



Area of application

Gravity sewers

- Circular profiles: 6 in. - 63 in.
- Ovoid cross-sections: 14 / 21 in. - 48 / 71 in.



Advantages

- Higher mechanical characteristics compared to the Berolina-Liner
- Reduction of the structurally required wall thickness compared to the Berolina-Liner
- Seamless design, particular extensibility
- 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 mgmt. acc. to EN ISO 9001:2015
- Bridging small profile and cross-section changes
- Resin types: PE, VE, styrene-free
- Abrasion protection layer

Additional advantage: IES

Integrated Enhanced Security

- Can be a substitute for 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 resin

Technical data

Approved for UP and VE resins

Density after curing (ASTM D1505):	99.3 lb/ft ³ (±31.2 lb/ft ³)
Glass fibre content (ASTM D2584):	53% (± 8%)
Glass weight per unit area (per mm wall thickness):	26.5 oz/yd ² (+4.4 / -2.9 oz/yd ²)
Short-term circumferential modulus of elasticity (ASTM D2412):	≥ 2,465,000 psi
Short-term modulus of elasticity (ASTM D790):	≥ 2,465,000 psi
Short-term flexural strength (ASTM D790):	≥ 40,600 psi
Long-term circumferential modulus of elasticity (ASTM 2412):	≥ 2,060,000 psi
Long-term flexural strength (ASTM D790):	≥ 34,100 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%