



MARINE CHOCK

High Performance Marine Epoxy Chock

PRODUCT DESCRIPTION

Five Star® Marine Chock is an epoxy chock system specifically engineered for use under critically aligned marine main engines, reduction gears and stern tube bearings. Five Star Marine Chock is a two component, 100% solids, solvent free material providing excellent flowability and high compressive strength at elevated temperatures and loading conditions. Five Star Marine Chock is an economical replacement for steel chocks because it eliminates costly machining and provides virtually 100% contact to machinery base plates.

ADVANTAGES

- Permanent support for machinery requiring precision alignment
- Chemically resistant
- Pourable two component system
- Eliminates costly machining

USES

- Marine main propulsion engines
- Gas compressors
- Reduction gears, generators, motors, and pumps
- Circular bearings
- Strut and stern tube bearings
- Replacement for steel chocks

PACKAGING AND YIELD

Five Star Marine Chock is a two component chocking system consisting of partially filled containers of resin and hardener and is available in a unit yielding approximately 0.15 cubic feet (4.3 liters).

SHELF LIFE

One year 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 C 579 B Post Cure @ 140°F (60°C)	19,500 psi (134 MPa)
Compressive Secant Modulus	900,000 psi
Coefficient of Linear Thermal Expansion, ASTM C 531 32°F to 140°F (0°C to 60°C)	16.7 x 10 ⁻⁶ in/in/°F (29.5 x 10 ⁻⁶ mm/mm/°C)
Linear Shrinkage, ASTM C 531	0.0002 in/in
Flexural Strength, ASTM C 580	6,500 psi (45 MPa)
Tensile Strength, ASTM C 307	3,000 psi (21 MPa)
Pot Life 70°F (21°C)	30 Minutes
Fire Resistance, ASTM D 635	Self Extinguishing
Color	Blue
Barcol Hardness, ASTM D 2583	60 - 65

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

PLACEMENT GUIDELINES

1. **SURFACE PREPARATION:** All surfaces to be in contact with Five Star® Marine Chock shall be free of oil, grease, and other contaminants. Steel surfaces with sharp edges or frets should be smoothed prior to pouring in order to prevent possible cracks in the epoxy chock.
2. **FORMWORK:** Open celled foam or similar material should be installed on three sides of the chock area. The foam dam must fit firmly between the machinery bedplate and the foundation to provide a liquid-tight seal. Anchor bolts must be sprayed with a suitable release agent. Any jacking bolts that are located inside the chock area must also be treated with a suitable release agent. The entire chock area must be sprayed with release agent prior to installing the front dam. Check the chock area for any possible locations that could cause a leak and seal accordingly. Install a front dam made of steel angle iron or flat bar approximately 3/4 inch (18 mm) to 1 inch (25 mm) away from the machinery bedplate and high enough to allow the chocking material to be poured 1/2 inch (12 mm) above the bottom of the bedplate. Spray the inside of the front dam with release agent. **Machinery must be in final alignment position prior to pouring Five Star Marine Chock.**
3. **MIXING:** For optimum performance, resin and hardener should be conditioned to between 21°C (70°F) and 27°C (80°F) for at least 12 hours before use. Premix Component A (resin) for approximately one minute. Pour Component B (hardener) into the Component A (resin) container and mix thoroughly for three to four minutes with a slow speed drill and paddle mixer at 200 rpm. Always keep the mixing blade completely submerged in the chocking material to minimize air entrapment. Be certain the mixing blade removes material completely around the sides and bottom of the resin can. This will ensure a uniform mix of the resin and hardener.
4. **POURING:** Always pour Five Star Marine Chock from the lowest side of the chock area which will force air to escape through the open celled foam at the opposite corner. Continue to pour slowly until the entire chock area is filled and the chock overpour area is filled to a level approximately 1/2 inch (12 mm) above the bottom of the bedplate. NOTE: Do not scrape material from the sides of the container, use only material that flows freely from container. Be sure that all the chocks have hardened before leaving the area of the pour. For pour placements less than 1/2 inch (12 mm) or greater than 2 1/2 inches (63 mm) or 0.15 cubic feet (4.3 liters), contact the Five Star Products Engineering and Technical Service Center at (800) 243-2206
5. **POST-PLACEMENT PROCEDURES:** Make sure the chocks have cured properly based on the following steel temperatures and curing times, then remove the front dam, release jacking bolts, tighten anchor bolts to recommended torque or tension.

Steel Temperature	Cure Time
13°C to 15°C (55°F to 60°F)	48 hours
16°C to 18°C (61°F to 65°F)	36 hours
19°C to 21°C (66°F to 70°F)	24 hours
Above 23°C (Above 75°F)	18 hours

6. **CLEAN UP:** All tools and equipment may be cleaned with a 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 Engineering and Technical Service Center at (800) 243-2206.

CONSIDERATIONS

- For pour placements less than 1/2 inch (12 mm) or greater than 2 1/2 inches (63 mm) or 0.15 cubic feet (4.3 liters), contact the Five Star Products Engineering and Technical Service Center at (800) 243-2206
- Flowability and cure times are adversely affected by lower temperatures.

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.

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 Service Center at (800) 243-2206.

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