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

As of: May 20, 2022

GENERAL INFORMATION				
Product group	GFRP LINER supply			
Product range	SAERTEX-LINER® GAS			
Design	Type S+XR			
Utilization	Gas			
Approvals	WRc			
Reinforcing material	Multiaxial fabric made of glass fiber			
Resin type	UP			
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	DN	Composite wall thickness	Transport conditions	Storage stability
	250-800 mm	4,3-8,3 mm	No temperature control required	12 months at 7-25 °C
	801-1200 mm	9,3–12,3 mm	no temperature control required, at outdoor temperatures below 25 °C and transport time less than 48 hours	12 months at 7-18 °C 6 months at 7-25°C
Pressure table	Available			
EC Safety Data Sheet	Available			

DESIGN CHARACTERISTICS	
Maximum operating pressure (MDP)	up to 33 bar/up to 478 psi
Host pipe profile	Circular
Diameter range	DN 250 - 1200/10” – 48”
Structural wall thickness	4.3 mm-12.3 mm, in 1 mm increments
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

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FOILS	
Inner foils with barrier function	Pressure
- 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	≥ 20.500 N/mm²: 2,973,270 psi
Short-term bending E modulus according to DIN EN ISO 11296-4 // DIN EN ISO 178	≥ 16.800 N/mm²: 2,436,630 psi
Short-term bending stress according to DIN EN ISO 11296-4 // DIN EN ISO 178	≥ 270 N/mm²: 39,160 psi
Long-term circumferential E modulus*$_{ex\ 50\ years}$ according to DIN EN 761	16.000 N/mm²: 2,320,600 psi
Long-term bending stress E modulus*$_{ex\ 50\ years}$ according to DIN EN 761	210 N/mm²: 30,455 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 %

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

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COMPOSITE REINFORCEMENT	
Glass fiber type according to DIN 61850	Permanently corrosion and chemical resistant, ECR
Number of layers multiaxial fabric	at least 3
Glass area weight per mm wall thickness	1210 g/m² ± 150 g/m²
Specific density according to DIN EN ISO 1183-2	2.62 g/cm³
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