



RAPID REPAIR

Fast Turnaround Fiber-Reinforced Repair Mortar

PRODUCT DESCRIPTION

Five Star® Rapid Repair is a fast turnaround, single component, high performance cementitious repair mortar for horizontal or formed vertical repairs. Five Star Rapid Repair may be extended with coarse aggregate to make a fast setting concrete for deeper placements. Five Star Rapid Repair is a versatile high early strength product which provides a durable long term repair.

ADVANTAGES



This product may be eligible for up to five LEEDS points.

- High early strength
- Low chloride ion permeability
- Open to traffic in three hours
- Excellent freeze/thaw resistance
- One component/ease of use
- Coarse aggregate extension

USES

- Floors and slabs
- General repair of concrete structures
- Expansion joint rebuild
- Steps and walkways
- Parking structures
- Formed vertical repairs

PACKAGING AND YIELD

Five Star Rapid Repair is packaged in heavy-duty polyethylene lined bags weighing 50 lbs.(22.7 kg) yielding approximately 0.39 cubic feet (11 liters) and approximately 0.58 cubic feet (16.4 liters) with a 60% coarse aggregate extension.

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 C109	
3 Hours	2500 psi (17.2 MPa)
1 Day	4000 psi (27.6 MPa)
7 Days	6000 psi (41.3 MPa)
Bond Strength, ASTM C882	
1 Day	1500 psi (10.4 MPa)
7 Days	2000 psi (13.8 MPa)
Length Change, ASTM C157	
28 Days Wet	+0.05%
28 Days Dry	-0.05%
Freeze/Thaw Resistance, ASTM C666A	
Relative Durability	>90%
Working Time at 70°F (21°C)	15 minutes

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® Rapid Repair shall be free of oil, grease, laitance, and other contaminants. Concrete must be clean, sound and rough to ensure a good bond. A perimeter edge and minimum depth of 1/2 inch (12 mm) should be provided for a durable repair. Featheredging is not recommended. 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.
- 2. MIXING:** Pre-wet mortar mixer (stationary barrel with moving blades), empty excess water. A drill and paddle mixer is acceptable for single bag mixes. With the mixer running add 80% of the pre-measured potable water (total water content is 2 to 2.5 quarts potable water per 50 lb. unit) to the mixer. While mixing, slowly add Five Star Rapid Repair and mix to a uniform consistency for three to four minutes. Adjust consistency if necessary, but do not exceed maximum water content stated on the package or an amount that will cause segregation. Addition of coarse aggregate meeting ASTM C 33 should be used for pours greater than 2 inches (50 mm) in depth; add coarse aggregate before final water adjustment. Do not mix more material than can be placed within 15 minutes.
- 3. METHODS OF PLACEMENT:** Whenever possible, place Five Star Rapid Repair 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. Finish as necessary.
SPECIAL CONDITIONS: For use in cold temperatures, Five Star Rapid Repair must be maintained at a temperature of at least 40°F (5°C). Protect from freezing until a compressive strength of at least 1000 psi (6.9 MPa) is obtained. Faster strength gain will occur when the Five Star Rapid Repair and mixing water have been conditioned to a higher temperature prior to placement. In hot temperatures, Five Star Rapid Repair should be kept as cool as possible, but not exceeding 90°F (32°C). Chilled water should be used for mixing to help maintain sufficient working time.
- 4. POST-PLACEMENT PROCEDURES:** Five Star Rapid Repair shall be protected until initial set. Wet cure after placement for approximately 2 to 3 hours via wet burlap or ponding the surface with water. Large volume placements may require extended wet cure. Contact Five Star Engineering and Technical Service Center for additional guidance. In-service operation may begin immediately after the required strength has been reached.

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 Engineering and Technical Service Center at (800) 243-2206.

CONSIDERATIONS

- Never exceed the maximum recommended amount of mixing water stated on the package or an amount that will cause segregation.
- Temperature of surfaces must be between 40°F and 90°F (5°C and 32°C) at time of placement.
- Substrate shall be free of frost and ice.
- Repair material shall be protected from freezing until it reaches 1000 psi (6.9 MPa).
- Placement shall be continuous to avoid cold joints.

CAUTION

Contains cementitious material and crystalline silica. International Agency for Research on Cancer has evaluated 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 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's Engineering and Technical Service Center at (800) 243-2206.

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."

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