December 2019





ICRI Publishes Important Guidelines 20 Years in the Making!

October was an important month for both the International Concrete Repair Institute (ICRI) and Cortec[®] MCI[®], as it marked the publication of an important technical document approximately 20 years in the making! Guideline No. 510.2-2019 covers the "Use of Penetrating Surface Applied Corrosion Inhibitors for Corrosion Mitigation of Reinforced Concrete Structures."

The document explains the problem of concrete reinforcement corrosion and covers the selection and application of a variety of surface applied technologies, including mixed inhibitors of the amino alcohol and amino carboxylate type (equivalent to Cortec[®] MCI[®] Technology).

In addition to being an excellent resource for users of Cortec[®] MCI[®] surface applied products, the publication also holds special interest because Cortec's own Jessi Meyer (VP of MCI[®] Sales) was one of eight primary authors on a panel of 35 experts that helped prepare the 24-page document. Jessi joined the ICRI Committee 510 on Corrosion when they began writing the guidelines in the early 2000s shortly after Jessi started as a Technical Service Engineer at Cortec[®]. She is happy to finally see the long-term vision become a reality in the form of a technical masterwork that represents a rich source of information from dozens of concrete corrosion experts.

The guidelines are now available online as a free download for all ICRI members:

https://www.icri.org/store/ViewProduct.aspx?id=15167280&hhSearchT erms=%2522510+and+2%EF%BF% BD2019%2522



MCI[®] News

Penetrating New Markets at Concrete Asia!

Cortec® Southeast Asia (SEA) has been busy penetrating new markets with MCI[®] concrete durability solutions. Representing Cortec® MCI® at Concrete Asia, Cortec[®] SEA Regional Manager, Philip Horsford, was able to connect with a new audience, identify key projects in the area, and meet with many suppliers, contractors, and potential MCI® distributors. The MCI[®] concept was a pleasant surprise to many who were hearing about the technology for the first time and were happy to see a new product line bringing superior competition to area markets. With burgeoning urban growth expected in Southeast Asia, trillions of dollars of infrastructure, housing, and commercial construction projects are predicted to pour into the region-exactly the kind of projects that will benefit from MCI® durability solutions.



MCI® at the World Sales Meeting

Thanks to many of you who joined us at the Cortec[®] World Sales Meeting in early October! We enjoyed networking and coming together with both new and seasoned Cortec[®] MCI[®] professionals. The all-day training track on October 4th was a great opportunity to learn from successful MCI[®] distributors in the U.S. and Middle East, and also dive more deeply into MCI[®] Technology with Cortec[®] technical and restoration experts. We look forward to building a portfolio of many more experiences and success stories to share with each other at our next gathering!

MCI® Training at Cortec® World Headquarters

Immediately before and after the Cortec[®] World Sales Meeting, we were pleased to welcome a number of engineers from other continents for in-depth MCl[®] training at Cortec[®] world headquarters. Engineers had the opportunity to observe MCl[®] detection testing on concrete samples, watch the step-by-step lengthy process of ASTM G180 testing, and participate in intense MCl[®] classroom training with Jessi Meyer. We appreciate the energy and excitement these engineers are carrying with them as they spread concrete durability solutions to other nations.

Jessi Speaks at Concrete Canada

Jessi Meyer was honored to speak to an attentive audience on the subject of "Corrosion Inhibiting Technologies for Concrete" at The Buildings Show, December 5th in Toronto, Canada. Jessi's presentation discussed recent updates to the ICRI Corrosion Committee "Guidelines on Surface Applied Corrosion Inhibitors" and also delved into the basics of corrosion; different types of corrosion inhibitors, surface treatments, and admixtures for concrete; and case studies to demonstrate best practices.





MCI[®] News

Great Response at Fall ICRI!

The 2019 ICRI Fall Convention early November in Philadelphia saw record attendance with a comparable surge in visitors to the MCI[®] booth as well. As usual, Jessi Meyer attended a number of technical and organizational committees, including a Women in ICRI committee meeting where she found it encouraging to see women succeeding in the industry.

Ashraf Hasania (MCI[®] Technical Sales & Market Manager, Canada), who also attended the conference, noted that interest in Migrating Corrosion Inhibitors was very strong, with "more people coming to our booth than ever!" In addition to enjoying conversations with a broad range of contractors, engineers, architects, and manufacturers, Ash enjoyed attending several technical sessions focused on a variety of challenges that face historic restoration crews in the concrete industry.

Cortec[®] is looking forward to seeing many new and familiar faces at the next ICRI convention, March 23rd-25th in Vancouver, BC! (Learn more in our "UPCOMING EVENTS" list below.)



"Bio-based Corrosion Inhibitors: Building for resiliency in marine environments"

Construction Specifier September 2019

An important MCI[®] project using MCI[®]-2005 admixture in the Lodge at Gulf State Park was featured this September in Construction Specifier magazine. The article describes the corrosion challenges faced in the Alabama Gulf Coast environment and how the choice of a Migrating Corrosion Inhibiting admixture helped the project stay in budget with significant cost savings compared to the use of epoxy-coated rebar. The sustainability features of the admixture as a biobased material made within a 500 mile (805 km) radius of the lodge were also factors very much in line with the project's overall goal of LEED certification. Read the full article here: <u>https://www.constructionspecifier.</u> <u>com/publications/de/201909/?page=18</u>.

"Mitigating Corrosion Inhibitor on Bridge Preservation Project"

NACE Infrastructure Insights Fall 2019

A detailed article on the corrosion mitigation project at the Krk Bridge in Croatia was featured in the third issue of NACE Infrastructure Insights, a new triannual digital publication from NACE International, "The Worldwide Corrosion Authority." The article covers the background of the bridge repair issues, which stem back to design and construction problems as long ago as the 1980s. Key structural problems, including corrosion, were found early on, resulting in decades of costly ongoing repair and maintenance. A recent repair phase includes the use of MCI[®]-2020, which was chosen after experimental lab and field tests. The article quotes Ivana Liposcak, Cortec[®] MCI[®] Technical Sales Manager, Europe, for in-depth information on the repair project and use of MCI[®]-2020. Read the full article here: https://tinyurl.com/rleh6be



MCI[®] News



NOVEMBER MCI® FOCUS MONTH

November was Cortec's month to place a special focus on MCI[®] solutions for concrete corrosion. During November, we published a flurry of helpful materials focusing on some top MCI[®] products for various concrete applications, such as potable water structures, water repellent applications, concrete repairs, PT applications, and more! Here are some snapshots of what we discussed:

Leading the Way for Corrosion Protection of Concrete Potable Water Structures

Reinforced concrete potable water structures are at higher risk for corrosion because of constant exposure to moisture. They are also limited on protection methods, because it is important not to apply dangerous substances that can leach into drinking water. Cortec[®] has developed NSF Standard 61 certified MCI[®] products for use in all phases of a structure's life cycle, including new construction, maintenance, and repair. Our November 7th press release shares specific examples of how MCI[®] has been used in these areas: <u>https://www.cortecvci.com/whats_new/announcements/MCI-UL-Certification-PR.pdf</u>.

Unleashing the Migrating Corrosion Inhibiting Power of MCI[®] Water Repellents

A common best practice to make new or existing concrete structures last longer is to periodically apply a concrete sealer. An even more powerful option—with no extra labor required—is to apply a Cortec® MCI® concrete sealer enhanced with Migrating Corrosion Inhibitors. When applied, MCI® water repellents create a hydrophobic layer at the concrete surface to prevent intrusion of chlorides and carbonation and protect concrete from the ingress of wind-driven rain. At the same time, MCI® molecules penetrate through the concrete pore structure to form a corrosion inhibiting molecular layer on the surface of embedded metal reinforcement. This dual protection is convenient to achieve by just applying one product. Learn more about our two-in-one and three-in-one options in our press release from November 13th: <u>https://www. cortecvci.com/whats_new/announcements/MCI-Water-Repellants-PR-2019-11.pdf</u>.

MCI[®]-2020 Gel: A Deep-Reaching Solution for Corroding Rebar

Topical corrosion inhibiting treatments for reinforced concrete structures require a clean, properly prepared surface area to work as intended. Cortec's MCI[®]-2020 Gel is designed to work when

proper surface preparation cannot be achieved or is economically undesirable, by delivering Cortec's proven Migrating Corrosion Inhibitor[™] Technology directly to the depth of reinforcement. MCI[®]-2020 Gel is an injectable corrosion inhibitor that provides a robust dose of corrosion protection directly where it is most needed. Once inside the concrete, the inhibitor can also move laterally through the concrete along the embedded reinforcement via liquid and vapor diffusion. MCI[®] molecules deposit across metal surfaces, forming a molecular layer that acts as a barrier to corrosive elements such as chlorides and carbonation. Find out more details in our November 22nd press release: <u>https://www.cortecvci.</u> com/whats_new/announcements/MCI2020_Gel%20_PR.pdf

Post-Tension Solutions Take the Stress Out of Corrosion Protection for Bridge Contractors

It often takes several years to build a prestressed concrete bridge. During that time, construction materials such as rebar and posttensioning (PT) cables may be exposed to corrosive environments. Thanks to Cortec's specialty line of MCI[®] PT products, contractors can take several easy steps to mitigate corrosion on these important metal components. These include solutions for rebar storage, PT ducts, and suspension cables. Learn more in our November 26th release: <u>https://www.cortecvci.com/whats_new/announce-</u> ments/MCI-Post-Tension-PR-2019-11.pdf.

LET'S STAY IN TOUCH!

Did you know we regularly share Cortec® MCI® news, ideas, and resources through a variety of digital venues? Stay informed and join the conversation by following us on LinkedIn (<u>https://www.linkedin.com/showcase/mci-migrating-corrosion-inhibitors-/</u>) and Facebook (<u>https://www.facebook.com/cortecmci/</u>), or signing up for our email updates: <u>https://go.pardot.com/l/562712/2018-12-04/</u> j7mv74



Case Histories

Case History 647: Extending Service Life of Alabama Spillway

Big Creek Lake in Alabama supplies drinking water to an extensive area that includes the city of Mobile. When the lake rises, water overflows through a concrete spillway covered by an aging concrete bridge that receives routine maintenance. In 2018, the dam owner decided to include MCI®-2020 V/O in its preventative maintenance plan to protect against corrosion and avoid concrete spalling. Because the application is near a source of drinking water, an important factor in selecting MCI®-2020 V/O was its safety characteristics as a thickened version of MCI®-2020, which is certified to meet NSF Standard 61 for use in potable water structures. Read the full case history here: https://www.corteccasehistories.com/?s2member_file_download=access-s2member_level1/ch647.pdf



Case History 650: Park of Peace Amphitheater

The Park of Peace amphitheater was recently built in Mevasseret-Zion, Israel. Because the amphitheater was designed for at least 100 years of service and was considered to have high exposure levels to a soil/ground environment and air (proximity to a major highway accelerates carbonation), extra protection was needed in the concrete mix. Concrete containing MCI®-2005 corrosion inhibiting admixture was selected as a "performance-based" concrete option because of its compliance with EN-206-1 standards, competitive cost, reduced cracking, and longer expected service life. Much of the concrete was poured in large segments for the stage and seating tiers. Surface cracking was minimal. The amphitheater was considered a success and has been in regular use since construction.

Read the full case history here: <u>https://www.corteccasehis-</u> tories.com/?s2member_file_download=access-s2memberlevel1/ch650.pdf







Upcoming Events

We have many exciting events on our calendar relating to concrete and corrosion in the upcoming months. We hope you can join us at as many of these networking and educational opportunities as possible!

Tradeshows

Canadian Concrete Expo January 22nd-23rd The International Centre Toronto, Canada https://canadianconcreteexpo.com/

World of Concrete February 4th-7th, 2020 Las Vegas Convention Center Booth # 12050 http://www.worldofconcrete.com

NACE CORROSION Conference & Expo March 15th-19th, 2020 George R. Brown Convention Center Houston, TX Booth # 1715 http://www.nacecorrosion.org

ICRI Spring 2020 March 23rd-25th, 2020 JW Marriott Parq Vancouver Vancouver, Canada https://www.icri.org/event/2020-ICRI-Spring

ACI Spring 2020 Convention March 29th-April 2nd Hyatt Regency O'Hare Rosemont/Chicago, IL https://www.concrete.org/events/conventions.aspx

STAY CONNECTED

Cortec® MCI® is on Facebook and LinkedIn! Join the conversation and follow us online to stay updated.

https://www.facebook.com/cortecmci/ https://www.linkedin.com/showcase/mci-migrating-corrosion-inhibitors-/



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