



CEMENTITIOUS UNDERWATER HIGH-STRENGTH GROUT

Cementitious Pile Jacket Grout

PRODUCT DESCRIPTION

Five Star® Cementitious 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® Cementitious Underwater High-Strength Grout meets the performance requirements of ASTM C 1107 and CRD-C 621 specifications for non-shrink grout.

ADVANTAGES

- 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

USES

- 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

PACKAGING AND YIELD

Five Star® Cementitious Underwater High-Strength Grout is packaged in heavy-duty polyethylene lined bags available in 50 lb. (22.7 kg) units yielding approximately 0.43 cubic feet (12.2 liters) at maximum water. Also available in 800 lb. (363 kg) bulk bags yielding approximately 6.88 cubic feet and 3,000 lb. (1,361 kg) bulk bags yielding approximately 25.2 cubic feet.

SHELF LIFE

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

TYPICAL PROPERTIES AT 70°F (21°C) *	
Compressive Strength, (ASTM C 109)	
1 Day	3,500 psi (24.1 MPa)
7 Days	8,000 psi (55.2 MPa)
28 Days	8,500 psi (58.6 MPa)
Bond Strength, (ASTM C 882)	
28 Days	2,000 psi (13.8 MPa)
Modulus of Elasticity, (ASTM C 469)	
	5,200 ksi (35.8 GPa) @ 28 Days
Early Height Change, (ASTM C 827)	
	Positive Expansion
Working Time at 70°F (21°C)	
	60 minutes

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

PLACEMENT GUIDELINES

- SURFACE PREPARATION:** All surfaces to be in contact with Five Star® Cementitious Underwater High-Strength Grout shall be free of marine growth, oil, grease, laitance, and other contaminants. Concrete must be clean, sound, and roughened to ensure a good bond. For applications where surfaces are not underwater, presoak surfaces with clean water for 8 to 24 hours prior to application.
- MIXING:** Mix Five Star® Cementitious Underwater High-Strength Grout thoroughly for approximately four to five minutes to a uniform consistency with a mortar mixer (stationary barrel with moving blades). A drill and paddle mixer is acceptable for single bag mixes. For optimum performance, condition grout to between 60°F and 80°F (15°C and 27°C). Do not exceed maximum recommended amount of mixing water as stated on the package or add an amount that will cause segregation. Do not re-temper mix by adding additional water. Working time is approximately 60 minutes at 70°F (21°C). Follow printed instructions on the package. Always add mixing water first to mixer followed by grout. For large volume placements, Five Star® Cementitious Underwater High-Strength Grout may be extended with a clean washed coarse aggregate meeting the requirements of ASTM C 33 and mixed via a volumetric mixer. When mixing via a volumetric mixer, an initial trial mix should be performed to ensure proper consistency and mixing. Contact Five Star Products' Engineering and Technical Service Center for aggregate extension guidelines.
- PLACEMENT PROCEDURES:** Five Star® Cementitious Underwater High-Strength Grout may be dry packed, poured or pumped into place. For placement thicknesses of less than one inch (25 mm), or greater than six inches (150 mm), call Five Star Products' Engineering and Technical Service Center at 1-800-243-2206.
- POST PLACEMENT PROCEDURES:** Five Star® Cementitious Underwater High-Strength Grout shall be kept continuously wet for three days in tidal zone areas or areas not under water.

NOTE: PRIOR TO APPLICATION, READ ALL PRODUCT PACKAGING THOROUGHLY. For more detailed placement procedures, refer to Five Star® Design-A-Spec™ installation guidelines or call Five Star Products' Engineering and Technical Service Center at 1-800-243-2206.

CONSIDERATIONS

- If surface temperatures are not between 40°F and 90°F (4°C and 32°C) at time of placement, call Five Star Products' Engineering and Technical Service Center at 1-800-243-2206.
- Never exceed the maximum water content as stated on the bag or add an amount that will cause segregation.
- Construction practices dictate concrete foundation should achieve its design strength before grouting.

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 Five Star® distributor, local sales representative, or call Five Star Products' Engineering and Technical Service Center at 1-800-243-2206.

SKU / PRODUCT CODE	DESCRIPTION	# UNITS / PALLET	UNIT SIZE
20755	Five Star® Cementitious Underwater High-Strength Grout	56	50 lb. (22.7 kg) bag
20760	Five Star® Cementitious Underwater High-Strength Grout Bulk Bag	1	3,000 lb. (1,361 kg) bulk bag
20765	Five Star® Cementitious Underwater High-Strength Grout Bulk Bag	2	800 lb. (363 kg) bulk bag

EXCLUSIVE WARRANTY; DISCLAIMER OF LIABILITY: FIVE STAR MARINE, INC. (FSM) WARRANTS THAT FSM PRODUCTS ARE MANUFACTURED TO (i) BE FREE OF MANUFACTURING DEFECTS AND (ii) MEET FSM'S CURRENTLY PUBLISHED SPECIFICATIONS FOR PHYSICAL PROPERTIES, PROVIDED THAT THE FSM PRODUCTS ARE APPLIED IN ACCORDANCE WITH FSM'S DIRECTIONS AND TESTED IN ACCORDANCE WITH ASTM INTERNATIONAL AND FSM STANDARDS. IN THE EVENT THAT A FSM PRODUCT FAILS TO SATISFY THE FOREGOING WARRANTY, FSM WILL REPLACE THE DEFECTIVE FSM PRODUCT; PROVIDED, HOWEVER, PRIOR TO PROVIDING SUCH REPLACEMENT, FSM MAY REQUIRE THE RETURN TO FSM OF ANY UNUSED, DEFECTIVE OR ALLEGEDLY DEFECTIVE FSM PRODUCT, FREIGHT PREPAID, AND FSM SHALL HAVE THE RIGHT TO INSPECT ANY PROJECT IN WHICH ALLEGEDLY DEFECTIVE FSM PRODUCT HAS BEEN APPLIED AND TO INTERVIEW PERSONNEL AND REVIEW ASSOCIATED RECORDS RELATING TO THE USE OR APPLICATION OF ALLEGEDLY DEFECTIVE FSM PRODUCTS. EXCEPT AS SET FORTH ABOVE, WITH REGARDS TO THE FSM PRODUCTS, FSM MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY NATURE WHATSOEVER, EITHER EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. FOR THE AVOIDANCE OF DOUBT, THE FOREGOING IS INTENDED AS A SOLE AND EXCLUSIVE REMEDY FOR ANY FSM PRODUCT DEFECT, AND FSM SHALL NOT BE LIABLE FOR DAMAGES OF ANY SORT ARISING FROM THE USE OF FSM PRODUCTS, INCLUDING PUNITIVE, ACTUAL, REMOTE, OR CONSEQUENTIAL DAMAGES, AND WHETHER RESULTING FROM CLAIMS OF BREACH OF CONTRACT, BREACH OF ANY WARRANTY (WHETHER EXPRESS OR IMPLIED) OR FROM ANY OTHER CAUSE WHATSOEVER. WITHOUT LIMITING THE FOREGOING, FSM SHALL NOT BE LIABLE IN THE EVENT THAT THE USE OF FSM PRODUCTS INFRINGES ANY PATENT OR OTHER INTELLECTUAL PROPERTY OR PROPRIETARY RIGHT OF ANY THIRD PARTY.

Specifications Subject to Change.

For most current version of datasheet, go to FiveStarProducts.com

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