



Digital model of terrain

Results (Stage of construction 1)

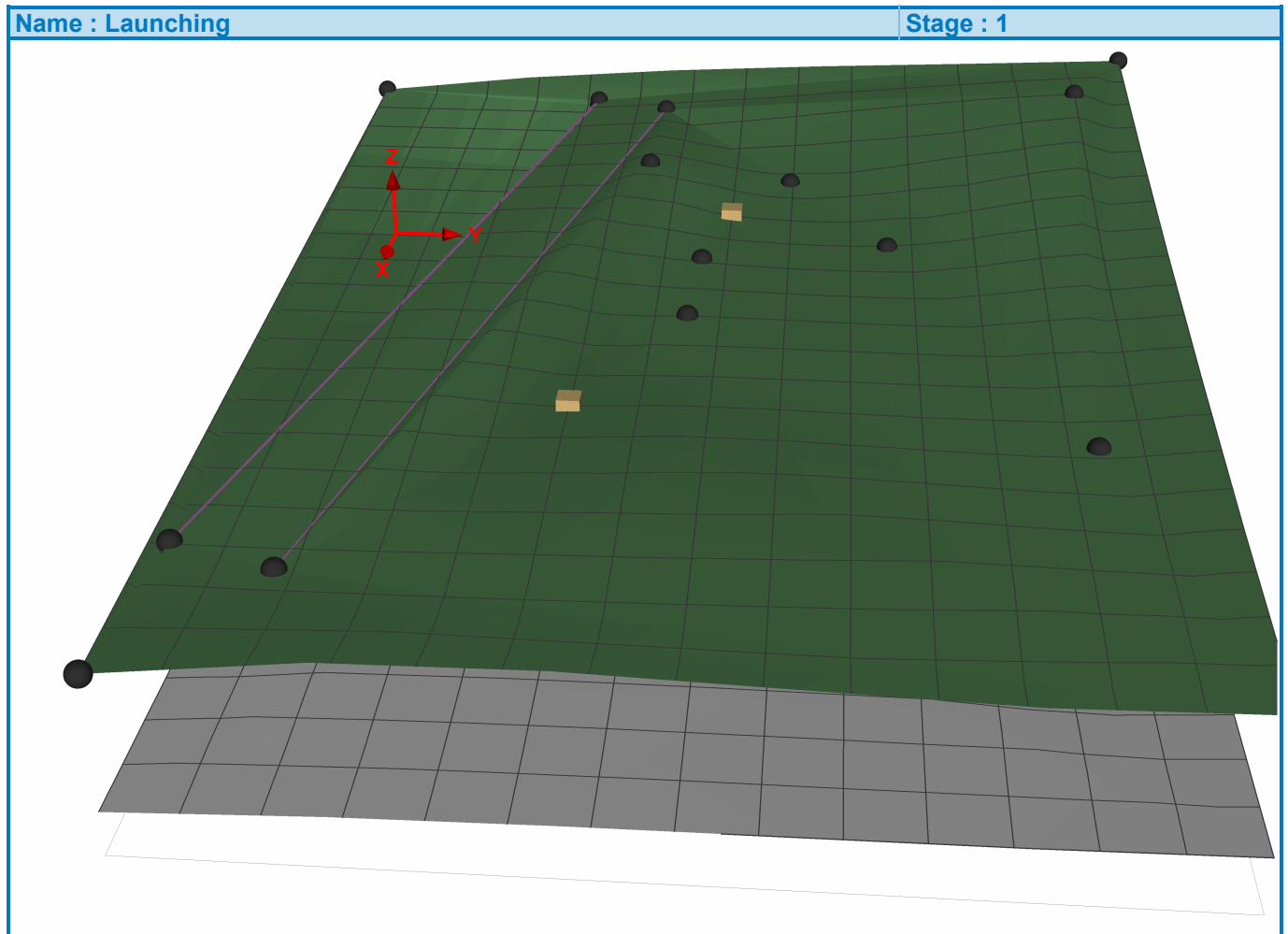
Generate

Parameters

Smoothing : medium

Active edge : 0,0 %

Run



Input data (Stage of construction 2)

Assign

No.	Name of layer	Assigned soil	Pattern
1	Terrain	Gravelly silt (MG), consistency firm	
2	Layer 1	Gravelly silt (MG), consistency firm	
3	Layer 2	Silty gravel (GM)	



Coordinates of points

No.	Local coordinates		
	X [m]	Y [m]	Z [m]
1	0,60	3,20	100,06
2	16,95	-0,75	99,64
3	0,60	3,21	100,16
4	16,95	-0,74	99,74
5	1,30	4,55	100,26
6	17,50	0,75	99,72
7	4,50	4,50	100,39
8	7,90	5,60	100,05
9	4,35	6,95	100,04
10	7,05	8,60	100,00
11	13,75	11,40	99,91
12	10,00	5,50	100,00
13	2,00	12,00	101,00
14	0,00	-1,00	100,06
15	20,00	-1,00	99,72
16	20,00	13,00	99,91
17	0,00	13,00	101,00
20001	6,00	6,00	100,05
20002	13,00	4,00	99,90

Edges inserted between terrain points

No.	Start pt.	End pt.	No.	Start pt.	End pt.	No.	Start pt.	End pt.
1	5	6	2	3	4			

Earth grading

Earth grading No. 1: Earth grading 1

Height : 102,00 m

Gradient : 89,00 °

Earth grading points

No.	Local coordinates			Gradient [°]
	X [m]	Y [m]	Z [m]	
1	5,50	12,90	102,00	89,00
2	17,50	12,90	102,00	89,00
3	7,05	8,70	102,00	89,00

Earth grading No. 2: Earth grading 2

Height : Various

Gradient : 89,00 °

Earth grading points

No.	Local coordinates			Gradient [°]
	X [m]	Y [m]	Z [m]	
1	18,95	7,75	98,60	89,00
2	17,20	12,60	98,10	89,00
3	14,20	11,40	98,10	89,00
4	15,76	7,40	98,60	89,00
5	14,41	1,51	99,80	89,00
6	17,50	0,76	99,72	89,00

Results (Stage of construction 2)

Calculation of volumes of earthwork in stage No.4 against stage No.3

EXCAVATED



Soil	Without bulkage [m³]	Coefficient bulkage	Total [m³]
Gravelly silt (MG), consistency firm	38,09	1,10	41,89
Silty gravel (GM)	0,00	1,10	0,00
Total	38,09	-	41,89

FILLED

Soil	[m³]
Gravelly silt (MG), consistency firm	49,77
Silty gravel (GM)	0,00
Total	49,77

Line-constructions

Line construction No. 1: Line-construction 1

Type : Longitudinal line-construction

Program : Settlement

Points on a line

No.	Local coordinates		
	X [m]	Y [m]	Z [m]
1	1,00	5,00	100,26
2	18,00	8,00	98,56

Run

Construction type	Program	Name	State
Line-construction	Settlement	Line-construction 1	

Line-construction 1 - Settlement

Settlement analysis

Input data

Project

Settings

Standard - EN 1997 - DA2

Settlement

Analysis method : Analysis using oedometric modulus

Restriction of influence zone : by percentage of Sigma, Or

Coeff. of restriction of influence zone : 10,0 [%]

Interface

No.	Interface location	Coordinates of interface points [m]					
		x	z	x	z	x	z
1		0,00	0,00	0,36	0,06	1,14	-0,06
		3,48	-0,03	5,78	-0,23	7,67	-0,26
		7,71	-0,26	8,24	-0,22	10,69	-0,16
		13,38	-0,24	14,89	-0,26	14,92	-1,68
		17,26	-1,70				
2		7,71	-0,26	11,43	-0,31	14,89	-0,26



No.	Interface location	Coordinates of interface points [m]					
		x	z	x	z	x	z
3		0,00	-3,00	3,05	-3,15	4,96	-3,21
		8,33	-2,98	15,04	-2,36	17,26	-2,39

Soil parameters

Gravelly silt (MG), consistency firm

Unit weight : $\gamma = 19,00 \text{ kN/m}^3$
 Oedometric modulus : $E_{oed} = 24,00 \text{ MPa}$
 Saturated unit weight : $\gamma_{sat} = 19,00 \text{ kN/m}^3$

Silty gravel (GM)

Unit weight : $\gamma = 19,00 \text{ kN/m}^3$
 Oedometric modulus : $E_{oed} = 94,50 \text{ MPa}$
 Saturated unit weight : $\gamma_{sat} = 19,00 \text{ kN/m}^3$

Assigning and surfaces

No.	Surface position	Coordinates of surface points [m]				Assigned soil
		x	z	x	z	
1		11,43	-0,31	14,89	-0,26	Gravelly silt (MG), consistency firm
		13,38	-0,24	10,69	-0,16	
		8,24	-0,22	7,71	-0,26	
2		3,05	-3,15	4,96	-3,21	Gravelly silt (MG), consistency firm
		8,33	-2,98	15,04	-2,36	
		17,26	-2,39	17,26	-1,70	
		14,92	-1,68	14,89	-0,26	
		11,43	-0,31	7,71	-0,26	
		7,67	-0,26	5,78	-0,23	
		3,48	-0,03	1,14	-0,06	
		0,36	0,06	0,00	0,00	
3		15,04	-2,36	8,33	-2,98	Silty gravel (GM)
		4,96	-3,21	3,05	-3,15	
		0,00	-3,00	0,00	-5,21	
		17,26	-5,21	17,26	-2,39	
		0,00	-3,00	0,00	-5,21	

Water

Water type : No water

Holes layout

Layout and refinement of holes : standard

Horizontal layout

Layout pattern : exact
 Add holes : by number of sections
 Number of sections : 20

Vertical refinement

No.	From depth [m]	Refinement [m]
1	0,00	0,10
2	2,00	0,30

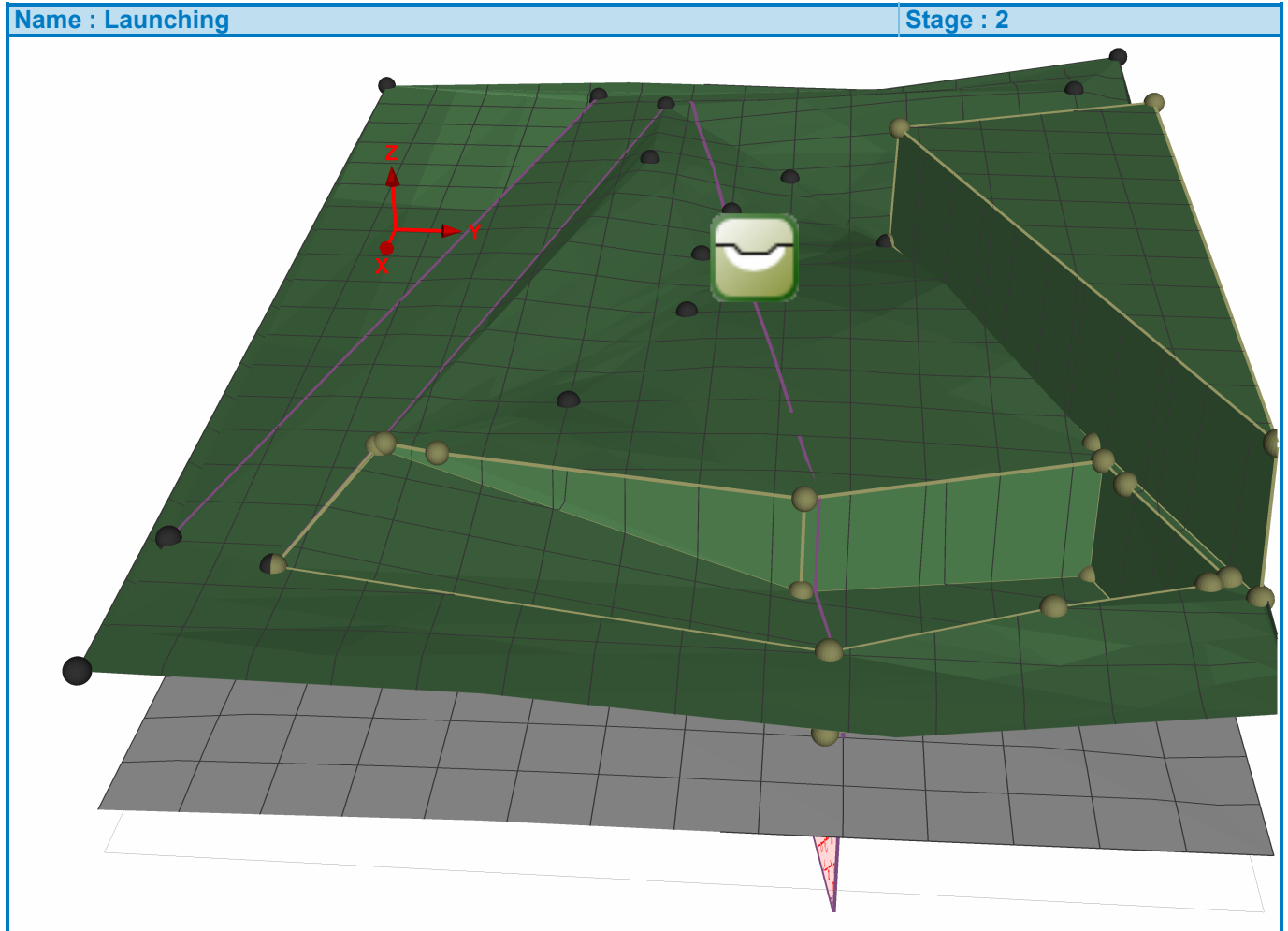


3	5,00	0,50
4	10,00	2,00
5	30,00	10,00

Results (Stage of construction 1)

Results

Analysis of geostatic stress was successfully completed



Input data (Stage of construction 3)

Assign

No.	Name of layer	Assigned soil	Pattern
1	Terrain	Gravelly silt (MG), consistency firm	
2	Layer 1	Gravelly silt (MG), consistency firm	
3	Layer 2	Gravelly silt (MG), consistency firm	



No.	Name of layer	Assigned soil	Pattern
4	Layer 3	Silty gravel (GM)	

Coordinates of points

No.	Local coordinates		
	X [m]	Y [m]	Z [m]
1	0,60	3,20	100,06
2	16,95	-0,75	99,64
3	0,60	3,21	100,16
4	16,95	-0,74	99,74
5	1,30	4,55	100,26
6	17,50	0,75	99,72
7	4,50	4,50	100,39
8	7,90	5,60	100,05
9	4,35	6,95	100,04
10	7,05	8,60	100,00
12	10,00	5,50	100,00
13	2,00	12,00	101,00
14	0,00	-1,00	100,06
15	20,00	-1,00	99,72
16	20,00	13,00	99,91
17	0,00	13,00	101,00
18	17,20	12,60	98,10
19	17,22	12,64	99,94
20	14,20	11,40	98,10
21	14,16	11,42	99,90
22	15,76	7,40	98,60
23	15,73	7,40	100,01
24	14,41	1,51	99,80
25	14,39	1,50	99,83
26	17,50	0,76	99,72
27	18,95	7,75	98,60
28	18,97	7,75	99,76
29	14,76	11,66	99,88
30	17,50	12,90	102,00
31	17,68	12,94	99,96
32	7,05	8,70	102,00
33	7,03	8,65	100,01
34	5,50	12,90	102,00
35	5,46	12,92	100,57
36	13,71	11,34	99,91
37	6,69	9,56	100,13
38	5,87	11,80	100,62
39	5,65	12,40	100,50
63	12,65	12,94	100,14
64	14,58	2,37	99,86
65	14,41	1,61	99,89
66	18,01	10,44	99,91
67	17,32	12,38	99,90
20001	6,00	6,00	100,05
20002	13,00	4,00	99,90



Edges inserted between terrain points

No.	Start pt.	End pt.	No.	Start pt.	End pt.	No.	Start pt.	End pt.
1	5	6	2	3	4	3	18	19
4	20	21	5	22	23	6	24	25
7	27	28	8	18	20	9	20	22
10	22	24	11	24	26	12	26	27
13	27	18	14	19	29	15	29	21
16	21	23	17	23	64	18	64	65
19	65	25	20	25	26	21	30	31
22	32	33	23	34	35	24	30	32
25	32	34	26	34	30	27	31	36
28	36	33	29	33	37	30	37	38
31	38	39	32	39	35	34	35	63
66	63	31	67	26	28	68	28	66
69	66	67	70	67	19			

Earth grading

Earth grading No. 1: Earth grading 1

Height : Various

Gradient : 89,00 °

Earth grading points

No.	Local coordinates			Gradient [°]
	X [m]	Y [m]	Z [m]	
1	17,31	12,70	98,10	89,00
2	10,58	9,95	98,10	89,00
3	7,18	8,52	98,60	89,00
4	4,40	6,64	99,30	89,00
5	2,43	4,46	100,30	89,00
6	5,86	3,66	100,10	89,00
7	9,81	2,70	98,10	89,00
8	17,66	0,91	98,10	89,00
9	19,13	7,81	98,10	89,00

Results (Stage of construction 3)

Calculation of volumes of earthwork in stage No.4 against stage No.3

EXCAVATED

Soil	Without bulkage [m³]	Coefficient bulkage	Total [m³]
Gravelly silt (MG), consistency firm	150,18	1,10	165,20
Silty gravel (GM)	1,14	1,10	1,25
Total	151,32	-	166,45

FILLED

Soil	[m³]
Gravelly silt (MG), consistency firm	1,77
Silty gravel (GM)	0,00
Total	1,77

Line-constructions

Line construction No. 1: Line-construction 1

Type : Longitudinal line-construction

Program : Settlement

Points on a line



No.	Local coordinates		
	X [m]	Y [m]	Z [m]
1	1,00	5,00	100,26
2	18,00	8,00	98,10

Run

Construction type	Program	Name	State
Line-construction	Settlement	Line-construction 1	

Line-construction 1 - Settlement

Settlement analysis

Input data

Project

Settings

Standard - EN 1997 - DA2

Settlement

Analysis method : Analysis using oedometric modulus

Restriction of influence zone : by percentage of Sigma, Or

Coeff. of restriction of influence zone : 10,0 [%]

Interface

No.	Interface location	Coordinates of interface points [m]					
		x	z	x	z	x	z
1		0,00	0,00	0,36	0,06	1,34	-0,04
		2,30	-0,06	2,31	-0,40	4,03	-0,71
		5,58	-0,87	7,31	-1,85	9,37	-2,16
		17,26	-2,16				
2		0,00	-3,00	3,05	-3,15	4,96	-3,21
		8,33	-2,98	15,04	-2,36	17,26	-2,39

Soil parameters

Gravelly silt (MG), consistency firm

Unit weight : $\gamma = 19,00 \text{ kN/m}^3$

Oedometric modulus : $E_{\text{oed}} = 24,00 \text{ MPa}$

Saturated unit weight : $\gamma_{\text{sat}} = 19,00 \text{ kN/m}^3$

Silty gravel (GM)

Unit weight : $\gamma = 19,00 \text{ kN/m}^3$

Oedometric modulus : $E_{\text{oed}} = 94,50 \text{ MPa}$

Saturated unit weight : $\gamma_{\text{sat}} = 19,00 \text{ kN/m}^3$



Assigning and surfaces

No.	Surface position	Coordinates of surface points [m]				Assigned soil
		x	z	x	z	
1		3,05	-3,15	4,96	-3,21	Gravelly silt (MG), consistency firm
		8,33	-2,98	15,04	-2,36	
		17,26	-2,39	17,26	-2,16	
		9,37	-2,16	7,31	-1,85	
		5,58	-0,87	4,03	-0,71	
		2,31	-0,40	2,30	-0,06	
		1,34	-0,04	0,36	0,06	
2		15,04	-2,36	8,33	-2,98	Silty gravel (GM)
		4,96	-3,21	3,05	-3,15	
		0,00	-3,00	0,00	-5,21	
		17,26	-5,21	17,26	-2,39	

Water

Water type : No water

Holes layout

Layout and refinement of holes : standard

Horizontal layout

Layout pattern : exact

Add holes : by number of sections

Number of sections : 20

Vertical refinement

No.	From depth [m]	Refinement [m]
1	0,00	0,10
2	2,00	0,30
3	5,00	0,50
4	10,00	2,00
5	30,00	10,00

Results (Stage of construction 1)

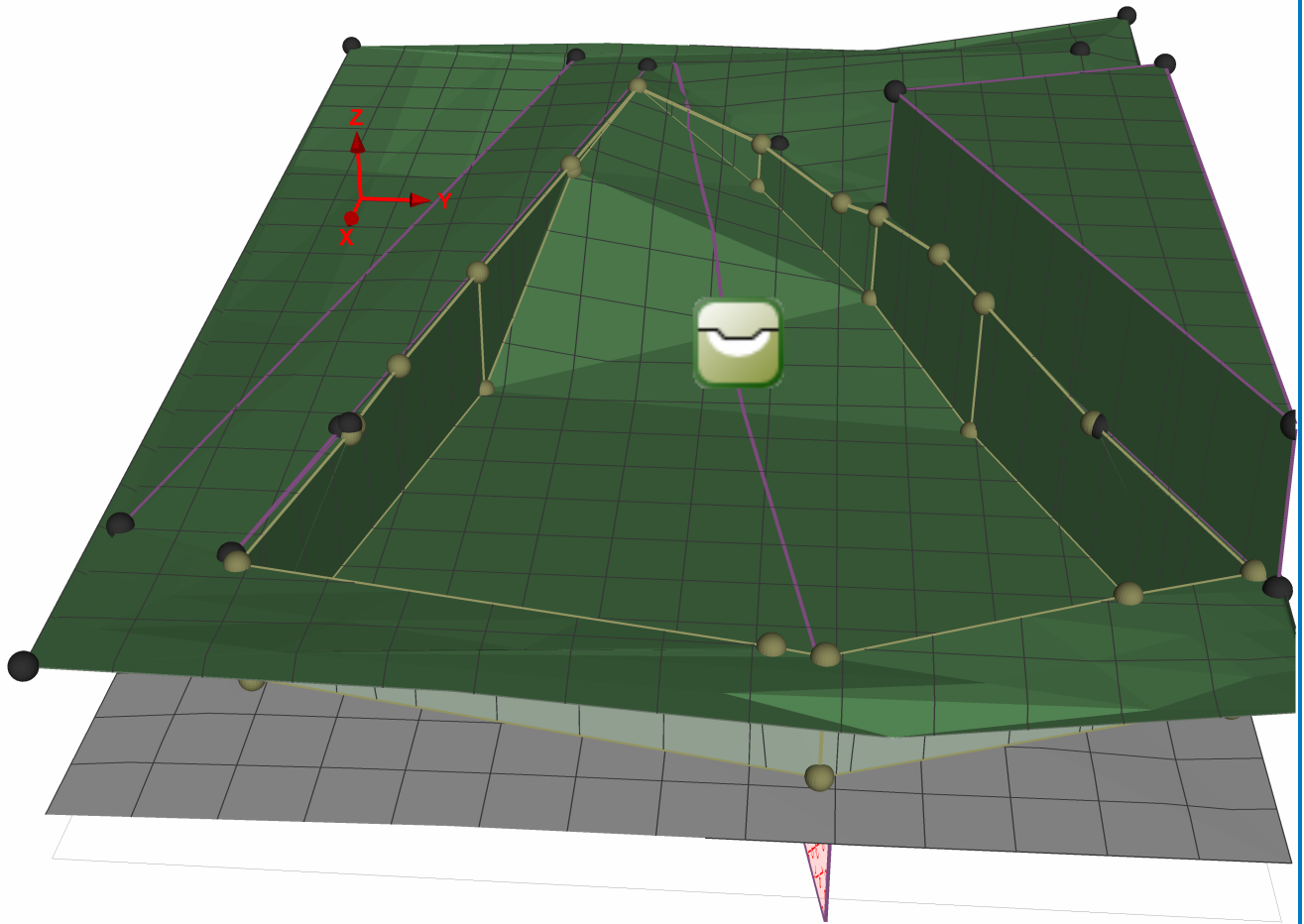
Results

Analysis of geostatic stress was successfully completed



Name : Launching

Stage : 3



Input data (Stage of construction 4)

Assign

No.	Name of layer	Assigned soil	Pattern
1	Terrain	Gravelly silt (MG), consistency firm	
2	Layer 1	Gravelly silt (MG), consistency firm	
3	Layer 2	Gravelly silt (MG), consistency firm	
4	Layer 3	Gravelly silt (MG), consistency firm	
5	Layer 4	Silty gravel (GM)	



Coordinates of points

No.	Local coordinates		
	X [m]	Y [m]	Z [m]
1	0,60	3,20	100,06
2	16,95	-0,75	99,64
3	0,60	3,21	100,16
4	16,95	-0,74	99,74
5	1,30	4,55	100,26
6	17,50	0,75	99,72
9	4,35	6,95	100,04
10	7,05	8,60	100,00
13	2,00	12,00	101,00
14	0,00	-1,00	100,06
15	20,00	-1,00	99,72
16	20,00	13,00	99,91
17	0,00	13,00	101,00
24	14,41	1,51	99,80
25	14,39	1,50	99,83
26	17,50	0,76	99,72
30	17,50	12,90	102,00
31	17,68	12,94	99,96
32	7,05	8,70	102,00
33	7,03	8,65	100,01
34	5,50	12,90	102,00
35	5,46	12,92	100,57
36	13,71	11,34	99,91
37	6,69	9,56	100,13
38	5,87	11,80	100,62
39	5,65	12,40	100,50
40	10,58	9,95	98,10
41	10,57	9,98	100,16
42	7,18	8,52	98,60
43	7,17	8,55	100,01
44	4,40	6,64	99,30
45	4,39	6,66	100,07
46	2,43	4,46	100,29
47	5,86	3,66	100,10
48	5,86	3,64	100,18
49	9,81	2,70	98,10
50	9,80	2,67	100,03
51	17,66	0,91	98,10
52	17,69	0,87	99,72
53	19,13	7,81	98,10
54	19,16	7,81	99,75
55	17,31	12,70	98,10
56	17,32	12,74	99,95
57	9,16	9,39	100,27
58	6,34	7,99	99,87
59	12,76	1,99	99,94
60	14,31	1,64	99,83
61	14,43	1,61	99,78
62	19,04	7,21	99,77
63	12,65	12,94	100,14
65	14,41	1,61	99,89
68	17,88	11,24	99,92
69	13,65	11,24	99,92



Edges inserted between terrain points

No.	Start pt.	End pt.	No.	Start pt.	End pt.	No.	Start pt.	End pt.
1	5	6	2	3	4	6	24	25
11	24	26	20	25	26	21	30	31
22	32	33	23	34	35	24	30	32
25	32	34	26	34	30	27	31	36
28	36	33	29	33	37	30	37	38
31	38	39	32	39	35	33	40	41
34	35	63	35	42	43	36	44	45
37	47	48	38	49	50	39	51	52
40	53	54	41	55	56	42	40	42
43	42	44	44	44	46	45	46	47
46	47	49	47	49	51	48	51	53
49	53	55	50	55	40	51	41	57
52	57	43	53	43	58	54	58	45
55	45	46	56	46	48	57	48	50
58	50	59	59	59	60	60	60	61
61	61	52	62	52	62	63	62	54
64	54	68	65	68	56	66	63	31
71	56	69	72	69	41			

Results (Stage of construction 4)

Calculation of volumes of earthwork in stage No.4 against stage No.3

EXCAVATED

Soil	Without bulkage [m ³]	Coefficient bulkage	Total [m ³]
Gravelly silt (MG), consistency firm	0,91	1,10	1,01
Silty gravel (GM)	0,00	1,10	0,00
Total	0,91	-	1,01

FILLED

Soil	[m ³]
Gravelly silt (MG), consistency firm	0,73
Silty gravel (GM)	0,00
Total	0,73

Line-constructions

Line construction No. 1: Line-construction 1

Type : Longitudinal line-construction

Program : Settlement

Points on a line

No.	Local coordinates		
	X [m]	Y [m]	Z [m]
1	1,00	5,00	100,26
2	18,00	8,00	98,10

Run

Construction type	Program	Name	State
Line-construction	Settlement	Line-construction 1	



Line-construction 1 - Settlement

Settlement analysis

Input data

Project

Settings

Standard - EN 1997 - DA2

Settlement

Analysis method : Analysis using oedometric modulus
Restriction of influence zone : by percentage of Sigma, Or
Coeff. of restriction of influence zone : 10,0 [%]

Interface

No.	Interface location	Coordinates of interface points [m]					
		x	z	x	z	x	z
1		0,00	0,00	0,36	0,06	1,34	-0,04
		2,30	-0,06	2,31	-0,40	4,03	-0,71
		5,58	-0,87	7,31	-1,85	9,37	-2,16
		17,26	-2,16				
2		0,00	-3,00	3,05	-3,15	4,96	-3,21
		8,33	-2,98	15,04	-2,36	17,26	-2,39

Soil parameters

Gravelly silt (MG), consistency firm

Unit weight : $\gamma = 19,00 \text{ kN/m}^3$
Oedometric modulus : $E_{\text{oed}} = 24,00 \text{ MPa}$
Saturated unit weight : $\gamma_{\text{sat}} = 19,00 \text{ kN/m}^3$

Silty gravel (GM)

Unit weight : $\gamma = 19,00 \text{ kN/m}^3$
Oedometric modulus : $E_{\text{oed}} = 94,50 \text{ MPa}$
Saturated unit weight : $\gamma_{\text{sat}} = 19,00 \text{ kN/m}^3$

Assigning and surfaces

No.	Surface position	Coordinates of surface points [m]				Assigned soil
		x	z	x	z	
1		3,05	-3,15	4,96	-3,21	Gravelly silt (MG), consistency firm
		8,33	-2,98	15,04	-2,36	
		17,26	-2,39	17,26	-2,16	
		9,37	-2,16	7,31	-1,85	
		5,58	-0,87	4,03	-0,71	
		2,31	-0,40	2,30	-0,06	
		1,34	-0,04	0,36	0,06	
		0,00	0,00	0,00	-3,00	
2		15,04	-2,36	8,33	-2,98	Silty gravel (GM)
		4,96	-3,21	3,05	-3,15	
		0,00	-3,00	0,00	-5,21	
		17,26	-5,21	17,26	-2,39	



Water

Water type : No water

Holes layout

Layout and refinement of holes : standard

Horizontal layout

Layout pattern : exact

Add holes : by number of sections

Number of sections : 20

Vertical refinement

No.	From depth [m]	Refinement [m]
1	0,00	0,10
2	2,00	0,30
3	5,00	0,50
4	10,00	2,00
5	30,00	10,00

Results (Stage of construction 1)

Results

Analysis of geostatic stress was successfully completed

