

COMPOSITE GUARD™ FP

COMPOSITE FIRE PROOFING SYSTEM



Description

For more than 25 years, Neptune Research Inc. has focused its strategic research initiatives on the development, manufacturing and marketing of state-of-the-art pipe repair and reinforcement technologies that withstand the test of time, water and other elements.

The increasing demand for fireproofing of these reinforcement technologies in high risk process areas within refineries, chemical plants and offshore platforms launched a 2010 initiative to produce the first ever fireproofing system designed for use with composite repair technologies.

The Technology

NRI's Composite Guard™FP System utilizes nano-technology to create an integrated fire proofing system for application on high risk piping within fire proofing zones in refineries and on offshore platforms. The Composite Guard™FP System protects the composite repair under extreme fire conditions by creating a barrier between the external flame temperature and the composite repair's outer substrate. The extremely low thermal conductivity of the barrier prevents the composite repair system from reaching temperatures exceeding the maximum temperature rating, preventing degradation or failure of the composite.

Mechanical Properties

Test	Method	Result
Surface Burning Characteristics	ASTM E 84	Flame Spread Index = 0 Smoke Developed Index = 0
Clone Calorimetry	ASTM E 1354	No ignition at 50 kW/m ²
Non-Combustibility	ISO 1182:1190	Meets criteria

Typical Applications

- Offshore platforms
- Refineries
- Chemical processing plants

Benefits

- Increase safety
- Designed specifically for use with composite repairs
- Fast Installation
- Lightweight
- Impact resistant
- Long term durability
- Provides instant fire protection
- Thermal Barrier: does not require flame exposure to form a barrier like other coatings

Physical Properties

VOCs: None

Color: White

Thickness: Approximately 1.2" (90 mm)

Hydrophobic: Yes

UV Stable: Yes

Impact Resistant: Yes

Corrosion Resistant: Yes

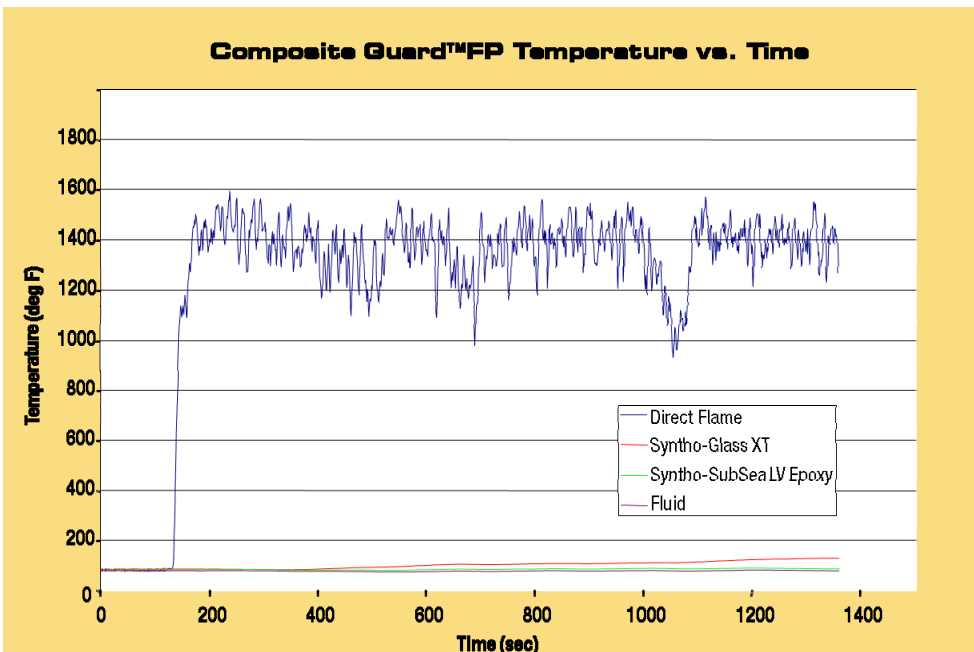
Service Temperature:

MAX: Up to 2000°F (1093°C)



Fire Resistance Testing

Probe Location	Min Temp	Max Temp	Delta
Direct Flame	78°F (25°C)	1596°F (869°C)	1518 °F (825°C)
Syntho-Glass XT® Substrate	80°F (26°C)	130°F (54°C)	49°F (9°C)
Syntho-Subsea™ LV	81°F (27°C)	90°F (32°C)	9°F (12°C)
Fluid	76°F (24°C)	85°F (29°C)	9°F (12°C)



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