

# 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 operator qualified engineered system was designed to conform to and recognized by ASME PCC-2, ASME B31, ISO TS24817, DOT, API, and CSA Z662 standards for nonmetallic reinforcing solutions, thus ensuring product application integrity. 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 (24°C)	130,000 psi (8,960 bar)
Tensile Modulus	ASTM D3039	75°F (24°C)	12,000 ksi (824,337 bar)
Flexural Strength	ASTM D790	75°F (24°C)	104,500 psi (7,205 bar)
Flexural Modulus	ASTM D790	75°F (24°C)	7,165 ksi (494,009 bar)
Hardness, Shore D @ 75°F (24°C)	ASTM D2240	75°F (24°C)	90
Lap Shear (to steel)	ASTM D5868	75°F (24°C)	3,150 psi (217 bar)



### Typical Applications

- Flare lines
- Steam piping
- Girth welds, elbows, tees
- Chemical processing lines
- 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

Pot Life: 75 Minutes @ 75°F (24°C)

Working Time:

45 Minutes @ 75°F (24°C)

Gel Time:

Approx. 161 Minutes @ 70°F (21°C)

Cure Time:

Approx. 18 Hours @ 75°F (24°C)

Service Temperature:

Max: Up to 300°F (149°C)

Application Temperature:

50° to 200°F (5° to 93°C)

Solids Content: 100%

Shelf Life: 12 Months with recommended storage methods

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