

EMACO® R350 CI

One-component, polymer-modified, shrinkage-compensated, lightweight vertical/overhead repair mortar with integral corrosion inhibitor



DESCRIPTION:

EMACO® R350 CI repair mortar is a one-component, polymer-modified, shrinkage-compensated product which contains an integral corrosion inhibitor. The product is ideally suited for patching and/or resurfacing distressed concrete. The lightweight nature of the product allows for excellent build without sagging. EMACO R350 CI repair mortar is designed for both interior and exterior use.

Application Thickness:

Vertical/Overhead: Featheredge to 2-3/4 in. (70 mm) per lift.

RECOMMENDED FOR:

- Vertical and overhead surfaces
- Building facades
- Balconies and columns
- Beam and soffit repair
- Bridges and parking garages
- Retaining walls
- General spalled areas
- Tuckpointing

FEATURES/BENEFITS:

- Corrosion resistant - contains an integral corrosion inhibitor
- One component - easy mixing and handling
- Low permeability - resists moisture and chloride intrusion
- Low modulus of elasticity - improved compatibility for surface renovation
- Economical - excellent yield per bag

PACKAGING/ESTIMATING:

EMACO R350 CI repair mortar is supplied in 55 lb (25 kg) moisture-resistant bags which yield approximately 0.62 ft³ (0.017 m³). This will cover approximately 7.4 ft² (0.69 m²) at a 1 in. (25 mm) depth before waste.

PERFORMANCE DATA:

Results were obtained when material was mixed with 0.98 gallons (3.7 liters) of water per bag and cured at 70 °F (21 °C). Reasonable variations can be expected depending upon mixing equipment, temperature, application methods, test methods, and curing conditions.

PLASTIC PROPERTIES:

Unit Weight 103 lb/ft³ (1,650 kg/m³)

Working Time 30 minutes

Set Times (h:min) (ASTM C 266)	Initial Set 0:45	Final Set 1:30
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HARDENED PROPERTIES:

	1 Day psi (MPa)	7 Day psi (MPa)	28 Day psi (MPa)
Direct Shear Bond Strength (Michigan DOT)	250 (1.7)	300 (2.1)	400 (2.8)
Slant Shear Bond Strength (ASTM C 882, Modified ¹)	500 (3.5)	1100 (7.6)	1500 (10.4)
Modulus of Elasticity at 28 Days (ASTM C 469)	2.0 x 10 ⁶ psi (14.0 GPa)		
Rapid Chloride Permeability at 28 Days (ASTM C 1202/AASHTO T 277)	300 coulombs		
Freeze-Thaw Resistance at 300 Cycles (ASTM C 666, Procedure A)	100% RDM		
Scaling Resistance at 50 Cycles (ASTM C 672)	1, very slight scaling		

	1 Day psi (MPa)	7 Day psi (MPa)	28 Day psi (MPa)
Splitting Tensile Strength (ASTM C 496)	200 (1.4)	300 (2.1)	600 (4.1)
Flexural Strength (ASTM C 348)	250 (1.7)	700 (4.8)	900 (6.2)
Compressive Strength (ASTM C 109)	1500 (10.4)	3500 (24.2)	5000 (34.5)

¹ No epoxy-bonding agent used, air cured per ASTM C 1042.

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 1/8 in. (3 mm) substrate profile and a 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 1/4 in. (6 mm). After concrete removal and prior to placement, mechanically abrade the concrete surface to remove all bond-inhibiting materials from the concrete substrate to provide a saturated, surface dry (SSD) condition.

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 P24 rebar coatings.

MIXING:

Add 0.95 to 1.1 gallons (3.6 to 4.1 liters) of potable water per 55 lb (25 kg) bag of EMACO R350 CI repair mortar. 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. Mix for 3 to 5 minutes until a homogeneous consistency is achieved.

APPLICATION:

Remove excess water from the saturated substrate and apply while taking proper consideration for compaction around reinforcing steel. Scrub a bond coat of EMACO R350 CI repair mortar into the prepared surface with a stiff bristle broom or brush. EMACO R350 CI repair mortar must be placed before the bond coat dries. When applying in multiple lifts, scratch the preliminary lift before initial set. Apply the next lift after the preliminary lift has reached final set. If the next lift is not to be immediately placed, keep the surface continually moist. Cut-off or level as required to match the 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:

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 200W curing compounds; or moist cure for a minimum of 2 days.

SAFETY:

For industrial and professional use only. Refer to MSDS before use. Wear appropriate protective clothing and eye protection.

LIMITATIONS:

Do not mix partial bags. Minimum ambient and surface temperatures should be 45 °F (7 °C) and rising at the time of application. Do not use solvent-based curing compounds. Do not mix longer than 5 minutes.

STORAGE AND SHELF LIFE:

Unopened bags have a shelf life of 18 months when stored under cover in dry conditions between 45 and 90 °F (7 and 32 °C).

RELATED BULLETINS:

Material Safety Data Sheet — EMACO R350
Installation Bulletin (7I57) #112675 — EMACO R350
Specification Bulletin (7S57) #112645 — EMACO R350

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