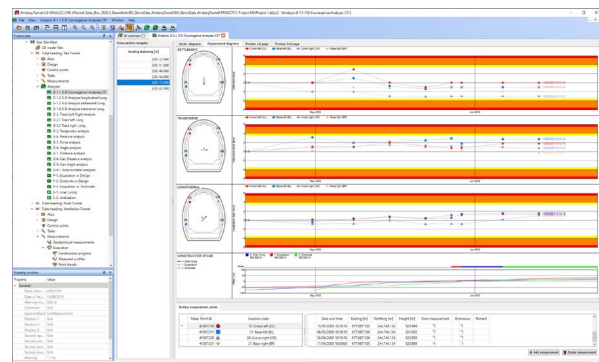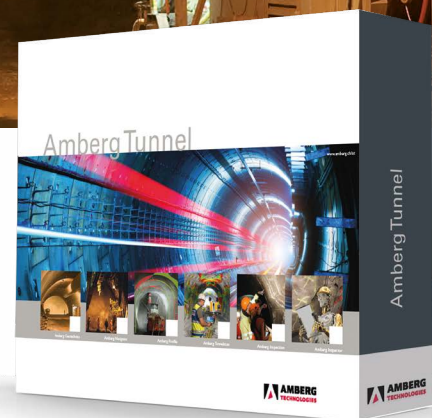# Amberg Geotechnics

Datasheet

See what's moving – In underground construction and in tunnel maintenance

Amberg Geotechnics – The comprehensive software solution for observing and evaluating deformations and settlements in tunnel construction and operational maintenance.

- Manage several construction stages
- Tunnel definition in 3D
- Flexible data import from various formats
- Recognise risks and hazard potentials quickly, clearly and comprehensively
- Display clear and relevant geotechnical evaluation
- Calculations relative to the tunnel axes
- Evaluations can be adapted with just a few mouse clicks
- Automated workflow with Amberg Navigator task - 3D Geotechnical points

See what's moving!

Amberg Geotechnics
System overview

Basic functions and features

Manage complex tunnelling projects within one Amberg Tunnel project (multiple axes and construction stages)

Data organized in construction stages (theoretical profiles, sections, transverse slope and blocks)

Support for all underground projects (incl. inclined tunnels (e.g. hydro-power projects) and vertical shafts)

Define theoretical profiles vertically or inclined relative to longitudinal profile

Comfortable and interactive project data input with direct graphical visualisation

Comprehensive import of project design (e.g. Cremer, LandXML, DXF, ASCII, TUN (SBG) or IFC)

Comprehensive profile editor for simplifying routine tasks (blow-up function, mirroring, drag and drop, split, etc.)

Support for transition zones between various profile geometries (linear or centroid-based interpolation)

Graphical visualisation of project geometry data in the 3D viewer

Automatic project data consistency testing on input

Axis calculator to transform absolute coordinates to axis coordinate system (2D / 3D) and back

Export axis and design for independent check (ASCII, PTS, OBJ, PLY)

Management of the control points for each drive, including history and quality checks

Project-specific adaptation of units (e.g. meters, international and US feet) and the display of decimal places

Integrated address management for personalised reports (e.g. contractor or client)

Construction progress logging for each construction stage

Project export to Amberg Navigator tablet (USB, Cloud), Amberg Applications, Leica RoadRunner, PPS, LandXML

Geotechnical functions

Geotechnical functions	Basic	Plus
User-defined, country-specific geotechnical sensors	√	√
User-defined units and tolerance limits for optimised import of geotechnical measurement data	√	√
User-defined legend texts as a function of the direction of view relative to tunnel heading	√	√
Define geotechnical sensors along the tunnel surface in various construction stages	√	√
Define geotechnical sensors in boreholes in various construction stages		√
Position geotechnical points by means of angles and distances relative to profile, axis and station offset, or absolute coordinates	√	√
Store data in an SQL database	√	√
Automatic data allocation by means of a unique point number	√	√
Automatic point allocation via a snap radius to facilitate working without long point numbers	√	√
Imported data are traceable and can be deactivated at any time	√	√
Documentation of imported data for quality assurance	√	√
Interpretation of displacement in relative and absolute modes at the press of a button	√	√
Define unlimited geotechnical analyses	√	√
Turn measurement sections inactive when no longer in use	√	√
Flexible filtering of measured data points and profiles for optimal reporting	√	√
Automatic analyse updating	√	√
Support for 3D convergence analyses	√	√
Support for ID analyses (e.g. load cells, crack meter, temperature sensor, levelling, …)		√
Support for distances computed from 3D points		√
Support for angles computed from 3D points		√
Support for extensometer evaluation		√
Support for longitudinal section-based evaluations for 3D points for settlement, longitudinal and transverse displacement		√
Support for longitudinal section-based evaluations for ID data		√
Flexible evaluation settings for project-specific reports	√	√
Export geotechnical analyses to PDF, TXT, EXCEL, HTML, JPEG, …	√	√
User-defined ASCII measurement result export for special analyses	√	√
Highlight warning and critical limits on the reports	√	√

Amberg Technologies AG
Trockenloostrasse 21
CH-8105 Regensdorf
Switzerland

Tel. +41 44 870 92 22

info@amberg.ch
ambergtechnologies.com

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