

FIVE STAR STRUCTURAL CONCRETE PLUS MIGRATING CORROSION INHIBITORS

**ONE COMPONENT FORMULATED WITH MCI FOR
REBAR CORROSION PROTECTION
HIGH THREE-HOUR STRENGTHS
VERY LOW CHLORIDE ION PERMEABILITY
HIGH BOND STRENGTH**

PRINCIPAL USES

- General repair of concrete structures.
- Rapid machinery foundation rebuilds.
- Fast repairs for coatings.
- Concrete floor toppings and overlays.
- MCI not affected by chlorides in concrete.
- MCI extends life of repairs.
- Ref. MCI-2006NS for corrosion protection details

PLACEMENT GUIDELINES SURFACE PREPARATION

All surfaces in contact with Five Star Structural Concrete shall be free of oil, grease, laitance and other contaminants. Concrete must be clean, sound and rough to ensure a good bond. Surfaces should be prepared in accordance with 1 or 3 of "Surface Preparation Methods". Remove all oxidation from exposed reinforcing steel. Feather-edging is not desirable for structural repairs. A perimeter edge of 10mm minimum depth should be provided for a durable repair. Soak concrete surfaces prior to application with liberal quantities of potable water, leaving the concrete saturated and free of standing water.

MIXING

Mix Five Star Structural Concrete thoroughly for approximately 5 minutes with a mortar mixer or drill and paddle mixer. Adjust consistency if necessary. Do not exceed maximum recommended amount of mixing water as stated on the package or add an amount that will cause segregation. Do not mix more material than can be placed in 15 minutes. Addition of coarse aggregate, Pro-Struct 53MC, may be necessary for pours greater than 50mm. Product and aggregate must be submitted to a testing authority prior to its use to determine performance. Do not re-temper the mix by adding more water – it will cause shrinkage and cracking.

PLACEMENT PROCEDURES

Whenever possible, place Five Star Structural Concrete full depth from one side of the repair to the other. Where this is not practical, placement must be continuous to prevent cold joints between pours. Finish as necessary.

SPECIAL CONDITIONS

For use in cold temperatures, Five Star Structural Concrete must be maintained at a temperature of at least 5°C. Protect from freezing until a compressive strength of at least 6.9MPa is obtained. Faster strength gain will occur when the Five Star Structural Concrete and mixing water have been conditioned to a higher temperature prior to placement.

In hot temperatures, Five Star Structural Concrete should be kept as cool as possible, but not exceeding 32°C. Ice cold water should be used for mixing to help maintain sufficient working time.

WET CURING

Five Star Structural Concrete shall be set after 20 minutes. Wet cure immediately for 2 hours by covering with water saturated hessian.

Note: Prior to application, read all product packaging thoroughly and refer to material safety data sheet.

LIMITATIONS

- Never exceed the maximum water content as stated on the package.
- Not to be used for grouting beneath baseplates. Use Five Star Grout – Pro-Struct 531 for normal setting and Five Star Instant Grout – Pro-Struct 533 for cold weather and fast setting conditions.
- Placement shall be continuous to avoid cold joints.

CAUTION

Contains cementitious material and crystalline free silica. 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.

TYPICAL PROPERTIES AT 25°C

Compressive Strength ASTM C-109 *	3 Hours > 17 MPa 1 Day >34 MPa 7 Days >40 MPa 28 Days >45 MPa
Bond Strength ASTM C-882	1 Day: 13 MPa 7 Days: 17 MPa
Linear Length Change ASTM C-157	28 Days (wet) +0.05% 28 Days (dry) -0.09%
Thermal Coefficient of Expansion ASTM C-531	9 x 10 ⁻⁶ mm/mm/°C
Scaling Resistance, ASTM C-672 50 Cycles	0
Chloride Ion Permeability ASTM C-1202	28 Days - <1000 coulombs
Working Time	15 Minutes
Yield	25kg yields ± 14 litres
Shelf Life	1 Year in original plastic shrink wrapped pallet, when stored in dry conditions. Individual bags have limited shelf life. High humidity will reduce shelf life.

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