



CRANE RAIL GROUT

High-Flow Epoxy for Low Clearance Applications

PRODUCT DESCRIPTION

Five Star® Crane Rail Grout is a highly flowable, non-shrink, rapid strength gain, epoxy grout for tight clearance applications and dynamic loads. It is a three component, 100% solids epoxy system that exhibits positive expansion when tested in accordance with ASTM C 827 for precision grouting and alignment of crane rail. Five Star® Crane Rail Grout has excellent chemical resistance.

ADVANTAGES

- High flow for tight clearances
- Excellent adhesion to steel
- 95% Effective Bearing Area (EBA) is typically achieved following proper grouting procedures
- Expansive, non-shrink per ASTM C 827
- Chemically resistant
- Rapid strength gain for fast turnaround

USES

- Crane rail
- Railroad track rehabilitation
- Precision alignment under dynamic load conditions
- Tight clearance grouting of dynamic loads
- Transfer car runways
- Material handling tracks
- Light rail applications

PACKAGING AND YIELD

Five Star® Crane Rail Grout is a three-component system consisting of partially filled containers of resin and hardener, and one 50 lb. polyethylene lined bag of aggregate. Unit yield is approximately 0.49 cubic feet (13.9 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)	
Height Change, ASTM C 827, at 90°F (32°C)	Positive Expansion
Effective Bearing Area	95%
Compressive Strength, ASTM C 579 B*	
1 Day	13,000 psi (90 MPa)
7 Days	15,000 psi (103 MPa)
28 Days	16,000 psi (110 MPa)
Post Cure @ 140°F (60°C)	17,000 psi (117 MPa)
Tensile Strength, ASTM C 307	
7 Days	2,500 psi (17.2 MPa)
Bond to Concrete, ASTM C 882	
7 Days	3,000 psi (20.7 MPa)
Flexural Strength, ASTM C 580	5,500 psi (37.9 MPa)
Working Time at 70°F (21°C)	30 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

- SURFACE PREPARATION:** All surfaces to be in contact with Five Star® Crane Rail Grout shall be roughened to a minimum CSP8 (Concrete Surface Profile) in accordance with ICRI Standard 310.2R and be free of oil, grease, laitance, and other contaminants. Concrete must be clean, sound, dry and roughened to ensure a good bond. Areas where bond is not desired must be treated with paste wax or polyethylene.
- 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 Five Star Products' Engineering and Technical Service Center for further information.
- MIXING:** Mix using a mortar mixer or a drill and paddle for single unit mixes. For optimum performance, all components should be conditioned to between 70°F and 80°F (21°C and 27°C) for 24 hours prior to use. Pour all Component B (hardener) into pail containing Component A (resin). Mix thoroughly with a slow speed drill and paddle mixer to avoid air entrapment. Transfer mixed liquids to mortar mixer or larger container suitable to hold mixed liquids and Component C (aggregate). 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).
- METHODS OF PLACEMENT:** Five Star® Crane Rail Grout may be poured into place. All grouting shall be placed from one side to the other, maintaining contact with the bottom of the substrate at all times. A headbox is strongly recommended. For placements less than 0.4 inch (10 mm) or greater than three inches (75 mm), contact Five Star Products' Engineering and Technical Service Center at 1-800-243-2206.
- POST-PLACEMENT PROCEDURES:** If final finishing of exposed surfaces is necessary, it may be done before material becomes unworkable using a steel trowel. 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 suitable solvent or a strong detergent solution before material hardens. Sand may be used as an abrasive.

NOTE: PRIOR TO APPLICATION, READ ALL PRODUCT PACKAGING THOROUGHLY. For more detailed placement procedures call Five Star Products' Engineering and Technical Service Center at 1-800-243-2206.

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 Five Star® Design-A-Spec™.
- To obtain bond, concrete shall be visibly free of surface moisture.
- Do not reduce aggregate loading or add solvents to increase flowability.
- For operating temperatures exceeding 180°F (82°C), contact Five Star Products' Engineering and Technical Service Center at 1-800-243-2206.
- 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 SAFETY DATA SHEET.**

SKU / PRODUCT CODE	DESCRIPTION	# UNITS/PALLET	UNIT SIZE
33195	Five Star® Crane Rail Grout (Domestic)	48 (3 pallets)	Resin (A): 10 lb (4.5 kg) Pail Hardener (B): 1.7 lb (0.77 kg) Can Aggregate (C): 50 lb (22.7 kg) Bag
33195I	Five Star® Crane Rail Grout (International)	48 (3 pallets)	Resin (A): 10 lb (4.5 kg) Jerry can Hardener (B): 1.7 lb (0.77 kg) Can Aggregate (C): 50 lb (22.7 kg) Bag

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Specifications Subject to Change.

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