

MCI®-2702 Overhead Repair Mortar

DESCRIPTION

MCI®-2702 Overhead Repair Mortar is a single component, polymer-modified, cement-based mortar designed for structurally repairing deteriorated concrete. MCI®-2702 is designed for use on vertical or overhead surfaces for repairs from ¼ to 2 inches (6 to 51 mm). Once mixed by drill and paddle, it can be applied in lifts for deeper applications, reducing waste and increasing job-site productivity.

PACKAGING & STORAGE

MCI®-2702 is available in a 50 pound (23 kg) bags.

To ensure best product performance, store in original packaging, indoors, and out of direct sunlight at 40-100 °F (4-38 °C).

Shelf life: 1 Year



HOW IT WORKS

Cortec's MCI®-2702 Overhead Repair Mortar formulation contains the optimal concentration of MCI® (Migratory Corrosion Inhibitor™) to both migrate and protect steel rebar embedded in concrete by creating a protective monomolecular layer that inhibits further corrosion of rebar within the patch area of the concrete repair.

WHERE TO USE

MCI®-2702 is designed to be used in vertical and overhead repairs on steel reinforced structures. The additional corrosion inhibitor package protects rebar from corrosive elements, making this an ideal repair material for aggressive environments.

ADVANTAGES

- Acrylic polymer-modified - increases durability and freeze-thaw resistance; provides excellent adhesion; improves flexural strength
- Non-sag, low slump - hangs up to 2 inches (51 mm) in one lift vertically and overhead; increases job-site productivity
- Low shrinkage - allows for a stable bond line; resists perimeter cracking
- Thermal compatibility with concrete - prevents delamination caused by thermal differences across the concrete-mortar bond line
- 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

PHYSICAL PROPERTIES

- Yield - 0.50 ft² per 50 lb bag (0.014 m³ per 23 kg bag)
- Coverage - 20-25 ft² per 50 lb bag, applied at ¼ inch thick (1.9-2.3 m² per 23 kg bag, at 6 mm thick)

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STANDARD TESTING AND PERFORMANCE CRITERIA

Property	Test Method	Time	Test Results
Working Time (minutes)			15-30
Compressive Strength (psi/Mpa)	ASTM C-109	7 days	>5000/>34.5
		28 days	>6300/>43.5
Flexural Strength (psi/Mpa)	ASTM C-293	7 days	>1100/>7.59
		28 days	>1,500/>10.35
Modules of Elasticity in Compression (psi/Mpa)	ASTM C-469	28 days	2.26 x 10 ⁶ /1.56 x 10 ⁴
Shrinkage (%)	ASTM C-157	7 days	<0.01
		28 days	<0.01
Direct Tensile Bond (psi/Mpa)	ASTM D-4541	28 days	500/3.45*

*100% Substrate Failure

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

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 cool water per 50 lb (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 (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 15-30 minutes, depending upon material and ambient and surface conditions.

APPLICATION

Apply only to surfaces which are sound, clean, and properly prepared. Dampen the area to be repaired 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 before each lift 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 more 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 desired finish.

CURING

Direct sun or wind may cause unwanted rapid surface drying. Curing may be accomplished by continuous water fogging for 48 hours or by covering 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.

CONSIDERATIONS

- 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 ¼ 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 feather edge.
- Do not add additional powder from other units.
- Do not overmix.

CLEANUP

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

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