



Area of application

Gravity sewers

- Circular profiles: ID 6 in. - 38 in.
- Ovoid cross-sections: 8 in. / 12 in. - 28 in. / 41 in.



Advantages

- Seamless design, particular expandability
- Up to 1,640 / 3,280 ft. (≤ 12 in.)
- Can be stored up to 6 months (VE liners) or 12 months (UP liners)
- Fast curing and smooth surface
- Suitable for all standard pipe profiles
- Quality management in accordance with EN ISO 9001:2015
- Bridging small profile and cross-section changes
- Resin types depending on requirement (polyester, vinyl ester, styrene-free)
- Abrasion protection layer

Additional advantage: IES

Integrated Enhanced Security

- Can be a substitute for a gliding foil, reducing installation time
- Available up to 24 in.



Approvals

- DIBt Z-42.3-336 (UP and VE resins)
- WRc PT/496/0422 (UP and VE resin)
- CSTB 17.2/15-303_V4 (UP resins)
- City of Los Angeles, USA (UP resins)

Reinforcement material

Woven glass complex E-CR according to

- ASTM D578

Resins

Unsaturated polyester resins (UP resins)

- Type 1140 according to DIN 16946-2
- Group 3 according to DIN 18820-1
- Group 4 according to EN 13121-1

Vinyl ester resins (VE resins)

- Type 1310 according to DIN 16946-2
- Group 5 according to DIN 18820-1
- Group 7 B according to EN 13121-1

Styrene-free resins

Technical data

Approved for UP and VE resins

Density after curing (ASTM D1505):	93.6 lb/ft ³ (±31.2 lb/ft ³)
Glass fibre content (EN ISO 1172 / by mass):	46% (± 8%)
Glass weight per unit area (per mm wall thickness):	19.2 oz/yd ² (+4.4 / -3.0 oz/yd)
Short-term circumferential modulus of elasticity (ASTM D2412):	1,450,000 psi
Short-term modulus of elasticity in flexure (ASTM D790):	≥ 1,450,000 psi
Short-term flexural strength (ASTM D790)*:	≥ 150 N/mm ²
Reduction factor for long-term values (ASTM D5365):	A = 1.45
Long-term circumferential modulus of elasticity (ASTM D2412):	≥ 986,000 psi
Long-term flexural strength (ASTM D790)*:	≥ 15,200 psi
Laminate design:	Multi-layer, seamless and overlapping in longitudinal direction; overlaps are offset
Linear expansion during calibration:	~ 0.0%
Allowable diameter tolerances of the host pipes:	DIA ≤ 32 in. ± 5%; DIA > 32 in. ± 2%