Product data sheet
SAERTEX-LINER® MULTI, TYPE S+, PRESSURE

As of: February 1, 2023

GENERAL INFORMATION	
Product group	GRP LINER – Pressure
Product range	SAERTEX-LINER® MULTI
Design	Type S+
Application	Municipal wastewater, storm water, sewage
Reinforcing material	Multiaxial fabric made of ECR glass
Resin type	Unsaturated polyester resin (UP)
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 12 months at temperatures from 45 °F – 77 °F
EC Safety Data Sheet	Available upon request

*WT- Wall Thickness
**DIA- Diameter

DESIGN CHARACTERISTICS	
Maximum operating pressure (MDP)	Up to 14 psi
Host pipe profile	Circular
Diameter range	10” –48”
Structural wall thickness	4 mm-12 mm, in 1 mm increments
Permissible Stretch	Available on request
Outer foils	Integrated gliding and light protection foil and permanent foil with barrier
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/m² ± 150 g/m²
Specific density according to DIN EN ISO 1183-2	1.6 g/cm³ ± 0.5 g/cm³
Glass content according to DIN EN ISO 1172	≥ 46% (mass-based)
Barcol hardness according to DIN EN 59	≥ 40 IRHD
Longitudinal seam	Yes

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FOILS	
Inner foils with barrier function	Pressure
- Foil Type	Permanent*
- Materials	PE/PA nonwoven PET
- Thickness	Up to 400 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) Permanent: Facilitates liner installation and curing with post-installation functions. Remains in the liner.
**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	2,970,000psi
Short-term bending E modulus according to DIN EN ISO 11296-4 // DIN EN ISO 178 // ASTM D790	2,450,000 psi
Short-term bending stress according to DIN EN ISO 11296-4 // DIN EN ISO 178 // ASTM D790	39,000 psi
Retention factor A after 10,000 hours according to DIN EN 761	1.28/78%
Retention 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 %