Report for D-Settlement 21.2

Settlement Calculations
Developed by Deltares

Company:	Aveco de Bondt
Date of report:	02/06/2022
Time of report:	14:57:55
Report with version:	21.2.1.34213
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File name:	Gramsbergen_1A_GPF2
Project identification:	210481002_Gramsbergen daling GWS Zetting door verl;aging GWS Grondprofiel 2

1 Table of Contents

2 Echo of the Input

2.1 Layer Boundaries

Boundary number	Co-ordinates [m]				
8 - X -	-50.000	50.000			
8 - Y -	8.500	8.500			
7 - X -	-50.000	50.000			
7 - Y -	7.600	7.600			
6 - X -	-50.000	50.000			
6 - Y -	3.700	3.700			
5 - X -	-50.000	50.000			
5 - Y -	2.400	2.400			
4 - X -	-50.000	50.000			
4 - Y -	-0.500	-0.500			
3 - X -	-50.000	50.000			
3 - Y -	-3.000	-3.000			
2 - X -	-50.000	50.000			
2 - Y -	-3.700	-3.700			
1 - X -	-50.000	50.000			
1 - Y -	-4.800	-4.800			
0 - X -	-50.000	50.000			
0 - Y -	-6.000	-6.000			

2.2 Pl-lines

Pl-line number	Co-ordinates [m]				
1 - X -	-50.000	50.000			
1 - Y -	7.470	7.470			
2 - X -	-50.000	0.000	1.000	50.000	
2 - Y -	7.370	7.370	7.470	7.470	

2.3 General Data

Soil model:	NEN Bjerrum
Consolidation model:	Darcy
Strain model:	Linear
Groundwater level:	Initial determined by Pl-line number 1
Unit weight of water:	9.81 [kN/m³]
Stress distribution	
- Soil:	Buisman
- Loads:	Simulate
End of consolidation:	100000.00 [days]
No maintain profile	
Pc (initial):	Constant
Creep rate reference time:	1.000 [days]
No imaginary surface	
No submerging	
Load column width	
- Non-Uniform Loads :	1.00 [m]
- Trapeziform Loads :	1.00 [m]

2.4 Soil Profiles

Layer number	Material name	Pl-line top	Pl-line bottom
8	Klei, zw zand, slap	1	1
7	Zand, schoon, ma	1	1
6	Klei, schoon, slap	1	1
5	Zand, schoon, ma	1	1
4	Klei, schoon, ma	1	1
3	Zand, schoon, ma	1	1
2	Klei, schoon, ma	1	1

Layer number	Material name	Pl-line top	Pl-line bottom
1	Zand, schoon, ma	1	1

2.5 Soil Properties

Layer number	Drained	Unit weight	
		Unsaturated [kN/m³]	Saturated [kN/m³]
8	No	15.00	15.00
7	Yes	18.00	20.00
6	No	14.00	14.00
5	Yes	18.00	20.00
4	No	17.00	17.00
3	Yes	18.00	20.00
2	No	17.00	17.00
1	Yes	18.00	20.00

Layer number	Storage type	Vert. consolid. coefficient Cv [m²/s]	Vertical permeability [m/s]	Permeability strain mod. [-]	Initial vertical permeability [m/s]
8	Vert. cons.	2.00E-08	-	-	-
7	Vert. cons.	-	-	-	-
6	Vert. cons.	8.00E-08	-	-	-
5	Vert. cons.	-	-	-	-
4	Vert. cons.	5.00E-08	-	-	-
3	Vert. cons.	-	-	-	-
2	Vert. cons.	5.00E-08	-	-	-
1	Vert. cons.	-	-	-	-

Layer number	POP [kN/m²]	OCR [-]	Equiv. age [days]
8	10.00	-	-
7	-	1.30	-
6	-	1.30	-
5	-	1.30	-
4	-	1.30	-
3	-	1.30	-
2	-	1.30	-
1	-	1.30	-

Layer number	Reloading/ swelling ratio RR [-]	Compression ratio CR [-]	Coeff. of sec. compression Ca [-]	Reloading/ swelling index Cr [-]	Compression index Cc [-]	Initial void ratio (e0) [-]
8	0.0767000	0.2300000	0.0092000	-	-	-
7	0.0013000	0.0038000	0.0000000	-	-	-
6	0.1095000	0.3286000	0.0131000	-	-	-
5	0.0013000	0.0038000	0.0000000	-	-	-
4	0.0511000	0.1533000	0.0061000	-	-	-
3	0.0013000	0.0038000	0.0000000	-	-	-
2	0.0511000	0.1533000	0.0061000	-	-	-
1	0.0013000	0.0038000	0.0000000	-	-	-

2.6 Water Loads

2.6.1 Water Load: Daling GWS

Phreatic line 1
Time: 0 [days]

Layer number	Pl-line top	Pl-line bottom
8	2	2
7	2	2
6	2	2
5	2	2

Layer number	Pl-line top	Pl-line bottom
4	2	2
3	2	2
2	2	2
1	2	2

2.7 Verticals

Vertical number	X co-ordinates [m]				
1 - 2	-40.000	50.000			

3 Settlements

3.1 Settlements

Vertical number	X co-ordinate [m]	Z co-ordinate [m]	Surface level [m]	Settlement [m]
1	-40.00	-999.00	8.50	0.128
2	50.00	0.00	8.50	0.122

End of Report