

Berolina-Liner



Advantages:

- Seamless construction
- Ready-to-install
- Suitable for storage
- Fast curing
- Smooth surface, suitable for all profiles
- Bridging of profile- and cross-section changes
- Chemical and abrasion resistant inner layer
- Selection of material according to requirements (UP / VE)

Field of application:

Gravity pipes

Round: DN 150 (6") - DN 1600 (63")

Ovoid: 200 (8") / 300 (10") –
1200 (48") / 1800 (71")

Berolina-Liner with IES



Additional Advantages:

- Integrated Enhanced Security
(gliding film not needed)



Field of application:

Gravity pipes

DN 150 (6") - DN 600 (24")

Regulated according to:

DIBt-Approval Z-42.3-336

WRc PT405/0417

CSTB 17/15-303

City of Los Angeles Approval, CA, USA

bkp - berolina.de

Technical data

Reinforcement material:

Glass fabric E-CR according to
DIN EN 14020-1,
DIN EN 14020-2 und
DIN EN 14020-3.

Resins:

Unsaturated Polyester resins
(UP-resins)

acc. to DIN 18820-1,
table 1, group 3, ISO-NPG
acc. to DIN 16946-2, table 3,
type 1140.

Vinylester resins (VE-resins)

acc. to DIN 16946-2, table 4,
type 1310.

Density after curing (DIN EN ISO 1183-2):

1.5 g/cm³ (± 0.5 g/cm³)

Glass fibre content (DIN EN ISO 1172)

(mass related):

46% (±8%)

Glass weight per unit area

(each mm structural wall thickness/laminate): 650 g/m² (+150/-100 g/m²)

Short term flexural modulus (E-modulus)

(DIN EN 1228)*:

≥ 10,000 N/mm² (≥ 1,450,000 psi)

Short term flexural E-modulus

(DIN EN ISO 178)*:

≥ 8,700 N/mm² (≥ 1,261,800 psi)

Short term flexural strength

(DIN EN ISO 178)*:

≥ 150 N/mm² (≥ 21,750 psi)

Reduction factor for long term values

(DIN EN 761):

A = 1.45

Long term flexural modulus (E-modulus)

(DIN EN 1228)*:

≥ 6,800 N/mm² (≥ 986,000 psi)

Long term flexural strength

(DIN EN ISO 178)*:

≥ 105 N/mm² (≥ 15,230 psi)

Laminate design:

Multilayer, seamless and axially
overlapping. Overlaps being
arranged with offset.

Linear expansion during calibration:

~ 0.0%

Allowable variation of host pipes diameter:

DN ≤ 800: ± 5%

DN > 800: ± 2%

* Structural laminate thickness DIN EN ISO 11296-4 (06/2010)