

# MASTERPATCH® 240 CR

One-component, flowable, prepackaged repair concrete

## DESCRIPTION:

MASTERPATCH® 240 CR repair concrete is a prepackaged, proprietary blend of portland cement, graded aggregate and additives. It is a flowable repair concrete product that is ideally suited for spall, full-depth and overlay repair on horizontal and formed vertical and/or overhead surfaces.

### Application Thickness

- Minimum application thickness is 1 in. (25 mm)
- Recommended maximum application thickness is 8 in. (200 mm)

## RECOMMENDED FOR:

General repair and retrofit of:

- Spalled concrete
- Full-depth slabs and decks
- Concrete sidewalks and pavements
- Floors

## FEATURES/BENEFITS:

- Workable - 4 to 6 in. (100 to 150 mm) slump allows easy placement
- Prepackaged quality - bag-to-bag uniformity
- Versatile - trowel-applied horizontal and formed vertical and overhead placement
- Air-entrained - 5% to 7%

## STANDARDS COMPLIANCE:

Aggregate gradation meets ASTM C 33, Top Size: 3/8 in. (12 mm). Cement meets ASTM C 150, Type I requirements.

## PACKAGING/ESTIMATING:

MASTERPATCH 240 CR repair concrete is supplied in 55 lb (25 kg) moisture-resistant bags which yield approximately 0.41 ft<sup>3</sup> (0.0115 m<sup>3</sup>). This will cover approximately 4.9 ft<sup>2</sup> (0.46 m<sup>2</sup>) at a 1 in. (25 mm) depth before waste. The product is also available in 3,300 lb (1,500 kg) bulk bags.

## PERFORMANCE DATA:

Results were obtained when material was mixed with 0.61 gal (2.3 L) of water per bag and moist-cured at 73 °F (22 °C). Reasonable variations can be expected depending upon mixing equipment, temperature, application methods, test methods and curing conditions.

### PLASTIC PROPERTIES:

<b>Unit Weight</b>	145 lb/ft <sup>3</sup> (2,323 kg/m <sup>3</sup> )	
<b>Working Time</b>	1 hour	
<b>Set Times (h:min)</b> (ASTM C 266)	Initial Set 6:00	Final Set 8:00

### HARDENED PROPERTIES:

	<b>28 Day psi (MPa)</b>		
<b>Slant Shear Bond Strength</b> (ASTM C 882, Modified <sup>1</sup> )	2000 (13.8)		
<b>Splitting Tensile Strength</b> (ASTM C 496)	500 (3.5)		
<b>Flexural Strength</b> (ASTM C 78)	750 (5.2)		
	<b>1 Day psi (MPa)</b>	<b>7 Day psi (MPa)</b>	<b>28 Day psi (MPa)</b>
<b>Compressive Strength</b> (ASTM C 109 <sup>2</sup> )	3000 (20.7)	5000 (34.5)	7000 (48.3)

<sup>1</sup> No epoxy-bonding agent used.

<sup>2</sup> Using 2 in. (50 mm) cubes.

## SURFACE PREPARATION:

### Concrete

Perform surface preparation in compliance with ICRI Technical Guideline No. 03730, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion". Remove all unsound or delaminated concrete providing a minimum 1/4 in. (6 mm) substrate profile and 3/4 in. (20 mm) clearance behind corroded reinforcing steel. The perimeter of the area to be patched should be sawcut to a minimum depth of 1 in. (25 mm) to prevent featheredges. After concrete removal and prior to placement, mechanically abrade the concrete surface to remove all bond-inhibiting materials from the concrete substrate and to provide additional mechanical bond. Unless a bonding agent is used, presoak the prepared concrete surface to provide a saturated, surface dry (SSD) condition.

## **SURFACE PREPARATION (CONTINUED):**

### **Corroded Reinforcing Steel**

Remove all oxidation and scale from the exposed reinforcing steel in accordance with ICRI Technical Guideline No. 03730 "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion". For additional protection from future corrosion, coat the prepared reinforcing steel with EMACO P22 or EMACO P24 rebar coatings.

### **MIXING:**

Add 0.59 to 0.66 gallons (2.25 to 2.5 liters) of potable water per 55 lb (25 kg) bag of MASTERPATCH 240 CR repair concrete. Mechanically mix using a mortar mixer of an appropriate size. Pour approximately 90% of the mix water into the mixing container then charge the mixer with the bagged material. Add the remaining mix water as required to obtain desired consistency. Maximum recommended slump is 7 in. (175 mm). Mix for 3 to 5 minutes until a homogeneous consistency is achieved.

### **APPLICATION:**

#### **Formed Applications**

Immediately prior to placement, drain presoaking water from the form leaving a saturated substrate with no excess water remaining. For vertical and overhead applications, air relief vents should be placed at the highest point in the repair area to prevent voids from entrapped air. Apply with sufficient pressure to ensure intimate contact with the substrate surface. A long open-time bonding agent such as CONCRESEIVE® LIQUID LPL bonding adhesive may be used in lieu of a saturated substrate. In this case, place the MASTERPATCH 240 CR repair concrete before the bonding agent becomes tack-free. Remove forms when sufficient strength has developed. For further information, consult ACI 347R "Guide to Formwork for Concrete".

### **Horizontal Applications**

Scrub a bond coat of MASTERPATCH 240 CR repair concrete into the prepared saturated surface with a stiff bristle broom or brush. A long open time bonding agent such as CONCRESEIVE LIQUID LPL may be used in lieu of a bond coat. MASTERPATCH 240 CR repair concrete must be placed before the bond coat or bonding agent dries. Level as needed to match original concrete elevation. Where rapid drying conditions exist (such as hot, dry, windy conditions) use CONFILM® evaporation reducer. Finish the final surface as required.

### **CURING:**

Curing should continue after form removal. Proper curing is extremely important and should be conducted in accordance with ACI 308 "Standard Practice for Curing Concrete". Apply a curing compound which complies with the moisture retention requirements of ASTM C 309 such as MASTERKURE® 100W or MASTERKURE 200W curing compounds; or moist cure for a minimum of 7 days (including time in the form).

### **LIMITATIONS:**

Minimum application thickness is 1 in. (25 mm). Do not mix partial bags. Minimum ambient and surface temperatures should be 45 °F ( 7 °C) and rising at the time of application.

### **STORAGE AND SHELF LIFE:**

Unopened bags have a shelf life of 12 months when stored under cover in dry conditions between 45 and 90 °F (7 and 32 °C).

### **RELATED BULLETINS:**

Material Safety Data Sheet — MASTERPATCH 240 CR Repair Concrete

For additional information, contact your local Master Builders representative.

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