iPlus®Composite

Product Information

A high strength, reinforced composite pipe solution ideal for medium and large diameter pipeline rehabilitation.



The iPlus® Composite system delivers tomorrow's cured-in-place-pipe (CIPP) solutions today. iPlus® Composite is a next-generation carbon or glass fibre-reinforced CIPP solution with greater strength and stiffness than traditional CIPP — making it ideal for rehabilitating medium to large diameter (600mm to 2400mm) foul sewers and storm sewers.

More strength

Reinforcing fibres are integrated into the pipe wall to create a uniform laminate structure with improved physical properties. The improved flexural properties make iPlus® Composite an excellent choice to reconstruct larger diameters or non-circular shapes, such as arch pipes or egg shape sewers.

Better for the environment

iPlus® Composite is truly a product that does more with less. Less resin is used during production, less energy is required to cure this product, and less fuel is needed to transport this product to the jobsite. iPlus® Composite can be installed in less time than conventional CIPP, saving energy and reducing emissions released into the air from on-site equipment. All these factors are good for the environment and will help agencies meet mandates to reduce emissions and conserve energy.

More capacity

By combining innovative engineering technology with superior materials, iPlus® Composite is a fully structural pipeline rehabilitation product that is nearly half the wall thickness of conventional CIPP offerings. Thinner iPlus® Composite walls increase the flow area compared to more conventional rehabilitation products, enhancing the pipe flow rate.

iPlus®Composite offers many other benefits:

- Provides a seamless, jointless "pipe-within-a-pipe"
- Restores structural integrity
- Significantly reduces infiltration
- Stabilises pipes with a wide range of shapes
- Increases flow capacity compared to the host pipe and more conventional rehabilitation products

Materials and Structure

iPlus® Composite is reinforced with carbon fibre and/or Advantex fibreglass materials which provide excellent chemical resistance to constituents found in sewers and exceed all the trenchless industry corrosion requirements. The iPlus® Composite laminate design method optimally locates the structural reinforcing materials (see picture below), reducing the pipe wall thickness by nearly half. As with other CIPP products, the applied pipe loads are calculated according to the trenchless technology industry's accepted standards.

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1. General Data	
Diameter range	DN 600 – DN 2400
Wall thickness	4.5mm – 30mm
Carrier material	PE - Needle felt with carbon and/or glass fibres
Wall thickness after curing	89% bis 94% of the nominal wt
Abrasion layer	PP-coating: Standard 450 - 550 g/m² Optional: 850 - 950 /m²
Abrasion resistance	Not detectable according to DIN EN 295-3 (Darmstädter Kipprinnentest)
Suitable resins	Any kind of resin icl. Vinylester resin
Curing technologies	Warm water, Steam/air mix

2. Mechanical Performance	
Short term E-Modulus (DIN EN 1228)	6200 MPa
Long term E-Modulus	3650 MPa
Short term bending stress (DIN EN ISO 178)	110 MPa
Long term bending stress	65 MPa
Long term reduction factor	1.7

3. Operating Conditions	
Chemical resistance	pH 0.5 up to pH10 (Depending on media temperature and kind of resin)
Max. media temperature	75 °C (Depending on kind of resin)
Old pipe conditions I, II or III	All three, the needed wt is defined by the static calculation
Displacements at joints	Yes
Bends	Yes, up to 45° and r ≥ 5 x d
Diameter transition	No
Wall thickness transitions	Yes
Typical installation length	60m up to 300m
Host pipe shape	No limitation
Host pipe material	No limitation

4. Transport and stocking of wet liners	
Packing	Refrigerated cooling containers (Temperature controlled reefer unit)
Storage time / pot live	For UP-resin and ϑmax = 17°Cat the centre of the liner rack: 5 days after wet out.

All figures are examples and will vary depending on the design of the liner structure and used resin.
Each liner is individually calculated and manufactured according to customer specifications.