

# S L U T I O N S

## PROJECT:

*Grandview Bridge*

**OWNER:** Idaho DOT

**YEAR:** 2016



Badly Damaged Piles Prior to Repair



Encasement Wrapped Piles After Repair



## The Details

PROJECT CONTRACTOR:

JC Constructors

PROJECT ENGINEER:

Idaho Department of Transportation

MARKET/ENVIRONMENT:

Marine

SUBSTRATE

24" Diameter Concrete Piles

PRODUCT USED:

**Five Star® PileForm™ F Jackets, Pile Jacket Epoxy**

**Grout LPL & Structural Concrete® Underwater Hand Pack**

SIZE OF PROJECT

70 Piles

**The Challenge** – The bridge spanning the Snake River in Grandview, Idaho was in dire need of repairs. Many of the piles had deteriorated due to the harsh marine environment. The Idaho DOT sought a way to extend the life of the structure without the high cost of replacing it.

**The Solution** – Five Star Products, Inc. was approached and able to offer the complete solution. The first step was to repair and reshape extensive voids in the piles with Structural Concrete® Underwater Hand Pack. This hand-applied product is specifically engineered for underwater use and sets rapidly with minimal washout. Once that was complete, 25" diameter PileForm™ F fiberglass reinforced plastic pile rehabilitation encasements were used to surround each of the damaged piles. The 1/2" annulus was then filled with long pot life underwater Pile Jacket Epoxy Grout LPL to form a permanent repair.



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# PRODUCT SOLUTIONS

## Hand Applied, Rapid Strength Underwater Repair

### STRUCTURAL CONCRETE® UNDERWATER HAND PACK

Five Star Structural Concrete® Underwater Hand Pack is a rapid strength gain, single component, permanent concrete repair material intended for underwater application by hand or trowel. This concrete repair material allows small volume hand placements with minimal underwater washout. Designed for placement in tidal zones and underwater, application thickness may range from one-half inch (13 mm) to several inches in a single installation.

#### USES

- Underwater repair of concrete tanks, dams and hydraulic structures
- Filling underwater concrete cavities and voids
- Underwater repair of concrete piles, piers, seawalls and marine structures

#### ADVANTAGES

- Rapid set underwater placement
- Minimal washout
- Saltwater resistant
- Chloride and sulfate resistant
- High early strength
- Variable application thickness
- One component for reliability and ease of use
- Migrating corrosion inhibitor technology

## 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

## Long Pot Life Underwater Epoxy Grout System

### PILE JACKET EPOXY GROUT LPL

Five Star® Pile Jacket Epoxy Grout LPL is a three-component, 100% solids epoxy system specifically designed for underwater grouting and marine pile encapsulation where a longer pot life system is required. Five Star® Pile Jacket Epoxy Grout LPL is a low viscosity resin and hardener system which is mixed with aggregate to encapsulate concrete, timber, or steel pilings in hostile marine environments.

#### USES

- Marine Pile repair and restoration when used with Five Star® Pile-Form™ F Fiberglass Jackets
- Engineered epoxy grouting system offers corrosion protection for concrete, steel and wood marine piles
- Excellent adhesion to masonry, concrete, wood, steel and most marine structural materials

#### 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® licensee, distributor, local sales representative, or you may call the Five Star Products' Engineering and Technical Service Center at 1-800-243-2206 (from the U.S.) or +1 203-336-7900 (outside the U.S.).

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