LISTATO DI CALCOLO – FASE 2

RICERCA SUPERFICIE CRITICA CIRCOLARE

Analisi di stabilità dei pendii con: JANBU (1956)

Lat./Long.	44.417087/9.129564
Normativa	NTC 2008
Numero di strati	3.0
Numero dei conci	10.0
Grado di sicurezza ritenuto accettabile	1.3
Coefficiente parziale resistenza	1.1
Analisi	Condizione drenata
Superficie di forma circolare	

Maglia dei Centri

Ascissa vertice sinistro inferiore xi	0.0 m
Ordinata vertice sinistro inferiore yi	80.0 m
Ascissa vertice destro superiore xs	160.0 m
Ordinata vertice destro superiore ys	350.0 m
Passo di ricerca	10.0
Numero di celle lungo x	20.0
Numero di celle lungo y	20.0

Coefficienti sismici [N.T.C.]

Dati generali

Tipo opera:	2 - Opere ordinarie
Classe d'uso:	Classe II
Vita nominale:	50.0 [anni]
Vita di riferimento:	50.0 [anni]

Parametri sismici su sito di riferimento

Categoria sottosuolo:	C
Categoria topografica:	T3

S.L. Stato limite	TR Tempo ritorno [anni]	ag [m/s²]	F0 [-]	TC* [sec]
S.L.O.	30.0	0.28	2.5	0.2
S.L.D.	50.0	0.35	2.55	0.22
S.L.V.	475.0	0.85	2.51	0.28
S.L.C.	975.0	1.13	2.48	0.29

Coefficienti sismici orizzontali e verticali

Opera: Stabilità dei pendii e Fondazioni

S.L. Stato limite	amax [m/s²]	beta [-]	kh [-]	kv [sec]
S.L.O.	0.504	0.2	0.0103	0.0051
S.L.D.	0.63	0.2	0.0128	0.0064
S.L.V.	1.53	0.2	0.0312	0.0156
S.L.C.	2.034	0.24	0.0498	0.0249

Coefficiente azione sismica orizzontale	0.031
Coefficiente azione sismica verticale	0.01 6

Vertici profilo

N	X m	y m
1	0.0	0.0
2	5.02	2.5
3	10.01	2.0
4	15.11	1.47
5	16.36	1.44
6	18.66	2.93
7	21.06	7.15
8	22.59	7.61
9	26.5	8.1
10	32.75	9.52
11	40.67	11.99
12	40.76	12.37
13	44.15	12.37
14	44.15	18.37
15	61.04	24.74
16	66.08	24.74
17	66.08	28.74
18	67.51	28.74
19	71.75	31.66
20	75.51	31.66
21	75.59	31.87
22	77.96	31.87
23	77.96	35.87
24	82.4	38.1
25	90.21	38.1
26	90.21	42.1
27	94.85	44.03
28	102.28	44.03
29	102.28	48.03
30	115.54	50.26
31	121.1	50.26
32	121.42	50.91
33	123.81	50.91
34	123.81	54.91
35	132.27	58.74
36	141.12	58.74
37	141.12	62.74
38	145.87	64.54
39	152.55	64.54
40	152.55	64.56
41	154.25	64.56
42	154.25	68.56
43	163.1	70.49
44	168.12	70.52
45	168.15	70.6
46	170.12	70.6
47	170.12	74.6
48	179.02	76.51
49	184.03	76.54
50	184.06	76.62
51	186.01	76.62
52	186.01	80.62
53	194.73	82.47
54	199.74	82.5
55	199.89	82.89
56	203.14	82.89
57	203.14	86.89
58	210.56	88.51
59	215.57	88.54
60	215.67	88.8
61	218.41	88.8
62	218.41	92.8
63	226.36	94.51
64	231.37	94.54
65	231.47	94.82

66	234.31	94.82
67	234.31	98.82
68	242.18	100.51
69	247.19	100.54
70	247.19	100.54
71	267.2	100.54
72	272.02	102.54
73	276.14	102.54
74	276.14	105.14
75	277.14	105.14
76	282.79	107.56
77	287.09	107.56
78	287.09	110.16
79	288.09	110.16
80	296.09	112.54
81	299.97	112.54
82	299.97	115.14
83	300.97	115.14
84	307.85	117.6
85	315.6	117.6
86	315.6	120.2
87	316.6	120.2
88	324.51	122.58
89	329.47	122.58
90	329.47	125.18
91	330.47	125.18
92	339.18	127.6
93	344.88	127.6
94	344.88	130.2
95	345.88	130.2
96	355.93	132.19
97	433.8	133.0 2

Falda

Nr.	X (m)	y (m)
1	0.0	0.0
2	5.02	2.5
3	10.01	2.0
4	15.11	1.47
5	16.36	1.44
6	18.66	2.93
7	20.45	6.09
8	102.78	20.1
9	102.8	20.1
10	159.6	43.29
11	159.6	43.29
12	294.28	93.94
13	294.29	93.95
14	330.58	113.29
15	330.6	113.29
16	363.07	118.29
17	363.1	118.29
18	414.33	131.4 6

Vertici strato 1

N	X (m)	y (m)
1	0.0	0.0
2	5.02	2.5
3	10.01	2.0
4	15.11	1.47
5	16.36	1.44
6	18.66	2.93
7	21.06	7.15
8	22.59	7.61
9	26.5	8.1
10	32.75	9.52
11	42.61	12.6

12	48.71	13.21
13	53.26	14.02
14	58.12	15.53
15	64.29	17.64
16	70.5	18.02
17	81.13	21.02
18	93.9	23.5
19	101.03	24.85
20	109.98	30.03
21	118.88	31.91
22	128.0	36.58
23	139.9	40.13
24	142.92	40.79
25	159.6	43.29
26	172.1	48.29
27	184.1	53.29
28	192.1	58.29
29	200.1	63.29
30	216.6	68.29
31	239.1	73.29
32	264.1	78.29
33	274.1	83.29
34	284.1	88.29
35	292.6	93.29
36	300.6	98.29
37	308.1	103.29
38	318.1	108.29
39	330.6	113.29
40	363.1	118.29
41	370.6	123.29
42	375.1	128.29
43	375.1	128.29
44	375.1	128.29
45	433.8	133.02
46	439.98	133.0 2

Vertici strato 2

N	X (m)	y (m)
1	0.0	0.0
2	5.02	2.5
3	10.01	2.0
4	15.11	1.47
5	16.36	1.44
6	18.66	2.93
7	19.56	4.52
8	22.25	5.7
9	66.68	13.34
10	100.36	19.1
11	118.09	19.1
12	161.53	39.47
13	200.09	51.87
14	224.02	63.38
15	261.26	69.58
16	289.18	80.21
17	310.9	95.71
18	344.58	107.22
19	376.94	110.76
20	434.11	116.08
21	439.98	116.08

Coefficienti parziali per i parametri geotecnici del terreno

Tangente angolo di resistenza al taglio	1.25
Coesione efficace	1.25
Coesione non drenata	1.4
Riduzione parametri geotecnici terreno	Si

Stratigrafia

c: coesione; cu: coesione non drenata; Fi: Angolo di attrito; G: Peso Specifico; Gs: Peso Specifico Saturo; K: Modulo di Winkler

Strato	c (kg/cm²)	cu (kg/cm²)	Fi (°)	G (Kg/m³)	Gs (Kg/m³)	K (Kg/cm³)	Litologia	
1	0.0383		29.6	1837	2000	0.00		
2	0		26.51	1695	1800	0.00		
3	0.4352		33.31	2402	2500	0.00		

Muri di sostegno - Caratteristiche geometriche

N°	x (m)	y (m)	Base mensola a valle (m)	Base mensola a monte (m)	Altezza muro (m)	Spessore testa (m)	Spessore base (m)	Peso specifico (Kg/m³)
1	44.15	12.37	0	0	6	2	4	2800
2	77.96	31.87	0	0	4	3	4	2800
3	123.81	50.91	0	0	4	3	4	2800
4	154.25	64.56	0	0	4	3	4	2800
5	170.12	70.6	0	0	4	3	4	2800
6	186.01	76.62	0	0	4	3	4	2800
7	203.14	82.89	0	0	4	3	4	2800
8	218.41	88.8	0	0	4	3	4	2800
9	234.31	94.82	0	0	4	3	4	2800
10	66.08	24.74	0	0	4	3	4	2800
11	90.21	38.1	0	0	4	3	4	2800
12	102.28	44.03	0	0	4	3	4	2800
13	141.12	58.74	0	0	4	3	4	280 0

Pali...

N°	x (m)	y (m)	Diametro (m)	Lunghezza (m)	Inclinazione (°)	Interasse (m)
1	45.87207	19.02133	0.22	12	90	0.5
2	43.47367	11.37152	0.2	6	90	3.6
3	41.34955	11.37152	0.2	6	90	3.6
4	39.29785	11.56757	0.22	6	90	0.5

Risultati analisi pendio [NTC 2008: [A2+M2+R2]]

Fs minimo individuato	1.11
Ascissa centro superficie	48.0 m
Ordinata centro superficie	80.0 m
Raggio superficie	67.52 m

Numero di superfici esaminate....(501)

N°	Xo	Yo	Ro	Fs
1	24.0	80.0	67.1	2.31
2	28.0	86.8	81.7	1.63
3	40.0	80.0	67.5	1.15
4	44.0	86.8	81.8	1.50
5	48.0	80.0	67.5	1.11
6	52.0	86.8	72.8	1.18
7	56.0	80.0	50.7	1.12

8	60.0	86.8	81.8	1.54
9	64.0	80.0	59.2	1.50
10	68.0	86.8	72.8	1.35
11	72.0	80.0	67.5	1.49
12	76.0	86.8	72.8	1.55
13	80.0	80.0	67.5	1.64
14	84.0	86.8	81.8	1.63
15	88.0	80.0	59.1	1.39
16	92.0	86.8	72.8	1.67
17	96.0	80.0	50.6	1.70
18	100.0	86.8	63.9	1.39
19	104.0	80.0	59.2	1.39
20	108.0	86.8	37.0	1.18
21	112.0	80.0	51.2	1.57
22	116.0	86.8	63.9	1.62
23	120.0	80.0	26.6	1.41
24	124.0	86.8	63.6	1.33
25	128.0	80.0	51.2	1.32
26	132.0	86.8	27.9	1.11
27	136.0	80.0	42.0	1.59
28	140.0	86.8	54.7	1.40
29	144.0	80.0	42.3	1.59
30	148.0	86.8	72.6	1.97
31	152.0	80.0	59.1	2.00
32	156.0	86.8	37.2	1.80
33	160.0	80.0	67.2	2.08
34	40.0	93.5	87.8	1.57
35	44.0	100.3	83.5	1.42
36	48.0	93.5	78.0	1.32
37	52.0	100.3	83.5	1.41
38	56.0	93.5	87.8	1.57
39	60.0	100.3	83.5	1.33
40	64.0	93.5	78.0	1.23
41	68.0	100.3	62.7	2.16
42	72.0	93.5	68.3	1.48
43	76.0	100.3	73.1	1.65
44	80.0	93.5	87.8	1.67
45	84.0	100.3	83.5	1.34
46	88.0	93.5	78.0	1.47
47	92.0	100.3	73.1	1.52
48	96.0	93.5	68.3	1.43
49	104.0	93.5	78.1	1.57
50	108.0	100.3	73.1	1.34
51	112.0	93.5	68.3	1.39
52	116.0	100.3	83.5	1.53
53	120.0	93.5	58.7	1.42
54	124.0	100.3	41.9	1.92
55	128.0	93.5	49.0	1.55
56	132.0	100.3	62.7	1.55
57	136.0	93.5	58.7	1.42
58	140.0	100.3	73.1	1.72
59	144.0	93.5	39.3	1.76
60	148.0	100.3	62.7	1.38
61	152.0	93.5	68.4	1.76
62	156.0	100.3	52.3	1.50
63	160.0	93.5	39.1	1.60
64	28.0	113.8	105.6	1.20
65	32.0	107.0	100.0	1.52
66	44.0	113.8	94.4	1.51
67	48.0	107.0	88.9	1.47
68	52.0	113.8	106.1	1.64
69	56.0	107.0	100.0	1.67
70	60.0	113.8	94.4	1.41

71	68.0	113.8	94.4	1.29
72	72.0	107.0	88.9	1.27
73	76.0	113.8	94.4	1.28
74	80.0	107.0	88.9	1.22
75	84.0	113.8	71.1	5.77
76	92.0	113.8	82.7	1.54
77	96.0	107.0	100.0	1.69
78	100.0	113.8	94.4	1.33
79	104.0	107.0	77.7	1.37
80	108.0	113.8	94.4	1.50
81	112.0	107.0	88.9	1.27
82	116.0	113.8	82.8	1.23
83	120.0	107.0	55.8	1.63
84	124.0	113.8	59.2	2.45
85	128.0	107.0	66.8	1.60
86	132.0	113.8	71.1	1.61
87	136.0	107.0	66.8	1.55
88	140.0	113.8	82.8	1.64
89	144.0	107.0	66.8	1.56
90	148.0	113.8	82.8	1.69
91	152.0	107.0	77.9	1.69
92	156.0	113.8	82.8	1.75
93	160.0	107.0	55.8	1.69
94	8.0	120.5	108.7	20.00
95	32.0	120.5	112.1	1.42
96	40.0	120.5	112.1	1.53
97	48.0	120.5	99.7	1.60
98	56.0	120.5	99.7	1.47
99	76.0	127.3	105.1	1.34
100	88.0	120.5	112.1	1.41
101	92.0	127.3	92.0	1.70
102	100.0	127.3	105.1	1.20
103	104.0	120.5	99.7	1.41
104	112.0	120.5	99.7	1.56
105	116.0	127.3	92.0	1.47
106	120.0	120.5	87.2	1.37
107	124.0	127.3	92.0	1.39
108	128.0	120.5	87.2	1.29
109	132.0	127.3	78.9	1.66
110	136.0	120.5	112.1	1.69
111	140.0	127.3	65.8	2.90
112	148.0	127.3	105.1	1.83
113	152.0	120.5	74.8	1.56
114	156.0	127.3	78.9	1.46
115	160.0	120.5	87.2	1.81
116	8.0	134.0	121.2	20.00
117	20.0	140.8	129.0	1.39
118	28.0	140.8	116.9	1.47
119	40.0	134.0	111.2	1.78
120	44.0	140.8	130.4	1.40
121	52.0	140.8	131.0	1.50
122	56.0	134.0	124.6	1.45
123	60.0	140.8	103.6	2.23
124	68.0	140.8	130.3	1.36
125	76.0	140.8	130.6	1.45
126	84.0	140.8	116.7	1.29
127	88.0	134.0	97.6	1.82
128	92.0	140.8	115.9	1.33
129	96.0	134.0	110.9	1.23
130	100.0	140.8	102.1	1.59
131	104.0	134.0	96.8	1.53
132	108.0	140.8	116.7	1.28
133	112.0	134.0	110.8	1.45

134	116.0	140.8	101.5	1.48
135	124.0	140.8	101.6	1.64
136	128.0	134.0	97.5	1.44
137	132.0	140.8	131.0	1.74
138	136.0	134.0	124.6	1.75
139	140.0	140.8	87.7	1.76
140	144.0	134.0	83.6	1.59
141	148.0	140.8	103.1	1.32
142	152.0	134.0	97.5	1.65
143	156.0	140.8	87.2	1.67
144	160.0	134.0	97.4	1.76
145	20.0	154.3	142.4	1.37
146	28.0	154.3	128.9	1.89
147	40.0	147.5	136.9	1.43
148	52.0	154.3	127.9	1.75
149	68.0	154.3	126.7	1.41
150	72.0	147.5	121.4	1.35
151	76.0	154.3	111.2	2.10
152	80.0	147.5	121.3	1.39
153	88.0	147.5	121.9	1.31
154	92.0	154.3	126.7	1.19
155	96.0	147.5	136.8	1.67
156	100.0	154.3	127.3	1.26
157	104.0	147.5	121.3	1.27
158	108.0	154.3	142.7	1.75
159	112.0	147.5	108.1	1.48
160	116.0	154.3	127.7	1.49
161	120.0	147.5	121.4	1.50
162	124.0	154.3	111.1	1.45
163	128.0	147.5	121.8	1.76
164	132.0	154.3	112.8	1.50
165	136.0	147.5	107.9	1.39
166	140.0	154.3	142.7	1.79
167	144.0	147.5	106.6	1.30
168	148.0	154.3	112.5	1.32
169	152.0	147.5	107.0	1.49
170	156.0	154.3	111.0	1.38
171	160.0	147.5	107.5	1.70
172	12.0	167.8	154.7	1.72
173	32.0	161.0	134.0	1.70
174	44.0	167.8	154.7	1.16
175	52.0	167.8	155.2	1.26
176	68.0	167.8	154.6	1.29
177	72.0	161.0	148.9	1.49
178	76.0	167.8	137.7	1.50
179	80.0	161.0	132.1	1.46
180	84.0	167.8	138.3	1.43
181	88.0	161.0	132.7	1.33
182	92.0	167.8	120.3	5.16
183	100.0	167.8	155.0	1.67
184	104.0	161.0	148.5	1.66
185	108.0	167.8	138.1	1.27
186	112.0	161.0	132.6	1.30
187	116.0	167.8	154.9	1.72
188	120.0	161.0	116.7	1.43
189	124.0	167.8	137.7	1.51
190	128.0	161.0	132.6	1.67
191	132.0	167.8	121.7	1.46
192	136.0	161.0	149.1	1.86
193	140.0	167.8	121.0	1.53
194	144.0	161.0	116.0	1.39
195	148.0	167.8	121.9	1.40
196	152.0	161.0	116.5	1.43

197	156.0	167.8	120.4	1.46
198	160.0	161.0	100.8	1.64
199	24.0	174.5	160.7	1.41
200	36.0	181.3	167.3	1.31
201	40.0	174.5	161.2	1.18
202	60.0	181.3	167.5	1.24
203	64.0	174.5	161.0	1.28
204	76.0	181.3	149.0	1.57
205	84.0	181.3	148.8	1.37
206	88.0	174.5	161.0	1.62
207	92.0	181.3	129.7	2.83
208	96.0	174.5	143.6	1.40
209	104.0	174.5	160.7	1.65
210	108.0	181.3	149.0	1.35
211	112.0	174.5	161.0	1.70
212	116.0	181.3	148.9	1.38
213	120.0	174.5	143.5	1.57
214	124.0	181.3	166.9	1.79
215	132.0	181.3	129.7	1.51
216	136.0	174.5	161.3	1.78
217	140.0	181.3	130.5	1.47
218	144.0	174.5	143.1	1.72
219	148.0	181.3	131.3	1.48
220	152.0	174.5	126.0	1.47
221	156.0	181.3	129.8	1.62
222	160.0	174.5	126.3	1.49
223	20.0	194.8	178.8	1.58
224	40.0	188.0	154.7	2.21
225	44.0	194.8	179.0	1.22
226	48.0	188.0	173.0	1.18
227	52.0	194.8	160.3	4.45
228	56.0	188.0	173.8	1.12
229	64.0	188.0	154.4	1.82
230	68.0	194.8	178.9	1.13
231	72.0	188.0	154.4	1.66
232	76.0	194.8	179.3	1.48
233	84.0	194.8	159.0	1.46
234	92.0	194.8	159.0	1.55
235	96.0	188.0	154.4	1.40
236	100.0	194.8	140.4	4.14
237	104.0	188.0	153.6	1.45
238	112.0	188.0	155.2	1.38
239	116.0	194.8	179.8	1.70
240	120.0	188.0	135.4	1.85
241	124.0	194.8	159.3	1.30
242	128.0	188.0	154.1	1.47
243	132.0	194.8	159.8	1.55
244	136.0	188.0	153.9	1.73
245	140.0	194.8	140.0	1.56
246	144.0	188.0	134.8	1.55
247	148.0	194.8	140.7	1.64
248	152.0	188.0	135.5	1.60
249	156.0	194.8	139.2	1.66
250	160.0	188.0	135.7	1.58
251	32.0	201.5	185.0	1.40
252	48.0	201.5	164.9	3.52
253	60.0	208.3	191.9	1.18
254	64.0	201.5	185.4	1.18
255	92.0	208.3	169.9	1.53
256	96.0	201.5	185.3	1.57
257	100.0	208.3	191.5	1.55
258	104.0	201.5	143.9	2.78
259	108.0	208.3	191.4	1.58

260	112.0	201.5	185.7	1.67
261	116.0	208.3	171.8	1.33
262	120.0	201.5	165.5	1.26
263	124.0	208.3	170.2	1.38
264	128.0	201.5	164.9	1.53
265	132.0	208.3	170.4	1.53
266	136.0	201.5	165.1	1.71
267	140.0	208.3	149.1	1.70
268	152.0	201.5	145.0	1.61
269	156.0	208.3	148.6	1.61
270	160.0	201.5	165.2	1.81
271	32.0	215.0	197.0	1.49
272	52.0	221.8	181.8	2.54
273	68.0	221.8	203.2	1.19
274	72.0	215.0	197.5	1.23
275	80.0	215.0	197.1	1.39
276	84.0	221.8	203.5	1.48
277	88.0	215.0	197.2	1.51
278	92.0	221.8	180.7	1.62
279	100.0	221.8	181.5	1.51
280	104.0	215.0	197.1	1.59
281	108.0	221.8	181.3	1.45
282	112.0	215.0	176.7	1.45
283	116.0	221.8	182.6	1.44
284	120.0	215.0	176.4	1.38
285	124.0	221.8	203.4	1.65
286	128.0	215.0	175.6	1.33
287	132.0	221.8	203.8	1.72
288	136.0	215.0	197.4	1.69
289	140.0	221.8	181.1	1.60
290	144.0	215.0	175.3	1.72
291	148.0	221.8	180.8	1.71
292	152.0	215.0	154.5	1.62
293	156.0	221.8	180.6	1.72
294	160.0	215.0	176.0	1.67
295	0.0	228.5	210.2	2.53
296	36.0	235.3	215.2	1.47
297	44.0	235.3	215.5	1.36
298	56.0	228.5	188.0	2.16
299	60.0	235.3	193.1	2.70
300	68.0	235.3	191.5	2.83
301	76.0	235.3	215.8	1.31
302	88.0	228.5	209.7	1.43
303	92.0	235.3	215.4	1.56
304	96.0	228.5	209.6	1.55
305	112.0	228.5	187.5	1.54
306	116.0	235.3	170.5	2.28
307	120.0	228.5	209.9	1.63
308	124.0	235.3	191.8	1.43
309	128.0	228.5	209.4	1.71
310	132.0	235.3	192.6	1.43
311	136.0	228.5	187.4	1.45
312	140.0	235.3	192.1	1.48
313	144.0	228.5	186.2	1.67
314	148.0	235.3	191.8	1.72
315	152.0	228.5	209.5	1.75
316	156.0	235.3	191.5	1.72
317	160.0	228.5	186.7	1.65
318	52.0	248.8	228.1	1.25
319	56.0	242.0	198.8	3.90
320	60.0	248.8	228.4	1.25
321	72.0	242.0	221.7	1.27
322	76.0	248.8	203.1	3.72

323	80.0	242.0	221.5	1.30
324	84.0	248.8	227.8	1.37
325	88.0	242.0	221.9	1.51
326	92.0	248.8	227.6	1.55
327	96.0	242.0	221.5	1.54
328	108.0	248.8	202.8	1.57
329	116.0	248.8	204.3	1.49
330	120.0	242.0	198.0	1.43
331	124.0	248.8	202.7	1.47
332	128.0	242.0	197.2	1.46
333	132.0	248.8	203.3	1.52
334	136.0	242.0	198.3	1.40
335	140.0	248.8	202.9	1.43
336	144.0	242.0	196.9	1.51
337	148.0	248.8	203.1	1.53
338	152.0	242.0	197.2	1.59
339	156.0	248.8	177.1	2.03
340	160.0	242.0	197.5	1.67
341	48.0	255.5	233.7	1.31
342	56.0	255.5	234.5	1.31
343	68.0	262.3	239.7	1.24
344	72.0	255.5	233.9	1.19
345	76.0	262.3	240.1	1.32
346	80.0	255.5	233.6	1.31
347	96.0	255.5	208.1	1.73
348	100.0	262.3	239.7	1.61
349	104.0	255.5	233.6	1.59
350	108.0	262.3	213.6	1.57
351	112.0	255.5	209.0	1.50
352	116.0	262.3	215.1	1.53
353	120.0	255.5	208.9	1.53
354	124.0	262.3	213.5	1.50
355	128.0	255.5	207.9	1.45
356	132.0	262.3	214.1	1.60
357	136.0	255.5	209.1	1.51
358	144.0	255.5	207.7	1.43
359	148.0	262.3	240.1	1.74
360	152.0	255.5	234.0	1.71
361	156.0	262.3	213.1	1.68
362	160.0	255.5	207.6	1.58
363	28.0	275.8	251.3	1.61
364	36.0	275.8	251.3	1.43
365	44.0	275.8	251.5	1.33
366	60.0	275.8	252.7	1.34
367	72.0	269.0	246.0	1.17
368	76.0	275.8	224.8	3.75
369	104.0	269.0	245.8	1.57
370	108.0	275.8	224.4	1.58
371	120.0	269.0	219.7	1.52
372	124.0	275.8	224.3	1.69
373	132.0	275.8	224.9	1.64
374	140.0	275.8	224.6	1.61
375	144.0	269.0	218.5	1.53
376	148.0	275.8	224.6	1.50
377	152.0	269.0	219.4	1.59
378	156.0	275.8	224.0	1.47
379	160.0	269.0	219.0	1.63
380	68.0	289.3	264.1	1.15
381	76.0	289.3	264.4	1.19
382	80.0	282.5	258.0	1.34
383	84.0	289.3	264.2	1.37
384	88.0	282.5	258.4	1.62
385	92.0	289.3	264.1	1.67

386	96.0	282.5	258.1	1.67
387	100.0	289.3	264.5	1.63
388	108.0	289.3	264.0	1.56
389	112.0	282.5	230.5	1.52
390	116.0	289.3	236.4	1.72
391	120.0	282.5	230.5	1.67
392	124.0	289.3	264.2	1.66
393	128.0	282.5	258.0	1.66
394	132.0	289.3	235.6	1.76
395	136.0	282.5	230.8	1.65
396	140.0	289.3	235.4	1.66
397	144.0	282.5	229.2	1.65
398	148.0	289.3	235.4	1.60
399	152.0	282.5	230.2	1.50
400	156.0	289.3	234.8	1.52
401	160.0	282.5	229.8	1.57
402	4.0	302.8	276.8	3.04
403	56.0	296.0	270.9	1.30
404	60.0	302.8	277.0	1.25
405	64.0	296.0	270.5	1.18
406	72.0	296.0	270.3	1.17
407	80.0	296.0	270.1	1.39
408	84.0	302.8	276.3	1.40
409	96.0	296.0	240.5	6.51
410	100.0	302.8	276.6	1.54
411	108.0	302.8	276.3	1.53
412	112.0	296.0	270.4	1.63
413	116.0	302.8	276.7	1.70
414	120.0	296.0	241.4	1.78
415	128.0	296.0	240.2	1.83
416	132.0	302.8	246.4	1.77
417	136.0	296.0	241.6	1.74
418	140.0	302.8	276.5	1.74
419	144.0	296.0	240.0	1.68
420	148.0	302.8	246.2	1.69
421	152.0	296.0	241.0	1.61
422	156.0	302.8	276.2	1.75
423	160.0	296.0	240.6	1.50
424	52.0	316.3	288.8	1.37
425	64.0	309.5	282.7	1.22
426	68.0	316.3	288.4	1.25
427	72.0	309.5	282.4	1.21
428	76.0	316.3	288.8	1.23
429	80.0	309.5	282.3	1.32
430	84.0	316.3	288.5	1.44
431	88.0	309.5	282.7	1.55
432	92.0	316.3	256.5	2.36
433	96.0	309.5	282.4	1.58
434	100.0	316.3	288.8	1.58
435	104.0	309.5	282.3	1.56
436	108.0	316.3	288.5	1.54
437	112.0	309.5	282.2	1.52
438	116.0	316.3	256.7	1.69
439	124.0	316.3	256.8	1.77
440	132.0	316.3	257.2	1.79
441	136.0	309.5	252.5	1.80
442	140.0	316.3	257.1	1.69
443	144.0	309.5	282.2	1.73
444	148.0	316.3	256.9	1.66
445	152.0	309.5	282.7	1.75
446	156.0	316.3	256.5	1.59
447	160.0	309.5	251.3	1.56
448	0.0	323.0	295.4	2.43

449	28.0	329.8	299.7	1.67
450	36.0	329.8	299.6	1.55
451	56.0	323.0	295.2	1.31
452	60.0	329.8	301.4	1.31
453	68.0	329.8	300.6	1.30
454	72.0	323.0	294.5	1.27
455	76.0	329.8	300.9	1.26
456	84.0	329.8	300.6	1.41
457	88.0	323.0	262.8	2.16
458	92.0	329.8	267.4	3.64
459	96.0	323.0	294.5	1.60
460	100.0	329.8	301.0	1.56
461	104.0	323.0	294.5	1.55
462	120.0	323.0	262.6	1.73
463	124.0	329.8	300.7	1.73
464	128.0	323.0	261.8	1.80
465	132.0	329.8	267.9	1.93
466	136.0	323.0	263.3	1.72
467	140.0	329.8	267.9	1.77
468	144.0	323.0	261.7	1.75
469	148.0	329.8	267.7	1.72
470	152.0	323.0	262.7	1.66
471	156.0	329.8	267.3	1.63
472	160.0	323.0	262.1	1.65
473	16.0	336.5	306.3	4.42
474	20.0	343.3	312.1	4.35
475	76.0	343.3	313.1	1.28
476	88.0	336.5	307.0	1.53
477	96.0	336.5	272.8	3.29
478	100.0	343.3	279.0	2.24
479	104.0	336.5	272.8	5.21
480	108.0	343.3	312.7	1.54
481	120.0	336.5	306.6	1.70
482	124.0	343.3	312.9	1.76
483	128.0	336.5	306.5	1.76
484	132.0	343.3	313.0	1.75
485	136.0	336.5	274.1	1.89
486	140.0	343.3	278.7	1.85
487	144.0	336.5	306.5	1.77
488	148.0	343.3	278.5	1.72
489	152.0	336.5	273.5	1.67
490	156.0	343.3	278.1	1.69
491	0.0	350.0	319.7	2.41
492	24.0	350.0	318.0	4.54
493	40.0	350.0	317.7	1.64
494	48.0	350.0	318.1	1.52
495	104.0	350.0	318.8	1.60
496	112.0	350.0	284.4	9.23
497	120.0	350.0	318.7	1.79
498	128.0	350.0	318.6	1.77
499	136.0	350.0	284.9	1.91
500	144.0	350.0	283.4	1.90
501	152.0	350.0	284.4	1.73

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CARICO LIMITE PALI
xc = 40.00 yc = 80.00 Rc = 67.509 Fs=1.1505

Micropali Monte x=45.87207 Y=19.02133 Plim=6729.8 Kg Sbalzo del palo 6.52 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 48.00 yc = 80.00 Rc = 67.519 Fs=1.1074

Micropali Monte x=45.87207 Y=19.02133 Plim=6729.8 Kg Sbalzo del palo 7.08 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 52.00 yc = 86.75 Rc = 72.763 Fs=1.1785

Micropali Monte x=45.87207 Y=19.02133 Plim=6729.8 Kg Sbalzo del palo 5.58 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 56.00 yc = 80.00 Rc = 50.74 Fs=1.1244

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 108.00 yc = 86.75 Rc = 36.991 Fs=1.1837

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 132.00 yc = 86.75 Rc = 27.901 Fs=1.1131

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 64.00 yc = 93.50 Rc = 78.009 Fs=1.2334

Micropali Monte x=45.87207 Y=19.02133 Plim=6729.8 Kg Sbalzo del palo 3.05 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 28.00 yc = 113.75 Rc = 105.552 Fs=1.1991

Micropali Monte x=45.87207 Y=19.02133 Plim=4261.5 Kg Sbalzo del palo 10.45 m
Micropali Base x=43.47367 Y=11.37152 Plim=5253.2 Kg Sbalzo del palo 3.18 m
Micropali Base x=41.34955 Y=11.37152 Plim=5253.2 Kg Sbalzo del palo 3.18 m
Micropali Valle x=39.29785 Y=11.56757 Plim=7741.1 Kg Sbalzo del palo 2.20 m

CARICO LIMITE PALI
xc = 80.00 yc = 107.00 Rc = 88.912 Fs=1.2207

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 116.00 yc = 113.75 Rc = 82.787 Fs=1.2334

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 100.00 yc = 127.25 Rc = 105.07 Fs=1.2037

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 96.00 yc = 134.00 Rc = 110.912 Fs=1.2272

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 92.00 yc = 154.25 Rc = 126.667 Fs=1.1943

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 44.00 yc = 167.75 Rc = 154.719 Fs=1.1591

Micropali Monte x=45.87207 Y=19.02133 Plim=6729.8 Kg Sbalzo del palo 8.28 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 40.00 yc = 174.50 Rc = 161.20 Fs=1.1825

Micropali Monte x=45.87207 Y=19.02133 Plim=6729.8 Kg Sbalzo del palo 7.76 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 44.00 yc = 194.75 Rc = 179.042 Fs=1.2183

Micropali Monte x=45.87207 Y=19.02133 Plim=6729.8 Kg Sbalzo del palo 5.64 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 48.00 yc = 188.00 Rc = 173.039 Fs=1.183

Micropali Monte x=45.87207 Y=19.02133 Plim=6729.8 Kg Sbalzo del palo 6.53 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m

Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 56.00 yc = 188.00 Rc = 173.839 Fs=1.1243

Micropali Monte x=45.87207 Y=19.02133 Plim=6729.8 Kg Sbalzo del palo 7.36 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 68.00 yc = 194.75 Rc = 178.896 Fs=1.1333

Micropali Monte x=45.87207 Y=19.02133 Plim=6729.8 Kg Sbalzo del palo 5.04 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 60.00 yc = 208.25 Rc = 191.863 Fs=1.1844

Micropali Monte x=45.87207 Y=19.02133 Plim=6729.8 Kg Sbalzo del palo 5.02 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 64.00 yc = 201.50 Rc = 185.379 Fs=1.1755

Micropali Monte x=45.87207 Y=19.02133 Plim=6729.8 Kg Sbalzo del palo 5.08 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 68.00 yc = 221.75 Rc = 203.229 Fs=1.1913

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 72.00 yc = 215.00 Rc = 197.454 Fs=1.2282

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 72.00 yc = 255.50 Rc = 233.853 Fs=1.1943

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 72.00 yc = 269.00 Rc = 245.987 Fs=1.1688

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m

Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 68.00 yc = 289.25 Rc = 264.064 Fs=1.1536

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 76.00 yc = 289.25 Rc = 264.442 Fs=1.1851

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 64.00 yc = 296.00 Rc = 270.547 Fs=1.1764

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 72.00 yc = 296.00 Rc = 270.253 Fs=1.171

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 64.00 yc = 309.50 Rc = 282.714 Fs=1.2183

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m

CARICO LIMITE PALI
xc = 72.00 yc = 309.50 Rc = 282.386 Fs=1.2083

Micropali Monte x=45.87207 Y=19.02133 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=43.47367 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Base x=41.34955 Y=11.37152 Plim=0.0 Kg Sbalzo del palo 0.00 m
Micropali Valle x=39.29785 Y=11.56757 Plim=0.0 Kg Sbalzo del palo 0.00 m