



FIVE STAR[®] HP EPOXY GROUT

High Performance Precision Grout

PRODUCT DESCRIPTION

Five Star HP Epoxy Grout is the only multi-purpose expansive, nonshrink, epoxy grout for supporting equipment requiring precision alignment. Five Star HP Epoxy Grout is a three component, 100% solids, solvent-free system formulated to exhibit high early strength combined with the highest creep resistance at elevated temperatures. Five Star HP Epoxy Grout has excellent flow characteristics for ease of placement.

ADVANTAGES

- Permanent support for machinery requiring precision alignment
- High early strength
- Start-up in 16 hours or less
- Solvent-free clean up
- Adjustable flow for various conditions
- Expansive, nonshrink, ASTM C 827
- Excellent creep resistance
- Chemically resistant
- 95% Effective Bearing Area (EBA)
- Adhesion to steel

USES

- Fast turnaround
- Tight clearance grouting
- Precision alignment under dynamic load conditions
- Vibration dampening filler for rotating equipment
- Support of chemical tanks, vessels and rotating equipment
- Aggressive chemical environments
- Installation of anchors and dowels

PACKAGING AND YIELD

Five Star HP Epoxy Grout is a three component system consisting of partially filled containers of resin, hardener and polyethylene lined bags of aggregate. Available in units yielding 2.1 cubic feet (59.5 liters) of hardened grout when using five bags of aggregate (Standard). When maximum flow is required, up to one bag of aggregate can be withheld to enhance flow (High Flow) which reduces yield to 1.75 cubic feet (49.6 liters).

SHELF LIFE

Two years in original unopened packaging when stored in dry conditions. Before use and for optimum performance, condition material to between 70°F and 90°F (21°C and 32°C).

TYPICAL PROPERTIES AT 73°F (23°C)

	HP EPOXY GROUT (Standard)		HP EPOXY GROUT (High Flow)	
Aggregate Content	5 Bags/Unit		4 Bags/Unit	
Clearances	1 - 6 inches (25 - 150 mm)		½ - 4 inches (13 - 100 mm)	
Height Change, ASTM C 827, at 90°F (32°C)	Positive Expansion		Positive Expansion	
Effective Bearing Area	95%		95%	
Creep, ASTM C 1181, 1 year				
400 psi (2.8 MPa) 140°F (60°C)	1.2 x 10 ⁻³ in/in (mm/mm)		2.0 x 10 ⁻³ in/in (mm/mm)	
Tensile Strength, ASTM C 307	2400 psi (16.6 MPa)		2000 psi (13.8 MPa)	
Flexural Strength, ASTM C 580	4800 psi (33.1 MPa)		4400 psi (30.4 MPa)	
Coefficient of Expansion, ASTM C 531	17 x 10 ⁻⁶ in/in/°F (30 x 10 ⁻⁶ mm/mm/°C)		18 x 10 ⁻⁶ in/in/°F (32 x 10 ⁻⁶ mm/mm/°C)	
Bond to Concrete, ASTM C 882	Concrete Failure		Concrete Failure	
Compressive Strength, ASTM C 579 B*	Comp. Strength	Comp. Modulus	Comp. Strength	Comp. Modulus
	psi (MPa)	psi (MPa)	psi (MPa)	psi (MPa)
16 Hours	11000 (75.9)	1.6 x 10 ⁶ (11.0 x 10 ³)	10000 (69.0)	1.5 x 10 ⁶ (10.4 x 10 ³)
1 Day	15000 (103.5)	2.0 x 10 ⁶ (13.8 x 10 ³)	14000 (96.6)	1.9 x 10 ⁶ (13.1 x 10 ³)
7 Days	16500 (113.9)	2.2 x 10 ⁶ (15.2 x 10 ³)	16000 (110.4)	2.1 x 10 ⁶ (14.5 x 10 ³)
Post cured at 140°F (60°C)	17500 (120.8)	2.5 x 10 ⁶ (17.2 x 10 ³)	17000 (117.3)	2.3 x 10 ⁶ (15.9 x 10 ³)

**Materials tested per ASTM C 579 B. 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

SURFACE PREPARATION: All surfaces to be in contact with Five Star HP 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. Provide a SSPC-SP6 commercial finish on all metal surfaces to ensure proper adhesion when required.

FORMS AND ISOLATION JOINTS: Formwork shall be constructed of rigid nonabsorbent materials, securely anchored, liquid tight and strong enough to resist forces developed during grout placement. The clearance between formwork and baseplate shall be three to five inches (75 to 125 mm) to allow for headbox. The clearance for remaining sides shall be one to two inches (25 to 50 mm). Areas where bond is not desired must be treated with paste wax or polyethylene. Isolation joints should be placed on six foot (1.8 m) centers with a maximum placement volume of 20 cubic feet (566 liters) for Standard and 10 cubic feet (283 liters) for High Flow formulas.

AGGREGATE CONTENT: Maximum aggregate content of Five Star HP Epoxy Grout should be used whenever possible. For increased flowability in cold temperatures, tight clearances or long flow distances, aggregate content may be reduced to four bags per unit.

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 paddle or slow speed mixer to avoid air entrapment. Pour mixed liquids into mortar mixer. 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 60 minutes when temperatures are at 73°F (23°C).

METHODS OF PLACEMENT: Five Star HP Epoxy Grout may be poured into place. All grouting shall be placed from one side to the other, maintaining contact with the bottom of the baseplate at all times. For clearances greater than six inches (150 mm) or more than 20 cubic feet (566 liters), use Five Star® DP Epoxy Grout or call the Five Star Products Engineering and Technical Center at 800-243-2206.

POST-PLACEMENT PROCEDURES: Final 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.

CLEAN UP: All tools and equipment may be cleaned with a water and strong detergent solution or 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™ or call the Five Star Products Engineering and Technical Center at 800-243-2206.

LIMITATIONS

- Flowability and strength gain are adversely affected by lower temperatures.
- For placement temperatures between 50°F and 70°F (10°C and 21°C) or above 90°F (32°C), refer to Design-A-Spec™.
- To obtain bond, concrete shall be visibly free of surface moisture.
- When clearances are outside the recommended range or when exceeding maximum placement volumes, contact the Five Star Products Engineering and Technical Center.
- Do not add solvents to increase flowability.
- For continuous operating temperatures exceeding 180°F (82°C), contact the Five Star Products Engineering and Technical Center.
- Construction practices dictate concrete foundation should achieve its design strength before grouting.

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.

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 800-243-2206.

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