



# **DP EPOXY GROUT PG**

Low Exothermic, Pumpable, Precision Epoxy Grout

## **PRODUCT DESCRIPTION**

Five Star® DP Epoxy Grout PG is the only pumpable, expansive, non-shrink, low exothermic epoxy grout for machinery grouting. This versatile, dual-purpose product is formulated for single, large volume placements and may be used as thin as ½ inch (13 mm) in depth. Five Star® DP Epoxy Grout PG is a three component, 100% solids, solvent-free system formulated to provide high strength and superior creep resistance combined with the highest effective bearing area. Five Star® DP Epoxy Grout PG exhibits positive expansion when tested in accordance with ASTM C 827.

## **ADVANTAGES**

- Pumpable
- Permanent support for machinery requiring precision alignment
- Low exothermic properties with early strength development
- Long working time
- Solvent-free clean up
- Expansive, non-shrink per ASTM C 827
- Superior creep resistance
- Chemically resistant
- 95% Effective Bearing Area (EBA) is typically achieved following proper grouting procedures
- Excellent adhesion to steel

## **USES**

- Large volume applications
- Foundation rebuilds and skid mounted equipment
- Precision alignment under dynamic load conditions
- Vibration dampening for rotating equipment
- Support of chemical tanks, vessels and rotating equipment
- Aggressive chemical environments
- Installation of anchors and dowels
- Operating temperatures up to 180°F (82°C)

## **PACKAGING AND YIELD**

Five Star® DP Epoxy Grout PG is a three component system consisting of partially filled containers of resin, hardener and four polyethylene lined bags of aggregate and is available in a unit yielding approximately 1.58 cubic feet (44.7 liters) of hardened material.

## **SHELF LIFE**

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

<b>TYPICAL PROPERTIES AT 70°F (21°C)</b>		
<b>Clearances</b>	1/2 to 6 inches (13 - 150 mm)	
<b>Height Change, ASTM C 827, at 90°F (32°C)</b>	Positive Expansion	
<b>Effective Bearing Area</b>	95%	
<b>Creep, ASTM C 1181, 1 year 400 psi (2.8 MPa) 140°F (60°C)</b>	4.5 x 10 <sup>-3</sup> in/in (mm/mm)	
<b>Tensile Strength, ASTM C 307</b>	2,000 psi (13.8 MPa)	
<b>Flexural Strength, ASTM C 580</b>	5,000 psi (34.5 MPa)	
<b>Coefficient of Expansion, ASTM C 531</b>	22 x 10 <sup>-6</sup> in/in/°F (40 x 10 <sup>-6</sup> mm/mm/°C)	
<b>Bond to Concrete, ASTM C 882</b>	Concrete Failure	
<b>Compressive Strength, ASTM C 579 B*</b>	Compressive Strength psi (MPa)	Compressive Modulus psi (MPa)
1 Day	9,000 (62.1)	1.2 x 10 <sup>6</sup> (8.3 x 10 <sup>3</sup> )
7 Days	13,000 (89.7)	1.5 x 10 <sup>6</sup> (10.3 x 10 <sup>3</sup> )
Post-cured at 140°F (60°C)	14,500 (100)	1.7 x 10 <sup>6</sup> (11.7 x 10 <sup>3</sup> )
<b>Working Time at 70°F (21°C)</b>	75 minutes	

*\*Materials tested per ASTM C 579 B. Rate of loading 0.25 inches per minute. The data shown above reflects 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® DP Epoxy Grout PG shall be free of oil, grease, laitance and other contaminants. Concrete must be clean, sound, dry and roughened to ensure a good bond. An SSPC-SP6 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 Product, 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. 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 75 minutes when temperatures are at 70°F (21°C).
4. **METHODS OF PLACEMENT:** Five Star® DP Epoxy Grout PG may be pumped or 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 clearances greater than 6 inches (150 mm) or volumes more than 50 cubic feet (1.4 cubic meter), call the Five Star Products, Inc. Engineering and Technical Service Center at (800) 243-2206. When pumping Five Star® DP Epoxy Grout PG, use of a peristaltic pump may produce best results.
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 must be free of visible surface moisture.
- When clearances are outside the recommended range or when exceeding maximum placement volumes, contact the Five Star Products Engineering and Technical Service 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 Service 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, and 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 you may call Five Star Products, Inc. Engineering and Technical Service Center at (800) 243-2206.*

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