

# MCI®-2701

## PRODUCT DESCRIPTION

MCI-2701 with MCI (Migrating Corrosion Inhibitor) is a polymer-modified, cement-based mortar for structurally repairing or overlaying deteriorated concrete. Developed with Sto Corporation, this product is designed for use on horizontal or vertical surfaces for repairs from 1/4 to 2 inches (6 mm to 51 mm) or extend it with aggregate for deeper horizontal applications.

MCI-2701 provides the proper concentration of MCI molecules necessary to create a protective monomolecular layer on metals embedded in concrete and inhibit further corrosion of bars.

MCI-2701 is a one-component, multi-purpose repair mortar that is ready-to-use; just add clean water. Once mixed by drill and paddle or standard mortar mixer, its medium-slump floats and consolidates easily. The acrylic polymer in the product provides a creamy consistency that can be finished easily without tearing the surface. Finish it smooth with a trowel or texture with a sponge float or broom.

## FEATURES AND BENEFITS

Features	Benefits
Polymer-modified	Increases durability and freeze-thaw resistance; excellent adhesion; improves flexural strength
Low shrinkage	Stable bond line; resists perimeter cracking
Thermally compatible with concrete	Prevents delamination caused by temperature changes
Integral Corrosion Inhibitor	Protects embedded steel against corrosion
High abrasion resistance	Wears longer; stands up to abusive traffic
One component	Factory controlled polymer to cement ratio; ready-to-use; easily mixed with water on the job site, no chemical jugs to dispose
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-2701 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 55-pound (25 kg) bag.

Mixing must be achieved mechanically using a slow-speed 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 (0.24 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 temperatures are above 45°F (7°C). 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 feather edge.
- Do not add more water than specified.
- Do not add additional powder from other units.
- Do not overmix.



## APPLICATION

Apply only to sound, clean, properly prepared, frost-free surfaces. Dampen the area to be repaired so 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. Apply MCI-2701 while the scrub coat is still wet.

Complete the repair while the scrub coat is still wet and trowel to the desired finish. MCI-2701 can be applied to a thickness of 2 inches (51 mm) in one lift. For application depths of up to 5 inches (127 mm) extend MCI-2701 by adding 27 pounds (12.2 kg) of clean, uniformly graded,  $\frac{3}{8}$  inch (9 mm) aggregate dampened to SSD condition.

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.

## 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

## Clean Up

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

## YIELD

0.50 ft<sup>3</sup> per 55 lb bag (0.014 m<sup>3</sup> per 27 kg bag).

## COVERAGE

20-25 ft<sup>2</sup> per 55 lb bag, applied at  $\frac{1}{4}$  inch thick (2 m<sup>2</sup> per 27 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	7 days	7,000/48.3
		28 days	8,200/56.58
Flexural Strength (psi/Mpa)	ASTM C-293	7 days	1,2000/8.28
		28 days	1,500/10.35
Modules of Elasticity in Compression (psi/Mpa)	ASTM C-469	28 days	3.67 x 10 <sup>5</sup> / 2.53 x10
Shrinkage (%)	ASTM C-157	7 days	.06
		28 days	.08
Rapid Chloride Permeability (Coulombs)	ASTM C-1202	28 days	820

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

## PACKAGING AND STORAGE

MCI-2701 is available in 60 lb bag (27 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).

## LIMITED WARRANTY

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4119 White Bear Parkway, St. Paul, MN 55110 USA  
Phone (651) 429-1100, Fax (651) 429-1122  
Toll Free (800) 4-CORTEC, E-mail info@cortecvci.com  
Internet <http://www.cortecvci.com>

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