

INITIAL DATA

Soil properties

No.	Description	Unit Wt	E0	Ka	Kp	Kac	Kpc	Kr	Earth pressure coefficients.
1	Made Ground	16.00	0.66	0.49	2.04	1.40	2.86	0.50	Calculated
2	Firm London Clay	17.00	0.63	0.45	2.20	1.35	2.97	0.50	Calculated
3	Very Stiff London Clay	19.50	0.63	0.44	2.28	1.32	3.02	0.50	Calculated

No.	c0	y0	Gradient of c	E0	Gradient of E	Drained/Undrained
1	0.00	0.00	0.00	15000.	0.00	Undrained
2	30.00	0.00	0.00	15000.	0.00	Undrained
3	60.00	0.00	0.00	15000.	0.00	Undrained

Parameters used to calculate Earth pressure coefficients

No.	Phi Delta/Phi Beta	Cw/C
1	20.00	0.00
2	22.00	0.00
3	23.00	0.00

Soil Strength Partial Factors

Document and case:	tan Phi'	c'	Cu	E
EC7 DAI Combination	1.00	1.00	1.00	1.00

Note: Only the parameters in bold have been affected by Partial Factors, No geometry or other factors have been changed.

Design Soil properties after applying Partial Factors

No.	Unit Wt	E0	Ka	Kp	Kac	Kpc	Kr	Earth pressure coefficients.
1	16.00	0.66	0.49	2.04	1.40	2.86	0.50	Calculated
2	17.00	0.63	0.45	2.20	1.35	2.97	0.50	Calculated
3	19.50	0.63	0.44	2.28	1.32	3.02	0.50	Calculated

No.	c0	y0	Gradient of c	E0	Gradient of E	Drained/Undrained
1	0.00	0.00	0.00	15000.	0.00	Undrained
2	30.00	0.00	0.00	15000.	0.00	Undrained
3	60.00	0.00	0.00	15000.	0.00	Undrained

Parameters used to calculate design Earth pressure coefficients

No.	Phi Delta/Phi Beta	Cw/C
1	20.00	0.00
2	22.00	0.00
3	23.00	0.00

Surcharge properties

No.	Stage	Side	Level	Pressure	Partial Factor	Offset	Width	Ks
1	0	-	Left	0.00	10.00	1.00	1.00	5.00

Note: Only the parameters in bold have been affected by Partial Factors.

Surcharge Design properties

No.	Stage	Side	Level	Pressure	Offset	Width	Ks
1	0	-	Left	0.00	10.00	1.00	5.00

Strut properties

No.	Stage	Node	Level	Prestress	Stiffness	Angle	Lever arm
1	1	-	4	-1.00	0.00	100000.00	0.00

STAGE 0 : INITIAL CONDITION

Ground level [m] LEFT: 0.00 RIGHT: 0.00 Soil zones changed

Water data on LEFT side

No.	Level	Pressure	Unit wt.
1	0.00	0.00	10.00

Water data on RIGHT side

No.	Level	Pressure	Unit wt.
1	0.00	0.00	10.00

Analysis details

SAFE model with redistribution and without friction at wall/soil interface
 E profile Generated
 Boundary distances [m] : 50.00 50.00

Convergence control parameters

Maximum number of iterations : 900
 Tolerance for displacement convergence [mm] : 0.01
 Tolerance for pressure convergence [kN/m²] : 0.10
 Damping coefficient : 1.00
 Maximum incremental displacement [m] : 1.00

RESULTS FOR STAGE 0 : Initial condition

Warning: Frew has had new features added to simplify application of partial factors in line with EC7. However, there are alternative ways of complying with EC7 including manual adjustment of certain values. The features in the program do not automatically make a design EC7 compliant and the user must continue to check the output carefully to ensure the assumptions and adjustments to characteristic values are as they require. Note that pore pressures and strut pre-stress are not factored. If a strut pre-stress is used to model a structural force, and other effects of actions are being factored, the user may wish to factor the input value of strut pre-stress.

Surcharge or strut changes

Surcharge no. 1 applied at this stage

Summary Results

Node	Level	Displacement [mm]	Moment [kNm/m]	Shear [kN/m]
Top wall node	1	0.00	0.00	0.00

STAGE 1 : PERMANENT CONDITION

Ground level [m] LEFT: 0.00 RIGHT: -2.80 Soil zones changed and wall EI changed

Water data on LEFT side

No.	Level	Pressure	Unit wt.
1	-1.00	0.00	10.00

Water data on RIGHT side

No.	Level	Pressure	Unit wt.
1	-2.80	0.00	10.00

RESULTS FOR STAGE 1 : Permanent Condition

Warning: Frew has had new features added to simplify application of partial factors in line with EC7. However, there are alternative ways of complying with EC7 including manual adjustment of certain values. The features in the program do not automatically make a design EC7 compliant and the user must continue to check the output carefully to ensure the assumptions and adjustments to characteristic values are as they require. Note that pore pressures and strut pre-stress are not factored. If a strut pre-stress is used to model a structural force, and other effects of actions are being factored, the user may wish to factor the input value of strut pre-stress.

Surcharge or strut changes

Strut no 1 inserted at this stage

Summary Results

Node	Level	Displacement [mm]	Moment [kNm/m]	Shear [kN/m]
Top wall node	1	0.00	-1.63	0.00
Above strut 1	4	-1.00	0.80	-6.60
Below strut 1				-58.74
Dig level (R)	8	-3.04	5.32	66.37
Max BM	9	-3.51	6.09	67.88
Wall toe	18	-7.50	8.69	0.00

Strut Forces

No.	Node no.	Strut force	Horiz force	Moment	Max strut force
1	4	80.13	80.13	0.00	80.13