

Bentley PLAXIS[®] LE Product Fact Sheet

PLAXIS LE (formerly SVSLOPE) enables users to reliably complete numerous limit-equilibrium slope stability models with intuitive workflows and fast analysis. Advance your digital workflows with the ability to design 3D geometry and analyze both 2D and 3D scenarios in one application. You can build conceptual models and geometry and integrate groundwater analysis. PLAXIS LE enables you to represent materials spatially with advanced techniques and automate slope stability techniques. You can utilize reinforcements, dynamic loads, and design standards. Plus, users can determine material parameters with the SoilVision Soils Database. Perform consolidation analysis and manage various project workflows and scenarios. *Please note:* Geotechnical SELECT Entitlements are required for the following, and are marked with the “*” symbol in the list below.

Features

ANALYSIS TYPES

Groundwater Flow

Small-strain Saturated Consolidation (SSC)

Large-strain Saturated Consolidation (LSC)*

Pseudo-3D LSC Analysis Technique*

LEM Slope Stability Combination

Import from SoilVision Soils Database*

More Features

Steady-state and Transient Scenarios

1D, 2D, and 3D simulation

Staged Construction / Excavation / Boundaries

Pumping Wells and Injectors

Particle Tracking

Batch Analysis of Groups of Models

Multi-Core CPUs, Multi-Threading and 64-bit Environments Supported

GROUNDWATER MATERIAL PROPERTIES

Saturated

Saturated-Unsaturated (Unsaturated Fits)

- Fredlund-Xing Fit

- Van Genuchten Fit

- Van Genuchten and Mualem Fit

- Gardner Fit

- Brooks and Corey Fit

- Gitirana and Fredlund Fit

- Fredlund Bimodal Fit

Saturated Hydraulic Conductivity – 4 Estimations

Unsaturated Hydraulic Conductivity

- Fredlund, Xing and Huang Estimation

- Modified Campbell Estimation

- Van Genuchten and Mualem estimation

- Leong and Rahardjo Estimation

- Brooks and Corey Estimation

- Fredlund 2-point Estimation

- Gardner fit

- Anisotropy

Features

CONSOLIDATION MATERIAL PROPERTIES

Linear-Elastic
Logarithmic Function
Weibull Function
Extended Power Function
Saturated Hydraulic Conductivity – 4 Methods

GROUNDWATER BOUNDARY CONDITIONS

Newman and Dirichlet
Staged Boundary Conditions
Precipitation and Runoff
Evaporation

INITIAL CONDITIONS

FEM Analysis Output
Head or Pore-Water Pressure
Water Table
Grid
Assign by Region

MESH

Fully-Automatic Generation
Manual Mesh Refinement
Unstructured Finite Element Meshes
2D Meshing

- Triangular Element Shape
- Quadrilateral Element Shape
- Exact Control Over Maximum Element Size

3D Meshing

- Linear 4-node Tetrahedral Elements
- Multi-core Mesh Generation*
- Mesh Element Quality Reporting
- Exact Control over Maximum Element Size
- Export of Tetrahedral Mesh

EQUATION SOLVERS

Galerkin Finite Element Method
Parallel Processor Support

Features

CALCULATIONS

Manual Data Input / Editing
Data Transformations (Translation, Rotation, Scaling)
Surface Adjustment (Planar Calculations, Overlap Testing, etc.)
Kriging (for Generating Grids)
Extrusion (Generate Surfaces from Cross-Sections)
Set Operations (Union, XOR, Subtraction)
Surface Intersections
Surface Cleanup / Repair Tools
Mesh Refinement
Surface Remeshing
Merge Operations (Combine Surfaces, Regions, Polygons)
Boundary Calculations
Volume Calculations
Slicing
Surface Cuts and Excavations
Build Surfaces from Boreholes/Fence Diagrams
Filling Curves
Depositional Surfaces

MORE FEATURES

Artwork (Arrows, Labels, etc.)
Data Management / Organization (Tagging, Date Stamps, Coloring)
Multi-Core CPUs, Multi-Threading & 64 bit Environments Supported