

As of: February 2023

#### GENERAL INFORMATION

Product group	GRP LINER - Gravity
Product range	SAERTEX-LINER® INDUSTRY
Design	Type S+
Application	Corrosive sewage with compatibility check
Reinforcing material	Multiaxial fabric made of ECR glass
Resin type	Vinyl ester resin (VE)
Wet out (Saturation)	Fully wet out at the factory
Curing procedure	UV light - cured in place pipe (UV-CIPP)
Installation procedure	Pull in place
Inflation procedure	Compressed air
Shelf-life storage parameters	Up to 6 months at temperatures from 45°F - 77°F
EC Safety Data Sheet	Available upon request

#### DESIGN CHARACTERISTICS

Host pipe profile	All types
Diameter range	6" – 40"
Structural wall thickness	3 mm-10 mm, in 1 mm increments; system limits: 40" max. WT 8 mm, WD 10 mm max. 32"
Permissible elongation	≤16": DN + 2% >16": DN + 4%
Outer foils	Integrated sliding and light protection foil and permanent foil with barrier function
Liner construction as outlined in:	DIBt approval Z-42.3-350, Annex 1 and 2, abZ/AB

#### COMPOSITE REINFORCEMENT

Glass fiber type according to DIN 61850	Permanently corrosion and chemical resistant, ECR
Number of layers multiaxial fabric	≥ 2
Glass area weight per mm wall thickness	1100 g/m <sup>2</sup> ± 150 g/m <sup>2</sup>
Specific density according to DIN EN ISO 1183-2	1.6 g/cm <sup>3</sup> ± 0.5 g/cm <sup>3</sup>
Glass content according to DIN EN ISO 1172	≥ 46% (mass-based)
Barcol hardness according to DIN EN 59	≥ 40 IRHD
Longitudinal seam	Yes

**Product data sheet**  
**SAERTEX-LINER® INDUSTRY, TYPE S+**

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FOILS	
Inner foils with barrier function	
- Foil Type	Temporary*
- Materials	PE/PA
- Thickness	Up to 200 µm
Protective outer gliding foil, UV light protection** integrated	
- Material	PVC reinforced fabric
- Thickness	Up to 500 µm
Permanent outer foil with barrier function	
- Material	PE/PA/PE and nonwoven PP
- Thickness	Up to 200 µm

\*(terms ISO 11296- 4): Temporary: Foil is removed after curing.

\*\*Up to 24" and max. 5.500lbs liner weight and corresponding condition of host pipe, liner may be installed without additional gliding foil.

MECHANICAL CHARACTERISTICS	
Short-term circumferential E modulus according to DIN EN 1228 // DIN EN ISO 11296-4:2011	2,970,000psi
Short-term bending E modulus according to DIN EN ISO 11296-4:2011 // DIN EN ISO 178 // ASTM	2,430,000 psi
Short-term bending stress according to DIN EN ISO 11296-4:2011 // DIN EN ISO 178 // ASTM	39,000 psi
Retention factor A after 10,000 hours according to DIN EN 761	1.28/78%
Reduction factor A after 20,000 hours according to DIN EN 761	1.31/76%
Creep tendency after 24 hours according to DIN EN ISO 899-2	≤ 6 %