

As of: February 6, 2023

| GENERAL INFORMATION | |
|------------------------|--|
| Product group | GFK-LINER sewage |
| Product range | SAERTEX-LINER® MULTI |
| Design | Type S+ |
| Application | Municipal wastewater, rainwater, sewage |
| Reinforcing material | Multiaxial fabric made of ECR glass |
| Resin type | Unsaturated polyester resins (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 |
| Safety Data Sheet | Available upon request |

| DIA (inch) | STORAGE | | | | | | | | | | | | |
|------------|-------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|------|------|
| | Composite wall thickness (mm) | | | | | | | | | | | | |
| | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 6 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue |
| 8 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue |
| 12 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue |
| 16 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue |
| 20 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue |
| 24 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue |
| 28 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue |
| 32 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue |
| 36 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue |
| 40 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue |
| 44 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue |
| 48 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue |
| 52 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue | Blue |
| 56 | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Blue | Blue | Blue | Blue |
| 60 | Blue | Blue | Blue | Blue | Blue | Blue | Blue | Blue | Blue | Blue | Blue | Blue | Blue |
| 64 | Blue | Blue | Blue | Blue | Blue | Blue | Blue | Blue | Blue | Blue | Blue | Blue | Blue |

- 44 to 77° F – 12 months
- 44 to 57° F – 3 months

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| DESIGN CHARACTERISTICS | |
|-----------------------------------|--|
| Host pipe profile | All types |
| Diameter range | 8" – 64" |
| Structural wall thickness | 3 mm-15 mm, in 1 mm increments |
| Permissible elongation | ≤16": DN + 2% >16": DN + 4% |
| 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 | 1,100 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 | ≥ 40 IRHD |
| Longitudinal seam | Yes |

| FOILS | |
|---|-------------------------|
| Inner foils with barrier function | |
| - Foil Type | Temporary* |
| - Material | 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 | E/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.

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| MECHANICAL CHARACTERISTICS | | |
|---|-------------------|---------------------------------------|
| Short-term circumferential E modulus according to DIN EN 1228 // DIN EN ISO 11296-4:2011 | 8" to 64" | 2,970,000 psi |
| Short-term bending E modulus according to DIN EN ISO 11296-4:2011 // DIN EN ISO 178 // ASTM D790 | 8" to 15" ≥18" | 2,450,000 psi 2,800,000 psi |
| Short-term bending stress according to DIN EN ISO 11296-4:2011 // DIN EN ISO 178 // ASTM D790 | 8" to 64" | 39,000 psi |
| Retention factor A after 10,000 hours according to DIN EN 761 | 8" to 15" ≥18" | 1.31/76% 1.25/80% |
| Retention factor A after 20,000 hours according to DIN EN 761 | 8" to 15" ≥18" | 1.34/75% 1.28/78% |
| Creep tendency after 24 hours according to DIN EN ISO 899-2 | 8" to 64" | ≤ 6% |