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Three Cortec[®] MCI[®] Products Mitigate Ongoing Corrosion!

Three MCI[®] products have been evaluated according to US Bureau of Reclamation M-82 (M0820000.714) Standard Protocol to Evaluate the Performance of Corrosion Mitigation Technologies in Concrete Repairs. Cortec[®] is one of the first manufacturers to complete this testing, which is the first of its kind to identify products effective against existing corrosion. The protocol creates a level playing field for DOTs, engineers, and owners to see which products can truly enhance the integrity of repairs to their structures.



Topical Treatment Test Specimen Photograph

According to July 2014 standards, the USBR M-82 Standard Protocol to Evaluate the Performance of Corrosion Mitigation Technologies in Concrete Repairs has the following significance (see Section 1.04):

- To predict how treatments will mitigate preexisting corrosion
- To compare various corrosion treatments to control specimens

- To develop studies of concrete corrosion mitigating repair systems
- To find black steel's chloride induced corrosion threshold in certain conditions



Tourney Consulting Group (TCG), a CCRL/AMRL inspected and AASHTO-accredited lab performed the test according to the protocol and reported the procedure and results. The Cortec[®] materials tested - MCI[®]-2018, MCI[®]-2019, and MCI[®]-2020—not only performed effectively in reducing corrosion rates, but did so from a higher chloride content starting point. The M-82 protocol requires the combined

macrocell corrosion current to reach a level of 5,000 Coulombs before repair treatment can occur. Cortec's MCI[®] treatments were not applied until the average value was more than 10,000 Coulombs, which is an allowed alternative to the test if the surface applied repair does not depend upon the amount of chloride present at the reinforcing bars, or if protection at a higher initial chloride content level is to be demonstrated. The MCI[®] treated slabs showed a reduction in cracking in both length and area. MCI[®] treatments also provided a statistically significant reduction of corrosion relative to untreated slabs and were deemed effective in mitigating ongoing corrosion according to USBR M-82 (M0820000.714) Standard Protocol.



MCI[®]-2018 is a combination water repellant and Migrating Corrosion Inhibitor (MCI[®]) whose added protection comes in the form of a 100% organosilane water repellant. This reduces the ingress of water, chloride, and other contaminants in addition to its migrating inhibitor abilities.

MCI[®]-2019 is similar to MCI[®]-2018 but contains only 40% organosilane in a solvent base, creating flexible treatment options for varying budget needs and repair expectations.

MCI[®]-2020 is a water-based corrosion inhibitor for concrete and masonry structures. This product provides the highest concentration of MCI[®] inhibitor in a topical treatment. Since MCI[®]-2020 does not have water repelling properties, a standard 40% silane repellent was used over it during the M-82 protocol testing.



The M-82 protocol is a significant step forward in evaluating the effectiveness of various reinforced concrete corrosion inhibitors on the market. With the successful performance of MCI[®]-2018, MCI[®]-2019, and MCI[®]-2020, users can have added confidence in selecting and applying these innovative corrosion inhibitors for the protection of important concrete and masonry structures.

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