

# MIGRATORY CORROSION INHIBITOR (MCI®) PRODUCTS FOR CONCRETE



## MCI®-2702

### PRODUCT DESCRIPTION

MCI®-2702 is a single component, polymer-modified, cement-based mortar for structurally repairing deteriorated concrete. Developed with Sto Corporation, MCI®-2702 is designed for use on vertical or overhead surfaces for repairs from ¼ to 2 inches (6 to 51 mm) or apply it in lifts for deeper applications.

MCI®-2702 is a one-component vertical and overhead repair mortar that is ready to use; just add clean water. Once mixed by drill and paddle, it hangs 2 inches (51 mm) without falling, reducing waste and increasing job-site productivity.

MCI®-2702 provides the necessary concentration of MCI® (Migratory Corrosion Inhibitor) molecules on embedded steel bars. They create a protective monomolecular layer on metals embedded in concrete and inhibit further corrosion of bars.

The polymer in the product provides a creamy consistency that can be finished easily without tearing the surface. Finish it smooth with a trowel or textured with a sponge float or brush. Use MCI®-2702 for application depths from ¼ to 2 inches (6 mm to 51 mm) or apply it in lifts for deeper applications.

### FEATURES AND BENEFITS

Features	Benefits
Polymer-modified	Increases durability and freeze-thaw resistance; excellent adhesion; improves flexural strength
Non-sag, low slump	Hangs 2 inches (51 mm) in one lift vertically and overhead; increases job-site productivity
Low shrinkage	Stable bond line; resists perimeter cracking
Thermally compatible with concrete	Prevents delamination caused by temperature changes
One component	Factory-controlled polymer-to-cement ratio; ready-to-use; easily mixed with water on the job-site, no chemical jugs to dispose of
Contains Migrating Corrosion Inhibitor (MCI)	Seeks out and forms a corrosion inhibiting protective layer on metals; migrates to adjacent areas to protect metals around the repair area; reduces the halo or ring effect surrounding the repair area

### SURFACE PREPARATION

Remove loose and deteriorated concrete by mechanical chipping or sandblasting to obtain a fractured aggregate surface. Detail the edge of the patch to a 90° angle to eliminate feather edging. Make sure surfaces are sound, clean, and free of all bond-inhibiting materials including oil, dirt, dust, laitance and standing water.

### MIXING

Use MCI®-2702 at a preconditioned temperature of 70 ± 5° F (21 ± 3° C).

Use 6.0 to 6.5 pints (2.83 to 3.08 L) of water per 50-pound (23 kg) bag.

Mixing must be achieved mechanically using a slow-speed, ¾ inch (19 mm) drill and mixing paddle. Pour 6.0 pints (2.83 L) of water into a clean 5 gallon (19 L) mixing bucket. Mix while slowly adding the powder, one-third at a time. If more water is needed, up to one-half pint (.24 L) may be added.

Mix up to 4 minutes, to a uniform, lump-free consistency. Avoid overmixing, which could entrap air. Once mixed, the working time is 25-45 minutes, depending upon material, ambient and surface conditions.

### LIMITATIONS

- Apply only when the surface and ambient temperature are 45-50° F (7-10° C) and rising. See Cold Weather Application guidelines, per ACI, for applications in temperatures less than 50° F (10° C). Applications made during temperatures greater than 85° F (29° C) should follow Hot Weather Application guidelines, per ACI.
- The minimum required thickness is 1.4 inch (6 mm).
- Application depths greater than 2 inches (51 mm) must be completed in lifts.
- Do not add more water than specified.
- Do not add additional powder from other units.
- Do not overmix.

### APPLICATION

Apply only to sound and clean, properly prepared, frost-free surfaces. Dampen the area to be repaired



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so that the pores of the concrete are filled with water. Remove any ponding or glistening water on the surface (saturated surface dry/SSD).

**IMPORTANT:** Work a scrub coat of the mixed material into the substrate to ensure intimate contact and establish bond.

Complete the repair while the scrub coat is still wet and trowel to the desired finish. MCI-2702 can be applied to a thickness of 2 inches (51 mm) in one lift. For application depths greater than 2 inches (51 mm) apply MCI-2702 in successive lifts.

For additional lifts, scarify the first lift and allow it to set until hardened sufficiently to accept the next lift, about 30 minutes at 75° F (23° C). Trowel the final lift to the desired finish. Applications made during temperatures below 50° F (10° C) or above 85° F (29° C) should follow appropriate application guidelines.

**Curing**

Direct sun or wind may cause unwanted rapid surface drying. Curing may be accomplished by continuous water fogging for 48 hours or cover with damp burlap or burlene curing blankets. Do not use solvent-based curing compounds. If a coating or sealer will be applied, use water fogging or blanket curing methods and prep finished surface per manufacturer’s recommendations.

**Clean Up**

Clean tools and equipment with water immediately after use. Cured material can only be removed mechanically.

**YIELD**

0.45 ft³ per 50 lb bag (0.013 m³ per 23 kg bag).

**FOR INDUSTRIAL USE ONLY**

**KEEP OUT OF REACH OF CHILDREN**

**KEEP CONTAINER TIGHTLY CLOSED**

**NOT FOR INTERNAL CONSUMPTION**

**CONSULT MATERIAL SAFETY DATA SHEET FOR MORE INFORMATION**

**COVERAGE**

20-25 ft² per 50 lb bag, applied at ¼ inch thick (2 m² per 23 kg bag, at 6 mm thick).

**TECHNICAL DATA**

Report	Test Method	Criteria	Test Results
Working time (minutes)			25-45
Compressive Strength (psi/Mpa)	ASTM C-109	1 day	2,800/19.32
		7 days	5,500/37.95
		28 days	6,500/44.85
Flexural Strength (psi/Mpa)	ASTM C-293	7 days	1,100/7.59
		28 days	1,300/8.97
Modulus of Elasticity in Compression (psi/Mpa)	ASTM C-469	28 days	2.26 x 10 <sup>6</sup> / 1.56 x 10 <sup>4</sup>
Splitting Tensile Strength (psi/Mpa)	ASTM C-496	7 days	485/3.35
		28 days	565/3.90
Shrinkage (%)	ASTM C-157	7 days	<.05
		28 days	<.09
Direct Tensile Bond (psi/Mpa)	ASTM D-4541	28 days	260/1.79*
Length Change	ASTM C-157	28 days	<0.03**

Typical values for material cured at 73°F (23°C) and 50% R.H.

\* 100% failure in substrate

\*\* Wet Cure

**PACKAGING AND STORAGE**

MCI-2702 is available in 50 lb bag (23 kg). The shelf life of the product is 12 months in original, unopened, properly stored container. Store in a dry area between 50° F (10° C) and 85° F (29° C). Protect from direct sunlight and extreme heat [(90° F (32° C))].

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