



# Miracote MPC

## Product Technical Data Sheet



**Miracote MPC (Multipurpose Protective Coating)** is a polymerized, two component, cementitious protective coating that can be applied over a variety of surfaces including concrete, masonry, metal, wood, and tile. It consists of a unique rubber-like polymer liquid that is mixed with a proprietary cement and aggregate blend. Miracote MPC is then typically applied in two or more coats by trowel, brush, roller, spray or notched squeegee and back roll.

Designed for both exterior and interior use, **Miracote MPC** restores and protects concrete surfaces from the consequences of exposure to water and chloride intrusion, freeze thaw damage and carbonation. An extremely durable, cost-effective protective coating **Miracote MPC** is “breathable” and allows for the transmission of inherent moisture vapor within concrete without blistering or delamination. By lowering moisture content within the concrete, **Miracote MPC** helps reduce the potential for corrosion of steel reinforcement.

### WHERE TO USE

- Concrete restoration and protection projects
- Resurfacing flawed or discolored concrete
- Bridge parapets and abutments
- Concrete elements in marine environments
- Renovations to stadiums and arenas
- Driveways, sidewalks, balconies, and breezeways
- Pool decks and patios
- Use with MiraFlex XL for lead paint encapsulation
- Secondary containment and water tank linings

### ADVANTAGES

- NSF-61 Certified for use in potable water.
- Moisture vapor permeable – reduces potential for corrosion.
- Protects against penetration of water, chlorides, and CO<sup>2</sup>.
- Ideal for exterior/interior, pedestrian, and vehicular traffic.
- Mitigates corrosion when used with MiraPrime Aqua-Blok XL.
- Enhances appearance and curb appeal of concrete & masonry.
- Excellent adhesion to most substrate.
- Extensive choice of colors, textures, and patterns.
- Zero VOC – meets LEED point criteria.
- Slip resistance built-in with most application methods.

### COVERAGE RATES

Theoretical coverage per unit:

One coat Application .....	500 sq. ft. @ 1/32” (31.25 mils)
Two Coat Application.....	250 sq. ft. @ 1/16” (62.50 mils)
Three Coat Application.....	166 sq. ft. @ 3/32” (93.75 mils)
Pedestrian Traffic.....	Minimum two coats required.
Vehicular Traffic.....	Minimum three coats required.

Approximate Yield/Unit .....

1.25 cu. ft. (regular powder only)
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Actual consumption rates are dependent on many factors including, but not limited to, substrate texture and porosity, variations in applied thickness and normal allowance for waste.

### PACKAGING and COLORS

- MPC Liquid Catalyst Component (5-gallon pail)
- MPC Regular Powder, Natural Gray or White\* (55 lb. bag)
- MPC Hard Powder, Natural Gray or White\* (55 lb. bag)
- \*To match Standard Colors requires use of White Powder
- MPC Regular Powder, Gray & White Blend (55 lb. bag)
- MPC Special Custom Blends Available (55 lb. bag)
- MPC Smooth\*\* Powder, Natural Gray or White (40 lb. bag)
- \*\*Used only in MPC Micro-topping (Refer to Mir. 250 PTDS)

### MIX RATIO

- Regular: 5Gal Liquid Catalyst: 2-bags of MPC Regular Powder.
- Smooth: 5Gal Liquid Catalyst: 2-bags of MPC Smooth Powder.

### SHELF LIFE AND STORAGE

Shelf life is one year from the date of manufacture provided containers remain unopened and material is stored in a protected environment free from moisture, excessive heat and freezing temperatures, and direct sunlight.

### TYPICAL PHYSICAL PROPERTIES @ 75°F (24°C)

<b>Working Life</b> .....	15-60 minutes (temperature dependent)
<b>Recoat Time</b> .....	1-4 hours or when dry
<b>Open to Traffic</b> .....	12 – 24 hours
<b>Adhesion</b> ASTM C-882, Type 1 .....	515 psi
<b>Tensile Strength</b> ASTM C190 .....	450 psi
<b>Compressive Strength</b> ASTM C109.....	2,440 psi
<b>Water Vapor Permeability</b> ASTM E96 .....	1.96 perms/in
<b>Water Absorption</b> Weight gain of 4” coated concrete cube after 21 days water immersion (CMCH).....	<2%
<b>Elongation</b> ASTM D412.....	12%
<b>Shore Hardness</b> ASTM D2240.....	Durometer A - 82
<b>Freeze-Thaw Resistance – 50 Cycles</b> .....	no scaling/peeling/flaking (Concrete cylinders immersed for 8 hrs. in coated saltwater solution followed by 16 hrs. of freezing).
<b>Weathering</b> ASTM G23 .....	No visible degradation (Method I Procedure, 60 cycles)
<b>Resistance to Wind Driven Rain</b>	
Fed. Spec. TT-C-558 .....	(8hrs)
Fed. Spec. TT-C-0035 .....	(24hrs)
At 5” water pressure and 60 gal/hr water flow,	
no water or dampness noted on back of test panels.	
<b>Resistance to Hydrocarbon Substances</b> .....	ASTM D1308 (Spot Open Test) No softening or attack – after 21 days repeated re-application of gasoline, SAE-10 motor oil and jet fuel.
<b>Impact Resistance</b> MIL-D-3134, Para.4.7.3	
2 lb steel ball dropped from 8’ height onto coated steel plate .....	No cracking or detachment
<b>Flammable Properties</b> ASTM E84 .....	Flame spread – 4 Smoke Density – 0
<b>Fire Resistance</b> UL790.....	Complies as Class A
<b>Potable Water Compatibility</b> .....	NSF/ANSI Compliant

### OVERVIEW OF INSTALLATION STEPS

- **Surface Preparation** - All surfaces to be coated must be clean, sound, and free from any bond inhibiting substances including, but not limited to, grease, oil and any other contaminants or loosely adhered materials. For concrete substrates, a minimum surface profile of a CSP-3 or higher is required depending on overall substrate conditions and coating requirements. Concrete and other porous or absorptive substrates should be **(SSD) saturated surface dry** with no standing water at the time of the Miracote MPC application to the substrate.
- **Mixing – Miracote MPC** must be mixed mechanically using a low-speed drill with a “Jiffy-type” or similar Miracote-approved mixing paddle in a clean mixing container. Pre-mix Liquid Catalyst first to re-disperse any polymer solids that may have settled on the bottom of the pail. When mixing, always pour the liquid catalyst component into the mixing pail first and slowly add the powder component. The mix ratio of powder to liquid may be slightly modified depending on whether a slurry or trowel-grade consistency is desired. Thoroughly mix the material until a uniform smooth consistency is achieved that is free of lumps and pockets of dry powder.

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### OVERVIEW OF INSTALLATION STEPS (Continued)

- **Application** - Miracote MPC can be applied using a roller, brush, broom, trowel, magic trowel, squeegee, or spray equipment. Apply Miracote MPC only on properly prepared substrates and be sure that all voids and bug holes are properly filled by working material into the substrate.

### FOR BEST RESULTS

- Always install a minimum 4' by 4' test area or job site mock-up for owner approval of acceptable color, texture, finish adhesion and any other critical requirements prior to proceeding with the installation.
- Upon the completion of concrete surface preparation, it is highly recommended to perform in-situ adhesion tests for verification of acceptable substrate tensile strength. Consult ICRI Guideline No. 210.3R-2013 for conducting pull-off tests to evaluate suitable bond of concrete surface materials.
- Prior to application perform concrete surface repair only with MiraPatch pre-packaged repair mortars.
- Verify that the most current versions of product technical data sheets (PTDS), material safety data sheets (MSDS), and installation guidelines (IG) are being utilized for project submittals and application reference.
- Protect materials at all times from excessive heat and cold.
- Precondition liquid catalyst and powder between 55°F(4.5°C) to 80°F(4.5°C) prior to mixing and application.
- Regularly check wet film thickness with mil gauge and monitor product consumption to ensure correct application thicknesses are obtained.
- The proper application of this product is the sole responsibility of the end user. Job site visits by Miracote representatives are only for the purpose of making recommendations. Supervision and quality control are the sole responsibility of the user.
- Measure surface and ambient temperatures to ensure that material is only applied when temperatures are 40°F (4.5°C) and rising during placement and cure time.
- As with concrete and other cementitious or masonry products, surface staining and tire marking may occur. Apply a clear film-forming or penetrating sealer to enhance stain resistance, cleanability and minimize tire marking.
- Natural gray and pigmented cementitious coatings may exhibit color variegation due to fluctuating evaporation rates during cure. For better color consistency, apply a topcoat of MiraGard Colorbond or other Miracote pigmented topcoats.
- Condition the concrete substrate with MiraPrime Aqua-Blok XL to minimize the potential for efflorescence migration and mitigate the corrosion of reinforcing steel at a 95% confidence limit as tested per U.S. Bureau of Reclamation M-82 Standard Protocol to Evaluate the Performance of Corrosion Mitigation Technologies.

### LIMITATIONS

- Expect reflection of dynamic cracks and control joints in substrate. Implement detail as per current published installation guidelines (IG's).
- Staining, streaking and efflorescence may occur when fresh coating is exposed to excessive ponding or running water.
- Avoid the application of solvent-based sealers or coatings until MPC has been allowed to cure for a minimum of 72 hours under normal temperature and relative humidity conditions.
- As with all cement-based materials, avoid any contact with aluminum which can cause an adverse reaction due to Miracote MPC's cementitious content. If unavoidable, prime aluminum with MiraPrime Membrane B.
- Concrete structures or elements containing hydrophobic crystalline admixtures may result in substrates that will be difficult to produce acceptable adhesion. Perform in-situ pull-off testing to verify suitable and measurable tensile bond strengths.
- Use extreme caution when resurfacing scaled concrete surfaces in freeze-thaw zones due to the potential for insufficient air-entrainment. These types of unsound surfaces may continue to scale at the bond line due to migration of ground moisture.
- Reported product technical data published in this document is based on controlled laboratory tests conducted in controlled conditions. Actual field installed properties may vary due to climatic conditions, mixing and application methods, equipment, application and curing conditions, and independent test methods.
- After a heavy, pro-longed downpour or following pressure-washing operations concrete substrates should be allowed to sufficiently vacate excess moisture prior to proceeding with the application.

### LIMITED WARRANTY

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CAUTION: ALWAYS KEEP OUT OF THE REACH OF CHILDREN.



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