



ELASTOMERIC GROUT

Elastomeric Polyurethane Grout

PRODUCT DESCRIPTION

Five Star® Elastomeric Grout is specially designed for light rail transportation grouting. The three component system consists of a two component polymer and aggregate that imparts vibration and sound dampening properties combined with exceptional electrical resistance. This product is formulated for placements that require good flow and adhesion to both rail and concrete, while maintaining line and grade. Five Star® Elastomeric Grout is a solvent-free system that provides rapid cure and superior chemical resistance to a variety of chemicals including oils, fuels, acids, caustics and solvents. Five Star® Elastomeric Grout is DOT non-hazardous and is environmentally and applicator friendly.

ADVANTAGES

- High electrical resistance
- Low exotherm with early cure
- Absorbs vibration and dramatically reduces noise caused by vibration
- Superior adhesion prevents water penetration
- Chemically resistant
- Strong adhesion to steel and concrete

USES

- Light rail applications
- Railroad track rehabilitation
- Precision alignment under dynamic load conditions
- Vibration and noise dampening applications
- Flexible concrete patching
- Bridge header repair compound

PACKAGING AND YIELD

Five Star® Elastomeric Grout is a three component system consisting of partially filled containers of resin and hardener and one polyethylene lined bag of aggregate and is available in a unit yielding approximately 0.45 cubic feet (12.7 liters) of hardened material.

SHELF LIFE

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

TYPICAL PROPERTIES AT 70°F (21°C)

Shore A Hardness , ASTM D2240	Neat = 70+/-10 Filled = 85+/-10
Volume Resistivity , ASTM D257	> 1E12 Ohm-cm
Tensile Properties , ASTM D638 Ultimate Tensile Strength (UTS)	450 psi
Elongation	200%
Tear Resistance , ASTM D1004	200 lbs per inch
Bond to Concrete , ASTM C882	No shear failure, deflection to concrete
Bond to Steel , ASTM C882	No shear failure, deflection to steel
Compression Modulus , ASTM D575B	7%
Compression Set , ASTM D395	< 1% Incremental Set, third test
Dynamic Deflection , ASTM D2231	No failure
Fatigue Resistance , Testing at 1.6E7 Cycles 20Hz, 5-250 psi	< 10 % Deflection
Height Change , ASTM C827 at 90°F (32°C)	Positive Expansion
Working Time at 70°F (21°C)	30 minutes
Tack Free Time at 70°F (21°C)	3 hours
Cure Time at 70°F (21°C)	12 hours

The data shown above reflects typical results based on laboratory testing under controlled conditions. Reasonable variations from the data shown above may result.

APPLICATION INFORMATION

Minimum Plate Clearance	1 in. (25 mm)
Maximum In-Service Temperature	120°F (48°C)

Placement Depth 1 - 6 in. (25 - 150 mm)
> 6 in. (150 mm), contact Five Star

PLACEMENT GUIDELINES

Polyurethane polymers and curatives are sensitive to heat, humidity, and moisture. Five Star® Elastomeric Grout is capable of being installed at an ambient temperature range from 55°F – 90°F (13°C – 32°C), however for optimum performance, the grout, environment, mixing equipment, and all surfaces in contact with the grout should be at temperatures between 70°F - 90°F (21°C and 32°C). After installation, maintain grout, substrate, and baseplate/equipment temperatures above 55°F (13°C) until grout reaches required compressive strength. **Flowability and strength gain are affected by lower and higher temperatures.** For installation temperatures outside recommended ranges, contact Five Star Products.

- 1. SURFACE PREPARATION:** Construction practices dictate concrete foundation should achieve its design strength before grouting. All surfaces to be in contact with Five Star® Elastomeric Grout shall be dry and free of oil, grease, and other contaminants. Surfaces where epoxy grout bond is not desired must have a bond breaking material applied to them. To maximize bond, concrete surfaces shall be prepared by acceptable means to remove the top surface to coarse aggregate exposure. A minimum 1/4 inch (6 mm) peak to valley surface profile is recommended. The steel baseplate bonding surface should be dry, clean, and free of oil, grease, and other bond inhibiting materials. To optimize bond development to steel, refer to TB419 *Steel Baseplate Considerations*. Isolation/expansion joints should be used on installations of larger dimensions/volumes and should be installed prior to equipment placement. Any existing cracks shall be brought to the project engineer's attention prior to grout installation. Refer to TB213 *Epoxy Grout Concrete Surface Preparation*; TB415 *Expansion Joints in Grout Placement* for further details.
- 2. MIXING:** For mixing one unit, refer to TB416 *Single Unit Mixing Instructions*. For mixing multiple units in a mortar mixer (recommended maximum eight units at a time) begin by combining all the Component A (resin) into a separate container(s). Pour all corresponding Component B (hardener) jug into the container containing all Component A (resin). Mix thoroughly for 1 - 2 minutes (or until separate materials cannot be observed) with a paddle or with a slow speed drill. Mix slowly to avoid air entrapment. Immediately pour the mixed liquids (combined Components A & B) into a mortar mixer with blades not moving. Add one bag of Component C (aggregate) and start the mortar mixer blades. Add the remaining corresponding Component C (aggregate) bags. Mix only until aggregate is completely wetted out (no dry aggregate observed). Do not reduce aggregate loading or add solvents or water to increase flowability. Do not mix partial units. .
- 3. PLACEMENT:** Five Star® Elastomeric Grout may be poured into place. Use of a headbox is highly recommended. Placement should always be across the shortest distance. All grout shall be placed from one side to the other, maintaining contact with the bottom of the baseplate/rail at all times until final set. For grout depth less than 1 inch (25 mm) or greater than 6 inches (150 mm), call Five Star Products. Refer to Five Star® TB412 *Grout Placement* for further details. If field testing of the grout is required, refer to TB210 *Proper Compressive Strength Testing - Epoxy Grouts*; TB417 *Field Sampling for Testing Requirements*.
- 4. POST-PLACEMENT:** Until initial set, ensure that grout maintains continuous contact with the bottom of the baseplate/rail and formwork remains leak-free. No wet curing is allowed. Protect area from moisture during cure. Protect from direct sun exposure until initial set. Finishing of exposed surfaces is aided by using a solvent wiped trowel just before material becomes unworkable. Final anchor bolt torque and in-service operation may begin immediately after product is fully cured. Refer to Five Star® TB413 *Grout Finishing* for further details.
- 5. CLEAN UP:** All tools and equipment may be cleaned with soap and water before the material hardens. Sand or a similar abrasive may be used with the soap and water to aid in the clean-up.

For additional Five Star® Technical Bulletins, visit FiveStarProducts.com. For further questions, or if additional information is required, contact your local Five Star® Technical Sales Representative at 1-800-243-2206.

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.**

SKU/PRODUCT CODE	DESCRIPTION	#UNITS/PALLET	UNIT SIZE
35000	Five Star® Elastomeric Grout	36	Resin (A): 8.8 lbs. (4.0 kg) pail Hardener (B): 4.0 lbs. (1.82 kg) pail Aggregate (C): 44 lbs. (20 kg) one bag

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Specifications Subject to Change.

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

Five Star Products, Inc.
Corporate Headquarters
 2 Enterprise Drive, Suite 303
 Shelton, CT 06484 USA
 Tel: +1 203-336-7900 • Fax: +1 203-336-7930
FiveStarProducts.com



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