



Item# RCME1 Revised: 12/28/2019

Epoxy Modified Mortar

High density, microsilica/ceramic epoxy-based cement

Description

Epoxytec Mortartec Ceramico™ is a next generation, epoxy modified mortar. A highly advanced, formulated epoxy blend incorporating cutting-edge waterborne epoxide technology with proprietary engineered curing; combined with a specific balance of Portland cement, hardened ceramics, graded silica aggregate, synthetic fibers and silica fume to produce one of the most coveted mortars in the industrial market today. This results in a smooth mortar application with the one of the hardest mortar surfaces in the industry once cured. The Mortartec Ceramico™ is industrial-grade and exhibits excellent performance properties unlike any mortar technology before it, with incredible adhesive properties, enhanced barrier sealing capabilities assisting with minimizing out-gassing and moisture vapor transmission (MVT).

Often specified as a resurfacer, the material acts as an enhancement to any subsequent epoxy top coat systems. With a resinous open crosslink during initial gel-time it serves as a bonding layer and crosslinking system, boosting the adhesion of epoxy top coats and making any system cohesively improved and better performing in combination; the mortar serves as a self-priming underlayment, top coated with a variety of high-performance epoxies for use when dealing in extremely aggressive environments.

Mortartec Ceramico™ is a high-performance solution for lining, surfacing/resurfacing, patching and filling voids and bug holes on concrete substrates. The mortar may be hand or spray applied, typically from 1/16" to 1" in depth. Uses include repairing concrete walls, ceilings, lining brick or concrete infrastructure, etc. Mortartec Ceramico™ provides an extremely dense matrix and will accept coatings at earlier stages than typical Portland cement repair products.

Typical Uses

Repair mortar and/or total substrate resurfacer for concrete to aid in top coating and lining.

- Industrial infrastructure repair / resurfacing
- Sanitary sewers / manholes / lift stations
- Water + wastewater treatment plants

Features

- Advanced epoxy-modified-cement technology
- Next generation, acid resistant mortar (surpassing calcium aluminate)
- Mitigation of MVT and outgassing
- Same day recoat / top coat (~3 hours after applied)
- Incredible adhesion
- Self-priming open resinous cross-link for top coat bond optimization
- No need for further preparation after cure
- Ultra-thin film capability (1/16"), up to 1" per pass
- "Green" concrete resurfacing solution

Surface Preparation

Remove all loose concrete, brick or mortar from affected areas by mechanical means. Surfaces shall be free of paints, oils, dirt, dust, curing compounds, sealers, form release agents or any material that would prevent mortar from coming into contact with the open pores of the concrete. Shot blasting, abrasive blasting, chipping and high-pressure water cleaning (5,000 psi min.) are all excellent surface preparation methods. Smooth concrete surfaces may require etching.

IMPORTANT: Dampen area to achieve a saturated, surface dry condition (SSD). Substrate should remain moist, SSD as much and as long as possible until the application.

Prepare concrete to remove laitance, form release agents, curing compounds, sealers and other contaminants and to provide surface profile in accordance with SSPC-SP13/NACE 6, ICRI CSP5. To repair large bugholes, and spalls, coarse aggregate or preapproved fillers may be added.

Mixing

Pour liquid Part B into a container large enough to hold all components. With agitation slowly add Part A. When blended, slowly sift powder, Part C, while continuing agitation. Do not dump all of the Part C into the liquids at one time. Mix for at least two minutes or until the cement-sand is thoroughly wetted and a smooth consistency is obtained. Important: Do not add additional Part C.



Mortartec Ceramico™

Application Method

Allow new concrete to cure 28 days, or until compressive strength has reached accepting levels. Verify dryness by testing for the presence of moisture with the "Plastic Film Tape- Down Test" (Reference ASTM D4263) or by other industry acceptable methods. When moisture is detected on horizontal surfaces, perform "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" (Reference ASTM F1869). Moisture content not to exceed three pounds per 1,000 sq.ft. in a 24 hour period. Then proceed to mix, apply, and finish. If within recoat times, no preparation is required for subsequent lifts or top coats.

Coverage

Allow for wastage due to surface irregularities porosity. Maximum performance is obtained when the product is expertly applied as a continuous, void-free film. When using Mortartec Ceramico™, surface should be "pre-wet" or dampened with potable water to a Saturated Surface Dry (SSD) condition; the concrete is darkened by water but there is no pooling on the surface. Do not oversaturate the surface.

Thickness	Coverage/Kit (~0.41 Ft ³)
1/16" (62.5 mils)	77 sq ft (7.15 m ²) theoretical
1/8" (125 mils)	38.5 sq ft (3.58 m ²) theoretical
1/4" (250 mils)	19.25 sq ft (1.8 m ²) theoretical
1/2" (500 mils)	10 sq ft (1.00 m ²) theoretical

Thinning

If Mortartec Ceramico™ begins to thicken in pail during use when applying by hand, do not add more water. Simply re-agitate with drill to bring back original creamy texture. Because Mortartec Ceramico™ is waterborne epoxy modified, ONLY while spraying, it is possible to add additional water in measured quantities without affecting performance as spraying cause some loss of moisture. Up to 6oz of additional water can be safely added, if Mortartec Ceramico™ is being transferred with low-pressure spray application. Use only potable water.

Equipment

Mortar hawk, steel, concrete finishing trowels, broad knives and rubber floats are recommended. Material can be transferred to the surface by utilizing hydraulic spray equipment (i.e. Graco M680 or S340e Mortar Pump or a 9:1 WIWA 410 pump) followed by troweling to seal the material. For a smoother finished appearance, trowel licks may be reduced by using a dry sponge to smooth out the Mortartec Ceramico™ material. Note: If white liquid is brought to the surface during this process, material is being overworked and/or oversaturated. Overworking or oversaturating the surface may have an adverse effect on the adhesion of subsequent coatings applied. If this is evident, then allow for Mortartec Ceramico™ cure and remove surface deposit using concrete rub brick, or other applicable method.

Limitations

Surface temperatures must be no higher than 110F during application, and no less than 65F. Protect from rain until initial set has been achieved. To avoid flash setting, do not contaminate Mortartec Ceramico™ with other type cements.

- Minimum thickness: 1/16 inch
- Maximum thickness: 1 inch per pass, if rebuilding requires more depth, wait for the gel time to set in order to hang multiple coats in successive applications (1/2 hr @ 85F) Note: For alternative repair methods of large spalls and other cavities deeper than the recommended maximum thickness, contact Epoxytec.
- Recoat windows start as soon as gel begins (typically 2 hours minimum @ 77F), do not exceed 36 hours @ 77F for recoat or tie-in top coats.
- Consult with Epoxytec for detailed instruction applying to "green" concrete

Storage & Handling

- Shelf life: 24 months, sealed.
- Storage: Store in a dry area away from direct sunlight. The product should be conditioned to between 70° F and 90° F before use, or material may clump.

Item & Color

- #50 Kit (grey) Item# RCME1-K1

Technical Properties

Volume solids	100%
VOCs	0.1 lbs/gallon
# of components	3-parts (A,B,C)
Net weight (kit)	48.72lbs (1 jug, 1 jar, 35.5 lbs bag = 3.1 gal. mixed)
Cure / Recoat times @ 77F	3-4 hours (touch dry) 36 hours (full cure)
Chemical Resistance	
33% sulfuric immersion	1.88% (weight loss)
Hydro-sulfuric (H ₂ S)	A-Excellent (up to 400ppm)
Modulus of Elasticity ASTM C-469	
24 hours	3,000,000+ psi
28 days	4,000,000+ psi
Flexural Strength ASTM C-293	
24 hours	800+ psi
28 days	1,300+ psi
Tensile Strength ASTM C-307	650+ psi
Shear Bond ASTM C-882	>3,000 psi
Shrinkage ASTM C-157	<0.005
Concrete Adhesion ASTM D7234	>500 psi (substrate failure)
Pot life	1.0 hrs @ 77F
Shrinkage ASTM C-596	< 0.01%
Freeze/Thaw ASTM C666	100 cycles, no damage

Health & Safety

Consult the Material Safety Data Sheet for further health and safety information.

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