



FIVE STAR® GROUT

High Performance Precision Grout

PRODUCT DESCRIPTION

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

ADVANTAGES

- 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
- Long 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 baseplates to maintain precision alignment
- Nonshrink grouting of structural steel and precast concrete
- Installation of anchors and dowels
- Support of tanks and vessels
- Repair of concrete in confined areas

TECHNICAL SUPPORT

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

- Over 30 years of experience in precision grouting
- Technical Center staffed with experienced engineers available for consultation
- 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 1.0 cubic foot (28.3 liters) or 50 lb (22.7 kg) yielding 0.5 cubic feet (14.1 liters).

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 | 2000 psi (13.8 MPa) | |
| 28 Days | | |
| Pull-Out Strength, Shear Bond with #5 deformed bar | 2400 psi (16.6 MPa) | |
| 7 Days | | |
| Compressive Strength, ASTM C 109 | Min. Water | Max. Water |
| | <u>psi (MPa)</u> | <u>psi (MPa)</u> |
| 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 five minutes to a uniform consistency with a mortar mixer. 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. 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. For pumping applications and for placement thicknesses of less than one inch (25 mm), or greater than three inches (75 mm), call the Five Star Products Engineering and Technical Center at 203-336-7900.
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 Engineering and Technical Center at 203-336-7900.

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.
- For placements thinner than one inch (25 mm) or greater than three inches (75 mm), call the Five Star Products Engineering and Technical Center.
- Construction practices dictate concrete foundation should achieve its design strength before grouting.

CAUTION

Contains cementitious material and crystalline free 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.**

WARRANTY: "FIVE STAR PRODUCTS, INC. (FSP) PRODUCTS ARE MANUFACTURED TO BE FREE OF MANUFACTURING DEFECTS AND TO MEET FSP'S CURRENT PUBLISHED PHYSICAL PROPERTIES WHEN APPLIED IN ACCORDANCE WITH FSP'S DIRECTIONS AND TESTED IN ACCORDANCE WITH ASTM AND FSP STANDARDS. HOWEVER, SHOULD THERE BE DEFECTS OF MANUFACTURING OF ANY KIND, THE SOLE RIGHT OF THE USER WILL BE TO RETURN ALL MATERIALS ALLEGED TO BE DEFECTIVE, FREIGHT PREPAID TO FSP FOR REPLACEMENT. THERE ARE NO OTHER WARRANTIES BY FSP OF ANY NATURE WHATSOEVER, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IN CONNECTION WITH THIS PRODUCT. FSP SHALL NOT BE LIABLE FOR DAMAGES OF ANY SORT, INCLUDING PUNITIVE, ACTUAL, REMOTE OR CONSEQUENTIAL DAMAGES, RESULTING FROM ANY CLAIMS OF BREACH OF CONTRACT, BREACH OF ANY WARRANTY, WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR FROM ANY OTHER CAUSE WHATSOEVER. FSP SHALL ALSO NOT BE RESPONSIBLE FOR USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT HELD BY OTHERS."

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 Engineering and Technical Center at 203-336-7900.

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