

mCrete™ ROC Liner

Product Technical Data

MCOR™

5800

MCOR™ 5800 (mCrete™ ROC Liner) is a next generation, advanced epoxy modified mortar. A formulated blend of cutting-edge waterborne epoxide technology with proprietary engineered curing agents; combined with a precise balance of Portland cement, toughened ceramics, graded silica aggregate, synthetic fibers and silica fume to produce a new generation of epoxy mortars. The material presents a smooth mortar application with the hardest surface in the industry once cured. MCOR™ 5800 is industrial-grade and exhibits excellent acid and chemical resistance unlike any mortar technology before it, with incredible adhesive properties (even when applied thin), enhanced barrier sealing capabilities assisting with minimizing out-gassing, hydrostatic and moisture vapor transmission (MVT).

Often specified as a stand-alone liner surpassing corrosion protection of older mortar lining technologies (even outperforming dated technologies, such as calcium aluminate), the mortar also acts as an enhancement to any subsequent epoxy top coat systems. With a resinous open crosslink during initial cure it serves as a bonding layer and crosslinking system, boosting the adhesion of 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 and polymer technologies for use when dealing in extremely aggressive environments.

MCOR™ 5800 is a high-performance solution for lining, surfacing/resurfacing, and patching voids on concrete substrates. The mortar may be hand or spray applied, typically between 1.5mm – 25mm (1/16" to 1"). MCOR™ 5800 provides an extremely dense matrix and will accept coatings at earlier stages than typical Portland cement repair products.

Features

- Advanced epoxy-modified-cement technology
- Next Generation, chemical resistant mortar (surpassing calcium aluminate)
- Sulfuric and hydrosulfuric acid protection
- Used to repair or as a stand-alone liner
- Seals I&I and reduces hydrostatic 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 1.5mm – 25mm (1/16" to 1") per pass

Applications Include

Uses include repairing concrete walls, ceilings, lining brick or concrete infrastructure, etc.

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

Surface Preparation

The success of any coating application is directly proportional to the completeness of the substrate preparation and the care the application crew puts into the application. Surface must be clean and sound. Verify that the temperature of the surface is at least 3 degrees C (5 degrees F) higher than the dew point temperature to preclude condensation.

Concrete: Remove all oil, dirt, and contaminants and prepare the concrete by abrasive blasting, high pressure water blasting, jetting and/or approved mechanical methods to SSPC SP-13/NACE No. 6 "Surface Preparation of Concrete." Surface should be dry and free of dust.

Application Method

Material is supplied in one (1) containers with three (3) parts (base+cure+media) as a unit. If possible, always mix a complete unit in the proportions supplied. Kits come proportioned; DO NOT ADD water, adding more or less liquid will adversely affect the cured physical properties.

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 any additional sand/cement than what's supplied.

NOTE: Before applying, allow new concrete to cure 28 days, or until compressive strength has reached accepting levels. obtained when the product is expertly applied as a continuous, void-free film. When using MCOR™ 5800, 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. Although mCrete ROC Liner has high tolerances to moisture, do not apply on moisture saturated concrete above 85% or on active leaks. Proceed to mix, apply, and finish. If within recoat times, no preparation is required for subsequent lifts or top coats.

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. 11:1 Grover grout pump or 9:1 WIWA 410 pump, or similar) 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 MCOR™ 5800 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 MCOR™ 5800 cure and remove surface deposit using concrete rub brick, or other applicable method.



3000 N 29 CT, Hollywood, FL 33020
mcor.net | T: 888.961.MCOR (6267)

Important! Although the technical details and recommendations contained in this data sheet correspond to the best of our knowledge and experience, all the above information must, in every case be taken as merely indicative and subject to confirmation after long-term practical applications; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product. The sole liability of MCOR and Epoxytec International, Inc. for any claims out of the manufacturer's use of sale of its products shall be for the buyer's purchase price.

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Thinning

If MCOR™ 5800 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 MCOR™ 5800 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 175 mL (6oz) of additional water can be safely added, if MCOR™ 5800 is being transferred with low-pressure spray application. Use only potable water.

Volume Capacity & Color

A unit is a three-component (base+cure+media).
The volume capacity of a 1 kg of mixed MCOR™ 5800 yields 533 cm³ [33 in³].
MCOR™ 5800 is available in: Grey (GRY)

Storage & Handling

Shelf life: 24 months, sealed.
Store in a dry area away from direct sunlight.
Clean tools with water.

Limitations

The product should be conditioned to between 20C and 32C (70F and 90F) before use, or material may clump. Surface temperatures must be no higher than 43C (110F) during application, and no less than 18C (65F). Protect from rain until initial set has been achieved. To avoid flash setting, do not contaminate MCOR™ 5800 with other type cements.

- Minimum thickness: 1.5mm (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 @ 30C or 85F)
Note: For alternative repair methods of large spalls and other cavities deeper than the recommended maximum thickness, contact MCOR.
- Recoat windows start as soon as gel begins (typically 2 hours minimum @ 25C or 77F), do not exceed 36 hours @ 25C (77F) for recoat or tie-in top coats.

Safety

Consult Material Safety Data Sheet (SDS) for all material safety information.

Technical Properties

Type:	Waterborne epoxy-modified-mortar
VOCs	0.1 lbs/gallon
# of components	3-parts (A,B,C)
Cure / Recoat times @ 25C (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	20,685+ Mpa (3,000,000+ psi)
28 days	27,580+ Mpa (4,000,000+ psi)
Flexural Strength ASTM C-293	
24 hours	5.5+ Mpa (800+ psi)
28 days	9+ Mpa (1,300+ psi)
Tensile Strength ASTM C-307	4.5+ Mpa (650+ psi)
Shear Bond ASTM C-882	>20.5 Mpa (3,000 psi)
Shrinkage ASTM C-157	<0.005
Concrete Adhesion ASTM D7234	>3.5 Mpa (500 psi) - substrate failure
Pot life	1.0 hrs @ 25C (77F)
Shrinkage ASTM C-596	< 0.01%
Freeze/Thaw ASTM C666	100 cycles, no damage

Coverage

Allow for wastage due to surface irregularities porosity.

Thickness (Metric)	Coverage/Kit (theoretical)
1.5 mm (min. thickness)	5.9 m ²
5 mm	2.3 m ²
1 cm	1.2 m ²
5 cm	0.235 m ² (2,350 cm ²)
10 cm	0.12 m ² (1,200 cm ²)

Thickness (Standard)	Coverage/Kit (theoretical)
1/16" (62.5 mils)	77 sq ft
1/8" (125 mils)	38.5 sq ft
1/4" (250 mils)	19.25 sq ft
1/2" (500 mils)	10 sq ft
1" (1000 mils)	5 sq ft



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