Product data sheet
SAERTEX-LINER® ENVIRONMENT, TYPE S+ XR

As of: February 2023

GENERAL INFORMATION	
Product group	GRP LINER - Pressure
Product range	SAERTEX-LINER® ENVIRONMENT
Design	Type S+ XR
Application	Pressure lines for municipal wastewater, rainwater,
Reinforcing material	Multiaxial fabric made of ECR glass
Resin type	Styrene-free vinyl ester resin (SFVE)
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 procedure	Up to 6 months at temperatures from 45°F -65°F
	3 months at 44°F- 57°F **if** WT* ≥ 9 mm and / or DIA** ≥
EC Safety Data Sheet	Available upon request

*WT- Wall Thickness
**DIA- Diameter

DESIGN CHARACTERISTICS	
Operating pressure	Up to 478 psi
Host pipe profile	Circular
Structural classification according to the DIN EN ISO 11295/AWWA M28	Class A/Class IV: Independent- Fully structural
Diameter range	10”-48”
Structural wall thickness	4.3 mm-12.3 mm, in 1 mm increments
Liner construction as outlined in:	Analog 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	≥ 3
Glass area weight per mm wall thickness	1210 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 // 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 D790	2,430,000 psi
Short-term bending stress according to DIN EN ISO 11296-4:2011 // DIN EN ISO 178	39,000 psi
Retention factor A after 10,000 hours according to DIN EN 761	1.28/78%
Creep tendency after 24 hours according to DIN EN ISO 899-2	≤ 6 %

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