



FLUID EPOXY

High Performance Fluid Epoxy

PRODUCT DESCRIPTION

Five Star® Fluid Epoxy is a two component, all-purpose, rapid cure fluid epoxy system. Five Star® Fluid Epoxy is designed for low clearance grouting, anchoring applications, and setting of leveling bolts/wedges.

ADVANTAGES

- High early strength
- Fluid, self-leveling consistency
- Placement down to 1/8 inch (3 mm)
- Good impact resistance
- Excellent adhesion to steel
- Convenient packaging

USES

- Anchoring machines, baseplates and other equipment
- Installation of bolts, anchors, and dowels
- Dynamic load grouting
- Adhesive applications

PACKAGING AND YIELD

Five Star® Fluid Epoxy is a two component system consisting of a resin/aggregate preblend and hardener packaged separately inside a box and is available in a unit yielding approximately 0.20 cubic feet (5.7 liters) of hardened material.

SHELF LIFE

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

TYPICAL PROPERTIES AT 70°F (21°C)		
Compressive Strength, ASTM C579A*	Compressive Strength	Compressive Secant Modulus
6 Hours	11,000 psi (75.8 MPa)	3.5×10^5 psi (2.4×10^3 MPa)
1 Day	13,000 psi (89.6 MPa)	4.3×10^5 psi (2.9×10^3 MPa)
7 Days	14,000 psi (96.5 MPa)	4.8×10^5 psi (3.3×10^3 MPa)
Creep, ASTM C1181, 1 year	10×10^{-3} in/in (mm/mm) at 140°F (60°C), 400 psi (2.8 MPa)	
Tensile Strength, ASTM C307	2,500 psi (17.2 MPa)	
Flexural Strength, ASTM C580	6,800 psi (46.9 MPa)	
Flexural Secant Modulus, ASTM C580	1.0×10^6 psi (6.9×10^3 MPa)	
Coefficient of Thermal Expansion, ASTM C531	32×10^{-6} in/in/°F (57.6×10^{-6} mm/mm/°C)	
Bond to Concrete, ASTM C882	Concrete Failure	
Working Time at 70°F (21°C)	30 minutes	

* Rate of loading 0.125 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.

APPLICATION INFORMATION

Minimum Plate Clearance	½ in. (3 mm)	Placement Depth	⅝ - 1½ in. (3 - 38 mm)
Maximum In-Service Temperature	150°F (65°C)		> 1½ in. (38 mm), contact Five Star

PLACEMENT GUIDELINES

Five Star® Fluid Epoxy (hereafter referred to as "material") is capable of being installed at an ambient temperature range from 55°F – 95°F (13°C – 35°C), however for optimum performance, the material, environment, mixing equipment, and all surfaces in contact with the material should be at temperatures between 70°F - 90°F (21°C and 32°C). After installation, maintain the material, substrate, and baseplate/equipment temperatures above 55°F (13°C) until the material 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.

- SURFACE PREPARATION:** Construction practices dictate concrete foundation should achieve its design strength before grouting. All surfaces to be in contact with Five Star® Fluid Epoxy 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 material installation. Refer to TB213 *Epoxy Grout Concrete Surface Preparation*, TB415 *Expansion Joints in Grout Placement* for further details.
- FORMWORK:** Formwork should be constructed and sealed 24-hours prior to the material installation. Formwork shall be constructed of rigid non-absorbent materials, securely anchored, liquid-tight and strong enough to resist forces developed during material 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.
- MIXING:** Use mixing paddle and a slow speed drill for mixing. Pre-mix Component A (resin and aggregate preblend) until uniform color and consistency is observed (approximately 1 minute). Pour all of Component B (hardener) into pail containing the mixed resin/aggregate (Component A) and mix until a uniform color is achieved (approximately 2 minutes). Use immediately after mixing.
- PLACEMENT:** Five Star® Fluid Epoxy may be poured in place. It is a self-leveling product that needs little or no finishing. For placements greater than 1 ½ inches (38 mm) contact Five Star Products. If field testing of the material is required, contact Five Star Products.
- POST-PLACEMENT:** Until initial set, ensure that the material 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. Final anchor bolt torque and in-service operation may begin immediately after minimum required grout strength has been achieved.
- 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. 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 SAFETY DATA SHEET.**

SKU/PRODUCT CODE	DESCRIPTION	#UNITS/PALLET	UNIT SIZE (WEIGHT VOLUME - A & B)
31400	Five Star® Fluid Epoxy	48	Resin/Aggregate (A/C) pre-blend: 20.9 lbs. (9.4 kg) 1.43 gal (5.42 L) Hardener (B): 1.1 lbs. (0.5 kg) 0.13 gal (0.50 L)
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."			

Specifications Subject to Change.

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

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