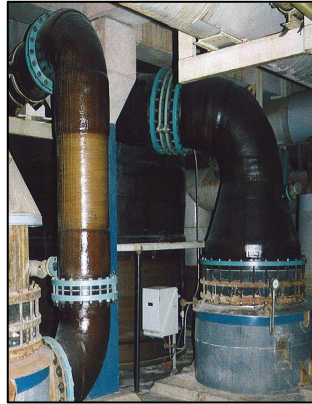


Quadrant Symalit®



Liner Pipes



QUADRANT

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Quadrant Symalit® Liner Pipes

Quadrant Symalit liner pipes are a first-choice option to build long-lasting tailor-made pipe systems for almost all corrosive media. The pipes can be connected flange-less to practically endless pipings. The well-proven Symalit fluoropolymers confer the protection against chemical attack and permeation, whereas mechanical stiffness and pressure resistance is yielded by FRP-reinforcement. For the latter, all Symalit liner pipes are surface-modified to achieve the bond strengths exceeding all existing norms.



Bond strengths of Symalit liner pipes

- Requirement of DIN 16964 (PVDF): 5 N / mm²
- Test method segment shear test according to DIN 53769

Typically measured values on Symalit Liner Pipes

- PVDF 1000 HV Liner: 6 - 9 N / mm²
- ECTFE 1000 GK: 9 - 12 N / mm²
- FEP 1000 / MFA 500 / PFA 1000 GGS: 9 - 12 N / mm²

Symalit® PVDF HV Liner Pipes

Polymers: Symalit PVDF 1000 or PVDF ESd

Type of surface modification

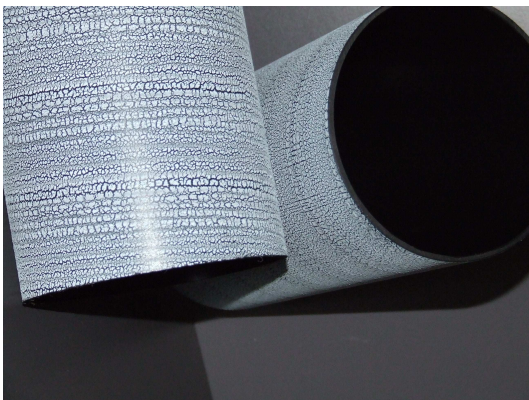
- Chemical-thermal, which yields much higher bond strengths, than simple etching. Since more than 25 years, it provides outstanding process safety in the application range of PVDF (fabric backing not required)

Applications

- Most neutral and acidic media, up to approx. 120 °C (248 °F), anti-static applications

Availability

- Pipes, elbows, fittings



Advantages of FRP-reinforced liner pipes

- Lightweights
- Tailor-made, flange-less (welded) connections
- Less risk of breakdowns, than with steel-based pipes
- Less permeation-caused damages, than with steel-based pipes
- Easy maintenance

Symalit® ECTFE GK Liner Pipes

Polymer: Symalit ECTFE 1000

Type of surface modification

- Symalit GK synthetic fabric backing. For outstanding bond strengths at elevated temperatures
(where chemical-thermal treatment is not sufficient)

Applications

- Highly concentrated chemicals, also basic media, up to approx. 140 °C (284 °F)

Availability

- Pipes



Symalit fabric backing types

- Symalit GK: Synthetic fabric (not Polyester!)
- Symalit GGS: Glass fabric backing

Both fabric backing types have excellent chemical resistance, also against media like HCl. Symalit GGS is designed for high melting point polymers (fully fluorinated), where Symalit GK cannot be used.

Symalit® FEP / MFA / PFA GGS Liner Pipes

Polymers: Symalit FEP 1000 / MFA 500 / PFA 1000

Type of surface modification

- Symalit GGS glass fabric backing. For highest bond strengths in roughest applications.

Applications

- Highly corrosive media, up to approx. 180 °C (356 °F; PFA)

Availability

- Pipes, elbows



How to fabricate fittings from sheet materials

Elbows, fittings (T-connectors, reductions) and pipes of big diameters can be manufactured from sheet material, when these are not available otherwise:

- Oversized pipes can be welded from sheets
- Elbows, T-connectors and reductions can be welded from tailored sheet material

For availability of sheet material, please also see Quadrant Symalit Delivery Programme, available from Quadrant's homepage.

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