Surface Preparation Guide for MCI® Products

Application of MCI® surface applied corrosion inhibitors (SACIs) for concrete can only start after properly preparing the concrete surface. This includes removal and replacement of non-durable concrete and/or repair of surface irregularities. Removal of all deteriorated or cracked concrete all the way down to sound concrete is recommended. Concrete repairs should be in accordance with professional engineering advice. Repairs should be allowed to cure before coating for best results. A 28-day cure for new concrete is preferred. Concrete and adjacent surfaces must be sound, dry, clean, and free of all dust, dirt, oil, grease, laitance, efflorescence, sealers, coatings, curing compounds, waxes, membranes, rubber tire marks, and asphalt. Cleaning can be done using steam cleaning, water blasting, sandblasting, or shot blasting. Use an air compressor with a water and oil trap to ensure the cleaning method does not apply materials intended for removal. Use a brush, broom, sweeper, or air compressor on surfaces for final cleaning before application.

Product	Coverage Rate	Recommended Surface Preparation	Remarks
MCI®-2018	125-175 ft²/gal (3.0-4.3 m²/L)	Mechanically prepare concrete substrate to obtain a surface profile of approximately 27-38 mils (0.7-1.0 mm) (CSP 1-3 per ICRI guidelines).	MCI®-2018 may be applied to damp surfaces, although dry surfaces are preferred to achieve maximum penetration into the substrate.
MCI®-2019	125-175 ft²/gal (3.0-4.3 m²/L)		MCI®-2019 can be used on concrete substrates that are pre-treated with silane.
MCI®-2020	150 ft²/gal (3.7 m²/L)	Clean and dry substrate before application.	If prior adhesion testing has not been performed, a water rinse may be required prior to application of subsequent coatings or membranes.
MCI®-2021	150-250 ft²/gal (3.7-6.1 m²/L)	Mechanically prepare concrete substrate to obtain a surface profile of approximately 27-38 mils (0.7-1.0 mm) (CSP 1-3 as per ICRI guidelines).	Apply two to five coats. If two coats are used, dosage rate per coat should be between 300-500 ft²/gal (7.4-12.2 m²/L). 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. Overdosing MCI®-2021 can cause the appearance of difficult-to-remove white silicate crystal formations on the surface of the substrate. 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. MCI®-2021 will not penetrate film-forming sealers, coatings, paints, membranes, or asphalt.
MCI®-2022	125-175 ft²/gal (3-4 m²/L)		Application should be made by flooding, brushing, or spraying until the surface is saturated. On horizontal surfaces, the liquid material should pond on the surface at least five seconds before being absorbed. On vertical surfaces, apply in a flooding application from the bottom up so the material runs down 6-8 inches (15-20 cm) below the spray pattern. Specially designed overhead and vertical versions can also be used. Curing requires 7-10 days.
MCI® POWR Series	125–175 ft²/gal (3-4 m²/L)		For best results, two applications are recommended, with the second application applied using a wet-on-wet technique. During application, precautions should be taken to protect the surrounding area from overspray and run-off.
For all products, if a subsequent application of a topical product requires more aggressive mechanical preparation (i.e., higher CSP profile), use the same preparation method for MCI® products.			

Cortec® Coatings for Metallic Surfaces		
Product	Substrate Condition	Recommended Surface Prep
CorrVerter® MCI® Rust Primer	Corroded	Loose rust, loose mill scale, and salt should be removed from carbon steel by high pressure wash or wire brush. Prepare surface according to SSPC-SP2.
MCI® CorShield®	Clean	The metal surface must be clean of rust and equivalent to NACE #3/SSPC-SP6.

Concrete Surface Profile (CSP)

ICRI's Surface Preparation Guideline 310.2R-2013: Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair describes various methods of concrete surface preparation that will result in different surface profiles. ICRI CSP (concrete surface profile) chips can be used to determine which CSP number has been reached on a concrete surface. Photos below are images of CSP chips and are used only for example, NOT for actual verification of a concrete surface profile.

CSP1

CSP2

CSP3