

S L U T I O N S

PROJECT:

Pier Rehabilitation of Nackawic River Bridge

OWNER: Province of New Brunswick-Canada

YEAR: 2015



The Details

PROJECT CONTRACTOR:

Stoncor Canada

PROJECT ENGINEER:

Province of New Brunswick

MARKET/ENVIRONMENT:

Marine

SUBSTRATE:

Prepared Concrete

PRODUCTS USED:

**Five Star® PileForm™ F Fiberglass Reinforced Plastic (FRP)
Pile Rehabilitation Jackets & Five Star® Underwater High-Strength Grout**

SIZE OF PROJECT:

Two Concrete Piles 1,524m² x 4,064 long;
330+ Units of Five Star® Underwater High-Strength Grout

The Challenge — Cost-effectively rehabilitate two deteriorated concrete piles on the Nackawic River Bridge and further protect them from the damaging effects of ice and floating debris—*without the expense and time required to replace them.*

The Solution — PileForm™ F (FRP) Pile Rehabilitation Jackets. To facilitate placement of the jackets around these very large concrete piles, two-piece 6.35mm (0.25") thick fiberglass jackets were constructed. The jackets were then backed with timber formwork during the placement of the grout to resist the pressure exerted by the grout when pumped into the 50mm (2") annulus between jacket and pile. PileForm™ F Pile Rehabilitation Jackets are a highly effective repair solution as the fiberglass jackets protect the pile from harsh marine exposure to ice, floating debris, chemical pollution, oils, acids and salt water. Critical to the successful installation of these jackets was Five Star® Underwater High Strength Grout. This cementitious pile jacket grout can be pumped or poured, is non-shrink from the time of placement and contains migrating corrosion inhibitors for superior corrosion resistance.



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PRODUCT SOLUTIONS

Cementitious Pile Jacket Grout

UNDERWATER HIGH-STRENGTH GROUT

Five Star® Underwater High-Strength Grout is an underwater pump grade, cement-based, non-shrink grout for pile restoration and similar applications. When tested in accordance with ASTM C 827, Five Star® Underwater High-Strength Grout exhibits positive expansion for shrink compensation. Five Star® Underwater High-Strength Grout meets the performance requirements of ASTM C 1107 and CRD-C 621 specifications for non-shrink grout.

USES

- Placement via tremie, pump or pour
- Salt and seawater resistant
- Non-ferrous, non-corrosive
- Non-shrink from the time of placement
- Contains migrating corrosion inhibitors for superior corrosion resistance

ADVANTAGES

- Pile repair, rehabilitation and restoration
- Grouting underwater structures and as a pile jacket fill material
- Grouting areas subject to freshwater, saltwater or brackish exposure
- Installation of anchors and dowels

FIVE STAR® SERVICES

- Design-A-Spec™ engineering specification assistance
- Technical on-call center with field and project experienced staff
- Field support representatives for on-site consultation
- Corporate research laboratory available to customize products for unique applications

Fiberglass Reinforced Plastic (FRP) Pile Jackets

PILEFORM™ F PILE REHABILITATION JACKETS

Five Star® PileForm™ F fiberglass reinforced plastic (FRP) Pile Rehabilitation Jackets meet and exceed marine engineering specifications for use in hostile marine environments where exposure to ice, floating debris, chemical pollution, oils, acids, salt water and where tidal action may occur. Jackets are available in translucent or may be gel coated to any specified color.

USES

- Used around timber, steel or concrete piles
- Available in permanent and reusable varieties that can be assembled topside or in the water.

ADVANTAGES

- Easy installation
- Lightweight for easy maneuvering by divers
- Non-corrosive
- High strength
- Excellent solvent and chemical resistance
- High abrasion and impact resistance

For worldwide availability, additional product information and technical support, contact your local Five Star® distributor, local sales representative, or you may call the Five Star Products' Engineering and Technical Service Center at +1-203-336-7900.

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