

MIGRATORY CORROSION INHIBITOR (MCI®) PRODUCTS FOR CONCRETE



MCI®-2018 Sealer, Patented MCI®-2018 AG Sealer, Patented

PRODUCT DESCRIPTION

MCI-2018 is a silane based concrete sealer containing time-proven Migrating Corrosion Inhibitors (MCI®). MCI-2018 is a small molecule product that allows deep penetration into concrete and provides water repellency by chemically reacting with the cementitious substrate under proper application. Treated substrates are hydrophobic and retain their original appearance. MCI-2018 seals surface pores, which prevents intrusion of chloride and carbonation and protects from the ingress of wind-driven rain. Treated concrete surfaces are fully breathable and their natural moisture-vapor transmission is not affected.

MCI-2018's unique feature is its Migratory Corrosion Inhibitor action that allows this product to migrate through even the densest concrete structures. It seeks out embedded reinforcement to form a protective monomolecular corrosion inhibiting layer on the steel, which inhibits the electrochemical corrosion process between the rebar and the chloride ions, oxygen, and moisture in the concrete. MCI-2018 will extend the service life of structures.

An alkaline environment, such as new concrete, will catalyze the reaction and speed the formation of MCI-2018's hydrophobic surface. As a standard procedure, fresh concrete should be allowed to cure for 28 days before application. Any repair work should be performed at least three days before application.

ADVANTAGES

- MCI-2018 offers a time proven corrosion inhibiting technology that will extend the life of all reinforced concrete structures such as commercial buildings, parking decks, garages, and bridge structures
- Protects against the harmful effects of corrosion by migrating into even the densest concrete
- Migratory inhibitor reduces further corrosion
- Easily applied to concrete by spray, roller, or squeegee, lowering the cost of labor and equipment
- Non-toxic, contains no nitrites, phosphates, chromates
- MCI-2018 molecules are very small, allowing penetration into the smallest concrete pores
- Enhances the durability of reinforced concrete and increases surface abrasion resistance
- Blocks carbonation and chloride ion intrusion
- Not a vapor barrier
- No blushing, peeling or yellowing
- Helps protect against alkali attack

COVERAGE RATE

Application rates will vary depending on surface porosity and number of applications. Approximate coverage rate is 125-175 ft²/gal. (3-4.3 m²/l). Before applying, it is recommended that preliminary tests be carried out to determine dosing.

APPLICATION

Surfaces should be free of standing water, surface dirt, dust, oils, grease, curing compounds, efflorescence, laitance, and other contaminants. MCI-2018 may be applied to damp surfaces, although dry surfaces are preferred to achieve maximum penetration into the substrate.

Application can be performed using airless sprayer, roller or brush. When a brush or roller is used, repeated applications should be made until the surface remains moist for a few minutes. If an airless is used, application should continue until the substrate is thoroughly saturated. Sprayers should be fitted with solvent resistant hoses and gaskets.

For best results, two applications are recommended, with the second application applied using a wet on wet technique, i.e., the surface is wet from the first application, but not glossy. During application, precautions should be taken to protect the surrounding area from overspray and run-off.

APPLICATION CONDITIONS

MCI-2018 should not be used on structures under hydrostatic pressure. Do not apply when temperature is at or below 5°C (40°F) or on extremely windy days when evaporation of the solvent would be too rapid. MCI-2018 will not penetrate film-forming sealers, coatings, paints, membranes, or asphalt.

If a coating will be used over MCI-2018, a seven day period is recommended before coating. A compatibility test should also be performed.



TYPICAL PROPERTIES

Appearance:

MCI-2018	Clear colorless to yellow liquid
MCI-2018 AG	Green liquid
pH	8.5-9.5 (1% in water)
Density	7.5-7.6 lb/gal (0.90-0.92 kg/l)
VOC	2.2 lb/gal (245 g/l)

TECHNICAL DATA FROM LABORATORY TESTS

NCHRP - Series II

Reduction in Chloride Ion Content

The samples showed an average of 88% reduction when a single coat was applied at 125 ft²/gal.

NCHRP - Series IV, Southern Exposure

Accelerated Weathering Tests

24 weeks of accelerated weathering testing included salt water exposure, ultraviolet light exposure, and wetting and drying cycles. The test results show that a single coat at 125 ft²/gal (10 m²/l) had no discoloration and reduced the average chloride ion intrusion into the concrete by 98% when compared to uncoated control specimens. The performance exceeds the 90% limit suggested in the NCHRP report No. 244.

ASTM C-642: Water Absorption of Concrete

The test result shows that a single coat at 125 ft²/gal (10 m²/l) had an average of 74% reduction after 50 days compared to the control.

FOR INDUSTRIAL USE ONLY

KEEP OUT OF REACH OF CHILDREN

KEEP CONTAINER TIGHTLY CLOSED

NOT FOR INTERNAL CONSUMPTION

CONSULT MATERIAL SAFETY DATA SHEET FOR MORE INFORMATION

ASTM C-672: Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals

Test result indicates little or no change after greater than 50 cycles of deicer freezing and thawing of coated concrete specimens.

AASHTO T-259: Resistance of Concrete to Chloride Ion Penetration

Coated samples had a 82.6% reduction compared to the control. There was a negligible amount of chloride ingress from 0.5 to 1 inch.

ASTM E-514: Water Penetration and Leakage Through Masonry

The coated samples had a 95% reduction in leakage rate compared to the control.

Federal Specification SS-W-110C: Water Repellency

The test result shows that a single coat at 125 ft²/gal (10 m²/l) exceeds the 1.0% maximum with the result of 0.39% water absorption.

PACKAGING AND STORAGE

MCI-2018 should be kept away from moisture. When stored in original, airtight containers in a cool, well ventilated place, MCI-2018 has a shelf life of 12 months from the date of shipment. Stir thoroughly before use.

MCI-2018 is available in 5 gallon (19 liter) pails and 55 gallon (208 liter) drums.

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