

technical Engineering\Soil Mechanics\ver Mechanics\verruijt\Soil Mechanics\SPWa , Mechanics\verruijt\Soil Mechanics\

**General Data**

Licensed User : technical Engineering\Soil Mechanics\ver Mechanics\verruijt\Soil Mechanics\SPWa

**Data of Layers**

Step 0, Left side

Layer	Top (m)	Bottom (m)	Wd (kN/m <sup>3</sup> )	Ws (kN/m <sup>3</sup> )	Zw (m)	Cap (m)	q (kN/m <sup>2</sup> )	c (kN/m <sup>2</sup> )	Ka (-)	Kp (-)	Kn (-)	Dw (m)
1	0.000	1.000	17.160	17.160	4.000	0.000	10.000	0.000	0.333	3.260	0.500	0.056
2	1.000	4.000	17.160	17.160	4.000	0.000	10.000	0.000	0.333	3.260	0.500	0.056
3	4.000	5.000	20.600	20.600	1.000	0.000	10.000	0.000	0.270	4.000	0.426	0.018
4	5.000	7.000	20.600	20.600	1.000	0.000	10.000	0.000	0.270	4.000	0.426	0.018
5	7.000	12.000	20.600	20.600	1.000	0.000	10.000	0.000	0.270	4.000	0.426	0.018

Step 0, Right side

Layer	Top (m)	Bottom (m)	Wd (kN/m <sup>3</sup> )	Ws (kN/m <sup>3</sup> )	Zw (m)	Cap (m)	q (kN/m <sup>2</sup> )	c (kN/m <sup>2</sup> )	Ka (-)	Kp (-)	Kn (-)	Dw (m)
1	0.000	1.000	17.160	17.160	4.000	0.000	10.000	0.000	0.333	3.260	1.000	0.056
2	1.000	4.000	17.160	17.160	4.000	0.000	10.000	0.000	0.333	3.260	0.500	0.056
3	4.000	5.000	20.600	20.600	1.000	0.000	10.000	0.000	0.270	4.000	0.426	0.018
4	5.000	7.000	20.600	20.600	1.000	0.000	10.000	0.000	0.270	4.000	0.426	0.018
5	7.000	12.000	20.600	20.600	1.000	0.000	10.000	0.000	0.270	4.000	0.426	0.018

Step 1, Left side

Layer	Top (m)	Bottom (m)	Wd (kN/m <sup>3</sup> )	Ws (kN/m <sup>3</sup> )	Zw (m)	Cap (m)	q (kN/m <sup>2</sup> )	c (kN/m <sup>2</sup> )	Ka (-)	Kp (-)	Kn (-)	Dw (m)
1	0.000	1.000	0.000	10.000	5.000	0.000	0.000	0.000	1.000	1.000	1.000	1.000
2	1.000	4.000	0.000	10.000	5.000	0.000	0.000	0.000	1.000	1.000	1.000	1.000
3	4.000	5.000	0.000	10.000	5.000	0.000	0.000	0.000	1.000	1.000	1.000	1.000
4	5.000	7.000	0.000	10.000	5.000	0.000	0.000	0.000	1.000	1.000	1.000	1.000
5	7.000	12.000	20.600	20.600	5.000	0.000	0.000	0.000	0.270	4.000	0.426	0.018

Step 1, Right side

Layer	Top (m)	Bottom (m)	Wd (kN/m <sup>3</sup> )	Ws (kN/m <sup>3</sup> )	Zw (m)	Cap (m)	q (kN/m <sup>2</sup> )	c (kN/m <sup>2</sup> )	Ka (-)	Kp (-)	Kn (-)	Dw (m)
1	0.000	1.000	17.160	17.160	4.000	0.000	10.000	0.000	0.333	3.260	1.000	0.056
2	1.000	4.000	17.160	17.160	4.000	0.000	10.000	0.000	0.333	3.260	0.500	0.056
3	4.000	5.000	20.600	20.600	1.000	0.000	10.000	0.000	0.270	4.000	0.426	0.018
4	5.000	7.000	20.600	20.600	1.000	0.000	10.000	0.000	0.270	4.000	0.426	0.018
5	7.000	12.000	20.600	20.600	1.000	0.000	10.000	0.000	0.270	4.000	0.426	0.018

**Data of Anchors and Lateral Forces**

Step 0 :

Point	Fx (kN/m)	Fa (kN/m)	Fw (m)
0	0.000	0.000	1.000
1	0.000	0.000	1.000
2	0.000	0.000	1.000
3	0.000	0.000	1.000
4	0.000	0.000	1.000
5	0.000	0.000	1.000

Step 1 :

Point	Fx (kN/m)	Fa (kN/m)	Fw (m)
0	0.000	0.000	1.000
1	0.000	500.000	-0.020
2	0.000	0.000	1.000
3	0.000	0.000	1.000
4	0.000	0.000	1.000
5	0.000	0.000	1.000

**Data of Axial Forces and Moment**

Step	NA (kN/m)	NB (kN/m)	MA (kNm/m)
0	0.000	0.000	0.000
1	0.000	0.000	0.000

**Catalogue of Profiles**

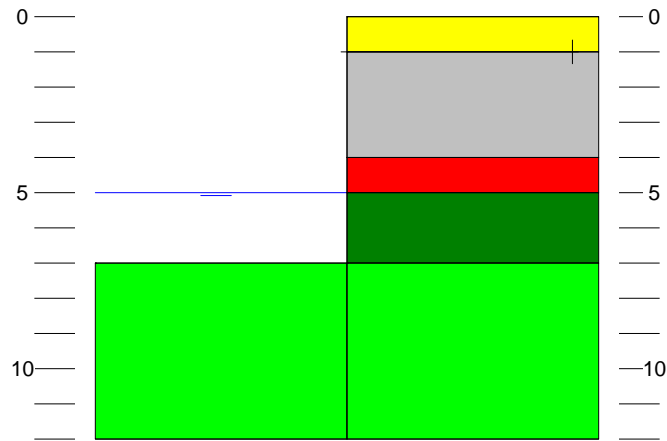
No	Profile Name	Area (m <sup>2</sup> /m)	Weight (kN/m <sup>3</sup> )	E (GN/m <sup>2</sup> )	h (m)	i (m)	EI (kNm <sup>2</sup> /m)
1	Larssen 20	0.010100	78.000	210.000	0.220000	0.080800	13847.2
2	Larssen 21	0.012100	78.000	210.000	0.220000	0.079800	16181.2
3	Larssen 22	0.015500	78.000	210.000	0.340000	0.117000	44557.7
4	Larssen 23	0.019700	78.000	210.000	0.420000	0.146000	88184.3
5	Larssen 24	0.022300	78.000	210.000	0.420000	0.153000	109624.3
6	Larssen 25	0.026200	78.000	210.000	0.420000	0.156100	134068.4
7	Larssen 61	0.012000	78.000	210.000	0.150000	0.056570	8064.4
8	Larssen 62	0.014000	78.000	210.000	0.310000	0.113000	37540.9
9	Larssen 31	0.012700	78.000	210.000	0.150000	0.052100	7239.3
10	Larssen 32	0.015500	78.000	210.000	0.250000	0.082600	22208.1
11	Larssen 42	0.015500	78.000	210.000	0.210000	0.075900	18751.4
12	Larssen 43	0.020800	78.000	210.000	0.410000	0.127000	70451.5
13	Larssen 45	0.025400	78.000	210.000	0.410000	0.124000	82015.6
14	Hoesch 95	0.012000	78.000	210.000	0.190000	0.076800	14863.6
15	Hoesch 116	0.014800	78.000	210.000	0.250000	0.101000	31704.7
16	Hoesch 122	0.015500	78.000	210.000	0.190000	0.075900	18751.4
17	Hoesch 134	0.017100	78.000	210.000	0.300000	0.122000	53448.4
18	Hoesch 155	0.019700	78.000	210.000	0.300000	0.123000	62588.7
19	Hoesch 175	0.022300	78.000	210.000	0.340000	0.141000	93102.7
20	Hoesch 215	0.027400	78.000	210.000	0.340000	0.140000	112778.4

**Cross Sections**

Step 0 :



Step 1 :



Results after Step 1 :

i	z (m)	w (m)	M (kNm)	Q- (kN)	Q+ (kN)	F (kN)	f (kN/m <sup>2</sup> )
0	0.000000	0.112435	0.000000	0.000000	0.000000	0.000000	0.000000
1	0.125000	0.097298	0.282003	-4.512044	-4.512044	0.000000	-36.096352
2	0.250000	0.082161	1.182641	-9.898175	-9.898175	0.000000	-43.089048
3	0.375000	0.067022	2.811177	-16.158394	-16.158394	0.000000	-50.081752
4	0.500000	0.051880	5.276870	-23.292700	-23.292700	0.000000	-57.074448
5	0.625000	0.036732	8.688982	-31.301094	-31.301094	0.000000	-64.067152
6	0.750000	0.021574	13.031396	-38.177523	-38.177523	0.000000	-55.011432
7	0.875000	0.006400	18.127383	-43.358273	-43.358273	0.000000	-41.446000
8	1.000000	-0.008794	23.738228	-46.415240	173.426380	219.841620	-24.455736
9	1.120000	-0.023398	3.018626	171.900324	171.900324	0.000000	-12.717133
10	1.240000	-0.038006	-17.512913	170.291982	170.291982	0.000000	-13.402850
11	1.360000	-0.052595	-37.846513	168.601354	168.601354	0.000000	-14.088567
12	1.480000	-0.067145	-57.972301	166.828441	166.828441	0.000000	-14.774275
13	1.600000	-0.081635	-77.880402	164.973242	164.973242	0.000000	-15.459992
14	1.720000	-0.096044	-97.560942	163.035757	163.035757	0.000000	-16.145708
15	1.840000	-0.110352	-117.004046	161.015987	161.015987	0.000000	-16.831417
16	1.960000	-0.124538	-136.199841	158.913931	158.913931	0.000000	-17.517133
17	2.080000	-0.138582	-155.138453	156.729590	156.729590	0.000000	-18.202842
18	2.200000	-0.152465	-173.810006	154.462963	154.462963	0.000000	-18.888558
19	2.320000	-0.166168	-192.204627	152.114050	152.114050	0.000000	-19.574275
20	2.440000	-0.179671	-210.312441	149.682852	149.682852	0.000000	-20.259983
21	2.560000	-0.192955	-228.123574	147.169368	147.169368	0.000000	-20.945700
22	2.680000	-0.206002	-245.628152	144.573598	144.573598	0.000000	-21.631417
23	2.800000	-0.218793	-262.816300	141.895543	141.895543	0.000000	-22.317125
24	2.920000	-0.231311	-279.678145	139.135202	139.135202	0.000000	-23.002842
25	3.040000	-0.243539	-296.203811	136.292575	136.292575	0.000000	-23.688558
26	3.160000	-0.255459	-312.383426	133.367663	133.367663	0.000000	-24.374267
27	3.280000	-0.267053	-328.207113	130.360465	130.360465	0.000000	-25.059983
28	3.400000	-0.278307	-343.665000	127.270982	127.270982	0.000000	-25.745692
29	3.520000	-0.289203	-358.747212	124.099213	124.099213	0.000000	-26.431408
30	3.640000	-0.299727	-373.443874	120.845158	120.845158	0.000000	-27.117125
31	3.760000	-0.309862	-387.745113	117.508818	117.508818	0.000000	-27.802833
32	3.880000	-0.319594	-401.641053	114.090192	114.090192	0.000000	-28.488550
33	4.000000	-0.328908	-415.121822	110.589280	110.589280	0.000000	-29.174267
34	4.111111	-0.337149	-427.105524	105.117352	105.117352	0.000000	-49.247401
35	4.222222	-0.345008	-438.472412	99.486633	99.486633	0.000000	-50.676522
36	4.333333	-0.352477	-449.204843	93.697125	93.697125	0.000000	-52.105624
37	4.444444	-0.359545	-459.285173	87.748826	87.748826	0.000000	-53.534745
38	4.555555	-0.366204	-468.695760	81.641737	81.641737	0.000000	-54.963361
39	4.666667	-0.372446	-477.418960	75.375858	75.375858	0.000000	-56.392967
40	4.777778	-0.378261	-485.437129	68.951189	68.951189	0.000000	-57.822079
41	4.888889	-0.383645	-492.732625	62.367730	62.367730	0.000000	-59.251190
42	5.000000	-0.388589	-499.287803	55.625480	55.625480	0.000000	-60.680311

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43	5.125000	-0.393618	-505.738850	47.591271	47.591271	0.000000	-64.273672
44	5.250000	-0.398078	-511.182826	39.512343	39.512343	0.000000	-64.631424
45	5.375000	-0.401961	-515.614141	31.388696	31.388696	0.000000	-64.989176
46	5.500000	-0.405262	-519.027205	23.220330	23.220330	0.000000	-65.346928
47	5.625000	-0.407978	-521.416428	15.007246	15.007246	0.000000	-65.704672
48	5.750000	-0.410106	-522.776221	6.749443	6.749443	0.000000	-66.062424
49	5.875000	-0.411644	-523.100994	-1.553079	-1.553079	0.000000	-66.420176
50	6.000000	-0.412593	-522.385157	-9.900320	-9.900320	0.000000	-66.777928
51	6.125000	-0.412952	-520.623119	-18.292279	-18.292279	0.000000	-67.135672
52	6.250000	-0.412724	-517.809292	-26.728957	-26.728957	0.000000	-67.493424
53	6.375000	-0.411912	-513.938085	-35.210354	-35.210354	0.000000	-67.851176
54	6.500000	-0.410520	-509.003908	-43.736470	-43.736470	0.000000	-68.208928
55	6.625000	-0.408555	-503.001173	-52.307304	-52.307304	0.000000	-68.566672
56	6.750000	-0.406022	-495.924288	-60.922857	-60.922857	0.000000	-68.924424
57	6.875000	-0.402929	-487.767663	-69.583129	-69.583129	0.000000	-69.282176
58	7.000000	-0.399287	-478.525710	-78.288120	-78.288120	0.000000	-69.639928
59	7.119048	-0.395316	-468.708493	-86.641137	-86.641137	0.000000	-70.165118
60	7.238095	-0.390866	-457.930222	-94.433809	-94.433809	0.000000	-65.458785
61	7.357143	-0.385947	-446.257606	-101.666135	-101.666135	0.000000	-60.751344
62	7.476190	-0.380572	-433.757353	-108.338115	-108.338115	0.000000	-56.044923
63	7.595238	-0.374753	-420.496171	-114.449749	-114.449749	0.000000	-51.337561
64	7.714286	-0.368504	-406.540767	-120.001038	-120.001038	0.000000	-46.630678
65	7.833333	-0.361839	-391.957849	-124.991981	-124.991981	0.000000	-41.924139
66	7.952381	-0.354772	-376.814125	-129.422578	-129.422578	0.000000	-37.216896
67	8.071429	-0.347321	-361.176304	-133.292829	-133.292829	0.000000	-32.510004
68	8.190476	-0.339499	-345.111092	-136.602734	-136.602734	0.000000	-27.803347
69	8.309524	-0.331325	-328.685197	-139.352294	-139.352294	0.000000	-23.096230
70	8.428571	-0.322814	-311.965328	-141.541507	-141.541507	0.000000	-18.389485
71	8.547619	-0.313985	-295.018192	-143.170375	-143.170375	0.000000	-13.682447
72	8.666667	-0.304853	-277.910497	-144.238897	-144.238897	0.000000	-8.975556
73	8.785714	-0.295436	-260.708951	-144.747074	-144.747074	0.000000	-4.268709
74	8.904762	-0.285753	-243.480262	-144.694904	-144.694904	0.000000	0.438227
75	9.023810	-0.275821	-226.291138	-144.082389	-144.082389	0.000000	5.145110
76	9.142857	-0.265657	-209.208285	-142.909528	-142.909528	0.000000	9.852084
77	9.261905	-0.255279	-192.298413	-141.176321	-141.176321	0.000000	14.558892
78	9.380952	-0.244704	-175.628230	-138.882768	-138.882768	0.000000	19.265945
79	9.500000	-0.233949	-159.264442	-136.028870	-136.028870	0.000000	23.972666
80	9.619048	-0.223032	-143.273757	-132.614625	-132.614625	0.000000	28.679566
81	9.738095	-0.211967	-127.722885	-128.640035	-128.640035	0.000000	33.386730
82	9.857143	-0.200771	-112.678531	-124.105099	-124.105099	0.000000	38.093341
83	9.976190	-0.189460	-98.207405	-119.009818	-119.009818	0.000000	42.800583
84	10.095238	-0.178049	-84.376214	-113.354190	-113.354190	0.000000	47.507123
85	10.214286	-0.166551	-71.251666	-107.138217	-107.138217	0.000000	52.214006
86	10.333333	-0.154979	-58.900469	-100.361897	-100.361897	0.000000	56.921384
87	10.452381	-0.143348	-47.389331	-93.025232	-93.025232	0.000000	61.627789
88	10.571429	-0.131667	-36.784958	-85.128222	-85.128222	0.000000	66.334672
89	10.690476	-0.119949	-27.154060	-76.670865	-76.670865	0.000000	71.042168
90	10.809524	-0.108202	-18.563344	-67.653163	-67.653163	0.000000	75.748454
91	10.928571	-0.096436	-11.079518	-58.075115	-58.075115	0.000000	80.456022
92	11.047619	-0.084659	-4.769290	-47.936721	-47.936721	0.000000	85.162237
93	11.166667	-0.072876	0.300633	-37.237981	-37.237981	0.000000	89.869128
94	11.285714	-0.061094	4.063542	-25.978895	-25.978895	0.000000	94.576814
95	11.404762	-0.049315	6.452730	-14.159464	-14.159464	0.000000	99.282903
96	11.523810	-0.037542	7.401489	-1.779687	-1.779687	0.000000	103.989794
97	11.642857	-0.025777	6.843111	11.160436	11.160436	0.000000	108.697598
98	11.761905	-0.014018	4.710888	24.660905	24.660905	0.000000	113.403577
99	11.880952	-0.002264	1.621489	27.241009	27.241009	0.000000	21.672986
100	12.000000	0.009488	0.000000	0.000000	0.000000	0.000000	-228.823743

Results after Step 1 :

