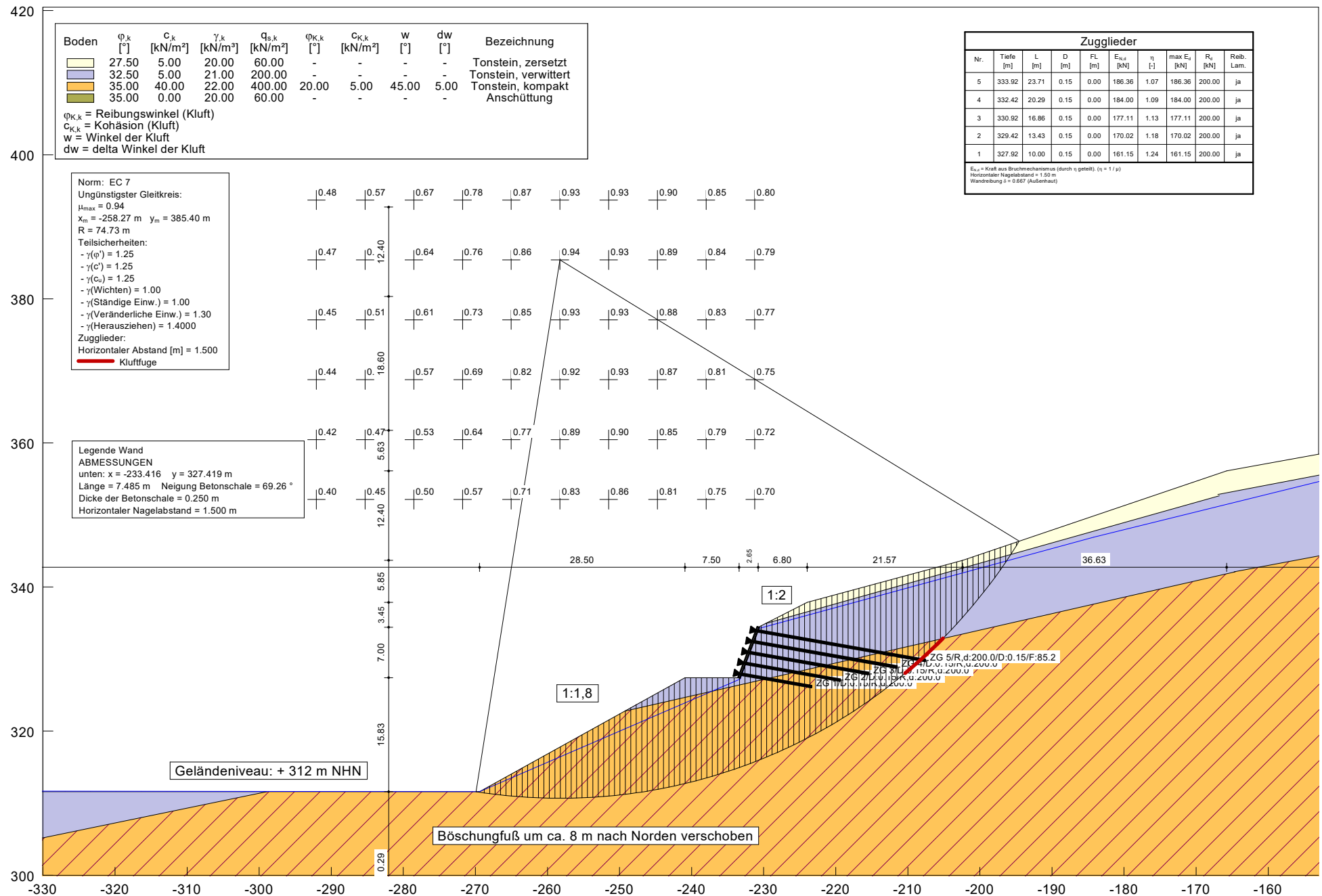


Standsicherheitsberechnungen

Schnitt 6 +312 m NHN Nördliche Böschung



Böschungsberechnung nach EC 7 mit Kreisgleitflächen

Parameterliste

ϕ [°] = Reibungswinkel
 c [kN/m²] = Kohäsion
 γ [kN/m³] = Wichte
 q_s [kN/m²] = Mantelreibung
 μ [-] = Ausnutzungsgrad
 x_m, y_m [m] = x,y-Wert des Gleitkreismittelpunktes
 rad [m] = Radius des Gleitkreises

Teilsicherheiten: (GEO-3)

- $\gamma_m(\phi) = 1.25$
- $\gamma_m(c') = 1.25$
- $\gamma_m(c_u) = 1.25$
- $\gamma_m(Wichten) = 1.00$
- $\gamma_m(\text{Ständige Einw.}) = 1.00$
- $\gamma_m(\text{Veränderliche Einw.}) = 1.30$
- $\gamma_m(\text{Herausziehen}) = 1.4000$ (GEO-2)

Bewegungsrichtung des Gleitkörpers nach links

Koordinaten der Geländepunkte

Nr.	x	y	Nr.	x	y	Nr.	x	y	Nr.	x	y	Nr.	x	y
[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]
1	-532.037	287.361	2	-507.243	291.305	3	-471.743	311.591	4	-269.418	311.591	5	-240.916	327.419
6	-233.416	327.419	7	-230.766	334.419	8	-223.962	337.865	9	-202.393	343.710	10	-165.766	356.107
11	-134.774	361.742	12	-70.536	380.337	13	-23.202	392.734						

Charakteristische Bodenkennwerte

Boden	$\phi_{k,k}$	$c_{k,k}$	$\gamma_{k,k}$	$q_{s,k}$	Bezeichnung
[-]	[°]	[kN/m ²]	[kN/m ³]	[kN/m ²]	
1	27.50	5.00	20.00	60.00	Tonstein, zersetzt
2	32.50	5.00	21.00	200.00	Tonstein, verwittert
3	35.00	40.00	22.00	400.00	Tonstein, kompakt
4	35.00	0.00	20.00	60.00	Anschüttung

Klüftung vorhanden

$\phi_{K,k}$ = Reibungswinkel (Kluft)

$c_{K,k}$ = Kohäsion (Kluft)

w = Winkel der Kluft (0° ==> horizontal; 90° ==> vertikal)

dw = delta Winkel der Kluft

Wenn die Neigung der Lamelle " $\text{tetta} \geq w - dw$ " und " $\text{tetta} \leq w + dw$ " ist, werden die Scherparameter der Kluft verwendet.

Nr.	$\phi_{K,k}$	$c_{K,k}$	w	dw	Nr.	$\phi_{K,k}$	$c_{K,k}$	w	dw
[-]	[°]	[kN/m ²]	[°]	[°]	[-]	[°]	[kN/m ²]	[°]	[°]
1	-	-	-	-	2	-	-	-	-
3	20.00	5.00	45.00	5.00	4	-	-	-	-

Bemessungs-Bodenkennwerte

Boden	ϕ_d	c_d	γ_d	Bezeichnung
[-]	[°]	[kN/m ²]	[kN/m ³]	
1	22.61	4.00	20.00	Tonstein, zersetzt
2	27.01	4.00	21.00	Tonstein, verwittert
3	29.26	32.00	22.00	Tonstein, kompakt
4	29.26	0.00	20.00	Anschüttung

Koordinaten der Schichten und Bodennummern

Nr.	x(links)	y(links)	x(rechts)	y(rechts)	Boden-Nr.
[-]	[m]	[m]	[m]	[m]	
1	-79.906	374.820	-23.532	389.760	1
2	-132.899	359.317	-79.906	374.820	1
3	-167.005	352.834	-133.180	359.317	1
4	-164.750	342.123	-133.180	348.042	2
5	-133.462	347.760	-73.423	364.391	2
6	-73.423	364.109	-20.995	378.203	2
7	-405.470	303.224	-351.872	311.591	4
8	-393.350	302.097	-355.579	308.298	1
9	-508.143	291.162	-405.752	303.224	4
10	-355.579	308.016	-337.467	311.591	1

11	-533.441	284.621	-393.068	301.815	1
12	-534.568	275.037	-439.295	286.594	2
13	-365.444	297.869	-298.930	311.591	2
14	-439.013	286.312	-365.444	297.869	2
15	-229.770	334.924	-166.769	352.659	1
16	-249.261	322.785	-164.554	342.096	2
17	-555.709	199.495	-3.237	199.495	3

Koordinaten des Porenwasserdruck-Polygonzuges

Nr.	x	y	Nr.	x	y	Nr.	x	y	Nr.	x	y	Nr.	x	y
[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]
1	-532.877	284.621	2	-516.247	287.158	3	-417.309	298.714	4	-341.767	311.681	5	-269.418	311.591
6	-233.266	327.223	7	-230.693	334.245	8	-184.199	346.915	9	-134.026	359.317	10	-66.658	378.767
11	-22.686	390.041												

Zugglieder

D [m] = Durchmesser

FL [m] = freie Länge

R,d [kN/m] = aufnehmbare Bemessungskraft

Horizontaler Abstand = 1.500 m

Nr.	x1	y1	x2	y2	D	FL	R,d	Reib.
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN]	Lam.
1	-233.23	327.92	-223.38	326.18	0.15	0.00	200.00	ja
2	-232.66	329.42	-219.43	327.09	0.15	0.00	200.00	ja
3	-232.09	330.92	-215.49	327.99	0.15	0.00	200.00	ja
4	-231.52	332.42	-211.55	328.90	0.15	0.00	200.00	ja
5	-230.96	333.92	-207.60	329.80	0.15	0.00	200.00	ja

Wasserstand vor der Böschung links [m] = 0.00

Wasserstand vor der Böschung rechts [m] = 0.00

γ Wasser [kN/m³] = 10.000

Berechnung mit Berücksichtigung des passiven Erddruckkeils

Wand

Abmessungen

unten: x = -233.416 y = 327.419 m

Länge = 7.485 m Neigung = 69.26 °

Dicke der Betonschale = 0.250 m

Horizontaler Nagelabstand = 1.500 m

Ergebnisse

Suchbereich

Art Suchradius

Anfangs- und Endradius

x / y (Anfang): -241.5294 325.3056

x / y (Ende): -241.5294 293.6848

Anzahl Radian = 40

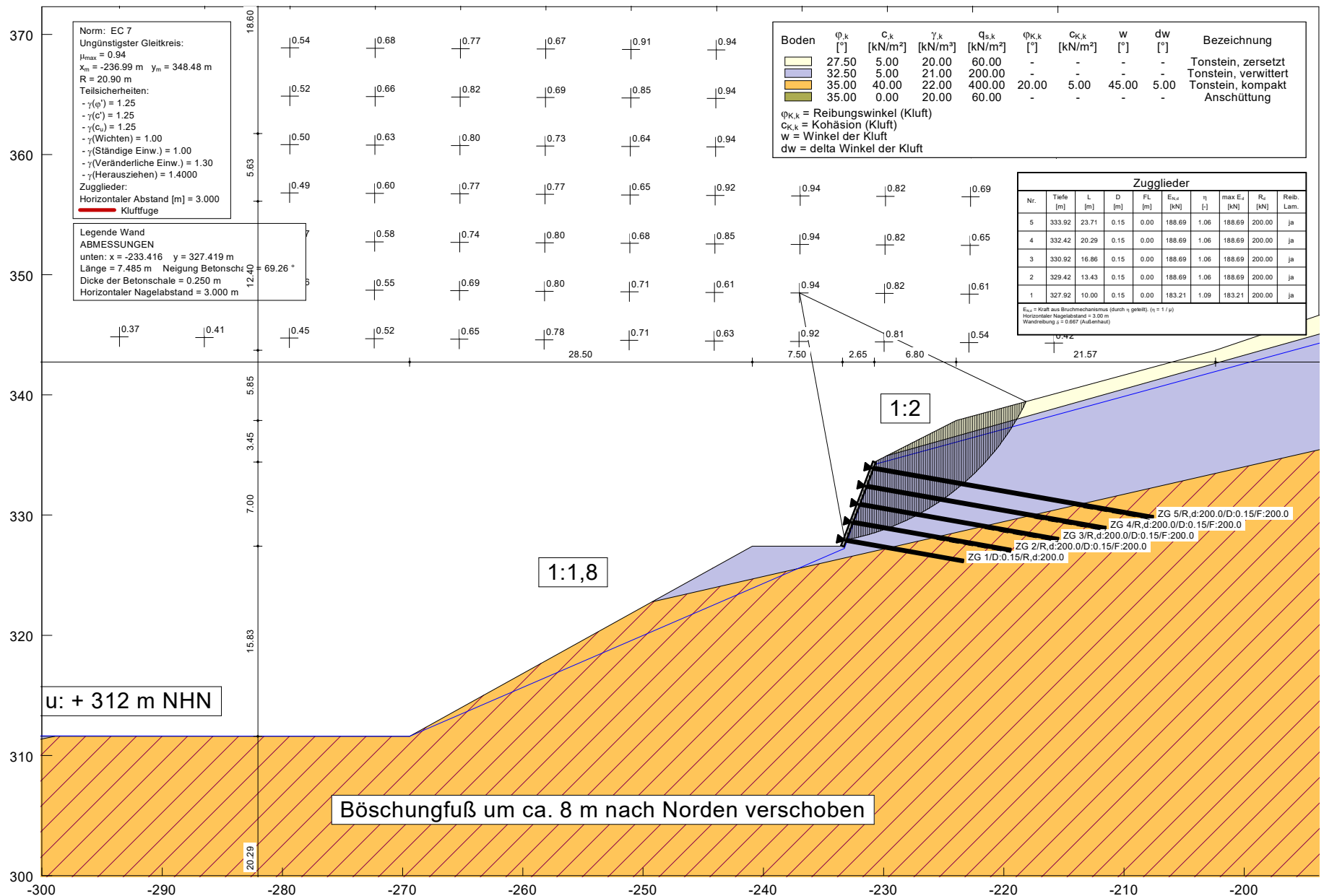
Nr	xm	ym	Radius	Lamellen	μ	Zähler	Nenner	M(Ti)	M(R)	M(Gi)	M(S)
[-]	[m]	[m]	[m]	[-]	[-]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]
1	-231.2361	352.1474	32.5746	100	0.7007	116239.622	165881.106	165881.1	0.0	116239.6	0.0
2	-231.2361	360.4615	40.4985	100	0.7248	167649.704	231308.220	231308.2	0.0	167649.7	0.0
3	-231.2361	368.7756	54.7864	100	0.7487	428300.364	572029.496	572029.5	0.0	428300.4	0.0
4	-231.2361	377.0897	62.9504	100	0.7738	550863.936	711935.892	711935.9	0.0	550863.9	0.0
5	-231.2361	385.4038	78.9832	100	0.7930	1200319.114	1513661.121	1513661.1	0.0	1200319.1	0.0
6	-231.2361	393.7179	87.2252	100	0.8047	1427397.073	1773853.350	1773853.3	0.0	1427397.1	0.0
7	-237.9941	352.1474	37.3098	100	0.7515	179744.116	239173.584	239173.6	0.0	179744.1	0.0
8	-237.9941	360.4615	43.2175	100	0.7916	199078.408	251499.499	251499.5	0.0	199078.4	0.0
9	-237.9941	368.7756	60.1828	100	0.8052	609255.899	756641.215	756641.2	0.0	609255.9	0.0
10	-237.9941	377.0897	66.1135	100	0.8266	643893.535	778955.771	778955.8	0.0	643893.5	0.0
11	-237.9941	385.4038	78.3635	100	0.8437	1070499.482	1268765.500	1268765.5	0.0	1070499.5	0.0
12	-237.9941	393.7179	87.4588	100	0.8533	1353064.145	1585641.583	1585641.6	0.0	1353064.1	0.0
13	-244.7521	352.1474	43.5809	100	0.8096	303325.223	374679.250	374679.3	0.0	303325.2	0.0
14	-244.7521	360.4615	49.5013	100	0.8475	336354.373	396870.114	396870.1	0.0	336354.4	0.0
15	-244.7521	368.7756	60.1639	100	0.8697	549708.815	632047.447	632047.4	0.0	549708.8	0.0
16	-244.7521	377.0897	67.6757	100	0.8803	653157.321	741937.634	741937.6	0.0	653157.3	0.0
17	-244.7521	385.4038	75.9801	100	0.8939	808232.557	904207.468	904207.5	0.0	808232.6	0.0
18	-244.7521	393.7179	85.8664	100	0.8974	1103781.500	1229910.141	1229910.1	0.0	1103781.5	0.0

19	-251.5102	352.1474	43.9729	100	0.8584	276466.449	322057.648	322057.6	0.0	276466.4	0.0
20	-251.5102	360.4615	51.2575	100	0.9021	345995.213	383557.172	383557.2	0.0	345995.2	0.0
21	-251.5102	368.7756	59.3974	100	0.9273	448870.730	484073.405	484073.4	0.0	448870.7	0.0
22	-251.5102	377.0897	67.5870	100	0.9316	565101.096	606588.882	606588.9	0.0	565101.1	0.0
23	-251.5102	385.4038	76.5909	100	0.9295	744447.150	800913.115	800913.1	0.0	744447.2	0.0
24	-251.5102	393.7179	84.0483	100	0.9254	839294.505	906988.323	906988.3	0.0	839294.5	0.0
25	-258.2682	352.1474	44.0342	100	0.8333	225690.521	270836.438	270836.4	0.0	225690.5	0.0
26	-258.2682	360.4615	50.8996	100	0.8856	271900.048	307035.854	307035.9	0.0	271900.0	0.0
27	-258.2682	368.7756	58.7224	100	0.9200	346427.479	376558.984	376559.0	0.0	346427.5	0.0
28	-258.2682	377.0897	68.9790	100	0.9349	542175.234	579940.174	579940.2	0.0	542175.2	0.0
29	-258.2682	385.4038	74.7250	100	0.9399	523343.782	556836.934	556836.9	0.0	523343.8	0.0
30	-258.2682	393.7179	82.8277	100	0.9342	628430.914	672688.003	672688.0	0.0	628430.9	0.0
31	-265.0262	352.1474	46.6071	100	0.7058	225200.406	319087.408	319087.4	0.0	225200.4	0.0
32	-265.0262	360.4615	53.6872	100	0.7739	284248.475	367281.747	367281.7	0.0	284248.5	0.0
33	-265.0262	368.7756	61.8526	100	0.8233	380351.811	461979.692	461979.7	0.0	380351.8	0.0
34	-265.0262	377.0897	69.5246	100	0.8487	461075.415	543283.330	543283.3	0.0	461075.4	0.0
35	-265.0262	385.4038	77.3431	100	0.8618	550181.328	638382.872	638382.9	0.0	550181.3	0.0
36	-265.0262	393.7179	86.0242	100	0.8732	698968.481	800430.103	800430.1	0.0	698968.5	0.0
37	-271.7843	352.1474	56.9437	100	0.5744	464964.152	809515.454	809515.5	0.0	464964.2	0.0
38	-271.7843	360.4615	59.1733	100	0.6352	372665.863	586683.488	586683.5	0.0	372665.9	0.0
39	-271.7843	368.7756	66.9595	100	0.6870	478269.870	696132.896	696132.9	0.0	478269.9	0.0
40	-271.7843	377.0897	72.1926	100	0.7302	463705.605	635034.651	635034.7	0.0	463705.6	0.0
41	-271.7843	385.4038	80.4673	100	0.7599	585365.105	770316.450	770316.4	0.0	585365.1	0.0
42	-271.7843	393.7179	88.1708	100	0.7767	680701.620	876362.649	876362.6	0.0	680701.6	0.0
43	-278.5423	352.1474	68.0205	100	0.4987	846876.949	1698099.969	1698100.0	0.0	846876.9	0.0
44	-278.5423	360.4615	70.0233	100	0.5273	718038.295	1361646.083	1361646.1	0.0	718038.3	0.0
45	-278.5423	368.7756	73.0675	100	0.5659	623007.409	1100841.152	1100841.2	0.0	623007.4	0.0
46	-278.5423	377.0897	75.3805	100	0.6066	472372.624	778752.524	778752.5	0.0	472372.6	0.0
47	-278.5423	385.4038	85.4517	100	0.6436	707814.441	1099790.283	1099790.3	0.0	707814.4	0.0
48	-278.5423	393.7179	92.2220	100	0.6733	766249.189	1138061.384	1138061.4	0.0	766249.2	0.0
49	-285.3004	352.1474	72.4905	101	0.4455	947111.890	2125933.177	2125933.2	0.0	947111.9	0.0
50	-285.3004	360.4615	78.0661	100	0.4662	1016449.548	2180346.267	2180346.3	0.0	1016449.5	0.0
51	-285.3004	368.7756	84.3940	100	0.4871	1120879.742	2301016.148	2301016.1	0.0	1120879.7	0.0
52	-285.3004	377.0897	90.8943	100	0.5123	1228180.424	2397365.735	2397365.7	0.0	1228180.4	0.0
53	-285.3004	385.4038	92.7622	100	0.5382	977613.443	1816311.133	1816311.1	0.0	977613.4	0.0
54	-285.3004	393.7179	98.0008	100	0.5680	954253.565	1680139.383	1680139.4	0.0	954253.6	0.0
55	-292.0584	352.1474	77.2726	104	0.4030	1073764.905	2664702.919	2664702.9	0.0	1073764.9	0.0
56	-292.0584	360.4615	83.7395	101	0.4159	1203752.771	2894119.249	2894119.2	0.0	1203752.8	0.0
57	-292.0584	368.7756	90.5086	100	0.4356	1363893.684	3131134.659	3131134.7	0.0	1363893.7	0.0
58	-292.0584	377.0897	96.8878	100	0.4530	1473483.943	3252666.367	3252666.4	0.0	1473483.9	0.0
59	-292.0584	385.4038	102.0966	100	0.4693	1479350.716	3152247.087	3152247.1	0.0	1479350.7	0.0
60	-292.0584	393.7179	108.6929	100	0.4840	1589982.359	3285135.654	3285135.7	0.0	1589982.4	0.0

Ungünstigster Gleitkreis

Nr	xm	ym	Radius	Lamellen	μ	Zähler	Nenner	M(Ti)	M(R)	M(Gi)	M(S)
[-]	[m]	[m]	[m]	[-]	[-]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]
29	-258.2682	385.4038	74.7250	100	0.9399	523343.782	556836.934	556836.9	0.0	523343.8	0.0

Schnitt 6 +312 m NHN Nagelwand



Böschungsberechnung nach EC 7 mit Kreisgleitflächen

Parameterliste

φ [°] = Reibungswinkel
 c [kN/m²] = Kohäsion
 γ [kN/m³] = Wichte
 q_s [kN/m²] = Mantelreibung
 μ [-] = Ausnutzungsgrad
 x_m, y_m [m] = x,y-Wert des Gleitkreismittelpunktes
 r [m] = Radius des Gleitkreises

Teilsicherheiten: (GEO-3)

- $\gamma_m(\varphi) = 1.25$
- $\gamma_m(c') = 1.25$
- $\gamma_m(c_u) = 1.25$
- $\gamma_m(Wichten) = 1.00$
- $\gamma_m(\text{Ständige Einw.}) = 1.00$
- $\gamma_m(\text{Veränderliche Einw.}) = 1.30$
- $\gamma_m(\text{Herausziehen}) = 1.4000$ (GEO-2)

Bewegungsrichtung des Gleitkörpers nach links

Koordinaten der Geländepunkte

Nr.	x	y	Nr.	x	y	Nr.	x	y	Nr.	x	y	Nr.	x	y
[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]
1	-532.037	287.361	2	-507.243	291.305	3	-471.743	311.591	4	-269.418	311.591	5	-240.916	327.419
6	-233.416	327.419	7	-230.766	334.419	8	-223.962	337.865	9	-202.393	343.710	10	-165.766	356.107
11	-134.774	361.742	12	-70.536	380.337	13	-23.202	392.734						

Charakteristische Bodenkennwerte

Boden	$\varphi_{k,k}$	$c_{k,k}$	$\gamma_{k,k}$	$q_{s,k}$	Bezeichnung
[-]	[°]	[kN/m ²]	[kN/m ³]	[kN/m ²]	
1	27.50	5.00	20.00	60.00	Tonstein, zersetzt
2	32.50	5.00	21.00	200.00	Tonstein, verwittert
3	35.00	40.00	22.00	400.00	Tonstein, kompakt
4	35.00	0.00	20.00	60.00	Anschüttung

Klüftung vorhanden

$\varphi_{K,k}$ = Reibungswinkel (Kluft)

$c_{K,k}$ = Kohäsion (Kluft)

w = Winkel der Kluft (0° ==> horizontal; 90° ==> vertikal)

dw = delta Winkel der Kluft

Wenn die Neigung der Lamelle " $\text{tetta} \geq w - dw$ " und " $\text{tetta} \leq w + dw$ " ist, werden die Scherparameter der Kluft verwendet.

Nr.	$\varphi_{K,k}$	$c_{K,k}$	w	dw	Nr.	$\varphi_{K,k}$	$c_{K,k}$	w	dw
[-]	[°]	[kN/m ²]	[°]	[°]	[-]	[°]	[kN/m ²]	[°]	[°]
1	-	-	-	-	2	-	-	-	-
3	20.00	5.00	45.00	5.00	4	-	-	-	-

Bemessungs-Bodenkennwerte

Boden	φ_d	c_d	γ_d	Bezeichnung
[-]	[°]	[kN/m ²]	[kN/m ³]	
1	22.61	4.00	20.00	Tonstein, zersetzt
2	27.01	4.00	21.00	Tonstein, verwittert
3	29.26	32.00	22.00	Tonstein, kompakt
4	29.26	0.00	20.00	Anschüttung

Koordinaten der Schichten und Bodennummern

Nr.	x(links)	y(links)	x(rechts)	y(rechts)	Boden-Nr.
[-]	[m]	[m]	[m]	[m]	
1	-79.906	374.820	-23.532	389.760	1
2	-132.899	359.317	-79.906	374.820	1
3	-167.005	352.834	-133.180	359.317	1
4	-164.750	342.123	-133.180	348.042	2
5	-133.462	347.760	-73.423	364.391	2
6	-73.423	364.109	-20.995	378.203	2
7	-405.470	303.224	-351.872	311.591	4
8	-393.350	302.097	-355.579	308.298	1
9	-508.143	291.162	-405.752	303.224	4
10	-355.579	308.016	-337.467	311.591	1

11	-533.441	284.621	-393.068	301.815	1
12	-534.568	275.037	-439.295	286.594	2
13	-365.444	297.869	-298.930	311.591	2
14	-439.013	286.312	-365.444	297.869	2
15	-229.770	334.924	-166.769	352.659	1
16	-249.261	322.785	-164.554	342.096	2
17	-555.709	199.495	-3.237	199.495	3

Koordinaten des Porenwasserdruck-Polygonzuges

Nr.	x	y	Nr.	x	y	Nr.	x	y	Nr.	x	y	Nr.	x	y
[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]
1	-532.877	284.621	2	-516.247	287.158	3	-417.309	298.714	4	-341.767	311.681	5	-269.418	311.591
6	-233.266	327.223	7	-230.693	334.245	8	-184.199	346.915	9	-134.026	359.317	10	-66.658	378.767
11	-22.686	390.041												

Zugglieder

D [m] = Durchmesser

FL [m] = freie Länge

R,d [kN/m] = aufnehmbare Bemessungskraft

Horizontaler Abstand = 3.000 m

Nr.	x1	y1	x2	y2	D	FL	R,d	Reib.
[-]	[m]	[m]	[m]	[m]	[m]	[m]	[kN]	Lam.
1	-233.23	327.92	-223.38	326.18	0.15	0.00	200.00	ja
2	-232.66	329.42	-219.43	327.09	0.15	0.00	200.00	ja
3	-232.09	330.92	-215.49	327.99	0.15	0.00	200.00	ja
4	-231.52	332.42	-211.55	328.90	0.15	0.00	200.00	ja
5	-230.96	333.92	-207.60	329.80	0.15	0.00	200.00	ja

Wasserstand vor der Böschung links [m] = 0.00

Wasserstand vor der Böschung rechts [m] = 0.00

γ Wasser [kN/m³] = 10.000

Berechnung mit Berücksichtigung des passiven Erddruckkeils

Wand

Abmessungen

unten: x = -233.416 y = 327.419 m

Länge = 7.485 m Neigung = 69.26 °

Dicke der Betonschale = 0.250 m

Horizontaler Nagelabstand = 3.000 m

Ergebnisse

Suchbereich

Art Suchradius

Anfangs- und Endradius

x / y (Anfang): -226.0623 332.1258

x / y (Ende): -225.8006 329.0728

Anzahl Radien = 40

Nr	xm	ym	Radius	Lamellen	μ	Zähler	Nenner	M(Ti)	M(R)	M(Gi)	M(S)
[-]	[m]	[m]	[m]	[-]	[-]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]
1	-215.3084	388.7900	57.6756	100	0.6463	167318.924	258893.791	258893.8	0.0	167318.9	0.0
2	-215.3560	384.7457	53.6980	100	0.6397	145431.880	227348.984	227349.0	0.0	145431.9	0.0
3	-215.4035	380.7014	49.7313	100	0.6279	125308.581	199565.948	199565.9	0.0	125308.6	0.0
4	-215.4511	376.6571	45.7781	100	0.6150	106892.216	173812.070	173812.1	0.0	106892.2	0.0
5	-215.4987	372.6128	41.8424	100	0.5998	90119.224	150251.384	150251.4	0.0	90119.2	0.0
6	-215.5463	368.5686	37.9297	100	0.5789	74946.430	129456.424	129456.4	0.0	74946.4	0.0
7	-215.5939	364.5243	34.0477	100	0.5549	61305.536	110478.422	110478.4	0.0	61305.5	0.0
8	-215.6414	360.4800	30.2085	100	0.5273	49141.022	93193.552	93193.6	0.0	49141.0	0.0
9	-215.6890	356.4357	29.1714	101	0.4975	62660.842	125951.485	125951.5	0.0	62660.8	0.0
10	-215.7366	352.3914	25.3977	101	0.4733	48393.966	102242.530	102242.5	0.0	48394.0	0.0
11	-215.7842	348.3471	21.6587	102	0.4495	36024.003	80142.744	80142.7	0.0	36024.0	0.0
12	-215.8318	344.3028	18.2025	105	0.4181	26789.880	64081.356	64081.4	0.0	26789.9	0.0
13	-222.4216	388.8138	58.3964	100	0.7967	142162.647	178436.386	178436.4	0.0	142162.6	0.0
14	-222.4648	384.7717	54.4352	100	0.7904	124443.359	157449.574	157449.6	0.0	124443.4	0.0
15	-222.5081	380.7295	50.4746	100	0.7826	107974.594	137963.731	137963.7	0.0	107974.6	0.0
16	-222.5513	376.6874	46.5907	100	0.7764	94107.907	121208.021	121208.0	0.0	94107.9	0.0
17	-222.5946	372.6453	42.6323	100	0.7659	79888.389	104309.619	104309.6	0.0	79888.4	0.0
18	-222.6379	368.6032	38.7510	100	0.7562	67871.656	89758.876	89758.9	0.0	67871.7	0.0

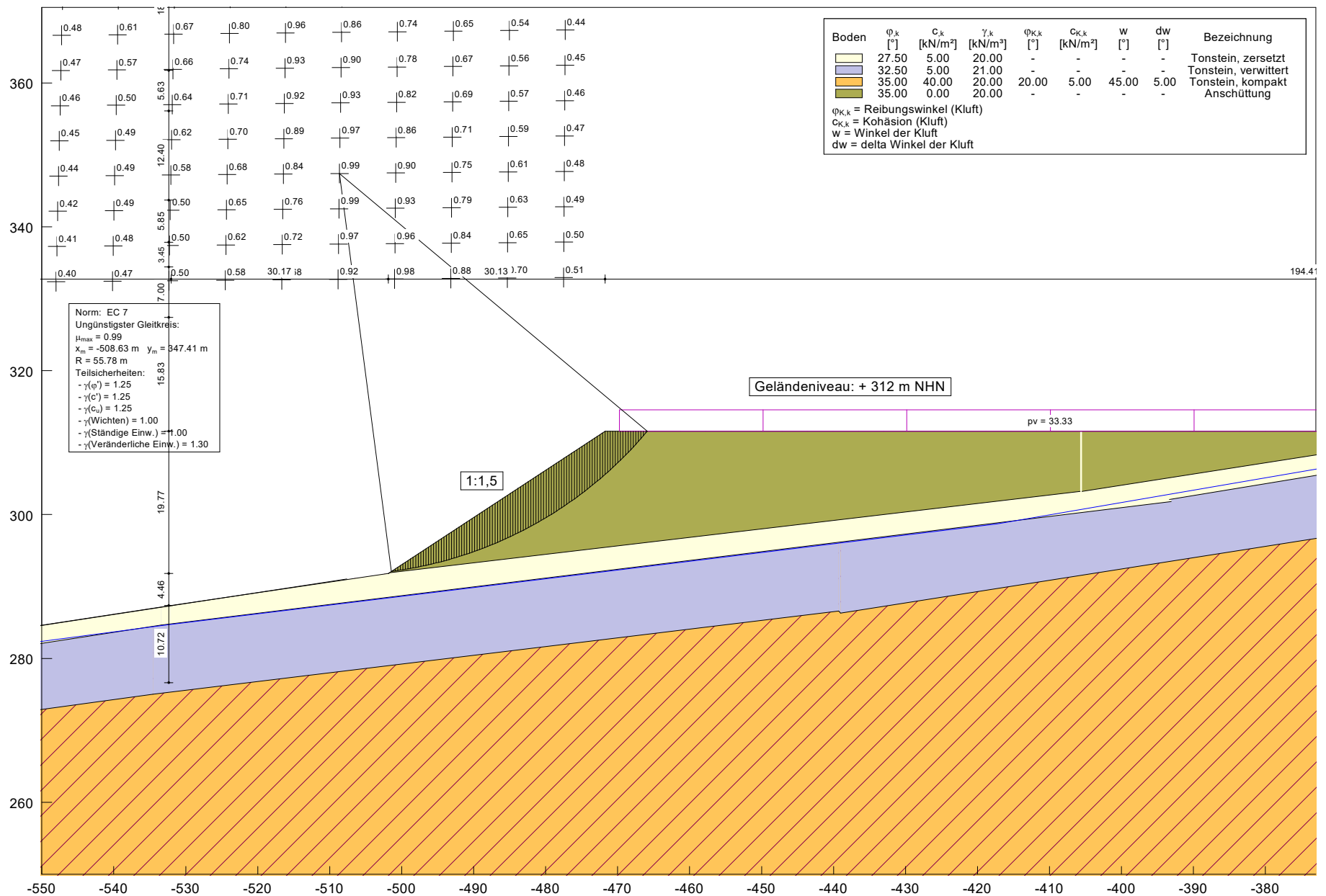
19	-222.6811	364.5610	34.7209	100	0.7371	54945.364	74543.178	74543.2	0.0	54945.4	0.0
20	-222.7244	360.5189	30.7691	100	0.7175	44175.474	61571.032	61571.0	0.0	44175.5	0.0
21	-222.7676	356.4768	26.7467	100	0.6895	33940.041	49224.216	49224.2	0.0	33940.0	0.0
22	-222.8109	352.4346	22.7315	100	0.6545	25066.065	38296.268	38296.3	0.0	25066.1	0.0
23	-222.8541	348.3925	18.8024	100	0.6090	17754.956	29154.401	29154.4	0.0	17755.0	0.0
24	-222.8974	344.3504	14.8202	101	0.5415	11202.946	20688.618	20688.6	0.0	11202.9	0.0
25	-229.5348	388.8376	59.4984	100	0.8454	125624.197	148605.209	148605.2	0.0	125624.2	0.0
26	-229.5737	384.7976	55.3929	100	0.8375	107332.794	128163.177	128163.2	0.0	107332.8	0.0
27	-229.6126	380.7577	51.3657	100	0.8342	92424.985	110792.258	110792.3	0.0	92425.0	0.0
28	-229.6516	376.7177	47.3407	100	0.8312	78921.108	94952.955	94953.0	0.0	78921.1	0.0
29	-229.6905	372.6777	43.3185	100	0.8285	66759.916	80583.306	80583.3	0.0	66759.9	0.0
30	-229.7294	368.6378	39.3000	100	0.8265	55879.469	67608.109	67608.1	0.0	55879.5	0.0
31	-229.7683	364.5978	35.2864	100	0.8262	46219.312	55944.390	55944.4	0.0	46219.3	0.0
32	-229.8073	360.5578	31.2032	100	0.8221	36992.406	44997.818	44997.8	0.0	36992.4	0.0
33	-229.8462	356.5179	27.2065	100	0.8235	29467.054	35783.541	35783.5	0.0	29467.1	0.0
34	-229.8851	352.4779	23.1487	100	0.8186	22304.401	27245.957	27246.0	0.0	22304.4	0.0
35	-229.9241	348.4379	19.1920	100	0.8172	16504.120	20195.033	20195.0	0.0	16504.1	0.0
36	-229.9630	344.3980	15.2047	100	0.8065	11226.022	13919.471	13919.5	0.0	11226.0	0.0
37	-236.6480	388.8614	60.7646	100	0.8880	109215.672	122990.585	122990.6	0.0	109215.7	0.0
38	-236.6826	384.8236	56.8029	100	0.8932	96260.572	107773.861	107773.9	0.0	96260.6	0.0
39	-236.7172	380.7858	52.8527	100	0.9007	84518.739	93837.580	93837.6	0.0	84518.7	0.0
40	-236.7518	376.7480	48.9168	100	0.9112	73929.828	81137.528	81137.5	0.0	73929.8	0.0
41	-236.7864	372.7102	44.9234	100	0.9187	63310.351	68912.367	68912.4	0.0	63310.4	0.0
42	-236.8210	368.6724	40.8789	100	0.9230	52912.915	57329.675	57329.7	0.0	52912.9	0.0
43	-236.8556	364.6346	36.8671	100	0.9297	43793.835	47103.250	47103.3	0.0	43793.8	0.0
44	-236.8902	360.5968	32.8262	100	0.9329	35179.109	37710.190	37710.2	0.0	35179.1	0.0
45	-236.9248	356.5590	28.8509	100	0.9419	27930.294	29653.260	29653.3	0.0	27930.3	0.0
46	-236.9594	352.5212	24.8305	100	0.9406	21038.309	22367.347	22367.3	0.0	21038.3	0.0
47	-236.9940	348.4833	20.9038	100	0.9434	15379.022	16301.095	16301.1	0.0	15379.0	0.0
48	-237.0286	344.4455	16.9385	100	0.9198	10097.997	10977.888	10977.9	0.0	10098.0	0.0
49	-243.7612	388.8852	61.8516	100	0.9184	84059.785	91526.197	91526.2	0.0	84059.8	0.0
50	-243.7914	384.8495	57.8610	100	0.9215	72970.996	79184.144	79184.1	0.0	72971.0	0.0
51	-243.8217	380.8139	53.9005	100	0.9260	63142.751	68187.769	68187.8	0.0	63142.8	0.0
52	-243.8520	376.7782	49.9772	100	0.9330	54449.142	58360.574	58360.6	0.0	54449.1	0.0
53	-243.8823	372.7426	46.0279	100	0.9347	45852.352	49054.424	49054.4	0.0	45852.4	0.0
54	-243.9126	368.7070	42.1402	100	0.9398	38496.279	40964.041	40964.0	0.0	38496.3	0.0
55	-243.9428	364.6713	38.2623	100	0.9407	31576.973	33567.453	33567.5	0.0	31577.0	0.0
56	-243.9731	360.6357	34.4257	100	0.9368	25342.806	27052.130	27052.1	0.0	25342.8	0.0
57	-244.0034	356.6000	30.6114	100	0.9195	19501.916	21210.116	21210.1	0.0	19501.9	0.0
58	-244.0337	352.5644	27.2789	100	0.8543	16859.828	19734.979	19735.0	0.0	16859.8	0.0
59	-244.0639	348.5288	26.6849	100	0.6115	37629.523	61535.799	61535.8	0.0	37629.5	0.0
60	-244.0942	344.4931	23.9258	100	0.6254	35828.971	57287.661	57287.7	0.0	35829.0	0.0
61	-250.8744	388.9090	63.4223	100	0.9210	64128.982	69628.232	69628.2	0.0	64129.0	0.0
62	-250.9003	384.8755	59.6021	100	0.9275	56536.082	60954.268	60954.3	0.0	56536.1	0.0
63	-250.9263	380.8420	55.7631	100	0.9272	48744.666	52570.755	52570.8	0.0	48744.7	0.0
64	-250.9522	376.8085	51.9901	100	0.9302	42047.314	45202.038	45202.0	0.0	42047.3	0.0
65	-250.9782	372.7750	48.2293	100	0.9255	35497.935	38353.757	38353.8	0.0	35497.9	0.0
66	-251.0041	368.7416	44.5057	100	0.9138	29360.399	32129.151	32129.2	0.0	29360.4	0.0
67	-251.0301	364.7081	41.1793	100	0.8534	27060.041	31708.690	31708.7	0.0	27060.0	0.0
68	-251.0560	360.6746	40.4538	100	0.6443	68608.177	106487.120	106487.1	0.0	68608.2	0.0
69	-251.0820	356.6411	37.4054	100	0.6484	67707.970	104423.745	104423.7	0.0	67708.0	0.0
70	-251.1079	352.6077	34.5594	100	0.6847	67932.250	99216.149	99216.1	0.0	67932.2	0.0
71	-251.1339	348.5742	31.9700	100	0.7134	69416.710	97303.244	97303.2	0.0	69416.7	0.0
72	-251.1598	344.5407	29.6191	100	0.7142	71140.297	99607.741	99607.7	0.0	71140.3	0.0
73	-257.9875	388.9327	65.7936	100	0.9139	51740.691	56617.291	56617.3	0.0	51740.7	0.0
74	-258.0092	384.9014	62.1059	100	0.9128	45392.746	49727.834	49727.8	0.0	45392.7	0.0
75	-258.0308	380.8701	58.4280	100	0.9019	38961.939	43197.523	43197.5	0.0	38961.9	0.0
76	-258.0524	376.8388	55.1776	100	0.8582	38112.080	44409.021	44409.0	0.0	38112.1	0.0
77	-258.0741	372.8075	54.3535	100	0.6620	104431.260	157762.239	157762.2	0.0	104431.3	0.0
78	-258.0957	368.7762	51.1794	100	0.6743	104690.560	155255.787	155255.8	0.0	104690.6	0.0
79	-258.1173	364.7449	48.1338	100	0.6866	106230.412	154709.229	154709.2	0.0	106230.4	0.0
80	-258.1389	360.7135	45.2427	100	0.7285	109156.690	149842.138	149842.1	0.0	109156.7	0.0
81	-258.1606	356.6822	42.5376	100	0.7707	113646.181	147450.635	147450.6	0.0	113646.2	0.0
82	-258.1822	352.6509	40.0561	100	0.7952	119890.931	150765.505	150765.5	0.0	119890.9	0.0
83	-258.2038	348.6196	37.8424	100	0.8011	128069.684	159872.818	159872.8	0.0	128069.7	0.0
84	-258.2254	344.5883	35.9458	100	0.7821	138078.486	176557.491	176557.5	0.0	138078.5	0.0
85	-265.1007	388.9565	69.1483	100	0.8532	48711.349	57094.946	57094.9	0.0	48711.3	0.0
86	-265.1180	384.9274	68.3052	100	0.6766	144392.214	213395.528	213395.5	0.0	144392.2	0.0
87	-265.1353	380.8982	65.0623	100	0.6893	146024.744	211849.457	211849.5	0.0	146024.7	0.0
88	-265.1526	376.8691	61.9118	100	0.7013	149045.849	212516.855	212516.9	0.0	149045.8	0.0
89	-265.1699	372.8399	58.8685	100	0.7203	153604.265	213236.591	213236.6	0.0	153604.3	0.0

90	-265.1872	368.8108	55.9501	100	0.7705	159770.398	207349.669	207349.7	0.0	159770.4	0.0
91	-265.2046	364.7816	53.1770	100	0.8157	167818.011	205727.960	205728.0	0.0	167818.0	0.0
92	-265.2219	360.7525	50.5731	100	0.8000	177349.696	221697.533	221697.5	0.0	177349.7	0.0
93	-265.2392	356.7233	47.6414	100	0.7689	172268.247	224034.757	224034.8	0.0	172268.2	0.0
94	-265.2565	352.6942	44.9094	100	0.7356	168598.313	229195.107	229195.1	0.0	168598.3	0.0
95	-265.2738	348.6650	42.9346	100	0.6912	178774.947	258662.809	258662.8	0.0	178774.9	0.0
96	-265.2911	344.6359	41.1752	101	0.6502	188111.895	289298.463	289298.5	0.0	188111.9	0.0
97	-272.2139	388.9803	75.7833	100	0.7146	195871.022	274104.587	274104.6	0.0	195871.0	0.0
98	-272.2269	384.9533	72.6501	100	0.7362	202124.476	274551.172	274551.2	0.0	202124.5	0.0
99	-272.2399	380.9263	69.3665	100	0.7462	199854.674	267845.248	267845.2	0.0	199854.7	0.0
100	-272.2529	376.8994	65.3250	100	0.7156	165508.902	231297.966	231298.0	0.0	165508.9	0.0
101	-272.2658	372.8724	63.8547	100	0.6905	227819.043	329923.255	329923.3	0.0	227819.0	0.0
102	-272.2788	368.8454	61.1726	100	0.6802	237038.703	348479.647	348479.6	0.0	237038.7	0.0
103	-272.2918	364.8184	58.6445	100	0.6598	246686.598	373853.147	373853.1	0.0	246686.6	0.0
104	-272.3048	360.7914	56.2913	100	0.6335	256146.819	404343.586	404343.6	0.0	256146.8	0.0
105	-272.3177	356.7644	53.8333	100	0.6026	257006.452	426500.823	426500.8	0.0	257006.5	0.0
106	-272.3307	352.7374	52.2021	101	0.5755	279246.007	485233.106	485233.1	0.0	279246.0	0.0
107	-272.3437	348.7104	50.5163	102	0.5472	294128.554	537558.841	537558.8	0.0	294128.6	0.0
108	-272.3567	344.6834	49.1035	104	0.5220	313076.351	599716.913	599716.9	0.0	313076.4	0.0
109	-279.3271	389.0041	77.9856	100	0.6366	157770.949	247844.970	247845.0	0.0	157770.9	0.0
110	-279.3358	384.9793	77.4051	100	0.5812	279460.306	480865.132	480865.1	0.0	279460.3	0.0
111	-279.3444	380.9545	74.5563	100	0.5801	288453.685	497218.271	497218.3	0.0	288453.7	0.0
112	-279.3531	376.9296	71.8202	100	0.5746	297502.802	517766.542	517766.5	0.0	297502.8	0.0
113	-279.3617	372.9048	69.2101	100	0.5597	306798.707	548163.188	548163.2	0.0	306798.7	0.0
114	-279.3704	368.8800	66.5915	100	0.5416	310416.737	573170.486	573170.5	0.0	310416.7	0.0
115	-279.3790	364.8552	64.2417	100	0.5165	319444.020	618531.652	618531.7	0.0	319444.0	0.0
116	-279.3877	360.8303	62.1608	101	0.5021	336925.352	670984.198	670984.2	0.0	336925.4	0.0
117	-279.3963	356.8055	60.3457	102	0.4863	359857.506	740056.521	740056.5	0.0	359857.5	0.0
118	-279.4050	352.7807	58.6131	103	0.4708	379929.133	806954.216	806954.2	0.0	379929.1	0.0
119	-279.4136	348.7559	57.1120	105	0.4621	408193.537	883428.803	883428.8	0.0	408193.5	0.0
120	-279.4223	344.7310	55.8611	108	0.4488	439263.905	978652.249	978652.2	0.0	439263.9	0.0
121	-286.4403	389.0279	85.2748	100	0.4864	349919.800	719372.264	719372.3	0.0	349919.8	0.0
122	-286.4446	385.0052	82.4993	100	0.4798	359221.382	748649.084	748649.1	0.0	359221.4	0.0
123	-286.4490	380.9826	79.8301	100	0.4715	368607.286	781753.201	781753.2	0.0	368607.3	0.0
124	-286.4533	376.9599	77.0202	100	0.4565	366271.644	802421.388	802421.4	0.0	366271.6	0.0
125	-286.4576	372.9372	74.6101	101	0.4423	378370.113	855487.727	855487.7	0.0	378370.1	0.0
126	-286.4619	368.9146	72.5752	101	0.4360	405339.565	929707.223	929707.2	0.0	405339.6	0.0
127	-286.4663	364.8919	70.4509	101	0.4253	426695.702	1003231.319	1003231.3	0.0	426695.7	0.0
128	-286.4706	360.8693	68.4972	103	0.4201	453869.966	1080512.926	1080512.9	0.0	453870.0	0.0
129	-286.4749	356.8466	66.7290	104	0.4177	483443.470	1157505.126	1157505.1	0.0	483443.5	0.0
130	-286.4792	352.8239	65.1614	106	0.4085	512507.609	1254556.922	1254556.9	0.0	512507.6	0.0
131	-286.4836	348.8013	63.8093	108	0.4059	553543.802	1363625.569	1363625.6	0.0	553543.8	0.0
132	-286.4879	344.7786	62.6867	111	0.4070	602234.077	1479708.744	1479708.7	0.0	602234.1	0.0
133	-293.5535	389.0517	90.4871	100	0.3956	431466.135	1090564.553	1090564.6	0.0	431466.1	0.0
134	-293.5535	385.0312	87.8738	100	0.3875	442019.741	1140586.027	1140586.0	0.0	442019.7	0.0
135	-293.5535	381.0107	85.3698	101	0.3813	455429.885	1194475.221	1194475.2	0.0	455429.9	0.0
136	-293.5535	376.9902	82.8880	101	0.3730	468239.926	1255217.990	1255218.0	0.0	468239.9	0.0
137	-293.5535	372.9697	80.7304	101	0.3724	499850.129	1342419.506	1342419.5	0.0	499850.1	0.0
138	-293.5535	368.9492	78.6167	102	0.3690	528313.639	1431807.672	1431807.7	0.0	528313.6	0.0
139	-293.5535	364.9287	76.6557	103	0.3715	561544.748	1511590.220	1511590.2	0.0	561544.7	0.0
140	-293.5535	360.9082	74.8595	105	0.3655	593377.371	1623603.570	1623603.6	0.0	593377.4	0.0
141	-293.5535	356.8877	73.2402	106	0.3686	638905.289	1733116.146	1733116.1	0.0	638905.3	0.0
142	-293.5535	352.8672	71.8097	109	0.3667	681308.873	1857840.041	1857840.0	0.0	681308.9	0.0
143	-293.5535	348.8467	70.5795	111	0.3716	741289.356	1994721.369	1994721.4	0.0	741289.4	0.0
144	-293.5535	344.8262	69.5602	114	0.3710	797338.442	2148998.633	2148998.6	0.0	797338.4	0.0

Ungünstigster Gleitkreis

Nr	xm	ym	Radius	Lamellen	μ	Zähler	Nenner	M(Ti)	M(R)	M(Gi)	M(S)
[-]	[m]	[m]	[m]	[-]	[-]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]
47	-236.9940	348.4833	20.9038	100	0.9434	15379.022	16301.095	16301.1	0.0	15379.0	0.0

Schnitt 6 +312 m NHN Südliche Böschung



Böschungsberechnung nach EC 7 mit Kreisgleitflächen

Parameterliste

φ [°] = Reibungswinkel
 c [kN/m²] = Kohäsion
 γ [kN/m³] = Wichte
 μ [-] = Ausnutzungsgrad
 x_m, y_m [m] = x,y-Wert des Gleitkreismittelpunktes
 rad [m] = Radius des Gleitkreises

Teilsicherheiten: (GEO-3)

- $\gamma_{\text{am}(\varphi)}$ = 1.25
- $\gamma_{\text{am}(c')}$ = 1.25
- $\gamma_{\text{am}(cu)}$ = 1.25
- $\gamma_{\text{am}(Wichten)}$ = 1.00
- $\gamma_{\text{am}(Ständige \text{ Einw.})}$ = 1.00
- $\gamma_{\text{am}(Veränderliche \text{ Einw.})}$ = 1.30

Bewegungsrichtung des Gleitkörpers nach links

Koordinaten der Geländepunkte

Nr.	x	y	Nr.	x	y	Nr.	x	y	Nr.	x	y	Nr.	x	y
[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]
1	-602.357	276.641	2	-532.037	287.361	3	-501.868	291.819	4	-501.868	291.819	5	-471.743	311.591
6	-277.338	311.591	7	-240.916	327.419	8	-233.416	327.419	9	-230.766	334.419	10	-223.962	337.865
11	-202.393	343.710	12	-165.766	356.107	13	-134.774	361.742	14	-70.536	380.337	15	-23.202	392.734

Charakteristische Bodenkennwerte

Boden	φ_k	c_k	γ_k	Bezeichnung
[-]	[°]	[kN/m ²]	[kN/m ³]	
1	27.50	5.00	20.00	Tonstein, zersetzt
2	32.50	5.00	21.00	Tonstein, verwittert
3	35.00	40.00	20.00	Tonstein, kompakt
4	35.00	0.00	20.00	Anschüttung

Klüftung vorhanden

$\varphi_{K,k}$ = Reibungswinkel (Kluft)

$c_{K,k}$ = Kohäsion (Kluft)

w = Winkel der Kluft (0° ==> horizontal; 90° ==> vertikal)

dw = delta Winkel der Kluft

Wenn die Neigung der Lamelle " $\text{tetta} \geq w - dw$ " und " $\text{tetta} \leq w + dw$ " ist,

werden die Scherparameter der Kluft verwendet.

Nr.	$\varphi_{K,k}$	$c_{K,k}$	w	dw	Nr.	$\varphi_{K,k}$	$c_{K,k}$	w	dw
[-]	[-]	[kN/m ²]	[°]	[°]	[-]	[-]	[kN/m ²]	[°]	[°]
1	-	-	-	-	2	-	-	-	-
3	20.00	5.00	45.00	5.00	4	-	-	-	-

Bemessungs-Bodenkennwerte

Boden	φ_d	c_d	γ_d	Bezeichnung
[-]	[°]	[kN/m ²]	[kN/m ³]	
1	22.61	4.00	20.00	Tonstein, zersetzt
2	27.01	4.00	21.00	Tonstein, verwittert
3	29.26	32.00	20.00	Tonstein, kompakt
4	29.26	0.00	20.00	Anschüttung

Koordinaten der Schichten und Bodennummern

Nr.	x(links)	y(links)	x(rechts)	y(rechts)	Boden-Nr.
[-]	[m]	[m]	[m]	[m]	
1	-79.906	374.820	-23.532	389.760	1
2	-132.899	359.317	-79.906	374.820	1
3	-167.005	352.834	-133.180	359.317	1
4	-164.750	342.123	-133.180	348.042	2
5	-133.462	347.760	-73.423	364.391	2
6	-73.423	364.109	-20.995	378.203	2
7	-405.470	303.224	-351.872	311.591	4
8	-393.350	302.097	-355.579	308.298	1
9	-501.715	291.919	-405.752	303.224	4
10	-355.579	308.016	-337.467	311.591	1
11	-533.441	284.621	-393.068	301.815	1
12	-602.619	274.024	-533.441	284.621	1

13	-365.444	297.869	-298.930	311.591	2
14	-439.013	286.312	-365.444	297.869	2
15	-229.770	334.924	-166.769	352.659	1
16	-253.488	321.821	-164.554	342.096	2
17	-534.568	275.037	-439.295	286.594	2
18	-603.142	265.650	-534.568	275.037	2
19	-439.295	286.594	-439.013	286.312	2
20	-600.000	199.495	-3.237	199.495	3

Koordinaten des Porenwasserdruck-Polygonzuges

Nr.	x	y	Nr.	x	y	Nr.	x	y	Nr.	x	y	Nr.	x	y
[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]	[-]	[m]	[m]
1	-610.000	274.439	2	-532.877	284.621	3	-417.309	298.714	4	-341.767	311.681	5	-276.654	311.117
6	-233.266	327.223	7	-230.693	334.245	8	-184.200	346.915	9	-134.026	359.317	10	-66.658	378.767
11	-22.686	390.041												

Verkehrslasten

Nr.	Größe(links)	Größe(rechts)	x(links)	x(rechts)	y
[-]	[kN/m²]	[kN/m²]	[m]	[m]	[m]
1	33.33	33.33	-469.74	-350.00	311.59

Wasserstand vor der Böschung links [m] = 0.00
Wasserstand vor der Böschung rechts [m] = 0.00

γ Wasser [kN/m³] = 10.000

Berechnung mit Berücksichtigung des passiven Erddruckkeils

Ergebnisse

Suchbereich

Art Suchradius

Anfangs- und Endradius

x / y (Anfang): -479.3785 299.9241

x / y (Ende): -479.3785 276.1976

Anzahl Radien = 40

Nr	xm	ym	Radius	Lamellen	μ	Zähler	Nenner	M(Ti)	M(R)	M(Gi)	M(S)
[-]	[m]	[m]	[m]	[-]	[-]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]
1	-477.1452	387.0352	103.7440	100	0.4113	725825.828	1764497.607	1764497.6	0.0	725825.8	0.0
2	-477.1769	382.1187	98.8280	100	0.4169	687304.651	1648604.111	1648604.1	0.0	687304.7	0.0
3	-477.2086	377.2021	94.5049	100	0.4237	674859.206	1592836.428	1592836.4	0.0	674859.2	0.0
4	-477.2404	372.2855	80.1015	100	0.4302	280637.861	652374.782	652374.8	0.0	280637.9	0.0
5	-477.2721	367.3689	75.1860	100	0.4399	262865.675	597550.760	597550.8	0.0	262865.7	0.0
6	-477.3038	362.4523	70.2706	100	0.4480	244170.240	545054.035	545054.0	0.0	244170.2	0.0
7	-477.3355	357.5357	65.3555	100	0.4576	225845.539	493515.863	493515.9	0.0	225845.5	0.0
8	-477.3672	352.6191	60.4406	100	0.4682	207234.046	442622.126	442622.1	0.0	207234.0	0.0
9	-477.3990	347.7025	55.5261	100	0.4790	189068.991	394688.641	394688.6	0.0	189069.0	0.0
10	-477.4307	342.7859	50.6121	100	0.4897	169837.806	346842.871	346842.9	0.0	169837.8	0.0
11	-477.4624	337.8694	45.6987	100	0.4990	150361.484	301296.456	301296.5	0.0	150361.5	0.0
12	-477.4941	332.9528	40.7862	100	0.5091	130754.469	256835.178	256835.2	0.0	130754.5	0.0
13	-484.8849	386.9401	95.4813	100	0.4916	372126.024	756921.016	756921.0	0.0	372126.0	0.0
14	-484.9252	382.0264	90.5790	100	0.5025	354074.085	704561.791	704561.8	0.0	354074.1	0.0
15	-484.9656	377.1127	85.6782	100	0.5149	334349.530	649390.341	649390.3	0.0	334349.5	0.0
16	-485.0060	372.1990	80.7790	100	0.5279	314446.793	595620.113	595620.1	0.0	314446.8	0.0
17	-485.0464	367.2853	75.8818	100	0.5433	296288.383	545313.033	545313.0	0.0	296288.4	0.0
18	-485.0867	362.3716	70.9871	100	0.5588	276654.681	495130.102	495130.1	0.0	276654.7	0.0
19	-485.1271	357.4579	66.0953	100	0.5749	256728.385	446588.890	446588.9	0.0	256728.4	0.0
20	-485.1675	352.5442	61.2074	100	0.5923	236683.957	399628.422	399628.4	0.0	236684.0	0.0
21	-485.2078	347.6304	56.3244	100	0.6105	216174.865	354111.145	354111.1	0.0	216174.9	0.0
22	-485.2482	342.7167	51.4478	100	0.6302	195993.293	311007.428	311007.4	0.0	195993.3	0.0
23	-485.2886	337.8030	46.5801	100	0.6494	174871.238	269267.372	269267.4	0.0	174871.2	0.0
24	-485.3289	332.8893	43.4980	100	0.6954	46713.807	67176.397	67176.4	0.0	46713.8	0.0
25	-492.6245	386.8449	96.1539	100	0.5756	396862.275	689435.903	689435.9	0.0	396862.3	0.0
26	-492.6736	381.9341	91.3016	100	0.5909	377358.827	638596.073	638596.1	0.0	377358.8	0.0
27	-492.7226	377.0233	86.4562	100	0.6079	358963.797	590460.851	590460.9	0.0	358963.8	0.0
28	-492.7716	372.1125	81.6191	100	0.6275	339080.049	540388.216	540388.2	0.0	339080.0	0.0
29	-492.8206	367.2016	76.7917	100	0.6472	320918.776	495862.493	495862.5	0.0	320918.8	0.0
30	-492.8696	362.2908	71.9763	100	0.6673	301358.705	451610.013	451610.0	0.0	301358.7	0.0
31	-492.9187	357.3800	67.1757	100	0.6892	282412.779	409777.359	409777.4	0.0	282412.8	0.0
32	-492.9677	352.4692	62.3934	100	0.7148	262941.163	367845.069	367845.1	0.0	262941.2	0.0

33	-493.0167	347.5584	49.5482	100	0.7494	74271.805	99104.254	99104.3	0.0	74271.8	0.0
34	-493.0657	342.6475	44.8624	100	0.7948	66448.975	83607.094	83607.1	0.0	66449.0	0.0
35	-493.1147	337.7367	40.2303	100	0.8395	57553.480	68555.426	68555.4	0.0	57553.5	0.0
36	-493.1638	332.8259	35.6730	100	0.8822	48741.017	55246.606	55246.6	0.0	48741.0	0.0
37	-500.3642	386.7498	96.8660	100	0.6520	402196.550	616897.695	616897.7	0.0	402196.6	0.0
38	-500.4219	381.8418	92.0986	100	0.6723	385677.927	573659.899	573659.9	0.0	385677.9	0.0
39	-500.4795	376.9339	86.7706	100	0.6911	344587.120	498579.397	498579.4	0.0	344587.1	0.0
40	-500.5372	372.0260	82.0405	100	0.7136	328718.399	460662.522	460662.5	0.0	328718.4	0.0
41	-500.5949	367.1180	70.4639	100	0.7378	109032.891	147786.205	147786.2	0.0	109032.9	0.0
42	-500.6526	362.2101	65.8189	100	0.7776	104087.517	133852.164	133852.2	0.0	104087.5	0.0
43	-500.7102	357.3021	61.2150	100	0.8173	97053.776	118744.939	118744.9	0.0	97053.8	0.0
44	-500.7679	352.3942	56.6623	100	0.8567	88630.017	103451.689	103451.7	0.0	88630.0	0.0
45	-500.8256	347.4863	52.1741	100	0.8966	80383.478	89654.786	89654.8	0.0	80383.5	0.0
46	-500.8832	342.5783	47.7686	100	0.9340	72361.849	77471.603	77471.6	0.0	72361.8	0.0
47	-500.9409	337.6704	43.4709	100	0.9640	64656.758	67073.328	67073.3	0.0	64656.8	0.0
48	-500.9986	332.7625	39.3165	100	0.9782	57372.337	58652.089	58652.1	0.0	57372.3	0.0
49	-508.1039	386.6546	91.3637	100	0.7261	142682.765	196502.344	196502.3	0.0	142682.8	0.0
50	-508.1702	381.7496	86.7431	100	0.7588	138381.783	182380.412	182380.4	0.0	138381.8	0.0
51	-508.2365	376.8445	82.1555	100	0.7943	134673.843	169551.914	169551.9	0.0	134673.8	0.0
52	-508.3028	371.9394	77.6069	100	0.8300	129292.026	155769.211	155769.2	0.0	129292.0	0.0
53	-508.3691	367.0344	73.1044	100	0.8645	121414.958	140452.238	140452.2	0.0	121415.0	0.0
54	-508.4355	362.1293	68.6571	100	0.8997	113792.934	126483.457	126483.5	0.0	113792.9	0.0
55	-508.5018	357.2243	64.2766	100	0.9344	106500.116	113976.897	113976.9	0.0	106500.1	0.0
56	-508.5681	352.3192	59.9773	100	0.9666	99625.335	103072.898	103072.9	0.0	99625.3	0.0
57	-508.6344	347.4142	55.7783	100	0.9930	93307.842	93966.749	93966.7	0.0	93307.8	0.0
58	-508.7008	342.5091	51.7037	100	0.9876	87870.728	88970.010	88970.0	0.0	87870.7	0.0
59	-508.7671	337.6041	47.7856	100	0.9663	83370.165	86279.563	86279.6	0.0	83370.2	0.0
60	-508.8334	332.6990	44.0657	100	0.9166	80213.602	87512.693	87512.7	0.0	80213.6	0.0
61	-515.8435	386.5594	93.9967	100	0.8383	162762.669	194168.253	194168.3	0.0	162762.7	0.0
62	-515.9185	381.6573	89.5292	100	0.8687	155450.157	178940.550	178940.6	0.0	155450.2	0.0
63	-515.9935	376.7551	85.1097	100	0.9000	148468.180	164973.322	164973.3	0.0	148468.2	0.0
64	-516.0684	371.8529	80.7459	100	0.9312	141894.827	152370.415	152370.4	0.0	141894.8	0.0
65	-516.1434	366.9508	76.4476	100	0.9598	135819.553	141505.841	141505.8	0.0	135819.6	0.0
66	-516.2184	362.0486	72.2262	100	0.9334	131470.769	140850.358	140850.4	0.0	131470.8	0.0
67	-516.2934	357.1464	68.0962	100	0.9179	127976.055	139418.825	139418.8	0.0	127976.1	0.0
68	-516.3683	352.2443	64.0753	100	0.8881	125169.635	140947.536	140947.5	0.0	125169.6	0.0
69	-516.4433	347.3421	60.1852	100	0.8449	122963.387	145527.430	145527.4	0.0	122963.4	0.0
70	-516.5183	342.4399	56.4531	100	0.7610	121445.011	159576.903	159576.9	0.0	121445.0	0.0
71	-516.5933	337.5377	54.7958	100	0.7167	175514.500	244907.071	244907.1	0.0	175514.5	0.0
72	-516.6682	332.6356	52.7611	100	0.6831	209818.758	307170.721	307170.7	0.0	209818.8	0.0
73	-523.5832	386.4643	97.1764	100	0.8798	179350.053	203858.577	203858.6	0.0	179350.1	0.0
74	-523.6668	381.5650	92.8800	100	0.8690	176369.434	202961.196	202961.2	0.0	176369.4	0.0
75	-523.7504	376.6657	88.6461	100	0.8540	174163.522	203927.820	203927.8	0.0	174163.5	0.0
76	-523.8341	371.7664	84.4844	100	0.8317	172647.488	207590.386	207590.4	0.0	172647.5	0.0
77	-523.9177	366.8671	80.4059	100	0.8020	171792.589	214195.890	214195.9	0.0	171792.6	0.0
78	-524.0013	361.9679	76.4239	100	0.7417	171690.583	231493.576	231493.6	0.0	171690.6	0.0
79	-524.0849	357.0686	74.5396	100	0.7123	254641.771	357486.122	357486.1	0.0	254641.8	0.0
80	-524.1686	352.1693	71.7228	100	0.6953	291094.911	418634.198	418634.2	0.0	291094.9	0.0
81	-524.2522	347.2700	68.5261	100	0.6765	304228.770	449700.938	449700.9	0.0	304228.8	0.0
82	-524.3358	342.3707	65.4635	100	0.6522	315193.081	483292.108	483292.1	0.0	315193.1	0.0
83	-524.4194	337.4714	60.3794	100	0.6158	243241.428	395025.110	395025.1	0.0	243241.4	0.0
84	-524.5031	332.5721	55.6967	100	0.5751	193174.117	335877.082	335877.1	0.0	193174.1	0.0
85	-531.3228	386.3691	100.8511	100	0.7372	223529.061	303198.270	303198.3	0.0	223529.1	0.0
86	-531.4151	381.4727	96.7367	100	0.7032	225043.953	320045.054	320045.1	0.0	225044.0	0.0
87	-531.5074	376.5763	95.7597	100	0.6888	398232.972	578167.266	578167.3	0.0	398233.0	0.0
88	-531.5997	371.6799	92.2611	100	0.6820	421898.589	618639.659	618639.7	0.0	421898.6	0.0
89	-531.6919	366.7835	88.8359	100	0.6730	443329.153	658692.409	658692.4	0.0	443329.2	0.0
90	-531.7842	361.8871	85.4933	100	0.6612	462546.169	699504.041	699504.0	0.0	462546.2	0.0
91	-531.8765	356.9907	80.8329	100	0.6431	406010.987	631317.829	631317.8	0.0	406011.0	0.0
92	-531.9688	352.0943	75.9033	100	0.6171	335184.543	543181.935	543181.9	0.0	335184.5	0.0
93	-532.0610	347.1979	71.2239	100	0.5835	277577.377	475734.695	475734.7	0.0	277577.4	0.0
94	-532.1533	342.3015	84.1641	100	0.5004	1131301.814	2260625.533	2260625.5	0.0	1131301.8	0.0
95	-532.2456	337.4051	80.4764	100	0.5005	1080637.248	2158966.636	2158966.6	0.0	1080637.2	0.0
96	-532.3379	332.5087	76.9242	101	0.4959	1032778.402	2082796.630	2082796.6	0.0	1032778.4	0.0
97	-539.0625	386.2740	110.0306	100	0.6584	645591.628	980492.591	980492.6	0.0	645591.6	0.0
98	-539.1634	381.3804	106.0276	100	0.6535	637579.450	975658.151	975658.2	0.0	637579.4	0.0
99	-539.2644	376.4869	100.6329	100	0.6419	530913.437	827154.463	827154.5	0.0	530913.4	0.0
100	-539.3653	371.5934	96.3449	100	0.6281	497694.149	792387.941	792387.9	0.0	497694.1	0.0
101	-539.4662	366.6999	91.2408	100	0.6051	411424.335	679947.184	679947.2	0.0	411424.3	0.0
102	-539.5671	361.8064	86.3254	100	0.5733	337485.832	588634.949	588634.9	0.0	337485.8	0.0
103	-539.6681	356.9129	82.9611	100	0.4962	348947.005	703232.036	703232.0	0.0	348947.0	0.0

104	-539.7690	352.0193	95.6444	100	0.4898	1363716.897	2784096.156	2784096.2	0.0	1363716.9	0.0
105	-539.8699	347.1258	92.3957	100	0.4887	1340677.802	2743417.039	2743417.0	0.0	1340677.8	0.0
106	-539.9708	342.2323	88.4425	100	0.4862	1278819.739	2630317.928	2630317.9	0.0	1278819.7	0.0
107	-540.0718	337.3388	84.2941	101	0.4816	1182070.686	2454647.408	2454647.4	0.0	1182070.7	0.0
108	-540.1727	332.4453	80.0480	101	0.4689	1075466.510	2293605.177	2293605.2	0.0	1075466.5	0.0
109	-546.8022	386.1788	111.4321	100	0.6098	552322.064	905733.345	905733.3	0.0	552322.1	0.0
110	-546.9117	381.2882	106.6985	100	0.5915	487286.124	823871.636	823871.6	0.0	487286.1	0.0
111	-547.0213	376.3975	102.0967	100	0.5679	430528.152	758112.480	758112.5	0.0	430528.2	0.0
112	-547.1309	371.5069	105.4526	100	0.4967	942188.723	1896931.819	1896931.8	0.0	942188.7	0.0
113	-547.2405	366.6163	102.7571	100	0.4847	996577.851	2055985.650	2055985.6	0.0	996577.9	0.0
114	-547.3501	361.7256	100.5576	100	0.4734	1076903.446	2274589.630	2274589.6	0.0	1076903.4	0.0
115	-547.4596	356.8350	97.1345	100	0.4609	1059417.611	2298714.611	2298714.6	0.0	1059417.6	0.0
116	-547.5692	351.9444	92.6320	100	0.4487	956940.649	2132513.791	2132513.8	0.0	956940.6	0.0
117	-547.6788	347.0537	88.7698	100	0.4376	899343.523	2054945.936	2054945.9	0.0	899343.5	0.0
118	-547.7884	342.1631	84.4236	101	0.4222	801486.160	1898221.084	1898221.1	0.0	801486.2	0.0
119	-547.8979	337.2724	80.0999	101	0.4087	709600.881	1736381.134	1736381.1	0.0	709600.9	0.0
120	-548.0075	332.3818	75.9173	102	0.4017	643976.908	1603133.542	1603133.5	0.0	643976.9	0.0
121	-554.5418	386.0836	119.0362	100	0.4877	955423.513	1959046.567	1959046.6	0.0	955423.5	0.0
122	-554.6601	381.1959	114.0038	100	0.4746	836862.231	1763162.291	1763162.3	0.0	836862.2	0.0
123	-554.7783	376.3081	110.0294	100	0.4610	805596.910	1747336.386	1747336.4	0.0	805596.9	0.0
124	-554.8965	371.4204	105.7476	100	0.4430	743913.546	1679379.373	1679379.4	0.0	743913.5	0.0
125	-555.0147	366.5326	101.2104	100	0.4220	660136.291	1564311.294	1564311.3	0.0	660136.3	0.0
126	-555.1330	361.6449	Kein Schnitt mit Gelände								
127	-555.2512	356.7571	Kein Schnitt mit Gelände								
128	-555.3694	351.8694	Kein Schnitt mit Gelände								
129	-555.4877	346.9816	Kein Schnitt mit Gelände								
130	-555.6059	342.0939	Kein Schnitt mit Gelände								
131	-555.7241	337.2061	Kein Schnitt mit Gelände								
132	-555.8423	332.3184	Kein Schnitt mit Gelände								
133	-562.2815	385.9885	Kein Schnitt mit Gelände								
134	-562.4084	381.1036	Kein Schnitt mit Gelände								
135	-562.5352	376.2188	Kein Schnitt mit Gelände								
136	-562.6621	371.3339	Kein Schnitt mit Gelände								
137	-562.7890	366.4490	Kein Schnitt mit Gelände								
138	-562.9159	361.5641	Kein Schnitt mit Gelände								
139	-563.0428	356.6793	Kein Schnitt mit Gelände								
140	-563.1696	351.7944	Kein Schnitt mit Gelände								
141	-563.2965	346.9095	Kein Schnitt mit Gelände								
142	-563.4234	342.0247	Kein Schnitt mit Gelände								
143	-563.5503	337.1398	Kein Schnitt mit Gelände								
144	-563.6772	332.2549	Kein Schnitt mit Gelände								

Ungünstigster Gleitkreis

Nr	xm	ym	Radius	Lamellen	μ	Zähler	Nenner	M(Ti)	M(R)	M(Gi)	M(S)
[-]	[m]	[m]	[m]	[-]	[-]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]	[kN*m/m]
57	-508.6344	347.4142	55.7783	100	0.9930	93307.842	93966.749	93966.7	0.0	93307.8	0.0