

PRODUCT DATA

FIVE STAR STRUCTURAL CONCRETE UNDERWATER HP HAND PACK UNDERWATER REPAIR

PRODUCT DESCRIPTION

Five Star Marine Structural Concrete Underwater HP 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 washout underwater. Designed for placement in tidal zones and underwater only, application thickness may range from one-half inch (13 mm) to several inches in a single installation.

ADVANTAGES

- Rapid setting
- Chloride and sulfate resistant
- Minimal washout
- One component for reliability and ease of use
- Saltwater resistant
- Variable application thicknesses
- High three hour strength

USES

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

PACKAGING AND YIELD

Five Star Structural Concrete Underwater HP is packaged in a plastic pails and is available in 36 lb. (16.3 kg) pail yielding approximately 0.35 cubic feet (9.9 liters) at maximum water.

SHELF LIFE

One year in original unopened packaging when stored in dry conditions; high relative humidity will reduce shelf life.

PLACEMENT GUIDELINES

1. SURFACE PREPARATION: All horizontal and vertical concrete surfaces in contact with Five Star Structural Concrete Underwater HP shall be free of marine growth, laitance, and other contaminants. All horizontal and vertical concrete surfaces must be clean, sound and rough to ensure a good bond. Presoak concrete surfaces in tidal zone areas. A perimeter edge and minimum depth of 1/2 inch (13 mm) should be provided for a

TYPICAL PROPERTIES @ 70°F (21°C)

Compressive Strength, ASTM C 109

• 3 Hours	3,000 psi (20.7 MPa)
• 1 Day	4,000 psi (27.6 MPa)
• 7 Days	5,000 psi (34.5 MPa)
• 28 Days	5,500 psi (37.9 MPa)

Underwater Bond Strength, ASTM C 882

• 7 Days	1,150 psi (7.9 MPa)
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Length Change, ASTM C 157

• 28 Days Wet	+0.02%
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Working Time at 70°F (21°C)

	10 minutes
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The data shown above reflects typical results based on laboratory testing under controlled conditions. Reasonable variations from the data shown may result. Test methods are modified where applicable.

durable repair. Feather edging is not desirable. Repair surfaces shall be between 45°F and 90°F (7°C and 32°C) at time of placement. For cold and hot weather placement, refer to Design-A-Spec™ or call Stonhard at (800) 263.3112.

2. MIXING: Five Star Structural Concrete Underwater HP is designed for small volume underwater repairs. Mix thoroughly with a drill and paddle mixer to a uniform consistency. Start by adding the minimum amount of potable water (indicated on the packaging), followed by the repair material and mix for two to three minutes. Adjust consistency as necessary. Do not exceed maximum water content as stated on the package. Do not mix more material than can be placed in ten minutes.
3. PLACEMENT PROCEDURES: Firmly work Five Star Structural Concrete Underwater HP into concrete surface with a trowel or by hand, taking care not to leave air pockets. Application is from one side of the repair to the other, filling the repair to the desired level. For multiple lift applications, contact Stonhard. Finish as necessary.

FIVE STAR STRUCTURAL CONCRETE UNDERWATER HP

HAND PACK UNDERWATER REPAIR

SPECIAL CONDITIONS: For use in cold temperatures, Five Star Structural Concrete Underwater HP must be maintained at a temperature of at least 45°F (7°C). Protect from freezing until a compressive strength of 1000 psi (6.9 MPa) is obtained. In hot temperatures, Five Star Structural Concrete Underwater HP should be kept as cool as possible, but not exceeding 90°F (32°C). Cold water should be used for mixing to help maintain sufficient working time. Summerset may also be used if necessary to provide more working time.

4. POST-PLACEMENT PROCEDURES: In tidal zones, Five Star Structural Concrete Underwater HP shall be kept wet continuously for 30 minutes after hardening.

NOTE: PRIOR TO APPLICATION, READ ALL PRODUCT PACKAGING THOROUGHLY. For more detailed placement procedures, refer to Design-ASpec™ installation guidelines or call Stonhard at (800) 263.3112.

CONSIDERATIONS

- Never exceed the maximum water content stated on the package or add an amount that will cause segregation.
- Repair material shall be protected from freezing until it reaches a compressive strength of 1000 psi (6.9 MPa).

CAUTION

Contains cementitious material and crystalline silica. International Agency for Research on Cancer has determined that there is sufficient evidence for the carcinogenicity of inhaled crystalline silica to humans. Take appropriate measures to avoid breathing dust. Avoid contact with eyes and contact with skin. In case of contact with eyes, immediately flush with plenty of water for at least 15 minutes. Immediately call a physician. Wash skin thoroughly after handling. Keep product out of reach of children. PRIOR TO USE, REFER TO SAFETY DATA SHEET.

For worldwide availability, additional product information and technical support, contact your local sales representative, or call Stonhard at (800) 263.3112.

SKU / PRODUCT CODE	DESCRIPTION	UNIT SIZE
29220	Five Star Structural Concrete Underwater HP	36 lb. Pail

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