

MIGRATORY CORROSION INHIBITOR (MCI®) PRODUCTS FOR CONCRETE



MCI®-2021 Patented



PRODUCT DESCRIPTION

MCI-2021 is a concrete sealer that combines a blend of reactive silicates, surface-active agents, and Cortec's time-proven Migratory Corrosion Inhibitors (MCI®). MCI-2021 preserves and protects concrete by working with the chemistry of concrete. The reactive silicates penetrate the concrete up to 1½ inches (3.75 cm) and react with calcium. The reaction products build additional insoluble silicate structures within the concrete. The newly built structure seals surface pores and creates a water repellent surface preventing carbonation and further intrusion of chloride. The concrete's ability to breathe is not affected.

MCI-2021's unique MCIs migrate through concrete structures to form a protective layer on embedded steel reinforcement. MCI-2021 also protects a multitude of other metals including carbon steel, galvanized steel, and aluminum. MCI-2021 will inhibit the further corrosion of reinforcing metals and extend the service life of the structure.

WHERE TO USE

MCI-2021 is recommended for repair and maintenance of:

- All reinforced, precast, prestressed, post-tensioned, concrete structures; including bridges, piers, highways, parking decks, ramps, garages, buildings, and streets exposed to corrosive environments (carbonation, deicing salts, and atmospheric attack)
- Plant floors subject to chemical attack

ADVANTAGES

MCI-2021 offers engineers, owners, contractors, DOTs, and government agencies a time proven corrosion inhibiting technology that will extend the life of all reinforced concrete structures.

- Protects against the harmful effects of corrosion by migrating into even the densest concrete
- Migratory inhibitor protects against corrosion and reduces existing corrosion rates
- Non-toxic and contains no nitrites, phosphates, or solvents
- Water-based and non-flammable for easy handling
- Enhances the durability of reinforced concrete and increases surface abrasion resistance
- Reduces carbonation and chloride ion intrusion
- Helps protect against chemical attack
- Not a vapor barrier-allows vapor transmission
- Proven to migrate to adjacent areas to protect surrounding metals

PHYSICAL PROPERTIES

Appearance	Slightly hazy off-white liquid
pH	11-12 (Neat)
Density	9.0-9.1 lb/gal (1.08-1.09 kg/L)
Total Alkalinity	65000-68000 mg/L (Neat)

COVERAGE

Application rates will vary, depending upon surface porosity and number of applications. The total overall dosage rate, (i.e. all coats combined), should be within 150-250 ft²/gal (3.7-6.1 m²/L)*. Example: if two coats are utilized then the dosage rate per coat should be between 300-500 ft²/gal (7.4-12.2 m²/L).

* Overdosing MCI-2021 can cause the appearance of white silicate crystal formations on the surface of the substrate, which are only removed by shotblast, grinding, etc.



SURFACE PREPARATION

Surface should be dry to touch, sound, clean, and free of all dirt, oil, grease, efflorescence, sealers, coatings, membranes, and asphalt. Cleaning may be done by steam cleaning, water-blasting, or sandblasting. (MCI-2061 can be used for removal of oil/grease)

As a standard procedure, fresh concrete should be allowed to cure for 28 days before application. In addition, any repair work should be performed at least three days before application. Protect all windows, doorways, lights, etc. from overspray.

APPLICATION

Apply MCI-2021 by spray (conventional airless or hand-pressure spray equipment) to any concrete surface. Apply MCI-2021 until surface starts to get saturated. A minimum of two coats is required. Apply the second coat and any additional coats immediately after the previous coat is dry to the touch (normal drying time is 10-30 minutes, depending on temperature). Apply only as much sealer as the surface will readily absorb*. After the final coat is applied, wet the entire treated area with a light water spray to assist in penetration and/or removal of any residual MCI-2021 and purged chlorides.

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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

If a coating will be used over MCI-2021, a 14 day period is recommended before application. A compatibility test should also be performed.

APPLICATION CONSIDERATIONS

The substrate and ambient temperature should be above freezing and below 100°F (38°C). Do not apply if the temperature is expected to fall below freezing within 12 hours. MCI-2021 will not penetrate film-forming sealers, coatings, paints, membranes, or asphalt.

TECHNICAL DATA

Test Results (AASHTO T-259, "Resistance of Concrete to Chloride Ion Penetration")

Depth, inch	Reduction, %
0.06-0.50	>47
0.50-1.00	63
1.00-2.00	50

Scaling Resistance of Concrete Surfaces Exposed to Deicer Chemicals ASTM C672

Concrete sealed with MCI-2021 had very slight scaling after 50 freeze/thaw cycles compared to moderate to severe scaling of the control.

PACKAGING AND STORAGE

MCI-2021 is available in 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

The shelf life of the product is 24 months in a sealed container.

LIMITED WARRANTY

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