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PRESS RELEASE



Top MCI® Products for Historical Restoration

Two priorities exist when restoring historical structures that have deteriorated from corrosion: (1) Mitigate corrosion to extend service life and minimize future repairs. (2) Do so without changing the appearance of the structure. This is especially difficult with historical concrete structures, as the addition of new materials could alter the color or texture of the concrete. Fortunately, [Cortec® MCI®](#) products have proven to be excellent resources for both maintaining and repairing heritage structures.

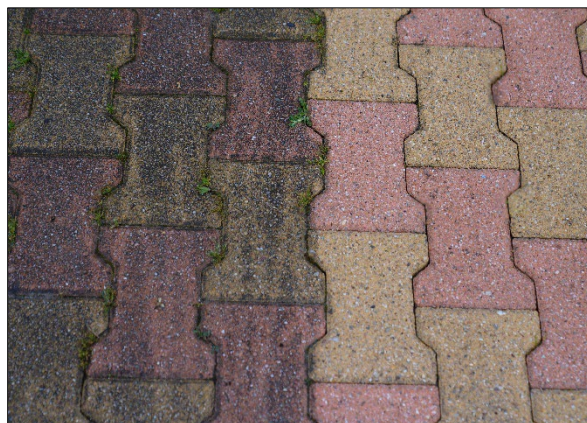
Rebar and Concrete Surface Prep

Rebar rust is typically the leading cause of concrete deterioration, and good surface prep is therefore integral to a successful repair. Traditionally this involves labor-intensive sandblasting and cleaning of the rusted rebar to white metal. [CorrVerter® MCI® Rust Primer](#) offers a convenient alternative to treat and passivate rusted rebars. A single component, fast drying water-based primer, CorrVerter® MCI®



can be applied to layers of tight rust, converting it into a hydrophobic passive layer. This method reduces labor and makes re-rusting less likely in the near future. Ash Hasania, Technical Sales & Product Manager for Cortec® MCI®, explained the consequences of overlooking this convenient surface prep method: “You can basically sandblast and not choose any corrosion inhibitor on the steel, but rust is going to come back fairly quickly, and [repair workers] will have to open it up again and clean it and . . . do the same cycle.”

Another important aspect of surface prep is making sure the concrete is clean. For example, concrete contaminated with oils or greases can be cleaned with [MCI®-2061](#) or [MCI®-2062](#). These cleaners contain microorganisms for extended cleaning power. Left overnight, the microorganisms degrade and digest greasy substances within the concrete. They also continue to provide residual cleaning even after the surface has been rinsed off.



Adding Migrating Corrosion Inhibitors to Repair Mortars



One of the most difficult parts of a historical concrete repair can be matching new repair mortars or concrete mixes to the old surface where patching is needed. Sometimes this requires highly specialized historical or decorative concrete mixes. [MCI® Mini Grenades](#) can be added directly to these specialty mixes to introduce Migrating Corrosion Inhibitors to the repair. These concrete corrosion inhibitors have been successfully used in historical preservation jobs to extend

service life without changing the color or look of the final repairs. They may also discourage the progression of the ring anode effect in areas adjacent to the repair by migrating and evening out the corrosion potential between existing concrete and repaired areas.

Surface Applied Corrosion Inhibitors in Historical Restoration

Surface Applied Corrosion Inhibitors (SACIs) are another important tool in historical restoration and preservation. SACIs can be applied at any stage of a structure’s lifecycle, extending time to subsequent repairs. [MCI®-2018](#) is an excellent option for preventative maintenance because it contains Migrating Corrosion Inhibitors with a 100% silane water repellent to slow the ingress of moisture and chlorides. [MCI®-2020](#) is ideal for heritage structures where corrosion problems have already begun. It contains a higher

concentration of corrosion inhibitors, minus the water repellent. Both SACIs are clear and do not change the color of the concrete while allowing Migrating Corrosion Inhibitors to penetrate into the concrete, slow the corrosion process, and extend service life.

Past MCI® Heritage Projects

Cortec® MCI® Technology has been used in many historical restoration projects or heritage structures where minimal change in appearance was as critical as corrosion mitigation.

- Zagreb Cathedral: Steel joints reinforcing the south tower at regular intervals were coated with CorrVerter® MCI® Rust Primer to arrest the corrosion while minimizing cost and intrusiveness of the repair.
- Pentagon: Corrosion due to carbonation that extended 3.5 inches (9 cm) deep prompted a major repair on the Pentagon lightwell walls. After 200,000 ft² (18,581 m²) of hand patches were made (using specially cut boards to mimic the pattern created by forms during original construction), [MCI®-2020 V/O](#) was applied over 1,000,000 ft² (92,903 m²) of surface area, along with a silane sealer and mineral-based coating to provide a minimum 20-year design life with the hopes of extending service life by 50 years.
- New York Hall of Science: The cast-in-place concrete façade of this unique structure had a shallow concrete cover, a common characteristic of brutalist architecture (often coinciding with high porosity) that makes such buildings more prone to corrosion. Repair work included application of MCI®-2020 and a water repellent. Probes were embedded during the repair and subsequently confirmed effective corrosion protection.
- Memorial University, St. John's, Newfoundland: The entrance of the education building was adorned with a decorative design in brutalist architectural style. Rebar corrosion took place beneath a very shallow concrete cover. CorrVerter® MCI® was used to passivate the rebar. MCI®-2020 was surface applied to protect the decorative entrance from further corrosion and extend the service life of the repair.





MCI® products are an excellent companion to heritage repairs because they mitigate corrosion without affecting structural appearance. Contact Cortec® to consult on which products may be ideal for your historical or heritage restoration project: <https://www.cortecmci.com/contact-us/>

Keywords: historical concrete restoration, concrete repair, brutalist architecture, Cortec, MCI, Migrating Corrosion Inhibitors, rebar rust, concrete corrosion, rusted rebar in concrete, From Grey to Green

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