

Amberg Tunnel Technical Specifications



Legend	
●	Existing feature
●	New or enhanced feature
○	Optional
¹	Requires measurements from the Amberg Navigator Documentation task
²	Requires Profile Basic or Plus

Amberg Tunnel Technical Specifications

Feature / Workflow	Navigator	Profile Basic	Profile Plus	Tunnelscan Basic	Tunnelscan Plus	Geotechnics Basic	Geotechnics Plus
Project							
Local project creation + editing	●	●	●	●	●	●	●
Remote project creation + editing	○	○	○	○	○	○	○
Remote project synchronisation	●	●	●	●	●	●	●
Interface							
Project tree navigation	●	●	●	●	●	●	●
3D overview (levelled), zoom, pan, rotate	●	●	●	●	●	●	●
Ortho background map import	●	●	●	●	●	●	●
Analysis quick browser	●	●	●	●	●	●	●
General / Miscellaneous							
Package project for technical support	●	●	●	●	●	●	●
Automatic check for updates	●	●	●	●	●	●	●
General options							
Configure project units/formats	●	●	●	●	●	●	●
Change user interface + reporting language	●	●	●	●	●	●	●
Turn on/off 2D map labels	●	●	●	●	●	●	●
Site							
Site creation	●	●	●	●	●	●	●
Site archiving	●	●	●	●	●	●	●
IFC import (3D model files)							
Import model (IFC, OBJ)	●	●	●	●	●	●	●
Model visualization in 3D	●	●	●	●	●	●	●
IFC file hierarchy view	●	●	●	●	●	●	●
Surface geometry selection tools	●	●	●	●	●	●	●
Export surface to the construction stage design	●	●	●	●	●	●	●
Tube design							
Tube design creation	●	●	●	●	●	●	●
Tube archiving	●	●	●	●	●	●	●
Copy tube design	●	●	●	●	●	●	●
Export tube design: LandXML	●	●	●	●	●	●	●
Export tube design: Amberg Applications	●	●	●	●	●	●	●
Export tube design: Leica RoadRunner	●	●	●	●	●	●	●
Export tube design: PPS	●	●	●	●	●	●	●
Shaft design							
Shaft design creation	●	●	●	●	●	●	●
Shaft archiving	●	●	●	●	●	●	●
Export shaft design: Amberg Applications	●	●	●	●	●	●	●

Feature / Workflow	Navigator	Profile Basic	Profile Plus	Tunnelscan Basic	Tunnelscan Plus	Geotechnics Basic	Geotechnics Plus
Alignment							
Alignment creation + editing	•	•	•	•	•	•	•
Derive alignment from chainage axis	•	•	•	•	•	•	•
Alignment quality check indicators	•	•	•	•	•	•	•
Alignment text + graphical reports	•	•	•	•	•	•	•
Import alignment (Horizontal): LandXML	•	•	•	•	•	•	•
Import alignment (Horizontal): DXF	•	•	•	•	•	•	•
Import alignment (Horizontal): Cremer	•	•	•	•	•	•	•
Import alignment (Horizontal): ASCII	•	•	•	•	•	•	•
Import alignment (Horizontal): LandXML	•	•	•	•	•	•	•
Import alignment (Vertical): LandXML	•	•	•	•	•	•	•
Import alignment (Vertical): Cremer	•	•	•	•	•	•	•
Import alignment (Vertical): ASCII	•	•	•	•	•	•	•
Import alignment (Vertical): desCN	•	•	•	•	•	•	•
Export alignment (Horizontal + vertical): LandXML	•	•	•	•	•	•	•
Export alignment (Horizontal + vertical): Cremer	•	•	•	•	•	•	•
Axis calculator							
Axis calculator: Interval point calculation	•	•	•	•	•	•	•
Axis calculator: Absolute coordinates to tunnel-axis coordinates	•	•	•	•	•	•	•
Axis calculator 2D + 3D views	•	•	•	•	•	•	•
Export axis calculator results: DXF	•	•	•	•	•	•	•
Export axis calculator results: ASCII	•	•	•	•	•	•	•
Export tabular report	•	•	•	•	•	•	•
Construction stage							
Construction stage creation	•	•	•	•	•	•	•
Construction stage import from 3D model (IFC)	•	•	•	•	•	•	•
Construction stage archiving	•	•	•	•	•	•	•
Theoretical profiles							
Theoretical profile manager	•	•	•	•	•	•	•
Theoretical profile creation + editing	•	•	•	•	•	•	•
Vertical + perpendicular profile types	•	•	•	•	•	•	•
Import theoretical profiles: LandXML	•	•	•	•	•	•	•
Import theoretical profiles: DXF	•	•	•	•	•	•	•
Import theoretical profiles: TUN	•	•	•	•	•	•	•
Export theoretical profiles: DXF	•	•	•	•	•	•	•
Export tabular + graphical report	•	•	•	•	•	•	•
Theoretical sections							
Theoretical section creation + editing	•	•	•	•	•	•	•
Theoretical section 2D + 3D views	•	•	•	•	•	•	•
Linear + mass-centre interpolation methods	•	•	•	•	•	•	•
Import theoretical sections: LandXML	•	•	•	•	•	•	•
Import theoretical sections: ASCII	•	•	•	•	•	•	•
Export theoretical section: ASCII, OBJ, PLY	•	•	•	•	•	•	•
Export tabular + graphical reports	•	•	•	•	•	•	•
Transverse slope							
Transverse slope creation + editing	•	•	•	•	•	•	•
Transverse slope 2D + 3D views	•	•	•	•	•	•	•
Import transverse slope: LandXML	•	•	•	•	•	•	•
Import transverse slope: ASCII	•	•	•	•	•	•	•
Export transverse slope: ASCII	•	•	•	•	•	•	•
Export tabular + graphical report	•	•	•	•	•	•	•
Block definition							
Block definition creation + editing	•	•	•	•	•	•	•
Block definition 2D + 3D views	•	•	•	•	•	•	•
Import block definition: ASCII	•	•	•	•	•	•	•
Export block definition: ASCII	•	•	•	•	•	•	•
Export tabular + graphical report	•	•	•	•	•	•	•

Feature / Workflow	Navigator	Profile Basic	Profile Plus	Tunnelscan Basic	Tunnelscan Plus	Geotechnics Basic	Geotechnics Plus
Control points							
Control point manager	•	•	•	•	•	•	•
Control point creation + editing	•	•	•	•	•	•	•
Control point 2D + 3D views	•	•	•	•	•	•	•
Name- + proximity-based import matching methods	•	•	•	•	•	•	•
Control point measurement table	•	•	•	•	•	•	•
Control point archiving	•	•	•	•	•	•	•
Mark measurement as erroneous	•	•	•	•	•	•	•
Mark measurement as zero	•	•	•	•	•	•	•
Set import deviation warning limit	•	•	•	•	•	•	•
Import control points: DBX	•	•	•	•	•	•	•
Import control points: GSI	•	•	•	•	•	•	•
Import control points: ASCII	•	•	•	•	•	•	•
Export control points (latest measurement): DBX	•	•	•	•	•	•	•
Export control points (latest measurement): ASCII	•	•	•	•	•	•	•
Export control points (all measurements): DBX	•	•	•	•	•	•	•
Export control points (all measurements): ASCII	•	•	•	•	•	•	•
Construction progress							
Construction progress editor / graph	•	•	•	•	•	•	•
Add, move, delete entries	•	•	•	•	•	•	•
Import timestamp and stationing: ASCII	•	•	•	•	•	•	•
Auto-populate progress graph with Navigator tablet measurement data	• ¹	• ¹	• ¹	• ¹	• ¹	• ¹	• ¹
Photos editor							
Photo storage manager	•	•	•	•	•	•	•
Import photos: JPEG, PNG, GIF	•	•	•	•	•	•	•
Add + edit attribute information	•	•	•	•	•	•	•
Auto-populate photos editor with Navigator tablet measurement data	• ¹	• ¹	• ¹	• ¹	• ¹	• ¹	• ¹
Export photos	•	•	•	•	•	•	•
Addresses							
Add recipient addresses, including company logos (for reports)	○	•	•	•	•	•	•
Add sender addresses, including company logos (for reports)	○	•	•	•	•	•	•
Reports PDF							
Select report template		•	•	•	•	•	•
Vizialization according analysis settings		•	•	•	•	•	•
Display recipient address	•	•	•	•	•	•	•
Display sender address	•	•	•	•	•	•	•
Show stationing of another axis		•	•	•	•	•	•
Show report creator		•	•	•	•	•	•
Write remarks		•	•	•	•	•	•
Display measured point remarks		•	•			•	•
Display measured profile remarks		•	•				
Display comment of most recent measurements						•	•
Show measurement info				•	•		
Navigator tablet data transfer							
Export project to Amberg Navigator tablet	•	•	•	•	•	•	•
Import project from Amberg Navigator tablet	•	•	•	•	•	•	•
Synchronise project with Amberg Navigator Cloud	○	○	○	○	○	○	○
Navigator tablet machine management							
Create + edit calibration points for machine positioning (drill rig)	•	•	•	•	•	•	•
Import calibration from file: ASCII	•	•	•	•	•	•	•
Export calibration to file: ASCII	•	•	•	•	•	•	•
Navigator tablet total station positioning tasks							
Configure Tripod (resection) task	•	•	•	•	•	•	•
Configure Tripod Automatic (resection automatic) task	•	•	•	•	•	•	•
Configure Temporary Control Points	•	•	•	•	•	•	•
Configure Console task	•	•	•	•	•	•	•
Configure Heading Check Point (HCHP)	•	•	•	•	•	•	•

Feature / Workflow	Navigator	Profile Basic	Profile Plus	Tunnelscan Basic	Tunnelscan Plus	Geotechnics Basic	Geotechnics Plus
Navigator tablet measurement tasks							
Tasks based on classic or 3D model design	•						
Create + edit profiling tasks (all)	•						
Profiling task definition import: ASCII	•						
Profiling task definition 2D + 3D views	•						
Profiling task definition text + graphical report	•						
Create + edit stake-out tasks (all)	•						
Stake-out task definition import: ASCII	•						
Stake-out task definition 2D + 3D views	•						
Stake-out task definition text + graphical report	•						
Create + edit scanning tasks (all)	•						
Create + edit geotechnics task	•						
Create + edit other tasks (all)	•						
Task archiving	•						
Stored points editor (points from Navigator)							
Automatic import of points stored on Navigator	•	•	•	•	•	•	•
Measured point meta data	•	•	•	•	•	•	•
Measured point linked with Navigator task	•	•	•	•	•	•	•
Export points:ASCII	•	•	•	•	•	•	•
Measured profiles editor							
Measured profile manager + editor		•	•				
Measured profile 2D viewer		•	•				
Measured profile data table		•	•				
Import profile measurements: ASCII		•	•				
Detect profiles in file during import: ASCII		•	•				
Import profile measurements: Amberg Apps (ProScan)		•	•				
Import profile measurements: Leica Roadrunner		•	•				
Extract profiles from point cloud: ASCII		•	•				
Extract profiles from point cloud: Leica Multistation (XCF, SDB)		•	•				
Extract profiles from point cloud: Z+F		•	•				
Extract profiles from point cloud: Faro		•	•				
Extract profiles from point cloud: LAS/LAZ		•	•				
Check profile thickness		•	•				
Copy + paste measured profiles		•	•				
Inflate / deflate measured profiles		•	•				
Reposition measured profiles		•	•				
Merge measured profiles		•	•				
Measured vs design profile analysis							
Create + edit measured vs design profile analysis		•	•				
Copy analysis		•	•				
Measured profiles 2D + 3D views		•	•				
Measured points data table		•	•				
Add / move / delete profile points		•	•				
Render 3D view to image		•	•				
Add additional construction stages for display		•	•				
Configure deviation unit and format		•	•				
Change analysis view direction		•	•				
Change analysis stationing mode		•	•				
Filter profiles by stationing range		•	•				
Filter profiles by measurement date		•	•				
Change graphical report template		•	•				
Geometric data filters		•	•				
Configure 2D view background visualisation		•	•				
Configure 2D view measurements visualisation		•	•				
Show least square point and best-fit circle		•	•				
Show chainage information		•	•				
Configure printing options		•	•				
Export 2D as-built profiles: DXF		•	•				
Export 3D as-built profiles: DXF		•	•				
Export profiles in matrix format: DXF		•	•				
Export profile information: ASCII		•	•				
Export profile measurements: ASCII		•	•				
Export Under- /overprofile report		•	•				
Export least square point report		•	•				
Export measured volume report		•	•				
Export 2D profile graphical report (single file)		•	•				
Export per profile PDF report		•	•				
Export horizontal + vertical cuts: DXF		•	•				
Export as-built mesh: OBJ		•	•				

Feature / Workflow	Navigator	Profile Basic	Profile Plus	Tunnelscan Basic	Tunnelscan Plus	Geotechnics Basic	Geotechnics Plus
Measured vs measured profile analysis							
Create + edit measured vs measured profile analysis			•				
Copy analysis			•				
Measured profiles 2D + 3D views			•				
Measured points data table (Original profile)			•				
Measured points data table (Comparison profile)			•				
Add / move / delete profile points			•				
Render 3D view to image			•				
Add additional construction stages for display			•				
Configure layer thickness unit and format			•				
Change analysis view direction			•				
Change analysis stationing mode			•				
Filter profiles by stationing range			•				
Filter profiles by measurement date			•				
Geometric data filters			•				
Configure 2D view background visualisation			•				
Configure 2D view measurements visualisation			•				
Show chainage information			•				
Configure printing options			•				
Export 2D original vs comparison profiles: DXF			•				
Export 3D original vs comparison profiles DXF			•				
Export original vs comparison profiles in matrix format: DXF			•				
Export comparison profile information: ASCII			•				
Export comparison profile measurements: ASCII			•				
Export original vs comparison measured volume report			•				
Export 2D profile graphical report			•				
Export horizontal + vertical cuts: DXF			•				
Export comparison mesh: OBJ			•				
Circularity profile analysis							
Create + edit measured vs design profile analysis			•				
Copy analysis			•				
Measured profiles 2D view			•				
Measured points data table			•				
Add / move / delete profile points			•				
Add additional construction stages for display			•				
Configure deviation unit and format			•				
Change analysis view direction			•				
Change analysis stationing mode			•				
Filter profiles by stationing range			•				
Filter profiles by measurement date			•				
Geometric data filters			•				
Use calculated radius for best-fit circle			•				
Use fixed radius (user defined) for best-fit circle			•				
Configure 2D view background visualisation			•				
Configure 2D view measurements visualisation			•				
Show least square point			•				
Show chainage information			•				
Configure printing options			•				
Export profile information: ASCII			•				
Export circularity graphical report (single file)			•				

Feature / Workflow	Navigator	Profile Basic	Profile Plus	Tunnelscan Basic	Tunnelscan Plus	Geotechnics Basic	Geotechnics Plus
Geological overprofile analysis							
Create + edit geological overprofile analysis			•				
Copy analysis			•				
Measured profiles 2D + 3D views			•				
Measured points data table			•				
Add / move / delete profile points			•				
Render 3D view to image			•				
Add additional construction stages for display			•				
Configure deviation unit and format			•				
Change analysis view direction			•				
Change analysis stationing mode			•				
Filter profiles by stationing range			•				
Filter profiles by measurement date			•				
Change graphical report template			•				
Geometric data filters			•				
Configure 2D view background visualisation			•				
Configure 2D view measurements visualisation			•				
Show chainage information			•				
Configure printing options			•				
Export 2D as-built profiles: DXF			•				
Export 3D as-built profiles DXF			•				
Export profiles in matrix format: DXF			•				
Export profile information: ASCII			•				
Export profile measurements: ASCII			•				
Export geological overprofile report			•				
Export 2D profile graphical report (single file)			•				
Export per profile PDF report			•				
Export horizontal + vertical cuts: DXF			•				
Export as-built mesh: OBJ			•				
Point cloud editor							
Point cloud manager + editor				•	•		
2D plan view				•	•		
Table view				•	•		
3D viewer				•	•		
3D orthometric view				•	•		
3D perspective view				•	•		
3D preset views				•	•		
Import point cloud: ASCII (PTS, XYZ...)				•	•		
Import point cloud: Leica Multistation				•	•		
Import point cloud: Z+F				•	•		
Import point cloud: FARO				•	•		
Import point cloud: FARO Scene				•	•		
Import point cloud: PCD				•	•		
Import point cloud: LAS/LAZ				•	•		
Import point cloud: E57				•	•		
Import point cloud: Leica RTC360				•	•		
Import point cloud: Leica BLK360 (G1 and G2)				•	•		
Copy + paste point clouds				•	•		
Merge point clouds				•	•		
Archive point clouds				•	•		
Reposition point cloud from APM (Navigator)				•	•		
Reposition point cloud from APM (third party)				•	•		
Increase / decrease display density				•	•		
Point cloud color: RGB or High contrast				•	•		
Filter point cloud: Downsample				•	•		
Filter point cloud: Distance based				•	•		
Filter point cloud: Stationing / chainage based				•	•		
Filter point cloud: Horizontal and vertical trim lines				•	•		
Filter point cloud: Theoretical design offset based				•	•		
Filter point cloud: Polygon selection based				•	•		
Split point cloud along tunnel axis				•	•		
Add/Subtract point cloud selection				•	•		
Cut/Paste point cloud selection to another construction stage				•	•		
Hide / unhide selected points				•	•		
Undo / redo filter step				•	•		
Copy point cloud selection to other construction stage				•	•		
Recalculate point cloud gravity centre				•	•		
Reposition point cloud using spheres (semiautomatic detection)					•		
Reposition point cloud using black + white targets					•		
Reposition point cloud using cloud 2 cloud				○	•		
Repositioning report for sphere and BW repositioning					•		

Feature / Workflow	Navigator	Profile Basic	Profile Plus	Tunnelscan Basic	Tunnelscan Plus	Geotechnics Basic	Geotechnics Plus
Measured vs design point cloud analysis							
Create + edit measured vs design point cloud analysis				•	•		
Copy analysis				•	•		
2D deroled view with custom colour-coded deviation values				•	•		
3D view with custom colour-coded deviation values				•	•		
Render 3D view to image				•	•		
Profile slice view with deviations				•	•		
Add additional construction stages for display				•	•		
Configure deviation unit and format				•	•		
Change analysis view direction				•	•		
Change analysis stationing mode				•	•		
Change analysis resolution (point cloud density)				•	•		
Filter point cloud: Theoretical design offset based				•	•		
Geometric data filters				•	•		
Configure 2D view background visualisation				•	•		
Configure 2D view measurements visualisation				•	•		
Configure colour map for deviations				•	•		
Configure printing options				•	•		
Export area coverage report: ASCII				•	•		
Export area classification report: ASCII				•	•		
Export measured volume report				•	•		
Export Under- /overprofile report				•	•		
Export 2D deroled report with custom colour-coded deviation values: PDF				•	•		
Export point cloud coloured by deviation to the theoretical profile				•	•		
Export downsampled point cloud				•	•		
Extract profiles to measured profiles editor				• ²	• ²		
Blast round scan analysis							
Create + edit blast round scan analysis					•		
Copy analysis					•		
2D deroled view with custom colour-coded deviation values					•		
3D view with custom colour-coded deviation values					•		
Render 3D view to image					•		
Profile slice view with deviations					•		
Add additional construction stages for display					•		
Configure deviation unit and format					•		
Change analysis view direction					•		
Change analysis stationing mode					•		
Change analysis resolution (point cloud density)					•		
Filter point cloud: Theoretical design offset based					•		
Mask inner or outer points					•		
Geometric data filters					•		
Interpolate areas without measurements (holes in point cloud)					•		
Configure 2D view background visualisation					•		
Configure 2D view measurements visualisation					•		
Configure colour map for deviations					•		
Configure printing options					•		
Export area coverage report: ASCII					•		
Export area classification report: ASCII					•		
Export measured volume report					•		
Export Under- /overprofile report					•		
Export 2D deroled report with custom colour-coded deviation values: PDF					•		
Export point cloud coloured by deviation to the theoretical profile					•		
Export downsampled point cloud					•		
Extract profiles to measured profiles editor					• ²		

Feature / Workflow	Navigator	Profile Basic	Profile Plus	Tunnelscan Basic	Tunnelscan Plus	Geotechnics Basic	Geotechnics Plus
Layer thickness scan analysis (Deformation analysis)							
Create + layer thickness scan analysis							•
Copy analysis							•
2D deroled view with custom colour-coded deviation values							•
3D view with custom colour-coded deviation values							•
Render 3D view to image							•
Profile slice view with deviations							•
Add additional construction stages for display							•
Configure deviation unit and format							•
Change analysis view direction							•
Change analysis stationing mode							•
Change analysis resolution (point cloud density)							•
Filter point cloud: Theoretical design offset based							•
Geometric data filters							•
Configure 2D view background visualisation							•
Configure 2D view measurements visualisation							•
Configure colour map for deviations							•
Configure printing options							•
Export measured volume report: PDF							•
Export measured volume report: ASCII							•
Export 2D deroled report with custom colour-coded deviation values: PDF							•
Export point cloud coloured by layer thickness							•
Export downsampled point cloud							•
Extract profiles to measured profiles editor							•?
Undulation scan analysis							
Create + undulation scan analysis							•
Copy analysis							•
2D deroled view with custom colour-coded deviation values							•
3D view with custom colour-coded deviation values							•
Render 3D view to image							•
Configure undulation parameters (bar length, percentage)							•
Change analysis view direction							•
Change analysis stationing mode							•
Change analysis resolution (point cloud density)							•
Filter point cloud: Theoretical design offset based							•
Geometric data filters							•
Configure 2D view background visualisation							•
Configure 2D view measurements visualisation							•
Configure colour map for deviations							•
Configure printing options							•
Export 2D deroled images							•
Export 2D deroled report with custom colour-coded deviation values: PDF							•
High resolution image scan analysis							
Create + high resolution image scan analysis							•
Copy analysis							•
2D deroled view							•
Configure brightness and contrast of the image							•
Change analysis view direction							•
Change analysis stationing mode							•
Change analysis resolution (point cloud density)							•
Filter point cloud: Theoretical design offset based							•
Geometric data filters							•
Configure 2D view background visualisation							•
Configure 2D view measurements visualisation							•
Configure maximum interpolation distance							•
Configure printing options							•
Export 2D deroled images							•
Export 2D deroled report: PDF							•

Feature / Workflow	Navigator	Profile Basic	Profile Plus	Tunnelscan Basic	Tunnelscan Plus	Geotechnics Basic	Geotechnics Plus
Geotechnical location codes							
Import location codes						•	•
Export location codes						•	•
Define visualization parameters						•	•
Define name and abbreviation						•	•
Geotechnical point types							
Import sensors						•	•
Export sensors						•	•
Configure units						•	•
Configure warning limits						•	•
Geotechnical cross sections							
Create geotechnical cross section						•	•
Deactivate cross section						•	•
Cross section 2D view						•	•
Copy cross section to interval						•	•
Copy cross section to list of stationings						•	•
Add 3D convergence point						•	•
Add geotechnical sensor							•
Set sensor type, date, location, warning limit						•	•
Add borehole with sensors							•
Geotechnical measurements							
Geotechnical measurements organized by cross section, location code, date and time						•	•
Import measured data						•	•
Import 3D points without point ID						•	•
Import measurements of a specific point						•	•
Undo import						•	•
Export measurements: ASCII						•	•
Set zero measurement						•	•
Mark erroneous measurements						•	•
Warnings of exceeded offset limits						•	•
Geotechnical convergence points analysis (cross section based)							
Create cross section based convergence analysis						•	•
Copy analysis						•	•
Change analysis view direction						•	•
Add additional construction stages for display						•	•
Configure deviation unit and format						•	•
Calculation of settlement, transversal and longitudinal offsets						•	•
Cross section view						•	•
Timeline for each offset						•	•
Visualization according location codes						•	•
Visualization of construction progress						•	•
Warnings for exceeded offset limits						•	•
Set zero measurement						•	•
Mark erroneous measurements						•	•
Filter measurements by: point type, location code						•	•
Filter measurements by: stationing						•	•
Filter measurements by: measurement date						•	•
Filter measurements by: date of the newest measurement						•	•
Configure background visualisation						•	•
Configure measurements visualisation						•	•
Configure printing options						•	•
Configure warning, alarm and critical trigger value						•	•
Export all results: ASCII						•	•
Export latest measurements: ASCII						•	•
Export tabular report with offsets: PDF						•	•
Export graphical report: PDF						•	•
Calculated angle analysis							•
Calculated distance analysis							•

Feature / Workflow	Navigator	Profile Basic	Profile Plus	Tunnelscan Basic	Tunnelscan Plus	Geotechnics Basic	Geotechnics Plus
Geotechnical sensors analysis (cross section based)							
Create sensor cross section based analysis							•
Copy analysis							•
Change analysis view direction							•
Add additional construction stages for display							•
Configure deviation unit and format							•
Calculation of deltas							•
Cross section view							•
Timeline visualization							•
Visualization according location codes							•
Visualization of construction progress							•
Warnings for exceeded offset limits							•
Set zero measurement							•
Mark erroneous measurements							•
Filter measurements by: point type, location code							•
Filter measurements by: stationing							•
Filter measurements by: measurement date							•
Filter measurements by: date of the newest measurement							•
Configure background visualisation							•
Configure measurements visualisation							•
Configure printing options							•
Configure warning, alarm and critical trigger value							•
Export all results: ASCII							•
Export latest measurements: ASCII							•
Export tabular report with offsets: PDF							•
Export graphical report: PDF							•
Angle analysis							•
Distance analysis							•
Extensometer analysis							•
Force analysis							•
Height analysis							•
Pressure analysis							•
Temperature analysis							•
Geotechnical longitudinal analysis							
Create longitudinal analysis							•
Copy analysis							•
Change analysis view direction							•
Add additional construction stages for display							•
Configure deviation unit and format							•
Calculation of deltas							•
Cross section schematic view							•
Visualization along axis with measurement epochs							•
Visualization of construction progress							•
Set zero measurement							•
Mark erroneous measurements							•
Filter measurements by: point type, location code							•
Filter measurements by: stationing							•
Filter measurements by: measurement date							•
Configure background visualisation							•
Configure measurements visualisation							•
Configure printing options							•
Export all results: ASCII							•
Export latest measurements: ASCII							•
Export graphical report: PDF							•
Angle analysis							•
Convergence analysis, settlement							•
Convergence analysis, longitudinal							•
Convergence analysis, transverse							•
Distance analysis							•
Force analysis							•
Height analysis							•
Pressure analysis							•
Temperature analysis							•

Feature / Workflow	Navigator	Profile Basic	Profile Plus	Tunnelscan Basic	Tunnelscan Plus	Geotechnics Basic	Geotechnics Plus
System requirements							
Operating system	Windows® 10/11 (64-bit version).						
Processor	Dual-core 1.80 GHz or better. For Tunnelscan module, Quad-core 2.80 GHz is recommended. Important: Amberg Tunnelscan performs better with Intel processors over AMD Ryzen processors.						
RAM	16 GB or more. For Tunnelscan module, 32 GB or more.						
Hard disk	30 GB or more. For Tunnelscan module, 100 GB or more (SSD).						
Graphics	DirectX 11 compatibility with 512 MB or more memory. For Tunnelscan module, 8 GB or higher is recommended. Important: The Tunnelscan module requires OpenGL 4.0 or later.						

Legend

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How to export

File -> Download ->PDF -> Current sheet - Use page breaks, Repeat frozen rows

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