



SP EPOXY GROUT PG

Superior Performance, Precision Non-Shrink Grout
Pump Grade

PRODUCT DESCRIPTION

Five Star® SP Epoxy Grout PG is the next generation in ultra-high performance epoxy grout. Five Star® SP Epoxy Grout PG has extremely high compressive strength, is expansive non-shrink, with ultra-low creep and outstanding Effective Bearing Area (EBA). Five Star® SP Epoxy Grout PG is a 100% solids epoxy grout system for high performance machinery and equipment.

ADVANTAGES

- Ultra-high 1 day & 7 day strengths
- Very low creep
- Excellent chemical resistance
- 95% Effective Bearing Area (EBA)
- Expansive and non-shrink per ASTM C 827
- Simple soap and water clean-up

USES

- Wind turbine bases and crane rails
- Compressors and turbo-machinery
- Presses and stamping machines
- Pumps and rotating equipment
- Skid-mounted equipment
- High dynamic load applications

PACKAGING

Five Star® SP Epoxy Grout PG is a three-component system consisting of partially filled containers of resin, hardener and polyethylene lined bags of aggregate. Five Star® SP Epoxy Grout PG is available in a unit yielding approximately 1.55 ft³ (43.9 liters).

SHELF LIFE

Two year shelf life if in original, unopened packaging when stored under dry conditions: high humidity storage space will reduce shelf life.

TYPICAL PROPERTIES AT 70°F (21°C)	
Early Height Change, ASTM C827	Positive Expansion
Effective Bearing Area (EBA)	95%
Creep, ASTM C1181, 1 Year 400 psi (2.8 MPa) @ 140°F (60°C)	1.0 x 10 ⁻³ in/in
Tensile Strength, ASTM C307	2,300 psi (15.9 MPa)
Flexural Strength, ASTM C580	5,500 psi (37.95 MPa)
Bond to Concrete, ASTM C882	Concrete Failure
Coefficient of Expansion, ASTM C531	17 x 10 ⁻⁶ in/in/°F (30.6 x 10 ⁻⁶ mm/mm/°C)
Compressive Strength, ASTM C579 B*	
1 Day	16,500 psi (113.8 MPa)
7 Day	17,500 psi (120.7 MPa)
28 Days	20,000 psi (138.0 MPa)
Post Cure	22,000 psi (151.7 MPa)
Working Time at 70° F (21° C)	30 Minutes

The data shown above reflects typical results based on laboratory testing under controlled conditions. Reasonable variations from the data shown may result in the field. Test methods are modified where applicable.

**ASTM C579 load rate II (0.25 inches per minute).*

APPLICATION INFORMATION

Minimum Plate Clearance	1 in. (25 mm)
Maximum In-Service Temperature	250°F (120°C)

Placement Depth	1 - 4 in. (25 - 100 mm) > 4 in. (100 mm), contact Five Star
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PLACEMENT GUIDELINES

The grout is capable of being installed at an ambient temperature range from 55°F – 95°F (13°C – 35°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 – 95°F (21°C and 35°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.** Refer to Five Star® Technical Bulletin (TB) 200 and 201 *Epoxy Cold and Hot Weather Grouting* for installation temperatures outside recommended ranges.

- 1. SURFACE PREPARATION:** Construction practices dictate concrete foundation should achieve its design strength before grouting. All surfaces to be in contact with Five Star® SP Epoxy Grout PG 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 Placements*, for further details.
- 2. FORMWORK:** Formwork should be constructed and sealed 24-hours prior to the grout installation. 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 should be sufficient to allow for a headbox to be placed between the edge of the baseplate and the form. The clearance for remaining sides shall be 1 to 2 inches (25 - 50 mm). Refer to Five Star® TB411 *Grout Shoulder Configurations* for further details. Formwork and areas where bond is not desired should be treated with grease, paste wax, or similar material. Refer to Five Star® TB410 *Grout Formwork* for further details.
- 3. MIXING:** Begin by pouring all of Component B (hardener) into the pail containing 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. Slowly add the remaining 3 bags and 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.
- 4. PLACEMENT:** Five Star® SP Epoxy Grout PG may be poured or pumped 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 at all times until final set. For grout depth greater than 4 inches (100 mm) contact Five Star Products. When pumping Five Star® SP Epoxy Grout PG, use of a peristaltic pump may produce best results. 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*.
- 5. POST-PLACEMENT:** Until initial set, ensure that grout maintains continuous contact with the bottom of the baseplate and formwork remains leak-free. No wet curing is allowed. 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 minimum required grout strength and a minimum compressive modulus of 1.0×10^6 (6.9×10^3 MPa) has been achieved. Refer to Five Star® TB413 *Grout Finishing* for further details.
- 6. 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

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 and appropriate respiratory protection in case of contact with eyes, flush repeatedly with water and contact a physician immediately. 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 SAFETY DATA SHEET.**

SKU / PRODUCT CODE	DESCRIPTION	# UNITS/PALLET	UNIT SIZE (WEIGHT VOLUME - A & B)
33501	Five Star® SP Epoxy Grout PG	36 (packaged on 4 pallets)	Resin (A): 21.9 lbs. (9.9 kg) 2.33 gal (8.80 L) Hardener (B): 5.4 lbs. (2.5 kg) 0.64 gal (2.40 L) Aggregate (C): Four 44 lb. (20 kg) Bags
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, EXPRESS 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."			

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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