



RAPID EPOXY GROUT

Fast Turnaround Precision Epoxy Grout

PRODUCT DESCRIPTION

Five Star® Rapid Epoxy Grout is the only expansive, non-shrink, rapid strength gain epoxy grout designed for very fast turnaround precision grouting. It is a three component, 100% solids, solvent free system formulated with superior flowability. Five Star® Rapid Epoxy Grout exhibits positive expansion when tested in accordance with ASTM C 827.

ADVANTAGES

- Permanent support for machinery requiring precision alignment
- High eight-hour strengths for fast turnaround
- High flow for tight clearances down to 1/2 inch
- Excellent creep resistance
- Expansive, non-shrink, ASTM C 827
- 95% Effective Bearing Area (EBA)
- Chemically resistant
- High temperature performance up to 250°F (121°C)
- Excellent adhesion to steel

USES

- Grouting machine baseplates to maintain precision alignment under high impact and vibration down to 1/2 inch
- Fast turnarounds
- Operating temperatures up to 250°F (121°C)
- Aggressive chemical environments
- Installation of anchors and dowels
- Dynamic loads

PACKAGING AND YIELD

Five Star® Rapid Epoxy Grout is a three component system consisting of resin, hardener and aggregate packaged separately in a pail and is available in a unit yielding approximately 0.50 cubic feet (14.2 liters) of hardened material.

SHELF LIFE

Two years 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 579 B*	Compressive Strength	Compressive Secant Modulus
8 Hours	8,000 psi (55.2 MPa)	1.3×10^6 (0.9 x 10 ⁴ MPa)
1 Day	14,000 psi (96.5 MPa)	1.6×10^6 (1.1 x 10 ⁴ MPa)
7 Days	15,000 psi (103.5 MPa)	1.7×10^6 (1.2 x 10 ⁴ MPa)
Tested at 180°F (82°C)	11,000 psi (75.9 MPa)	1.2×10^6 (0.8 x 10 ⁴ MPa)
Height Change at 90°F (32°C), ASTM C 827	Positive Expansion	
Effective Bearing Area	95%	
Creep, ASTM C 1181, 1 Year	1.8×10^{-3} in/in (mm/mm) at 140°F (60°C), 600 psi (4.1 MPa)	
Tensile Strength, ASTM C 307	2,400 psi (16.5 MPa)	
Flexural Strength, ASTM C 580	Flexural Strength	Flexural Secant Modulus
7 Days	5,000 psi (34.5 MPa)	2.0×10^6 (1.3 x 10 ⁴ MPa)
Tested at 180°F (82°C)	4,000 psi (27.6 MPa)	1.4×10^6 (0.9 x 10 ⁴ MPa)
Coefficient of Expansion, ASTM C 531	17×10^{-6} in/in/°F (30 x 10 ⁻⁶ mm/mm/°C)	
Bond to Concrete, ASTM C 882	Concrete Failure	
Working Time at 70°F (21°C)	30 minutes	

**Rate of loading 0.25 inches per minute. 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 to be in contact with Five Star® Rapid Epoxy Grout shall be free of oil, grease, laitance and other contaminants. Concrete must be clean, sound, dry and roughened to ensure a good bond. An SSPCSP6 commercial finish on all metal surfaces will optimize bond development to steel.
2. **FORMWORK:** Formwork shall be constructed of rigid non-absorbent materials, securely anchored, liquid-tight and strong enough to resist forces developed during grout placement. The clearance between formwork and baseplate shall be sufficient to allow for a headbox. The clearance for remaining sides shall be 1 to 2 inches (25 - 50 mm). Areas where bond is not desired must be treated with paste wax or polyethylene. Isolation joints may be necessary depending on pour dimensions. Contact the Five Star Products, Inc. Engineering and Technical Service Center for further information.
3. **MIXING:** For optimum performance, all components should be conditioned to between 70°F and 80°F (21°C and 27°C) prior to use. Pour all Component B (hardener) into pail containing Component A (resin). Mix thoroughly by hand with a paddle or with a slow speed drill and paddle mixer to avoid air entrapment. For large volume placements, pour mixed liquids into mortar mixer (stationary barrel with moving blades). While mixing, slowly add Component C (aggregate) and mix only until aggregate is completely wet. Add Component C (aggregate) immediately after mixing Component A (resin) and Component B (hardener). Working time is approximately 30 minutes when temperatures are at 70°F (21°C).
4. **METHODS OF PLACEMENT:** Five Star® Rapid Epoxy Grout may be poured into place. All grout shall be placed from one side to the other, maintaining contact with the bottom of the baseplate at all times. When possible, use of a headbox is highly recommended (refer to the Five Star® technical bulletin "Head Box and Plunger" for guidelines). For placement thicknesses of less than one-half inch (13 mm), or greater than three inches (75 mm), call the Five Star Products, Inc. Engineering and Technical Service Center at (800) 243-2206.
5. **POST-PLACEMENT PROCEDURES:** Final finishing should ensure material is flush with bottom edge of baseplate. Finishing of exposed surfaces is aided by using a solvent wiped trowel just before material becomes unworkable. In-service operation may begin immediately after minimum required grout strength and modulus have been achieved.
6. **CLEAN UP:** All tools and equipment may be cleaned with a water and strong detergent solution or suitable solvent before material hardens. Sand may be used as an abrasive.

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

CONSIDERATIONS

- Flowability and strength gain are adversely affected by lower temperatures.
- For placement temperatures below 55°F (13°C) or above 90°F (32°C), refer to Design-A-Spec™.
- To obtain bond, concrete shall be visibly free of surface moisture.
- For placements thinner than one-half inch (13 mm), greater than three inches (75 mm), or greater than 2½ cubic feet (70.8 liters), contact the Five Star Products Engineering and Technical Service Center at (800) 243-2206.
- Do not reduce aggregate loading or add solvents to increase flowability.
- For operating temperatures exceeding 250°F (121°C), contact the Five Star Products, Inc. Engineering and Technical Service

CAUTION

Irritant, toxic, strong sensitizer. Contains epoxy resin and amine. This product may cause skin irritation. Do not inhale vapors. Provide adequate ventilation. Protect against contact with skin and eyes. Wear rubber gloves, long sleeve shirt, goggles with side shields. In case of contact with eyes, flush repeatedly with water and contact a physician. Areas of skin contact should be promptly washed with soap and water. Do not take internally. 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 Five Star Product, Inc. Engineering and Technical Service Center at (800) 243-2206.

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