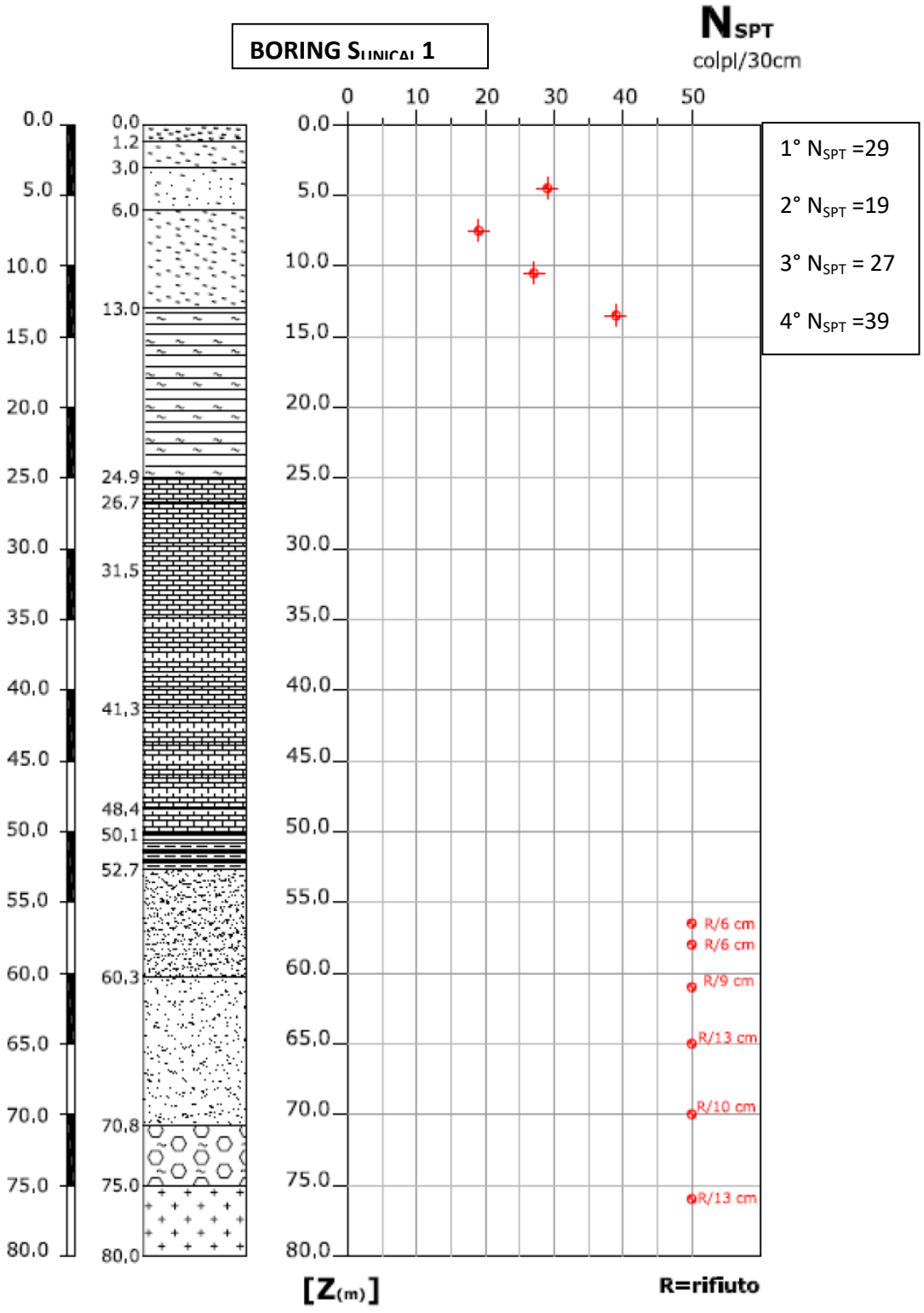
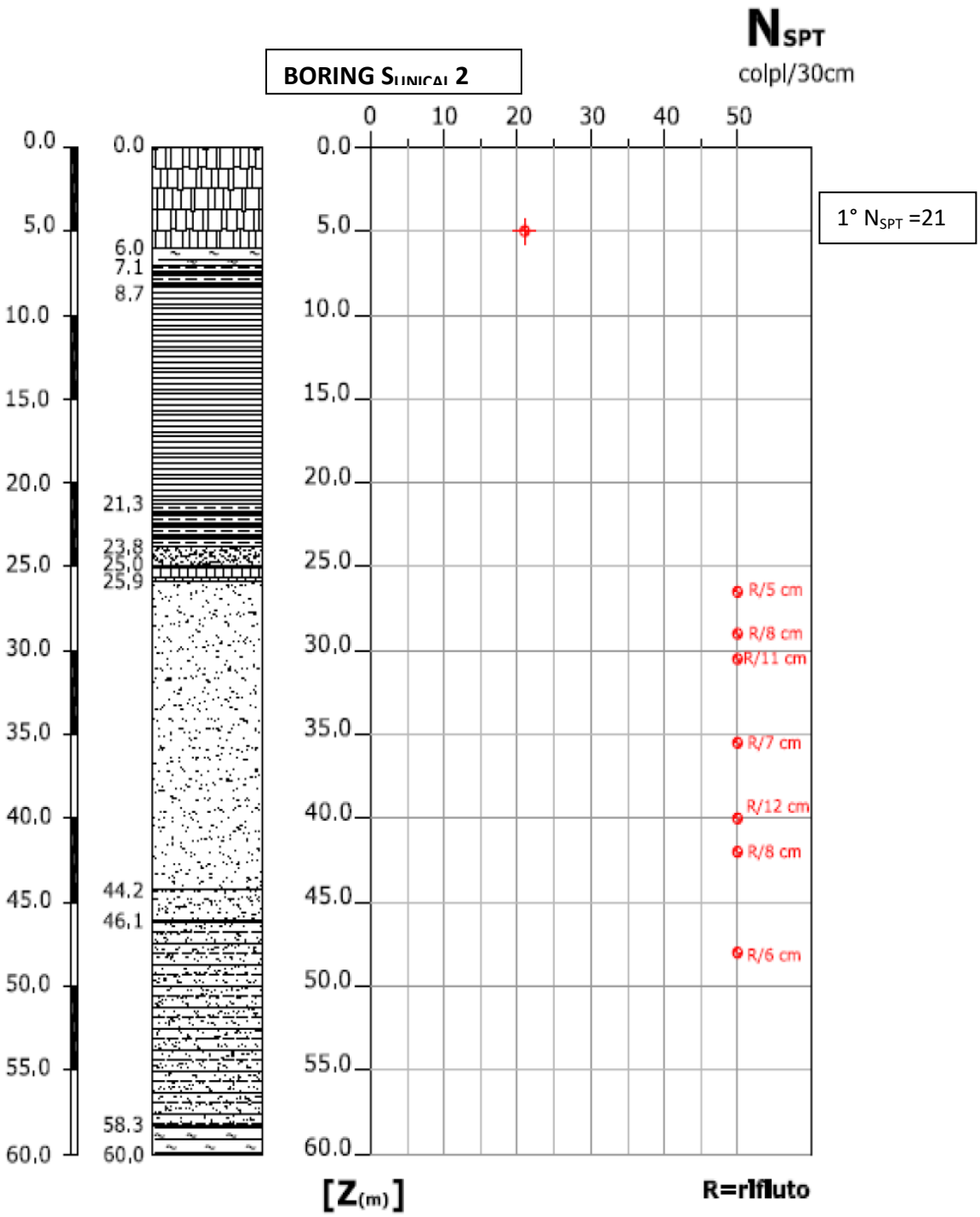
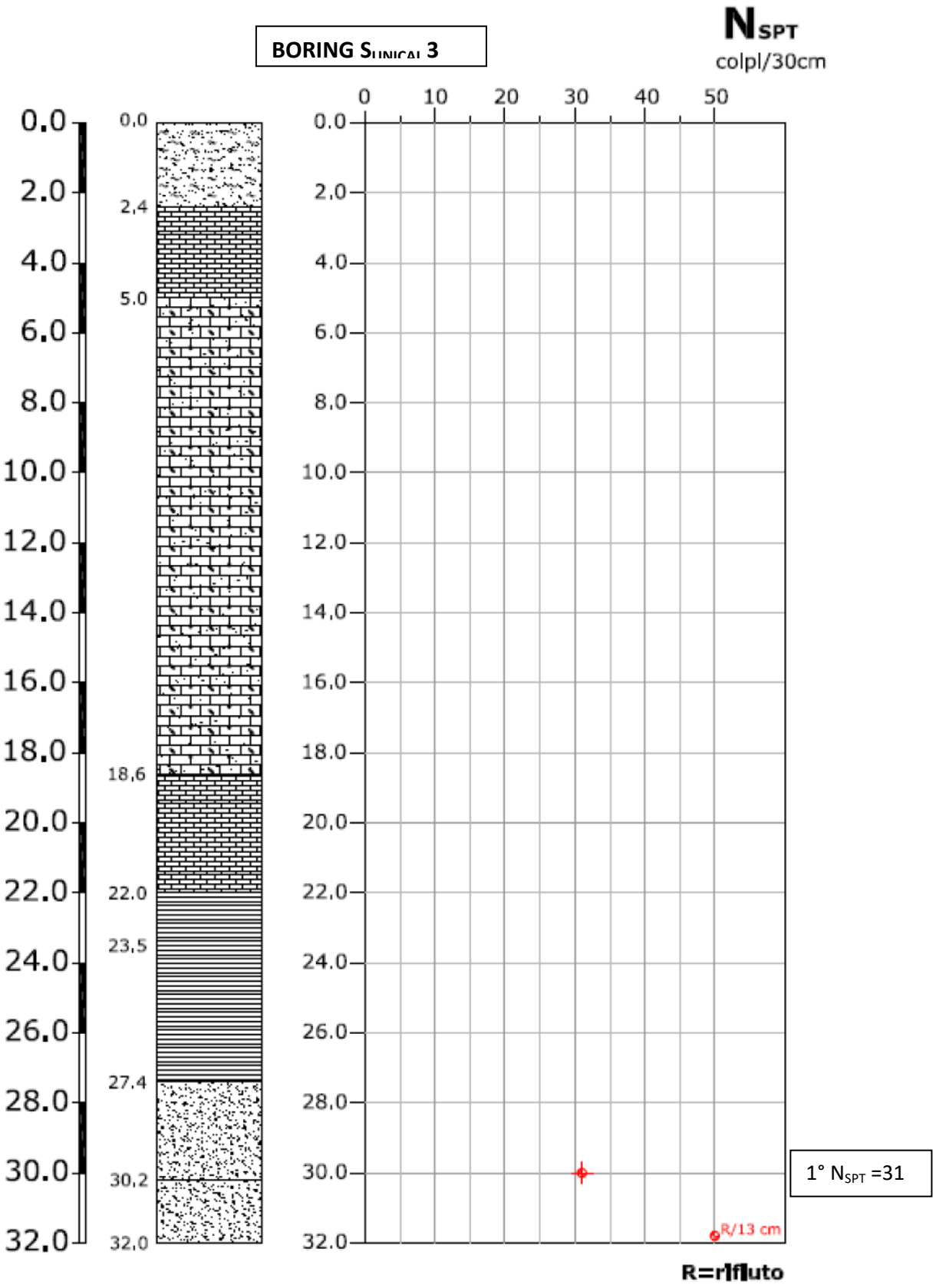
SPT TEST


BORING Sinicai 1
NSPT
colpl/30cm
0
10
20
30
40
50
1° NSPT =29
2° NSPT =19
3° NSPT = 27
4° NSPT =39
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0
50.0
55.0
60.0
65.0
70.0
75.0
80.0
0,0
1.2
3,0
6,0
13.0
24.9
26.7
31,5
41,3
48,4
50,1
52.7
60,3
70,8
75.0
80,0
R/6 cm
R/6 cm
R/9 cm
R/13 cm
R/10 cm
R/13 cm
[Z(m)]
R=rifiuto


BORING SUNICAL 2
NSPT
colpl/30cm
0
10
20
30
40
50
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0
50.0
55.0
60.0
0.0
6.0
7.1
8.7
21,3
23,8
25,0
25,9
44.2
46.1
58.3
60,0
1° NSPT =21
R/5 cm
R/8 cm
R/11 cm
R/7 cm
R/12 cm
R/8 cm
R/6 cm
[Z(m)]
R=rlfluto


BORING SUNICAL 3
NSPT
colpl/30cm
0
10
20
30
40
50
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
18.0
20.0
22.0
24.0
26.0
28.0
30.0
32.0
0.0
2,4
5.0
18,6
22.0
23,5
27.4
30,2
32,0
1° NSPT =31
R/13 cm
R=rifiuto

MENARD TEST

BORING S_{UNICAL} 1

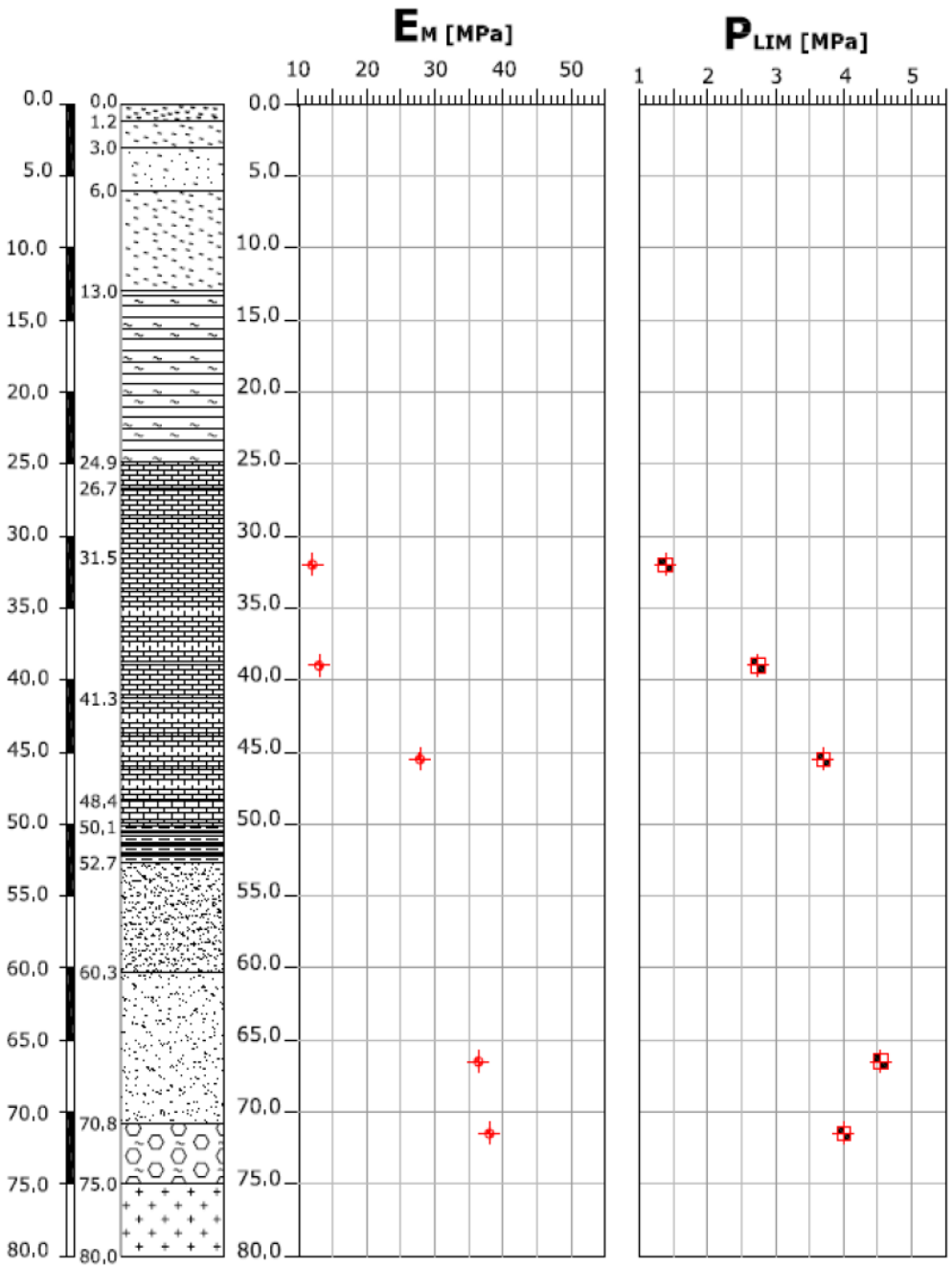


Table Menard Test S_{UNICAL} 1				
		DEPTH g.l. [m]	E_M [MPa]	P_{LIM} [MPa]
TEST N°	1	32,00	10,2	1,38
TEST N°	2	39,00	13	2,74
TEST N°	3	45,50	27,8	3,7
TEST N°	4	66,50	36,4	4,54
TEST N°	5	71,50	38,1	3,97

BORING S$_{UNICAL}$ 2

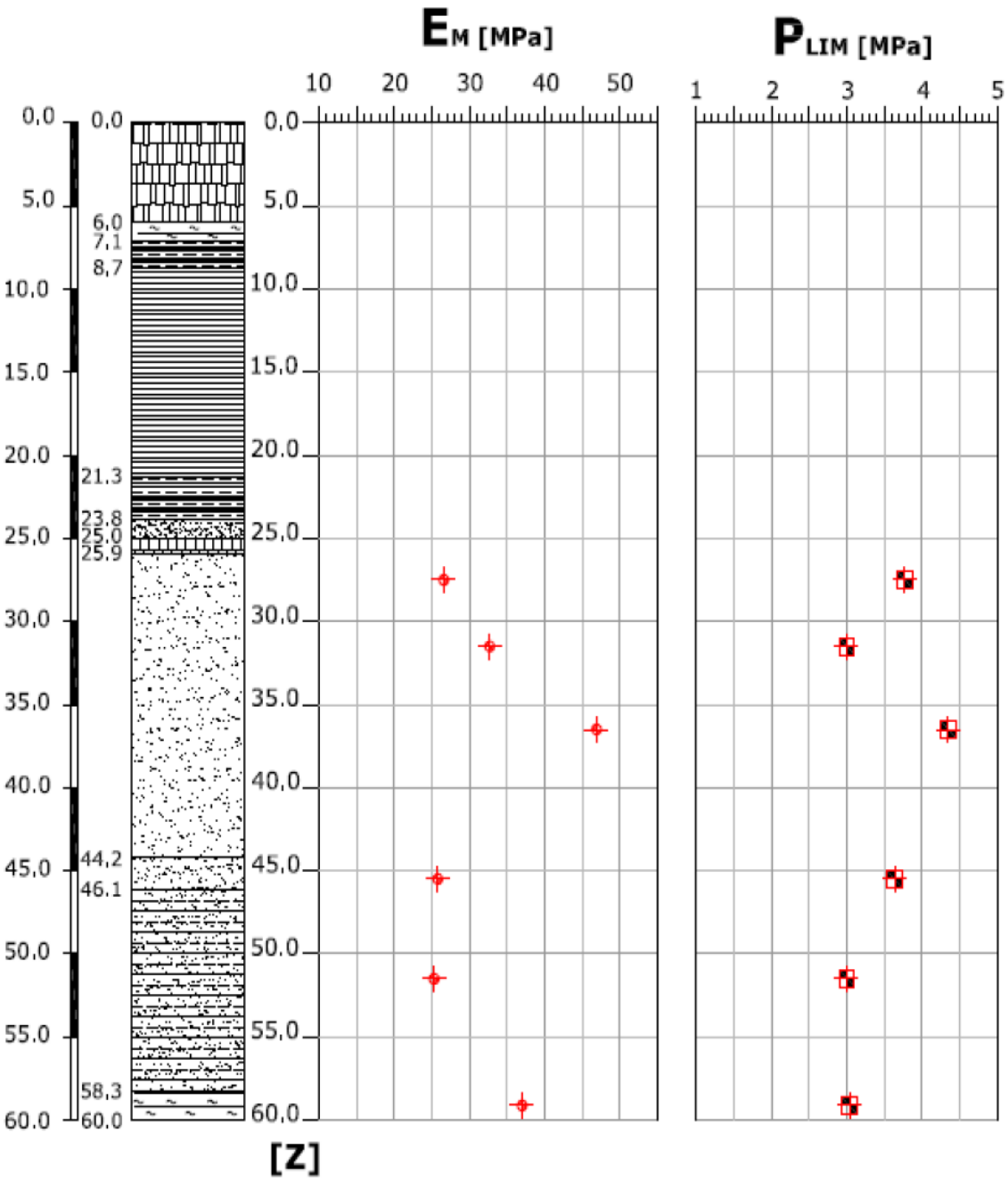
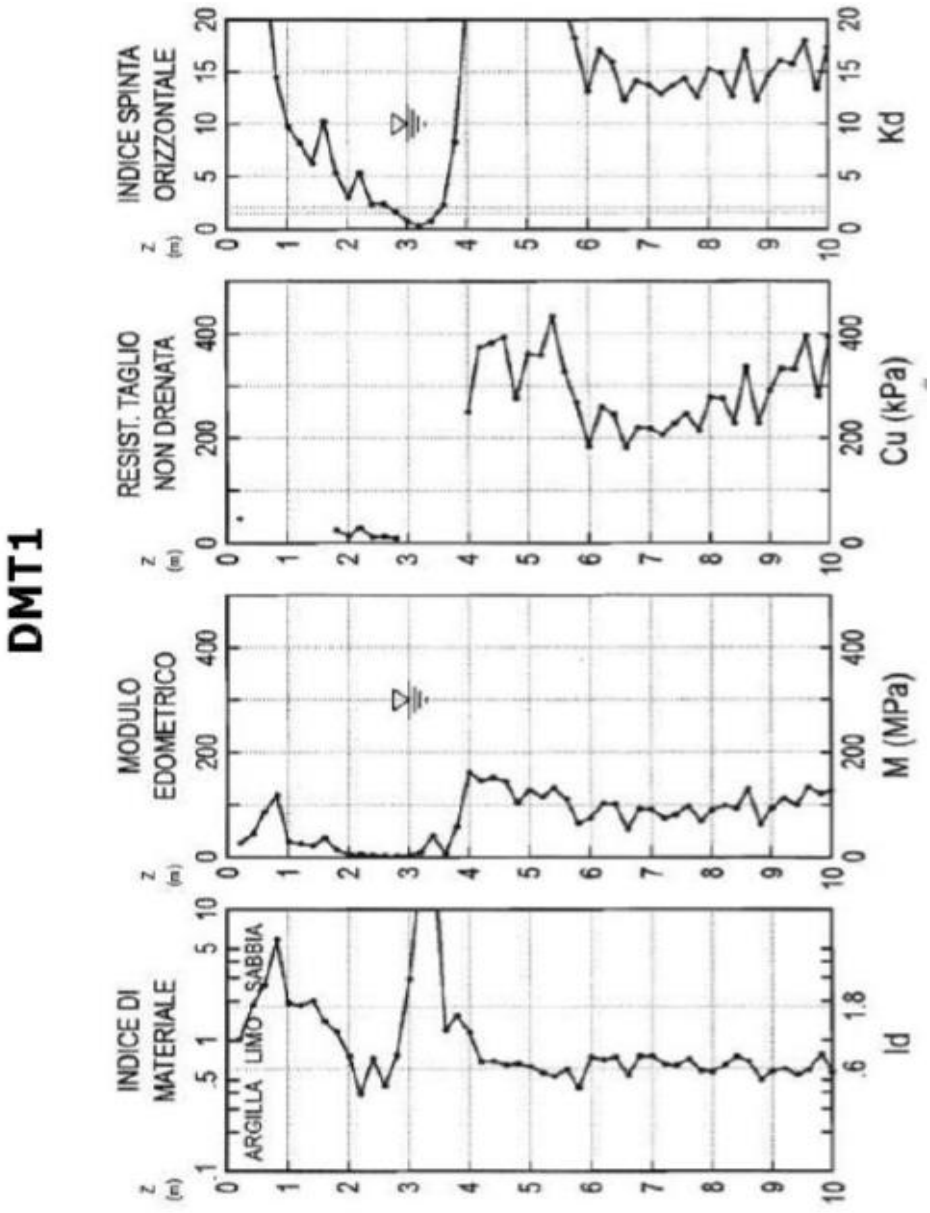


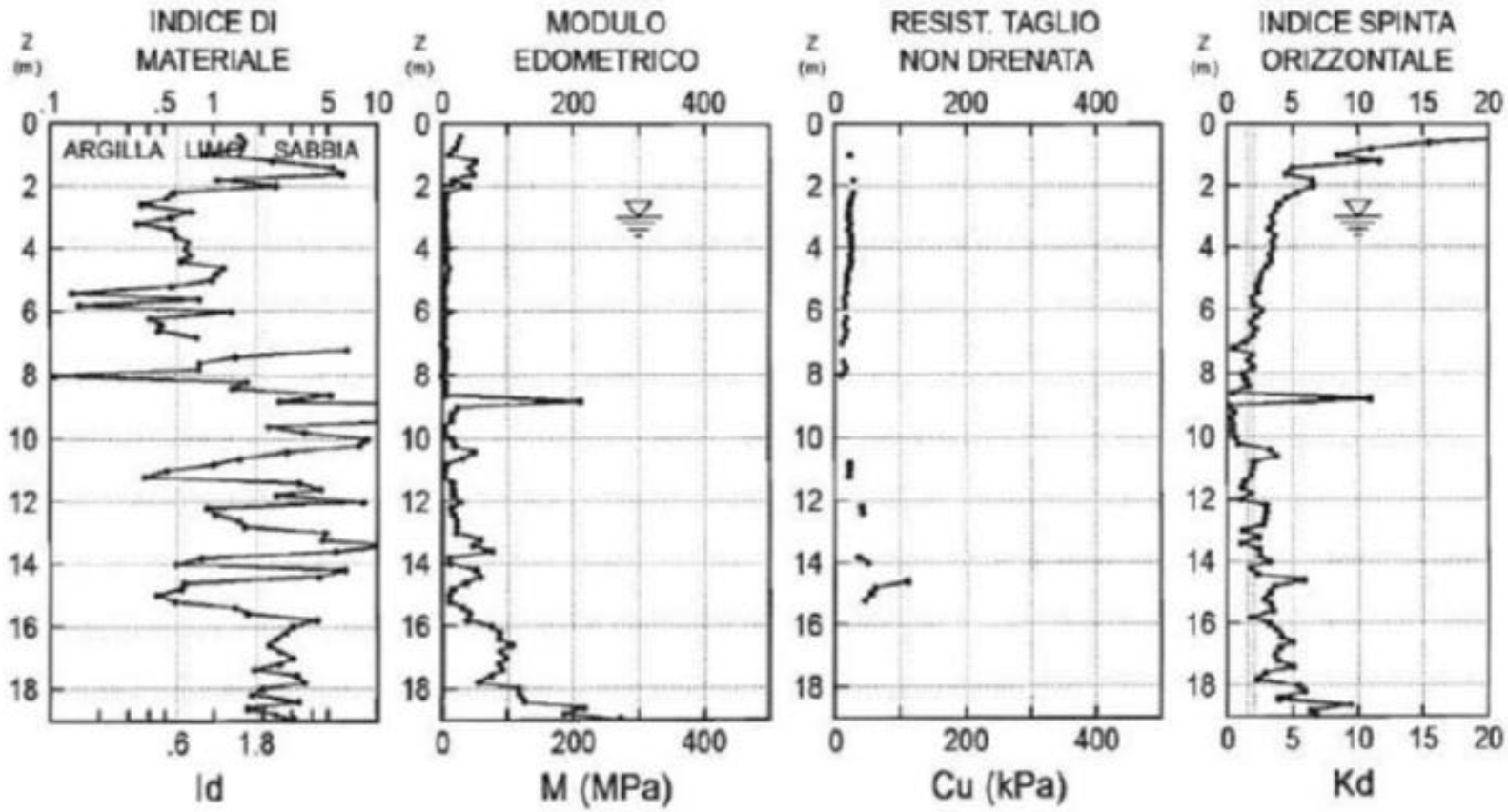
Table Menard Test S$_{UNICAL}$ 2				
		DEPTH g.l. [m]	E$_M$ [MPa]	P$_{LIM}$ [MPa]
TEST N°	1	27,50	26,60	3,76
TEST N°	2	31,50	32,70	3,01
TEST N°	3	36,50	46,90	4,35
TEST N°	4	45,50	25,80	3,64
TEST N°	5	51,50	25,30	3,06
TEST N°	6	60,00	37,00	3,35

DILATOMETRIC TEST

PROVA DILATOMETRICA MARCHETTI		
4 Dilatometric test		
TEST	Depth	
DMT1	10	[m]
DMT2	19	[m]
DMT3	19,4	[m]
DMT4	4,6	[m]

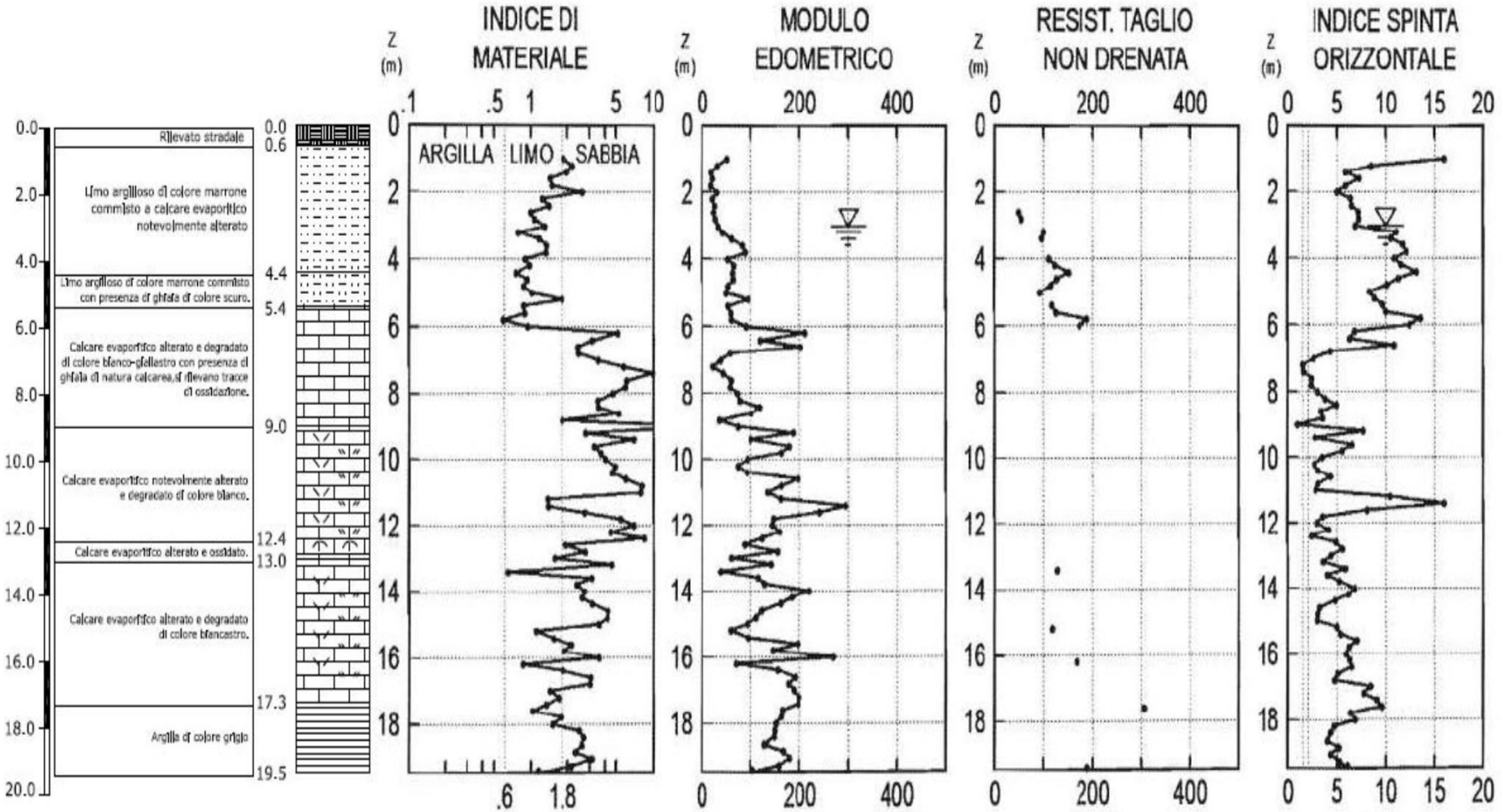


DMT2

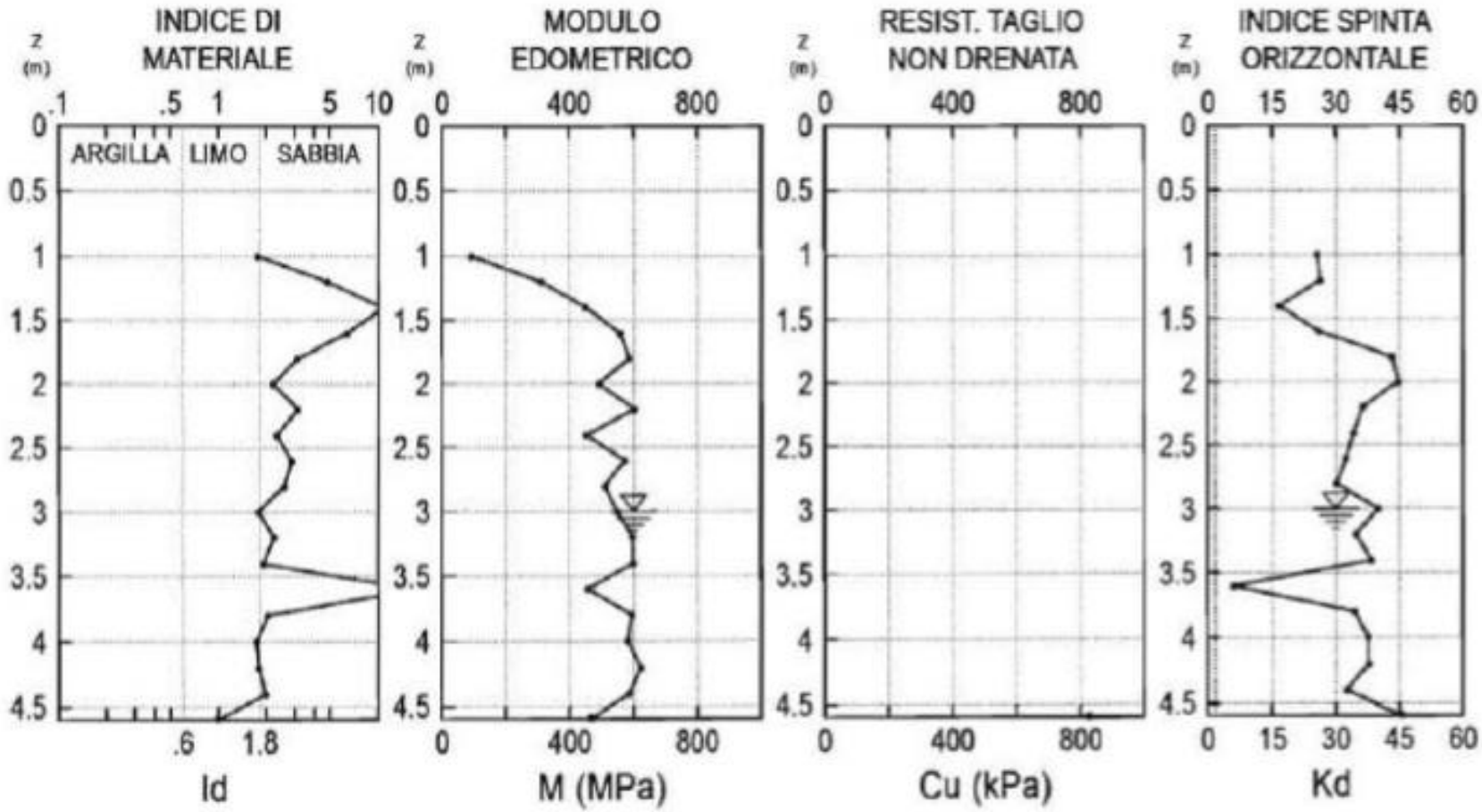

INDICE DI MATERIALE
z (m)
.1 .5 1 5 10
ARGILLA LIMO SABBIA
0 2 4 6 8 10 12 14 16 18
.6 1.8
Id
MODULO EDOMETRICO
z (m)
0 200 400
0 2 4 6 8 10 12 14 16 18
0 200 400
M (MPa)
RESIST. TAGLIO NON DRENATA
z (m)
0 200 400
0 2 4 6 8 10 12 14 16 18
0 200 400
Cu (kPa)
INDICE SPINTA ORIZZONTALE
z (m)
0 5 10 15 20
0 2 4 6 8 10 12 14 16 18
0 5 10 15 20
Kd

S5

DMT3

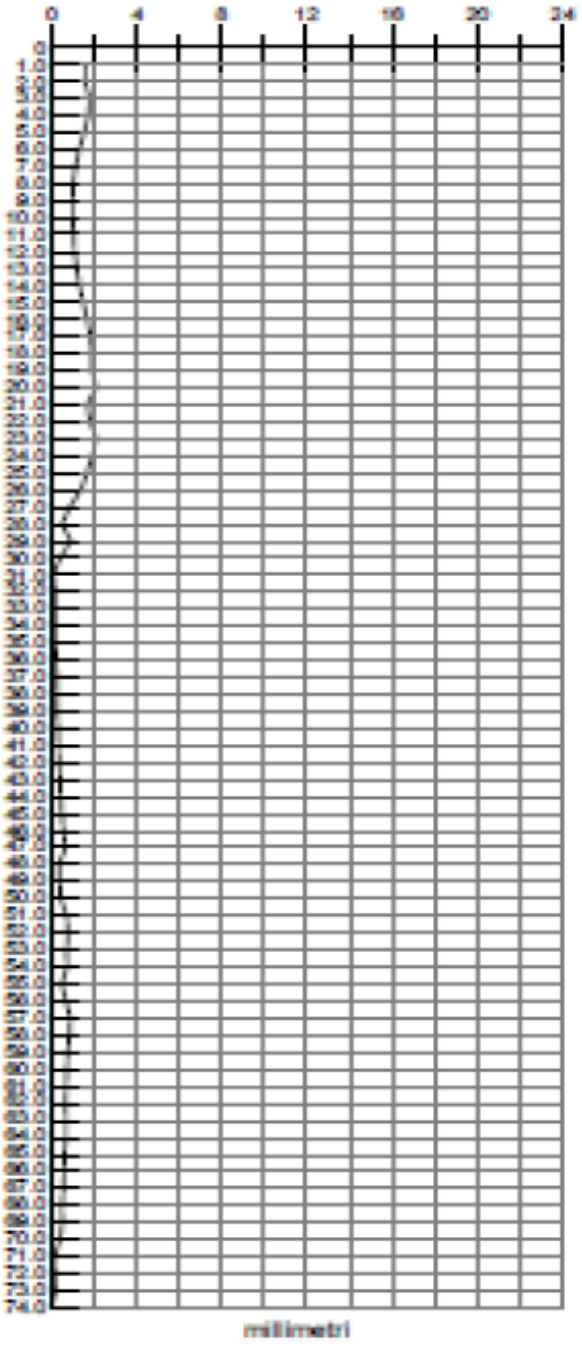

Rilevato stradale
Limo argilloso di colore marrone commisto a calcare evaporitico notevolmente alterato
Limo argilloso di colore marrone commisto con presenza di ghiaia di colore scuro.
Calcare evaporitico alterato e degradato di colore bianco-giallastro con presenza di ghiaia di natura calcarea,si rilevano tracce di ossidazione.
Calcare evaporitico notevolmente alterato e degradato di colore bianco.
Calcare evaporitico alterato e ossidato.
Calcare evaporitico alterato e degradato di colore biancastro.
Argilla di colore grigio
0.0
0.6
4.4
5.4
9.0
12.4
13.0
17.3
19.5
20.0
INDICE DI MATERIALE
Z (m)
ARGILLA LIMO SABBIA
MODULO EDOMETRICO
RESIST. TAGLIO NON DRENATA
INDICE SPINTA ORIZZONTALE

DMT4

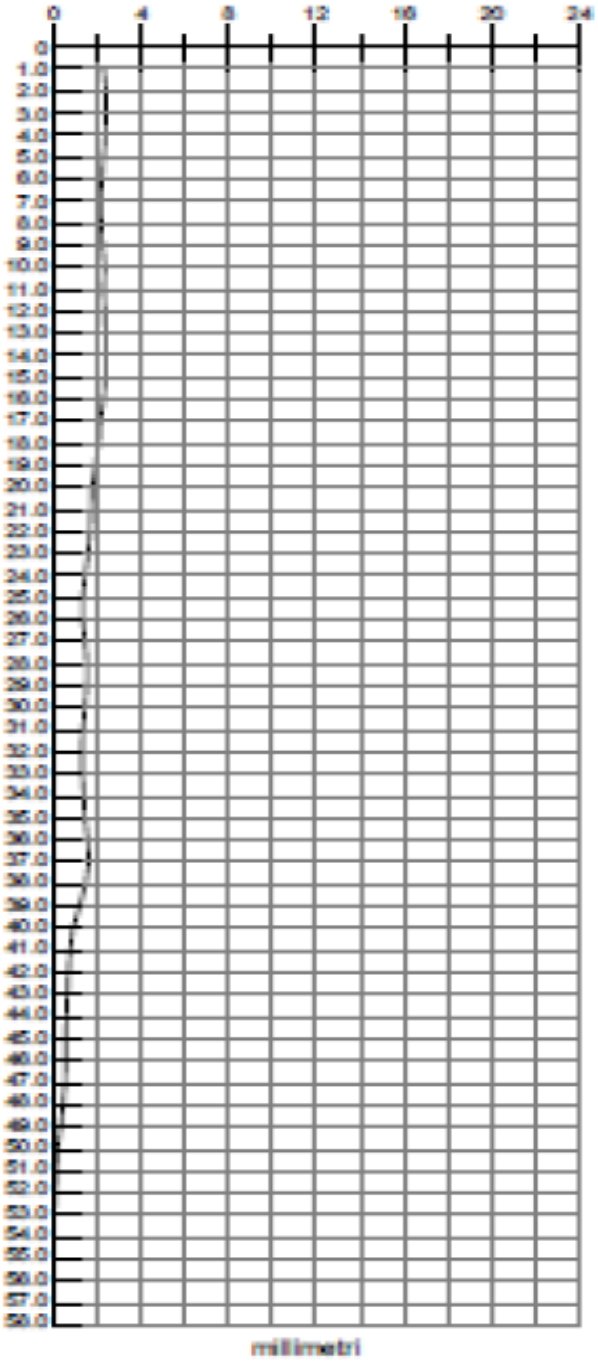

INDICE DI MATERIALE
z (m)
.1 .5 1 5 10
ARGILLA LIMO SABBIA
.6 1.8
Id
MODULO EDOMETRICO
0 400 800
M (MPa)
RESIST. TAGLIO NON DRENATA
Cu (kPa)
INDICE SPINTA ORIZZONTALE
0 15 30 45 60
Kd
0 0.5 1 1.5 2 2.5 3 3.5 4 4.5

INCLINOMETER TEST

BORING SUNICAL 1

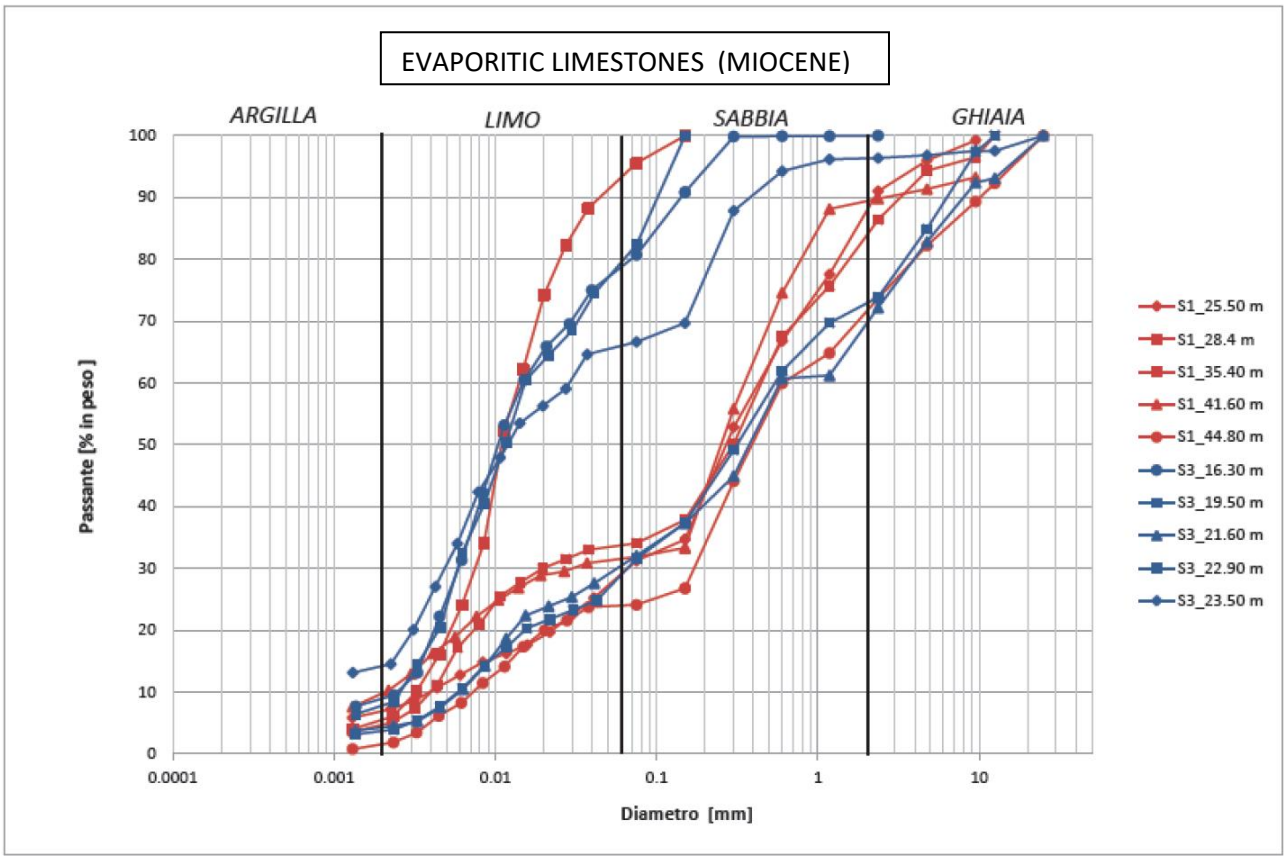


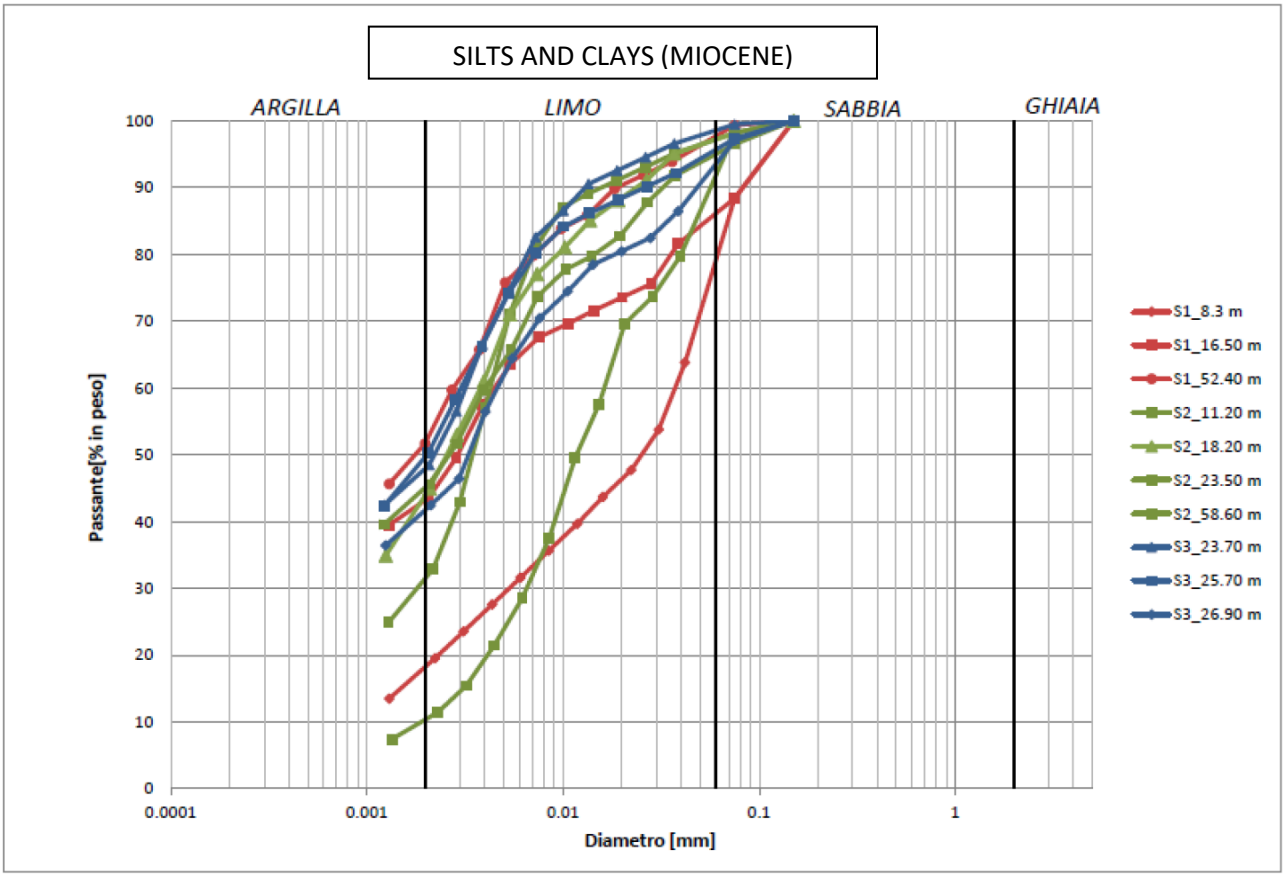
BORING SUNICAL 2

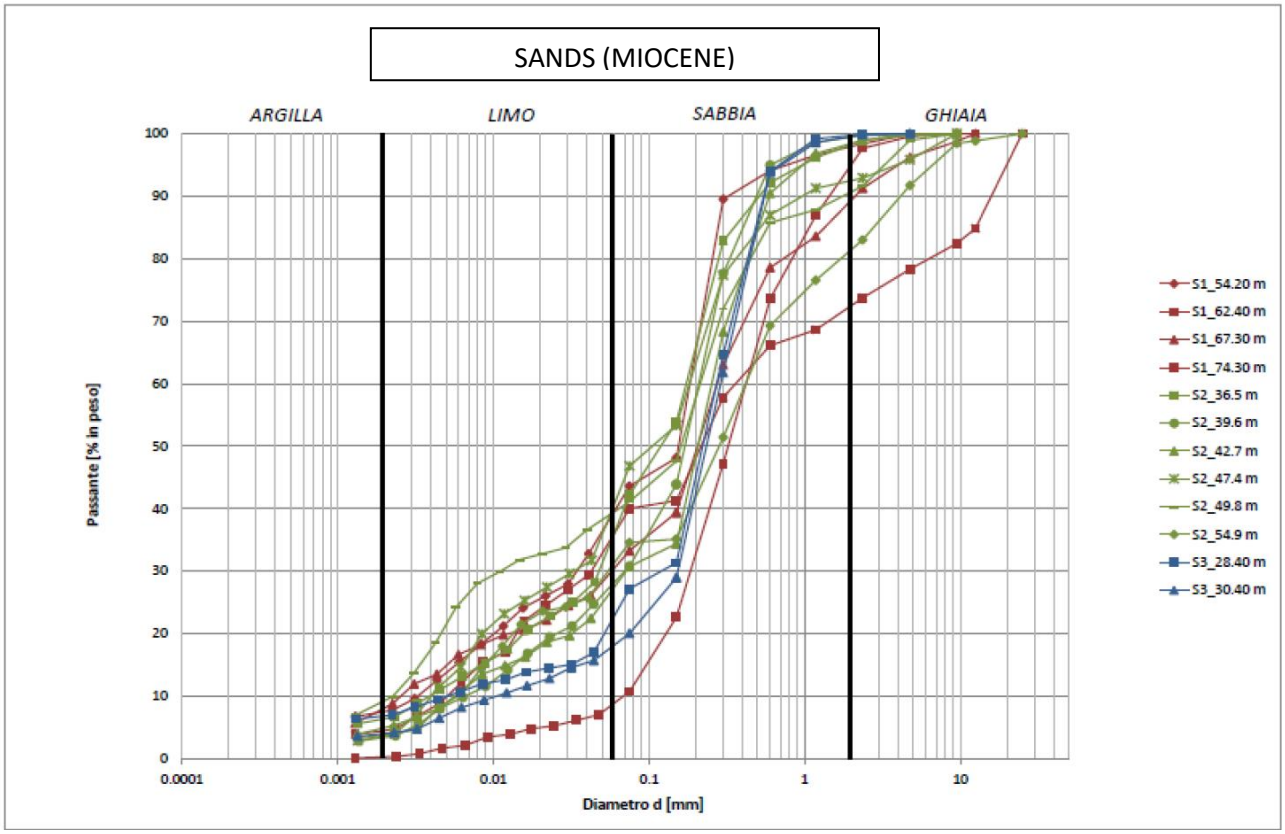


The measured displacements are very small, about 2 mm and it doesn't show information on the deformation.

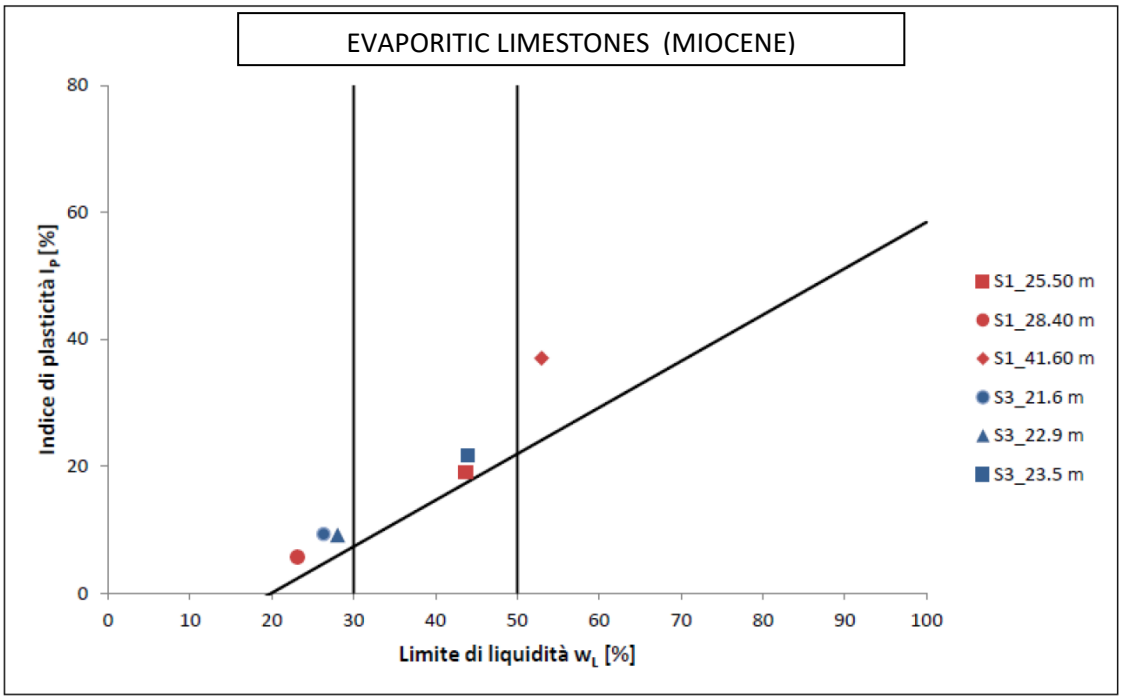
GRANULOMETRY TEST

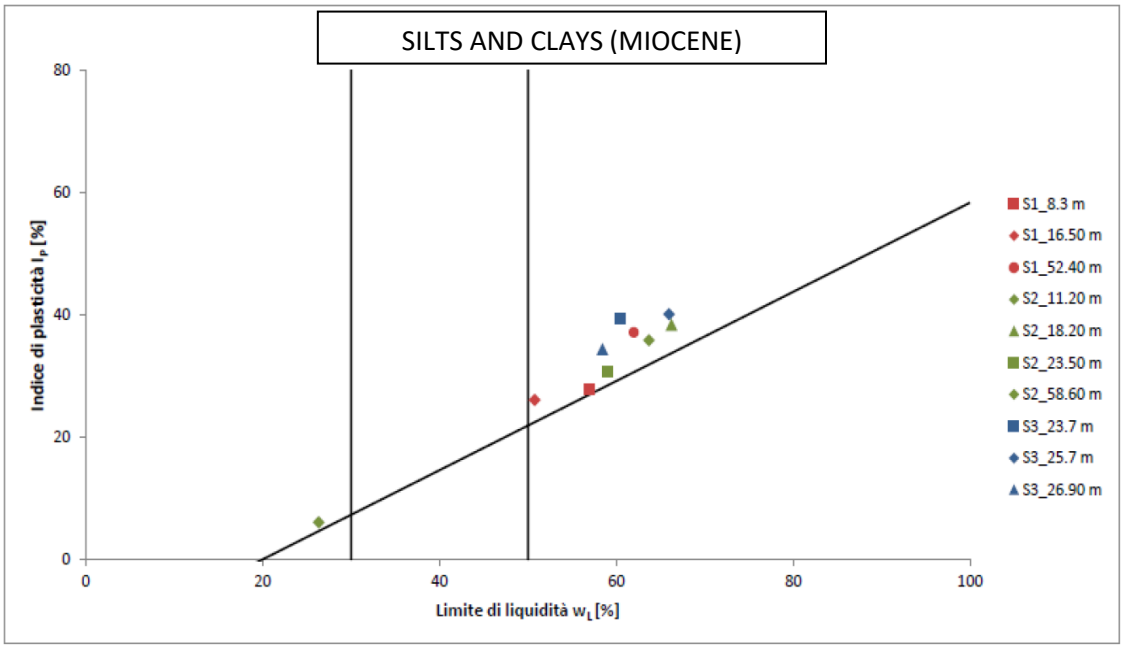


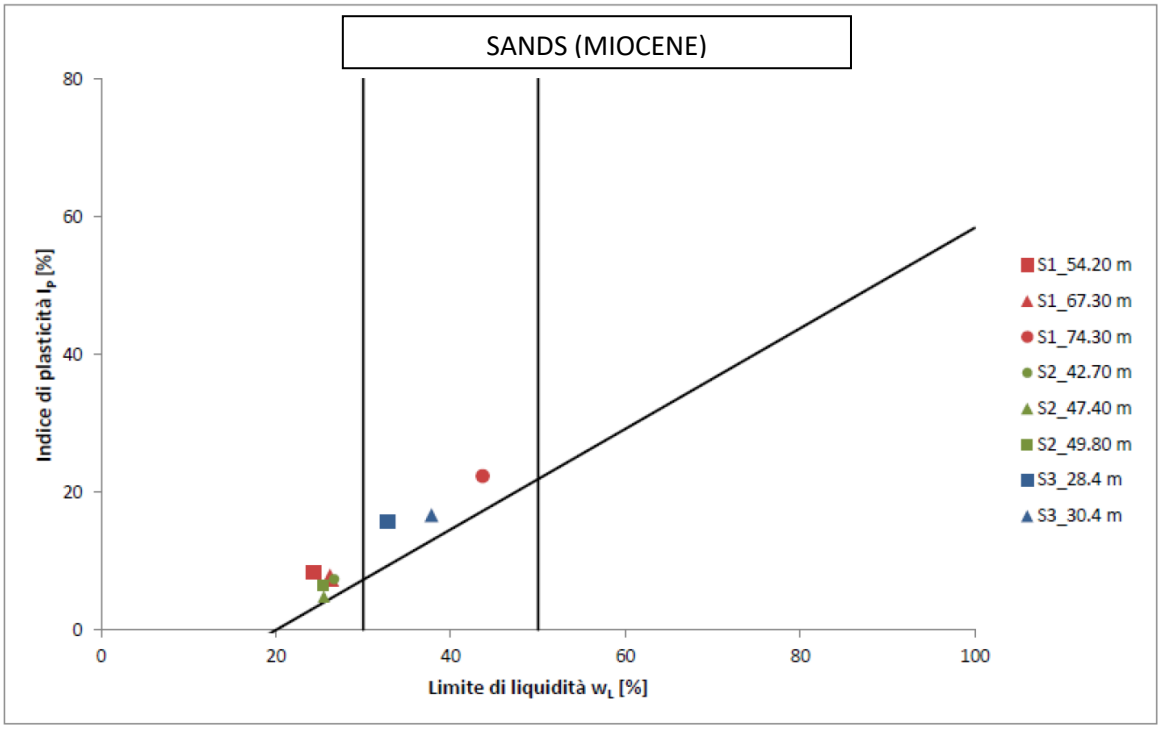



SANDS (MIOCENE)
ARGILLA
LIMO
SABBIA
GHIAIA
Passante [% in peso]
Diametro d [mm]
0.0001
0.001
0.01
0.1
1
10
0
10
20
30
40
50
60
70
80
90
100
S1_54.20 m
S1_62.40 m
S1_67.30 m
S1_74.30 m
S2_36.5 m
S2_39.6 m
S2_42.7 m
S2_47.4 m
S2_49.8 m
S2_54.9 m
S3_28.40 m
S3_30.40 m

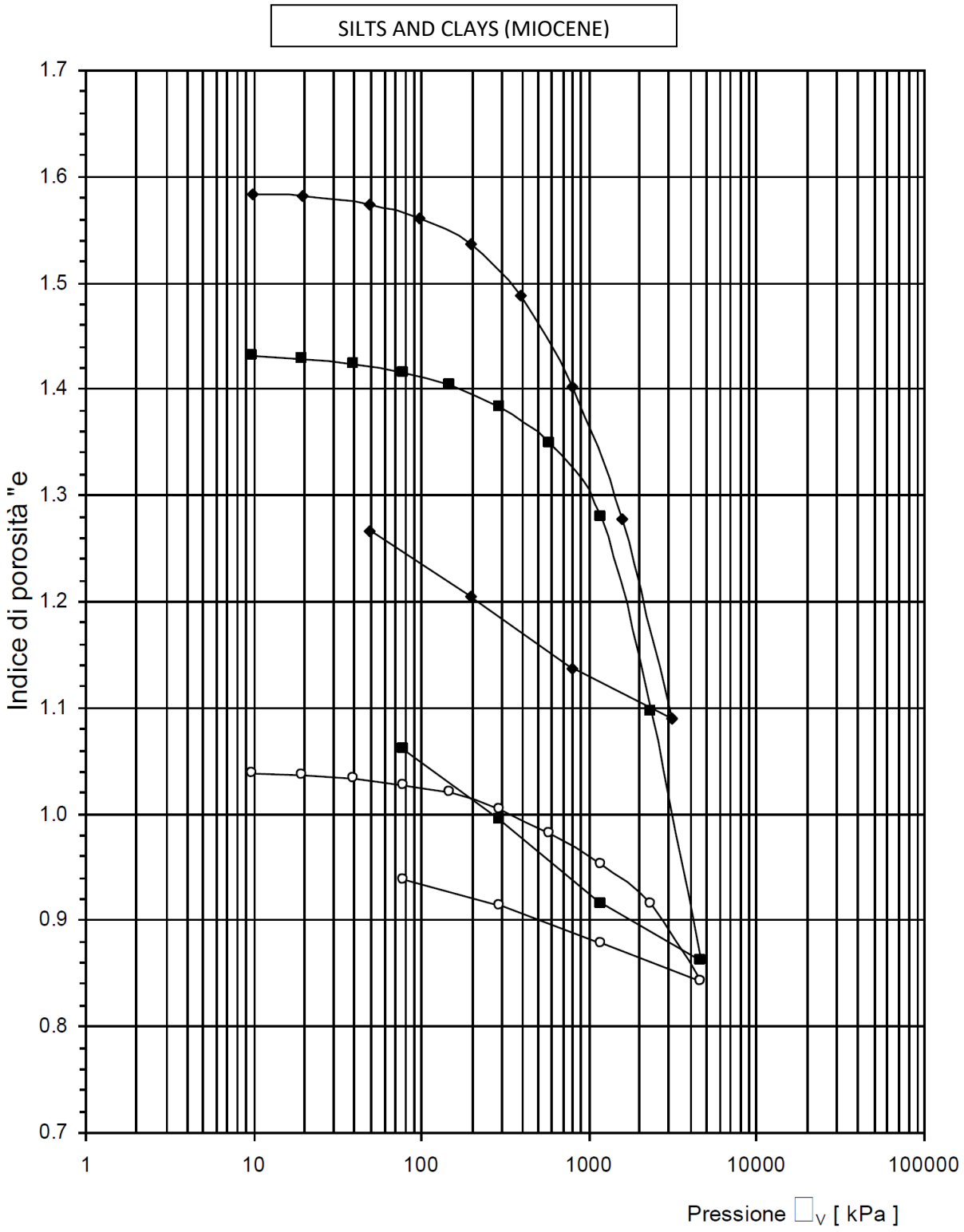
CASAGRANDA'S PLASTICITY TEST



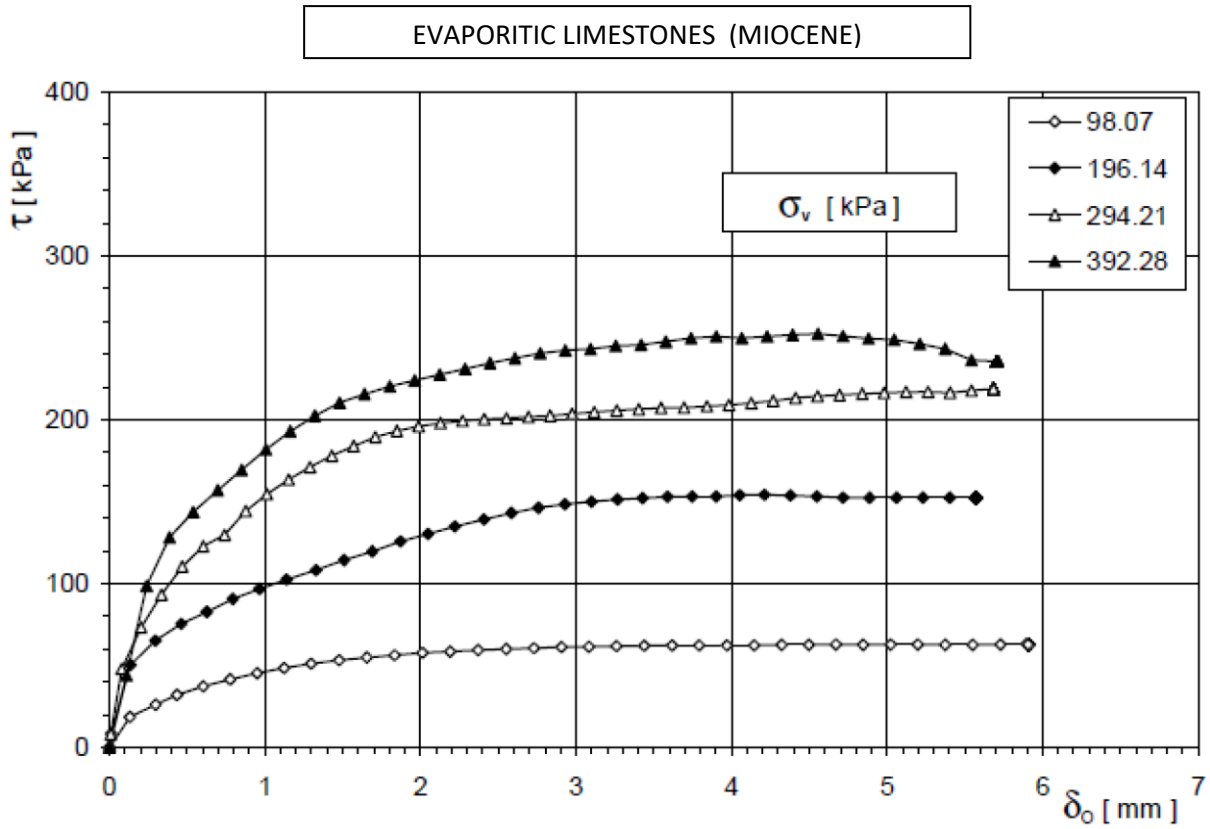



SANDS (MIOCENE)
Indice di plasticità I_p [%]
Limite di liquidità w_L [%]
0
20
40
60
80
100
S1_54.20 m
S1_67.30 m
S1_74.30 m
S2_42.70 m
S2_47.40 m
S2_49.80 m
S3_28.4 m
S3_30.4 m

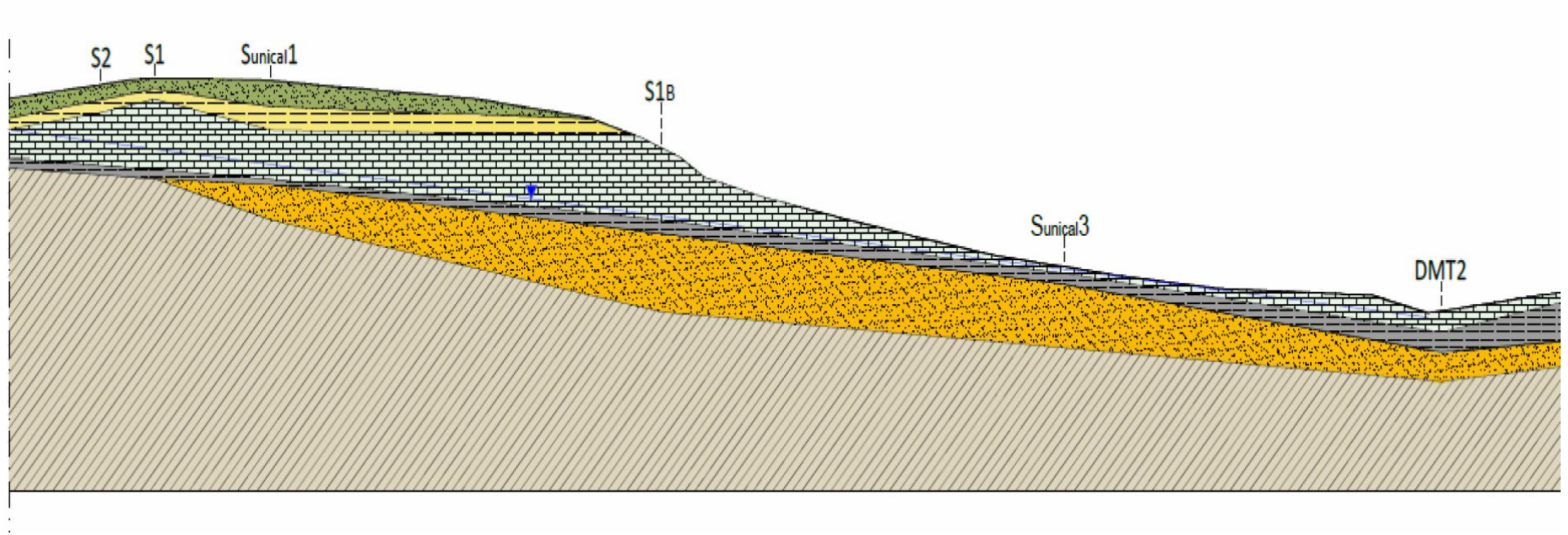
EDOMETRIC TEST



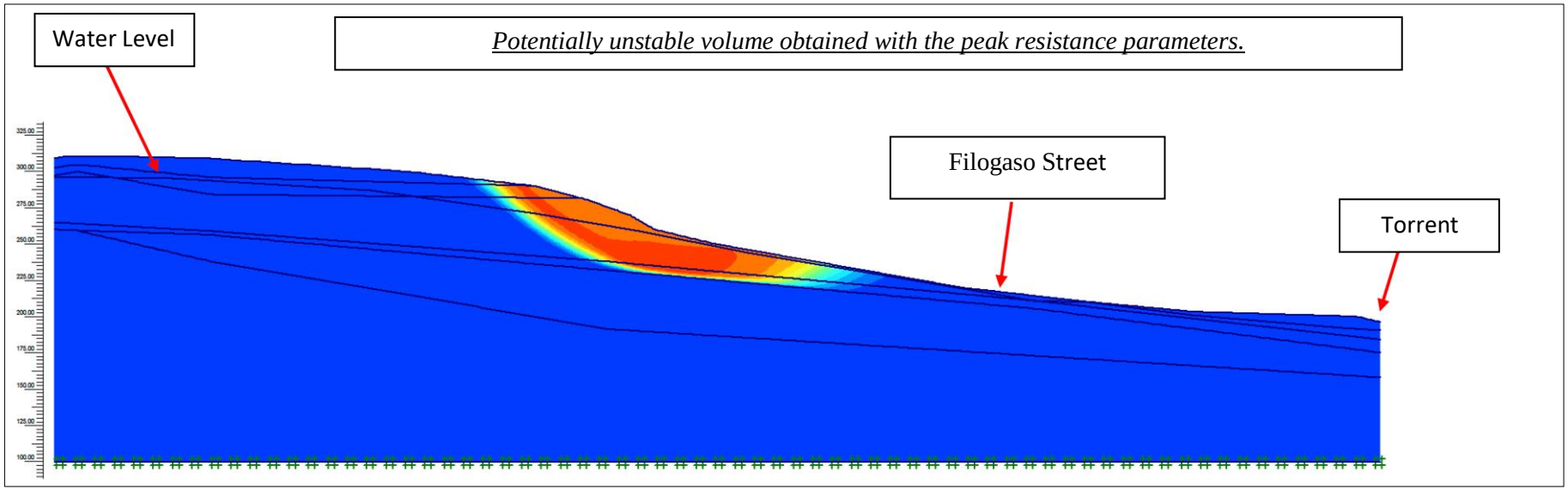
SHEAR TEST

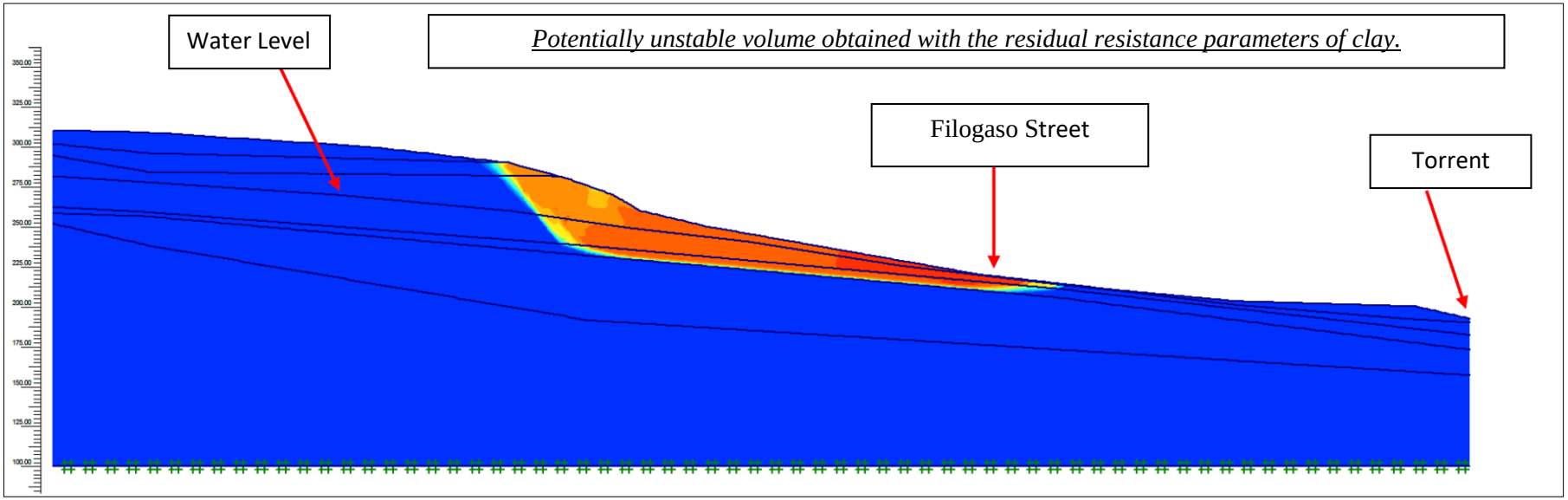

EVAPORITIC LIMESTONES (MIOCENE)
τ [kPa]
400
300
200
100
0
0
1
2
3
4
5
6
7
δo [mm]
σv [kPa]
98.07
196.14
294.21
392.28

STABILITY ANALISIS



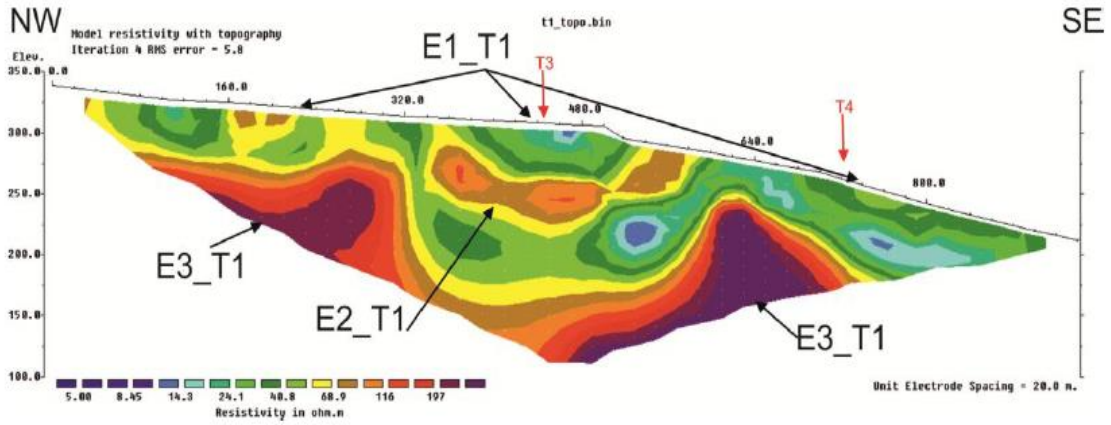
TYPES OF LAND
Sand of Pliocene
Silt of Pliocene
Limestone of Pliocene
Clay and silt of Miocene
Sand of Miocene
Gneiss and Schist

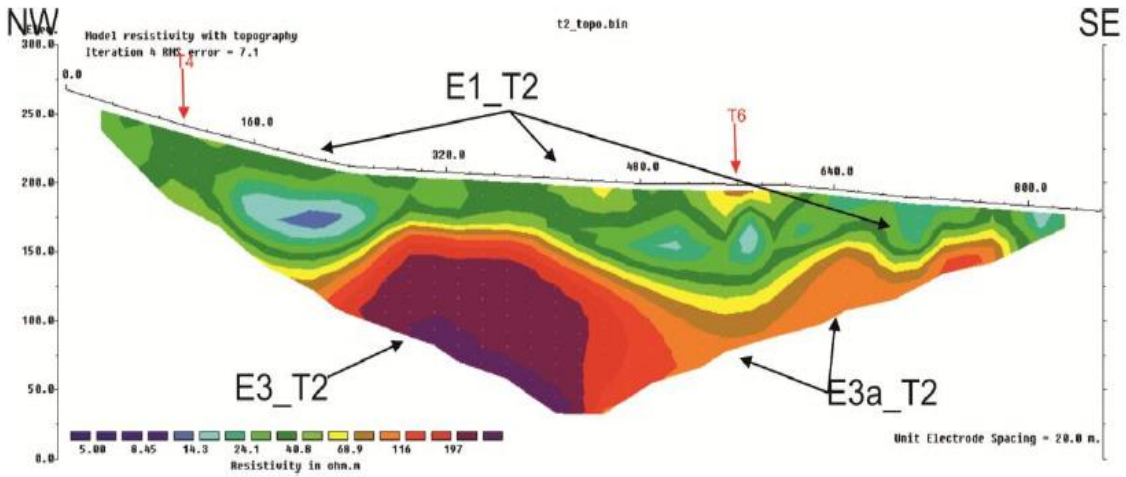

Water Level
Potentially unstable volume obtained with the peak resistance parameters.
Filogaso Street
Torrent

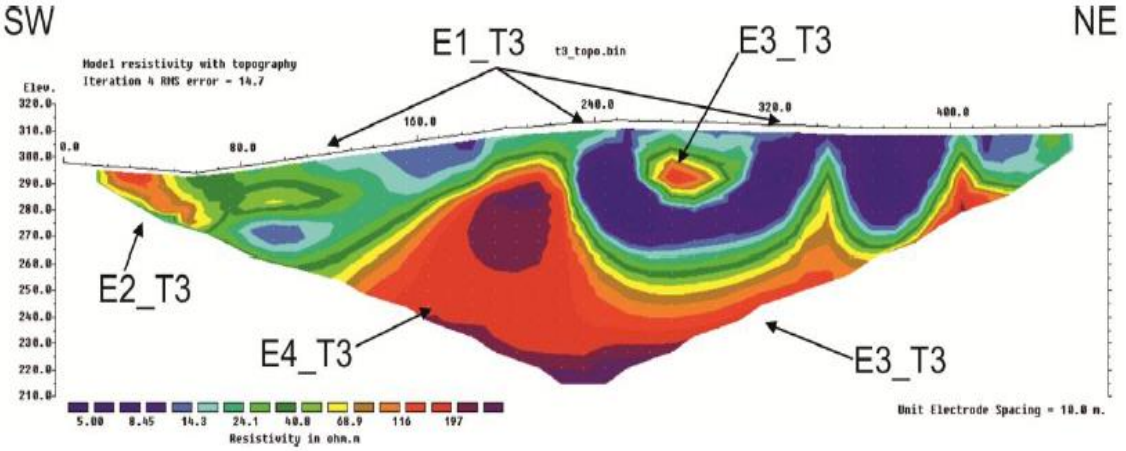

Water Level
Potentially unstable volume obtained with the residual resistance parameters of clay.
Filogaso Street
Torrent

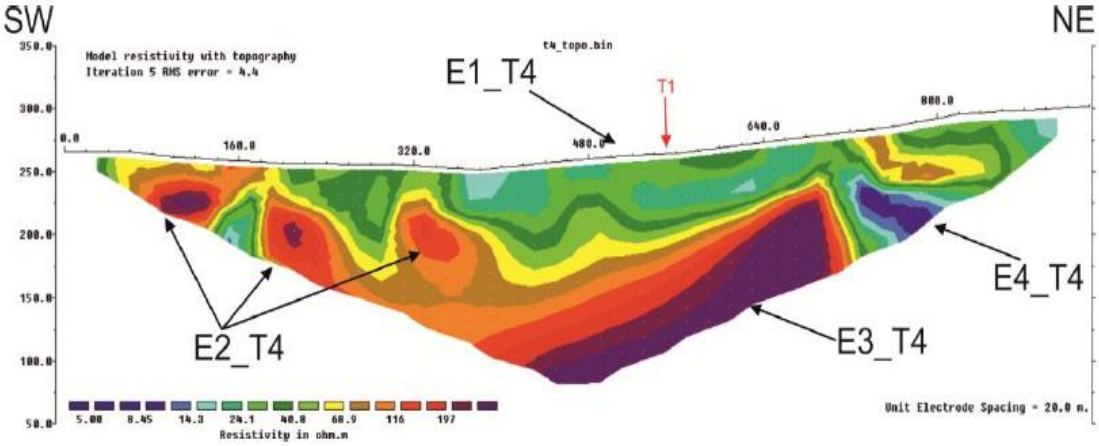
GEOELECTRIC TEST

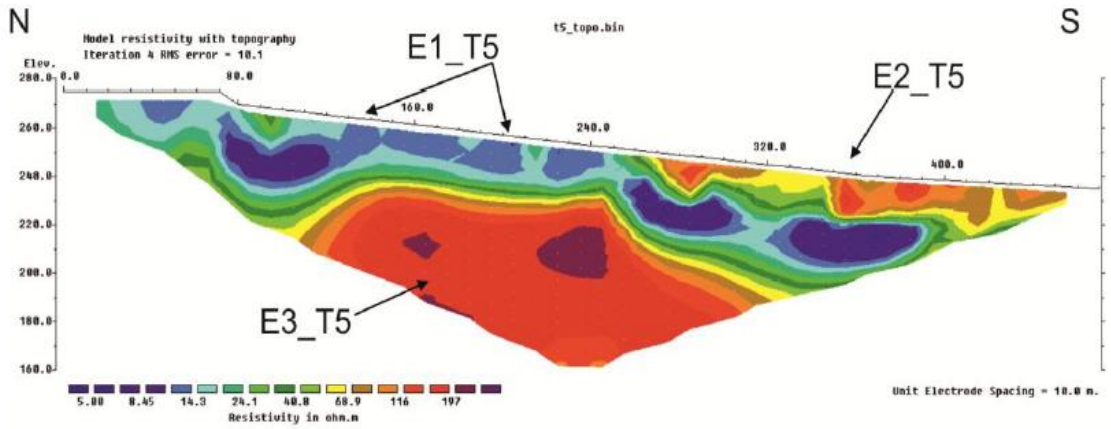
7 Tomography are made in different section .The test consists in 3 Tomography at 20 meters and 4 at 10 meters.

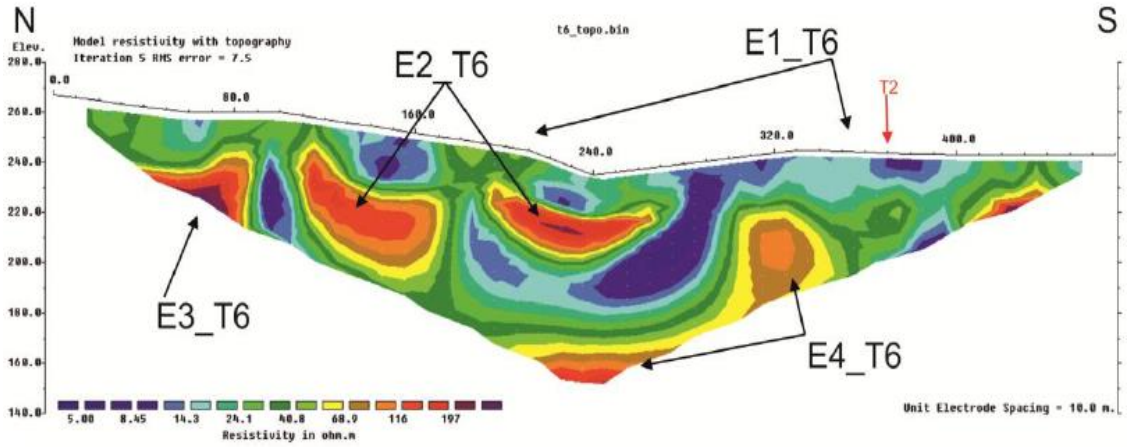


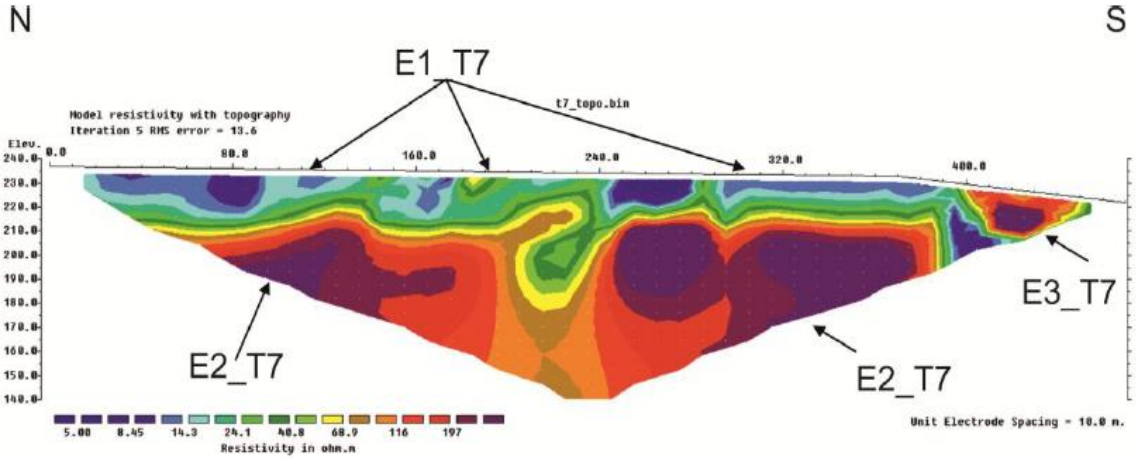

NW
SE
t2_topo.bin
Model resistivity with topography
Iteration 4 RMS error = 7.1
T4
T6
E1_T2
E3_T2
E3a_T2
Elev.
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
160.0
320.0
480.0
640.0
800.0
5.00
8.45
14.3
24.1
40.8
68.9
116
197
Resistivity in ohm.m
Unit Electrode Spacing = 20.0 m.


SW
NE
t3_topo.bin
Model resistivity with topography
Iteration 4 RMS error = 14.7
E1_T3
E3_T3
E2_T3
E4_T3
E3_T3
Elev.
320.0
310.0
300.0
290.0
280.0
270.0
260.0
250.0
240.0
230.0
220.0
210.0
0.0
80.0
160.0
240.0
320.0
400.0
5.00
8.45
14.3
24.1
40.8
68.9
116
197
Resistivity in ohm.m
Unit Electrode Spacing = 10.0 m.


SW
NE
t4_topo.bin
Model resistivity with topography
Iteration 5 RMS error = 4.4
E1_T4
T1
E2_T4
E4_T4
E3_T4
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
160.0
320.0
480.0
640.0
800.0
5.00
8.45
14.3
24.1
40.8
68.9
116
197
Resistivity in ohm.m
Unit Electrode Spacing = 20.0 m.


N
S
Model resistivity with topography
Iteration 4 RMS error = 10.1
t5_topo.bin
E1_T5
E2_T5
E3_T5
Elev.
280.0
260.0
240.0
220.0
200.0
180.0
160.0
0.0
80.0
160.0
240.0
320.0
400.0
5.00
8.45
14.3
24.1
40.8
68.9
116
197
Resistivity in ohm.m
Unit Electrode Spacing = 10.0 m.

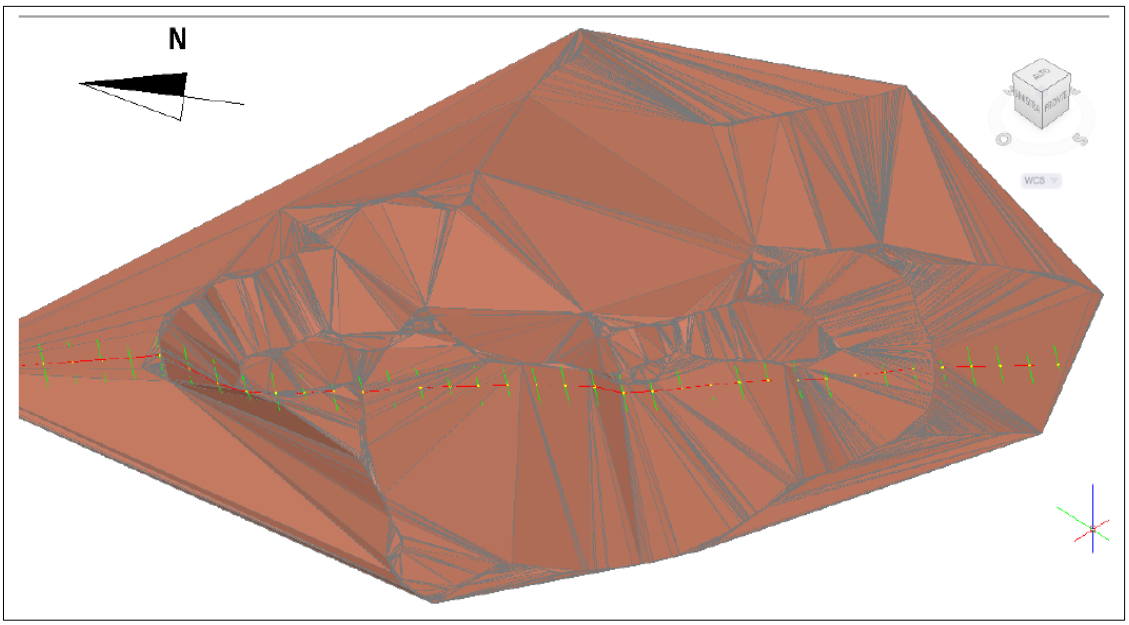

N
S
Model resistivity with topography
Iteration 5 RMS error = 7.5
t6_topo.bin
E1_T6
E2_T6
E3_T6
E4_T6
T2
Elev.
280.0
260.0
240.0
220.0
200.0
180.0
160.0
140.0
0.0
80.0
160.0
240.0
320.0
400.0
5.00
8.45
14.3
24.1
40.8
68.9
116
197
Resistivity in ohm.m
Unit Electrode Spacing = 10.0 m.

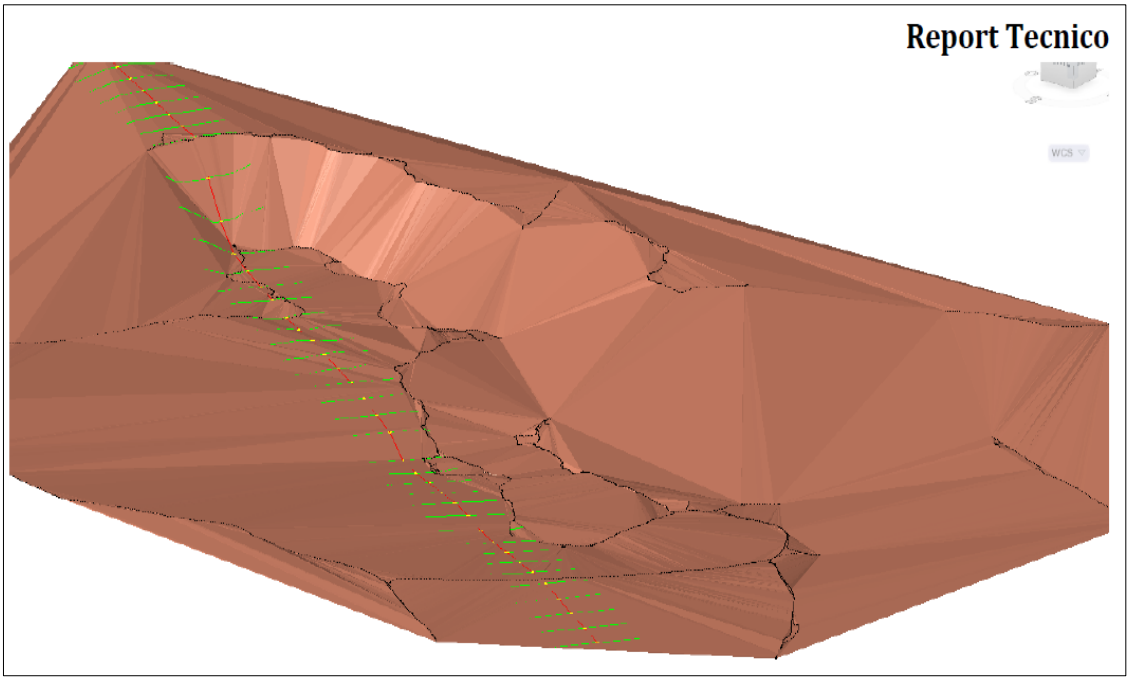

N
S
E1_T7
Model resistivity with topography
Iteration 5 RMS error = 13.6
t7_topo.bin
E2_T7
E2_T7
E3_T7
Elev.
240.0
230.0
220.0
210.0
200.0
190.0
180.0
170.0
160.0
150.0
140.0
0.0
80.0
160.0
240.0
320.0
400.0
5.00
8.45
14.3
24.1
40.8
68.9
116
197
Resistivity in ohm.m
Unit Electrode Spacing = 10.0 m.

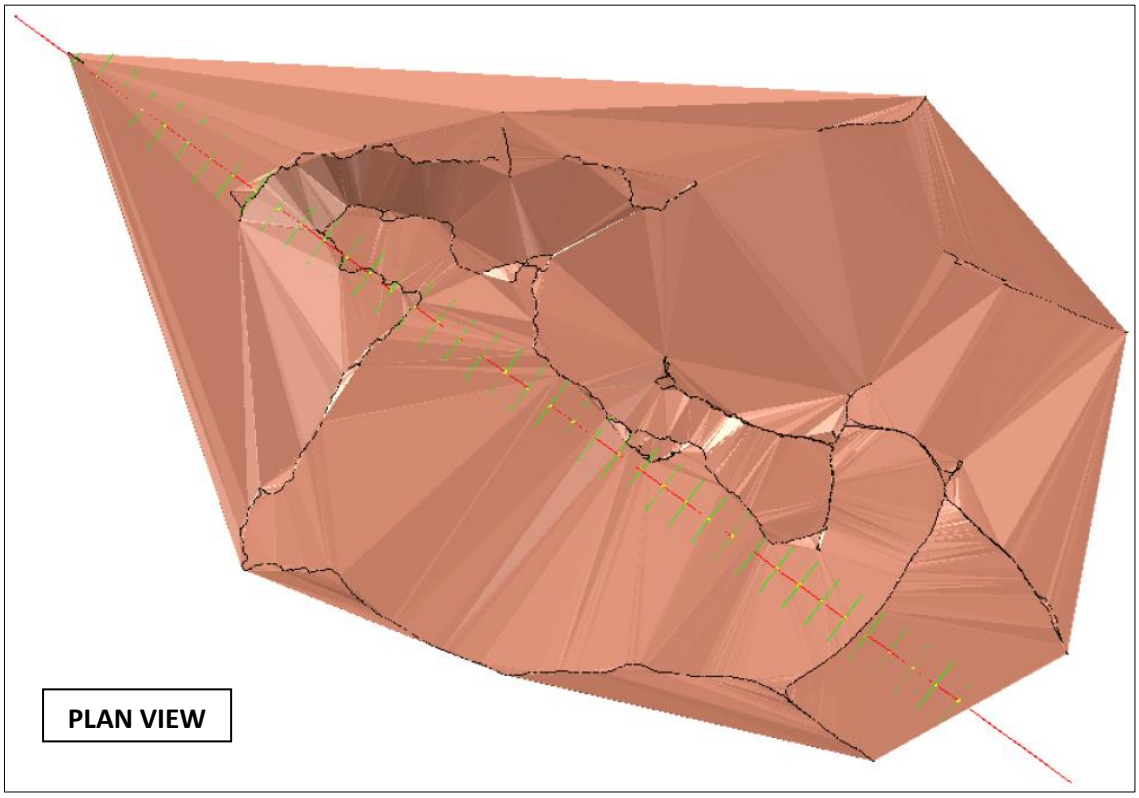
GSNN INVESTIGATION

Acquisitions are obtained along the crown and the body of landslide.

TRIANGULAR DTM







The red line represents the profile of longitudinal tomography