

# Amberg Tamping GRP 1000





## The configuration consists of

- Premium hardware GRP 1000
- Application specific software Tamping Plus
- Robust and guaranteed precision thanks to GRP Fidelity
- First-class application support

## Technical data GRP 1000

System configuration		Cont. system accuracy	
Gauge (mm)	1000, 1067, 1435, 1520/24, 1600, 1668/76	Gauge	+/- 0.3 mm
<b>TGS FX</b>		Superelevation	+/- 0.5 mm
Gauge	- 25 mm to + 65 mm	- stop&go mode	+/- 1.0 mm
Superelevation (Cant)	+/- 260 mm (+/- 10°)	- kinematic mode	
<b>Sensor performance</b>		<b>Positioning</b>	
Track geometry measurement (Position, Gauge, Superelevation)		Leica total stations	TS15, TS30, TS50, MS50
Measurement stop&go - duration	TPS: 5 s GPS: 1 s	- motorised, ATR	
Measurement kinematic - data frequency	TPS: 7 Hz GPS: 10 Hz	- radio modem	
<b>System accuracy</b>		Leica GPS	GPS1200, GS10/14/15
Determination of track position and height <sup>*)</sup>		<b>Power supply</b>	
GRP with total station (TPS)	Pos./Height: +/- 1 mm +/- 5 mm	TGS FX – sensors	Leica GEB171, rechargeable > 8 h
GRP with GPS	Position: +/- 20 mm Height: +/- 40 mm	Battery life <sup>*)</sup>	
<sup>*)</sup> Typical project accuracy. Depending on e.g. atmospheric conditions, control point quality, positioning sensor and project conditions.		Panasonic control computer	Li-Ion battery, rechargeable > 4 h
		Battery life <sup>*)</sup>	
		<b>Environmental specifications</b>	
		Working temperature range	-10° to +50° C
		Humidity	< 80 %
		<b>System weight</b>	
		GRP 1000	27 kg
		- ready to measure	
		- incl. battery and computer	

## System use and typical system performance

Tamping applications	
Typical track work applications	- New construction - Rehabilitation - Renewal - Maintenance - Tamping only
System use	- Track - Turnout systems, incl. structural gauge enlargement (e.g. FAKOP <sup>®</sup> )
<b>Typical project performance</b>	
Track survey with total station	800 – 1200 m/h
Track survey with GPS	3000 m/h
- GPS receiver and reference station necessary	
<b>Tamping data (lift and slue values)</b>	
Tamping data preparation	< 10 min per 500 m
- correction data calculation incl. ramping	
Tamping data formats	Plasser WinALC, DosALC CGV5 Framafer BAO3 Matisa Harsco
- further formats on request	
<b>System approval</b>	
CE Conformity	EN 61326-1:2005 EN 61000-6-2:2005 EN 61000-6-4:2006 EN 13848-4 Directive 2004/108/EC Directive 2002/95/EC
GRP System FX approvals from	Network Rail / London Underground (UK), Deutsche Bahn (DE), SBB (CH), SNCF (FR), ÖBB (AT), RFI (IT), Adif (ES), ProRail (NL), Infrabel (BE)
 DB Ril. 833.0050 Type approval as railway surveying device by DB AG.  DB Ril. 824.0050 Measurement and detection of long-wave track irregularities.	
<b>Extract of references</b>	
Amberg's railway surveying solutions have proven their high performance all over the world. Demanding projects have been successfully realised in e.g. Germany, Austria, Belgium, the Netherlands, Denmark, France, Italy, Spain, Greece, Turkey, Australia, United Kingdom, Saudi Arabia, UAE, Korea, USA, PR China.	

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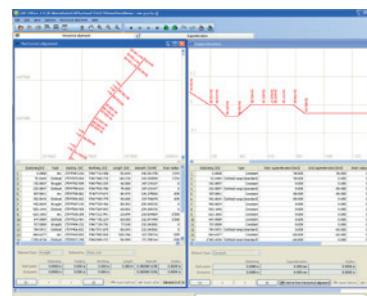
## System performance and technical data

### Amberg Tamping

The perfect track with Amberg Tamping. High-performance system solution for track design based tamping survey.

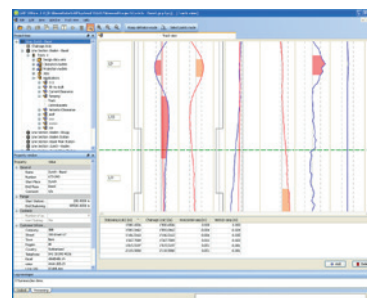
#### Project data management

- Central database for input, visualisation and management of all track project data including route data chronology, control points and survey and construction progress.
- User-defined project definition either as manual input of the (relative) track axis data from a track layout plan or as (absolute) coordinate referenced track axis data directly from the database or design software.
- Prior definition of geometrical tamping parameters (e.g. max. lift, max. slue per run).



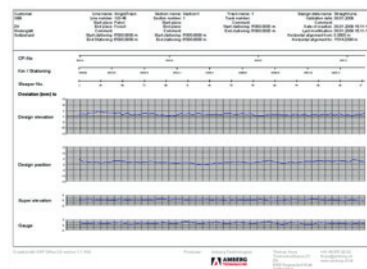
#### Surveying

- Automatic surveying of current track position including inner track geometry as basis for calculation of lift and slue values.
- All relevant track information available on track in real-time.
- Data logging in static or kinematic surveying mode, depending on project requirements – with surveying performance up to 3 km/h.



#### Evaluation and reporting

- Automatic survey data processing and evaluation – including automatic linking of subsequently surveyed sections.
- User friendly tamping data editor for interactive graphical data analysis and processing.
- Direct export of correction data for Plasser, Framafier and Matisa tamping machine control computers.
- Comprehensive reports of inner and outer track geometry analyses.



Amberg Technologies AG  
Trockenloostrasse 21  
CH-8105 Regensdorf  
Switzerland

Phone +41 44 870 92 22  
Fax +41 44 870 06 18

info@amberg.ch  
www.amberg.ch/at

