

# PLAXIS 3D

## Three-dimensional reliability

PLAXIS 3D is a finite element package intended for three-dimensional analysis of deformation and stability in geotechnical engineering. It is equipped with features to deal with various aspects of complex geotechnical structures and construction processes.

PLAXIS 3D is equipped with features to deal with various aspects of complex geotechnical structures and construction processes. Geotechnical applications require advanced constitutive models for the simulation of the non-linear, time-dependent and anisotropic behaviour of soils and/or rock.

In addition, since soil is a multi-phase material, special procedures are required to deal with hydrostatic and non-hydrostatic pore pressures in the soil. Although the modelling of the soil itself is an important issue, many projects involve the modelling of structures and the interaction between the structures and the soil.

### User friendly 3D geotechnical software

PLAXIS 3D is intended to provide a flexible 3D tool for practical analysis to be used by geotechnical engineers who are not necessarily numerical specialists. Plaxis has addressed this issue by designing robust and theoretically sound computational procedures.

- Logical geotechnical workflow
- Easy-to-use graphical user interface
- Borehole wizard for soil modelling
- Real 3D interaction

### Flexible and interoperable geometry

With PLAXIS 3D arbitrary geometry of soil and structures can be defined in two different modes. These modes are specifically defined for Soil or Structural modelling. Independent solid models can automatically be intersected and meshed.

- DXF, DWG, 3DS and Terrain geometry import facilities
- Model explorer offering direct access to all objects
- Commands runner and model replay functions
- Intersect and Combine tools for complex shapes

### Realistic simulation of construction stages

The Staged constructions mode enables a realistic simulation of construction and excavation processes by activating and deactivating soil volume clusters and structural objects, application of loads, changing of water tables, etc.

- Convenient and intuitive Phase explorer
- Multi object editing
- Realistic assessment of stresses and displacements
- Automatic regeneration of construction stages for geometric changes

### Robust and reliable calculation kernel

The well-proven PLAXIS calculation kernel distinguishes between a Plastic calculation, a Consolidation analysis and a Phi-c reduction (safety analysis). All types of analyses can be performed with Updated Mesh to take into account large deformations.

- Well-proven and robust calculation procedures
- 64-bit Calculation kernel
- Parallelization of independent calculation phases

### Coprehensive and detailed post-processing

PLAXIS Output consists of a full suite of visualization tools to check details of the complex inner structure of a full 3D underground soil-structure model.

- Contour, shading, iso-surface and vectors plots
- Movable cross-sections
- Advanced data slicing
- Extensive report and movie Generator

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