Program Details

Article number
ggu-01-105

Operating System
Windows XP/Vista/7

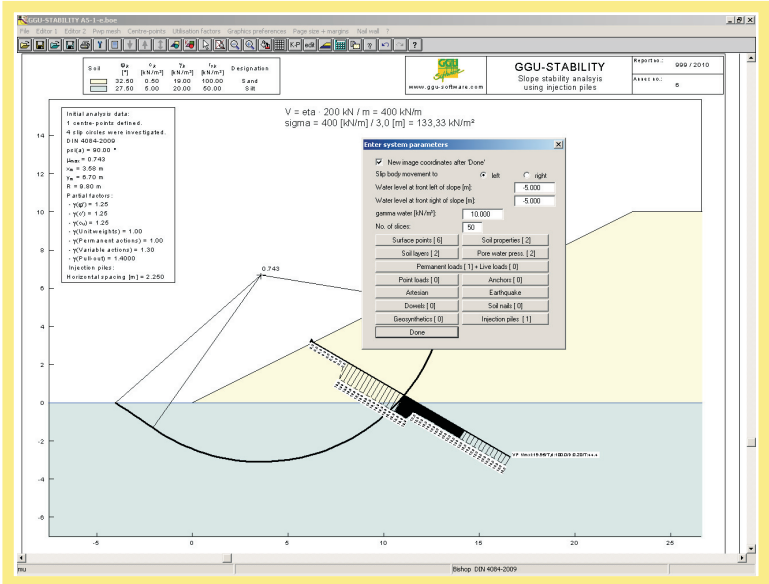
PROGRAM GGU-STABILITY
GEOTECHNICAL COMPUTATION

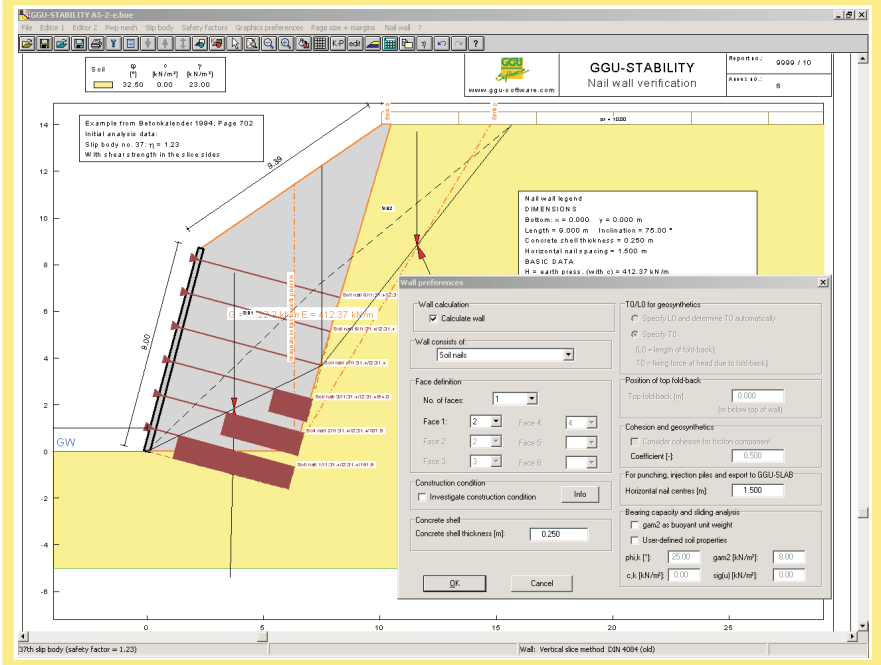
Description

GGU-STABILITY *- slope stability analysis and analysis of soil nailing and reinforced earth walls.*

Nailing can consist of:
- *Anchors*
- *Soil nails*
- *Geosynthetics (reinforced earth)*
- *Injection piles*

Capabilities:
- *Choice of analysis using either partial safety factors to DIN 1054:2005 or EC 7 or global safety factor (DIN 1054 old)*
- *System input using absolute heights*
- *Verification of inner stability after Janbu, using the general wedge method or the vertical slice method*
- *General stability to DIN 4084*
- *Analysis with fibre cohesion for wastes dissimilar to soil (Kölsch method)*
- *Verification of sliding safety*
- *Verification of overturning safety*
- *Verification of bearing capacity failure safety to DIN 4017*
- *Bending design of the concrete shell to DIN 1045-1 via interface to the GGU-SLAB program*
- *Punching verification*
- *Determination of the maximal "nail forces"*
- *Graphics oriented and tabular input/editing of system geometry and system data*
- *Import of surface points, pore water pressure points and soil layers from tables (e.g. Excel) via Windows clipboard*
- *Automatic generation of nail grids or manual input*
- *Geosynthetics can be defined using company products*
- *Consideration of horizontal and vertical seismic acceleration*
- *Consideration of porewater pressures from a pore water pressure line or pore water pressure mesh*
- *Import of a pore water pressure mesh created in the GGU-SS-FLOW2D program (groundwater flow modelling)*
- *Encased columns can be generated*
- *Variable visualisation of safety factors, e.g. as colour-filled contours*
- *Adopted standard, program name and version can be included in the General legend*
- *User-defined design of output sheet*





- *Print or copy screen sections, e.g. for transfer to a word processor*
- *Integrated Mini-CAD system for additional annotation of graphics*

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GGU-STABILITY
Nail wall verification

Report no.: 9999 / 10
Annex no.: 1

Soil nails									
Nr.	Depth [m]	L [m]	t1,d [kN/m/m]	t2,d [kN/m/m]	Tg [kN/m]	η [-]	SB no. [-]	Ta [kN/m]	cal T [kN/m]
4	6.00	7.00	30.00	30.00	46.26	2.85	31	-	46.26
3	4.50	6.00	30.00	30.00	44.12	1.70	38	-	44.12
2	3.00	7.00	30.00	30.00	82.36	1.70	38	-	82.36
1	1.50	6.00	30.00	30.00	85.30	1.70	38	-	85.30

Ta = force on outer skin from earth pressure
Tg = force from failure mechanism (divided by η). (η = 1 / mue)
Horizontal nail spacing = 1.50 m

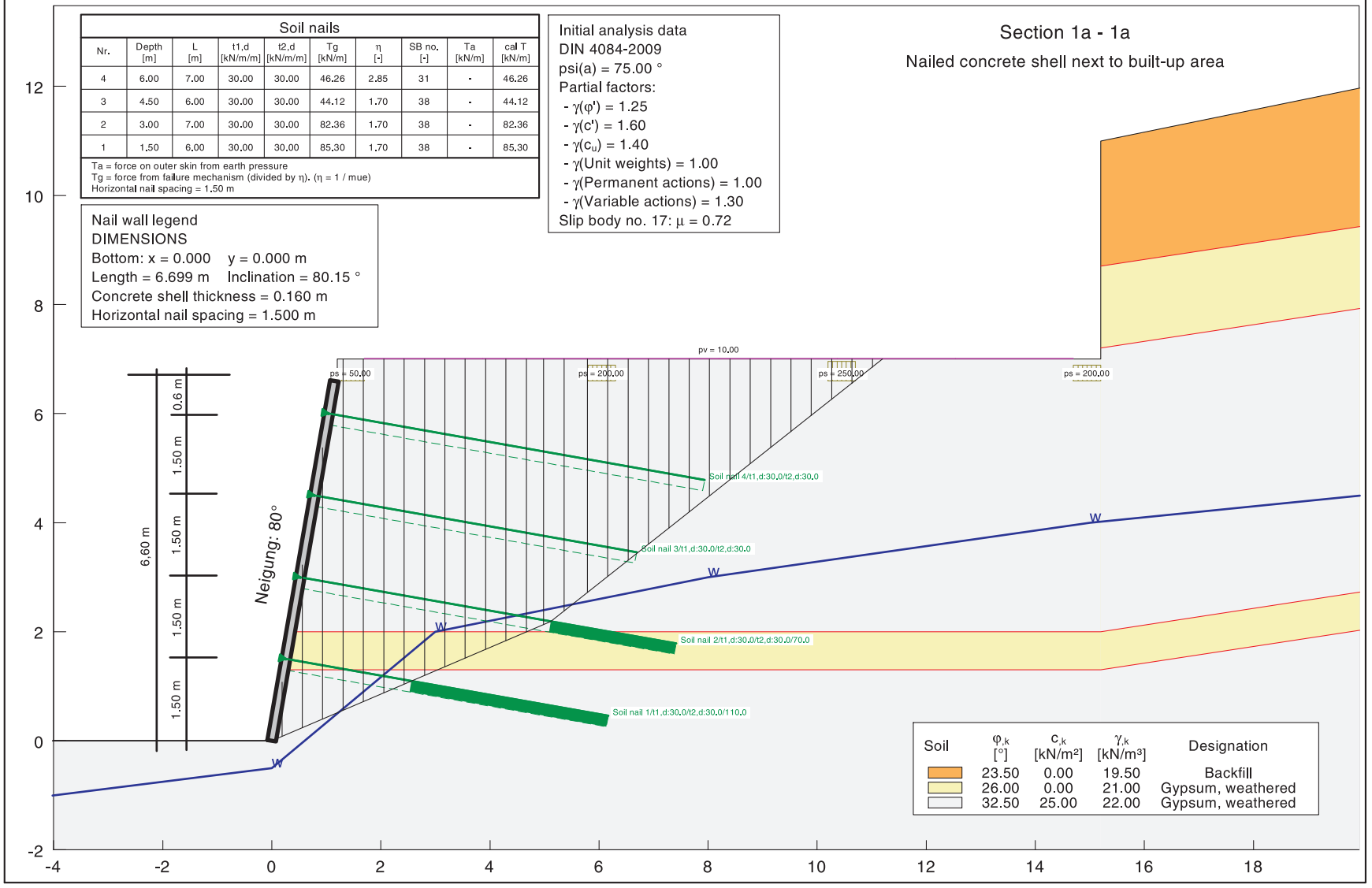
Nail wall legend
DIMENSIONS
Bottom: x = 0.000 y = 0.000 m
Length = 6.699 m Inclination = 80.15 °
Concrete shell thickness = 0.160 m
Horizontal nail spacing = 1.500 m

Initial analysis data
DIN 4084-2009
psi(a) = 75.00 °
Partial factors:
- γ(φ') = 1.25
- γ(c') = 1.60
- γ(c_u) = 1.40
- γ(Unit weights) = 1.00
- γ(Permanent actions) = 1.00
- γ(Variable actions) = 1.30

Slip body no. 17: μ = 0.72

Section 1a - 1a

Nailed concrete shell next to built-up area



Soil	φ_k [°]	c_k [kN/m²]	γ_k [kN/m³]	Designation
	23.50	0.00	19.50	Backfill
	26.00	0.00	21.00	Gypsum, weathered
	32.50	25.00	22.00	Gypsum, weathered