

Layer Thickness Amberg Navigator Task



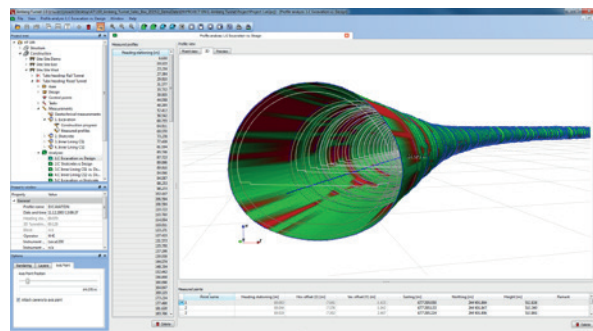
Is there enough sprayed concrete applied?

Sprayed concrete application is one of the fundamental tasks during conventional tunnel excavation. In these days, there is a high interest from the industry to check the applied sprayed concrete layer thickness for the complete area and not only at discrete points as with the conventional drilling method. Furthermore, the measurement results should be ready instantly and the visualisation of the results should be easy to interpret.

Benefits

Keep costs low by keeping up the quality:

- Real-time layer thickness control
- Operable by the nozzleman
- Complete information of sprayed concrete applied
- Corrections in the same spraying cycle
- Cost savings due to exact sprayed concrete
- Stand-alone & on-machine solutions



Layer thickness control – lower shotcrete costs!

Layer Thickness Overview

Functions and features of the Amberg Tunnel office software
Interactive project data input with immediate graphical feedback
Pre-defined profile measurements tasks in the office for a fast surveying routine in the tunnel
Automatic data synchronisation of design and measurements from the office to the tunnel
Functions and features of the Amberg Control office module
Management of measured profiles for each construction stage
Repositioning of measured profiles based on updated control point coordinates
Analysis of measured profiles in comparison to the design data
Analysis of measured profiles as compared to measured profiles of a second construction stage
2D and 3D views of the profiles for a quick interpretation of results
Project-specific reports allowing many settings for calculations and display
Exclusion of areas using cross-section lines and section angles
2D and 3D export of profiles to DXF
3D export of horizontal or vertical cutting planes to DXF
Generation of tabular and graphical reports from analyses
Flexible report generation based on project-specific requirements
Functions and features of the Amberg Navigator tablet software
Automatic profile surveying at pre-defined stations on different construction stages
Real-time evaluation of layer thickness data direct after measurements in the tunnel
2D profile visualisation of the layer thickness data
Visualisation of critical area direct on the tunnel wall with a red laser
Saving measurement values for analysis in Amberg Control (office software)
Free definition of lower and upper bound values for the layer thickness analysis

What do you need for layer thickness control?

Software

Navigator tablet software

Profile measurement task

Layer thickness task

Office software

Amberg Tunnel

Control Plus module

Hardware requirements

Amberg Navigator Tablet	
Operating system	Windows 7, Windows 8 / 8.1
Platform	64-bit (required for scanning tasks)
Processor	1 GHz
Memory	2 GB RAM
Hard disk capacity	Hard disk with 1 GB free disk space (for installation)
Communication	Distance <10 m: Bluetooth
Tablet – Total station	Distance <100 m: long range Bluetooth
Screen min.	7"

Total station	
Leica 1200 Series	TPS1200, TS30, TM30*
Leica Viva	TS15, TS16
Leica Nova	MS50, TS50, TM50*, MS60, TS60
License for Leica total station	GeoCom Robotics GeoCom Scanning**

* Target lock and PowerSearch is not supported.

** Required for Leica MultiStation Scanning task

Amberg Technologies has been developing specialised system solutions for the infrastructure industry for more than 30 years. The unique combination of systems development experience and industry know-how results in measurement systems characterised by precision instruments, practical system design and powerful software. Last but not least, Amberg Technologies' products have gained the trust and recognition of tunnelling and railway industry experts thanks to a worldwide service and support network.

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