

As of: May 5, 2021

GENERAL INFORMATION							
Product group	GRP LINER supply						
Product range	SAERTEX-LINER® H ₂ O						
Design	Type S+						
Utilization	Potable water						
Approvals	DVGW-W270, KTW, NSF/ANSI Standard 61 and others*						
Reinforcing material	Multiaxial fabric made of glass fiber						
Resin type	Styrene-free vinyl ester resin (SFVE)						
Impregnation	Pre-impregnated at the factory						
Curing procedure	Light-cured pipe lining (UV-CIPP)						
Installation procedure	Pull in place						
Inflation procedure	Compressed air						
Shelf life**	<table border="0"> <tr> <td>6 months:</td> <td>3 months:</td> </tr> <tr> <td>- WD ≤ 8.3 mm</td> <td>- WD > 8.3 mm</td> </tr> <tr> <td>- 7°C – 18°C/45°F - 65°F</td> <td>- 7°C – 14°C/45°F - 57°F</td> </tr> </table>	6 months:	3 months:	- WD ≤ 8.3 mm	- WD > 8.3 mm	- 7°C – 18°C/45°F - 65°F	- 7°C – 14°C/45°F - 57°F
6 months:	3 months:						
- WD ≤ 8.3 mm	- WD > 8.3 mm						
- 7°C – 18°C/45°F - 65°F	- 7°C – 14°C/45°F - 57°F						
Pressure table	Available						
EC Safety Data Sheet	Available						

* Brazil, China, Israel, Poland, Russia, Slovakia, Spain, Czech Republic, Belarus

**WD = wall thickness

DESIGN CHARACTERISTICS	
Maximum operating pressure (MDP)	up to 1 bar/up to 14 psi
Host pipe profile	Circular
Diameter range	DN 250-1200/10" – 48"
Structural wall thickness	4 mm - 12 mm, in 1 mm increments
Inner foils with barrier function*	Hygienic
Outer foils*	Integrated sliding and light protection foil and permanent foil with barrier function
Structural classification according to DIN EN ISO 11295/ AWWA M28	Class A/Class IV: independent - fully statically loadable
Liner construction as outlined in:	Analog DIBt approval Z-42.3-350, Annex 1 and 2, abZ/AB

* Details see section "FOILS"

COMPOSITE REINFORCEMENT	
Glass fiber type according to DIN 61850	Permanently corrosion and chemical resistant, ECR
Number of layers multiaxial fabric	at least 2
Glass area weight per mm wall thickness	1100 g/m ² ± 150 g/m ²
Specific density according to DIN EN ISO 1183-2	1.6 g/cm ³ ± 0.5 g/cm ³
Glass content according to DIN EN ISO 1172	≥ 46% (mass-based)
Barcol hardness according to DIN EN 59	≥ 50 IRHD
Longitudinal seam	Yes
Winding	No

As of: May 5, 2021

FOILS	
Inner foils with barrier function	Hygienic
- Remains in the liner	Permanent
- Materials	PE/PA, nonwoven PET
- Thickness	Up to 400 µm
Protective outer gliding foil, UV light protection*, integrated	
- Material	PVC, fabric reinforced in places
- Thickness	Up to 500 µm
Permanent outer foil with barrier function	
- Material	PE/PA/PE and nonwoven PP
- Thickness	Up to 200 µm

*Up to DN 600/24 inch and max. 2.5 t liner weight and corresponding condition of host pipe installation possible without additional gliding foil.

Notes (terms ISO 11296- 4):

- Temporary: Foil is removed after curing.
- Semi-permanent: Facilitates liner installation and curing without post-installation functions. Remains in the liner.
- Permanent: Facilitates liner installation and curing with post-installation functions. Remains in the liner.

MECHANICAL CHARACTERISTICS	
Short-term circumferential E modulus according to DIN EN 1228	≥ 12.950 N/mm ² : 1,878,235 psi
Short-term bending E modulus according to DIN EN ISO 11296-4 // DIN EN ISO 178	≥ 15.000 N/mm ² : 2,175,565 psi
Short-term bending stress according to DIN EN ISO 11296-4 // DIN EN ISO 178	≥ 230 N/mm ² : 33,355 psi
Long-term circumferential E modulus* _{ex 50 years} according to DIN EN 761	9.450 N/mm ² : 1,370,605 psi
Long-term bending stress E modulus* _{ex 50 years} according to DIN EN 761	165 N/mm ² : 23,930 psi
Retention factor A after 2,000 hours* according to DIN EN 761	1.37/72%
Creep tendency after 24 hours according to DIN EN ISO 899-2	≤ 5 %

* These values are used for the static calculation of the liner's stability according to DWA-A 143-2.