

MCI®-2018 X and MCI®-2018 X V/O

DESCRIPTION

MCI®-2018 X is a 100% silane penetrating water repellent. It provides great protection for concrete against water ingress and other contaminants. MCI®-2018 X lines the pores of the concrete matrix with a hydrophobic layer, boosting the durability and service life of concrete structures. MCI®-2018 X can be conveniently applied on top of a penetrating, surface-applied corrosion inhibitor (SACI) for a full system of protection against moisture and corrosion.

MCI®-2018 X is also available as MCI®-2018 X V/O, a higher viscosity formulation ideal for easier application on vertical and overhead surfaces.

PACKAGING & STORAGE

Both MCI®-2018 X and MCI®-2018 X V/O are available in 5 gallon (19 L) pails and 55 gallon (208 L) drums.

To ensure best product performance, store in original packaging, indoors, and out of direct sunlight at 40–100°F (4–38°C).

Shelf life: 2 years



HOW IT WORKS

MCI®-2018 X and MCI®-2018 X V/O provide water repellency by chemically reacting with the cementitious substrate under proper application, decreasing the ingress of aggressive materials.

In previous applications, applying MCI®-2018 X and MCI®-2018 X V/O after a SACI have prolonged the protection period of the corrosion inhibitor. For data projections on specific applications, please contact Cortec® Technical Service.

WHERE TO USE

- Commercial buildings
- Parking garages
- Bridge decks or bridge structures
- Tunnels
- Jetties/piers and other marine structures
- Offshore oil platforms (non-submerged applications)
- Any other reinforced concrete structure

ADVANTAGES

- Lines the substrate pores with a hydrophobic layer without altering appearance
- Allows surfaces to remain fully breathable and maintain their natural moisture-vapor transmission
- Blocks carbonation and chloride ion intrusion
- Extends the service life of structures
- Easy application by spray, roller, or squeegee
- Contains no nitrites, phosphates, or chromates
- No blushing, peeling, or yellowing

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PHYSICAL PROPERTIES

	MCI®-2018 X	MCI®-2018 X V/O
Appearance	Clear, colorless liquid	Clear to white gel
Density	7.3–7.7 lb/gal (0.87–0.92 kg/L)	8.5–8.9 lb/gal (1.02–1.07 kg/L)
VOC	<3.1 lb/gal (350 g/L)	<3.1 lb/gal (350 g/L)
Sag Resistance	N/A	>8 wet mil (200 µm)

PERFORMANCE DATA

Performance Criteria	Test Method	Results
Concrete Sealer Testing	Alberta Transportation Specification B388	Meets Type 1C at 205 ft ² /gal (5 m ² /L) coverage rate.
Reduction in Chloride Ion Content	NCHRP Series II	Single coat application of 125 ft ² /gal (3.06 m ² /L) showed 88% reduction in chloride ion content.
Accelerated Weathering Tests	NCHRP Series IV, Southern Exposure	Single coat application of 125 ft ² /gal (3.06 m ² /L) had zero discoloration and reduced chloride intrusion by 98%.
Resistance to Chloride Ion Penetration	AASHTO T259	Treated samples showed 82.6% reduction in chloride ion penetration compared to control. Depths from 0.5–1 inch (1.25–2.54 cm) contained negligible amounts of chloride ions.
Water Absorption of Concrete	ASTM C642	Single coat application of 125 ft ² /gal (3.06 m ² /L) showed a 74% reduction after 50 days compared to control.
Water Repellency	Federal Specification SS-W-110C	Single coat application of 125 ft ² /gal (3.06 m ² /L) resulted in 0.39% water absorption, exceeding the 1.0% maximum allowed in spec.
Scaling Resistance of Concrete Exposed to Deicing Chemicals	ASTM C672	Results show little to no change after more than 50 cycles of freeze-thaw with the use of deicing salts on treated concrete samples.

COVERAGE

Application rates will vary depending on surface porosity and number of applications. Recommended total coverage rate is 125–175 ft²/gal (3–4.3 m²/L). Cortec® recommends performing a concrete absorption test before application to determine dosing.

SURFACE PREPARATION

Surfaces should be free of standing water, dirt, dust, oils, grease, curing compounds, efflorescence, laitance, and other contaminants. Prepare concrete substrate to obtain a surface profile of approximately 4–13 mils (0.10–0.33 mm) (CSP 1–3 as per ICRI guidelines). Cleaning may be done by steam cleaning, water blasting or sandblasting.

Note: For additional corrosion protection, MCI®-2020 can be applied prior to applying MCI®-2018 X or MCI®-2018 X V/O.

APPLICATION

MCI®-2018 X and MCI®-2018 X V/O may be applied to damp surfaces; however, dry surfaces are preferred to achieve maximum penetration into the substrate.

Application can be performed using airless or pneumatic sprayer, roller, or brush. Sprayers should be fitted with solvent hoses and gaskets. For best results, we recommend a two-coat, wet-on-wet application technique (e.g., the surface is damp from first application but not glossy when the second coat is applied). During application, take precautions to protect the surrounding areas from overspray and runoff.

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CONSIDERATIONS

- Mix thoroughly before use
- Should be applied to sound, clean concrete that is free of oils, dirt, sealers, coatings, paints, membranes, or asphalt
- Should only be applied when temperatures are between 40–100°F (5–38°C)
- Should not be applied on extremely windy days when evaporation would be too rapid
- Fresh concrete should be allowed to cure for 28 days before application; allow repair material to fully cure before applying MCI®-2018 X and MCI®-2018 X V/O
- If using a coating over MCI®-2018 X or MCI®-2018 X V/O, a seven-day waiting period is recommended before application; a compatibility test should be performed prior to application
- Should not be used on structures under hydrostatic pressure

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