ALLEGATO 14
VERIFICHE DI STABILITÀ INTERFERENZA 25
SEZIONE A-A' - RELAZIONI DI CALCOLO

VERIFICA DI STABILITÀ PRE-OPERAM IN ASSENZA DI FALDA ACQUIFERA

Analisi di stabilità dei pendii con BISHOP

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Numero di strati	3.0
Numero dei conci	50.0
Coefficiente di sicurezza [R2]	1.1

Superficie di forma circolare

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Maglia dei Centri

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Ascissa vertice sinistro inferiore xi	303.98 m
Ordinata vertice sinistro inferiore yi	640.31 m
Ascissa vertice destro superiore xs	567.49 m
Ordinata vertice destro superiore ys	774.17 m
Passo di ricerca	10.0
Numero di celle lungo x	10.0
Numero di celle lungo y	10.0

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Coefficienti sismici [N.T.C.] 2018

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Dati generali

Descrizione:	
Latitudine:	41.79
Longitudine:	15.0
Tipo di costruzione:	2 - Opere ordinarie
Classe d'uso:	Classe IV
Vita nominale:	50.0 [anni]
Vita di riferimento:	100.0 [anni]

Parametri sismici su sito di riferimento

Categoria sottosuolo:	C
Categoria topografica:	T1

S.L. Stato limite	TR Tempo ritorno [anni]	ag [m/s²]	F0 [-]	TC* [sec]
S.L.O.	60.0	0.78	2.47	0.31
S.L.D.	101.0	1.0	2.5	0.32
S.L.V.	949.0	2.57	2.45	0.35
S.L.C.	1950.0	3.33	2.44	0.36

Coefficienti sismici orizzontali e verticali

Opera: Stabilità dei pendii

S.L. Stato limite	amax [m/s²]	beta [-]	kh [-]	kv [sec]
S.L.O.	1.17	0.2	0.0239	0.0119
S.L.D.	1.5	0.24	0.0367	0.0184
S.L.V.	3.3789	0.28	0.0965	0.0482
S.L.C.	4.0055	0.28	0.1144	0.0572

Coefficiente azione sismica orizzontale	0.0965
Coefficiente azione sismica verticale	0.0482

Vertici profilo

N	X m	y m
1	0.0	197.5
2	2.8	197.0
3	5.3	196.5
4	8.22	196.0
5	11.74	195.5
6	16.83	195.0
7	24.5	194.8
8	31.8	195.0
9	36.7	195.5
10	40.27	196.0
11	43.32	196.5
12	46.34	197.0
13	48.92	197.5
14	51.71	198.0
15	54.7	198.5
16	58.06	199.0
17	61.69	199.5
18	66.18	200.0
19	71.71	200.5
20	78.55	201.0
21	86.56	201.5
22	94.19	202.0
23	100.74	202.5
24	106.49	203.0
25	111.66	203.5
26	116.35	204.0
27	120.49	204.5
28	124.42	205.0
29	128.29	205.5
30	132.39	206.0
31	136.57	206.5
32	140.66	207.0
33	144.92	207.5
34	149.28	208.0
35	153.21	208.5
36	156.78	209.0
37	160.08	209.5
38	163.31	210.0
39	166.54	210.5
40	169.77	211.0
41	172.99	211.5
42	176.28	212.0
43	179.62	212.5
44	182.9	213.0
45	186.1	213.5
46	189.17	214.0
47	192.18	214.5
48	195.09	215.0
49	197.92	215.5
50	200.66	216.0
51	203.22	216.5
52	205.66	217.0

53	208.05	217.5
54	210.34	218.0
55	212.62	218.5
56	214.88	219.0
57	217.17	219.5
58	219.48	220.0
59	221.75	220.5
60	224.07	221.0
61	226.56	221.5
62	229.06	222.0
63	231.58	222.5
64	234.01	223.0
65	236.43	223.5
66	238.82	224.0
67	241.13	224.5
68	243.53	225.0
69	246.21	225.5
70	249.11	226.0
71	252.15	226.5
72	255.4	227.0
73	258.91	227.5
74	262.65	228.0
75	266.35	228.5
76	269.73	229.0
77	272.95	229.5
78	276.33	230.0
79	280.15	230.5
80	284.47	231.0
81	289.29	231.5
82	295.24	232.0
83	303.21	232.5
84	313.76	233.0
85	324.03	233.5
86	330.57	234.0
87	335.39	234.5
88	339.53	235.0
89	343.21	235.5
90	346.65	236.0
91	350.02	236.5
92	353.28	237.0
93	356.66	237.5
94	360.18	238.0
95	363.87	238.5
96	367.94	239.0
97	372.26	239.5
98	376.81	240.0
99	381.5	240.5
100	385.96	241.0
101	390.16	241.5
102	394.06	242.0
103	397.87	242.5
104	401.6	243.0
105	405.31	243.5
106	409.09	244.0
107	413.03	244.5
108	416.97	245.0
109	420.84	245.5
110	424.63	246.0
111	427.86	246.5

112	430.74	247.0
113	433.41	247.5
114	436.01	248.0
115	438.55	248.5
116	441.2	249.0
117	443.8	249.5
118	446.51	250.0
119	449.42	250.5
120	452.89	251.0
121	456.35	251.5
122	459.57	252.0
123	462.54	252.5
124	465.39	253.0
125	468.11	253.5
126	470.78	254.0
127	473.4	254.5
128	476.06	255.0
129	478.68	255.5
130	481.28	256.0
131	483.88	256.5
132	486.48	257.0
133	489.1	257.5
134	491.67	258.0
135	494.2	258.5
136	496.71	259.0
137	499.17	259.5
138	501.54	260.0
139	503.94	260.5
140	506.25	261.0
141	508.56	261.5
142	510.9	262.0
143	513.22	262.5
144	515.58	263.0
145	518.01	263.5
146	520.57	264.0
147	523.2	264.5
148	525.93	265.0
149	528.75	265.5
150	531.7	266.0
151	534.73	266.5
152	537.82	267.0
153	540.89	267.5
154	543.97	268.0
155	547.1	268.5
156	550.2	269.0
157	553.31	269.5
158	556.38	270.0
159	559.5	270.5
160	562.69	271.0
161	565.95	271.5
162	569.31	272.0
163	572.75	272.5
164	576.24	273.0
165	579.82	273.5
166	583.43	274.0
167	587.01	274.5
168	590.6	275.0
169	594.19	275.5
170	597.66	276.0

171	600.71	276.5
172	603.53	277.0
173	606.36	277.5
174	609.29	278.0
175	612.35	278.5
176	615.69	279.0
177	619.63	279.5
178	625.11	280.0
179	631.56	280.5
180	639.06	281.0
181	652.18	281.5
182	676.46	282.0
183	685.18	282.3
184	694.53	282.0
185	705.41	281.5
186	715.37	281.0
187	744.97	280.5
188	771.22	280.0
189	797.74	279.5
190	898.87	279.0

Vertici strato 1

N	X m	y m
1	0.0	197.5
2	2.8	197.0
3	5.3	196.5
4	8.22	196.0
5	11.74	195.5
6	16.83	195.0
7	24.5	194.8
8	31.8	195.0
9	36.7	195.5
10	40.27	196.0
11	43.32	196.5
12	46.34	197.0
13	48.92	197.5
14	51.71	198.0
15	54.7	198.5
16	58.06	199.0
17	61.69	199.5
18	66.18	200.0
19	71.71	200.5
20	78.55	201.0
21	86.56	201.5
22	94.19	202.0
23	100.74	202.5
24	106.49	203.0
25	111.66	203.5
26	116.35	204.0
27	120.49	204.5
28	124.42	205.0
29	128.29	205.5
30	132.39	206.0
31	136.57	206.5
32	140.66	207.0
33	144.92	207.5
34	149.28	208.0
35	153.21	208.5

36	156.78	209.0
37	160.08	209.5
38	163.31	210.0
39	166.54	210.5
40	169.77	211.0
41	172.99	211.5
42	176.28	212.0
43	179.62	212.5
44	182.9	213.0
45	186.1	213.5
46	189.17	214.0
47	192.18	214.5
48	195.09	215.0
49	197.92	215.5
50	200.66	216.0
51	203.22	216.5
52	205.66	217.0
53	207.84	217.21
54	210.13	217.46
55	212.28	217.86
56	214.62	218.16
57	217.91	218.71
58	233.46	221.15
59	240.69	222.1
60	247.76	223.04
61	307.29	229.91
62	320.06	231.22
63	327.36	232.12
64	333.58	232.91
65	337.33	233.48
66	343.76	234.21
67	352.76	235.13
68	383.43	238.38
69	409.02	241.63
70	424.25	243.46
71	438.67	245.69
72	462.12	249.41
73	479.52	252.86
74	494.13	255.81
75	509.72	258.93
76	529.42	262.71
77	555.81	267.35
78	576.24	270.8
79	581.21	271.8
80	585.26	272.67
81	588.93	273.54
82	592.12	274.31
83	594.73	274.89
84	597.63	275.76
85	600.71	276.5
86	603.53	277.0
87	606.36	277.5
88	609.29	278.0
89	612.35	278.5
90	615.69	279.0
91	619.63	279.5
92	625.11	280.0
93	631.56	280.5
94	639.06	281.0

95	652.18	281.5
96	676.46	282.0
97	685.18	282.3
98	694.53	282.0
99	705.41	281.5
100	715.37	281.0
101	744.97	280.5
102	771.22	280.0
103	797.74	279.5
104	898.87	279.0

Vertici strato 2

N	X m	y m
1	0.0	197.5
2	2.8	197.0
3	5.3	196.5
4	8.22	196.0
5	11.74	195.5
6	16.83	195.0
7	24.5	194.8
8	31.8	195.0
9	36.7	195.5
10	40.27	196.0
11	43.32	196.5
12	46.34	197.0
13	48.92	197.5
14	51.71	198.0
15	54.7	198.5
16	58.06	199.0
17	61.69	199.5
18	66.18	200.0
19	71.71	200.5
20	78.55	201.0
21	86.56	201.5
22	94.19	202.0
23	100.74	202.5
24	106.49	203.0
25	111.66	203.5
26	116.35	204.0
27	120.49	204.5
28	124.42	205.0
29	128.29	205.5
30	132.39	206.0
31	136.57	206.5
32	140.66	207.0
33	144.92	207.5
34	149.28	208.0
35	153.21	208.5
36	156.78	209.0
37	160.08	209.5
38	163.31	210.0
39	166.54	210.5
40	169.77	211.0
41	172.99	211.5
42	176.28	212.0
43	179.62	212.5
44	182.9	213.0
45	186.1	213.5

46	189.17	214.0
47	192.18	214.5
48	195.09	215.0
49	197.92	215.5
50	200.66	216.0
51	203.22	216.5
52	205.66	217.0
53	207.84	217.21
54	210.13	217.46
55	212.28	217.86
56	214.62	218.16
57	217.91	218.71
58	233.46	221.15
59	240.69	222.1
60	247.76	223.04
61	307.29	229.91
62	320.06	231.22
63	327.36	232.12
64	333.58	232.91
65	337.33	233.48
66	343.76	234.21
67	352.76	235.13
68	383.43	238.38
69	409.02	241.63
70	424.25	243.46
71	438.67	245.69
72	462.12	249.41
73	479.52	252.86
74	494.13	255.81
75	509.72	258.93
76	529.42	262.71
77	555.81	267.35
78	576.24	270.8
79	581.21	271.8
80	585.26	272.67
81	588.93	273.54
82	592.12	274.31
83	898.87	273.0

Stratigrafia

c: coesione; Fi: Angolo di attrito; G: Peso Specifico; Gs: Peso Specifico Saturo

Strato	c (kg/cm²)	Fi (°)	G (Kg/m³)	Gs (Kg/m³)	Litologia
1	0.04	17.1	1958	1978	
2	0	36	1900	1950	
3	0.4	20.8	2100	2110	

Risultati analisi pendio [A2+M2+R2]

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Fs minimo individuato	1.13
Ascissa centro superficie	396.21 m
Ordinata centro superficie	700.55 m
Raggio superficie	455.26 m

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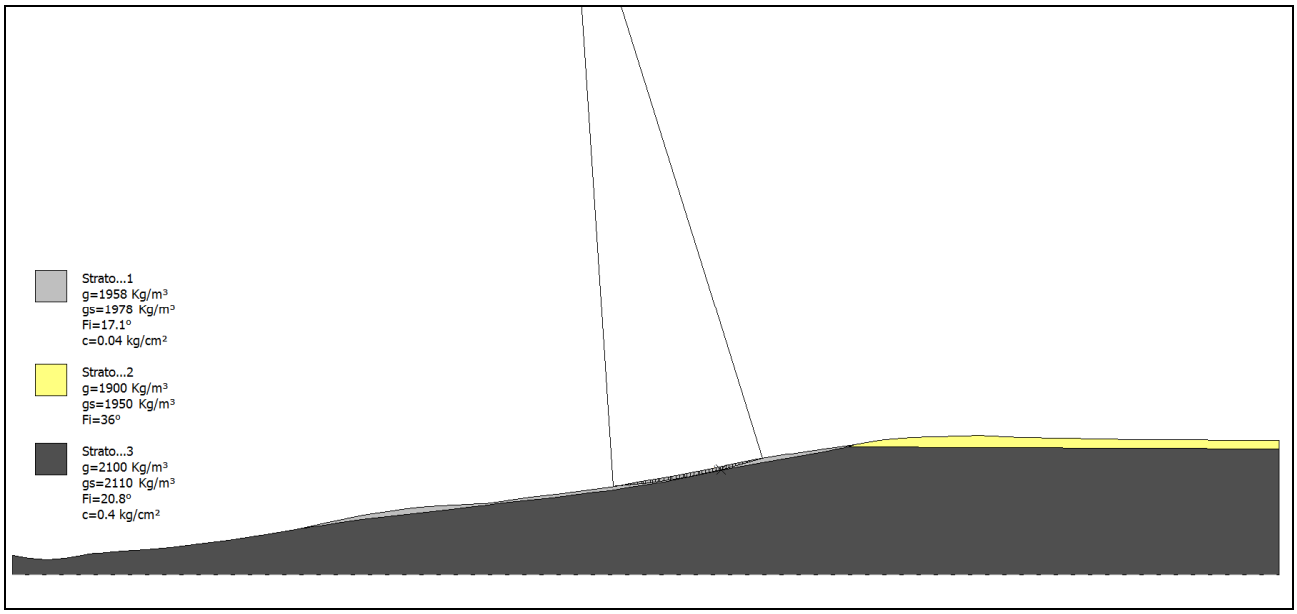
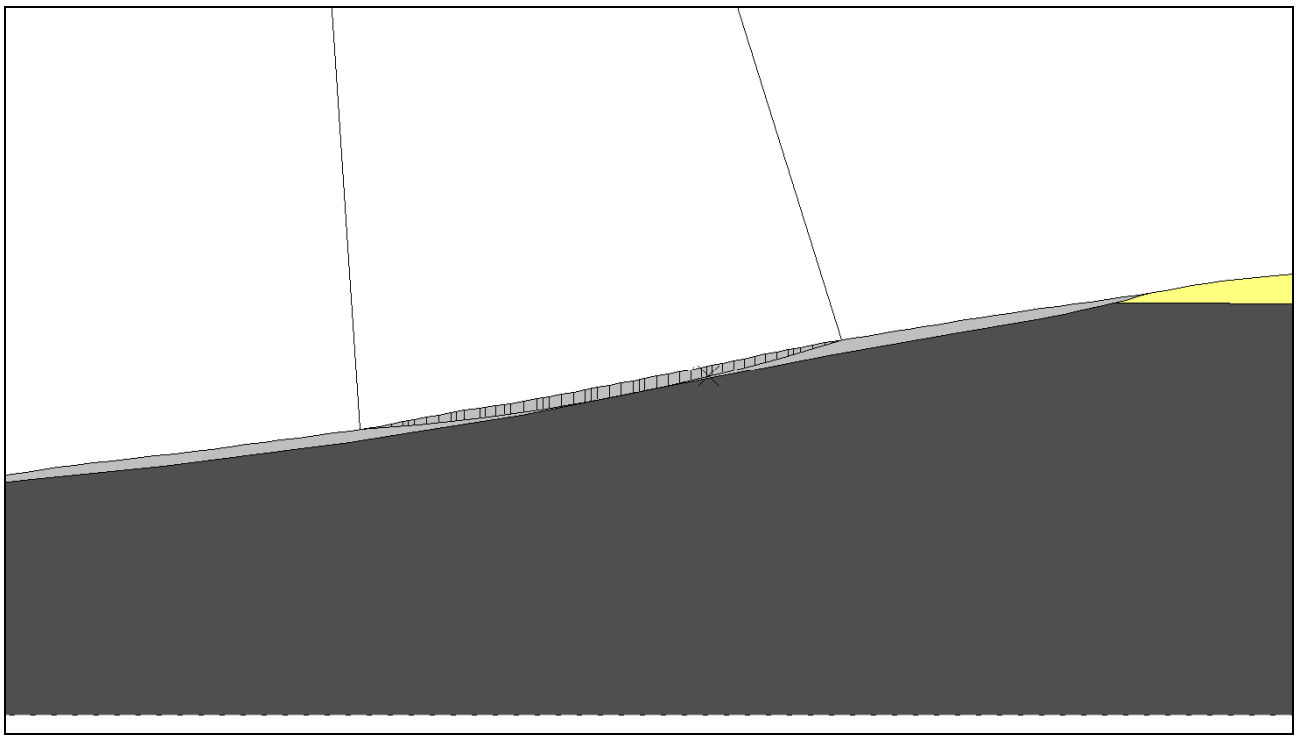
Analisi dei conci. Superficie...xc = 396.207 yc = 700.547 Rc = 455.26 Fs=1.1271

Nr.	B m	Alfa (°)	Li m	Wi (Kg)	Kh•Wi (Kg)	Kv•Wi (Kg)	c (kg/cm²)	Fi (°)	Ui (Kg)	N'i (Kg)	Ti (Kg)
1	1.28	3.9	1.28	139.9	13.5	6.74	0.03	13.8	0.0	113.7	389.0
2	2.88	4.2	2.89	1455.37	140.44	70.15	0.03	13.8	0.0	1377.6	1120.6
3	2.67	4.5	2.68	2861.23	276.11	137.91	0.03	13.8	0.0	2762.4	1363.6
4	2.6	4.9	2.61	4232.22	408.41	203.99	0.03	13.8	0.0	4108.4	1637.9
5	1.14	5.1	1.14	2297.32	221.69	110.73	0.03	13.8	0.0	2234.1	812.2
6	1.4	5.2	1.41	3200.25	308.82	154.25	0.03	13.8	0.0	3114.5	1079.7
7	2.65	5.5	2.66	7073.88	682.63	340.96	0.03	13.8	0.0	6888.9	2260.0
8	2.6	5.8	2.61	8158.91	787.33	393.26	0.03	13.8	0.0	7948.2	2477.5
9	2.71	6.2	2.73	9675.5	933.69	466.36	0.03	13.8	0.0	9425.6	2832.0
10	1.21	6.4	1.21	4631.04	446.9	223.22	0.03	13.8	0.0	4510.7	1329.5
11	1.7	6.6	1.72	6822.29	658.35	328.83	0.03	13.8	0.0	6643.5	1937.6
12	3.47	6.9	3.5	14500.74	1399.32	698.94	0.03	13.8	0.0	14112.3	4073.8
13	1.17	7.2	1.18	4982.33	480.79	240.15	0.03	13.8	0.0	4845.7	1392.0
14	2.29	7.4	2.31	9913.26	956.63	477.82	0.03	13.8	0.0	9636.8	2760.7
15	1.93	7.7	1.95	8492.28	819.51	409.33	0.03	13.8	0.0	8250.7	2355.7
16	1.29	7.9	1.3	5719.29	551.91	275.67	0.03	13.8	0.0	5554.4	1581.4
17	2.97	8.2	3.0	13492.78	1302.05	650.35	0.03	13.8	0.0	13097.6	3711.8
18	2.85	8.6	2.88	13347.16	1288.0	643.33	0.03	13.8	0.0	12948.8	3645.6
19	1.35	8.8	1.36	6454.84	622.89	311.12	0.03	13.8	0.0	6259.8	1754.2
20	1.37	9.0	1.39	6664.12	643.09	321.21	0.03	13.8	0.0	6461.3	1805.1
21	2.67	9.3	2.71	13241.7	1277.82	638.25	0.03	13.8	0.0	12834.5	3570.4
22	2.62	9.6	2.66	13305.81	1284.01	641.34	0.03	13.8	0.0	12891.3	3569.2
23	2.66	9.9	2.7	13747.25	1326.61	662.62	0.03	13.8	0.0	13313.2	3673.6
24	1.25	10.2	1.27	6496.32	626.9	313.12	0.03	13.8	0.0	6289.1	1732.7
25	1.37	10.3	1.4	7193.93	694.21	346.75	0.03	13.8	0.0	6962.9	1916.8
26	2.6	10.6	2.65	13686.53	1320.75	659.69	0.03	13.8	0.0	13242.4	3642.5
27	2.6	10.9	2.65	13714.03	1323.4	661.02	0.03	13.8	0.0	13262.9	3647.8
28	2.6	11.3	2.65	13661.98	1318.38	658.51	0.03	13.8	0.0	13206.0	3636.2
29	1.39	11.5	1.42	7272.85	701.83	350.55	0.03	13.8	0.0	7027.3	1938.4
30	1.23	11.7	1.25	6347.51	612.53	305.95	0.03	13.8	0.0	6131.4	1694.1
31	2.57	11.9	2.63	13157.75	1269.72	634.2	0.03	13.8	0.0	12704.4	3519.8
32	2.53	12.3	2.59	12721.09	1227.59	613.16	0.03	13.8	0.0	12275.7	3415.5
33	2.51	12.6	2.57	12348.14	1191.6	595.18	0.03	13.8	0.0	11908.5	3330.4
34	2.46	12.9	2.52	11801.76	1138.87	568.85	0.03	13.8	0.0	11374.3	3200.1
35	2.37	13.2	2.43	11088.62	1070.05	534.47	0.03	13.8	0.0	10680.2	3023.2
36	1.13	13.5	1.16	5179.89	499.86	249.67	0.03	13.8	0.0	4986.7	1418.5
37	1.27	13.6	1.31	5731.17	553.06	276.24	0.03	13.8	0.0	5515.3	1575.4
38	2.31	13.8	2.38	10171.59	981.56	490.27	0.03	13.8	0.0	9783.1	2811.6
39	2.31	14.1	2.38	9830.38	948.63	473.82	0.03	13.8	0.0	9447.5	2739.2
40	2.34	14.4	2.42	9536.05	920.23	459.64	0.03	13.8	0.0	9155.7	2685.2
41	2.32	14.7	2.4	8970.39	865.64	432.37	0.03	13.8	0.0	8602.3	2559.4
42	2.36	15.0	2.44	8559.68	826.01	412.58	0.03	13.8	0.0	8196.0	2483.4
43	2.43	15.4	2.52	8095.5	781.22	390.2	0.03	13.8	0.0	7734.9	2404.4
44	2.56	15.7	2.66	7561.24	729.66	364.45	0.03	13.8	0.0	7200.2	2327.1
45	1.12	15.9	1.17	2951.81	284.85	142.28	0.03	13.8	0.0	2800.6	942.7
46	1.51	16.1	1.57	3592.97	346.72	173.18	0.03	13.8	0.0	3396.9	1187.4
47	2.73	16.4	2.85	5307.13	512.14	255.8	0.03	13.8	0.0	4974.9	1894.1
48	2.82	16.7	2.94	3687.23	355.82	177.72	0.03	13.8	0.0	3377.1	1573.4
49	1.4	17.0	1.46	1083.7	104.58	52.23	0.03	13.8	0.0	943.4	620.5
50	2.11	17.2	2.21	632.73	61.06	30.5	0.03	13.8	0.0	437.8	723.9


Strato...1
g=1958 Kg/m³
gs=1978 Kg/m³
Fi=17.1°
c=0.04 kg/cm²
Strato...2
g=1900 Kg/m³
gs=1950 Kg/m³
Fi=36°
Strato...3
g=2100 Kg/m³
gs=2110 Kg/m³
Fi=20.8°
c=0.4 kg/cm²



VERIFICA DI STABILITÀ PRE-OPERAM IN PRESENZA DI FALDA ACQUIFERA

Analisi di stabilità dei pendii con BISHOP

==========

Numero di strati	3.0
Numero dei conci	50.0
Coefficiente di sicurezza [R2]	1.1

Superficie di forma circolare

==========

Maglia dei Centri

==========

Ascissa vertice sinistro inferiore xi	303.98 m
Ordinata vertice sinistro inferiore yi	640.31 m
Ascissa vertice destro superiore xs	567.49 m
Ordinata vertice destro superiore ys	774.17 m
Passo di ricerca	10.0
Numero di celle lungo x	10.0
Numero di celle lungo y	10.0

==========

Coefficienti sismici [N.T.C.] 2018

==========

Dati generali

Descrizione:	
Latitudine:	41.79
Longitudine:	15.0
Tipo di costruzione:	2 - Opere ordinarie
Classe d'uso:	Classe IV
Vita nominale:	50.0 [anni]
Vita di riferimento:	100.0 [anni]

Parametri sismici su sito di riferimento

Categoria sottosuolo:	C
Categoria topografica:	T1

S.L. Stato limite	TR Tempo ritorno [anni]	ag [m/s²]	F0 [-]	TC* [sec]
S.L.O.	60.0	0.78	2.47	0.31
S.L.D.	101.0	1.0	2.5	0.32
S.L.V.	949.0	2.57	2.45	0.35
S.L.C.	1950.0	3.33	2.44	0.36

Coefficienti sismici orizzontali e verticali

Opera: Stabilità dei pendii

S.L. Stato limite	amax [m/s²]	beta [-]	kh [-]	kv [sec]
S.L.O.	1.17	0.2	0.0239	0.0119
S.L.D.	1.5	0.24	0.0367	0.0184
S.L.V.	3.3789	0.28	0.0965	0.0482
S.L.C.	4.0055	0.28	0.1144	0.0572

Coefficiente azione sismica orizzontale	0.0965
Coefficiente azione sismica verticale	0.0482

Vertici profilo

N	X m	y m
1	0.0	197.5
2	2.8	197.0
3	5.3	196.5
4	8.22	196.0
5	11.74	195.5
6	16.83	195.0
7	24.5	194.8
8	31.8	195.0
9	36.7	195.5
10	40.27	196.0
11	43.32	196.5
12	46.34	197.0
13	48.92	197.5
14	51.71	198.0
15	54.7	198.5
16	58.06	199.0
17	61.69	199.5
18	66.18	200.0
19	71.71	200.5
20	78.55	201.0
21	86.56	201.5
22	94.19	202.0
23	100.74	202.5
24	106.49	203.0
25	111.66	203.5
26	116.35	204.0
27	120.49	204.5
28	124.42	205.0
29	128.29	205.5
30	132.39	206.0
31	136.57	206.5
32	140.66	207.0
33	144.92	207.5
34	149.28	208.0
35	153.21	208.5
36	156.78	209.0
37	160.08	209.5
38	163.31	210.0
39	166.54	210.5
40	169.77	211.0
41	172.99	211.5
42	176.28	212.0
43	179.62	212.5
44	182.9	213.0
45	186.1	213.5
46	189.17	214.0
47	192.18	214.5
48	195.09	215.0
49	197.92	215.5
50	200.66	216.0
51	203.22	216.5
52	205.66	217.0
53	208.05	217.5
54	210.34	218.0
55	212.62	218.5
56	214.88	219.0

57	217.17	219.5
58	219.48	220.0
59	221.75	220.5
60	224.07	221.0
61	226.56	221.5
62	229.06	222.0
63	231.58	222.5
64	234.01	223.0
65	236.43	223.5
66	238.82	224.0
67	241.13	224.5
68	243.53	225.0
69	246.21	225.5
70	249.11	226.0
71	252.15	226.5
72	255.4	227.0
73	258.91	227.5
74	262.65	228.0
75	266.35	228.5
76	269.73	229.0
77	272.95	229.5
78	276.33	230.0
79	280.15	230.5
80	284.47	231.0
81	289.29	231.5
82	295.24	232.0
83	303.21	232.5
84	313.76	233.0
85	324.03	233.5
86	330.57	234.0
87	335.39	234.5
88	339.53	235.0
89	343.21	235.5
90	346.65	236.0
91	350.02	236.5
92	353.28	237.0
93	356.66	237.5
94	360.18	238.0
95	363.87	238.5
96	367.94	239.0
97	372.26	239.5
98	376.81	240.0
99	381.5	240.5
100	385.96	241.0
101	390.16	241.5
102	394.06	242.0
103	397.87	242.5
104	401.6	243.0
105	405.31	243.5
106	409.09	244.0
107	413.03	244.5
108	416.97	245.0
109	420.84	245.5
110	424.63	246.0
111	427.86	246.5
112	430.74	247.0
113	433.41	247.5
114	436.01	248.0
115	438.55	248.5

116	441.2	249.0
117	443.8	249.5
118	446.51	250.0
119	449.42	250.5
120	452.89	251.0
121	456.35	251.5
122	459.57	252.0
123	462.54	252.5
124	465.39	253.0
125	468.11	253.5
126	470.78	254.0
127	473.4	254.5
128	476.06	255.0
129	478.68	255.5
130	481.28	256.0
131	483.88	256.5
132	486.48	257.0
133	489.1	257.5
134	491.67	258.0
135	494.2	258.5
136	496.71	259.0
137	499.17	259.5
138	501.54	260.0
139	503.94	260.5
140	506.25	261.0
141	508.56	261.5
142	510.9	262.0
143	513.22	262.5
144	515.58	263.0
145	518.01	263.5
146	520.57	264.0
147	523.2	264.5
148	525.93	265.0
149	528.75	265.5
150	531.7	266.0
151	534.73	266.5
152	537.82	267.0
153	540.89	267.5
154	543.97	268.0
155	547.1	268.5
156	550.2	269.0
157	553.31	269.5
158	556.38	270.0
159	559.5	270.5
160	562.69	271.0
161	565.95	271.5
162	569.31	272.0
163	572.75	272.5
164	576.24	273.0
165	579.82	273.5
166	583.43	274.0
167	587.01	274.5
168	590.6	275.0
169	594.19	275.5
170	597.66	276.0
171	600.71	276.5
172	603.53	277.0
173	606.36	277.5
174	609.29	278.0

175	612.35	278.5
176	615.69	279.0
177	619.63	279.5
178	625.11	280.0
179	631.56	280.5
180	639.06	281.0
181	652.18	281.5
182	676.46	282.0
183	685.18	282.3
184	694.53	282.0
185	705.41	281.5
186	715.37	281.0
187	744.97	280.5
188	771.22	280.0
189	797.74	279.5
190	898.87	279.0

Falda

Nr.	X m	y m
1	0.0	197.5
2	2.8	197.0
3	5.3	196.5
4	8.22	196.0
5	11.74	195.5
6	16.83	195.0
7	24.5	194.8
8	31.8	195.0
9	36.7	195.5
10	40.27	196.0
11	43.32	196.5
12	46.34	197.0
13	48.92	197.5
14	51.71	198.0
15	54.7	198.5
16	58.06	199.0
17	61.69	199.5
18	66.18	200.0
19	71.71	200.5
20	78.55	201.0
21	86.56	201.5
22	94.19	202.0
23	100.74	202.5
24	106.49	203.0
25	111.66	203.5
26	116.35	204.0
27	120.49	204.5
28	124.42	205.0
29	128.29	205.5
30	132.39	206.0
31	136.57	206.5
32	140.66	207.0
33	144.92	207.5
34	149.28	208.0
35	153.21	208.5
36	156.78	209.0
37	160.08	209.5
38	163.31	210.0
39	166.54	210.5

40	169.77	211.0
41	172.99	211.5
42	176.28	212.0
43	179.62	212.5
44	182.9	213.0
45	186.1	213.5
46	189.17	214.0
47	192.18	214.5
48	195.09	215.0
49	197.92	215.5
50	200.66	216.0
51	203.22	216.5
52	205.66	217.0
53	208.05	217.5
54	210.34	218.0
55	212.62	218.5
56	214.88	219.0
57	217.17	219.5
58	219.48	220.0
59	221.75	220.5
60	224.07	221.0
61	226.56	221.5
62	229.06	222.0
63	231.58	222.5
64	234.01	223.0
65	236.43	223.5
66	238.82	224.0
67	241.13	224.5
68	243.53	225.0
69	246.21	225.5
70	249.11	226.0
71	252.15	226.5
72	255.4	227.0
73	258.91	227.5
74	262.65	228.0
75	266.35	228.5
76	269.73	229.0
77	272.95	229.5
78	276.33	230.0
79	280.15	230.5
80	284.47	231.0
81	289.29	231.5
82	295.24	232.0
83	303.21	232.5
84	313.76	233.0
85	324.03	233.5
86	330.57	234.0
87	335.39	234.5
88	339.53	235.0
89	343.21	235.5
90	346.65	236.0
91	350.02	236.5
92	353.28	237.0
93	356.66	237.5
94	360.18	238.0
95	363.87	238.5
96	367.94	239.0
97	372.26	239.5
98	376.81	240.0

99	381.5	240.5
100	385.96	241.0
101	390.16	241.5
102	394.06	242.0
103	397.87	242.5
104	401.6	243.0
105	405.31	243.5
106	409.09	244.0
107	413.03	244.5
108	416.97	245.0
109	420.84	245.5
110	424.63	246.0
111	427.86	246.5
112	430.74	247.0
113	433.41	247.5
114	436.01	248.0
115	438.55	248.5
116	441.2	249.0
117	443.8	249.5
118	446.51	250.0
119	449.42	250.5
120	452.89	251.0
121	456.35	251.5
122	459.57	252.0
123	462.54	252.5
124	465.39	253.0
125	468.11	253.5
126	470.78	254.0
127	473.4	254.5
128	476.06	255.0
129	478.68	255.5
130	481.28	256.0
131	483.88	256.5
132	486.48	257.0
133	489.1	257.5
134	491.67	258.0
135	494.2	258.5
136	496.71	259.0
137	499.17	259.5
138	501.54	260.0
139	503.94	260.5
140	506.25	261.0
141	508.56	261.5
142	510.9	262.0
143	513.22	262.5
144	515.58	263.0
145	518.01	263.5
146	520.57	264.0
147	523.2	264.5
148	525.93	265.0
149	528.75	265.5
150	531.7	266.0
151	534.73	266.5
152	537.82	267.0
153	540.89	267.5
154	543.97	268.0
155	547.1	268.5
156	550.2	269.0
157	553.31	269.5

158	556.38	270.0
159	559.5	270.5
160	562.69	271.0
161	565.95	271.5
162	569.31	272.0
163	572.75	272.5
164	576.24	273.0
165	579.82	273.5
166	583.43	274.0
167	587.01	274.5
168	590.6	275.0
169	594.19	275.5
170	597.66	276.0
171	600.71	276.5
172	603.53	277.0
173	606.36	277.5
174	609.29	278.0
175	612.35	278.5
176	615.69	279.0
177	619.63	279.5
178	625.11	280.0
179	631.56	280.5
180	639.06	281.0
181	652.18	281.5
182	676.46	282.0
183	685.18	282.3
184	694.53	282.0
185	705.41	281.5
186	715.37	281.0
187	744.97	280.5
188	771.22	280.0
189	797.74	279.5
190	898.87	279.0

Vertici strato 1

N	X m	y m
1	0.0	197.5
2	2.8	197.0
3	5.3	196.5
4	8.22	196.0
5	11.74	195.5
6	16.83	195.0
7	24.5	194.8
8	31.8	195.0
9	36.7	195.5
10	40.27	196.0
11	43.32	196.5
12	46.34	197.0
13	48.92	197.5
14	51.71	198.0
15	54.7	198.5
16	58.06	199.0
17	61.69	199.5
18	66.18	200.0
19	71.71	200.5
20	78.55	201.0
21	86.56	201.5
22	94.19	202.0

23	100.74	202.5
24	106.49	203.0
25	111.66	203.5
26	116.35	204.0
27	120.49	204.5
28	124.42	205.0
29	128.29	205.5
30	132.39	206.0
31	136.57	206.5
32	140.66	207.0
33	144.92	207.5
34	149.28	208.0
35	153.21	208.5
36	156.78	209.0
37	160.08	209.5
38	163.31	210.0
39	166.54	210.5
40	169.77	211.0
41	172.99	211.5
42	176.28	212.0
43	179.62	212.5
44	182.9	213.0
45	186.1	213.5
46	189.17	214.0
47	192.18	214.5
48	195.09	215.0
49	197.92	215.5
50	200.66	216.0
51	203.22	216.5
52	205.66	217.0
53	207.84	217.21
54	210.13	217.46
55	212.28	217.86
56	214.62	218.16
57	217.91	218.71
58	233.46	221.15
59	240.69	222.1
60	247.76	223.04
61	307.29	229.91
62	320.06	231.22
63	327.36	232.12
64	333.58	232.91
65	337.33	233.48
66	343.76	234.21
67	352.76	235.13
68	383.43	238.38
69	409.02	241.63
70	424.25	243.46
71	438.67	245.69
72	462.12	249.41
73	479.52	252.86
74	494.13	255.81
75	509.72	258.93
76	529.42	262.71
77	555.81	267.35
78	576.24	270.8
79	581.21	271.8
80	585.26	272.67
81	588.93	273.54

82	592.12	274.31
83	594.73	274.89
84	597.63	275.76
85	600.71	276.5
86	603.53	277.0
87	606.36	277.5
88	609.29	278.0
89	612.35	278.5
90	615.69	279.0
91	619.63	279.5
92	625.11	280.0
93	631.56	280.5
94	639.06	281.0
95	652.18	281.5
96	676.46	282.0
97	685.18	282.3
98	694.53	282.0
99	705.41	281.5
100	715.37	281.0
101	744.97	280.5
102	771.22	280.0
103	797.74	279.5
104	898.87	279.0

Vertici strato 2

N	X m	y m
1	0.0	197.5
2	2.8	197.0
3	5.3	196.5
4	8.22	196.0
5	11.74	195.5
6	16.83	195.0
7	24.5	194.8
8	31.8	195.0
9	36.7	195.5
10	40.27	196.0
11	43.32	196.5
12	46.34	197.0
13	48.92	197.5
14	51.71	198.0
15	54.7	198.5
16	58.06	199.0
17	61.69	199.5
18	66.18	200.0
19	71.71	200.5
20	78.55	201.0
21	86.56	201.5
22	94.19	202.0
23	100.74	202.5
24	106.49	203.0
25	111.66	203.5
26	116.35	204.0
27	120.49	204.5
28	124.42	205.0
29	128.29	205.5
30	132.39	206.0
31	136.57	206.5
32	140.66	207.0

33	144.92	207.5
34	149.28	208.0
35	153.21	208.5
36	156.78	209.0
37	160.08	209.5
38	163.31	210.0
39	166.54	210.5
40	169.77	211.0
41	172.99	211.5
42	176.28	212.0
43	179.62	212.5
44	182.9	213.0
45	186.1	213.5
46	189.17	214.0
47	192.18	214.5
48	195.09	215.0
49	197.92	215.5
50	200.66	216.0
51	203.22	216.5
52	205.66	217.0
53	207.84	217.21
54	210.13	217.46
55	212.28	217.86
56	214.62	218.16
57	217.91	218.71
58	233.46	221.15
59	240.69	222.1
60	247.76	223.04
61	307.29	229.91
62	320.06	231.22
63	327.36	232.12
64	333.58	232.91
65	337.33	233.48
66	343.76	234.21
67	352.76	235.13
68	383.43	238.38
69	409.02	241.63
70	424.25	243.46
71	438.67	245.69
72	462.12	249.41
73	479.52	252.86
74	494.13	255.81
75	509.72	258.93
76	529.42	262.71
77	555.81	267.35
78	576.24	270.8
79	581.21	271.8
80	585.26	272.67
81	588.93	273.54
82	592.12	274.31
83	898.87	273.0

Stratigrafia

c: coesione; Fi: Angolo di attrito; G: Peso Specifico; Gs: Peso Specifico Saturo

Strato	c (kg/cm²)	Fi (°)	G (Kg/m³)	Gs (Kg/m³)	Litologia
1	0.04	17.1	1958	1978	
2	0	36	1900	1950	
3	0.4	20.8	2100	2110	

Risultati analisi pendio [A2+M2+R2]

Fs minimo individuato	0.7
Ascissa centro superficie	435.73 m
Ordinata centro superficie	693.85 m
Raggio superficie	441.02 m

B: Larghezza del concio; Alfa: Angolo di inclinazione della base del concio; Li: Lunghezza della base del concio; Wi: Peso del concio ; Ui: Forze derivanti dalle pressioni neutre; Ni: forze agenti normalmente alla direzione di scivolamento; Ti: forze agenti parallelamente alla superficie di scivolamento; Fi: Angolo di attrito; c: coesione.

Analisi dei conci. Superficie...xc = 435.733 yc = 693.854 Rc = 441.021 Fs=0.7041

Nr.	B m	Alfa (°)	Li m	Wi (Kg)	Kh•Wi (Kg)	Kv•Wi (Kg)	c (kg/cm²)	Fi (°)	Ui (Kg)	N'i (Kg)	Ti (Kg)
1	0.52	4.9	0.52	28.25	2.73	1.36	0.03	13.8	27.5	-6.0	234.9
2	2.66	5.1	2.67	491.27	47.41	23.68	0.03	13.8	188.9	373.8	1344.4
3	2.62	5.4	2.63	2313.85	223.29	111.53	0.03	13.8	446.5	1002.5	1546.6
4	1.1	5.7	1.1	1347.28	130.01	64.94	0.03	13.8	621.7	599.1	709.8
5	1.5	5.8	1.51	2204.66	212.75	106.26	0.03	13.8	740.9	990.3	1033.4
6	2.6	6.1	2.61	4737.34	457.15	228.34	0.03	13.8	921.2	2148.4	1939.4
7	1.07	6.3	1.07	2266.65	218.73	109.25	0.03	13.8	1074.0	1033.3	849.1
8	1.53	6.5	1.54	3571.08	344.61	172.13	0.03	13.8	1177.7	1632.1	1271.8
9	2.62	6.8	2.64	6909.22	666.74	333.02	0.03	13.8	1333.2	3166.1	2305.9
10	1.02	7.0	1.03	2945.32	284.22	141.96	0.03	13.8	1462.2	1351.7	938.8
11	1.55	7.2	1.56	4763.87	459.71	229.62	0.03	13.8	1552.2	2188.0	1475.7
12	2.53	7.5	2.55	8462.08	816.59	407.87	0.03	13.8	1690.9	3890.1	2519.5
13	1.09	7.7	1.1	3898.87	376.24	187.93	0.03	13.8	1808.9	1793.1	1126.6
14	1.42	7.9	1.43	5303.19	511.76	255.61	0.03	13.8	1887.7	2439.4	1504.4
15	2.46	8.1	2.48	9766.3	942.45	470.74	0.03	13.8	2007.1	4492.9	2699.9
16	1.29	8.4	1.3	5418.59	522.89	261.18	0.03	13.8	2121.9	2492.8	1464.5
17	1.08	8.5	1.09	4687.3	452.32	225.93	0.03	13.8	2196.3	2156.4	1249.6
18	2.4	8.7	2.43	10900.66	1051.91	525.41	0.03	13.8	2296.2	5014.0	2856.3
19	2.31	9.0	2.34	11092.6	1070.44	534.66	0.03	13.8	2427.7	5100.4	2846.0
20	1.11	9.3	1.12	5518.09	532.5	265.97	0.03	13.8	2522.0	2536.5	1396.1
21	1.2	9.4	1.22	6147.67	593.25	296.32	0.03	13.8	2581.8	2825.2	1542.2
22	2.34	9.7	2.37	12331.21	1189.96	594.36	0.03	13.8	2664.2	5664.1	3058.8
23	2.32	10.0	2.36	12670.91	1222.74	610.74	0.03	13.8	2761.2	5815.6	3103.5
24	1.03	10.2	1.05	5758.45	555.69	277.56	0.03	13.8	2822.7	2641.3	1399.6
25	1.33	10.3	1.35	7513.65	725.07	362.16	0.03	13.8	2858.9	3444.6	1818.0
26	2.43	10.6	2.47	13950.92	1346.26	672.43	0.03	13.8	2902.5	6389.7	3357.2
27	1.41	10.8	1.44	8178.15	789.19	394.19	0.03	13.8	2926.8	3741.3	1961.5
28	1.15	11.0	1.17	3287.26	317.22	158.45	0.03	13.8	2929.6	3038.8	1593.5
29	2.63	11.3	2.68	15188.76	1465.72	732.1	0.03	13.8	2919.7	6932.0	3642.0
30	1.39	11.5	1.42	7973.51	769.44	384.32	0.03	13.8	2891.8	3632.6	1916.4
31	1.34	11.7	1.36	7560.55	729.59	364.42	0.03	13.8	2861.0	3439.9	1822.6
32	2.82	12.0	2.88	15603.45	1505.73	752.09	0.03	13.8	2797.3	7083.0	3786.2
33	1.02	12.2	1.04	5466.35	527.5	263.48	0.03	13.8	2721.7	2475.4	1337.5
34	1.93	12.4	1.98	10136.88	978.21	488.6	0.03	13.8	2649.0	4580.8	2501.7
35	1.51	12.7	1.55	7642.77	737.53	368.38	0.03	13.8	2553.9	3444.1	1908.7
36	1.52	12.9	1.56	7383.3	712.49	355.88	0.03	13.8	2460.5	3318.1	1867.1
37	1.93	13.1	1.98	8952.2	863.89	431.5	0.03	13.8	2344.4	4008.8	2302.2
38	1.16	13.3	1.19	5118.78	493.96	246.73	0.03	13.8	2231.9	2283.9	1339.9
39	3.07	13.6	3.16	12570.44	1213.05	605.9	0.03	13.8	2070.1	5576.2	3384.7
40	0.94	13.9	0.97	3551.87	342.76	171.2	0.03	13.8	1906.6	1565.1	988.0
41	2.14	14.1	2.2	7501.65	723.91	361.58	0.03	13.8	1773.8	3285.1	2150.1

42	1.31	14.3	1.35	4186.53	404.0	201.79	0.03	13.8	1616.4	1817.7	1249.6
43	1.82	14.5	1.88	5274.11	508.95	254.21	0.03	13.8	1464.6	2267.4	1647.3
44	1.63	14.7	1.68	4156.46	401.1	200.34	0.03	13.8	1291.5	1761.9	1380.5
45	1.47	14.9	1.52	3294.92	317.96	158.81	0.03	13.8	1130.9	1373.1	1172.9
46	1.97	15.2	2.05	3688.97	355.99	177.81	0.03	13.8	944.5	1495.8	1452.7
47	1.14	15.4	1.18	1728.7	166.82	83.32	0.03	13.8	769.7	674.4	771.0
48	3.07	15.7	3.19	3198.58	308.66	154.17	0.03	13.8	526.7	1125.7	1842.7
49	0.97	15.9	1.0	540.46	52.15	26.05	0.03	13.8	282.9	134.1	503.5
50	1.72	16.1	1.79	381.77	36.84	18.4	0.03	13.8	112.0	-35.7	803.1