

**FIVE STAR GROUT PLUS
MIGRATING CORROSION INHIBITORS**

**FORMULATED WITH MCI FOR OPTIMUM CORROSION PROTECTION
PROVIDES PLACEMENT VERSATILITY; POUR, PUMP OR DRY PACK
DOES NOT CONTAIN GAS GENERATING ADDITIVES, SUCH AS ALUMINIUM POWDER
NON-SHRINK FROM THE TIME OF PLACEMENT
MEETS PERFORMANCE REQUIREMENTS OF ASTM-C 1107-2 AND CRD C-621 SPECIFICATION**

PRINCIPLE USES

- Grouting of machinery baseplates to maintain precision alignment.
- Non-shrink grouting of structural steel and pre-cast concrete.
- Installation of anchors and dowels.
- MCI not affected by chlorides in concrete.
- MCI extends life of repair.
- Ref. MCI-2006NS for corrosion protection details.
- For concrete repair, refer to Pro-Struct 529-MCI Structural Concrete.

**PLACEMENT GUIDELINES
SURFACE PREPARATION**

All surfaces in contact with Five Star Grout shall be free of oil, grease, laitance and other contaminants. Surfaces should be prepared in accordance with 1 or 3 of "Surface Preparation Methods". Surfaces should be roughened and pre-saturated for 8-14 hours prior to application with clean water, removing pooled water prior to installation.

MIXING

Mix Five Star Grout thoroughly to a uniform consistency with a mortar mixer. Do not aerate. Use minimum amount of water to place material. Do not exceed maximum recommended amount of water stated on the package. Do not re-temper the mix by adding more water – it will cause shrinkage cracking.

METHODS OF PLACEMENT

Five Star Grout may be dry packed pumped or poured into place.

POST-PLACEMENT PROCEDURES

Five Star Grout shall be wet cured for a minimum of three days, or coated with an approved curing compound after a minimum of 24 hour wet cure.

LARGE POURS

In certain circumstances 12.5kg (10 litres dry) of 6mm Pro-Struct 53-MC aggregate can be added to a unit producing 18 litres of product. Product and stone must be submitted to a local concrete testing authority prior to its use to determine its characteristics and performance.

MICRO-CONCRETE

In non-structural concrete repair application, add 1 bag of Pro-Struct 53MC aggregate to a unit of Pro-Struct 531-MCI. Dry mix the material prior to addition of water as per instructions in the method statement.

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

LIMITATIONS

- At time of placement, if temperatures of equipment and surfaces are not between 4°C and 32°C, refer to Design-A-Spec for cold and hot weather grouting procedures.
- Never exceed the maximum water content as stated on the bag or add an amount that will cause segregation.
- Construction practices dictate concrete foundation should achieve its design strength before grouting.
- Do not hand-mix Five Star Grout.
- Protect from rain, wind and rapid evaporation for 24 hours after application.

TYPICAL PROPERTIES AT 25°C

Early Height Change ASTM C-827	0.0 – 4.0%	
Hardened Height Change ASTM C-1090	0.0 – 0.3%	
Effective Bearing Area	95% Minimum	
Bond Strength ASTM C-882	28 Days – 13 MPa	
Pull-out Strength, Shear Bond With Y16mm deformed bar	7 Days – 16 MPa	
Compressive Strength ASTM C-942	Min. Water	MPa
	3 Days	>35
Restrained	7 Days	>45
Max. Water	MPa	
	>20	
	>30	
Yields	± 14 litres	
Working Time	30 Minutes	
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.	

APPLICATION INSTRUCTIONS

These instructions are not intended to show product recommendations for specific service. They are issued as an aid in determining correct surface preparation, mixing instructions and application procedure. It is assumed that the proper product recommendations have been made.

These instructions should be followed closely to obtain the maximum service from the materials.

APPLICATION INSTRUCTIONS:

FIVE STAR GROUT METHOD STATEMENT

Five Star Grout can be dry packed, trowelled, flowed, vibrated or pumped into place. General instructions are printed on each bag and are also available from StonCor Africa. Call for guidance on critical applications. Under normal conditions Five Star Grout does not reach its initial set in less than 45 minutes. For critical applications supporting heavy machinery, turbines, generators, pumps, compressors and equipment, a flowable grout will often be required.

Five Star Grout is unique in the field of grouting. It does not shrink when made flowable. Most grouts, when made flowable, develop extreme shrinkage which often results in failure or breakout. Designers should have an independent laboratory checking the shrinkage of flowable grouts under ASTM C-827 to avoid such failures and liabilities under installation.

INSTRUCTIONS FOR USE – FIVE STAR GROUT

1. Five Star Grout should be stored, handled and placed in accordance with the specifications of the South African Bureau of Standards for cement and cement products.
2. Have all necessary tools and materials as close as possible to the area to be grouted.
3. Formwork shall be constructed of rigid non-absorbent materials, securely anchored, watertight and strong enough to resist forces developed during placement. Formwork shall be coated with a form release agent.
4. All surfaces to be in contact with the grout shall be entirely free of oil, grease, laitance and other foreign substances. Roughen surface to assure good bond of grout to existing concrete. Soak concrete for 8-14 hours prior to application with potable water, leaving surface wet but free of excess water before placement.
5. Add measured clean water to Five Star Grout and mix for 5 minutes in a mortar mixer. Do not aerate. Do not mix more grout than can be placed within 30 minutes. Do not re-temper the mix by adding more water. Once mixing and placing of the grout has begun, it should be a continuous operation.
6. For high fluidity, add 4 litres water per 25kg dry grout. Adjust consistency if necessary. Do not exceed the maximum recommended amount of water as stated on the package. For moderate fluidity add 3.5 litres and adjust consistency to the desired slump. The minimum water addition of 3 litres should be used for mixes suitable for ramming. For convenience, approximately 14 litres of flowable grout will be produced by each 25kg bag.
7. Under machinery, Five Star Grout should be placed from one side only to avoid entrapping air. Under large machinery and plates, grout holes should be considered. Grout should be placed continuously until it protrudes from the entire perimeter.
8. Cure exposed grout surfaces with water saturated hessian for 3 days or Pro-Struct 610/601 diluted as per Curing Compound mix ratio to prevent excessive evaporation.
9. Remove formwork and cut back edges as specified to final configuration.
10. Before placing grout in unusual or difficult conditions, contact StonCor Africa.

NB: No changes to the above mixing instructions should be undertaken without prior reference to the StonCor Technical Staff.

CAUTION: MAY CONTAIN FLAMMABLE SOLVENTS. KEEP AWAY FROM SPARKS AND OPEN FLAMES. IN CONFINED AREAS WORKMEN MUST WEAR FRESH AIRLINE RESPIRATORS. HYPERSENSITIVE PERSONS SHOULD WEAR GLOVES OR USE PROTECTIVE CREAM. ALL ELECTRONIC EQUIPMENT AND INSTALLATIONS SHOULD BE MADE AND GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. IN AREAS WHERE EXPLOSION HAZARDS EXIST, WORKMEN SHOULD BE REQUIRED TO USE NONFERROUS TOOLS AND TO WEAR CONDUCTIVE AND NONSPARKING SHOES



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