STONHARD
CONSTRUCTION SOLUTIONS

PRODUCT DATA

FIVE STAR STRUCTURAL CONCRETE GUNITE S300

HIGH STRENGTH, DRY PROCESS SHOTCRETE REPAIR

PRODUCT DESCRIPTION

Five Star Structural Concrete Gunite S300 is a dry process shotcrete applied, high strength, permanent concrete repair material. Five Star Structural Concrete Gunite S300 may be used from 1/4 inch (6 mm) to deep/full depth applications and provides a long finishing time. Five Star Structural Concrete Gunite S300 provides increased corrosion protection of steel reinforced structures with migrating corrosion inhibitor technology and very low chloride ion permeability.

ADVANTAGES

- Available in 3000 lb bulk bag packaging for large volume applications
- Versatile - 1/4 inch (6 mm) to full depth applications
- Long finishing time
- High one and 28 day strengths
- High bond strength
- Very low chloride ion permeability
- Low rebound
- Excellent freeze/thaw resistance
- Outstanding corrosion resistance for protection and rehabilitation

USES

- Vertical and overhead repairs
- Structural repair for industrial plants
- Repair of load bearing walls, ceilings
- Marine and hydraulic structure repair and other structural members
- Sulfur pits

PACKAGING AND YIELD

Five Star Structural Concrete Gunite S300 is packaged in heavy-duty polyethylene lined bags and is available in 50 lb. (22.7 kg) units yielding approximately 0.39 cubic feet (11.0 liters) at maximum water. Five Star Structural Concrete Gunite S300 is also available in 3,000 lb (1,360 kg) bulk sacks for large volume applications.

SHELF LIFE

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

TYPICAL PROPERTIES @ 70°F (21°C)	
Compressive Strength, ASTM C 109	
• 1 Day	3,500 psi (24.2 MPa)
• 28 Days	8,000 psi (55.2 MPa)
Compressive Strength, ASTM C 42 in accordance with ACI 506R-90	
• 3 Days	5,900 psi (40.7 MPa)
• 7 Days	7,400 psi (51.1 MPa)
• 28 Days	8,500 psi (58.7 MPa)
Bond Strength, ASTM C 882	
• 7 Days	2,000 psi (13.8 MPa)
Thermal Coefficient of Expansion, ASTM C 531	5.0×10^{-6} in/in/°F (9.0×10^{-6} mm/mm/°C)
Chloride Ion Permeability, ASTM C 1202	
• 28 Days	Very Low (<1,000 Coulombs)
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 may result. Test methods are modified where applicable.

PLACEMENT GUIDELINES

1. SURFACE PREPARATION: All surfaces in contact with Five Star Structural Concrete Gunite S300 shall be free of oil, grease, laitance, and other contaminants. Concrete must be clean, sound and rough to ensure a good bond. Mechanically roughen concrete surfaces in accordance with ICRI Technical Guideline 03732 to a minimum concrete surface profile roughness (CSP 6 or greater). Remove all oxidation from exposed reinforcing steel. A perimeter edge and minimum depth of 1/4 inch (6 mm) should be provided for a durable repair. Featheredging is not desirable. Soak concrete surfaces prior to application with liberal quantities of potable water, leaving the concrete saturated and free of standing water. Surfaces shall be conditioned to between 45°F and 90°F (7°C and 32°C) at the time of placement.

2. MIXING: The mixing equipment should be capable of maintaining placement continuously.

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DRY MIX PROCESS: Predampen Five Star Structural Concrete Gunite S300 in a mortar mixer (stationary barrel with moving blades) prior to placement into gun or with a prehydration water ring equipped with a screen to avoid plug-ups. Avoid over dampening material. Do not dampen more material than can be placed within 60 minutes. Adjust consistency at nozzle.

3. METHODS OF PLACEMENT: Apply Five Star Structural Concrete Gunite S300 to full design thickness whenever possible. Overhead placement is applied in layers just thick enough to prevent sagging. Direct nozzle perpendicular to surface and rotate in a series of circular patterns, filling inside corners first. Five Star Structural Concrete Gunite S300 should emerge from the nozzle in a uniform, uninterrupted flow. Finish to desired texture with screed, float, trowel, or brush. For more detailed application and curing procedures, refer to ACI 506R-90, Guide to Shotcrete Report.

4. POST-PLACEMENT PROCEDURES: Five Star Structural Concrete Gunite S300 shall be coated with an approved curing compound meeting the water retention properties of ASTM C 309 immediately after finishing. Protect from excessive evaporation prior to set.

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

CONSIDERATIONS
- Never exceed the maximum water content as stated on the package.
- For cold and hot weather placement, refer to Design-A-Spec™ or call Stonhard at (800) 263.3112.
- Repair material shall be protected from freezing until it reaches 1000 psi (6.9 MPa).
- Placement shall be continuous to avoid cold joints.

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
28816	Five Star Structural Concrete Gunite S300	50 lb. Bag

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