

SYNTHO-GLOSS[®] XT

XTREME STRENGTH FIBERGLASS COMPOSITE SYSTEM



Description

Syntho-Glass[®] XT system is a unique pre-impregnated, bidirectional composite used to repair and reinforce both internal and external corrosion on pipelines or structures without expensive and time-consuming shutdowns. The initial development of this system was designed to conform to both the ASME PCC-2 and ISO TS24817 standards for nonmetallic reinforcing solutions. This XTreme strength design minimizes the time and cost of refurbishment by reducing the time to repair, as well as the replacement cost. When used with the appropriate primary coating, it enables one to repair and reinforce virtually any geometry in minutes.

The Syntho-Glass XT system provides a cost-effective solution by:

- Eliminating field mixing and wetting of the composite system to ensure proper fiber-to-resin content ratios that are crucial to reliable performance.
- Combining simplicity with flexibility to permit application to irregular shapes and geometries, thereby reducing parts inventory.
- Incorporating proprietary load transfer and bonding technology results in a high-tensile wrap capable of repairing pipes and pipelines beyond their original bursting strength.

Typical Applications

- Transmission and distribution pipelines
- Gathering lines
- Oil and gas risers
- Girth welds on vessels and pipelines
- Elbows, tees, and flanges
- High-pressure injection lines
- Process piping: chemicals, oil, gases, water, and steam

Benefits

- Water-activated urethane resin reduces composite preparation time by over 50%
- Increase in hoop tensile strength by 50%, thereby doubling maximum pressure retention capability
- Elimination of electrolytic corrosion associated with carbon fiber repair systems
- Installation in wet or submerged environments ensures ease of application in virtually any situation
- No VOCs minimizes potential safety hazards while making the entire installation user-friendly
- Full factory engineering consultation and support, ensuring safe and successful repairs
- Conformance to ASME PCC-2, DOT, ISO TS24817, and API570, ensuring product application integrity

Physical Properties

Working Time: 30 Minutes @ 75°F (24°C)

Initial Cure Time: 2 Hours @ 75°F (24°C)

VOCs: None

Resin Type:

Water-activated polyurethane

Resin Application:

Micro-controlled, Pre-impregnated

Service Temperature:

-50°F to 250°F (-46°C to 121°C)

Mechanical Properties

Tensile Strength – Method: ASTM D3039

Hoop: 54,000 PSI (3724.0 BAR)

Axial: 34,000 PSI (2344.8 BAR)

Hardness – Shore D @ 75°F (24°C)

30 Minutes: 47

2 Hours: 76

24 Hours: 83

Flexural – Method: ASTM D790 - 3 Point Flex

Strength: 58,680 PSI (4046.8 BAR)

Lap Shear – Method: ASTM D5379

Strength: 7,520 PSI (518.6 BAR)

Coefficient of

Linear Expansion – Method: ASTM D648

Hoop: CTLE: 1.06E-05 inches/inches/°F



Additional Syntho-Glass XT System Products:

- Kevlar® Reinforced Epoxy
- Reinforcing Load Transfer Epoxy
- UV Protectant Coating
- Installation Accessory Kit: Compression film, film perforation tool, additional safety gloves, and epoxy applicator tools



Kevlar® Reinforced 2-Part Epoxy – Load Transfer Agent Data

Temperature Resistance: Dry Applications	275°F (135°C)
Temperature Resistance: Wet Applications	160°F (71°C)
Flexibility	3.2% elongation at break
Tensile Strength	> 6,000 PSI (>413.7 BAR)
Compressive Strength	7,380 PSI (508.9 BAR)
Flexural Strength	4,550 PSI (313.7 BAR)
Adhesion, Dry, Abrasion Blasted	> 2,000
Abrasion Resistance	Taber Abrasion 34 mg/1,000 cycles (CS17/1,000 grams)



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