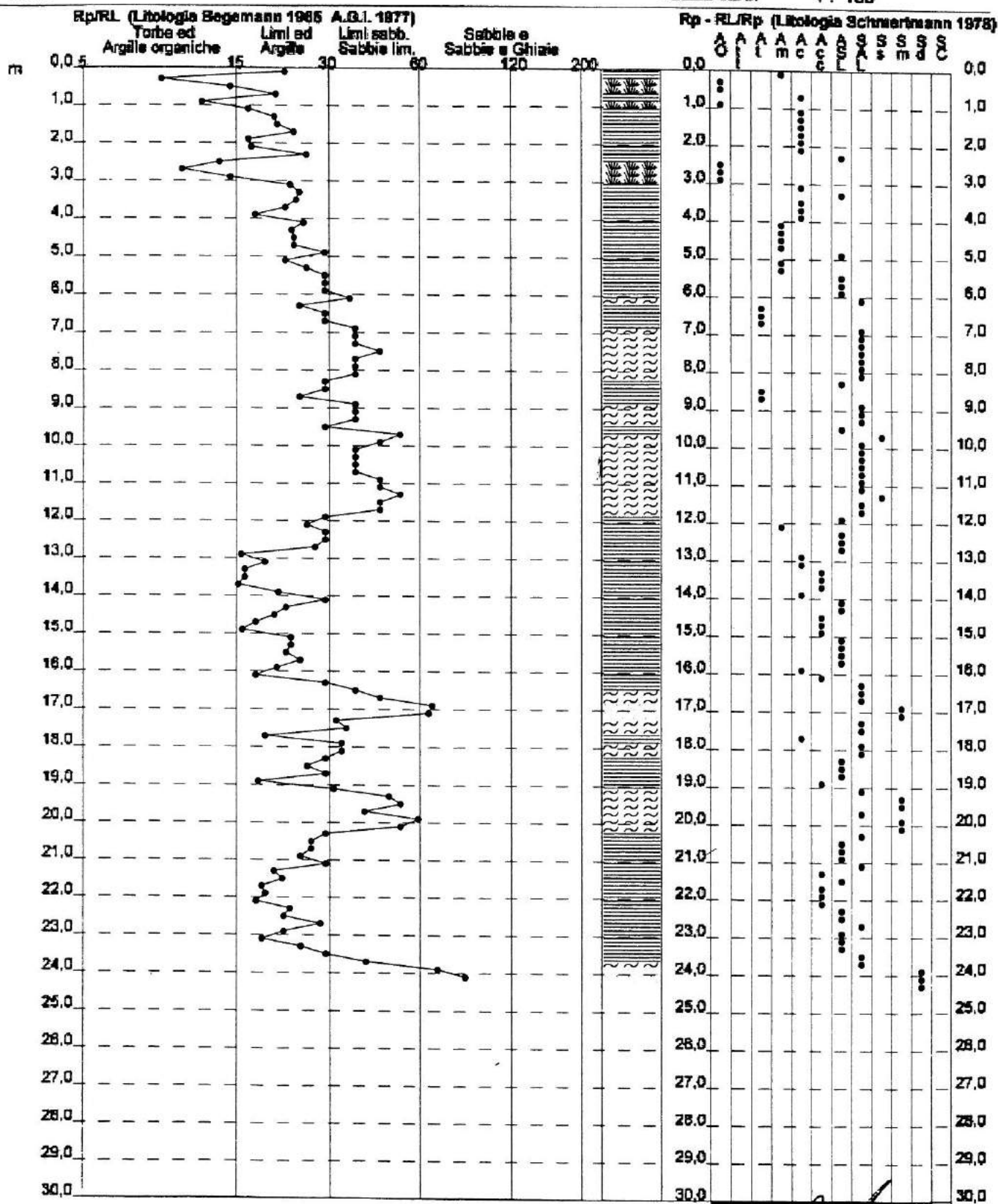
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 13

2004098-013

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. fonda : 2,00 m da quota inizio
 - scala vert. : 1 : 150



GEO TIRRENO s.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

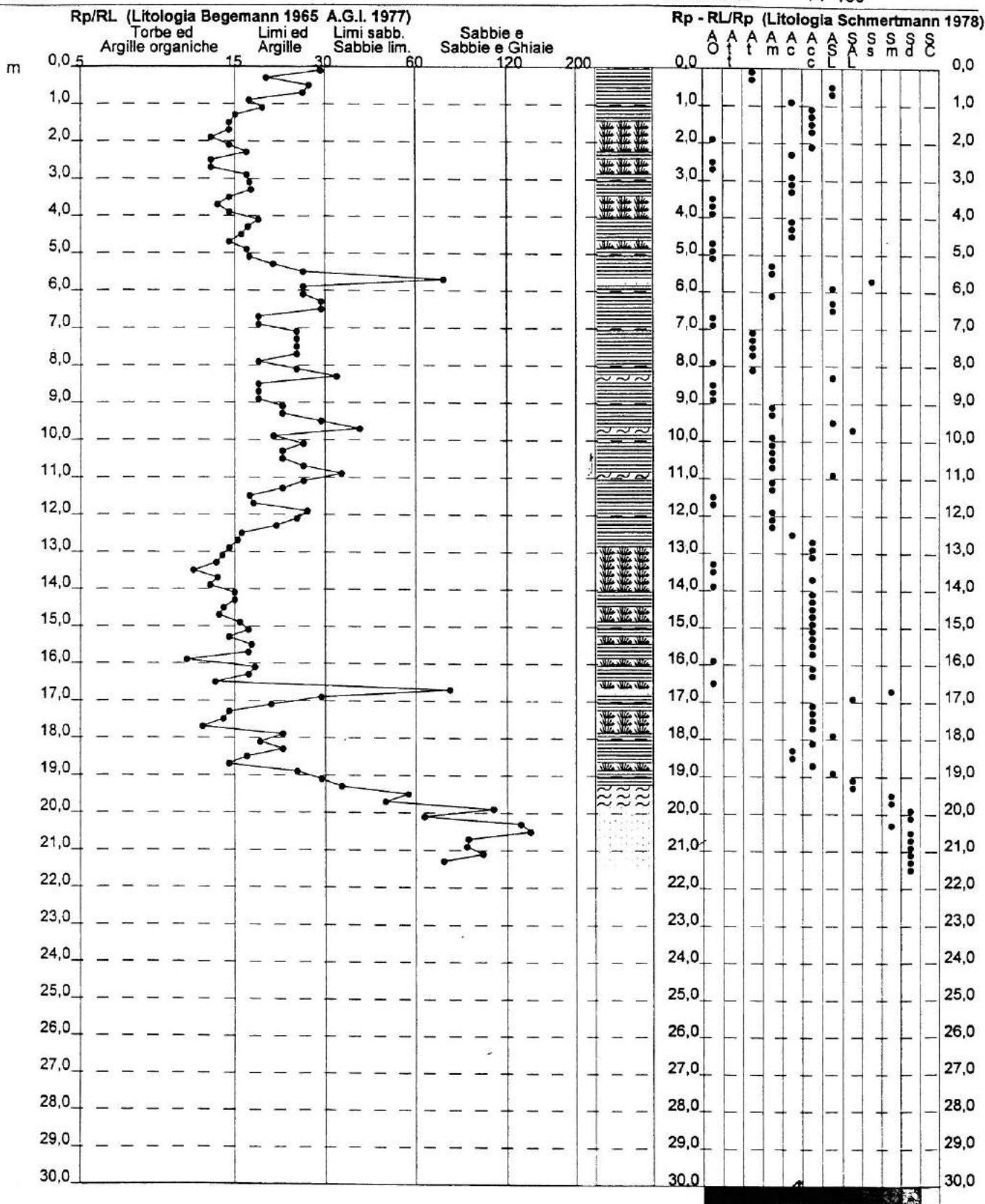
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 14

2010498-013

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,70 m da quota inizio
- scala vert.: 1 : 150



GEO TIRRENO s.r.l.
Via Cervara. 101
54100 MASSA
Part. IVA n° 0738890457

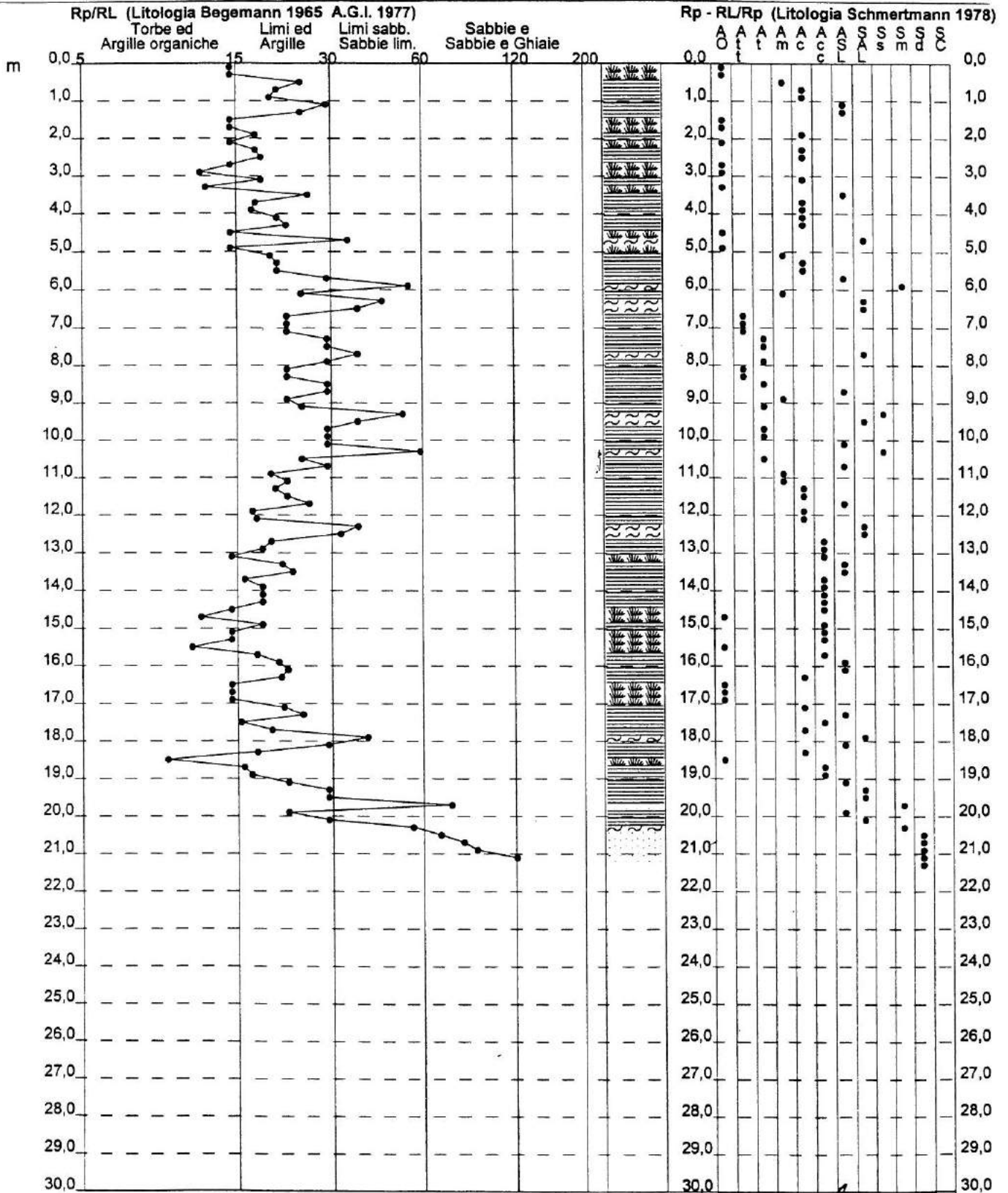
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 15

19/02/2002

- committente : Studio Geoprogetti e Studio Ghiotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : Falda non rilevata
- scala vert.: 1 : 150



GeoTIRRENO S.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

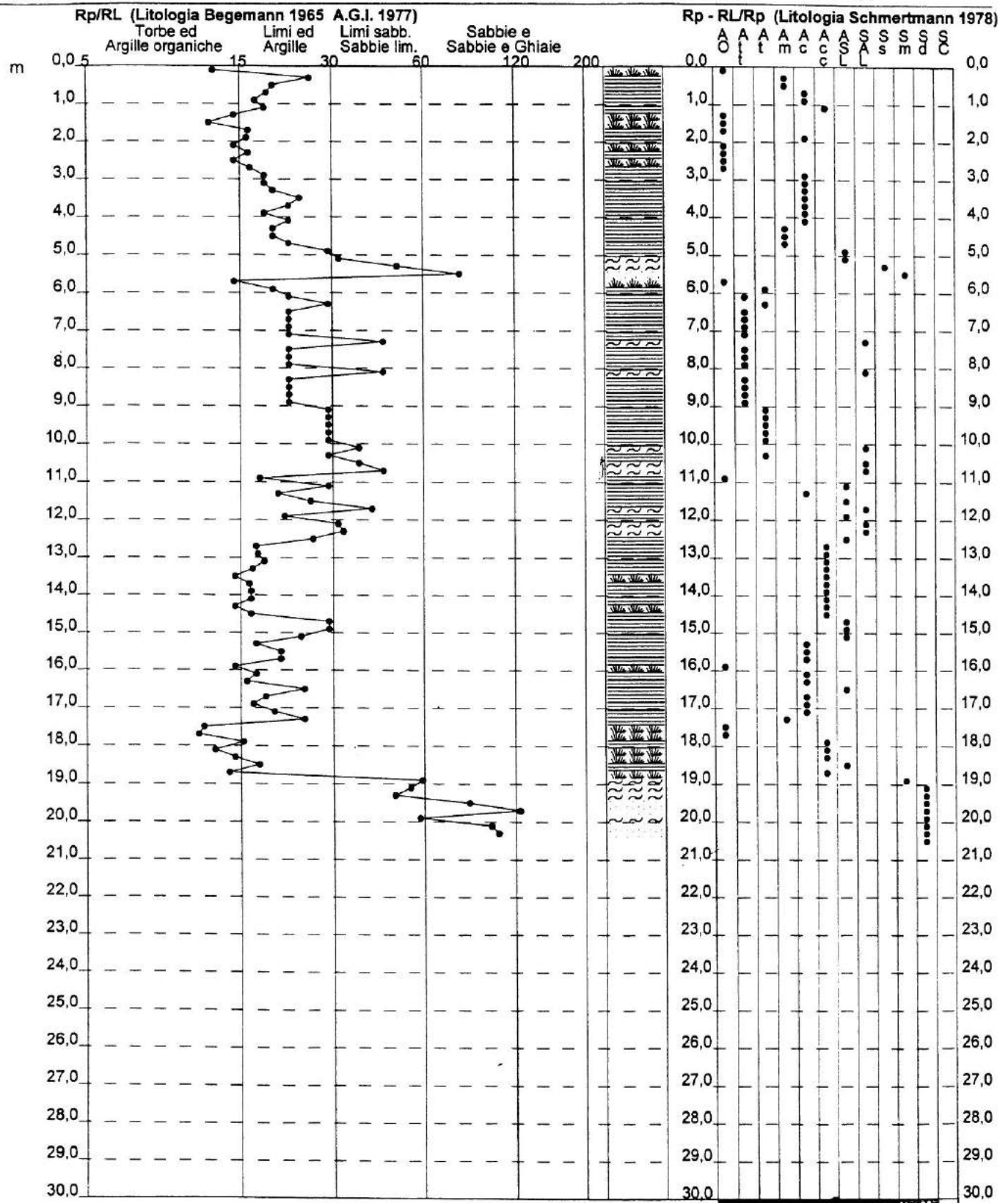
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 16

2010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - localit  : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,50 m da quota inizio
 - scala vert.: 1 : 150



GE...
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

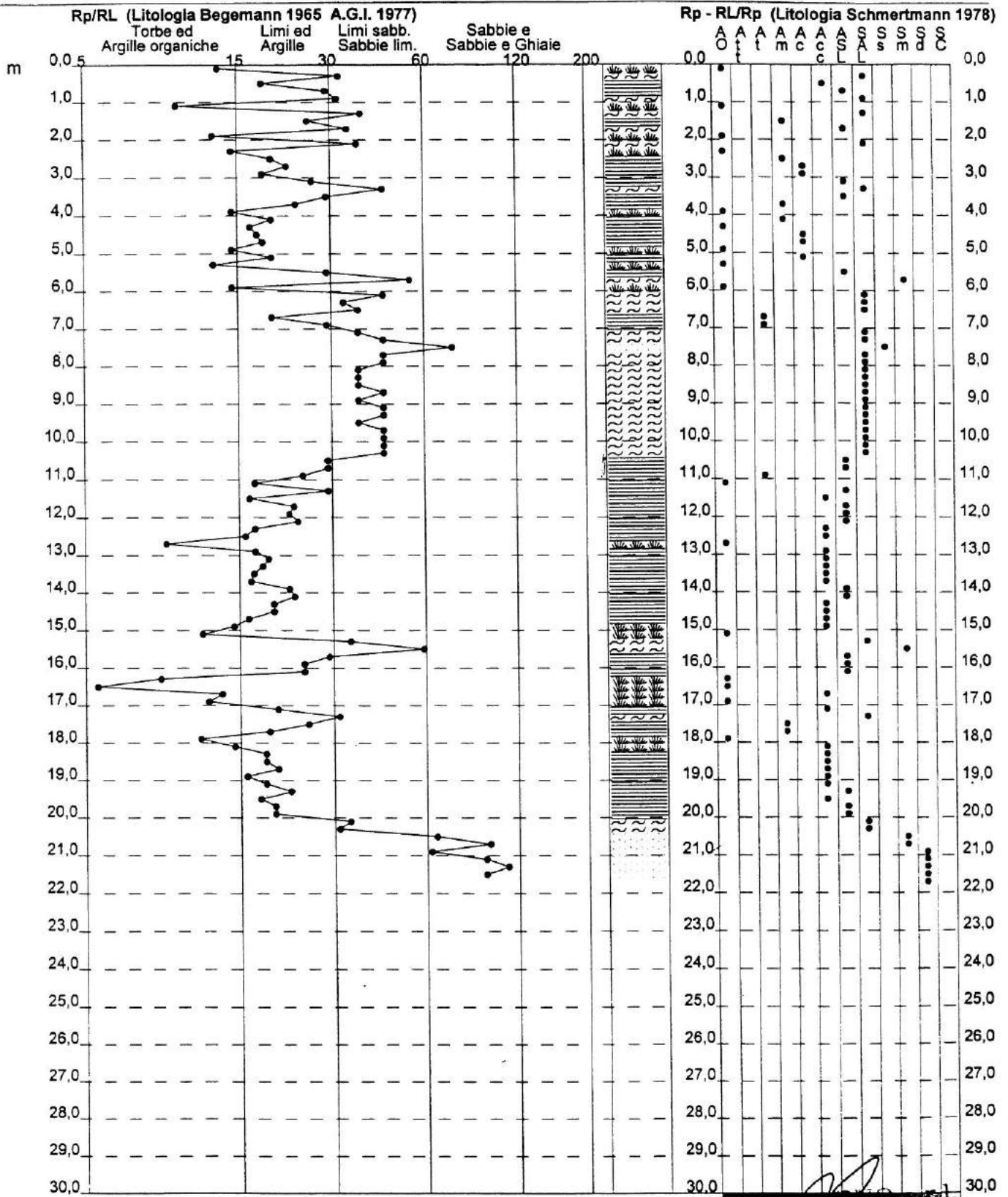
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 17

2010495-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,30 m da quota inizio
 - scala vert. : 1 : 150



Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

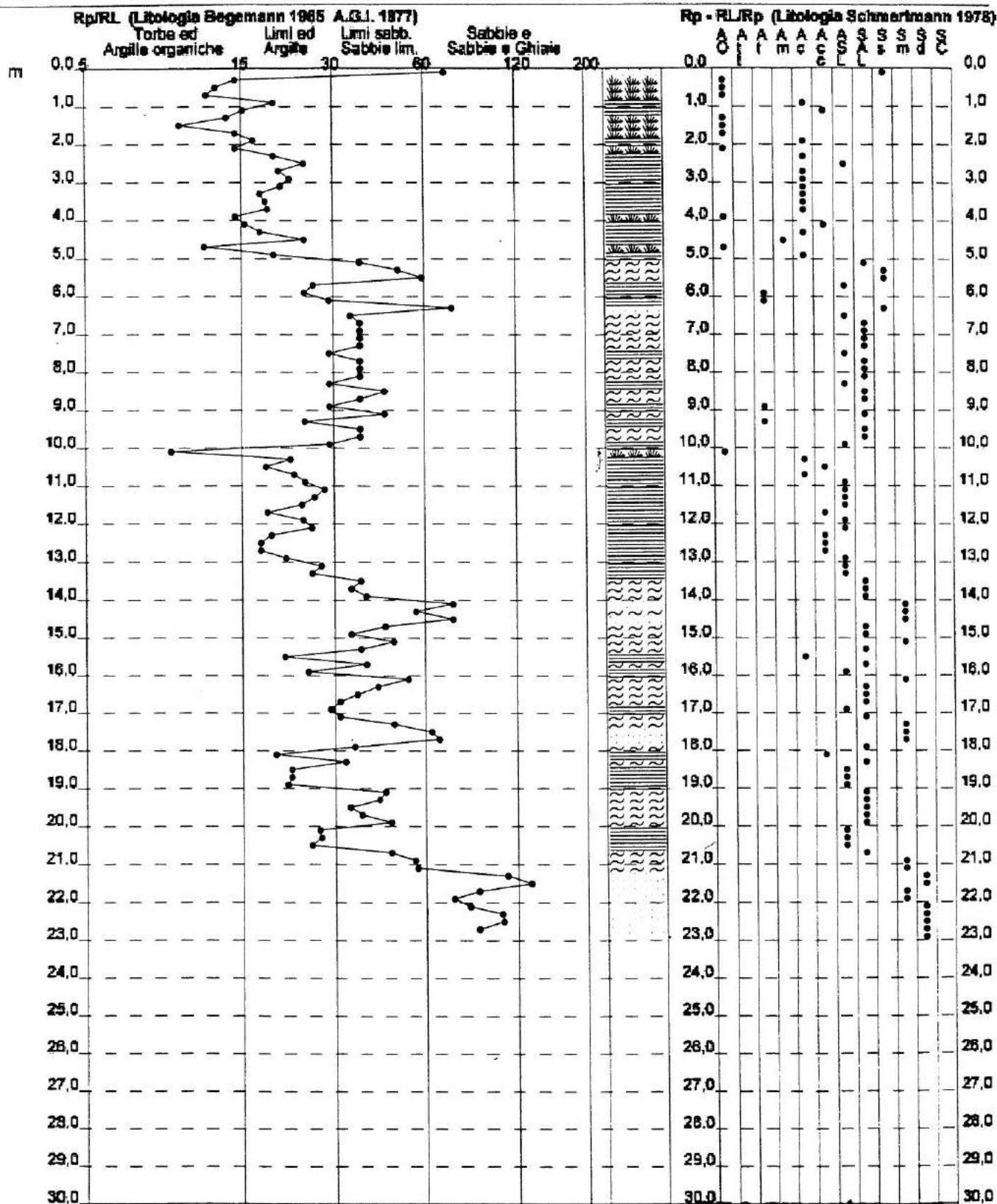
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 18

22/01/04/00010

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,70 m da quota inizio
- scala vert. : 1 : 150



Via Cervara 101
54100 MASSA
Tel. 0585 713690 451

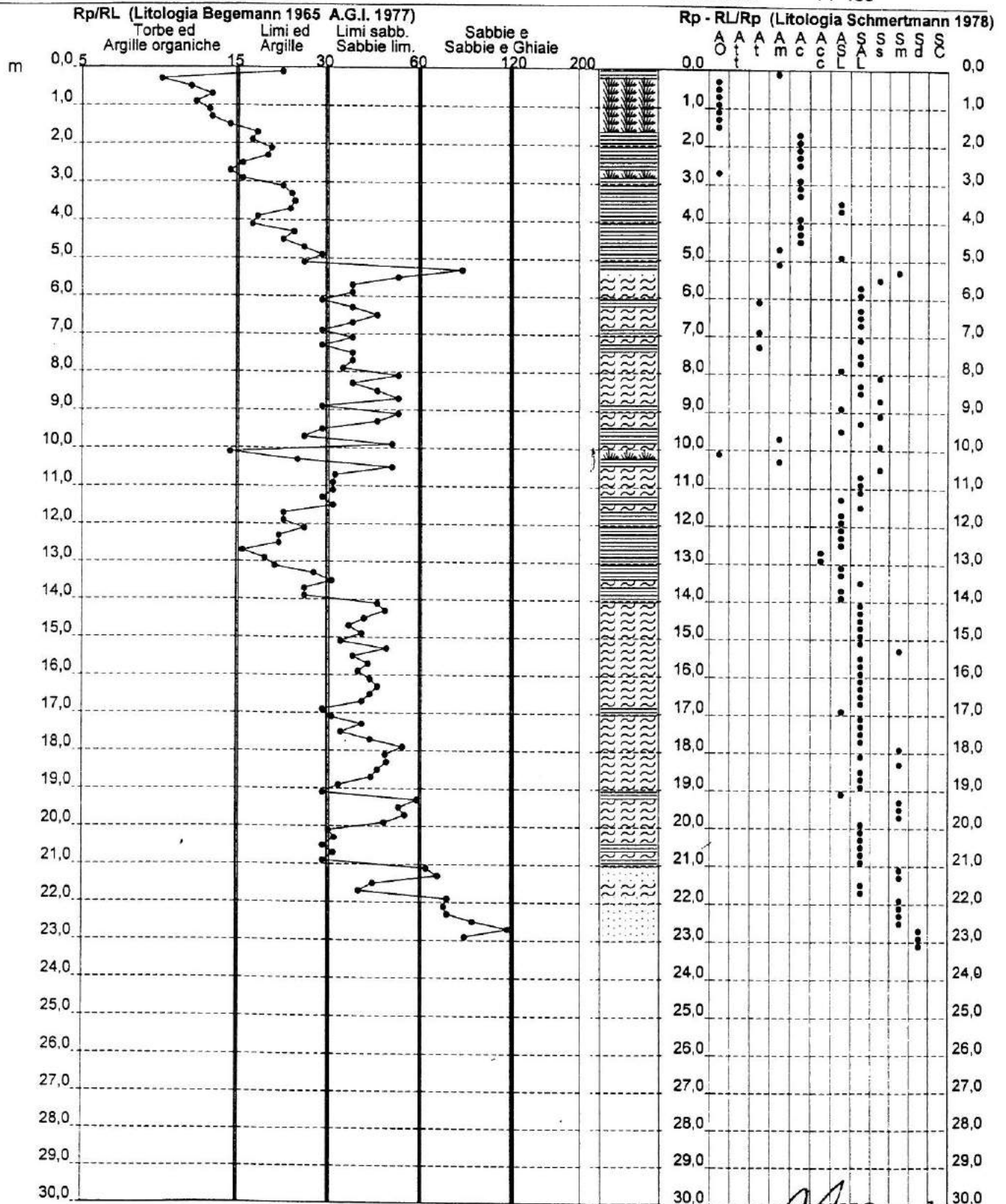
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 19

2.010495-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,80 m da quota inizio
 - scala vert. : 1 : 150



G
 Via Cervara, 101
 54100 MASSA
 Part IVA 00713690451

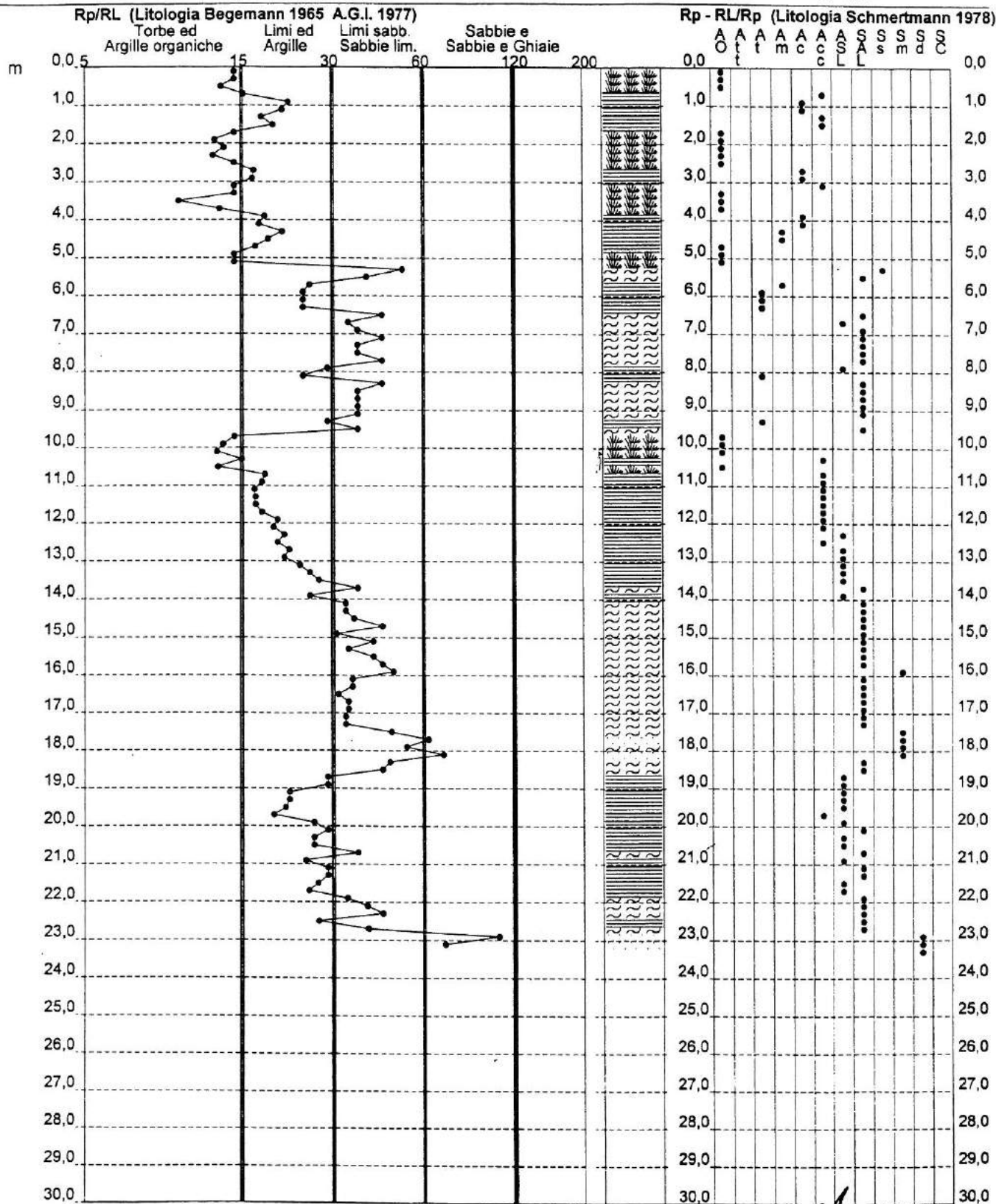
PROVA PENETROMETRICA STATICA VALUTAZIONI LITOLOGICHE

CPT 20

2010498-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 4,00 m da quota inizio
 - scala vert. : 1 : 150



...r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

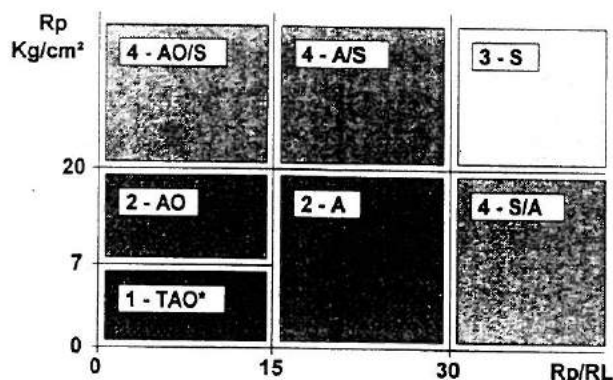
LEGENDA PARAMETRI GEOTECNICI

SCELTE LITOLOGICHE (validità orientativa)

Le scelte litologiche vengono effettuate in base al rapporto R_p / R_L
(Begemann 1965 -Raccomandazioni A.G.I. 1977), prevedendo altresì la possibilità di casi dubbi :

$R_p \leq 20 \text{ kg/cm}^2$: possibili terreni COESIVI anche se (R_p / R_L) > 30

$R_p \geq 20 \text{ kg/cm}^2$: possibili terreni GRANULARI anche se (R_p / R_L) < 30



NATURA LITOLOGICA

- 1 - COESIVA (TORBOSA) ALTA COMPRIMIBILITA'
- 2 - COESIVA IN GENERE
- 3 - GRANULARE
- 4 - COESIVA / GRANULARE

PARAMETRI GEOTECNICI (validità orientativa) - simboli - correlazioni - bibliografia

- γ' = peso dell' unità di volume (efficace) del terreno [correlazioni : γ' - R_p - natura]
(Terzaghi & Peck 1967 -Bowles 1982)
- σ'_{vo} = tensione verticale geostatica (efficace) del terreno (valutata in base ai valori di γ')
- C_u = coesione non drenata (terreni coesivi) [correlazioni : C_u - R_p]
- OCR = grado di sovra consolidazione (terreni coesivi) [correlazioni : OCR - C_u - σ'_{vo}]
(Ladd et al. 1972 / 1974 / 1977 - Lancellotta 1983)
- Eu = modulo di deformazione non drenato (terr.coes.) [correl. : Eu - C_u - OCR - I_p I_p = ind.plast.]
Eu50 - Eu25 corrispondono rispettivamente ad un grado di mobilitazione dello sforzo deviatorico pari al 50-25% (Duncan & Buchigani 1976)
- E' = modulo di deformazione drenato (terreni granulari) [correlazioni : E' - R_p]
 E'_{50} - E'_{25} corrispondono rispettivamente ad un grado di mobilitazione dello sforzo deviatorico pari al 50-25% (coeff. di sicurezza $F = 2 - 4$ rispettivamente)
(Schmertmann 1970 / 1978 - Jamiolkowski et al. 1983)
- Mo = modulo di deformazione edometrico (terreni coesivi e granulari) [correl. : Mo - R_p - natura]
(Sanglerat 1972 - Mitchell & Gardner 1975 - Ricceri et al. 1974 - Holden 1973)
- Dr = densità relativa (terreni gran. N. C. - normalmente consolidati)
[correlazioni : Dr - R_p - σ'_{vo}] (Schmertmann 1976)
- ϕ' = angolo di attrito interno efficace (terreni granulari N.C.) [correl. : ϕ' - Dr - R_p - σ'_{vo}]
(Schmertmann 1978 - Durgunoglu & Mitchell 1975 - Meyerhof 1956 / 1976)
 ϕ'_{1s} - (Schmertmann) sabbia fine uniforme ϕ'_{2s} - sabbia media unif./ fine ben gradata
 ϕ'_{3s} - sabbia grossa unif./ media ben gradata ϕ'_{4s} - sabbia-ghiaia poco lim./ ghiaietto unif.
 ϕ'_{dm} - (Durgunoglu & Mitchell) sabbie N.C.: ϕ'_{my} - (Meyerhof) sabbie limose
- Amax = accelerazione al suolo che può causare liquefazione (terreni granulari)
(g = acc.gravità)(Seed & Idriss 1971 - Sirio 1976) [correlazioni : (Amax/g) - Dr]

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 1

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,70 m da quota inizio
- pagina : 1

NATURA COESIVA													NATURA GRANULARE												
Prof. m	Rp kg/cm²	Rp/Ri (-)	Natura Litol.	Y t/m³	p/va kg/cm²	Cu kg/cm²	OCR (-)	Eu50 kg/cm²	Eu25 kg/cm²	Mo kg/cm²	Dr %	α1s (°)	α2s (°)	α3s (°)	α4s (°)	edm (°)	emy (°)	Amax/g (-)	E'50 kg/cm²	E'25 kg/cm²	Mo kg/cm²				
0,20	4	15	1***	1,85	0,04	0,20	51,7	8	12	6															
0,40	8	15	2////	1,85	0,07	0,40	51,7	88	102	35															
0,60	12	18	2////	1,85	0,11	0,57	48,7	97	146	45															
0,80	10	19	2////	1,85	0,15	0,50	28,8	85	129	40															
1,00	12	15	2////	1,85	0,19	0,57	25,7	97	146	45															
1,20	10	15	2////	1,85	0,22	0,50	17,3	85	129	40															
1,40	16	17	2////	1,85	0,26	0,70	21,6	118	177	52															
1,60	14	17	2////	1,85	0,30	0,64	16,3	108	162	48															
1,80	16	20	2////	0,96	0,32	0,70	16,9	118	177	52															
2,00	16	22	2////	0,96	0,33	0,70	15,7	118	177	52															
2,20	15	16	2////	0,95	0,35	0,67	13,9	113	170	50															
2,40	16	17	2////	0,96	0,37	0,70	13,7	118	177	52															
2,60	18	22	2////	0,98	0,39	0,75	14,1	128	191	56															
2,80	14	17	2////	0,94	0,41	0,64	10,8	108	162	48															
3,00	18	22	2////	0,98	0,43	0,75	12,6	128	191	56															
3,20	16	20	2////	0,96	0,45	0,70	10,8	118	177	52															
3,40	12	16	2////	0,92	0,47	0,57	8,1	112	168	45															
3,60	9	12	2////	0,88	0,48	0,45	5,7	130	196	38															
3,80	9	22	2////	0,88	0,50	0,45	5,5	137	205	38															
4,00	8	15	2////	0,86	0,52	0,40	4,5	145	218	35															
4,20	8	15	2////	0,86	0,54	0,40	4,3	150	225	35															
4,40	8	20	2////	0,86	0,55	0,40	4,2	155	232	35															
4,60	10	21	2////	0,90	0,57	0,50	5,3	157	235	40															
4,80	9	13	2////	0,88	0,59	0,45	4,5	165	247	38															
5,00	8	20	2////	0,86	0,61	0,40	3,7	171	257	35															
5,20	6	22	2////	0,82	0,62	0,30	2,5	159	238	29															
5,40	6	22	2////	0,82	0,64	0,30	2,4	160	241	29															
5,60	5	9	1***	0,46	0,65	0,25	1,9	30	46	8															
5,80	5	12	1***	0,46	0,66	0,25	1,9	30	46	8															
6,00	18	27	2////	0,98	0,68	0,75	7,1	169	254	56															
6,20	30	45	3:..	0,88	0,70	-	-	-	-	-	39	34	36	38	41	32	29	0,079	50	75	90	-			
6,40	36	45	3:..	0,89	0,71	-	-	-	-	-	45	34	37	39	42	33	30	0,092	60	90	108	-			
6,60	16	24	2////	0,96	0,73	0,70	5,9	195	293	52															
6,80	8	30	4F:	0,84	0,75	0,40	2,9	202	302	35															
7,00	4	20	2////	0,78	0,77	0,20	1,2	119	178	20															
7,20	3	22	2////	0,76	0,78	0,15	0,8	90	135	15															
7,40	4	20	2////	0,78	0,80	0,20	1,1	119	179	20															
7,60	3	15	1***	0,46	0,81	0,15	0,8	20	29	5															
7,80	3	15	1***	0,46	0,81	0,15	0,8	20	29	5															
8,00	3	22	2////	0,76	0,83	0,15	0,7	90	135	15															
8,20	4	20	2////	0,78	0,85	0,20	1,0	120	180	20															
8,40	3	22	2////	0,76	0,86	0,15	0,7	90	135	15															
8,60	4	30	4F:	0,80	0,88	0,20	1,0	120	180	20															
8,80	4	30	4F:	0,80	0,89	0,20	1,0	120	180	20															
9,00	4	30	4F:	0,80	0,91	0,20	0,9	120	180	20															
9,20	4	30	4F:	0,80	0,92	0,20	0,9	120	180	20															
9,40	4	30	4F:	0,80	0,94	0,20	0,9	120	180	20															
9,60	4	30	4F:	0,80	0,96	0,20	0,9	120	180	20															
9,80	4	30	4F:	0,80	0,97	0,20	0,9	120	180	20															
10,00	4	30	4F:	0,80	0,99	0,20	0,9	120	180	20															
10,20	20	75	4F:	0,93	1,01	0,80	4,7	280	420	60															
10,40	14	26	2////	0,94	1,03	0,64	3,5	289	433	48	17	30	33	36	39	28	27	0,032	33	50	60				
10,60	36	45	3:..	0,89	1,04	-	-	-	-	-	36	33	36	38	41	31	30	0,070	60	90	108				
10,80	26	49	3:..	0,87	1,06	-	-	-	-	-	24	31	34	37	40	29	28	0,046	43	65	78				
11,00	44	55	3:..	0,91	1,08	-	-	-	-	-	42	34	36	39	41	32	31	0,084	73	110	132				
11,20	16	24	2////	0,96	1,10	0,70	3,6	310	465	52															
11,40	4	20	2////	0,78	1,11	0,20	0,7	120	180	20															
11,60	5	25	2////	0,80	1,13	0,25	1,0	150	225	25															
11,80	4	30	4F:	0,80	1,15	0,20	0,7	120	180	20															
12,00	6	30	4F:	0,82	1,16	0,30	1,2	179	268	29															
12,20	7	105	4F:	0,83	1,18	0,35	1,4	206	309	32															
12,40	7	26	2////	0,84	1,19	0,35	1,4	206	309	32															
12,60	6	30	4F:	0,82	1,21	0,30	1,1	179	269	29															
12,80	7	35	4F:	0,83	1,23	0,35	1,3	207	310	32															
13,00	7	35	4F:	0,83	1,24	0,35	1,3	207	310	32															
13,20	6	45	4F:	0,82	1,26	0,30	1,0	180	269	29															
13,40	6	30	4F:	0,82	1,28	0,30	1,0	180	270	29															
13,60	6	30	4F:	0,82	1,29	0,30	1,0	180	270	29															
13,80	30	4F:	0,82	1,31	0,30	1,0	180	270	29																
14,00	7	26	2////	0,84	1,33	0,35	1,2	208	312	32															
14,20	7	35	4F:	0,83	1,34	0,35	1,2	208	312	32															
14,40	7	35	4F:	0,83	1,36	0,35	1,2	208	313	32															
14,60	7	35	4F:	0,83	1,38	0,35	1,1	209	313	32															
14,80	7	35	4F:	0,83	1,39	0,35	1,1	209	313	32															
15,00	7	26	2////	0,84	1,41	0,35	1,1	209	314	32															
15,20	8	30	4F:	0,84	1,43	0,40	1,3	237	355	35															
15,40	8	30	4F:	0,84	1,44	0,40	1,3	237	355	35															
15,60	8	30	4F:	0,84	1,46	0,40	1,2	237	356	35															
15,80	8	20	2////	0,86	1,48	0,40	1,2	237	356	35															
16,00	16	30	4F:	0,90	1,50	0,70	2,4	373	559	52															
16,20	16	40	4F:	0,90	1,51	0,70	2,4	374	561	52															
16,40	6	30	4F:	0,82	1,53	0,30	0,8	180	27																

**PROVA PENETROMETRICA STATICA
TABELLA PARAMETRI GEOTECNICI**

CPT 1

~~2.11.04.03.013~~

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,70 m da quota inizio
- pagina : 2

Prof. m	Rp kg/cm ²	Rp/Ri (-)	Natura Litol.	Y l/m ³	p'vo kg/cm ²	Cu kg/cm ²	OCR (-)	NATURA COESIVA			NATURA GRANULARE										
								Eu50 kg/cm ²	Eu25 kg/cm ²	Mo kg/cm ²	Dr %	σ1s (°)	σ2s (°)	σ3s (°)	σ4s (°)	adm (°)	amy (°)	Amax/g (-)	E'50 kg/cm ²	E'25 kg/cm ²	Mo kg/cm ²
20.20	30	22	4/f	0,96	1,89	1,00	2,8	506	759	90	15	30	33	36	39	27	29	0,029	50	75	90
20.40	30	37	3/iii	0,88	1,90	-	-	-	-	-	15	30	33	36	39	27	29	0,029	50	75	90
20.60	18	45	4/f	0,91	1,92	0,75	1,9	423	634	56	-	28	31	35	38	25	27	-	30	45	54
20.80	18	34	4/f	0,91	1,94	0,75	1,9	423	635	56	-	28	31	35	38	25	27	-	30	45	54
21.00	22	18	4/f	0,93	1,96	0,85	2,2	465	697	66	4	28	32	35	38	25	28	0,009	37	55	66
21.20	26	22	4/f	0,95	1,98	0,93	2,4	496	744	78	9	29	32	35	39	26	28	0,019	43	65	78
21.40	28	21	4/f	0,96	2,00	0,97	2,5	510	765	84	11	30	33	36	39	26	28	0,023	47	70	84
21.60	26	19	4/f	0,95	2,02	0,93	2,4	499	749	78	9	29	32	35	39	26	28	0,018	43	65	78
21.80	22	21	4/f	0,93	2,04	0,85	2,1	469	704	66	3	28	32	35	38	25	28	0,007	37	55	66
22.00	14	15	2/iii	0,94	2,05	0,64	1,5	372	559	48	-	-	-	-	-	-	-	-	-	-	-
22.20	18	19	2/iii	0,98	2,07	0,75	1,8	429	644	56	-	-	-	-	-	-	-	-	-	-	-
22.40	20	15	4/f	0,93	2,09	0,80	1,9	453	679	60	-	28	31	35	38	25	27	-	33	50	60
22.60	30	19	4/f	0,96	2,11	1,00	2,5	532	798	90	12	30	33	36	39	26	29	0,024	50	75	90
22.80	28	17	4/f	0,96	2,13	0,97	2,3	522	783	84	10	29	32	35	39	26	28	0,020	47	70	84
23.00	30	17	4/f	0,96	2,15	1,00	2,4	536	804	90	12	30	33	36	39	26	29	0,024	50	75	90
23.20	34	11	4/f	0,98	2,17	1,13	2,8	578	867	102	16	30	33	36	39	27	29	0,031	57	85	102
23.40	42	16	4/f	1,00	2,19	1,40	3,6	618	927	126	23	31	34	37	40	28	30	0,044	70	105	126
23.60	80	12	4/f	1,03	2,21	2,67	7,9	532	798	240	45	34	37	39	42	31	33	0,092	133	200	240
23.80	200	37	3/iii	1,15	2,23	-	-	-	-	-	76	39	40	42	44	36	38	0,178	333	500	600
24.00	240	-	3/iii	1,15	2,26	-	-	-	-	-	82	40	41	43	45	37	39	0,197	400	600	720
24.20	400	-	3/iii	1,15	2,28	-	-	-	-	-	100	42	43	45	46	40	40	0,257	667	1000	1200

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA 00713690451

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 2

2.010498-018

- committente : Studio Geoprogetti e Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,00 m da quota inizio
- pagina : 1

NATURA GOESIVA													NATURA GRANULARE										
Prof. m	Rp kg/cm ²	Rp/Rl (-)	Natura Lital.	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 %	ø1s (°)	ø2s (°)	ø3s (°)	ø4s (°)	ødm (°)	ømy (°)	Amax/g (-)	E'50 kg/cm ²	E'25 kg/cm ²	Mo kg/cm ²		
0.20	4	15	1***	1.85	0.04	0.20	51.7	8	12	6	-	-	-	-	-	-	-	-	-	-	-		
0.40	6	15	1***	1.85	0.07	0.30	36.1	12	18	9	-	-	-	-	-	-	-	-	-	-	-		
0.60	10	25	2/III	1.85	0.11	0.50	41.2	85	128	40	-	-	-	-	-	-	-	-	-	-	-		
0.80	10	19	2/III	1.85	0.15	0.50	28.8	85	128	40	-	-	-	-	-	-	-	-	-	-	-		
1.00	8	20	2/III	1.85	0.19	0.40	16.5	68	102	35	-	-	-	-	-	-	-	-	-	-	-		
1.20	18	27	2/III	1.85	0.22	0.75	28.8	128	191	58	-	-	-	-	-	-	-	-	-	-	-		
1.40	12	18	2/III	1.85	0.25	0.57	16.9	97	146	45	-	-	-	-	-	-	-	-	-	-	-		
1.60	16	22	2/III	1.85	0.30	0.70	18.3	118	177	52	-	-	-	-	-	-	-	-	-	-	-		
1.80	12	18	2/III	1.85	0.33	0.57	12.3	97	146	45	-	-	-	-	-	-	-	-	-	-	-		
2.00	8	15	2/III	0.96	0.35	0.40	7.4	82	129	35	-	-	-	-	-	-	-	-	-	-	-		
2.20	8	17	2/III	0.96	0.37	0.40	7.0	82	138	35	-	-	-	-	-	-	-	-	-	-	-		
2.40	9	13	2/III	0.88	0.39	0.45	7.6	94	141	38	-	-	-	-	-	-	-	-	-	-	-		
2.60	16	20	2/III	0.96	0.40	0.70	12.4	118	177	52	-	-	-	-	-	-	-	-	-	-	-		
2.80	22	24	4/F	0.93	0.42	0.85	14.9	144	216	66	41	34	35	39	41	33	28	0.082	37	55	56		
3.00	20	21	4/F	0.93	0.44	0.80	13.2	136	204	60	37	33	36	38	41	33	27	0.072	33	50	60		
3.20	18	19	2/III	0.98	0.46	0.75	11.5	128	191	56	-	-	-	-	-	-	-	-	-	-	-		
3.40	16	20	2/III	0.96	0.48	0.70	10.0	118	177	52	-	-	-	-	-	-	-	-	-	-	-		
3.60	14	19	2/III	0.94	0.50	0.64	8.5	118	178	48	-	-	-	-	-	-	-	-	-	-	-		
3.80	11	16	2/III	0.91	0.52	0.54	6.6	133	199	42	-	-	-	-	-	-	-	-	-	-	-		
4.00	10	15	2/III	0.90	0.54	0.50	5.8	143	215	40	-	-	-	-	-	-	-	-	-	-	-		
4.20	12	18	2/III	0.92	0.55	0.57	6.5	142	214	45	-	-	-	-	-	-	-	-	-	-	-		
4.40	16	30	4/F	0.90	0.57	0.70	8.0	137	206	52	23	31	34	37	40	30	27	0.043	27	40	48		
4.60	16	22	2/III	0.96	0.59	0.70	7.7	143	215	52	-	-	-	-	-	-	-	-	-	-	-		
4.80	11	14	2/III	0.91	0.61	0.54	5.4	166	249	42	-	-	-	-	-	-	-	-	-	-	-		
5.00	10	14	2/III	0.90	0.63	0.50	4.7	174	261	40	-	-	-	-	-	-	-	-	-	-	-		
5.20	9	19	2/III	0.88	0.64	0.46	4.0	180	270	38	-	-	-	-	-	-	-	-	-	-	-		
5.40	7	21	2/III	0.84	0.66	0.35	2.8	177	266	32	-	-	-	-	-	-	-	-	-	-	-		
5.60	5	19	2/III	0.80	0.68	0.25	1.8	142	214	25	-	-	-	-	-	-	-	-	-	-	-		
5.80	28	105	3***	0.87	0.69	-	-	-	-	-	37	33	36	38	41	32	28	0.073	47	70	84		
6.00	28	35	3***	0.87	0.71	-	-	-	-	-	37	33	36	38	41	32	28	0.072	47	70	84		
6.20	24	45	3***	0.88	0.73	-	-	-	-	-	31	32	35	38	40	31	28	0.059	40	60	72		
6.40	24	45	3***	0.88	0.75	-	-	-	-	-	30	32	35	38	40	31	28	0.058	40	60	72		
6.60	14	35	4/F	0.89	0.76	0.64	5.0	211	316	48	11	30	33	36	39	27	26	0.022	23	35	42		
6.80	8	30	4/F	0.84	0.78	0.40	2.7	206	309	35	-	28	31	35	38	25	26	-	13	20	24		
7.00	4	15	1***	0.46	0.79	0.20	1.1	26	39	6	-	-	-	-	-	-	-	-	-	-	-		
7.20	4	15	1***	0.46	0.80	0.20	1.1	26	39	6	-	-	-	-	-	-	-	-	-	-	-		
7.40	4	15	1***	0.46	0.81	0.20	1.1	26	39	6	-	-	-	-	-	-	-	-	-	-	-		
7.60	4	30	4/F	0.80	0.82	0.20	1.1	120	179	20	-	28	31	35	38	25	25	-	7	10	12		
7.80	4	30	4/F	0.80	0.84	0.20	1.0	120	180	20	-	28	31	35	38	25	25	-	7	10	12		
8.00	4	30	4/F	0.80	0.86	0.20	1.0	120	180	20	-	28	31	35	38	25	25	-	7	10	12		
8.20	4	20	2/III	0.78	0.87	0.20	1.0	120	180	20	-	-	-	-	-	-	-	-	-	-	-		
8.40	3	15	1***	0.46	0.88	0.15	0.7	20	29	5	-	-	-	-	-	-	-	-	-	-	-		
8.60	4	15	1***	0.46	0.89	0.20	1.0	26	39	6	-	-	-	-	-	-	-	-	-	-	-		
8.80	4	60	4/F	0.80	0.91	0.20	0.9	120	180	20	-	28	31	35	38	25	25	-	7	10	12		
9.00	5	25	2/III	0.80	0.92	0.25	1.2	148	222	25	-	-	-	-	-	-	-	-	-	-	-		
9.20	5	15	1***	0.46	0.93	0.25	1.2	32	48	8	-	-	-	-	-	-	-	-	-	-	-		
9.40	5	25	2/III	0.80	0.95	0.25	1.2	149	223	25	-	-	-	-	-	-	-	-	-	-	-		
9.60	5	25	2/III	0.80	0.96	0.25	1.2	149	223	25	-	-	-	-	-	-	-	-	-	-	-		
9.80	6	22	2/III	0.82	0.98	0.30	1.4	176	264	29	-	-	-	-	-	-	-	-	-	-	-		
10.00	6	18	2/III	0.82	1.00	0.30	1.4	176	264	29	-	-	-	-	-	-	-	-	-	-	-		
10.20	13	65	4/F	0.88	1.01	0.60	3.3	284	426	47	2	28	31	35	36	26	26	0.004	22	33	39		
10.40	11	16	2/III	0.91	1.03	0.54	2.8	274	411	42	-	-	-	-	-	-	-	-	-	-	-		
10.60	20	30	4/F	0.93	1.05	0.80	4.5	293	440	60	15	30	33	36	39	28	27	0.030	33	50	60		
10.80	40	75	3***	0.90	1.07	-	-	-	-	-	39	33	36	38	41	31	30	0.077	67	100	120		
11.00	22	55	3***	0.86	1.09	-	-	-	-	-	18	31	33	36	39	28	28	0.034	37	55	66		
11.20	16	30	4/F	0.90	1.10	0.70	3.5	311	467	52	7	29	32	35	39	26	27	0.015	27	40	48		
11.40	8	30	4/F	0.84	1.12	0.40	1.7	229	344	35	-	28	31	35	38	25	26	-	13	20	24		
11.60	6	22	2/III	0.82	1.14	0.30	1.2	178	268	29	-	-	-	-	-	-	-	-	-	-	-		
11.80	12	45	4/F	0.88	1.15	0.57	2.6	299	448	45	-	28	31	35	38	25	26	-	20	30	36		
12.00	6	30	4/F	0.82	1.17	0.30	1.1	179	268	29	-	28	31	35	38	25	26	-	10	15	18		
12.20	6	30	4/F	0.82	1.19	0.30	1.1	179	268	29	-	28	31	35	38	25	26	-	10	15	18		
12.40	6	22	2/III	0.82	1.20	0.30	1.1	179	269	29	-	-	-	-	-	-	-	-	-	-	-		
12.60	6	22	2/III	0.82	1.22	0.30	1.1	179	269	29	-	-	-	-	-	-	-	-	-	-	-		
12.80	8	60	4/F	0.84	1.24	0.40	1.5	233	349	35	-	28	31	35	38	25	26	-	13	20	24		
13.00	6	22	2/III	0.82	1.25	0.30	1.1	180	269	29	-	-	-	-	-	-	-	-	-	-	-		
13.20	6	30	4/F	0.82	1.27	0.30	1.0	180	270	29	-	28	31	35	38	25	26	-	10	15	18		
13.40	8	30	4/F	0.84	1.29	0.40	1.5	234	351	35	-	28	31	35	38	25	26	-	13	20	24		
13.60	7	26	2/III	0.84	1.30	0.35	1.2	208	312	32	-	-	-	-	-	-	-	-	-	-	-		
13.80	8	40	4/F	0.84	1.32	0.40	1.4	235	352	35	-	28	31	35	38	25	26	-	13	20	24		
14.00	7	26	2/III	0.84	1.34	0.35	1.2	208	312	32	-	-	-	-	-	-	-	-	-	-	-		
14.20	7	26	2/III	0.84	1.35	0.35	1.2	208	313	32	-	-	-	-	-	-	-	-	-	-	-		
14.40	7	26	2/III	0.84	1.37	0.35	1.1	209	313	32	-	-	-	-	-	-	-	-	-	-	-		
14.60	8	40	4/F	0.84	1.39	0.40	1.3	236	354	35	-	28	31	35	38	25	26	-	13	20	24		
14.80	7	26	2/III	0.84	1.40	0.35	1.1	209	313	32	-	-	-	-	-	-	-	-	-	-	-		
15.00	8	24	2/III	0.86	1.42	0.40	1.3	236	355	35	-	-	-	-	-	-	-	-	-	-	-		
15.20	8	30	4/F	0.84	1.44	0.40	1.3	237	355	35	-	28	31	35	38	25	26	-	13	20	24		
15.40	8	60	4/F	0.84																			

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 2

- committente : Studio Geoprogetti e Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,00 m da quota inizio
- pagina : 2

Prof. m	Rp kg/cm²	Rp/Rl (-)	Natura Litol.	Y U/m²	NATURA COESIVA					NATURA GRANULARE											
					p'vo kg/cm²	Cu kg/cm²	OCR (-)	Eu50 kg/cm²	Eu25 kg/cm²	Mo kg/cm²	Dr %	a1s (°)	a2s (°)	a3s (°)	a4s (°)	edm (°)	emy (°)	Amax/g (-)	E'50 kg/cm²	E'25 kg/cm²	Mo kg/cm²
20,20	36	21	4/4	0,99	1,90	1,20	3,5	537	805	108	21	31	34	37	40	28	30	0,040	60	90	108
20,40	34	36	3/3	0,89	1,92	-	-	-	-	-	19	31	34	36	40	27	29	0,036	57	85	102
20,60	22	27	4/4	0,93	1,94	0,85	2,2	463	695	66	4	29	32	35	38	25	28	0,009	37	55	66
20,80	20	25	4/4	0,93	1,96	0,80	2,1	446	669	60	0	28	31	35	38	25	27	-	33	50	60
21,00	24	18	4/4	0,94	1,98	0,89	2,3	482	723	72	6	29	32	35	39	25	28	0,015	40	60	72
21,20	28	23	4/4	0,96	2,00	0,97	2,5	510	764	84	11	30	33	36	39	26	28	0,023	47	70	84
21,40	26	19	4/4	0,95	2,01	0,93	2,4	499	749	78	9	29	32	35	39	26	28	0,018	43	65	78
21,60	30	25	4/4	0,96	2,03	1,00	2,6	524	786	90	13	30	33	36	39	26	29	0,026	50	75	90
21,80	28	30	4/4	0,96	2,05	0,97	2,4	515	773	84	11	29	33	36	39	26	28	0,022	47	70	84
22,00	20	19	4/4	0,93	2,07	0,80	1,9	452	678	60	-	28	31	35	38	25	27	-	33	50	60
22,20	20	17	4/4	0,93	2,09	0,80	1,9	453	679	60	-	28	31	35	38	25	27	-	33	50	60
22,40	30	17	4/4	0,96	2,11	1,00	2,5	532	798	90	12	30	33	36	39	26	29	0,024	50	75	90
22,60	32	20	4/4	0,97	2,13	1,07	2,6	555	832	96	14	30	33	36	39	26	29	0,028	53	80	96
22,80	30	19	4/4	0,96	2,15	1,00	2,4	536	803	90	12	30	33	36	39	26	29	0,024	50	75	90
23,00	36	18	4/4	0,99	2,17	1,20	3,0	592	888	108	18	31	33	36	39	27	30	0,034	60	90	108
23,20	40	27	4/4	1,00	2,19	1,33	3,4	615	922	120	21	31	34	37	40	27	30	0,041	67	100	120
23,40	34	16	4/4	0,98	2,21	1,13	2,7	583	874	102	16	30	33	36	39	27	29	0,030	57	85	102
23,60	44	16	4/4	1,00	2,23	1,47	3,7	628	942	132	24	31	34	37	40	28	31	0,046	73	110	132
23,80	100	15	4/4	1,05	2,25	3,33	10,3	567	850	300	52	35	38	40	42	32	34	0,110	167	250	300
24,00	180	17	4/4	1,11	2,27	6,00	21,2	1020	1530	540	72	38	40	42	44	36	37	0,166	300	450	540
24,20	240	-	3/3	1,15	2,29	-	-	-	-	-	82	39	41	43	45	37	39	0,196	400	600	720

GEO TIRRENO s.r.l.
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PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 3

2040498-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,90 m da quota inizio
 - pagina : 1

NATURA COESIVA											NATURA GRANULARE											
Prof. m	Rp kg/cm ²	Rp/Ri (-)	Natura Litol.	Y um ²	p'vo kg/cm ²	Cu kg/cm ²	OCR (-)	Eu50 kg/cm ²	Eu25 kg/cm ²	Mo kg/cm ²	Dr %	a1s (*)	a2s (*)	a3s (*)	a4s (*)	edm (*)	emy (*)	Amax/g (-)	E'50 kg/cm ²	E'25 kg/cm ²	Mo kg/cm ²	
0,20	6	11	1***	1,85	0,04	0,30	85,9	12	18	9	-	-	-	-	-	-	-	-	-	-	-	-
0,40	10	15	2/III	1,85	0,07	0,50	68,4	85	128	40	-	-	-	-	-	-	-	-	-	-	-	-
0,60	18	17	2/III	1,85	0,11	0,75	68,4	128	191	56	-	-	-	-	-	-	-	-	-	-	-	-
0,80	18	15	2/III	1,85	0,15	0,75	47,7	128	191	56	-	-	-	-	-	-	-	-	-	-	-	-
1,00	12	13	2/III	1,85	0,19	0,57	25,7	97	146	45	-	-	-	-	-	-	-	-	-	-	-	-
1,20	18	19	2/III	1,85	0,22	0,75	28,8	128	191	56	-	-	-	-	-	-	-	-	-	-	-	-
1,40	20	19	4/F	1,85	0,26	0,80	25,7	136	204	60	50	35	37	40	42	36	27	0,103	33	50	60	
1,60	20	18	4/F	1,85	0,30	0,80	21,8	136	204	60	46	34	37	39	42	35	27	0,095	33	50	60	
1,80	20	17	4/F	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	20	19	4/F	0,93	0,35	0,80	17,6	136	204	60	42	34	36	39	41	34	27	0,085	33	50	60	
2,20	18	19	2/III	0,98	0,37	0,75	15,1	128	191	56	-	-	-	-	-	-	-	-	-	-	-	-
2,40	20	20	4/F	0,93	0,39	0,80	15,4	136	204	60	40	34	36	39	41	33	27	0,079	33	50	60	
2,60	19	18	2/III	0,99	0,41	0,78	14,0	132	198	58	-	-	-	-	-	-	-	-	-	-	-	-
2,80	18	17	2/III	0,98	0,43	0,75	12,6	128	191	56	-	-	-	-	-	-	-	-	-	-	-	-
3,00	22	16	4/F	0,93	0,45	0,85	13,9	144	216	66	40	34	36	38	41	33	28	0,079	37	55	66	
3,20	24	18	4/F	0,94	0,47	0,89	14,1	151	227	72	42	34	36	39	41	33	28	0,083	40	60	72	
3,40	22	16	4/F	0,93	0,49	0,85	12,6	144	216	66	38	33	36	38	41	33	28	0,074	37	55	66	
3,60	20	21	4/F	0,93	0,50	0,80	11,2	136	204	60	33	33	35	38	41	32	27	0,065	33	50	60	
3,80	22	24	4/F	0,93	0,52	0,85	11,5	144	216	66	36	33	36	38	41	32	28	0,070	37	55	66	
4,00	18	19	2/III	0,98	0,54	0,75	9,4	130	195	56	-	-	-	-	-	-	-	-	-	-	-	-
4,20	16	17	2/III	0,96	0,56	0,70	8,2	134	201	52	-	-	-	-	-	-	-	-	-	-	-	-
4,40	14	15	2/III	0,94	0,58	0,64	7,1	145	218	48	-	-	-	-	-	-	-	-	-	-	-	-
4,60	12	18	2/III	0,92	0,60	0,57	5,9	159	238	45	-	-	-	-	-	-	-	-	-	-	-	-
4,80	12	20	2/III	0,92	0,62	0,57	5,7	166	248	45	-	-	-	-	-	-	-	-	-	-	-	-
5,00	11	21	2/III	0,91	0,63	0,54	5,1	175	262	42	-	-	-	-	-	-	-	-	-	-	-	-
5,20	10	25	2/III	0,90	0,65	0,50	4,5	182	273	40	-	-	-	-	-	-	-	-	-	-	-	-
5,40	8	30	4/F	0,84	0,67	0,40	3,3	187	281	35	-	28	31	35	38	25	26	-	13	20	24	
5,60	8	24	2/III	0,86	0,69	0,40	3,2	191	286	35	-	-	-	-	-	-	-	-	-	-	-	-
5,80	8	30	4/F	0,84	0,70	0,40	3,1	194	291	35	-	28	31	35	38	25	26	-	13	20	24	
6,00	8	15	2/III	0,86	0,72	0,40	3,0	197	296	35	-	-	-	-	-	-	-	-	-	-	-	-
6,20	20	50	4/F	0,93	0,74	0,80	6,9	196	279	60	24	31	34	37	40	30	27	0,046	33	50	60	
6,40	28	52	3:III	0,87	0,76	-	-	-	-	-	35	33	35	38	41	31	28	0,069	47	70	84	
6,60	10	37	4/F	0,86	0,77	0,50	3,6	219	328	40	-	28	31	35	38	25	26	-	17	25	30	
6,80	10	37	4/F	0,86	0,79	0,50	3,5	223	335	40	-	28	31	35	38	25	26	-	17	25	30	
7,00	12	45	4/F	0,88	0,81	0,57	4,1	226	339	45	4	29	32	35	38	25	26	0,011	20	30	36	
7,20	6	30	4/F	0,82	0,83	0,30	1,8	171	257	29	-	28	31	35	38	25	26	-	10	15	18	
7,40	6	30	4/F	0,82	0,84	0,30	1,7	172	258	29	-	28	31	35	38	25	26	-	10	15	18	
7,60	6	22	2/III	0,82	0,86	0,30	1,7	173	259	29	-	-	-	-	-	-	-	-	-	-	-	-
7,80	6	30	4/F	0,82	0,87	0,30	1,6	173	260	29	-	28	31	35	38	25	26	-	10	15	18	
8,00	6	30	4/F	0,82	0,89	0,30	1,6	174	260	29	-	28	31	35	38	25	26	-	10	15	18	
8,20	6	30	4/F	0,82	0,91	0,30	1,6	174	261	29	-	28	31	35	38	25	26	-	10	15	18	
8,40	6	30	4/F	0,82	0,92	0,30	1,5	175	262	29	-	28	31	35	38	25	26	-	10	15	18	
8,60	7	35	4/F	0,83	0,94	0,35	1,8	199	299	32	-	28	31	35	38	25	26	-	12	18	21	
8,80	6	22	2/III	0,82	0,96	0,30	1,5	175	263	29	-	-	-	-	-	-	-	-	-	-	-	-
9,00	6	22	2/III	0,82	0,97	0,30	1,4	176	264	29	-	-	-	-	-	-	-	-	-	-	-	-
9,20	6	30	4/F	0,82	0,99	0,30	1,4	176	264	29	-	28	31	35	38	25	26	-	10	15	18	
9,40	6	22	2/III	0,82	1,01	0,30	1,4	176	264	29	-	-	-	-	-	-	-	-	-	-	-	-
9,60	6	22	2/III	0,82	1,02	0,30	1,4	177	265	29	-	-	-	-	-	-	-	-	-	-	-	-
9,80	6	11	1***	0,46	1,03	0,30	1,3	38	57	9	-	-	-	-	-	-	-	-	-	-	-	-
10,00	12	45	4/F	0,88	1,05	0,57	2,9	285	427	45	-	28	31	35	38	25	26	-	20	30	36	
10,20	7	17	2/III	0,84	1,07	0,35	1,6	203	305	32	-	-	-	-	-	-	-	-	-	-	-	-
10,40	30	45	3:III	0,88	1,08	-	-	-	-	-	29	32	35	37	40	30	29	0,055	50	75	90	
10,60	26	28	4/F	0,95	1,10	0,93	5,1	303	455	78	23	31	34	37	40	29	28	0,044	43	65	78	
10,80	16	12	2/III	0,96	1,12	0,70	3,5	316	474	52	-	-	-	-	-	-	-	-	-	-	-	-
11,00	10	25	2/III	0,90	1,14	0,50	2,2	273	410	40	-	-	-	-	-	-	-	-	-	-	-	-
11,20	14	17	2/III	0,94	1,16	0,64	3,0	315	473	48	-	-	-	-	-	-	-	-	-	-	-	-
11,40	8	30	4/F	0,84	1,17	0,40	1,6	231	347	35	-	28	31	35	38	25	26	-	13	20	24	
11,60	7	26	2/III	0,84	1,19	0,35	1,4	206	309	32	-	-	-	-	-	-	-	-	-	-	-	-
11,80	6	22	2/III	0,82	1,21	0,30	1,1	179	269	29	-	-	-	-	-	-	-	-	-	-	-	-
12,00	6	22	2/III	0,82	1,22	0,30	1,1	179	269	29	-	-	-	-	-	-	-	-	-	-	-	-
12,20	7	26	2/III	0,84	1,24	0,35	1,3	207	310	32	-	-	-	-	-	-	-	-	-	-	-	-
12,40	7	35	4/F	0,83	1,26	0,35	1,3	207	311	32	-	28	31	35	38	25	26	-	12	18	21	
12,60	7	35	4/F	0,83	1,27	0,35	1,2	207	311	32	-	28	31	35	38	25	26	-	12	18	21	
12,80	7	26	2/III	0,84	1,29	0,35	1,2	208	311	32	-	-	-	-	-	-	-	-	-	-	-	-
13,00	6	30	4/F	0,82	1,31	0,30	1,0	180	270	29	-	-	-	-	-	-	-	-	-	-	-	-
13,20	7	35	4/F	0,83	1,32	0,35	1,2	208	312	32	-	28	31	35	38	25	26	-	10	15	18	
13,40	8	40	4/F	0,84	1,34	0,40	1,4	235	353	35	-	28	31	35	38	25	26	-	12	18	21	
13,60	8	30	4/F	0,84	1,36	0,40	1,4	235	353	35	-	28	31	35	38	25	26	-	13	20	24	
13,80	8	30	4/F	0,84	1,37	0,40	1,3	236	354	35	-	28	31	35	38	25	26	-	13	20	24	
14,00	8	40	4/F	0,84	1,39	0,40	1,3	236	354	35	-	28	31	35	38	25	26	-	13	20	24	
14,20	9	34	4/F	0,85	1,41	0,45	1,5	262	394	38	-	28	31	35	38	25	26	-	15	23	27	
14,40	8	40	4/F	0,84	1,42	0,40	1,3	237	355	35	-	28	31	35	38	25	26	-	13	20	24	
14,60	8	30	4/F	0,84																		

PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 3

2002-02-25-010

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,90 m da quota inizio
 - pagina : 2

Prof. m	Rp kg/cm ²	Rp/Rl (-)	Natura Litol.	Y t/m ³	NATURA COESIVA					NATURA GRANULARE											
					p'vo kg/cm ²	Cu kg/cm ²	OCR (-)	Eu50 kg/cm ²	Eu25 kg/cm ²	Mo kg/cm ²	Dr %	a1s (°)	a2s (°)	a3s (°)	a4s (°)	adm (°)	amy (°)	Amax/g (-)	E'50 kg/cm ²	E'25 kg/cm ²	Mo kg/cm ²
20.20	34	36	3:~	0.89	1.96	-	-	-	-	-	18	31	33	36	39	27	29	0.035	57	85	102
20.40	22	33	3:~	0.86	1.98	-	-	-	-	-	3	28	32	35	38	25	28	0.008	37	55	66
20.60	20	30	4:~	0.93	2.00	0.80	2.0	448	672	60	-	28	31	35	38	25	27	-	33	50	60
20.80	24	30	4:~	0.94	2.01	0.89	2.3	485	727	72	6	29	32	35	38	25	28	0.014	40	60	72
21.00	26	22	4:~	0.95	2.03	0.93	2.4	501	751	78	8	29	32	35	39	25	28	0.018	43	65	78
21.20	30	28	4:~	0.96	2.05	1.00	2.5	526	789	90	13	30	33	36	39	26	29	0.026	50	75	90
21.40	24	18	4:~	0.94	2.07	0.89	2.2	489	733	72	5	29	32	35	38	25	28	0.013	40	60	72
21.60	22	33	3:~	0.86	2.09	-	-	-	-	-	2	28	31	35	38	25	28	0.005	37	55	66
21.80	70	52	3:~	0.95	2.11	-	-	-	-	-	42	34	36	39	41	31	32	0.083	117	175	210
22.00	80	30	4:~	1.03	2.13	2.67	8.3	506	760	240	46	34	37	39	42	32	33	0.094	133	200	240
22.20	40	30	4:~	1.00	2.15	1.33	3.5	605	907	120	22	31	34	37	40	28	30	0.041	67	100	120
22.40	20	25	4:~	0.93	2.17	0.80	1.8	456	684	60	-	28	31	35	38	25	27	-	33	50	60
22.60	20	30	4:~	0.93	2.18	0.80	1.8	457	685	60	-	28	31	35	38	25	27	-	33	50	60
22.80	18	22	2:~	0.98	2.20	0.75	1.6	433	650	56	-	-	-	-	-	-	-	-	-	-	-
23.00	16	17	2:~	0.96	2.22	0.70	1.5	407	610	52	-	-	-	-	-	-	-	-	-	-	-
23.20	24	13	4:~	0.94	2.24	0.89	2.0	499	748	72	3	28	32	35	38	25	28	0.008	40	60	72
23.40	42	31	3:~	0.90	2.26	-	-	-	-	-	22	31	34	37	40	28	30	0.042	70	105	126
23.60	60	22	4:~	1.02	2.28	2.00	5.3	622	934	180	34	33	35	38	41	30	32	0.067	100	150	180
23.80	140	21	4:~	1.08	2.30	4.67	15.2	793	1190	420	63	37	39	41	43	34	36	0.139	233	350	420
24.00	220	-	3:~	1.15	2.33	-	-	-	-	-	78	39	41	42	44	37	38	0.185	367	550	660

GEO TIRRENO s.r.l.

Via Carrara, 101

54047 ASSA

Part. IVA n. 0713090451

PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 4

2010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 2,60 m da quota inizio
 - pagina : 2

Prof. m	Rp kg/cm ²	Rp/Rl (-)	Natura Litol.	Y t/m ²	p'vo kg/cm ²	Cu 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	E25 kg/cm ²	Mo kg/cm ²
												s1s (°)	s2s (°)	s3s (°)	s4s (°)	adm (°)	amy (°)	Amax/g (-)				
20,20	54	27	4/A	1,01	2,03	1,90	5,4	552	828	162	34	33	35	38	41	30	31	0,065	90	135	162	
20,40	50	37	3	0,92	2,05	-	-	-	-	-	31	32	35	38	40	29	31	0,059	83	125	150	
20,60	74	55	3	0,98	2,07	-	-	-	-	-	44	34	37	39	42	31	32	0,089	123	185	222	
20,80	80	120	3	0,97	2,09	-	-	-	-	-	46	34	37	39	42	32	33	0,095	133	200	240	
21,00	90	45	3	0,98	2,10	-	-	-	-	-	50	35	37	40	42	32	33	0,105	150	225	270	
21,20	80	24	4/A	1,03	2,13	2,67	8,3	506	759	240	46	34	37	39	42	32	33	0,094	133	200	240	
21,40	130	49	3	1,05	2,15	-	-	-	-	-	82	37	39	41	43	34	35	0,137	217	325	390	
21,60	120	60	3	1,03	2,17	-	-	-	-	-	59	36	38	40	43	34	35	0,129	200	300	360	
21,80	90	56	3	0,98	2,19	-	-	-	-	-	49	35	37	39	42	32	33	0,102	150	225	270	
22,00	76	38	3	0,96	2,21	-	-	-	-	-	43	34	36	39	41	31	33	0,087	127	190	228	
22,20	110	55	3	1,02	2,23	-	-	-	-	-	56	36	38	40	42	33	34	0,119	183	275	330	
22,40	140	70	3	1,06	2,25	-	-	-	-	-	64	37	39	41	43	34	36	0,141	233	350	420	
22,60	170	64	3	1,11	2,27	-	-	-	-	-	70	38	40	42	44	35	37	0,160	283	425	510	
22,80	200	43	3	1,15	2,29	-	-	-	-	-	76	39	40	42	44	36	38	0,176	333	500	600	
23,00	200	60	3	1,15	2,32	-	-	-	-	-	75	39	40	42	44	36	38	0,175	333	500	600	
23,20	220	47	3	1,15	2,34	-	-	-	-	-	78	39	41	42	44	37	38	0,185	367	550	660	
23,40	190	48	3	1,14	2,36	-	-	-	-	-	73	38	40	42	44	36	37	0,168	317	475	570	
23,60	300	75	3	1,15	2,38	-	-	-	-	-	89	40	42	43	45	38	40	0,218	500	750	900	
23,80	300	90	3	1,15	2,41	-	-	-	-	-	88	40	42	43	45	38	40	0,217	500	750	900	
24,00	260	39	3	1,15	2,43	-	-	-	-	-	83	40	41	43	45	37	40	0,200	433	650	780	
24,20	400	-	3	1,15	2,45	-	-	-	-	-	98	42	43	44	46	39	40	0,250	667	1000	1200	

GEO TIRRENO S.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 5

200496-013

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Oisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - pagina : 2

Prof. m	Rp kg/cm ²	Rp/Rl (-)	Natura Litol.	Y U/m ²	p'vo kg/cm ²	Cu kg/cm ²	OCR (-)	Eu50 kg/cm ²	Eu25 kg/cm ²	Mo kg/cm ²	Dr %	NATURA COESIVA				NATURA GRANULARE				Amax/g (-)	E'50 kg/cm ²	E'25 kg/cm ²	Mo kg/cm ²	
												e1s (°)	e2s (°)	e3s (°)	e4s (°)	edm (°)	emy (°)							
20,20	24	36	3:...	1,85	3,74	-	-	-	-	-	-	28	31	35	38	25	28	-	-	-	-	40	60	72
20,40	20	30	4:ff	1,85	3,77	0,80	0,9	480	720	60	-	28	31	35	38	25	27	-	-	-	-	33	50	60
20,60	20	30	4:ff	1,85	3,81	0,80	0,9	480	720	60	-	28	31	35	38	25	27	-	-	-	-	33	50	60
20,80	28	30	4:ff	1,85	3,85	0,97	1,1	578	864	84	-	28	31	35	38	25	28	-	-	-	-	47	70	84
21,00	34	25	4:ff	1,85	3,88	1,13	1,3	668	1002	102	2	28	31	35	38	25	28	-	-	-	0,005	57	85	102
21,20	30	21	4:ff	1,85	3,92	1,00	1,1	596	894	90	-	28	31	35	38	25	29	-	-	-	-	50	75	90
21,40	27	24	4:ff	1,85	3,96	0,95	1,1	567	851	81	-	28	31	35	38	25	29	-	-	-	-	45	68	81
21,60	23	23	4:ff	1,85	4,00	0,87	0,9	521	781	69	-	28	31	35	38	25	28	-	-	-	-	38	58	69
21,80	13	12	2:lll	1,85	4,03	0,60	0,6	363	544	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22,00	24	15	4:ff	1,85	4,07	0,89	0,9	533	800	72	-	28	31	35	38	25	28	-	-	-	-	40	60	72
22,20	28	14	4:ff	1,85	4,11	0,97	1,0	579	868	84	-	28	31	35	38	25	28	-	-	-	-	47	70	84
22,40	34	13	4:ff	1,85	4,14	1,13	1,2	672	1008	102	0	28	31	35	38	25	29	-	-	-	-	57	85	102
22,60	40	20	4:ff	1,85	4,18	1,33	1,5	778	1166	120	6	29	32	35	38	25	30	-	-	-	0,013	67	100	120
22,80	70	21	4:ff	1,85	4,22	2,33	3,0	1152	1728	210	25	31	34	37	40	27	32	-	-	-	0,047	117	175	210
23,00	190	71	3:...	1,85	4,25	-	-	-	-	-	59	36	38	40	43	32	37	-	-	-	0,127	317	475	570
23,20	260	39	3:...	1,85	4,29	-	-	-	-	-	69	38	40	41	44	34	40	-	-	-	0,157	433	650	780
23,40	400	-	3:...	1,85	4,33	-	-	-	-	-	84	40	41	43	45	37	40	-	-	-	0,203	667	1000	1200

GEO TIRRENO s.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 6

2010/008/018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - pagina : 2

Prof. m	Rp kg/cm²	Rp/RI (-)	Natura Litol.	Y' Um²	p'vo kg/cm²	Cu kg/cm²	OCR (-)	NATURA COESIVA			NATURA GRANULARE										
								Eu50 kg/cm²	Eu25 kg/cm²	Mo kg/cm²	Dr %	σ1s (°)	σ2s (°)	σ3s (°)	σ4s (°)	σcm (°)	σmy (°)	Amax/g (-)	E50 kg/cm²	E25 kg/cm²	Mo kg/cm²
20.20	32	27	4/1:	1,85	3,74	1,07	1,3	630	945	96	1	28	31	35	38	25	29	0,002	53	80	96
20.40	20	37	4/1:	1,85	3,77	0,80	0,9	480	720	60	-	28	31	35	38	25	27	-	33	50	60
20.60	18	22	2/III:	1,85	3,81	0,75	0,8	450	675	56	-	-	-	-	-	-	-	-	-	-	-
20.80	18	11	2/III:	1,85	3,85	0,75	0,8	450	675	56	-	-	-	-	-	-	-	-	-	-	-
21.00	34	28	4/1:	1,85	3,88	1,13	1,3	668	1002	102	2	28	31	35	38	25	29	0,005	57	85	102
21.20	32	24	4/1:	1,85	3,92	1,07	1,2	633	949	96	-	28	31	35	38	25	29	-	53	80	96
21.40	24	16	4/1:	1,85	3,96	0,89	1,0	533	800	72	-	28	31	35	38	25	28	-	40	60	72
21.60	20	17	4/1:	1,85	4,00	0,80	0,8	480	720	60	-	28	31	35	38	25	27	-	33	50	60
21.80	18	17	2/III:	1,85	4,03	0,75	0,8	450	675	56	-	-	-	-	-	-	-	-	-	-	-
22.00	14	9	2/III:	1,85	4,07	0,64	0,6	382	573	48	-	-	-	-	-	-	-	-	-	-	-
22.20	16	12	2/III:	1,85	4,11	0,70	0,7	417	626	52	-	-	-	-	-	-	-	-	-	-	-
22.40	16	20	2/III:	1,85	4,14	0,70	0,7	417	626	52	-	-	-	-	-	-	-	-	-	-	-
22.60	18	17	2/III:	1,85	4,18	0,75	0,7	450	675	56	-	-	-	-	-	-	-	-	-	-	-
22.80	18	15	2/III:	1,85	4,22	0,75	0,7	450	675	56	-	-	-	-	-	-	-	-	-	-	-
23.00	24	13	4/1:	1,85	4,25	0,89	0,9	533	800	72	-	28	31	35	38	25	28	-	40	60	72
23.20	32	17	4/1:	1,85	4,29	1,07	1,1	637	955	96	-	28	31	35	38	25	29	-	53	80	96
23.40	30	15	4/1:	1,85	4,33	1,00	1,0	600	900	90	-	28	31	35	38	25	29	-	50	75	90
23.60	50	7	4/1:	1,85	4,37	1,67	1,9	943	1415	150	12	30	33	36	39	25	31	0,024	83	125	150
23.80	90	14	4/1:	1,85	4,40	3,00	3,9	1236	1854	270	32	33	35	38	41	28	33	0,062	150	225	270
24.00	200	25	4/1:	1,85	4,44	6,67	10,4	1133	1700	600	59	36	38	41	43	33	38	0,129	333	500	600
24.20	240	-	3:::	1,85	4,48	-	-	-	-	-	65	37	39	41	43	33	39	0,146	400	600	720

GEO TIRRENO s.r.l.
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 54100 MASSA
 Part. IVA 00713690451

PROVA PENETROMETRICA STATICA
TABELLA PARAMETRI GEOTECNICI

CPT 7

2010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- localita' : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,10 m da quota inizio
- pagina : 1

Table with columns: Prof. m, Rp kg/cm², Rp/Ri (-), Natura Litol., Y t/m², p'vo kg/cm², Cu kg/cm², OCR (-), Eu50 kg/cm², Eu25 kg/cm², Mo kg/cm², Dr %, e1s (°), e2s (°), e3s (°), e4s (°), ecm (°), emy (°), Amax/g (-), E'50 kg/cm², E'25 kg/cm², Mo kg/cm².

GEO TIRRENO s.r.l.

Via Gervara, 101

54100 MASSA

Part. IVA 00713690451

PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 7

20/04/98-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,10 m da quota inizio
 - pagina : 2

Prof. m	Rp kg/cm ²	Rp/Rl (-)	Natura Litol.	Y 1/m ²	NATURA COESIVA					NATURA GRANULARE												
					p'vo kg/cm ²	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	
20.20	36	39	3:1:1	0,89	1,91	-	-	-	-	-	21	31	34	37	40	28	30	0,040	60	90	108	
20.40	20	25	4:1:1	0,93	1,93	0,80	-	-	444	667	60	1	28	31	35	38	25	27	0,001	33	50	80
20.60	24	36	3:1:1	0,86	1,95	-	-	-	-	-	-	7	29	32	35	39	25	28	0,015	40	60	72
20.80	24	26	4:1:1	0,94	1,97	0,89	-	-	481	722	72	6	29	32	35	39	25	28	0,015	40	60	72
21.00	30	28	4:1:1	0,86	1,99	1,00	-	-	519	779	90	14	30	33	36	39	26	29	0,027	50	75	90
21.20	32	34	3:1:1	0,88	2,01	-	-	-	-	-	-	16	30	33	36	39	27	29	0,030	53	80	96
21.40	28	21	4:1:1	0,96	2,02	0,97	-	-	513	769	84	11	30	33	36	39	26	28	0,022	47	70	84
21.60	22	16	4:1:1	0,93	2,04	0,95	-	-	470	705	66	3	28	32	35	38	25	28	0,006	37	55	66
21.80	70	52	3:1:1	0,95	2,06	-	-	-	-	-	-	42	34	36	39	41	31	32	0,085	117	175	210
22.00	70	26	4:1:1	1,03	2,08	2,33	-	-	516	775	210	42	34	36	39	41	31	32	0,084	117	175	210
22.20	40	13	4:1:1	1,00	2,10	1,33	-	-	594	890	120	22	31	34	37	40	28	30	0,042	67	100	120
22.40	44	47	3:1:1	0,91	2,12	-	-	-	-	-	-	25	32	34	37	40	28	31	0,048	73	110	132
22.60	30	37	3:1:1	0,88	2,14	-	-	-	-	-	-	12	30	33	36	39	26	29	0,024	50	75	90
22.80	28	42	3:1:1	0,87	2,16	-	-	-	-	-	-	9	29	32	35	39	26	28	0,020	47	70	84
23.00	20	25	4:1:1	0,93	2,17	0,80	-	-	456	684	60	-	28	31	35	38	25	27	-	33	50	60
23.20	24	26	4:1:1	0,94	2,19	0,89	-	-	496	745	72	4	29	32	35	38	25	28	0,009	40	60	72
23.40	24	22	4:1:1	0,94	2,21	0,89	-	-	497	746	72	4	28	32	35	38	25	28	0,009	40	60	72
23.60	44	33	3:1:1	0,91	2,23	-	-	-	-	-	-	24	31	34	37	40	28	31	0,046	73	110	132
23.80	70	26	4:1:1	1,03	2,25	2,33	-	-	578	867	210	40	34	36	39	41	30	32	0,080	117	175	210
24.00	120	15	4:1:1	1,07	2,27	4,00	-	-	680	1020	360	58	36	38	40	43	33	35	0,126	200	300	360
24.20	224	28	4:1:1	1,13	2,29	7,47	-	-	1269	1904	672	79	39	41	43	44	37	38	0,188	373	560	672
24.40	240	-	3:1:1	1,15	2,32	-	-	-	-	-	-	82	39	41	43	45	37	39	0,195	400	600	720

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 Part. IVA 00713600151

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 8

2010495-018

- committente : Studio geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,00 m da quota inizio
- pagina : 2

Prof. m	Rp kg/cm²	Rp/Rl (-)	Natura Litol.	Y V/m³	p'vo kg/cm²	Cu kg/cm²	OCR (-)	NATURA COESIVA			NATURA GRANULARE										
								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
20,20	26	18	4/f	0,95	1,94	0,93	2,5	492	738	78	10	29	32	35	39	26	28	0,020	43	65	78
20,40	60	50	3	0,93	1,96	-	-	-	-	-	38	33	36	38	41	30	32	0,075	100	150	180
20,60	40	33	3	0,90	1,97	-	-	-	-	-	24	31	34	37	40	28	30	0,045	67	100	120
20,80	22	33	3	0,86	1,99	-	-	-	-	-	3	28	32	35	38	25	28	0,006	37	55	66
21,00	36	30	4/f	0,99	2,01	1,20	3,3	563	844	108	20	31	34	37	40	27	30	0,038	60	90	108
21,20	22	21	4/f	0,93	2,03	0,85	2,1	469	704	66	3	28	32	35	38	25	28	0,007	37	55	66
21,40	14	21	2/III	0,94	2,05	0,64	1,5	372	558	48	-	-	-	-	-	-	-	-	-	-	-
21,60	20	30	4/f	0,93	2,07	0,80	1,9	451	677	60	-	-	-	-	-	-	-	-	-	-	-
21,80	16	20	2/III	0,96	2,09	0,70	1,6	451	677	60	-	28	31	35	38	25	27	-	33	50	60
22,00	14	17	2/III	0,94	2,11	0,64	1,4	403	605	52	-	-	-	-	-	-	-	-	-	-	-
22,20	20	30	4/f	0,93	2,12	0,80	1,9	373	560	48	-	-	-	-	-	-	-	-	-	-	-
22,40	20	30	4/f	0,93	2,14	0,80	1,8	454	681	60	-	28	31	35	38	25	27	-	33	50	60
22,60	20	21	4/f	0,93	2,16	0,80	1,8	455	682	60	-	28	31	35	38	25	27	-	33	50	60
22,80	32	48	3	0,88	2,18	-	-	456	683	60	-	28	31	35	38	25	27	-	33	50	60
23,00	24	30	4/f	0,94	2,20	0,89	2,0	497	745	72	14	30	33	36	39	28	29	0,027	53	80	96
23,20	22	24	4/f	0,93	2,22	0,85	1,9	479	718	66	4	29	32	35	38	25	28	0,009	40	60	72
23,40	36	18	4/f	0,99	2,24	1,20	2,9	603	904	108	1	28	31	35	38	25	28	0,001	37	55	66
23,60	50	37	3	0,92	2,25	-	-	-	-	-	17	30	33	36	39	27	30	0,033	60	90	108
23,80	100	50	3	1,00	2,27	-	-	-	-	-	28	32	35	37	40	29	31	0,054	83	125	150
24,00	160	60	3	1,09	2,30	-	-	-	-	-	52	35	37	40	42	32	34	0,109	167	250	300
24,20	200	100	3	1,15	2,32	-	-	-	-	-	68	38	39	41	43	35	36	0,153	267	400	480
24,40	220	110	3	1,15	2,34	-	-	-	-	-	75	39	40	42	44	36	38	0,175	333	500	600
24,60	170	85	3	1,11	2,36	-	-	-	-	-	78	39	41	42	44	37	38	0,185	367	550	660
24,80	180	90	3	1,12	2,39	-	-	-	-	-	69	38	40	41	44	35	37	0,157	283	425	510
25,00	240	90	3	1,15	2,41	-	-	-	-	-	71	38	40	42	44	35	37	0,162	300	450	540
25,20	300	75	3	1,15	2,43	-	-	-	-	-	81	39	41	43	44	37	39	0,192	400	600	720
25,40	400	-	3	1,15	2,45	-	-	-	-	-	88	40	42	43	45	38	40	0,216	500	750	900
											98	42	43	44	46	39	40	0,250	667	1000	1200

GEO TIRRENO s.r.l.
Via Cervara, 101
54100 MASSA
Part. IVA n° 0713690451

PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 9

2.010496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,45 m da quota inizio
 - pagina : 1

Prof. m	Rp kg/cm²	Rp/Rl (-)	Natura Litol.	Y t/m²	p'vo kg/cm²	Cu kg/cm²	OCR (-)	NATURA COESIVA						NATURA GRANULARE										
								Eu50 kg/cm²	Eu25 kg/cm²	Mo kg/cm²	Dr %	a1s (°)	a2s (°)	a3s (°)	a4s (°)	edm (°)	amy (°)	Amax/g (-)	E50 kg/cm²	E25 kg/cm²	Mo kg/cm²			
0,20	5	7	1***	1,85	0,04	0,25	68,4	10	15	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0,40	13	14	2/III	1,85	0,07	0,60	86,7	103	154	47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0,60	13	12	2/III	1,85	0,11	0,60	52,2	103	154	47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0,80	16	15	2/III	1,85	0,15	0,70	43,5	118	177	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,00	14	14	2/III	1,85	0,19	0,54	29,4	108	162	48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,20	15	13	2/III	1,85	0,22	0,67	24,8	113	170	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,40	10	14	2/III	1,85	0,28	0,50	14,3	85	128	40	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,60	14	17	2/III	0,94	0,28	0,54	17,7	108	162	48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,80	13	16	2/III	0,93	0,30	0,60	15,3	103	154	47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,00	11	13	2/III	0,91	0,31	0,54	12,2	91	137	42	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,20	14	11	2/III	0,94	0,33	0,64	14,1	108	162	48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,40	11	10	2/III	0,91	0,35	0,54	10,6	91	137	42	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,60	11	13	2/III	0,91	0,37	0,54	10,0	91	137	42	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,80	11	14	2/III	0,91	0,39	0,54	9,4	93	139	42	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,00	10	14	2/III	0,90	0,41	0,50	8,1	97	148	40	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,20	11	14	2/III	0,91	0,42	0,54	8,4	101	151	42	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,40	14	16	2/III	0,94	0,44	0,54	9,9	108	163	48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,60	13	15	2/III	0,93	0,46	0,60	8,8	109	164	47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,80	12	16	2/III	0,92	0,48	0,57	7,8	116	174	45	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,00	11	24	2/III	0,91	0,50	0,54	6,9	126	189	42	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,20	13	22	2/III	0,93	0,52	0,60	7,6	126	189	47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,40	9	19	2/III	0,88	0,53	0,45	5,1	147	221	38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,60	7	15	1***	0,46	0,54	0,35	3,6	29	43	11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,80	8	20	2/III	0,86	0,56	0,40	4,1	157	235	35	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5,00	6	15	1***	0,46	0,57	0,30	2,8	31	47	9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5,20	5	15	1***	0,46	0,58	0,25	2,2	29	44	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5,40	4	15	1***	0,46	0,59	0,20	1,6	25	37	6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5,60	3	15	1***	0,46	0,60	0,15	1,1	19	29	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5,80	3	15	1***	0,46	0,61	0,15	1,1	19	29	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6,00	3	15	1***	0,46	0,62	0,15	1,1	19	29	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6,20	2	15	1***	0,46	0,63	0,10	0,6	13	20	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6,40	2	30	4/F	0,77	0,64	0,10	0,6	60	90	10	--	28	31	35	38	25	25	--	--	3	5	6	6	6
6,60	2	30	4/F	0,77	0,66	0,10	0,6	60	90	10	--	28	31	35	38	25	25	--	--	3	5	6	6	6
6,80	2	30	4/F	0,77	0,67	0,10	0,6	60	90	10	--	28	31	35	38	25	25	--	--	3	5	6	6	6
7,00	2	15	1***	0,46	0,68	0,10	0,6	13	20	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7,20	2	30	4/F	0,77	0,70	0,10	0,6	60	90	10	--	28	31	35	38	25	25	--	--	3	5	6	6	6
7,40	2	30	4/F	0,77	0,71	0,10	0,5	60	90	10	--	28	31	35	38	25	25	--	--	3	5	6	6	6
7,60	2	30	4/F	0,77	0,73	0,10	0,5	60	90	10	--	28	31	35	38	25	25	--	--	3	5	6	6	6
7,80	2	30	4/F	0,77	0,74	0,10	0,5	60	90	10	--	28	31	35	38	25	25	--	--	3	5	6	6	6
8,00	2	15	1***	0,46	0,75	0,10	0,5	13	20	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8,20	2	15	1***	0,46	0,76	0,10	0,5	13	20	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8,40	2	30	4/F	0,77	0,78	0,10	0,5	60	90	10	--	28	31	35	38	25	25	--	--	3	5	6	6	6
8,60	2	15	1***	0,46	0,79	0,10	0,5	13	20	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8,80	2	15	1***	0,46	0,79	0,10	0,5	13	20	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9,00	2	30	4/F	0,77	0,81	0,10	0,5	60	90	10	--	28	31	35	38	25	25	--	--	3	5	6	6	6
9,20	3	45	4/F	0,78	0,83	0,15	0,7	90	135	15	--	28	31	35	38	25	25	--	--	5	8	9	9	9
9,40	15	37	4/F	0,89	0,84	0,67	4,7	235	352	50	11	30	33	36	39	27	27	0,022	25	38	48	48	48	48
9,60	16	40	4/F	0,90	0,86	0,70	4,8	239	359	52	13	30	33	36	39	28	27	0,025	27	40	48	48	48	48
9,80	5	19	2/III	0,80	0,88	0,25	1,3	148	221	25	--	--	--	--	--	--	--	--	--	7	10	12	12	12
10,00	4	30	4/F	0,80	0,89	0,20	1,0	120	180	20	--	28	31	35	38	25	25	--	--	7	10	12	12	12
10,20	16	30	4/F	0,90	0,91	0,70	4,5	254	381	52	11	30	33	36	39	27	27	0,023	27	40	48	48	48	48
10,40	2	15	1***	0,46	0,92	0,10	0,4	13	20	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10,60	4	20	2/III	0,78	0,94	0,20	0,9	120	180	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10,80	3	15	1***	0,46	0,95	0,15	0,6	20	29	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11,00	3	15	1***	0,46	0,95	0,15	0,6	20	29	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11,20	4	30	4/F	0,80	0,97	0,20	0,9	120	180	20	--	28	31	35	38	25	25	--	--	7	10	12	12	12
11,40	4	30	4/F	0,80	0,99	0,20	0,9	120	180	20	--	28	31	35	38	25	25	--	--	7	10	12	12	12
11,60	4	30	4/F	0,80	1,00	0,20	0,8	120	180	20	--	28	31	35	38	25	25	--	--	7	10	12	12	12
11,80	12	60	4/F	0,88	1,02	0,57	3,0	280	420	45	--	28	31	35	38	25	25	--	--	20	30	36	36	36
12,00	4	20	2/III	0,78	1,04	0,20	0,8	120	180	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12,20	5	37	4/F	0,81	1,05	0,25	1,0	150	225	25	--	28	31	35	38	25	25	--	--	8	13	15	15	15
12,40	10	30	4/F	0,86	1,07	0,50	2,4	267	401	40	--	28	31	35	38	25	26	--	--	17	25	30	30	30
12,60	14	30	4/F	0,89	1,09	0,64	3,2	303	454	48	2	28	32	35	38	26	26	0,006	23	35	42	42	42	42
12,80	23	25	4/F	0,94	1,11	0,67	4,6	308	462	69	19	31	34	36	40	28	28	0,036	38	58	69	69	69	
13,00	24	36	3***	0,86	1,12	--	--	--	--	--	20	31	34	37	40	28	28	0,038	40	60	72	72	72	72
13,20	28	18	4/F	0,96	1,14	0,97	5,1	314	471	84	25	32	34	37	40	29	28	0,048	47	70	84	84	84	
13,40	27	13	4/F	0,95	1,16	0,95	4,9	322	482	81	23	31	34	37	40	29	28	0,044	45	68	81	81	81	
13,60	28	16	4/F	0,96	1,18	0,97	4,9	327	490	84	24	31	34	37	40	29	28	0,046	47	70	84	84	84	
13,80																								

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 10

2010496-018

- committente :	Studio Geoprogetti e Studio Ghigliotti	- data :	19/02/2002
- lavoro :	Ampliamento zona produttiva di Ospedaletto	- quota inizio :	Piano Campagna
- località :	Ospedaletto (Comune di Pisa e di Cascina)	- prof. falda :	2,20 m da quota inizio
- note :		- pagina :	1

NATURA COESIVA								NATURA GRANULARE														
Prof. m	Rp kg/cm ²	Rp/RI (-)	Natura Litol.	Y _m Um ³	p'vo kg/cm ²	Cu kg/cm ²	OCR (-)	Eu50 kg/cm ²	Eu25 kg/cm ²	Mo kg/cm ²	Dr %	σ _{1s} (°)	σ _{2s} (°)	σ _{3s} (°)	σ _{4s} (°)	σ _{dm} (°)	σ _{my} (°)	Am _{max} /g (-)	E ₅₀ kg/cm ²	E ₂₅ kg/cm ²	Mo kg/cm ²	
0,20	6	9	1***	1,85	0,04	0,30	85,9	12	18	9	-	-	-	-	-	-	-	-	-	-	-	-
0,40	8	11	2***	1,85	0,07	0,40	51,7	68	102	35	-	-	-	-	-	-	-	-	-	-	-	-
0,60	12	13	2***	1,85	0,11	0,57	48,7	97	146	45	-	-	-	-	-	-	-	-	-	-	-	-
0,80	12	15	2***	1,85	0,15	0,57	34,0	97	146	45	-	-	-	-	-	-	-	-	-	-	-	-
1,00	16	24	2***	1,85	0,19	0,70	32,9	119	177	52	-	-	-	-	-	-	-	-	-	-	-	-
1,20	18	34	4/1/1	1,85	0,22	0,75	28,8	128	191	56	50	35	37	40	42	36	27	0,103	30	45	54	-
1,40	22	30	4/1/1	1,85	0,26	0,85	27,6	144	216	66	53	35	38	40	42	36	28	0,111	37	55	66	-
1,60	19	28	2***	1,85	0,30	0,78	20,9	132	198	58	-	-	-	-	-	-	-	-	-	-	-	-
1,80	16	20	2***	1,85	0,33	0,70	15,8	118	177	52	-	-	-	-	-	-	-	-	-	-	-	-
2,00	14	15	2***	1,85	0,37	0,64	12,4	108	162	48	-	-	-	-	-	-	-	-	-	-	-	-
2,20	16	15	2***	0,96	0,39	0,70	13,0	118	177	52	-	-	-	-	-	-	-	-	-	-	-	-
2,40	13	14	2***	0,93	0,41	0,60	10,3	103	154	47	-	-	-	-	-	-	-	-	-	-	-	-
2,60	12	15	2***	0,92	0,43	0,57	9,1	101	152	45	-	-	-	-	-	-	-	-	-	-	-	-
2,80	10	15	2***	0,90	0,44	0,50	7,3	110	165	40	-	-	-	-	-	-	-	-	-	-	-	-
3,00	14	13	2***	0,94	0,46	0,54	9,3	111	166	48	-	-	-	-	-	-	-	-	-	-	-	-
3,20	18	17	2***	0,98	0,48	0,75	10,9	128	191	56	-	-	-	-	-	-	-	-	-	-	-	-
3,40	20	17	4/1/1	0,93	0,50	0,90	11,3	136	204	60	34	33	35	38	41	32	27	0,065	33	50	60	-
3,60	14	15	2***	0,94	0,52	0,54	8,1	125	187	48	-	-	-	-	-	-	-	-	-	-	-	-
3,80	14	17	2***	0,94	0,54	0,54	7,7	131	196	48	-	-	-	-	-	-	-	-	-	-	-	-
4,00	14	16	2***	0,94	0,56	0,54	7,4	137	206	48	-	-	-	-	-	-	-	-	-	-	-	-
4,20	15	22	2***	0,95	0,58	0,57	7,5	141	211	50	-	-	-	-	-	-	-	-	-	-	-	-
4,40	16	24	2***	0,96	0,60	0,70	7,6	145	218	52	-	-	-	-	-	-	-	-	-	-	-	-
4,60	14	23	2***	0,94	0,61	0,54	6,6	158	237	48	-	-	-	-	-	-	-	-	-	-	-	-
4,80	11	27	2***	0,91	0,63	0,54	5,1	174	261	42	-	-	-	-	-	-	-	-	-	-	-	-
5,00	12	36	4/1/1	0,88	0,65	0,57	5,3	177	266	45	10	29	32	35	39	28	26	0,020	20	30	36	-
5,20	11	27	2***	0,91	0,67	0,54	4,8	186	278	42	-	-	-	-	-	-	-	-	-	-	-	-
5,40	10	19	2***	0,90	0,69	0,50	4,2	192	288	40	-	-	-	-	-	-	-	-	-	-	-	-
5,60	32	80	3***	0,88	0,70	-	-	-	-	-	41	34	36	39	41	33	29	0,083	53	80	96	-
5,80	26	97	3***	0,87	0,72	-	-	-	-	-	34	33	35	38	41	31	28	0,066	43	65	78	-
6,00	16	60	4/1/1	0,90	0,74	0,70	5,8	197	296	52	16	30	33	36	39	28	27	0,031	27	40	48	-
6,20	20	75	4/1/1	0,93	0,76	0,80	6,7	193	290	60	23	31	34	37	40	30	27	0,045	33	50	60	-
6,40	8	60	4/1/1	0,84	0,77	0,40	2,7	205	308	35	-	28	31	35	38	25	26	-	13	20	24	-
6,60	8	40	4/1/1	0,84	0,79	0,40	2,7	207	311	35	-	28	31	35	38	25	26	-	13	20	24	-
6,80	6	18	2***	0,82	0,81	0,30	1,8	171	256	29	-	-	-	-	-	-	-	-	-	-	-	-
7,00	4	15	1***	0,46	0,82	0,20	1,1	26	39	6	-	-	-	-	-	-	-	-	-	-	-	-
7,20	4	15	1***	0,46	0,83	0,20	1,1	26	39	6	-	-	-	-	-	-	-	-	-	-	-	-
7,40	4	15	1***	0,46	0,84	0,20	1,1	26	39	6	-	-	-	-	-	-	-	-	-	-	-	-
7,60	4	30	4/1/1	0,80	0,85	0,20	1,0	120	180	20	-	28	31	35	38	25	25	-	7	10	12	-
7,80	6	30	4/1/1	0,82	0,87	0,30	1,7	173	259	29	-	28	31	35	38	25	26	-	10	15	18	-
8,00	6	11	1***	0,46	0,88	0,30	1,6	37	56	9	-	-	-	-	-	-	-	-	-	-	-	-
8,20	8	17	2***	0,86	0,89	0,40	2,3	217	326	35	-	-	-	-	-	-	-	-	-	-	-	-
8,40	8	30	4/1/1	0,84	0,91	0,40	2,2	218	328	35	-	28	31	35	38	25	26	-	13	20	24	-
8,60	6	30	4/1/1	0,82	0,93	0,30	1,5	175	262	29	-	28	31	35	38	25	26	-	10	15	18	-
8,80	6	30	4/1/1	0,82	0,94	0,30	1,5	175	263	29	-	28	31	35	38	25	26	-	10	15	18	-
9,00	6	11	1***	0,46	0,95	0,30	1,5	38	57	9	-	-	-	-	-	-	-	-	-	-	-	-
9,20	8	20	2***	0,96	0,97	0,40	2,1	222	334	35	-	-	-	-	-	-	-	-	-	-	-	-
9,40	8	20	2***	0,96	0,99	0,40	2,0	223	335	35	-	-	-	-	-	-	-	-	-	-	-	-
9,60	18	45	4/1/1	0,91	1,01	0,75	4,4	281	421	56	13	30	33	36	39	27	27	0,025	30	45	54	-
9,80	42	105	3***	0,90	1,02	-	-	-	-	-	42	34	36	39	41	32	30	0,084	70	105	126	-
10,00	24	36	3***	0,86	1,04	-	-	-	-	-	22	31	34	37	40	29	28	0,042	40	60	72	-
10,20	14	52	4/1/1	0,89	1,06	0,64	3,3	297	445	48	3	28	32	35	38	26	26	0,008	23	35	42	-
10,40	24	60	3***	0,86	1,08	-	-	-	-	-	21	31	34	37	40	29	28	0,040	40	60	72	-
10,60	8	30	4/1/1	0,84	1,09	0,40	1,8	228	342	35	-	28	31	35	38	25	26	-	13	20	24	-
10,80	6	22	2***	0,82	1,11	0,30	1,2	178	267	29	-	-	-	-	-	-	-	-	-	-	-	-
11,00	6	18	2***	0,82	1,13	0,30	1,2	178	267	29	-	-	-	-	-	-	-	-	-	-	-	-
11,20	7	17	2***	0,84	1,14	0,35	1,4	205	308	32	-	-	-	-	-	-	-	-	-	-	-	-
11,40	6	18	2***	0,82	1,16	0,30	1,2	179	268	29	-	-	-	-	-	-	-	-	-	-	-	-
11,60	5	19	2***	0,80	1,17	0,25	0,9	150	225	25	-	-	-	-	-	-	-	-	-	-	-	-
11,80	6	22	2***	0,82	1,19	0,30	1,1	179	268	29	-	-	-	-	-	-	-	-	-	-	-	-
12,00	6	22	2***	0,82	1,21	0,30	1,1	179	269	29	-	-	-	-	-	-	-	-	-	-	-	-
12,20	7	26	2***	0,84	1,22	0,35	1,3	207	310	32	-	-	-	-	-	-	-	-	-	-	-	-
12,40	8	24	2***	0,86	1,24	0,40	1,5	233	349	35	-	-	-	-	-	-	-	-	-	-	-	-
12,60	9	22	2***	0,88	1,26	0,45	1,7	258	387	38	-	-	-	-	-	-	-	-	-	-	-	-
12,80	10	50	4/1/1	0,86	1,28	0,50	1,9	281	422	40	-	28	31	35	38	25	26	-	17	25	30	-
13,00	7	17	2***	0,84	1,29	0,35	1,2	208	311	32	-	-	-	-	-	-	-	-	-	-	-	-
13,20	10	21	2***	0,90	1,31	0,50	1,9	283	425	40	-	-	-	-	-	-	-	-	-	-	-	-
13,40	17	21	2***	0,97	1,33	0,72	2,9	361	541	54	-	-	-	-	-	-	-	-	-	-	-	-
13,60	18	27	2***	0,98	1,35	0,75	3,0	369	554	56	-	-	-	-	-	-	-	-	-	-	-	-
13,80	20	21	4/1/1	0,93	1,37	0,80	3,2	381	571	60	-	-	-	-	-	-	-	-	-	-	-	-
14,00	22	27	4/1/1	0,93	1,39	0,85	3,4	390	585	66	9	29	32	35	38	26	27	0,019	33	50	60	-
14,20	24	22	4/1/1	0,94	1,41	0,89	3,5	397	595	72	12	30	33	36	39	27	28	0,024	37	55	66	-
14,40	24	30	4/1/1																			

PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 10

2002020303

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 2,20 m da quota inizio
 - pagina : 2

Prof. m	Rp kg/cm ²	Rp/Rl (-)	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 %	NATURA COESIVA				NATURA GRANULARE					
												a1s (°)	a2s (°)	a3s (°)	a4s (°)	edm (°)	emy (°)	Amax/g (-)	E'50 kg/cm ²	E'25 kg/cm ²	Mo kg/cm ²
20.20	24	18	4/ff	0,94	1,97	0,89	2,3	481	722	72	6	29	32	35	39	25	28	0,015	40	60	72
20.40	30	22	4/ff	0,96	1,99	1,00	2,7	519	779	90	14	30	33	36	39	26	29	0,027	50	75	90
20.60	36	25	4/ff	0,99	2,01	1,20	3,3	563	844	108	20	31	34	37	40	27	30	0,038	60	90	108
20.80	30	20	4/ff	0,96	2,03	1,00	2,6	524	786	90	13	30	33	36	39	26	29	0,026	50	75	90
21.00	26	16	4/ff	0,95	2,05	0,93	2,3	502	753	78	8	29	32	35	39	25	28	0,017	43	65	78
21.20	36	21	4/ff	0,99	2,07	1,20	3,2	574	862	108	19	31	34	36	40	27	30	0,038	60	90	108
21.40	34	20	4/ff	0,98	2,09	1,13	2,9	566	849	102	17	30	33	36	39	27	29	0,032	57	85	102
21.60	30	20	4/ff	0,96	2,11	1,00	2,5	532	798	90	12	30	33	36	39	26	29	0,024	50	75	90
21.80	28	17	4/ff	0,96	2,13	0,97	2,3	522	783	84	10	29	32	35	39	26	28	0,020	47	70	84
22.00	36	21	4/ff	0,99	2,15	1,20	3,0	589	883	108	18	31	33	36	39	27	30	0,035	60	90	108
22.20	34	18	4/ff	0,98	2,17	1,13	2,8	577	866	102	16	30	33	36	39	27	29	0,031	57	85	102
22.40	36	18	4/ff	0,99	2,19	1,20	3,0	595	893	108	18	30	33	36	39	27	30	0,034	60	90	108
22.60	40	18	4/ff	1,00	2,21	1,33	3,3	619	928	120	21	31	34	37	40	27	30	0,040	67	100	120
22.80	36	18	4/ff	0,99	2,23	1,20	2,9	601	902	108	17	30	33	36	39	27	30	0,033	60	90	108
23.00	40	19	4/ff	1,00	2,25	1,33	3,3	627	941	120	21	31	34	37	40	27	30	0,039	67	100	120
23.20	44	18	4/ff	1,00	2,27	1,47	3,6	640	960	132	24	31	34	37	40	28	31	0,045	73	110	132
23.40	40	20	4/ff	1,00	2,29	1,33	3,2	636	953	120	20	31	34	37	40	27	30	0,039	67	100	120
23.60	60	26	4/ff	1,02	2,31	2,00	5,3	631	947	180	34	33	35	38	41	29	32	0,066	100	150	180
23.80	56	42	3:ff	0,93	2,32	-	-	-	-	-	31	32	35	38	41	29	31	0,061	93	140	168
24.00	100	42	3:ff	1,00	2,34	-	-	-	-	-	51	35	37	40	42	32	34	0,107	167	250	300
24.20	144	54	3:ff	1,07	2,37	-	-	-	-	-	64	37	39	41	43	34	36	0,140	240	360	432
24.40	200	-	3:ff	1,15	2,39	-	-	-	-	-	75	38	40	42	44	36	38	0,173	333	500	600

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PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 11

~~2010498-018~~

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 3,00 m da quota inizio
 - pagina : 1

NATURA COESIVA

NATURA GRANULARE

Prof. m	Rp kg/cm²	Rp/Rl (-)	Natura Litol.	Y' U/m³	p'vo kg/cm²	Cu kg/cm²	OCR (-)	Eu50 kg/cm²	Eu25 kg/cm²	Mo kg/cm²	Dr %	s1s (°)	s2s (°)	s3s (°)	s4s (°)	adm (°)	amy (°)	Amax/g (-)	E'50 kg/cm²	E'25 kg/cm²	Mo kg/cm²
0.20	6	45	4f.f.	1.85	0.04	0.30	85.9	51	77	29	56	36	38	40	42	39	26	0.119	10	15	18
0.40	8	20	2f.iii	1.85	0.07	0.40	51.7	68	102	35											
0.60	14	13	2f.iii	1.85	0.11	0.64	55.7	108	162	48											
0.80	10	19	2f.iii	1.85	0.15	0.50	28.8	85	128	40											
1.00	14	17	2f.iii	1.85	0.19	0.64	29.4	108	162	48											
1.20	18	17	2f.iii	1.85	0.22	0.75	28.8	128	191	56											
1.40	26	16	4f.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	19	22	2f.iii	1.85	0.30	0.78	20.9	132	198	58											
1.80	12	20	2f.iii	1.85	0.33	0.57	12.3	97	146	45											
2.00	11	14	2f.iii	1.85	0.37	0.54	10.0	91	137	42											
2.20	10	14	2f.iii	1.85	0.41	0.50	8.1	97	146	40											
2.40	12	13	2f.iii	1.85	0.44	0.57	8.6	105	158	45											
2.60	12	15	2f.iii	1.85	0.48	0.57	7.8	116	175	45											
2.80	10	14	2f.iii	1.85	0.52	0.50	6.0	137	206	40											
3.00	12	15	2f.iii	0.92	0.54	0.57	6.8	136	204	45											
3.20	18	17	2f.iii	0.98	0.56	0.75	9.1	132	198	56											
3.40	16	13	2f.iii	0.96	0.58	0.70	8.0	138	207	52											
3.60	12	10	2f.iii	0.92	0.59	0.57	6.0	157	236	45											
3.80	14	9	2f.iii	0.94	0.61	0.64	6.6	157	236	48											
4.00	14		2f.iii	0.94	0.63	0.64	6.3	164	246	48											
4.20	18	13	2f.iii	0.96	0.65	0.70	6.8	165	247	52											
4.40	14	13	2f.iii	0.94	0.67	0.64	5.9	178	267	48											
4.60	14	15	2f.iii	0.94	0.69	0.64	5.7	185	277	48											
4.80	16	18	2f.iii	0.96	0.71	0.70	6.2	186	279	52											
5.00	11	16	2f.iii	0.91	0.73	0.54	4.3	203	304	42											
5.20	10	15	2f.iii	0.90	0.74	0.50	3.8	209	314	40											
5.40	10	19	2f.iii	0.90	0.76	0.50	3.7	215	322	40											
5.60	10	15	2f.iii	0.90	0.78	0.50	3.6	220	330	40											
5.80	8	20	2f.iii	0.86	0.80	0.40	2.7	208	312	35											
6.00	16	24	2f.iii	0.96	0.82	0.70	5.1	224	336	52											
6.20	14	26	2f.iii	0.94	0.83	0.64	4.5	233	349	48											
6.40	10	17	2f.iii	0.90	0.85	0.50	3.2	237	358	40											
6.60	7	17	2f.iii	0.84	0.87	0.35	2.0	196	294	32											
6.80	8	24	2f.iii	0.86	0.89	0.40	2.3	217	325	35											
7.00	5	15	1***	0.46	0.90	0.25	1.3	32	48	8											
7.20	4	15	1***	0.46	0.91	0.20	1.0	26	39	6											
7.40	6	18	2f.iii	0.82	0.92	0.30	1.5	174	262	29											
7.60	4	30	4f.f.	0.80	0.94	0.20	0.9	120	180	20	28	31	35	38	25	25			7	10	12
7.80	6	30	4f.f.	0.82	0.95	0.30	1.5	175	263	29	28	31	35	38	25	26			10	15	18
8.00	5	12	1***	0.46	0.96	0.25	1.2	32	48	8											
8.20	4	20	2f.iii	0.78	0.98	0.20	0.9	120	180	20											
8.40	5	25	2f.iii	0.80	0.99	0.25	1.1	149	224	25											
8.60	8	18	2f.iii	0.82	1.01	0.30	1.4	176	265	29											
8.80	4	20	2f.iii	0.78	1.03	0.20	0.8	120	180	20											
9.00	5	37	4f.f.	0.81	1.04	0.25	1.1	150	224	25	28	31	35	38	25	25			8	13	15
9.20	6	18	2f.iii	0.82	1.06	0.30	1.3	177	266	29											
9.40	4	15	1***	0.46	1.07	0.20	0.8	26	39	6											
9.60	5	15	1***	0.46	1.08	0.25	1.0	32	49	8											
9.80	8	30	4f.f.	0.84	1.09	0.40	1.8	228	343	35											
10.00	18	13	2f.iii	0.98	1.11	0.75	3.8	313	470	56											
10.20	36	34	3***	0.89	1.13						34	33	35	38	41	31	30	0.066	60	90	108
10.40	20	25	4f.f.	0.93	1.15	0.60	4.0	321	481	60	13	30	33	36	39	27	27	0.026	33	50	60
10.60	12	30	4f.f.	0.88	1.17	0.57	2.6	300	450	45											
10.80	10	37	4f.f.	0.86	1.18	0.50	2.1	276	414	40											
11.00	8	30	4f.f.	0.84	1.20	0.40	1.6	232	348	35											
11.20	7	52	4f.f.	0.83	1.22	0.35	1.3	207	310	32											
11.40	6	30	4f.f.	0.82	1.23	0.30	1.1	179	269	29											
11.60	6	30	4f.f.	0.82	1.25	0.30	1.1	180	269	29											
11.80	7	26	2f.iii	0.84	1.27	0.35	1.3	207	311	32											
12.00	6	22	2f.iii	0.82	1.28	0.30	1.0	180	270	29											
12.20	6	45	4f.f.	0.82	1.30	0.30	1.0	180	270	29	28	31	35	38	25	26			10	15	18
12.40	7	26	2f.iii	0.84	1.32	0.35	1.2	208	312	32											
12.60	6	30	4f.f.	0.82	1.33	0.30	1.0	180	270	29	28	31	35	38	25	26			10	15	18
12.80	8	24	2f.iii	0.86	1.35	0.40	1.4	235	353	35											
13.00	7	21	2f.iii	0.84	1.37	0.35	1.1	209	313	32											
13.20	8	24	2f.iii	0.86	1.38	0.40	1.3	236	354	35											
13.40	7	21	2f.iii	0.84	1.40	0.35	1.1	209	313	32											
13.60	7	17	2f.iii	0.84	1.42	0.35	1.1	209	314	32											
13.80	8	12	2f.iii	0.86	1.44	0.40	1.3	237	355	35											
14.00	10	37	4f.f.	0.86	1.45	0.50	1.7	288	433	40	28	31	35	38	25	26			17	25	30
14.20	8	20	2f.iii	0.86	1.47	0.40	1.2	237	356	35											
14.40	10	15	2f.iii	0.90	1.49	0.50	1.6	289	434	40											
14.60	16	24	2f.iii	0.96	1.51	0.70	2.4	374	561	52											
14.80	18	22	2f.iii	0.98	1.53	0.75	2.6	393	590	56											
15.00	18	17	2f.iii	0.98	1.55	0.75	2.5	395	593	56											
15.20	20	15	4f.f.	0.93	1.56	0.80	2.7	412	618	60	6	29	32	35	38	25	27	0.014	33	50	60
15.40	20	14	4f.f.	0.93	1.58	0.80	2.7	414	622	60	5	29	32	35	38	25	27	0.013	33	50	60
15.60	23	14	4f.f.	0.94	1.60	0.87	2.9	434	651	69	10	29	32	36	39	26	28	0.020	36	58	69
15.80	24	15	4f.f.	0.94	1.62	0.89	3.0	441	662	72	11	30	33	36	39	26	28	0.022	40	60	72
16.00	24	18	4f.f.	0.94	1.64	0.89	2.9	444	666	72	11	30	33	36	39	26	28	0.022	40	60	72
16.20	28	21	4f.f.	0.96	1.66	0.97															

**PROVA PENETROMETRICA STATICA
TABELLA PARAMETRI GEOTECNICI**

CPT 11

2.010495-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 3,00 m da quota inizio
- pagina : 2

NATURA COESIVA										NATURA GRANULARE											
Prof. m	Rp kg/cm²	Rp/Ri (-)	Natura Litol.	Y ^r U/m²	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
20,20	30	13	4/F	0,96	2,04	1,00	2,6	525	787	90	13	30	33	36	39	26	29	0,026	50	75	90
20,40	36	13	4/F	0,89	2,06	1,20	3,2	572	859	108	19	31	34	36	40	27	30	0,037	60	90	108
20,60	40	23	4/F	1,00	2,08	1,33	3,6	587	880	120	23	31	34	37	40	28	30	0,043	67	100	120
20,80	30	18	4/F	0,96	2,10	1,00	2,5	531	796	90	13	30	33	36	39	26	29	0,025	50	75	90
21,00	32	20	4/F	0,97	2,12	1,07	2,7	553	830	96	15	30	33	36	39	26	29	0,028	53	80	96
21,20	30	19	4/F	0,96	2,14	1,00	2,4	535	802	90	12	30	33	36	39	26	29	0,024	50	75	90
21,40	36	18	4/F	0,99	2,16	1,20	3,0	590	886	108	18	31	33	36	39	27	30	0,035	60	90	108
21,60	40	27	4/F	1,00	2,18	1,33	3,4	612	918	120	22	31	34	37	40	28	30	0,041	67	100	120
21,80	32	20	4/F	0,97	2,20	1,07	2,5	562	843	96	14	30	33	36	39	26	29	0,027	53	80	96
22,00	32	20	4/F	0,97	2,22	1,07	2,5	564	846	96	13	30	33	36	39	26	29	0,026	53	80	96
22,20	36	18	4/F	0,99	2,24	1,20	2,9	603	904	108	17	30	33	36	39	27	30	0,033	60	90	108
22,40	40	20	4/F	1,00	2,26	1,33	3,3	629	944	120	21	31	34	37	40	27	30	0,039	67	100	120
22,60	40	17	4/F	1,00	2,28	1,33	3,2	634	950	120	20	31	34	37	40	27	30	0,039	67	100	120
22,80	44	16	4/F	1,00	2,30	1,47	3,6	648	972	132	24	31	34	37	40	28	31	0,045	73	110	132
23,00	50	27	4/F	1,01	2,32	1,67	4,2	647	970	150	28	32	35	37	40	28	31	0,053	83	125	150
23,20	42	31	3/...	0,90	2,33	-	-	-	-	-	22	31	34	37	40	27	30	0,041	70	105	126
23,40	60	37	3/...	0,93	2,35	-	-	-	-	-	34	33	35	38	41	29	32	0,065	100	150	180
23,60	96	60	3/...	0,99	2,37	-	-	-	-	-	50	35	37	40	42	32	34	0,103	160	240	288
23,80	120	60	3/...	1,03	2,39	-	-	-	-	-	57	36	38	40	43	33	35	0,122	200	300	360
24,00	160	40	3/...	1,09	2,41	-	-	-	-	-	67	37	39	41	43	35	36	0,149	267	400	480
24,20	180	-	3/...	1,12	2,44	-	-	-	-	-	70	38	40	42	44	35	37	0,160	300	450	540

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PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 12

013-02-013

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,80 m da quota inizio
- pagina : 2

Prof. m	Rp kg/cm²	Rp/Rl (-)	Natura Litol.	Y' Vm³	NATURA COESIVA					NATURA GRANULARE											
					p'vo kg/cm²	Cu kg/cm²	OCR (-)	Eu50 kg/cm²	Eu25 kg/cm²	Mo kg/cm²	Dr %	s1s (°)	s2s (°)	s3s (°)	s4s (°)	edm (°)	emy (°)	Amax/g (-)	E'50 kg/cm²	E'25 kg/cm²	Mo kg/cm²
20,20	124	77	3:...	1,04	2,03	-	-	-	-	-	62	37	39	41	43	34	35	0,136	207	310	372
20,40	146	100	3:...	1,07	2,05	-	-	-	-	-	67	37	39	41	43	35	36	0,152	243	365	438
20,60	118	52	3:...	1,03	2,07	-	-	-	-	-	60	36	38	41	43	34	35	0,130	197	295	354
20,80	76	52	3:...	0,96	2,09	-	-	-	-	-	45	34	37	39	42	31	33	0,081	127	190	228
21,00	148	74	3:...	1,07	2,11	-	-	-	-	-	67	37	39	41	43	35	36	0,151	247	370	444
21,20	190	95	3:...	1,14	2,13	-	-	-	-	-	76	39	40	42	44	36	37	0,178	317	475	570
21,40	210	157	3:...	1,15	2,16	-	-	-	-	-	79	39	41	42	44	37	38	0,186	350	525	630
21,60	240	120	3:...	1,15	2,18	-	-	-	-	-	83	40	41	43	45	38	39	0,200	400	600	720
21,80	260	130	3:...	1,15	2,20	-	-	-	-	-	86	40	42	43	45	38	40	0,208	433	650	780
22,00	260	97	3:...	1,15	2,23	-	-	-	-	-	85	40	41	43	45	38	40	0,207	433	650	780
22,20	260	-	3:...	1,15	2,25	-	-	-	-	-	85	40	41	43	45	38	40	0,206	433	650	780

GEO TIRRENO s.r.l.
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Part. IVA 00713690454

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECCNICI

CPT 13

2-010496-016

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,00 m da quota inizio
- pagina : 1

NATURA GOESIVA												NATURA GRANULARE											
Prof. m	Rp kg/cm²	Rp/Ri (-)	Natura Litol.	γ t/m³	pvo kg/cm²	Cu kg/cm²	OCR (-)	Eu50 kg/cm²	Eu25 kg/cm²	Mo kg/cm²	Dr %	a1s (°)	a2s (°)	a3s (°)	a4s (°)	edm (°)	emy (°)	Amaz/g (-)	E50 kg/cm²	E25 kg/cm²	Mo kg/cm²		
0,20	6	22	2/III	1,85	0,04	0,30	85,9	51	77	29	-	-	-	-	-	-	-	-	-	-	-	-	
0,40	6	9	1/III	1,85	0,07	0,30	36,1	12	18	9	-	-	-	-	-	-	-	-	-	-	-	-	
0,60	10	15	2/III	1,85	0,11	0,50	41,2	85	128	40	-	-	-	-	-	-	-	-	-	-	-	-	
0,80	14	21	2/III	1,85	0,15	0,64	38,9	108	162	48	-	-	-	-	-	-	-	-	-	-	-	-	
1,00	13	12	2/III	1,85	0,19	0,60	27,8	103	154	47	-	-	-	-	-	-	-	-	-	-	-	-	
1,20	16	17	2/III	1,85	0,22	0,70	26,2	118	177	52	-	-	-	-	-	-	-	-	-	-	-	-	
1,40	18	21	2/III	1,85	0,26	0,75	23,7	128	191	56	-	-	-	-	-	-	-	-	-	-	-	-	
1,60	17	21	2/III	1,85	0,30	0,72	19,2	123	184	54	-	-	-	-	-	-	-	-	-	-	-	-	
1,80	16	24	2/III	1,85	0,33	0,70	15,8	118	177	52	-	-	-	-	-	-	-	-	-	-	-	-	
2,00	16	17	2/III	0,96	0,35	0,70	14,7	118	177	52	-	-	-	-	-	-	-	-	-	-	-	-	
2,20	14	17	2/III	0,94	0,37	0,64	12,3	108	162	48	-	-	-	-	-	-	-	-	-	-	-	-	
2,40	14	26	2/III	0,94	0,39	0,64	11,8	108	162	48	-	-	-	-	-	-	-	-	-	-	-	-	
2,60	12	14	2/III	0,92	0,41	0,57	9,6	98	147	45	-	-	-	-	-	-	-	-	-	-	-	-	
2,80	7	10	1/III	0,46	0,42	0,35	5,0	22	33	11	-	-	-	-	-	-	-	-	-	-	-	-	
3,00	14	15	2/III	0,94	0,44	0,64	10,1	108	162	48	-	-	-	-	-	-	-	-	-	-	-	-	
3,20	14	23	2/III	0,94	0,45	0,64	9,5	109	164	48	-	-	-	-	-	-	-	-	-	-	-	-	
3,40	15	25	2/III	0,95	0,47	0,67	9,6	114	172	50	-	-	-	-	-	-	-	-	-	-	-	-	
3,60	13	24	2/III	0,93	0,49	0,60	8,1	118	177	47	-	-	-	-	-	-	-	-	-	-	-	-	
3,80	12	22	2/III	0,92	0,51	0,57	7,2	127	190	45	-	-	-	-	-	-	-	-	-	-	-	-	
4,00	12	18	2/III	0,92	0,53	0,57	6,9	133	200	45	-	-	-	-	-	-	-	-	-	-	-	-	
4,20	12	26	2/III	0,92	0,55	0,57	6,6	140	210	45	-	-	-	-	-	-	-	-	-	-	-	-	
4,40	11	24	2/III	0,91	0,57	0,54	5,9	151	228	42	-	-	-	-	-	-	-	-	-	-	-	-	
4,60	8	24	2/III	0,86	0,58	0,40	3,9	163	245	35	-	-	-	-	-	-	-	-	-	-	-	-	
4,80	8	24	2/III	0,86	0,60	0,40	3,8	169	254	35	-	-	-	-	-	-	-	-	-	-	-	-	
5,00	8	30	4/II	0,84	0,62	0,40	3,7	174	261	35	-	28	31	35	38	26	26	-	13	20	24	-	
5,20	6	22	2/III	0,82	0,63	0,30	2,5	160	240	29	-	-	-	-	-	-	-	-	-	-	-	-	
5,40	7	26	2/III	0,84	0,65	0,35	2,9	176	263	32	-	-	-	-	-	-	-	-	-	-	-	-	
5,60	6	30	4/II	0,82	0,67	0,30	2,3	163	244	29	-	28	31	35	38	25	26	-	10	15	18	-	
5,80	8	30	4/II	0,84	0,68	0,40	3,2	190	285	35	-	28	31	35	38	25	26	-	13	20	24	-	
6,00	12	30	4/II	0,88	0,70	0,57	4,9	194	291	45	-	8	29	32	35	39	27	26	0,017	20	30	36	-
6,20	12	36	4/II	0,88	0,72	0,57	4,7	200	300	45	-	7	29	32	35	39	27	26	0,016	20	30	36	-
6,40	5	25	2/III	0,80	0,73	0,25	1,6	144	217	25	-	28	31	35	38	25	25	-	7	10	12	-	
6,60	4	30	4/II	0,80	0,75	0,20	1,2	119	178	20	-	28	31	35	38	25	25	-	7	10	12	-	
6,80	4	30	4/II	0,80	0,77	0,20	1,2	119	179	20	-	28	31	35	38	25	25	-	8	13	15	-	
7,00	5	37	4/II	0,81	0,78	0,25	1,5	146	219	25	-	28	31	35	38	25	25	-	8	13	15	-	
7,20	5	37	4/II	0,81	0,80	0,25	1,5	146	219	25	-	28	31	35	38	25	25	-	8	13	15	-	
7,40	5	37	4/II	0,81	0,81	0,25	1,4	146	220	25	-	28	31	35	38	25	25	-	10	15	18	-	
7,60	6	45	4/II	0,82	0,83	0,30	1,8	172	257	29	-	28	31	35	38	25	26	-	8	13	15	-	
7,80	5	37	4/II	0,81	0,85	0,25	1,4	147	221	25	-	28	31	35	38	25	25	-	8	13	15	-	
8,00	5	37	4/II	0,81	0,86	0,25	1,3	147	221	25	-	28	31	35	38	25	25	-	8	13	15	-	
8,20	5	37	4/II	0,81	0,88	0,25	1,3	148	222	25	-	28	31	35	38	25	25	-	8	13	15	-	
8,40	6	30	4/II	0,82	0,90	0,30	1,6	174	261	29	-	28	31	35	38	25	26	-	10	15	18	-	
8,60	4	30	4/II	0,80	0,91	0,20	0,9	120	180	20	-	28	31	35	38	25	26	-	7	10	12	-	
8,80	5	25	2/III	0,80	0,93	0,25	1,2	148	223	25	-	-	-	-	-	-	-	-	8	13	15	-	
9,00	5	37	4/II	0,81	0,94	0,25	1,2	149	223	25	-	28	31	35	38	25	25	-	8	13	15	-	
9,20	5	37	4/II	0,81	0,96	0,25	1,2	149	223	25	-	28	31	35	38	25	25	-	8	13	15	-	
9,40	5	37	4/II	0,81	0,98	0,25	1,1	149	223	25	-	28	31	35	38	25	25	-	10	15	18	-	
9,60	6	30	4/II	0,82	0,99	0,30	1,4	176	264	29	-	28	31	35	38	25	26	-	12	18	21	-	
9,80	7	52	4/II	0,83	1,01	0,35	1,7	202	302	32	-	28	31	35	38	25	26	-	10	15	18	-	
10,00	6	45	4/II	0,82	1,03	0,30	1,4	177	265	29	-	28	31	35	38	25	26	-	8	13	15	-	
10,20	6	37	4/II	0,81	1,04	0,25	1,1	150	224	25	-	28	31	35	38	25	25	-	8	13	15	-	
10,40	6	37	4/II	0,81	1,06	0,25	1,0	150	225	25	-	28	31	35	38	25	25	-	8	13	15	-	
10,60	6	37	4/II	0,81	1,07	0,25	1,0	150	225	25	-	28	31	35	38	25	25	-	8	13	15	-	
10,80	6	37	4/II	0,81	1,09	0,25	1,0	150	225	25	-	28	31	35	38	25	25	-	8	13	15	-	
11,00	6	45	4/II	0,82	1,11	0,30	1,2	178	267	29	-	28	31	35	38	25	26	-	10	15	18	-	
11,20	7	52	4/II	0,82	1,12	0,30	1,2	178	267	29	-	28	31	35	38	25	26	-	12	18	21	-	
11,40	6	45	4/II	0,82	1,14	0,35	1,4	205	308	32	-	28	31	35	38	25	26	-	10	15	18	-	
11,60	6	45	4/II	0,82	1,16	0,30	1,2	179	268	29	-	28	31	35	38	25	26	-	10	15	18	-	
11,80	6	45	4/II	0,82	1,17	0,30	1,1	179	268	29	-	28	31	35	38	25	26	-	10	15	18	-	
12,00	6	30	4/II	0,82	1,19	0,30	1,1	179	268	29	-	28	31	35	38	25	26	-	10	15	18	-	
12,20	7	25	2/III	0,84	1,20	0,35	1,3	206	309	32	-	-	-	-	-	-	-	-	-	-	-	-	
12,40	8	30	4/II	0,84	1,22	0,40	1,6	232	349	35	-	28	31	35	38	25	26	-	13	20	24	-	
12,60	10	30	4/II	0,86	1,24	0,50	2,0	279	419	40	-	28	31	35	38	25	26	-	17	25	30	-	
12,80	13	28	2/III	0,93	1,26	0,60	2,5	320	480	47	-	-	-	-	-	-	-	-	-	-	-	-	
13,00	13	16	2/III	0,93	1,28	0,60	2,5	322	483	47	-	-	-	-	-	-	-	-	-	-	-	-	
13,20	18	19	2/III	0,98	1,30	0,75	3,2	365	539	56	-	-	-	-	-	-	-	-	-	-	-	-	
13,40	20	17	4/II	0,93	1,31	0,80	3,4	369	554	60	10	29	32	36	39	26	27	0,020	33	50	60	-	
13,60	20	17	4/II	0,93	1,33	0,80	3,3	373	560	60	10	29	32	35	39	26	27	0,020	33	50	60	-	
13,80	18	16	2/III	0,98	1,35	0,75	3,0	370	555	56	-	-	-	-	-	-	-	-	-	-	-	-	
14,00	17	21	2/III	0,97	1,37	0,72	2,8	367	550	54	-	-	-	-	-	-	-	-	-	-	-	-	
14,20	24	30	4/II	0,94	1,39	0,89	3,6	393	589	72	15	30	33	36	39	27	28	0,029	40	60	72	-	

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 13

201095-013

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 2,00 m da quota inizio
 - pagina : 2

Prof. m	Rp kg/cm²	Rp/Rl (-)	Natura Litol.	Y t/m²	p'vo kg/cm²	Cu kg/cm²	OCR (-)	NATURA COESIVA			NATURA GRANULARE										
								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
20,20	70	52	3:...	0,95	1,95	-	-	-	-	-	43	34	36	38	41	31	32	0,088	117	175	210
20,40	40	30	4:f:f	1,00	1,97	1,33	3,9	554	831	120	24	31	34	37	40	28	30	0,046	67	100	120
20,60	36	27	4:f:f	0,99	1,99	1,20	3,3	558	837	108	20	31	34	37	40	27	30	0,038	60	90	108
20,80	36	27	4:f:f	0,99	2,01	1,20	3,3	562	844	108	20	31	34	37	40	27	30	0,038	60	90	108
21,00	40	25	4:f:f	1,00	2,03	1,33	3,7	573	860	120	23	31	34	37	40	28	30	0,044	67	100	120
21,20	40	30	4:f:f	1,00	2,06	1,33	3,7	579	868	120	23	31	34	37	40	28	30	0,044	67	100	120
21,40	30	20	4:f:f	0,96	2,07	1,00	2,5	528	792	90	13	30	33	36	39	26	29	0,025	50	75	90
21,60	32	22	4:f:f	0,97	2,09	1,07	2,7	550	825	96	15	30	33	36	39	26	29	0,029	53	80	96
21,80	30	19	4:f:f	0,96	2,11	1,00	2,5	532	798	90	12	30	33	36	39	26	29	0,024	50	75	90
22,00	36	19	4:f:f	0,99	2,13	1,20	3,1	585	878	108	18	31	33	36	39	27	30	0,035	60	90	108
22,20	36	18	4:f:f	0,99	2,15	1,20	3,0	589	883	108	18	31	33	36	39	27	30	0,035	60	90	108
22,40	40	23	4:f:f	1,00	2,17	1,33	3,4	610	915	120	22	31	34	37	40	28	30	0,041	67	100	120
22,60	44	22	4:f:f	1,00	2,19	1,47	3,8	616	924	132	25	31	34	37	40	28	31	0,047	73	110	132
22,80	50	29	4:f:f	1,01	2,21	1,67	4,4	616	925	150	29	32	35	37	40	29	31	0,055	83	125	150
23,00	44	22	4:f:f	1,00	2,23	1,47	3,7	629	943	132	24	31	34	37	40	28	31	0,046	73	110	132
23,20	50	19	4:f:f	1,01	2,25	1,67	4,3	628	942	150	28	32	35	37	40	29	31	0,054	83	125	150
23,40	50	25	4:f:f	1,01	2,27	1,67	4,3	634	951	150	28	32	35	37	40	29	31	0,054	83	125	150
23,60	60	30	4:f:f	1,02	2,29	2,00	5,3	625	938	180	34	33	35	38	41	30	32	0,067	100	150	180
23,80	70	40	3:...	0,95	2,31	-	-	-	-	-	39	34	36	38	41	30	32	0,078	117	175	210
24,00	120	69	3:...	1,03	2,33	-	-	-	-	-	58	36	38	40	43	33	35	0,124	200	300	360
24,20	170	85	3:...	1,11	2,35	-	-	-	-	-	69	38	40	42	44	35	37	0,157	283	425	510
24,40	200	-	3:...	1,15	2,37	-	-	-	-	-	75	38	40	42	44	36	38	0,173	333	500	600

GEO TIRRENO s.r.l.
 Via Cervara, 101
 54100 MASSA
 Part. IVA 00713690451

**PROVA PENETROMETRICA STATICA
TABELLA PARAMETRI GEOTECNICI**

CPT 14

2.010436-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :
- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 2,70 m da quota inizio
- pagina : 1

NATURA COESIVA

NATURA GRANULARE

Prof. m	Rp kg/cm²	Rp/RI (-)	Natura Litol.	Y t/m²	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	4	30	4 F.F.	1,85	0,04	0,20	51,7	34	51	20	42	34	36	39	41	37	25	0,084	7	10	12
0,40	4	20	2 III	1,85	0,07	0,20	21,8	34	51	20											
0,60	11	27	2 III	1,85	0,11	0,54	45,0	91	137	42											
0,80	14	26	2 III	1,85	0,15	0,64	38,9	108	162	48											
1,00	14	17	2 III	1,85	0,19	0,64	29,4	108	182	48											
1,20	22	19	4 F.F.	1,85	0,22	0,85	33,4	144	216	66	57	36	38	40	43	37	28	0,121	37	55	66
1,40	21	16	4 F.F.	1,85	0,26	0,82	26,7	140	210	63	51	35	37	40	42	36	27	0,107	35	53	63
1,60	18	15	2 III	1,85	0,30	0,75	20,1	128	191	56											
1,80	16	15	2 III	1,85	0,33	0,70	15,8	118	177	52											
2,00	14	13	2 III	1,85	0,37	0,64	12,4	108	162	48											
2,20	16	15	2 III	1,85	0,41	0,70	12,3	118	177	52											
2,40	16	17	2 III	1,85	0,44	0,70	11,0	118	177	52											
2,60	14	13	2 III	1,85	0,48	0,74	8,9	114	171	48											
2,80	14	13	2 III	0,94	0,50	0,64	8,5	119	178	48											
3,00	16	17	2 III	0,96	0,52	0,70	9,1	123	185	52											
3,20	14	17	2 III	0,94	0,54	0,64	7,7	130	195	48											
3,40	13	18	2 III	0,93	0,56	0,60	7,0	140	210	47											
3,60	11	15	2 III	0,91	0,57	0,54	5,8	154	231	42											
3,80	11	14	2 III	0,91	0,59	0,54	5,5	160	241	42											
4,00	12	15	2 III	0,92	0,61	0,57	5,8	164	245	45											
4,20	15	19	2 III	0,95	0,63	0,67	6,7	160	241	50											
4,40	15	17	2 III	0,95	0,65	0,67	6,5	167	251	50											
4,60	11	16	2 III	0,91	0,67	0,54	4,8	185	278	42											
4,80	9	15	2 III	0,88	0,68	0,45	3,7	193	290	38											
5,00	8	17	2 III	0,86	0,70	0,40	3,1	194	291	35											
5,20	7	17	2 III	0,84	0,72	0,35	2,6	184	276	32											
5,40	7	21	2 III	0,84	0,74	0,35	2,5	186	279	32											
5,60	7	26	2 III	0,84	0,75	0,35	2,4	188	281	32											
5,80	20	75	4 F.F.	0,93	0,77	0,80	6,6	198	297	60	23	31	34	37	40	29	27	0,044	33	50	60
6,00	14	26	2 III	0,94	0,79	0,64	4,8	219	329	48											
6,20	7	26	2 III	0,84	0,81	0,35	2,2	192	288	32											
6,40	10	30	4 F.F.	0,86	0,82	0,50	3,4	231	347	40		28	31	35	38	25	26		17	25	30
6,60	6	30	4 F.F.	0,82	0,84	0,30	1,7	172	258	29		28	31	35	38	25	26		10	15	18
6,80	5	19	2 III	0,80	0,86	0,25	1,3	147	221	25											
7,00	5	19	2 III	0,80	0,87	0,25	1,3	148	221	25											
7,20	5	25	2 III	0,80	0,89	0,25	1,3	148	222	25											
7,40	5	25	2 III	0,80	0,90	0,25	1,3	148	222	25											
7,60	5	25	2 III	0,80	0,92	0,25	1,2	148	222	25											
7,80	5	25	2 III	0,80	0,94	0,25	1,2	148	223	25											
8,00	5	19	2 III	0,80	0,95	0,25	1,2	149	223	25											
8,20	5	25	2 III	0,80	0,97	0,25	1,2	149	223	25											
8,40	9	34	4 F.F.	0,85	0,99	0,45	2,4	243	364	38		28	31	35	38	25	26		15	23	27
8,60	5	19	2 III	0,80	1,00	0,25	1,1	149	224	25											
8,80	5	19	2 III	0,80	1,02	0,25	1,1	149	224	25											
9,00	5	19	2 III	0,80	1,03	0,25	1,1	150	224	25											
9,20	6	22	2 III	0,82	1,05	0,30	1,3	177	266	29											
9,40	6	22	2 III	0,82	1,07	0,30	1,3	177	266	29											
9,60	6	30	4 F.F.	0,82	1,08	0,30	1,3	178	266	29		28	31	35	38	25	26		10	15	18
9,80	8	40	4 F.F.	0,84	1,10	0,40	1,8	229	343	35		28	31	35	38	25	26		13	20	24
10,00	7	21	2 III	0,84	1,12	0,35	1,5	205	307	32		28	31	35	38	25	26				
10,20	7	26	2 III	0,84	1,13	0,35	1,4	205	307	32											
10,40	6	22	2 III	0,82	1,15	0,30	1,2	179	268	29											
10,60	6	22	2 III	0,82	1,17	0,30	1,2	179	268	29											
10,80	7	26	2 III	0,84	1,18	0,35	1,4	206	309	32											
11,00	7	35	4 F.F.	0,83	1,20	0,35	1,3	206	309	32											
11,20	7	26	2 III	0,84	1,22	0,35	1,3	206	310	32		28	31	35	38	25	26		12	18	21
11,40	6	22	2 III	0,82	1,23	0,30	1,3	207	311	32											
11,60	7	17	2 III	0,84	1,25	0,30	1,1	179	269	29											
11,80	6	18	2 III	0,82	1,27	0,30	1,0	207	311	32											
12,00	9	27	2 III	0,88	1,28	0,45	1,7	259	388	38											
12,20	10	25	2 III	0,90	1,30	0,50	1,9	283	424	40											
12,40	10	21	2 III	0,90	1,32	0,50	1,9	283	425	40											
12,60	11	16	2 III	0,91	1,34	0,54	2,0	300	451	42											
12,80	16	18	2 III	0,96	1,36	0,70	2,7	358	537	52											
13,00	19	15	2 III	0,99	1,38	0,78	3,1	378	568	58											
13,20	19	14	2 III	0,99	1,40	0,78	3,0	382	573	58											
13,40	20	14	4 F.F.	0,93	1,41	0,80	3,1	390	584	60	8	29	32	35	39	26	27	0,018	33	50	60
13,60	20	12	4 F.F.	0,93	1,43	0,80	3,0	393	589	60	8	29	32	35	39	26	27	0,017	33	50	60
13,80	22	14	4 F.F.	0,93	1,45	0,85	3,2	404	605	66	11	30	33	36	39	26	28	0,022	37	55	66
14,00	20	13	4 F.F.	0,93	1,47	0,80	2,9	399	598	60	7	29	32	35	39	26	27	0,016	33	50	60
14,20	25	16	4 F.F.	0,94	1,49	0,91	3,4	418	628	75	15	30	33	36	39	27	28	0,028	42	63	75
14,40	24	16	4 F.F.	0,94	1,51	0,89	3,2	421	631	72	13	30	33	36	39	27	28	0,025	40	60	72
14,60	25	14	4 F.F.	0,94	1,53	0,91	3,3	427	640	75	14	30	33	36	39	27	28	0,027	42	63	75
14,80	26	14	4 F.F.	0,95	1,55	0,93	3,3	433	650	78	15	30	33	36	39	27	28	0,029	43	65	78
15,00	26	16	4 F.F.	0,95	1,56	0,93	3,3	437	656	78	15	30	33	36	39	27	28	0,029	43	65	78
15,20	30	17	4 F.F.	0,96	1,58	1,00	3,5	447	670	90	19	31	34	36	40	29	29	0,037	50	75	90
15,40	26	15	4 F.F.	0,95	1,60	0,93	3,2	445	667	78	14	30	33	36	39	27	28	0,028	43	65	78
15,60	26	18	4 F.F.	0,95	1,62	0,93	3,1	448	673	78	14	30	33	36	39	27	28	0,027	43	65	78
15,80	30	17	4 F.F.	0,96	1,64	1,00	3,4	461	691	90	19	31									

PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 14

EPT0496-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 2,70 m da quota inizio
 - pagina : 2

Prof. m	Rp kg/cm ²	Rp/Rl (-)	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	NATURA COESIVA				NATURA GRANULARE				Amax/g (-)	E'50 kg/cm ²	E'25 kg/cm ²	Mo kg/cm ²
											Dr %	s1s (°)	s2s (°)	s3s (°)	s4s (°)	sdm (°)	smv (°)	sdm (°)				
20.20	130	65	3:::	1.05	2.07	-	-	-	-	-	63	37	39	41	43	34	35	0,140	217	325	390	
20.40	88	132	3:::	0.98	2.09	-	-	-	-	-	50	35	37	40	42	32	33	0,103	147	220	264	
20.60	170	142	3:::	1.11	2.11	-	-	-	-	-	72	38	40	42	44	36	37	0,165	283	425	510	
20.80	132	90	3:::	1.05	2.13	-	-	-	-	-	63	37	39	41	43	34	35	0,139	220	330	396	
21.00	178	89	3:::	1.12	2.15	-	-	-	-	-	73	38	40	42	44	36	37	0,168	297	445	534	
21.20	200	100	3:::	1.15	2.17	-	-	-	-	-	77	39	40	42	44	37	38	0,180	333	500	600	
21.40	200	75	3:::	1.15	2.20	-	-	-	-	-	77	39	40	42	44	36	38	0,179	333	500	600	
21.60	300	-	3:::	1.15	2.22	-	-	-	-	-	90	41	42	44	45	38	40	0,224	500	750	900	

GEO TIRENO s.r.l.
 Via Cervara, 101
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PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 15

22/09/98-018

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : Falda non rilevata
 - pagina : 2

Prof. m	Rp kg/cm ²	Rp/Rl (-)	Natura Litol.	Y t/m ³	p'vo kg/cm ²	Cu kg/cm ²	OCR (-)	NATURA COESIVA			NATURA GRANULARE										
								Eu50 kg/cm ²	Eu25 kg/cm ²	Mo kg/cm ²	Dr %	s1s (°)	s2s (°)	s3s (°)	s4s (°)	scm (°)	emy (°)	Amax/g (-)	E'50 kg/cm ²	E'25 kg/cm ²	Mo kg/cm ²
20,20	80	30	4/1	1,85	3,74	2,67	4,1	1043	1565	240	32	33	35	38	41	28	33	0,062	133	200	240
20,40	90	56	3	1,85	3,77	-	-	-	-	-	36	33	36	38	41	29	33	0,071	150	225	270
20,60	120	69	3	1,85	3,81	-	-	-	-	-	46	34	37	39	42	31	35	0,093	200	300	360
20,80	164	82	3	1,85	3,85	-	-	-	-	-	56	36	38	40	42	32	37	0,120	273	410	492
21,00	240	90	3	1,85	3,88	-	-	-	-	-	69	38	40	41	44	34	39	0,156	400	600	720
21,20	240	120	3	1,85	3,92	-	-	-	-	-	69	38	39	41	43	34	39	0,155	400	600	720
21,40	250	-	3	1,85	3,96	-	-	-	-	-	70	38	40	42	44	34	39	0,159	417	625	750

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 16

2-010495-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,50 m da quota inizio
- pagina : 1

NATURA COESIVA												NATURA GRANULARE											
Prof. m	Rp kg/cm²	Rp/Ri (-)	Natura Litol.	Y t/m²	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	6	13	1***	1,85	0,04	0,30	65,9	12	18	9	-	-	-	-	-	-	-	-	-	-	-	-	
0,40	7	26	2////	1,85	0,07	0,35	43,8	59	89	32	-	-	-	-	-	-	-	-	-	-	-	-	
0,60	8	20	2////	1,85	0,11	0,40	31,2	108	102	35	-	-	-	-	-	-	-	-	-	-	-	-	
0,80	14	19	2////	1,85	0,15	0,64	38,9	108	162	48	-	-	-	-	-	-	-	-	-	-	-	-	
1,00	14	17	2////	1,85	0,19	0,64	29,4	108	162	48	-	-	-	-	-	-	-	-	-	-	-	-	
1,20	20	19	4f.f.	1,85	0,22	0,80	31,2	136	204	60	53	35	38	40	42	36	27	0,113	-	-	-	-	
1,40	14	15	2////	1,85	0,26	0,64	19,3	108	162	48	-	-	-	-	-	-	-	-	-	-	-	-	
1,60	10	12	2////	0,90	0,28	0,50	13,1	85	128	40	-	-	-	-	-	-	-	-	-	-	-	-	
1,80	10	17	2////	0,90	0,30	0,50	12,1	85	128	40	-	-	-	-	-	-	-	-	-	-	-	-	
2,00	11	16	2////	0,91	0,31	0,54	12,3	91	137	42	-	-	-	-	-	-	-	-	-	-	-	-	
2,20	10	15	2////	0,90	0,33	0,50	10,3	85	128	40	-	-	-	-	-	-	-	-	-	-	-	-	
2,40	10	17	2////	0,90	0,35	0,50	9,8	85	128	40	-	-	-	-	-	-	-	-	-	-	-	-	
2,60	9	15	2////	0,88	0,37	0,45	8,1	88	132	38	-	-	-	-	-	-	-	-	-	-	-	-	
2,80	9	17	2////	0,88	0,38	0,45	7,6	94	140	38	-	-	-	-	-	-	-	-	-	-	-	-	
3,00	10	19	2////	0,90	0,40	0,50	8,2	96	144	40	-	-	-	-	-	-	-	-	-	-	-	-	
3,20	10	19	2////	0,90	0,42	0,50	7,8	102	152	40	-	-	-	-	-	-	-	-	-	-	-	-	
3,40	12	20	2////	0,92	0,44	0,57	8,7	104	156	45	-	-	-	-	-	-	-	-	-	-	-	-	
3,60	13	24	2////	0,93	0,46	0,60	8,9	108	163	47	-	-	-	-	-	-	-	-	-	-	-	-	
3,80	12	22	2////	0,92	0,48	0,57	7,9	115	172	45	-	-	-	-	-	-	-	-	-	-	-	-	
4,00	10	19	2////	0,90	0,49	0,50	6,4	128	192	40	-	-	-	-	-	-	-	-	-	-	-	-	
4,20	12	22	2////	0,92	0,51	0,57	7,2	127	191	45	-	-	-	-	-	-	-	-	-	-	-	-	
4,40	8	20	2////	0,86	0,53	0,40	4,4	148	222	35	-	-	-	-	-	-	-	-	-	-	-	-	
4,60	8	20	2////	0,86	0,55	0,40	4,2	153	229	35	-	-	-	-	-	-	-	-	-	-	-	-	
4,80	6	22	2////	0,82	0,56	0,30	2,9	151	227	29	-	-	-	-	-	-	-	-	-	-	-	-	
5,00	10	30	4f.f.	0,86	0,58	0,50	5,2	159	239	40	6	29	32	35	38	27	26	0,014	17	25	30	-	
5,20	13	32	4f.f.	0,88	0,60	0,60	6,4	155	233	47	14	30	33	36	39	28	26	0,028	22	33	39	-	
5,40	20	50	4f.f.	0,93	0,62	0,80	8,7	146	219	60	28	32	35	37	40	31	27	0,055	33	50	60	-	
5,60	32	80	3:...	0,88	0,63	-	-	-	-	-	44	34	37	39	42	33	29	0,089	53	80	96	-	
5,80	8	15	2////	0,86	0,65	0,40	3,4	183	275	35	-	-	-	-	-	-	-	-	-	-	-	-	
6,00	4	20	2////	0,78	0,67	0,20	1,4	117	176	20	-	-	-	-	-	-	-	-	-	-	-	-	
6,20	3	22	2////	0,76	0,68	0,15	0,9	90	135	15	-	-	-	-	-	-	-	-	-	-	-	-	
6,40	4	30	4f.f.	0,80	0,70	0,20	1,3	118	177	20	-	28	31	35	38	25	25	-	-	-	-	-	
6,60	3	22	2////	0,76	0,71	0,15	0,9	90	135	15	-	-	-	-	-	-	-	-	-	-	-	-	
6,80	3	22	2////	0,76	0,73	0,15	0,9	90	135	15	-	-	-	-	-	-	-	-	-	-	-	-	
7,00	3	22	2////	0,76	0,74	0,15	0,8	90	135	15	-	-	-	-	-	-	-	-	-	-	-	-	
7,20	3	22	2////	0,76	0,76	0,15	0,8	90	135	15	-	-	-	-	-	-	-	-	-	-	-	-	
7,40	3	45	4f.f.	0,78	0,77	0,15	0,8	90	135	15	-	28	31	35	38	25	25	-	-	-	-	-	
7,60	3	22	2////	0,76	0,79	0,15	0,8	90	135	15	-	-	-	-	-	-	-	-	-	-	-	-	
7,80	3	22	2////	0,76	0,80	0,15	0,8	90	135	15	-	-	-	-	-	-	-	-	-	-	-	-	
8,00	3	22	2////	0,76	0,82	0,15	0,8	90	135	15	-	-	-	-	-	-	-	-	-	-	-	-	
8,20	3	45	4f.f.	0,78	0,84	0,15	0,7	90	135	15	-	28	31	35	38	25	25	-	-	-	-	-	
8,40	3	22	2////	0,76	0,85	0,15	0,7	90	135	15	-	-	-	-	-	-	-	-	-	-	-	-	
8,60	3	22	2////	0,76	0,87	0,15	0,7	90	135	15	-	-	-	-	-	-	-	-	-	-	-	-	
8,80	3	22	2////	0,76	0,88	0,15	0,7	90	135	15	-	-	-	-	-	-	-	-	-	-	-	-	
9,00	3	22	2////	0,76	0,90	0,15	0,7	90	135	15	-	-	-	-	-	-	-	-	-	-	-	-	
9,20	4	30	4f.f.	0,80	0,91	0,20	0,9	120	180	20	-	28	31	35	38	25	25	-	-	-	-	-	
9,40	4	30	4f.f.	0,80	0,93	0,20	0,9	120	180	20	-	28	31	35	38	25	25	-	-	-	-	-	
9,60	4	30	4f.f.	0,80	0,94	0,20	0,9	120	180	20	-	28	31	35	38	25	25	-	-	-	-	-	
9,80	4	30	4f.f.	0,80	0,96	0,20	0,9	120	180	20	-	28	31	35	38	25	25	-	-	-	-	-	
10,00	4	30	4f.f.	0,80	0,98	0,20	0,9	120	180	20	-	28	31	35	38	25	25	-	-	-	-	-	
10,20	5	37	4f.f.	0,81	0,99	0,25	1,1	149	224	25	-	28	31	35	38	25	25	-	-	-	-	-	
10,40	4	30	4f.f.	0,80	1,01	0,20	0,8	120	180	20	-	28	31	35	38	25	25	-	-	-	-	-	
10,60	5	37	4f.f.	0,81	1,02	0,25	1,1	149	224	25	-	28	31	35	38	25	25	-	-	-	-	-	
10,80	6	45	4f.f.	0,82	1,04	0,30	1,3	177	266	29	-	28	31	35	38	25	25	-	-	-	-	-	
11,00	6	18	2////	0,82	1,06	0,30	1,3	177	266	29	-	28	31	35	38	25	26	-	-	-	-	-	
11,20	6	30	4f.f.	0,82	1,07	0,30	1,3	177	266	29	-	-	-	-	-	-	-	-	-	-	-	-	
11,40	11	21	2////	0,91	1,09	0,54	2,6	281	422	42	-	28	31	35	38	25	26	-	-	-	-	-	
11,80	14	26	2////	0,94	1,11	0,64	3,1	307	461	48	-	-	-	-	-	-	-	-	-	-	-	-	
11,80	22	41	3:...	0,86	1,13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12,00	26	22	4f.f.	0,95	1,15	0,93	4,8	318	477	78	17	30	33	36	39	28	28	0,033	37	55	66	-	
12,20	30	32	3:...	0,88	1,16	-	-	-	-	-	22	31	34	37	40	29	28	0,042	43	65	78	-	
12,40	40	33	3:...	0,90	1,18	-	-	-	-	-	27	32	34	37	40	29	29	0,051	50	75	90	-	
12,80	32	27	4f.f.	0,97	1,20	1,07	5,4	327	490	96	28	33	36	38	41	31	30	0,072	67	100	120	-	
12,80	28	17	4f.f.	0,96	1,22	0,97	4,7	339	509	84	23	32	35	37	40	30	29	0,054	53	80	96	-	
13,00	26	18	4f.f.	0,95	1,24	0,93	4,4	346	519	78	20	31	34	37	40	29	28	0,044	47	70	84	-	
13,20	26	19	4f.f.	0,95	1,26	0,93	4,3	351	527	78	20	31	34	37	40	28	28	0,039	43	65	78	-	
13,40	25	17	4f.f.	0,94	1,28	0,91	4,1	357	535	75	18	31	33	36	39	28	28	0,035	42	63	75	-	
13,80	22	15	4f.f.	0,93	1,30	0,85	3,7	366	549	66	14	30	33	36	39	27	28	0,027	37	55	66	-	
14,00	20	17	4f.f.	0,93	1,31	0,80	3,4	369	554	60	10	29	32	36	39	26	27	0,020	33	50	60	-	
14,20	18	17	2////	0,98	1,33	0,75	3,1	367	550	56	-	-	-	-	-	-	-	-	-	-	-	-	
14,40	18	17	2////	0,98	1,35	0,75	3,0	370	555	56	-	-	-	-	-	-	-	-	-	-	-	-	
14,40	18	15	2////	0,96	1,37	0,70	2,7	360	540	52	-	-	-	-	-	-	-	-	-	-	-	-	
14,60	18	17	2////	0,98	1,39																		

PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 16

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,50 m da quota inizio
 - pagina : 2

Prof. m	Rp kg/cm ²	Rp/Rl (-)	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	NATURA GRANULARE								E'50 kg/cm ²	E'25 kg/cm ²	Mo kg/cm ²
											Dr %	a1s (°)	a2s (°)	a3s (°)	a4s (°)	adm (°)	amy (°)	Amax/g (-)			
20,20	200	100	3:...	1,15	1,94	-	-	-	-	-	80	39	41	43	44	37	38	0,189	333	500	600
20,40	210	105	3:...	1,15	1,96	-	-	-	-	-	81	39	41	43	44	37	38	0,193	350	525	630
20,60	230	-	3:...	1,15	1,98	-	-	-	-	-	84	40	41	43	45	38	39	0,203	383	575	690

PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 17

ES104088-018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,30 m da quota inizio
- pagina : 1

Prof. m	Rp kg/cm²	Rp/Ri (-)	Natura Litol.	Y l/m²	p'vo kg/cm²	Cu kg/cm²	OCR (-)	NATURA COESIVA				NATURA GRANULARE									
								Eu50 kg/cm²	Eu25 kg/cm²	Mo kg/cm²	Dr %	a1s (°)	a2s (°)	a3s (°)	a4s (°)	a5m	a6m	Amax/g (-)	E'50 kg/cm²	E'25 kg/cm²	Mo kg/cm²
0,20	20	14	4/F	1,85	0,04	0,80	99,9	136	204	60	97	42	43	44	46	44	27	0,248	33	50	60
0,40	22	33	3:III	1,85	0,07	-	-	-	-	-	83	40	41	43	45	42	28	0,201	37	55	86
0,60	30	19	4/F	1,85	0,11	1,00	96,0	170	255	90	84	40	41	43	45	41	29	0,204	50	75	90
0,80	12	30	4/F	1,85	0,15	0,57	34,0	97	146	45	46	34	37	39	42	36	26	0,093	20	30	36
1,00	26	32	3:III	1,85	0,19	-	-	-	-	-	67	37	39	41	43	39	28	0,150	43	65	78
1,20	12	10	2/III	1,85	0,22	0,57	20,5	97	146	45	-	-	-	-	-	-	-	-	-	-	-
1,40	18	39	4/F	0,91	0,24	0,75	26,1	128	191	56	48	35	37	39	42	35	27	0,099	30	45	54
1,60	7	26	2/III	0,84	0,26	0,35	9,2	61	92	32	-	-	-	-	-	-	-	-	-	-	-
1,80	7	35	4/F	0,83	0,27	0,35	8,5	65	97	32	12	30	33	36	39	29	26	0,024	12	18	21
2,00	7	13	1:III	0,46	0,28	0,35	8,2	16	24	11	-	-	-	-	-	-	-	-	-	-	-
2,20	10	37	4/F	0,86	0,30	0,50	11,9	85	128	40	22	31	34	37	40	31	26	0,042	17	25	30
2,40	6	15	1:III	0,46	0,31	0,30	6,0	17	25	9	-	-	-	-	-	-	-	-	-	-	-
2,60	8	20	2/III	0,86	0,33	0,40	8,1	78	117	35	-	-	-	-	-	-	-	-	-	-	-
2,80	12	22	2/III	0,92	0,34	0,57	11,8	97	146	45	-	-	-	-	-	-	-	-	-	-	-
3,00	10	19	2/III	0,90	0,36	0,50	9,4	87	130	40	-	-	-	-	-	-	-	-	-	-	-
3,20	18	27	2/III	0,98	0,38	0,75	14,6	128	191	56	-	-	-	-	-	-	-	-	-	-	-
3,40	12	45	4/F	0,88	0,40	0,57	9,8	97	146	45	21	31	34	37	40	30	26	0,041	20	30	36
3,60	10	30	4/F	0,86	0,42	0,50	7,9	101	161	40	14	30	33	36	39	29	26	0,028	17	25	30
3,80	8	24	2/III	0,86	0,43	0,40	5,7	117	175	35	-	-	-	-	-	-	-	-	-	-	-
4,00	7	15	1:III	0,46	0,44	0,35	4,7	23	34	11	-	-	-	-	-	-	-	-	-	-	-
4,20	8	20	2/III	0,86	0,46	0,40	5,3	126	189	35	-	-	-	-	-	-	-	-	-	-	-
4,40	8	17	2/III	0,86	0,48	0,40	5,0	132	188	35	-	-	-	-	-	-	-	-	-	-	-
4,60	12	18	2/III	0,92	0,50	0,57	7,5	122	182	45	-	-	-	-	-	-	-	-	-	-	-
4,80	10	19	2/III	0,90	0,51	0,50	6,1	136	204	40	-	-	-	-	-	-	-	-	-	-	-
5,00	12	15	2/III	0,92	0,53	0,57	6,9	135	202	45	-	-	-	-	-	-	-	-	-	-	-
5,20	12	20	2/III	0,92	0,55	0,57	6,6	142	212	45	-	-	-	-	-	-	-	-	-	-	-
5,40	7	13	1:III	0,46	0,56	0,35	3,5	30	46	11	-	-	-	-	-	-	-	-	-	-	-
5,60	16	30	4/F	0,90	0,58	0,70	7,9	139	209	52	22	31	34	37	40	30	27	0,042	27	40	48
5,80	22	55	3:III	0,86	0,60	-	-	-	-	-	33	33	35	38	41	31	28	0,063	37	55	66
6,00	12	15	2/III	0,92	0,61	0,57	5,7	165	247	45	-	-	-	-	-	-	-	-	-	-	-
6,20	18	45	4/F	0,91	0,63	0,75	7,8	153	230	56	24	31	34	37	40	30	27	0,046	30	45	54
6,40	18	34	4/F	0,91	0,65	0,75	7,5	159	239	56	24	31	34	37	40	30	27	0,045	30	45	54
6,60	5	37	4/F	0,81	0,67	0,25	1,4	142	213	25	-	-	-	-	-	-	-	-	-	-	-
6,80	4	20	2/III	0,78	0,68	0,20	1,4	118	177	20	-	-	-	-	-	-	-	-	-	-	-
7,00	4	30	4/F	0,80	0,70	0,20	1,3	118	177	20	-	-	-	-	-	-	-	-	-	-	-
7,20	5	37	4/F	0,81	0,71	0,25	1,7	144	216	25	28	31	35	38	41	31	28	-	-	-	-
7,40	6	45	4/F	0,82	0,73	0,30	2,1	167	250	29	28	31	35	38	41	31	28	-	-	-	-
7,60	5	75	4/F	0,81	0,75	0,25	1,6	145	217	25	28	31	35	38	41	31	28	-	-	-	-
7,80	6	45	4/F	0,82	0,76	0,30	2,0	169	253	29	28	31	35	38	41	31	28	-	-	-	-
8,00	6	45	4/F	0,82	0,78	0,30	1,9	170	254	29	28	31	35	38	41	31	28	-	-	-	-
8,20	5	37	4/F	0,81	0,80	0,25	1,5	146	219	25	28	31	35	38	41	31	28	-	-	-	-
8,40	5	37	4/F	0,81	0,81	0,25	1,4	146	220	25	28	31	35	38	41	31	28	-	-	-	-
8,60	5	37	4/F	0,81	0,83	0,25	1,4	147	220	25	28	31	35	38	41	31	28	-	-	-	-
8,80	6	45	4/F	0,82	0,84	0,30	1,7	172	258	29	28	31	35	38	41	31	28	-	-	-	-
9,00	5	37	4/F	0,81	0,86	0,25	1,3	147	221	25	28	31	35	38	41	31	28	-	-	-	-
9,20	6	45	4/F	0,82	0,88	0,30	1,6	173	260	29	28	31	35	38	41	31	28	-	-	-	-
9,40	6	45	4/F	0,82	0,89	0,30	1,6	174	261	29	28	31	35	38	41	31	28	-	-	-	-
9,60	6	45	4/F	0,81	0,91	0,25	1,3	148	222	25	28	31	35	38	41	31	28	-	-	-	-
9,80	6	45	4/F	0,82	0,93	0,30	1,5	175	262	29	28	31	35	38	41	31	28	-	-	-	-
10,00	6	45	4/F	0,82	0,94	0,30	1,5	175	262	29	28	31	35	38	41	31	28	-	-	-	-
10,20	6	45	4/F	0,82	0,96	0,30	1,5	175	263	29	28	31	35	38	41	31	28	-	-	-	-
10,40	6	45	4/F	0,82	0,97	0,30	1,4	176	264	29	28	31	35	38	41	31	28	-	-	-	-
10,60	6	30	4/F	0,82	0,99	0,30	1,4	176	264	29	28	31	35	38	41	31	28	-	-	-	-
10,80	5	30	4/F	0,82	1,01	0,30	1,4	176	265	29	28	31	35	38	41	31	28	-	-	-	-
11,00	5	25	2/III	0,80	1,02	0,25	1,1	149	224	25	-	-	-	-	-	-	-	-	-	-	-
11,20	7	17	2/III	0,84	1,04	0,36	1,6	203	304	32	-	-	-	-	-	-	-	-	-	-	-
11,40	12	30	4/F	0,88	1,06	0,57	2,9	286	429	45	26	31	35	38	41	31	28	-	-	-	-
11,60	18	17	2/III	0,98	1,08	0,75	4,0	300	451	56	-	-	-	-	-	-	-	-	-	-	-
11,80	28	23	4/F	0,96	1,10	0,97	5,4	299	448	84	26	32	34	37	40	29	28	0,050	47	70	84
12,00	30	22	4/F	0,96	1,12	1,00	5,5	303	454	90	28	32	35	37	40	30	29	0,054	50	75	90
12,20	32	24	4/F	0,97	1,13	1,07	5,8	303	455	96	30	32	35	38	40	30	29	0,057	53	80	96
12,40	28	17	4/F	0,96	1,15	0,97	5,0	318	477	84	25	31	34	37	40	29	28	0,047	47	70	84
12,60	24	16	4/F	0,94	1,17	0,89	4,4	327	491	72	19	31	34	36	40	28	28	0,036	40	60	72
12,80	22	9	4/F	0,93	1,19	0,85	4,1	333	499	66	16	30	33	36	39	28	28	0,030	47	70	84
13,00	28	17	4/F	0,96	1,21	0,97	4,7	336	504	84	24	31	34	37	40	29	28	0,045	47	70	84
13,20	36	19	4/F	0,99	1,23	1,20	6,1	324	486	108	32	32	35	38	41	30	30	0,062	60	90	108
13,40	32	18	4/F	0,97	1,25	1,07	5,2	343	515	96	27	32	35	37	40	29	29	0,052	53	80	96
13,60	30	17	4/F	0,96	1,27	1,00	4,7	353	530	90	25	31	34	37	40	29	29	0,047	50	75	90
13,80	34	17	4/F	0,98	1,29	1,13	5,3	351	527	102	29	32	35	37	40	29	29	0,047	50	75	90
14,00	30	22	4/F	0,96	1,31	1,00	4,5	365	547	90	24	31	34	37	40	30	29	0,055	57	85	102
14,20	28	23	4/F	0,96	1,33	0,97	4,2	371	556	84	21	31	34	37	40	29	29	0,046	50	75	90
14,40	24	20	4/F	0,94	1,35	0,89	3,7	379	569	72	16	30	33	36	39	27	28	0,041	47	70	84
14,60	24	20	4/F	0,94																	

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 17

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,30 m da quota inizio
- pagina : 2

Prof. m	Rp kg/cm ²	Rp/Rl (-)	Natura Litol.	Y t/m ³	p'vo kg/cm ²	Cu kg/cm ²	OCR (-)	Eu50 kg/cm ²	Eu25	Mo kg/cm ²	NATURA GRANULARE										
											Dr %	σ1s (°)	σ2s (°)	σ3s (°)	σ4s (°)	edm (°)	emy (°)	Amax/g (-)	E'50 kg/cm ²	E'25 kg/cm ²	Mo kg/cm ²
20,20	60	35	3:...	0,93	1,89	-	-	-	-	-	39	33	36	38	41	31	32	0,077	100	150	180
20,40	64	32	3:...	0,94	1,91	-	-	-	-	-	41	34	36	39	41	31	32	0,082	107	160	182
20,60	70	66	3:...	0,95	1,93	-	-	-	-	-	44	34	36	39	41	31	32	0,088	117	175	210
20,80	90	96	3:...	0,98	1,95	-	-	-	-	-	52	35	38	40	42	33	33	0,109	150	225	270
21,00	126	63	3:...	1,04	1,97	-	-	-	-	-	63	37	39	41	43	34	35	0,140	210	315	378
21,20	150	94	3:...	1,08	1,99	-	-	-	-	-	69	38	40	41	44	35	36	0,157	250	375	450
21,40	176	110	3:...	1,11	2,01	-	-	-	-	-	74	38	40	42	44	36	37	0,172	293	440	528
21,60	200	94	3:...	1,15	2,04	-	-	-	-	-	78	39	41	42	44	37	38	0,185	333	500	600
21,80	240	-	3:...	1,15	2,06	-	-	-	-	-	84	40	41	43	45	38	39	0,204	400	600	720

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 18

2310498.018

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- localita' : Ospedaletto (Comune di Pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,70 m da quota inizio
- pagina : 1

Prof. m	Rp kg/cm²	Rp/Ri (-)	Natura Litol.	Y' Um²	p'vo kg/cm²	Cu kg/cm²	OCR (-)	Eu50 kg/cm²	Eu25 kg/cm²	Mo kg/cm²	NATURA COESIVA				NATURA GRANULARE						
											Dr %	e1s (°)	e2s (°)	e3s (°)	e4s (°)	adm (°)	omy (°)	Amax/g (-)	E'50 kg/cm²	E'25 kg/cm²	Mo kg/cm²
0.20	19	71	4f:1	1,85	0,04	0,78	99,9	132	198	58	95	41	43	44	46	44	27	0,242	32	48	57
0.40	5	15	1***	1,85	0,07	0,25	28,8	10	15	8	-	-	-	-	-	-	-	-	-	-	-
0.50	13	13	2III	1,85	0,11	0,60	52,2	103	154	47	-	-	-	-	-	-	-	-	-	-	-
0.80	13	12	2III	1,85	0,15	0,60	36,5	103	154	47	-	-	-	-	-	-	-	-	-	-	-
1.00	16	20	2III	1,85	0,19	0,70	32,9	118	177	52	-	-	-	-	-	-	-	-	-	-	-
1.20	18	16	2III	1,85	0,22	0,75	28,8	128	191	58	-	-	-	-	-	-	-	-	-	-	-
1.40	15	14	2III	1,85	0,26	0,67	20,5	113	170	50	-	-	-	-	-	-	-	-	-	-	-
1.60	12	10	2III	1,85	0,30	0,57	14,3	97	146	45	-	-	-	-	-	-	-	-	-	-	-
1.80	14	15	2III	0,94	0,31	0,64	15,1	108	162	48	-	-	-	-	-	-	-	-	-	-	-
2.00	16	17	2III	0,96	0,33	0,70	15,7	118	177	52	-	-	-	-	-	-	-	-	-	-	-
2.20	14	15	2III	0,94	0,35	0,64	13,1	108	162	48	-	-	-	-	-	-	-	-	-	-	-
2.40	16	20	2III	0,96	0,37	0,70	13,7	118	177	52	-	-	-	-	-	-	-	-	-	-	-
2.60	20	25	4f:1	0,93	0,39	0,80	15,4	136	204	60	-	-	-	-	-	-	-	-	-	-	-
2.80	18	21	2III	0,98	0,41	0,75	13,4	128	191	56	40	34	36	39	41	33	27	0,079	33	50	60
3.00	15	22	2III	0,95	0,43	0,67	10,9	113	170	50	-	-	-	-	-	-	-	-	-	-	-
3.20	14	21	2III	0,94	0,45	0,64	9,7	109	163	48	-	-	-	-	-	-	-	-	-	-	-
3.40	12	18	2III	0,92	0,47	0,57	8,1	112	167	45	-	-	-	-	-	-	-	-	-	-	-
3.60	10	19	2III	0,90	0,48	0,50	6,5	125	187	40	-	-	-	-	-	-	-	-	-	-	-
3.80	14	19	2III	0,94	0,50	0,64	8,4	120	179	48	-	-	-	-	-	-	-	-	-	-	-
4.00	14	15	2III	0,94	0,52	0,64	8,0	125	188	48	-	-	-	-	-	-	-	-	-	-	-
4.20	15	16	2III	0,95	0,54	0,67	8,2	129	194	50	-	-	-	-	-	-	-	-	-	-	-
4.40	12	18	2III	0,92	0,56	0,57	6,4	145	217	45	-	-	-	-	-	-	-	-	-	-	-
4.60	10	25	2III	0,90	0,58	0,50	5,2	158	237	40	-	-	-	-	-	-	-	-	-	-	-
4.80	8	12	2III	0,88	0,59	0,40	3,8	167	251	35	-	-	-	-	-	-	-	-	-	-	-
5.00	16	20	2III	0,96	0,61	0,70	7,3	151	227	52	-	-	-	-	-	-	-	-	-	-	-
5.20	20	37	4f:1	0,93	0,63	0,80	8,4	150	225	60	28	32	35	37	40	31	27	0,053	33	50	60
5.40	20	50	4f:1	0,93	0,65	0,80	8,1	156	233	60	27	32	35	37	40	30	27	0,052	33	50	60
5.60	16	60	4f:1	0,90	0,67	0,70	6,8	171	257	52	19	31	34	36	40	29	27	0,036	27	40	48
5.80	18	27	2III	0,96	0,69	0,70	6,4	179	268	52	-	-	-	-	-	-	-	-	-	-	-
6.00	5	25	2III	0,80	0,70	0,25	1,7	143	215	25	-	-	-	-	-	-	-	-	-	-	-
6.20	4	30	4f:1	0,80	0,72	0,20	1,3	118	178	20	-	28	31	35	38	25	25	-	7	10	12
6.40	5	75	4f:1	0,81	0,74	0,25	1,6	144	217	25	-	28	31	35	38	25	25	-	8	13	15
6.60	7	35	4f:1	0,83	0,75	0,35	2,4	188	281	32	-	28	31	35	38	25	26	-	12	18	21
6.80	5	37	4f:1	0,81	0,77	0,25	1,5	145	218	25	-	28	31	35	38	25	25	-	8	13	15
7.00	5	37	4f:1	0,81	0,78	0,25	1,5	146	219	25	-	28	31	35	38	25	25	-	8	13	15
7.20	5	37	4f:1	0,81	0,80	0,25	1,5	146	219	25	-	28	31	35	38	25	25	-	8	13	15
7.40	5	37	4f:1	0,81	0,82	0,25	1,4	147	220	25	-	28	31	35	38	25	25	-	8	13	15
7.60	6	30	4f:1	0,82	0,83	0,30	1,8	172	258	29	-	28	31	35	38	25	26	-	10	15	18
7.80	5	37	4f:1	0,81	0,85	0,25	1,4	147	221	25	-	28	31	35	38	25	25	-	8	13	15
8.00	5	37	4f:1	0,81	0,87	0,25	1,3	147	221	25	-	28	31	35	38	25	25	-	8	13	15
8.20	5	37	4f:1	0,81	0,88	0,25	1,3	148	222	25	-	28	31	35	38	25	25	-	8	13	15
8.40	6	30	4f:1	0,82	0,90	0,30	1,6	174	261	29	-	28	31	35	38	25	26	-	10	15	18
8.60	6	45	4f:1	0,82	0,91	0,30	1,6	174	261	29	-	28	31	35	38	25	26	-	10	15	18
8.80	5	37	4f:1	0,81	0,93	0,25	1,2	148	223	25	-	28	31	35	38	25	25	-	8	13	15
9.00	4	30	4f:1	0,80	0,95	0,20	0,9	120	180	20	-	28	31	35	38	25	25	-	7	10	12
9.20	6	45	4f:1	0,82	0,96	0,30	1,5	175	263	29	-	28	31	35	38	25	26	-	10	15	18
9.40	5	25	2III	0,80	0,98	0,25	1,1	149	224	25	-	-	-	-	-	-	-	-	-	-	-
9.60	5	37	4f:1	0,81	0,99	0,25	1,1	149	224	25	-	28	31	35	38	25	25	-	8	13	15
9.80	5	37	4f:1	0,81	1,01	0,25	1,1	149	224	25	-	28	31	35	38	25	25	-	8	13	15
10.00	6	30	4f:1	0,82	1,03	0,30	1,3	177	265	29	-	28	31	35	38	25	26	-	10	15	18
10.20	5	9	1***	0,46	1,04	0,25	1,1	32	49	8	-	-	-	-	-	-	-	-	-	-	-
10.40	12	22	2III	0,92	1,06	0,57	2,9	286	428	45	-	-	-	-	-	-	-	-	-	-	-
10.60	20	19	4f:1	0,93	1,07	0,80	4,3	300	450	60	15	30	33	36	39	28	27	0,029	33	50	60
10.80	20	23	4f:1	0,93	1,09	0,80	4,3	305	458	60	15	30	33	36	39	28	27	0,028	33	50	60
11.00	25	25	4f:1	0,94	1,11	0,91	4,9	308	461	75	22	31	34	37	40	29	28	0,041	42	63	75
11.20	25	29	4f:1	0,94	1,13	0,91	4,8	314	470	75	21	31	34	37	40	29	28	0,041	42	63	75
11.40	25	27	4f:1	0,94	1,15	0,91	4,7	319	479	75	21	31	34	37	40	29	28	0,041	42	63	75
11.60	26	24	4f:1	0,95	1,17	0,93	4,7	325	487	78	22	31	34	37	40	29	28	0,042	43	65	78
11.80	24	19	4f:1	0,94	1,19	0,89	4,4	331	497	72	19	31	34	37	40	28	28	0,036	40	60	72
12.00	23	25	4f:1	0,94	1,21	0,87	4,2	337	505	69	17	30	33	36	39	28	28	0,032	38	58	69
12.20	28	26	4f:1	0,96	1,22	0,97	4,7	341	511	84	23	31	34	37	40	29	28	0,044	47	70	84
12.40	26	19	4f:1	0,95	1,24	0,93	4,4	347	521	78	20	31	34	37	40	28	28	0,039	43	65	78
12.60	24	18	4f:1	0,94	1,26	0,89	4,1	352	528	72	17	30	33	36	39	28	28	0,033	40	60	72
12.80	24	18	4f:1	0,94	1,28	0,89	4,0	358	537	72	17	30	33	36	39	28	28	0,032	40	60	72
13.00	26	22	4f:1	0,95	1,30	0,93	4,1	363	544	78	19	31	34	37	40	29	28	0,037	43	65	78
13.20	30	28	4f:1	0,96	1,32	1,00	4,4	368	552	84	24	31	34	37	40	29	29	0,045	50	75	90
13.40	28	26	4f:1	0,96	1,34	0,97	4,2	374	561	80	21	31	34	37	40	29	29	0,040	47	70	84
13.60	30	37	3:III	0,88	1,36	-	-	-	-	-	23	31	34	37	40	29	29	0,044	50	75	90
13.80	28	35	3:III	0,87	1,37	-	-	-	-	-	21	31	34	37	40	28	28	0,039	47	70	84
14.00	26	39	3:III	0,87	1,39	-	-	-	-	-	18	30	33	36	39	28	28	0,034	43	65	78
14.20	40	75	3:III	0,90	1,41	-	-	-	-	-	32	33	35	38	41	30	30	0,062	67	100	120
14.40	38	57	3:III	0,90	1,43	-	-	-	-	-	30	32	35	38	40	30	30	0,			

**PROVA PENETROMETRICA STATICA
TABELLA PARAMETRI GEOTECNICI**

CPT 18

- committente : Studio Geoprogetti e Studio Ghigliotti
- lavoro : Ampliamento zona produttiva di Ospedaletto
- località : Ospedaletto (Comune di pisa e di Cascina)
- note :

- data : 19/02/2002
- quota inizio : Piano Campagna
- prof. falda : 1,70 m da quota inizio
- pagina : 2

NATURA COESIVA											NATURA GRANULARE										
Prof. m	Rp kg/cm²	Rp/Rl (-)	Natura Litol.	Y t/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
20,20	44	27	4/1	1,00	1,96	1,47	4,4	546	819	132	27	32	35	37	40	29	31	0,052	73	110	132
20,40	52	28	4/1	1,01	1,98	1,73	5,3	538	809	156	33	33	35	38	41	30	31	0,064	87	130	156
20,60	52	26	4/1	1,01	2,00	1,73	5,3	546	819	156	33	33	35	38	41	29	31	0,063	87	130	156
20,80	50	47	3/1	0,92	2,01	-	-	-	-	-	31	32	35	38	40	29	31	0,060	83	125	150
21,00	60	56	3/1	0,93	2,03	-	-	-	-	-	37	33	36	38	41	30	32	0,073	100	150	180
21,20	84	57	3/1	0,97	2,05	-	-	-	-	-	48	35	37	39	42	32	33	0,100	140	210	252
21,40	118	111	3/1	1,03	2,07	-	-	-	-	-	60	36	38	41	43	34	35	0,130	197	295	354
21,60	140	131	3/1	1,06	2,09	-	-	-	-	-	66	37	39	41	43	35	36	0,146	233	350	420
21,80	84	90	3/1	0,97	2,11	-	-	-	-	-	48	35	37	39	42	32	33	0,098	140	210	252
22,00	70	75	3/1	0,95	2,13	-	-	-	-	-	41	34	36	39	41	31	32	0,063	117	175	210
22,20	146	84	3/1	1,07	2,15	-	-	-	-	-	66	37	39	41	43	35	36	0,148	243	365	438
22,40	184	106	3/1	1,13	2,18	-	-	-	-	-	74	38	40	42	44	36	37	0,171	307	460	552
22,60	200	107	3/1	1,15	2,20	-	-	-	-	-	77	39	40	42	44	36	38	0,179	333	500	600
22,80	240	90	3/1	1,15	2,22	-	-	-	-	-	83	40	41	43	45	37	39	0,198	400	600	720
23,00	240	-	3/1	1,15	2,25	-	-	-	-	-	82	40	41	43	45	37	39	0,198	400	600	720

PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 19

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 1,80 m da quota inizio
 - pagina : 2

Prof. m	Rp kg/cm ²	Rp/Rl (-)	Natura Litol.	Y t/m ²	NATURA COESIVA					NATURA GRANULARE											
					p'vo kg/cm ²	Cu kg/cm ²	OCR (-)	Eu50 kg/cm ²	Eu25 kg/cm ²	Mo kg/cm ²	Dr %	a1s (°)	a2s (°)	a3s (°)	a4s (°)	sdm (°)	amy (°)	Amaz/g (-)	E'50 kg/cm ²	E'25 kg/cm ²	Mo kg/cm ²
20,20	46	31	3:...	0,91	1,93	-	-	-	-	-	29	32	35	37	40	29	31	0,056	77	115	138
20,40	48	33	3:...	0,91	1,95	-	-	-	-	-	30	32	35	38	40	29	31	0,059	80	120	144
20,60	48	30	4/A	1,01	1,97	1,60	4,8	547	820	144	30	32	35	38	40	29	31	0,058	80	120	144
20,80	52	32	3:...	0,92	1,99	-	-	-	-	-	33	33	35	38	41	29	31	0,064	87	130	156
21,00	60	30	4/A	1,02	2,01	2,00	6,2	526	789	180	37	33	36	38	41	30	32	0,074	100	150	180
21,20	60	64	3:...	0,93	2,03	-	-	-	-	-	37	33	36	38	41	30	32	0,073	100	150	180
21,40	56	70	3:...	0,93	2,05	-	-	-	-	-	37	33	36	38	41	30	32	0,073	100	150	180
21,60	52	43	3:...	0,92	2,07	-	-	-	-	-	35	33	35	38	41	30	31	0,068	93	140	188
21,80	52	39	3:...	0,92	2,08	-	-	-	-	-	32	32	35	38	41	28	31	0,062	87	130	156
22,00	60	75	3:...	0,93	2,10	-	-	-	-	-	32	32	35	38	41	29	31	0,061	87	130	156
22,20	78	73	3:...	0,96	2,12	-	-	-	-	-	36	33	36	38	41	30	32	0,071	100	150	180
22,40	70	75	3:...	0,95	2,14	-	-	-	-	-	45	34	37	39	42	31	33	0,092	130	195	234
22,60	96	90	3:...	0,99	2,16	-	-	-	-	-	41	34	36	39	41	31	32	0,082	117	175	210
22,80	124	115	3:...	1,04	2,18	-	-	-	-	-	52	35	37	40	42	32	34	0,109	160	240	288
23,00	170	85	3:...	1,11	2,20	-	-	-	-	-	60	36	38	41	43	34	35	0,131	207	310	372
23,20	200	-	3:...	1,15	2,23	-	-	-	-	-	71	38	40	42	44	36	37	0,162	283	425	510
											76	39	40	42	44	36	38	0,178	333	500	600

PROVA PENETROMETRICA STATICA TABELLA PARAMETRI GEOTECNICI

CPT 20

2015/195-013

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 4,00 m da quota inizio
 - pagina : 1

Prof. m	Rp kg/cm²	Rp/Ri (-)	Natura Litol.	Y Um³	p'vo kg/cm²	Cu kg/cm²	OCR (-)	Eu50 kg/cm²	Eu25 kg/cm²	Mo kg/cm²	NATURA COESIVA						NATURA GRANULARE						Amaz/g (-)	E'50 kg/cm²	E'25 kg/cm²	Mo kg/cm²				
											Dr %	e1s (%)	e2s (%)	e3s (%)	e4s (%)	adm (%)	omy (%)	σ1s (%)	σ2s (%)	σ3s (%)	σ4s (%)									
0,20	6	15	1***	1,85	0,04	0,30	85,9	12	18	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0,40	10	15	2III	1,85	0,07	0,50	68,4	85	128	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0,60	10	14	2III	1,85	0,11	0,50	41,2	85	128	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0,80	15	16	2III	1,85	0,15	0,67	41,2	113	170	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,00	18	22	2III	1,85	0,19	0,75	36,1	128	191	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,20	20	21	4f.I	1,85	0,22	0,80	31,2	136	204	60	53	35	38	40	42	36	27	0,113	33	50	60	-	-	-	-	-	-	-	-	-
1,40	22	18	4f.I	1,85	0,26	0,85	27,6	144	216	66	53	35	38	40	42	36	28	0,111	37	55	66	-	-	-	-	-	-	-	-	-
1,60	20	20	4f.I	1,85	0,30	0,80	21,8	136	204	80	46	34	37	39	42	35	27	0,095	33	60	60	-	-	-	-	-	-	-	-	-
1,80	15	15	2III	1,85	0,33	0,67	15,0	113	170	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,00	13	13	2III	1,85	0,37	0,60	11,6	103	154	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,20	13	14	2III	1,85	0,41	0,60	10,3	103	154	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,40	12	13	2III	1,85	0,44	0,57	8,6	105	158	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,60	12	15	2III	1,85	0,48	0,57	7,8	116	175	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,80	15	17	2III	1,85	0,52	0,67	8,6	123	184	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,00	16	17	2III	1,85	0,55	0,70	8,3	132	198	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,20	16	15	2III	1,85	0,59	0,70	7,7	144	216	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,40	14	15	2III	1,85	0,63	0,64	6,4	163	245	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,60	10	10	2III	1,85	0,67	0,50	4,4	186	279	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,80	9	13	2III	1,85	0,70	0,45	3,6	198	298	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,00	10	19	2III	0,90	0,72	0,50	4,0	201	302	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,20	12	18	2III	0,92	0,74	0,57	4,5	206	309	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,40	10	21	2III	0,90	0,76	0,50	3,7	214	320	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,60	9	19	2III	0,88	0,76	0,45	3,2	215	323	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,80	7	17	2III	0,84	0,79	0,35	2,3	191	286	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5,00	6	15	1***	0,46	0,80	0,30	1,8	37	55	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5,20	6	15	1***	0,46	0,81	0,30	1,8	37	55	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5,40	14	52	4f.I	0,89	0,83	0,64	4,5	231	346	48	9	29	32	35	39	27	26	0,019	23	35	42	-	-	-	-	-	-	-	-	-
5,60	8	40	4f.I	0,84	0,84	0,40	2,5	213	319	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5,80	7	26	2III	0,84	0,86	0,35	2,0	195	293	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6,00	5	25	2III	0,80	0,88	0,25	1,3	148	221	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6,20	5	25	2III	0,80	0,89	0,25	1,3	148	222	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6,40	5	25	2III	0,80	0,91	0,25	1,2	148	222	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6,60	6	45	4f.I	0,82	0,93	0,30	1,5	175	262	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6,80	7	35	4f.I	0,83	0,94	0,35	1,8	199	299	32	28	31	35	38	25	26	26	-	10	15	18	-	-	-	-	-	-	-	-	-
7,00	5	37	4f.I	0,81	0,96	0,25	1,2	149	223	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7,20	6	45	4f.I	0,82	0,97	0,30	1,4	176	264	29	28	31	35	38	25	26	26	-	10	13	15	-	-	-	-	-	-	-	-	-
7,40	5	37	4f.I	0,81	0,99	0,25	1,1	149	224	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7,60	5	37	4f.I	0,81	1,01	0,25	1,1	149	224	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7,80	6	45	4f.I	0,82	1,02	0,30	1,4	177	265	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8,00	6	30	4f.I	0,82	1,04	0,30	1,3	177	265	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8,20	5	25	2III	0,80	1,06	0,25	1,0	150	225	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8,40	6	45	4f.I	0,82	1,07	0,30	1,3	177	266	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8,60	5	37	4f.I	0,81	1,09	0,25	1,0	150	225	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8,80	5	37	4f.I	0,81	1,10	0,25	1,0	150	225	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9,00	5	37	4f.I	0,81	1,12	0,25	1,0	150	225	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9,20	5	37	4f.I	0,81	1,14	0,25	0,9	150	225	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9,40	4	30	4f.I	0,80	1,15	0,20	0,7	120	180	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9,60	5	37	4f.I	0,81	1,17	0,25	0,9	150	225	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9,80	6	15	1***	0,46	1,18	0,30	1,1	39	58	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10,00	12	14	2III	0,92	1,20	0,57	2,5	303	455	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10,20	15	13	2III	0,95	1,22	0,67	3,0	331	496	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10,40	19	16	2III	0,99	1,24	0,78	3,5	348	523	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10,60	16	13	2III	0,96	1,25	0,70	3,0	343	514	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10,80	20	19	4f.I	0,93	1,27	0,80	3,5	359	539	60	11	30	33	36	39	27	27	-	-	-	-	-	-	-	-	-	-	-	-	-
11,00	22	18	4f.I	0,93	1,29	0,85	3,7	364	547	66	14	30	33	36	39	27	28	0,022	33	50	60	-	-	-	-	-	-	-	-	-
11,20	22	17	4f.I	0,93	1,31	0,85	3,6	370	555	66	13	30	33	36	39	27	28	0,027	37	55	66	-	-	-	-	-	-	-	-	-
11,40	21	17	4f.I	0,93	1,33	0,82	3,5	374	561	63	11	30	33	36	39	27	27	0,026	37	55	66	-	-	-	-	-	-	-	-	-
11,60	21	17	4f.I	0,93	1,35	0,82	3,4	379	568	63	11	30	33	36	39	27	27	0,023	35	53	63	-	-	-	-	-	-	-	-	-
11,80	22	18	4f.I	0,93	1,37	0,85	3,5	385	577	66	12	30	33	36	39															

PROVA PENETROMETRICA STATICA

TABELLA PARAMETRI GEOTECNICI

CPT 20

- committente : Studio Geoprogetti e Studio Ghigliotti
 - lavoro : Ampliamento zona produttiva di Ospedaletto
 - località : Ospedaletto (Comune di Pisa e di Cascina)
 - note :

- data : 19/02/2002
 - quota inizio : Piano Campagna
 - prof. falda : 4,00 m da quota inizio
 - pagina : 2

Prof. m	Rp kg/cm ²	Rp/Rl (-)	Natura Litol.	Y t/m ³	NATURA COESIVA					NATURA GRANULARE											
					p'vo kg/cm ²	Cu kg/cm ²	OCR (-)	Eu50 kg/cm ²	Eu25 kg/cm ²	Mo kg/cm ²	Dr %	s1s (°)	s2s (°)	s3s (°)	s4s (°)	edm (°)	smv (°)	Amax/g (-)	E'50 kg/cm ²	E'25 kg/cm ²	Mo kg/cm ²
20,20	40	30	4/1	1,00	2,13	1,33	3,5	601	902	120	22	31	34	37	40	28	30	0,042	67	100	120
20,40	36	27	4/1	0,99	2,15	1,20	3,0	590	885	108	18	31	33	36	39	27	30	0,035	60	90	108
20,60	36	27	4/1	0,99	2,17	1,20	3,0	593	889	108	18	31	33	36	39	27	30	0,034	60	90	108
20,80	40	37	3/1	0,90	2,19	-	-	-	-	-	21	31	34	37	40	27	30	0,041	67	100	120
21,00	44	25	4/1	1,00	2,21	1,47	3,8	623	935	132	24	31	34	37	40	28	31	0,048	73	110	132
21,20	44	30	4/1	1,00	2,23	1,47	3,7	629	944	132	24	31	34	37	40	28	31	0,048	73	110	132
21,40	48	30	4/1	1,01	2,25	1,60	4,1	628	942	144	27	32	34	37	40	28	31	0,052	80	120	144
21,60	52	28	4/1	1,01	2,27	1,73	4,5	633	950	156	30	32	35	37	40	29	31	0,057	87	130	156
21,80	52	26	4/1	1,01	2,29	1,73	4,4	639	959	156	29	32	35	37	40	29	31	0,056	87	130	156
22,00	60	35	3/1	0,93	2,31	-	-	-	-	-	34	33	35	38	41	29	32	0,056	100	150	180
22,20	64	40	3/1	0,94	2,33	-	-	-	-	-	36	33	36	38	41	30	32	0,071	107	160	192
22,40	60	45	3/1	0,93	2,35	-	-	-	-	-	34	33	35	38	41	29	32	0,065	100	150	180
22,60	56	28	4/1	1,01	2,37	1,87	4,7	659	988	168	31	32	35	38	40	29	31	0,060	93	140	168
22,80	70	40	3/1	0,95	2,39	-	-	-	-	-	39	33	36	38	41	30	32	0,076	117	175	210
23,00	114	107	3/1	1,02	2,41	-	-	-	-	-	55	36	38	40	42	33	34	0,117	190	285	342
23,20	144	72	3/1	1,07	2,43	-	-	-	-	-	63	37	39	41	43	34	36	0,138	240	360	432
23,40	200	-	3/1	1,15	2,45	-	-	-	-	-	74	38	40	42	44	36	38	0,171	333	500	600

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