



FIVE STAR® GROUT

High Performance Precision Nonshrink Grout

PRODUCT DESCRIPTION

Five Star® Grout is the industry's leading cement-based, nonmetallic, nonshrink grout for supporting machinery and equipment. It is formulated with air release technology that combines high performance with the greatest reliability. When tested in accordance with ASTM C 827, Five Star Grout exhibits positive expansion. Five Star Grout meets the performance requirements of ASTM C 1107-02 and CRD-C 621-93 specifications for nonshrink grout over a wide temperature range, 40°F - 90°F (4°C - 32°C), and a long working time, 45 minutes.

ADVANTAGES

- Air release technology
- 95% Effective Bearing Area (EBA) is typically achieved following proper grouting procedures
- Formulated with Devoider® for optimum load transfer
- Provides placement versatility: pour, pump or dry pack
- 45 minute working time
- Permanent support for machinery requiring precision alignment
- Does not contain gas generating additives, such as aluminum powder
- Nonshrink from the time of placement
- Locally manufactured under strict quality control standards

USES

- Grouting of machinery and equipment to maintain precision alignment
- Nonshrink grouting of structural steel and precast concrete
- Grouting of anchors and dowels
- Support of tanks and vessels

TECHNICAL SUPPORT

Five Star Products maintains the industry's foremost Technical Support Group:

- Over 50 years of experience in precision grouting
- Technical Center staffed with field experienced application specialists
- Design-A-Spec™ for engineering specification assistance
- Experienced representatives for field service
- Corporate research laboratory available to customize products for unique applications

PACKAGING AND YIELD

Five Star Grout is packaged in heavy-duty, polyethylene lined bags containing 100 lb (45.4 kg), yielding approximately 1.0 cubic foot (28.3 liters) or 50 lb (22.7 kg) yielding approximately 0.5 cubic feet (14.1 liters) of hardened material at maximum water.

SHELF LIFE

One year in original unopened packaging when stored in dry conditions. Higher humidity will reduce the shelf life.

TYPICAL PROPERTIES AT 73°F (23°C)		
Early Height Change, ASTM C 827	0.0 to 4.0%	
Hardened Height Change, ASTM C 1090	0.0 to 0.3%	
Effective Bearing Area	95%	
Bond Strength, ASTM C 882, 28 Days	2000 psi (13.8 MPa)	
Pull-out Strength, Shear Bond with #5 deformed bar, 7 Days	2400 psi (16.6 MPa)	
Compressive Strength, ASTM C 942 (C109 Restrained)	Minimum Water psi (MPa)	Maximum Water psi (MPa)
1 Day	4000 (27.6)	2500 (17.3)
3 Days	5500 (38.0)	3500 (24.1)
7 Days	6500 (44.9)	5000 (34.5)
28 Days	8000 (55.2)	6500 (44.9)



The data shown above reflect 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

1. **SURFACE PREPARATION:** All surfaces in contact with Five Star® Grout shall be free of oil, grease, laitance and other contaminants. Concrete must be clean, sound and roughened to ensure a good bond. Soak concrete surface for 8 to 24 hours prior to application with liberal quantities of potable water, leaving the concrete saturated and free of standing water.
2. **MIXING:** Mix Five Star Grout thoroughly for approximately four to five minutes to a uniform consistency with a mortar mixer. A drill and paddle mixer is acceptable for single bag mixes. For optimum performance, maintain grout at ambient temperatures between 40°F and 90°F (4°C and 32°C). Use heated or chilled water to help adjust working time. Mix Five Star Grout with 7 - 11 quarts potable water per 100 lb. bag (3 1/2 to 5 1/2 quarts per 50 lb. bag). Do not exceed maximum recommended amount of mixing water as stated on the package or add an amount that will cause segregation. Working time is approximately 45 minutes at 73°F (23°C). Follow printed instructions on the package.
3. **METHODS OF PLACEMENT:** Five Star Grout may be dry packed, poured or pumped into place. Minimum placement thickness for Five Star Grout is one inch. For pours over 6 inches in depth Five Star Grout should be extended with a clean damp coarse aggregate meeting the requirements of ASTM C 33, contact Five Star Technical Center at (800) 243-2206 for extension guidelines.
4. **POST-PLACEMENT PROCEDURES:** Five Star Grout shall be wet cured for a minimum of three days, or coated with an approved curing compound after a minimum 24 hour wet cure. In-service operation may begin immediately after the required grout strength has been reached.
NOTE: PRIOR TO APPLICATION, READ ALL PRODUCT PACKAGING THOROUGHLY. For more detailed placement procedures, refer to Design-A-Spec™ or call the Five Star Products Technical Center at (800) 243-2206.

LIMITATIONS

- At time of placement, if temperatures of equipment and surfaces are not between 40°F and 90°F (4°C and 32°C), refer to Design-A-Spec™ for cold and hot weather grouting procedures.
- 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.
- Do not hand mix Five Star Grout

CAUTION

Contains cementitious material and crystalline silica. International Agency for Research on Cancer has evaluated 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 MATERIAL SAFETY DATA SHEET.

For worldwide availability, additional product information and technical support, contact your local Five Star distributor, local sales representative, or you may call Five Star's Technical Center at (800) 243-2206.



Five Star Products, Inc.
Corporate Headquarters
750 Commerce Drive
Fairfield, CT 06825
Tel: 203-336-7900
Fax: 203-336-7930
<http://www.fivestarprouducts.com>

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