THERMO-WRAP™ CF

CARBON FIBER COMPOSITE REPAIR SYSTEM FOR HIGH TEMPERATURE AND PROCESS PIPING

Description

Thermo-Wrap™CF is a custom engineered carbon fiber composite system utilizing a high strength, biaxial hybrid carbon and glass fiber in conjunction with NRI's proprietary Thermo-Poxy™ epoxy system for the repair and restoration of pipes operating at elevated temperatures. This composite system was designed and tested to repair defects in accordance with the ASME PCC-2 and ISO TS-24817. Thermo-Wrap CF is specifically designed for repair applications which require the composite to maintain the high design strengths in high temperature environments, while still curing under room temperature conditions.

Mechanical Properties

Test	Method	Temperature	Results
Tensile Strength	ASTM D3039	75°F (23°C)	130,000 psi (8,960 bar)
Tensile Modulus	ASTM D3039	75°F (23°C)	12,000 ksi (824,337 bar)
Flexural Strength	ASTM D790	75°F (23°C)	104,500 psi (7,205 bar)
Flexural Modulus	ASTM D790	75°F (23°C)	7,165 ksi (494,009 bar)
Hardness, Shore D	ASTM D2240	75°F (23°C)	90
Lap Shear (to steel)	ASTM D5868	75°F (23°C)	3,150 psi (217 bar)

Typical Applications

- Ideal for flare lines
- Steam piping
- Girth welds, elbows, tees
- Anywhere elevated temperatures are of concern or expected

Benefits

- High temperature rating with an ambient cured epoxy
- No heating or post-curing required
- Full factory engineering calculations, consultation, and support
- High tensile strength and stiffness

Physical Properties

VOCs: None

Cure Time:

Approx. 18 hrs @ 75°F (24°C)

Approx. 3 hrs @ 280°F (138°C)

Service Temperature:

Max: Up to 300°F (149°C)

Application Temperature:

50 to 200°F (5 to 93°C)

Shelf Life (epoxy): 12 Months

NRI®
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