



REPAIR CONCRETE

Pre-Extended, Cementitious Concrete Repair Mortar

PRODUCT DESCRIPTION

Five Star® Repair Concrete is a permanent, rapid-setting, one component, pre-extended concrete repair material. It is designed for the repair of concrete surfaces such as floors, balconies, and parking garages. Five Star® Repair Concrete's similar appearance and color to concrete produces an architecturally appealing, virtually seamless permanent repair. This product is formulated to be applied in thicknesses from 1/2 to 12 inches (13 - 300 mm).

ADVANTAGES

- Unique aggregate formulation enables comparable color and appearance to concrete producing a nearly seamless repair
- Rapid-setting for quick turnaround repairs
- Pre-extended in-the-bag ensures consistent quality and saves contractor labor
- Can be coated in as early as 6 hours for faster project completion

USES

- For commercial concrete repair applications
- Interior and exterior horizontal surfaces as well as form-and-pour applications
- Full and partial depth repairs
- Fast, permanent repair for concrete surfaces such as floors, balconies, and parking garages
- Applications requiring high early strength gain
- Not intended for foundation rebuilds or high caustic/acid environments

PACKAGING AND YIELD

Five Star® Repair Concrete is packaged in 50 lb. (22.7 kg) bags yielding approximately 0.38 cubic feet (10.7 liters) at maximum water.

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)

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| Compressive Strength , ASTM C109, 2 inch cubes | |
| 3 Hours | 3,000 psi (21 MPa) |
| 1 Day | 4,000 psi (28 MPa) |
| 7 Days | 7,000 psi (48 MPa) |
| 28 Days | 8,000 psi (55 MPa) |
| Compressive Strength , ASTM C39, 3 X 6" cylinders at 28 days | |
| | 7,400 psi (51 MPa) |
| Flexural Strength , ASTM C348 | |
| 1 Day / 28 Days | 755 psi (5.2 MPa) / 1,070 psi (7.4 MPa) |
| Splitting Tensile Strength , ASTM C496 | |
| 1 Day / 28 Days | 425 psi (2.9 MPa) / 525 psi (3.6 MPa) |
| Slant Shear Bond Strength , ASTM C882 modified | |
| 1 Day / 28 Days | 2,300 psi (15.8 MPa) / 2,600 psi (17.9 MPa) |
| Rapid Chloride Permeability , ASTM C1202, Coulombs | |
| | < 1,000 (very low) |
| Freeze/Thaw Resistance , ASTM A666 (Procedure A) at 300 cycles | |
| | ≥ 95% RDM |
| Modulus of Elasticity , ASTM C469 | |
| | 5.3 x 10 ⁶ psi (36.5 GPa) |
| Coefficient of Thermal Expansion , CRD C39 | |
| | 7.0 x 10 ⁻⁶ in/in/°F (12.6 x 10 ⁻⁶ cm/cm/°C) |
| Length Change , ASTM C928 | |
| 28 days dry | -0.03 % |
| 28 days wet | +0.01 % |
| Set Time , ASTM C266, May be affected by colder & warmer temperatures ¹ | |
| Initial | 50 minutes |
| Final | 70 minutes |
| Working Time at 70°F (21°C) May be affected by colder & warmer temperatures ¹ | |
| | 25 Minutes |

¹ Refer to Five Star® Technical Bulletins: Concrete Repair in Cold Weather; Concrete Repair in Hot Weather

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.

APPLICATION INFORMATION

| | | | |
|---------------------|---|------------------------|---|
| Mixing Ratio | 1.75 - 2 quarts (1.7 - 1.9 L) potable water per 50 lb. bag | Placement Depth | 1/2 in. - 12 in. (13 mm - 300 mm) > 12 in. (300 mm), contact Five Star Products |
|---------------------|---|------------------------|---|

PLACEMENT GUIDELINES

For optimum performance, install at temperatures between 35°F and 90°F (2°C and 32°C). Maintain material, substrate and mixer temperatures above 35°F (2°C) until material reaches 1,000 psi (6.9 MPa) compressive strength or 24 hours. Strength gain are adversely affected by lower temperatures. For hot or cold weather applications refer to Five Star® Technical Bulletin *Concrete Repair in Cold Weather*; Technical Bulletin *Concrete Repair in Hot Weather*.

- SURFACE PREPARATION:** All horizontal and vertical concrete surfaces in contact with Five Star® Repair Concrete shall be free of oil, grease, laitance, and other contaminants. A saw cut perimeter edge at 3/4 inches is recommended. To maximize bond, horizontal and vertical concrete surfaces should be prepared by acceptable means to coarse aggregate exposure. Remove all oxidation from exposed reinforcing steel to achieve a clean steel finish. Featheredging is not allowed. Soak concrete surfaces prior to application with liberal quantities of potable water, leaving the concrete saturated and free of standing water, or use Five Star® Bonding Adhesive. Surfaces shall be conditioned to between 40°F and 90°F (5°C and 32°C) at the time of placement.
- FORMWORK:** Formwork should be constructed 24-hours prior to the application. Formwork shall be constructed of rigid non-absorbent materials, securely anchored, liquid-tight and strong enough to resist forces developed during placement. Formwork and areas where bond is not desired must be treated with grease, paste wax, or similar material. Joints may be necessary depending on pour dimensions. Any existing joints within the repair area should be maintained. Contact Five Star Products for further information.
- MIXING:** Wet down mortar mixer (stationary barrel with moving blades) before using and drain excess water. A drill and paddle mixer is acceptable for single bag mixes. Start with approximately 1.75 quarts (1.7 L) potable water per 50 lb. bag in the mixer. Add Five Star® Repair Concrete and mix for approximately 2 – 3 minutes after the addition of the final bag to a uniform consistency. Add additional potable water as necessary to achieve desired consistency mixing for an additional 1 – 2 minutes after final addition of potable water. Do not exceed the maximum recommended amount of potable mixing water as directed or add an amount that will cause segregation. For pours over 12 inches (300 mm) in depth contact Five Star Products for aggregate extension recommendations. For bulk mixing applications, contact Five Star Products.
- METHODS OF PLACEMENT:** Whenever possible, place Five Star® Repair Concrete full depth from one side of the repair to the other. To ensure optimal bond development, firmly work material into substrate. Placement should be continuous to prevent cold joints between pours.
- POST PLACEMENT PROCEDURES:** Keep material as cool as possible and protect from wind and sun exposure. Five Star® Repair Concrete shall be protected from moisture loss until initial set; then immediately coated with an approved curing compound or continuously wet cured for 2 days. At lower temperatures final set and strength development may take longer. Do not allow product to freeze until it reaches 1,000 psi (7 MPa) compressive strength.
- CLEAN UP:** All tools and equipment may be cleaned with soap and water before the material hardens.

PRIOR TO APPLICATION, READ ALL PRODUCT PACKAGING THOROUGHLY. For more detailed information contact your local Five Star® Technical Sales Representative at 1-800-243-2206.

CAUTION

Contains cementitious material and crystalline silica. International Agency for Research on Cancer has determined that there is sufficient evidence for the carcinogenicity of inhaled crystalline silica to humans. Take appropriate measures to avoid breathing dust. Avoid contact with eyes and contact with skin. In case of contact with eyes, immediately flush with plenty of water for at least 15 minutes. Immediately call a physician. Wash skin thoroughly after handling. Keep product out of reach of children. **PRIOR TO USE, REFER TO SAFETY DATA SHEET.**

| SKU / PRODUCT CODE | DESCRIPTION | # UNITS/PALLET | UNIT SIZE |
|--------------------|----------------------------|----------------|----------------------|
| 28812 | Five Star® Repair Concrete | 56 | 50 lb. (22.7 kg) bag |

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