



Revisado por PLAXIS 2017

PLAXIS

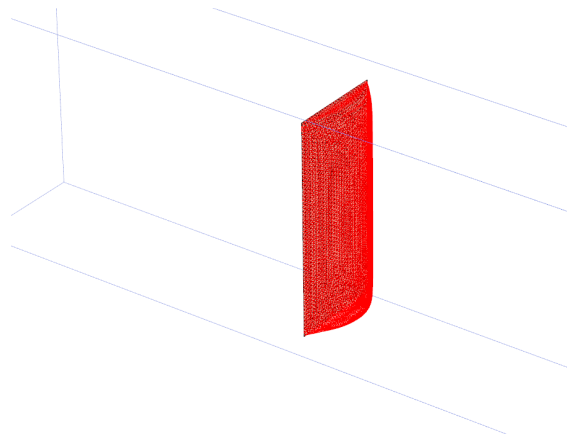
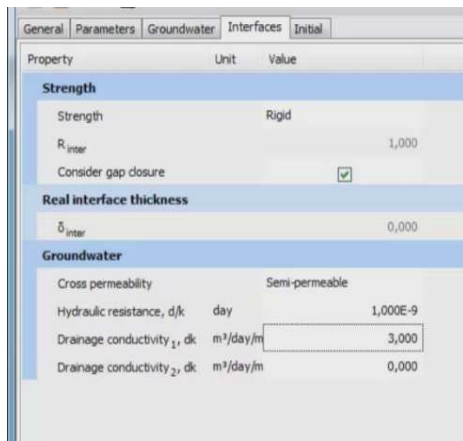


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1 Cross and parallel permeability in interfaces

In the interfaces tab of the material dataset under "Groundwater", users can select between *permeable*, *impermeable* and *semi-permeable* options to define the cross permeability. A hydraulic resistance needs to be filled in which will be considered for semi-permeable interfaces. For the parallel permeability users need to fill in drainage conductivity for the two direction parallel to the interface.

In staged construction mode, some settings with respect to interfaces have changed, users now need to click the checkbox "Active in flow" in order to take into account the defined cross and parallel permeability for calculations. Output facilities have been extended with a new result type for interfaces. When double clicking on the interface(s) users can inspect the flow normal to the interface as well as the flow in the two directions parallel to the interface, via Groundwater flow available under the Interface stresses.

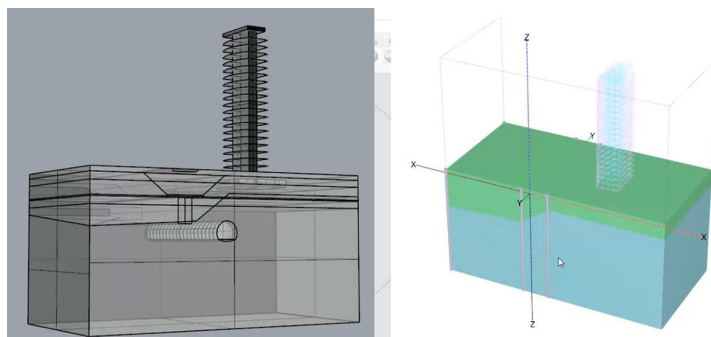


2 Multiply command for features and numeric properties (VIP)

The multiply command can be used to for instance multiply a set of loads with various load components by a factor higher or lower than 1. This command can be issued in the various modes on numerous objects, and especially for staged construction offers a convenient way to explore alternate load conditions, thermal conditions, initial conditions etc.

3 Export PLAXIS model to CAD

Via the user interface, users can now export their whole PLAXIS model to CAD format. This can also be done through the command line where additional conditions can be given, exporting only parts of the model. The exported model can be used for post-processing or incorporation into BIM workflow. With command based *.STL generation PLAXIS models are suitable for 3D printing.

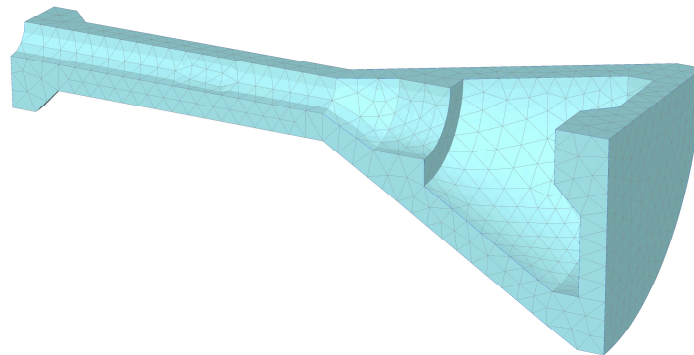


4 Dynamically loaded rigid bodies

Users can now apply dynamic loading to rigid bodies allowing them to model for example cyclic loads due to wind or wave loading on wind turbine foundations, or any other types of foundation which may be modelled as a rigid body.

5 Revolve around axis tool

Users can use the Revolve around axis tool to easily create a revolving extrusion along an arbitrary axis and number of degrees to create volumes, shells or surfaces. This offers a powerful tool for modelling circular structures or parts thereof like LNG tanks, or dome shape objects, natively in PLAXIS 3D. Combining this with the existing combine, intersect and extrude tools, users can create complex shapes in their models.



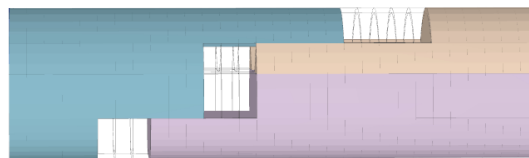
6 Improved sequence definition for NATM tunnels

In PLAXIS 3D 2017 users can now select between TBM and NATM excavation methods. The "NATM" method introduces new behavior for the automatic generation of the construction stages. Users can define a number of slices after which the tunnel face propagation will halt. In subsequent phases those slices will first be fully excavated before the tunnel face propagates again for the defined number of slices. This behavior is more in line with NATM excavations in practice.



Method:
NATM
Slice in active scope 5

Method:
TBM

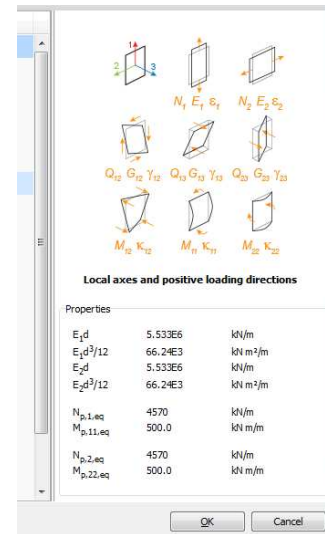
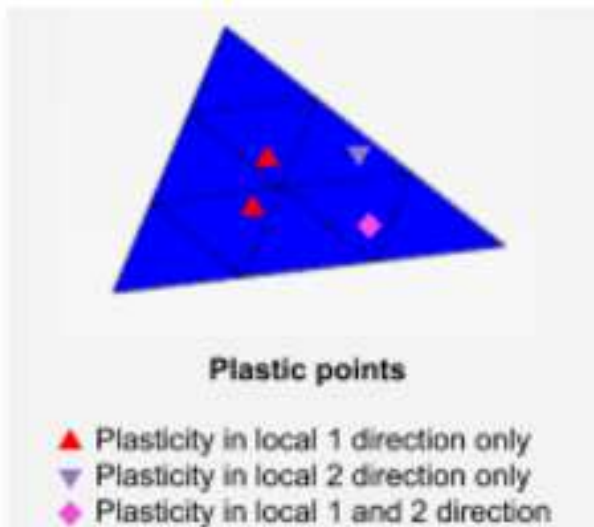


7 Command line improvements

PLAXIS 3D 2017 brings some improvements for the command line window. Users can now right click in the command line window and choose the Pop-out option to detach the command line window from the program. In addition some extra options to copy all successful commands or responses are available.

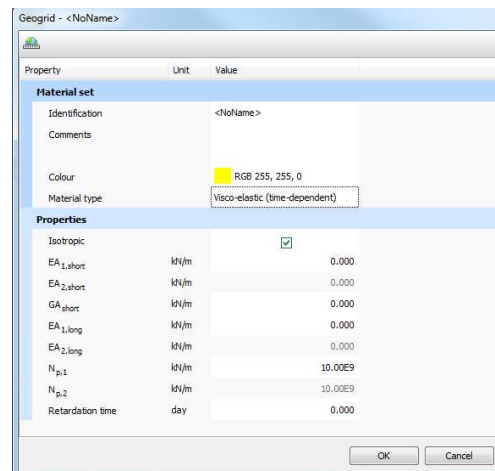
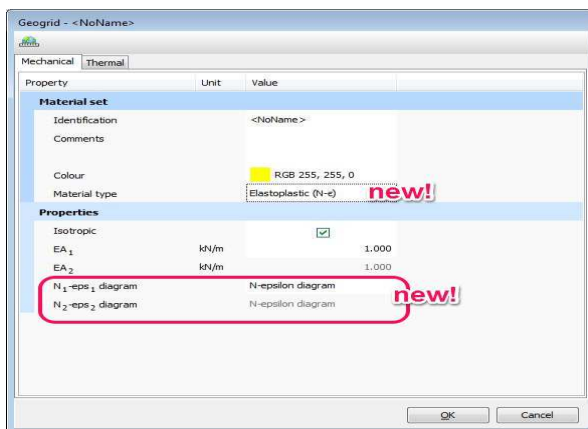
8 Elastoplastic Beams and Plates

The material models for beams and plates have been extended with an option for elastoplasticity. Users can input yield stress and moment of resistance, and in the side panel cross-sectional properties, plastic moment and axial force can be viewed, calculated from the input parameters. Output has been updated with tools to inspect if and where plasticity in the structural elements occurred.



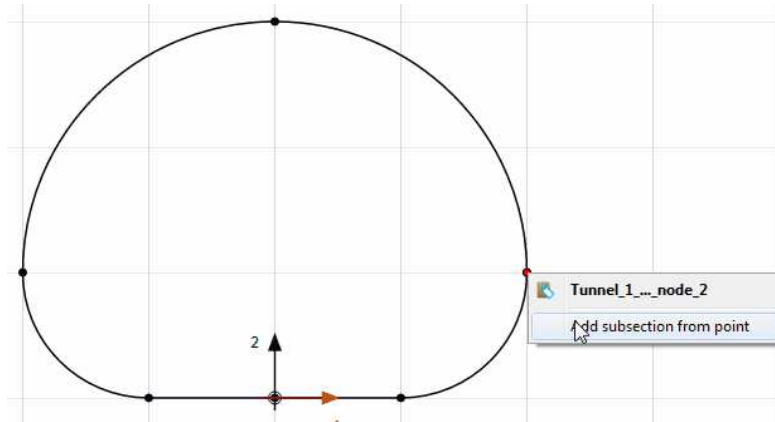
9 Non-linear geogrids: Elastoplastic (N-ε) or Viscoelastic (time-dependent)

PLAXIS 3D 2017 introduces two new types of behavior for geogrids. Users can now include elastoplastic, or viscoelastic behavior. For the elastoplastic behavior users can define N-epsilon diagrams. For the viscoelastic behavior, creep can be taken into account for geogrids.



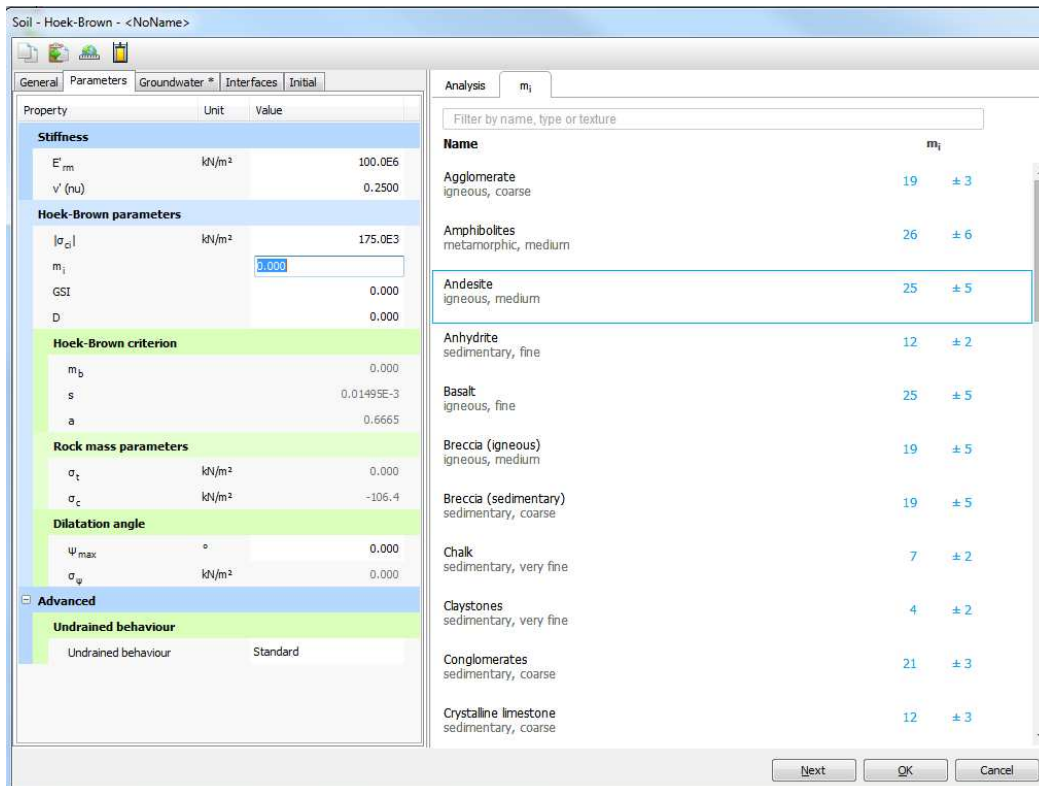
10 Create tunnel subsection from point (VIP)

In the tunnel designer it has become easier to create subsections, as users can define a subsection by right-clicking on a point and start the subsection from there. This speeds up drawing of, for example, an elephant's foot or sidewall drift on your tunnel cross-section.



11 Hoek-Brown parameter guide (VIP)

Via the side-panel of the Hoek-Brown material model users can find an interactive parameter guide for the model, consisting for example of selectable rock types and proposed magnitudes for the UCS, a searchable and clickable rock database for M_i , etc. An analysis tab is available as well, automatically plotting the major and minor principal stress based on the given parameters.



12 Miscellaneous features

- UBC3D-PLM model available as standard model in PLAXIS (VIP)
- Experimental nurbsurface generation from a point cloud
- Directly input the element dimension in the expert settings of the mesh menu
- Soil layering based on Robertson interpretation for imported CPT borehole data (VIP)
- Grouped clusters based on material assignment in Output Model explorer
- Cross-sections made in Output now respond to visibility changes done in the model explorer
- Time shown in Output plot title for calculations where a time component is defined
- Force envelopes of plates, beams and embedded beams available in Output
- Foot forces of embedded beams available in Output
- Rotation and tilt available in Output for distance measurement tool
- PyQtGraph added to Python distribution
- Encryption of communication between PLAXIS and scripting facilities
- Performance improvements in the scripting layer
- PLAXIS 3D 2017 Viewer