

Finite elements

Material properties

No.	Mat. type	EModule [MN/m²]	GModule	Poisson ratio	alpha.t [1/K]	gamma [kN/m²]
1	C20/25	28800	12000	0,20	1,000e-05	25,000
2	C20/25	28800	12000	0,20	1,000e-05	25,000
3	C20/25	28800	12000	0,20	1,000e-05	25,000

Bedding properties

Sec. No.	k _{bx}	k _{by} [MN/m²]	k _{bz}	b _x	b _y [m]	b _z
1	0,0	0,0	0,0	1,00	1,00	1,00
2	17,0	17,0	24,0	1,00	1,00	1,00
3	0,0	0,0	0,0	1,00	1,00	1,00

Creep and shrinkage properties

Material	phi.t	rho	epsilon.s
1	0,000	0,800	0,00E-05
2	0,000	0,800	0,00E-05
3	0,000	0,800	0,00E-05

Section properties

No.	1	FL d=0,3 A = 3,000e-01 [m²], I _y = 2,250e-03 [m4]
No.	2	FL d=0,3 A = 3,000e-01 [m²], I _y = 2,250e-03 [m4]
No.	3	FL d=0,3 A = 3,000e-01 [m²], I _y = 2,250e-03 [m4]

System characteristics

Nodes	1003
Elements	971
Unknown variables	6018
Bandwidth	402
Stiffness matrix	13,7 MB
Mass matrix	1,2 MB

Load case overview

No.	name
1	[p]
2	[v]
3	[water]

Load data Load case 1 ([p])

EG	: Dead load					
	Weighting factors:	fx	/	fy	/	fz = 0,0000 / 0,000 / 1,000
LG	: Line load (global)					
	x [m]	y	z	p _x [kN/m]	p _y	p _z
	Beg: -7,155	1,229	-4,100	0,00	0,00	15,30
	End: -7,410	1,044	-4,100	0,00	0,00	15,30
	Beg: -7,410	1,044	-4,100	0,00	0,00	15,30
	End: -7,710	0,946	-4,100	0,00	0,00	15,30
	Beg: -7,710	0,946	-4,100	0,00	0,00	15,30
	End: -8,026	0,946	-4,100	0,00	0,00	15,30
	Beg: -8,026	0,946	-4,100	0,00	0,00	15,30
	End: -8,326	1,044	-4,100	0,00	0,00	15,30

LG : Line load (global)

	x [m]	y	z	px [kN/m]	py	pz
Beg:	-8,326	1,044	-4,100	0,00	0,00	15,30
End:	-8,581	1,229	-4,100	0,00	0,00	15,30
Beg:	-8,581	1,229	-4,100	0,00	0,00	15,30
End:	-8,766	1,485	-4,100	0,00	0,00	15,30
Beg:	-8,766	1,485	-4,100	0,00	0,00	15,30
End:	-8,864	1,785	-4,100	0,00	0,00	15,30
Beg:	-8,864	1,785	-4,100	0,00	0,00	15,30
End:	-8,864	2,100	-4,100	0,00	0,00	15,30
Beg:	-8,864	2,100	-4,100	0,00	0,00	15,30
End:	-8,766	2,400	-4,100	0,00	0,00	15,30
Beg:	-8,766	2,400	-4,100	0,00	0,00	15,30
End:	-8,581	2,655	-4,100	0,00	0,00	15,30
Beg:	-8,581	2,655	-4,100	0,00	0,00	15,30
End:	-8,326	2,841	-4,100	0,00	0,00	15,30
Beg:	-8,326	2,841	-4,100	0,00	0,00	15,30
End:	-8,026	2,938	-4,100	0,00	0,00	15,30
Beg:	-8,026	2,938	-4,100	0,00	0,00	15,30
End:	-7,710	2,938	-4,100	0,00	0,00	15,30
Beg:	-7,710	2,938	-4,100	0,00	0,00	15,30
End:	-7,410	2,841	-4,100	0,00	0,00	15,30
Beg:	-7,410	2,841	-4,100	0,00	0,00	15,30
End:	-7,155	2,655	-4,100	0,00	0,00	15,30
Beg:	-7,155	2,655	-4,100	0,00	0,00	15,30
End:	-6,969	2,400	-4,100	0,00	0,00	15,30
Beg:	-6,969	2,400	-4,100	0,00	0,00	15,30
End:	-6,872	2,100	-4,100	0,00	0,00	15,30
Beg:	-6,872	2,100	-4,100	0,00	0,00	15,30
End:	-6,872	1,785	-4,100	0,00	0,00	15,30
Beg:	-6,872	1,785	-4,100	0,00	0,00	15,30
End:	-6,969	1,485	-4,100	0,00	0,00	15,30
Beg:	-6,969	1,485	-4,100	0,00	0,00	15,30
End:	-7,155	1,229	-4,100	0,00	0,00	15,30

FGZ : Area load (global)

Element	q1	q2	q3
from to		[kN/m?]	
848 971	63,90	63,90	63,90

FD : Liquid pressure

Element	liquid level z	specific gravity of the liquid
from to	[m]	[kN/m?]
145 847	-7,65	-10,18

Global equilibrium control load case 1

	Rx [kN]	Ry	Rz
Load :	88,46	88,46	1305,33
Support reaction:	0,00	0,00	0,00
Bedding forces :	88,47	88,47	1305,33
Sum :	-0,00	-0,00	0,00

Load data Load case 2 ([v]

FLZ : Area load (local)

Element	q1	q2	q3
from to		[kN/m?]	
145 847	-4,02	-4,02	-4,02

FGZ : Area load (global)

Element	q1	q2	q3
from to		[kN/m?]	
848 971	7,90	7,90	7,90

Global equilibrium control load case 2

	Rx [kN]	Ry	Rz
Load :	4,42	4,42	73,97
Support reaction:	0,00	0,00	0,00
Bedding forces :	4,42	4,42	73,97

Global equilibrium control load case 2

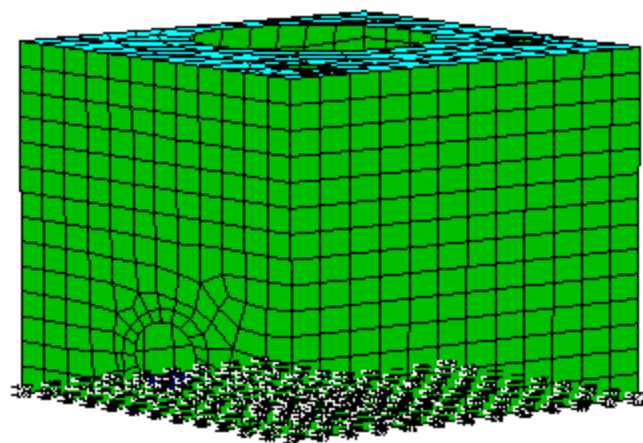
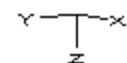
		Rx [kN]	Ry	Rz
Sum :		-0,00	-0,00	0,00

Load data Load case 3 ([water])

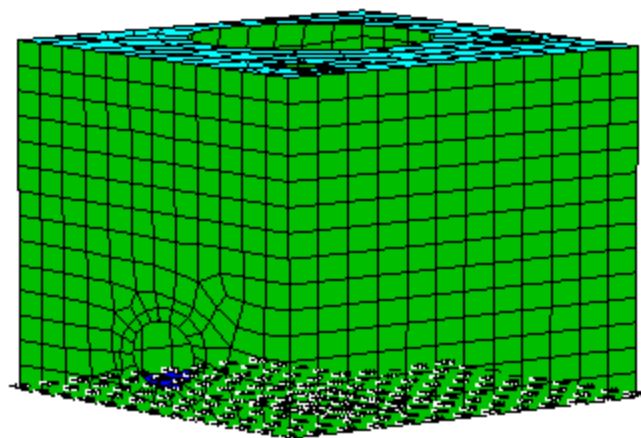
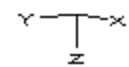
FD : Liquid pressure				
Element	liquid level z	specific gravity	of the liquid	
from to	[m]	[kN/m³]		
1 847	-4,10	10,00		

Global equilibrium control load case 3

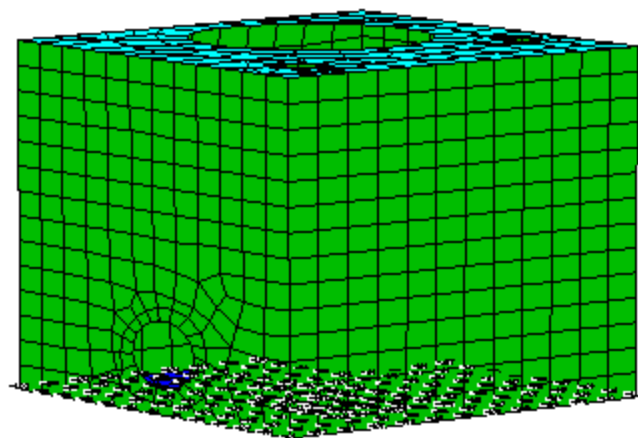
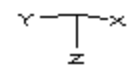
		Rx [kN]	Ry	Rz
Load :		-47,58	-47,73	522,65
Support reaction:		0,00	0,00	0,00
Bedding forces :		-47,58	-47,73	522,65
Sum :		0,00	0,00	0,00



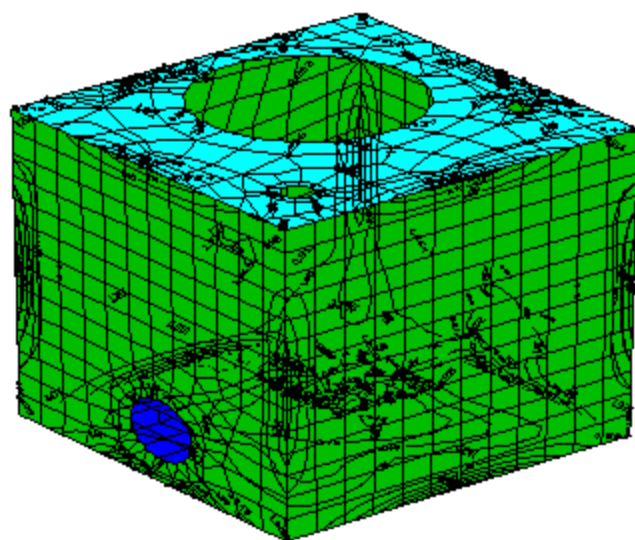
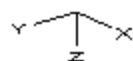
LFK 1: Soil pressure min,max Sigma.z [kN/m²]
Value range (overall system, min/max): -159,37/-98,19 [kN/m²]



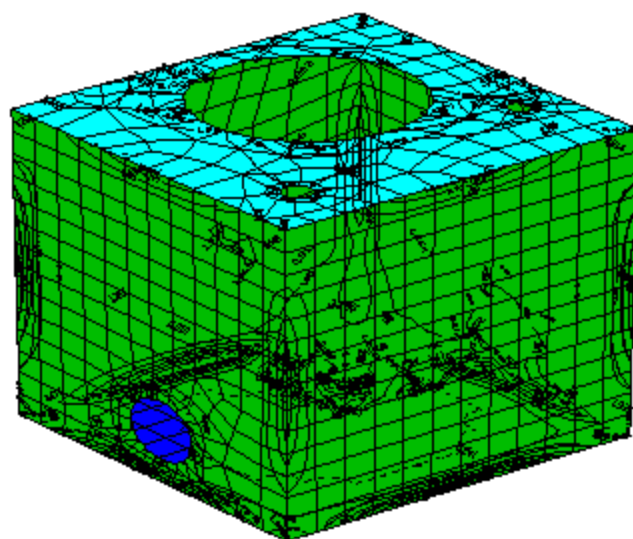
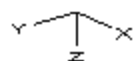
LFK 1: Soil pressure min Sigma.z [kN/m²]
Value range (overall system, min/max): -159,37/-144,66 [kN/m²]



LFK 1: Soil pressure max Sigma.z [kN/m²]
Value range (overall system, min/max): -110,25/-98,19 [kN/m²]



LFK 201: EC2 (fundamental and accidental combination)
 Bending reinforcement max (asx, asy), 1. layer [cm²/m]
 Range of the mean of values (overall system, min/max) 0,00/7,11 [cm²/m]
 Analysis at the element nodes, total weight from design 0,2 t



LFK 201: EC2 (fundamental and accidental combination)
 Bending reinforcement max (asx, asy), 2. layer [cm²/m]
 Range of the mean of values (overall system, min/max) 0,00/7,54 [cm²/m]
 Analysis at the element nodes, total weight from design 0,2 t