

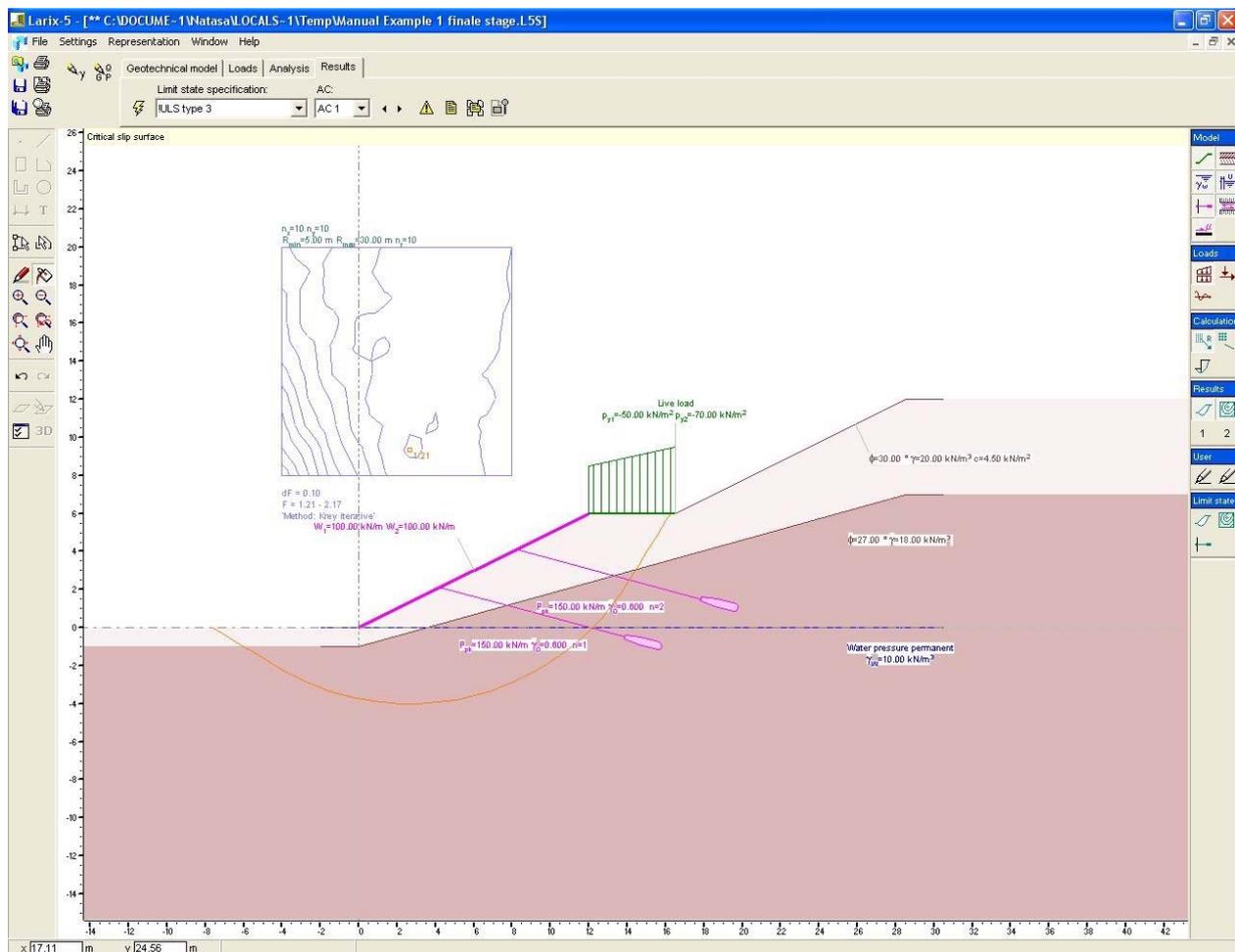
LARIX-5S

Geotechnical Engineering

Overall Stability

New Codes

Windows Environment



With the module LARIX-5S stability analyses for slopes, dam, excavations, nailed walls and retaining walls can be performed using the method of slices. The well known methods of Janbu and Krey are available. The stability can be determined for circular slip surfaces with or without end tangents and for polygonal slip surfaces.

Geotechnical model

- Arbitrary, polygonally-bounded soil layers
- Ground surface as separate polygon
- Water table with arbitrary polygonal form
- Influence of seepage using pore pressure contours (isobars) of arbitrary polygonal form
- Structural components with shear resistance that increases linearly within a specific zone from zero to its maximum value
- Anchors with minimum and maximum length specification for the dimensioning of the free anchor length
- Bonding elements with linear increase of the resisting force due to friction from zero to a maximum value (suitable for soil nails and geotextiles)

Loading

- Concentrated loads
- Trapezoidally-distributed loads
- Horizontal and vertical earthquake loading

Solution procedure

- Analysis of stability according to the methods of Janbu and Krey
- Analysis of the different shapes of slip surfaces (circles with/without end tangents, arbitrary polygons)
- Determination of the critical slip surface from a family of slip surfaces
- Variable number of slices
- Dimensioning of the free anchor length

Results

- Presentation of the critical slip surface and the dimensioned free anchor lengths
- Contour lines of safety values with the investigation of a family of slip surfaces
- Stability (in terms of safety factor) for all calculated slip surfaces

Safety concept

- Dimensioning according to the ultimate limit states for structural safety and serviceability (compatible with the Eurocodes)
- Uncertainties in the actions, the soil and material properties, the geometrical properties and the analytical model are taken into account by means of partial safety factors
- Tabular management of all - partly limit state-dependent – safety factors
- Automatic building of all necessary action combinations for the required limit states

- User-defined action combination
- Dimensioning according to the old safety concept with a global safety factor is possible

Results and limit states

- Dimensioning and verifications are carried out in the prescribed limit states
- Results for each limit state and each action combination
- Limit values over all action combinations

User interface

- User-friendly graphics input of all geometrically-defined data for the geotechnical model and loading using the object-oriented Graphics Editor with the usual CAD construction possibilities
- Multi-step Undo-/Redo function
- Very simple modification possibilities for all input data, both for individual objects and for object groups
- Search for objects with specific properties
- Management of all input objects according to type in individual management layers, whose visibility can be activated or deactivated as required
- Import of any type of input object from one analysis to another using copy/paste
- CAD drawing functions to complete figures (dimensions, labelling, line and area objects)
- Possibility of configuring working environment (colours of individual objects, symbol sizes, font sizes, dimension units and number of decimal places for all quantities, default values for dialogues)
- Detailed, context-sensitive help system and hints directly on the cursor itself; the manual can also be consulted on-line and with search for technical terms
- Operating systems Windows NT, 2000, XP

Interfaces

- Import and export in DXF format
- Export of graphics and texts to other applications (Word, Excel, etc.) via the clipboard
- Input data from LARIX-2, LARIX-3 and LARIX-4

Printing (CubusViewer)

- Page preview of the documents queued for printing with the possibility of changing dimensions, moving documents, pasting and deleting via the clipboard
- User-defined document template (free design of page header and footer) with firm's logo, etc.

Project management (CubusExplorer)

- Clear overview of project management in the style of the Windows Explorer
- Functions like archieving, file compression, moving, deleting, etc., for individual analyses or whole folders
- Graphical preview for user-friendly searching of an analysis

More LARIX-5 programs

- Excavation walls
- Retaining walls