# Berolina-Liner

## Area of application

**Gravity sewers**

- Circular profiles: ID 150 (6“) - ID 950 (37“)
- Ovoid cross-sections: 200/300 mm (8“/12“) - 700/1,050 mm (28“/41“)

## Advantages

- Seamless design, particular expandability
- Up to 500/1,000 meters (≤ DN 300)
- 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 DN 600

# Berolina-Liner

## 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

- EN 14020-1
- EN 14020-2
- EN 14020-3

## 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 (EN ISO 1183-2): | 1.5g/cm$^3$ (± 0.5 g/cm$^3$) |
| Glass fibre content (EN ISO 1172 / by mass): | 46% (± 8%) |
| Glass weight per unit area (per mm wall thickness)*: | 650 g/m$^2$ (+150/-100g/m$^2$) |
| Short-term circumferential modulus of elasticity (EN 1228)*: | ≥ 10,000 N/mm$^2$ |
| Short-term modulus of elasticity in flexure (EN ISO 178)*: | ≥ 8,700 N/mm$^2$ |
| Short-term flexural strength (EN ISO 178)*: | ≥ 150 N/mm$^2$ |
| Reduction factor for long-term values (EN 761): | A = 1.45 |
| Long-term circumferential modulus of elasticity (EN 1228)*: | ≥ 6,800 N/mm$^2$ |
| Long-term flexural strength (EN ISO 178)*: | ≥ 105 N/mm$^2$ |
| 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: | DN ≤ 800: ± 5%; DN > 800: ± 2% |

*All values according to DIBt approval*

** Structural wall thickness to EN ISO 11296-4 (07/2011)*

04/2026 Englisch

BKP Berolina Polyester GmbH & Co. KG · Heidering 28 · 16727 Velten, Germany · Phone: +49 (0) 3304 20 88-100 · Email: info@bkp-berolina.de · bkp-berolina.com