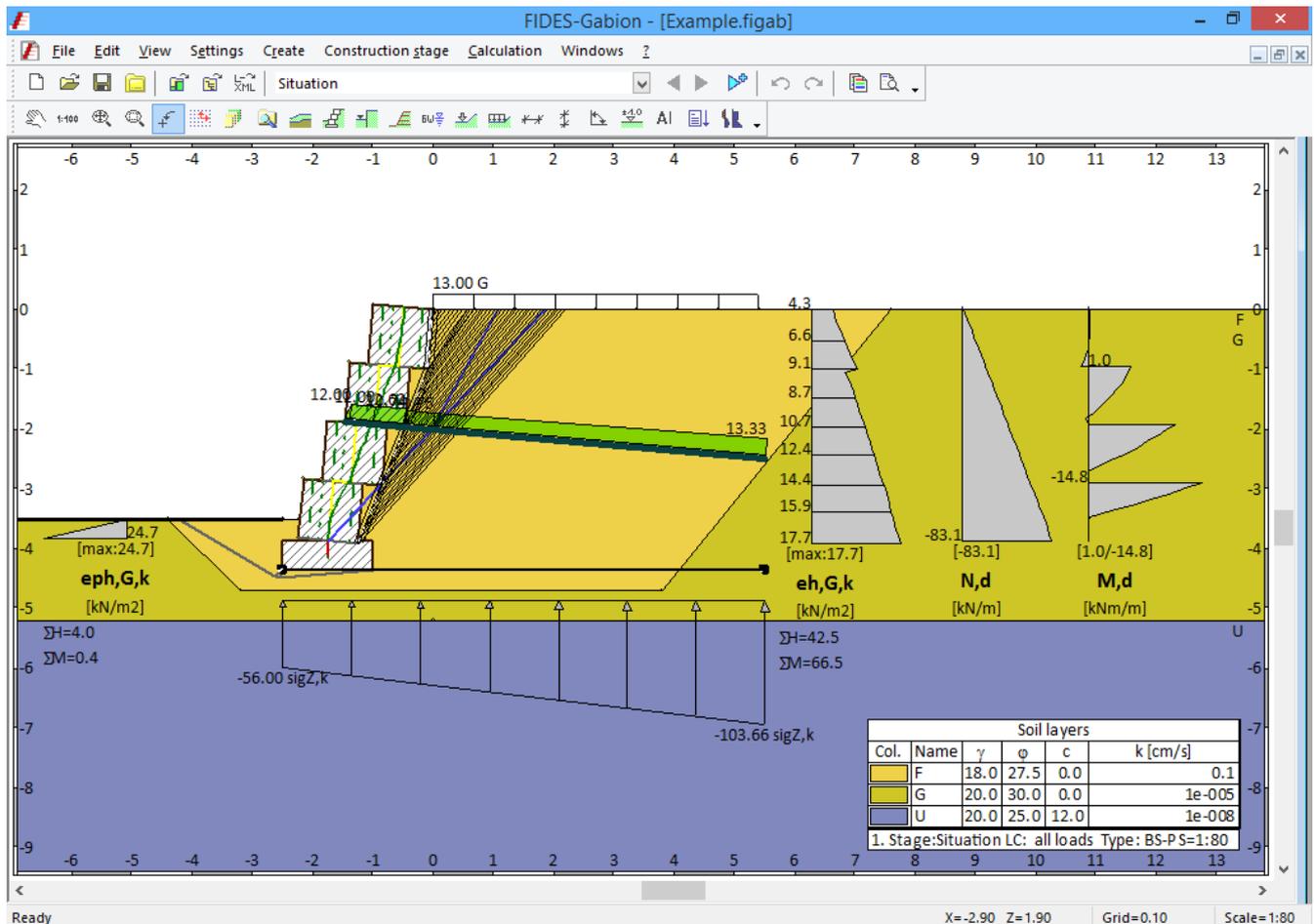


FIDES-Gabion

Calculation of Retainment walls with geotextiles

Gabions are increasingly used, thanks to its versatile design possibilities for architects and planners as a cheaper alternative to precast products and solid walls made of concrete or stones. The application area includes landscaping and road construction, noise barriers, protective structures and trenches. For a structural engineer FIDES-Gabion offers a tool that graphically-interactively leads the required structural analysis which is required for the calculation of retaining structures of gabions or solid blocks in the German Standard and Eurocodes. The calculation covers the evidence for tilting and sliding in the gaps, for inserted geotextiles, for the external stability as well as tilting, sliding and bearing failure in the base plane.

By the earth pressure calculation used by Culmann also complex soil layers and concentrated loads can be correctly identified. For external stability a multi-body fracture method (KEA: Kinematic Element Analysis) is used.



Performance Characteristics

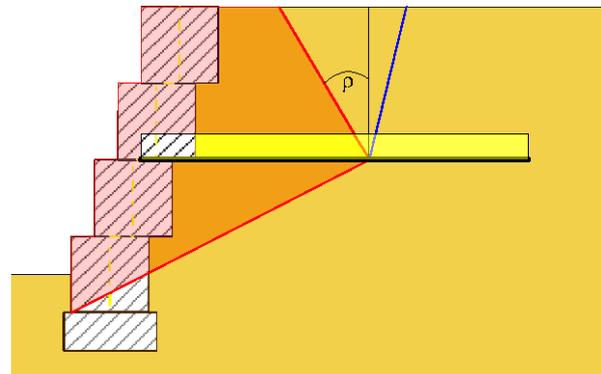
User Interface

- Object-oriented graphical user interface
- CAD-functionality
- Arbitrary number of polygonal outlined soil layers. Material properties of soils are stored in a layer data base which can be expanded by the user. Access to the extended soil layer data base which is common to all FIDES Geotechnics programs
- Common document format for all FIDES Geotechnics programs, e. g. FIDES-GeoStability
- Import and export functions for data exchange with other FIDES Geotechnics programs
- Detailed on-line assistance with exact explanation of the computing method
- Windows standard like for example Undo und Redo for all actions, Copy & Paste, context menu, System explorer, ...



Computation

- Arbitrary number of polygonally outlined soil layers with vertical embankments or embankments of any inclination
- Different earth pressure detections for each approach
- Earth pressure according to Culmann (Graphical Fault Line Method)
- Consideration of geo textiles
- Earth pressure according to Gudehus
- Proof of ground failure: arbitrary polygonally outlined soil layers, load placing, embankment geometry (DIN 4017 and DIN EN 1997 - Eurocode EC7)
- Sliding circle
- Stability by multi-body fracture process (KEM)



- Calculation according to DIN and EN 1997, and "Merkblatt über Stützkonstruktionen aus Beton-elementen, Blockschichtungen und Gabionen" (FSGV 2003 edition)

Results

- Tilting and sliding of the bed joints
- Evidence of internal and external stability safety
- Tilting, sliding, bearing capacity and slope stability in the base plane
- Pull-out resistance of geotextiles
- Results in RTF-Format or directly as Word-Document containing mixed text and graphics with our output module FIDES Pad 2