July 2019

MIGRATING CORROSION INHIBITORS
FROM GREY TO GREEN

MCI® POWR 100 Continues to Perform Well Under New Compliance Requirements!

Cortec's MCI® POWR 100 is a powerful three-in-one concrete surface treatment to repel water, resist oil and stains, and protect reinforced concrete from corrosion. These characteristics make it especially beneficial for commercial buildings, parking garages, bridges, and industrial floors with high exposure to oil, grease, or water.

MCI® POWR 100 has been successfully reformulated to meet the demands of an ever-changing compliance landscape. The new formula underwent multiple tests demonstrating that MCI® POWR 100 continues to deliver the required water, oil, and stain resistance while performing competitively and sometimes even superior to a traditional silane sealer in water and oil repellency traits.

MCI® POWR 100 works in three ways to deliver excellent concrete protection. First, the silane component of MCI® POWR 100 provides water repellency by chemically reacting with the cementitious substrate under proper application, decreasing the ingress of aggressive materials. Second, the oleophobic additive modifies the concrete surface to increase resistance to oil and food stains. Third, the MCI® component penetrates deep into the substrate, forming a protective, molecular barrier on embedded reinforcement to reduce the rate of corrosion at the rebar surface.

MCI® POWR 100 remains an excellent choice for those who want to combine corrosion protection with water, oil, and stain resistance in one surface treatment!

To learn more about testing performance details, please visit:

https://www.cortecvci.com/whats_new/announcements/MCI_POWR_100_PR.pdf

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MCI® News

Laying Good Foundations at Michigan ICRI Demo Day

Ashraf Hasania, MCI® Technical Sales & Market Manager for the Canadian region, traveled to Wixom, Michigan, March 1st to attend the local Michigan ICRI (International Concrete Repair Institute) Demo Day. Hasania stayed busy networking with a number of construction industry contractors and engineers in between the fast-paced demo schedule. He was also able to fill in knowledge gaps for many attendees who had differing levels of familiarity with MCI® Technology.

Research and Reunion at RILEM Sustainable Materials Conference

Cortec® was pleased to share MCI® Technology and concrete durability research at the 2nd RILEM Spring Convention & International Conference on Sustainable Materials, Systems and Structures (SMSS2019), March 20th-22nd in Rovinj, Croatia! Jessi Meyer (Cortec® VP, MCI® Sales) and Ivana Liposcak (MCI® Technical Sales Manager, Europe) both spoke during the durability symposia. Their sessions were well-attended and marked by good audience interaction on the following topics:

- "Evaluation of Service Life of Reinforced Concrete in the Middle East Eight Years of Testing," presented by Meyer and authored by Mohamad Nagi (American University in Dubai), Meyer, and Nizar Marjaba (Cortec® Middle East).
- "Organic Corrosion Inhibitors – Bio Based Technology to Extend Durability of Concrete for New Build and Existing Structures Performance," written and presented by Liposcak, with Meyer and Boris Miksic as co-authors.

The conference drew a diverse crowd of professionals from around the world, providing unique networking opportunities. It was also a pleasure for Meyer to reunite with former Cortec® interns from 20 years ago who have since joined the Faculty of Civil Engineering at the University of Zagreb and played an important role in helping organize the SMSS2019 conference!

In The Press

The May/June 2019 issue of the Concrete Repair Bulletin, published by ICRI, features a Cortec® article entitled "Enhancing Durability of Stone Cladding Corrosion Restoration and Repair." The article highlights three similar repair projects in Israel, where reinforced concrete structures with stone facades often have problems with stone tiles loosening and falling off due to corroded cladding anchors or rebar. The projects used MCI® to address the problem and mentions that similar repairs have been completed on approximately two dozen other projects of the same type. The article includes informative details on how the repairs were completed on each of the three main projects.

To read the full article, please visit: https://concreterepairbulletin.epubxp.com/i/1119748-may-jun-2019/25?m4=

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MCI® News

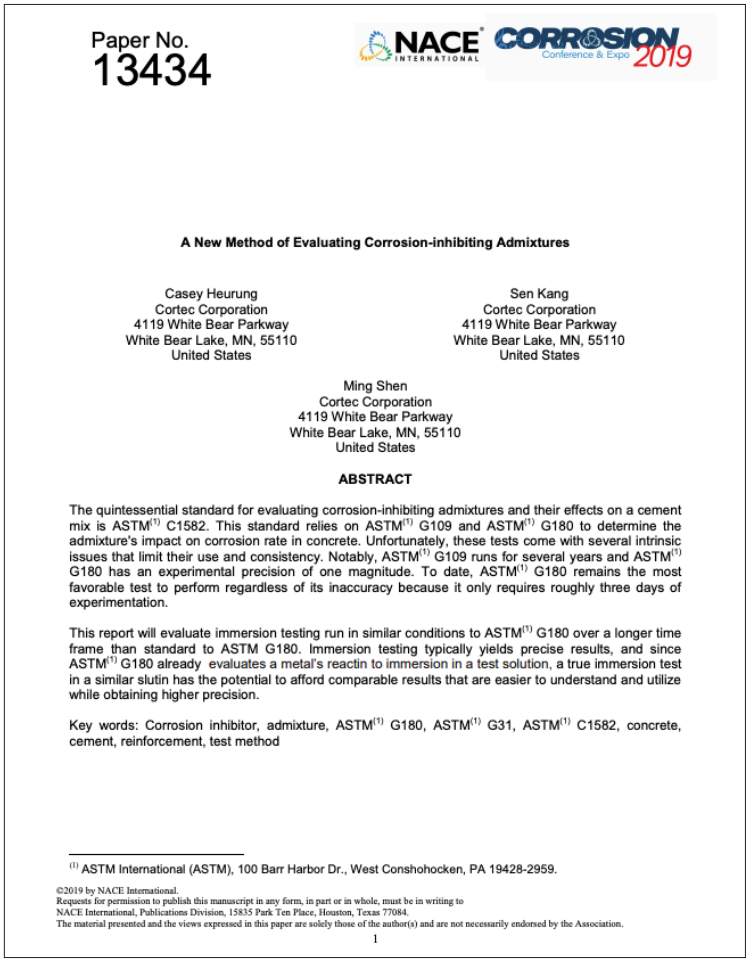
Leading the Industry Toward Improved Admixture Testing at NACE CORROSION 2019

Cortec® Technical Service Engineer Casey Heurung gave an excellent finale to Cortec's lineup of technical presentations at NACE CORROSION 2019, March 24th-28th in Nashville, Tennessee.

During the Wednesday transportation and infrastructure symposium, Heurung presented Paper #13434, "A New Method of Evaluating Corrosion-Inhibiting Admixtures," coauthored by Sen Kang (Sr. Corrosion Engineer) and Ming Shen (Director of Innovations and New Technologies).

The paper proposes a way to achieve greater precision through a more practical mode of testing corrosion inhibitor admixtures than current industry standards. Interaction with the audience following the presentation inspired Heurung with additional exciting ideas on how to improve this new proposed concrete admixture test method system even further, as Cortec® seeks to lead the industry toward increased reliability and efficiency in corrosion inhibitor admixture testing.

Casey Heurung presents "A New Method of Evaluating Corrosion-Inhibiting Admixtures" at NACE CORROSION 2019.



Paper No.
13434

NACE INTERNATIONAL CORROSION Conference & Expo 2019

A New Method of Evaluating Corrosion-inhibiting Admixtures

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ABSTRACT

The quintessential standard for evaluating corrosion-inhibiting admixtures and their effects on a cement mix is ASTM[1] C1582. This standard relies on ASTM[1] G109 and ASTM[1] G180 to determine the admixture's impact on corrosion rate in concrete. Unfortunately, these tests come with several intrinsic issues that limit their use and consistency. Notably, ASTM[1] G109 runs for several years and ASTM[1] G180 has an experimental precision of one magnitude. To date, ASTM[1] G180 remains the most favorable test to perform regardless of its inaccuracy because it only requires roughly three days of experimentation.

This report will evaluate immersion testing run in similar conditions to ASTM[1] G180 over a longer time frame than standard to ASTM G180. Immersion testing typically yields precise results, and since ASTM[1] G180 already evaluates a metal's reactin to immersion in a test solution, a true immersion test in a similar slutin has the potential to afford comparable results that are easier to understand and utilize while obtaining higher precision.

Key words: Corrosion inhibitor, admixture, ASTM[1] G180, ASTM[1] G31, ASTM[1] C1582, concrete, cement, reinforcement, test method

[1] ASTM International (ASTM), 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959.

American Concrete Institute Spring Convention

Jessi Meyer and Ashraf Hasania attended committee meetings on concrete admixtures and corrosion, respectively, at the March 24th-28th American Concrete Institute (ACI) Spring Convention in Quebec. Meyer also had the opportunity to sit in on a student poster session that had very interesting potential applications for Cortec® MCI®. Before heading to NACE CORROSION 2019, Meyer also stopped by the ICRI booth and snapped a photo of the new logo designed by the ICRI marketing committee that Meyer chairs.

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MCI® News

Cortec® MCI® Leaves Major Impression on ICRI Spring Convention

The major impact Cortec® MCI® Technology has made on the concrete repair industry was clearly reflected at the 2019 ICRI Spring Convention, April 8th-10th in Jacksonville, Florida. Jessi Meyer and Alan Jolley (MCI® Regional Sales Manager, SE Region) represented Cortec® MCI® at the event and made many positive connections with consultants, contractors, and others in the concrete repair industry. They also had the opportunity to see several milestones take place for Cortec® after its long history with ICRI.

During the Minnesota ICRI chapter luncheon, Meyer gave a presentation to all ICRI chapters on how to use the new ICRI logo and branding. Meyer chairs the ICRI marketing committee, which was responsible for developing the fresh new ICRI logo that was recently unveiled and well-received.

A second milestone attesting to Cortec's significant role in the industry was when Meyer became one of three ICRI members to receive a 2019 ICRI fellowship award during a special lunchtime ceremony. This special honor is limited to only a small percentage of ICRI members at one time. It symbolizes Meyer's significant contribution to the concrete repair industry on behalf of Cortec® MCI® over the last 20 years. The award was also featured in the most recent May/June issue of the Concrete Repair Bulletin.

Last, but not least, ICRI announced that its TAC (technical activities committee) had finally approved ICRI's corrosion inhibitor document for publication. This is an important document two decades in the making that highlights important guidelines and information on surface-applied corrosion inhibitors such as MCI®-2020, MCI®-2018, and MCI®-2019 for concrete. Stay tuned for updates on when this important document is finally released!

2019 ICRI PERSONAL AWARDS

FELLOWS

Being named an ICRI Fellow is recognition of an individual's long-term, devoted and enthusiastic service to ICRI. An ICRI Fellow is responsible for many noteworthy contributions to ICRI and the concrete repair industry in general. Criteria for nomination is based on the following: outstanding contributions to the production or use of concrete repair materials, products, or structures in the areas of education, research, development, design, construction or management; an individual shall have been an ICRI member for 5 consecutive years. We are now accepting nominations for 2020; an application can be obtained by visiting the ICRI website or by contacting the ICRI National office.

Scott Harrison

Scott Harrison has attended most of the ICRI national conventions during the last 25 years and has been an active participant in numerous administrative and technical committees, recently chairing the Publications and Education Committees. Mr. Harrison was instrumental in completing ICRI's first Compensation Survey during his Chairmanship of the Education Committee. He has served four years on the National ICRI Board of Directors, and is currently representing ICRI as a member on the Concrete Industry Management (CIM) National Steering Committee Board of Directors. He has also served on the Board of Directors and every Executive officer position with the Baltimore-Washington Chapter, serving as that chapter's President in 1999.

Jessi Meyer

Jessi Meyer holds a Bachelor of Science in Chemistry with Business Emphasis from the University of Wisconsin, Eau Claire and since that time she has held positions in technical service, sales, and is currently Vice President of Sales - Asia/MCI at Cortec Corporation in White Bear Lake, MN. Jessi joined Cortec in 2000 and has more than 18 years of experience in the concrete construction and restoration industry. She is responsible for oversight of Cortec Corporation's line of Migrating Corrosion Inhibitor (MCI) products globally and oversees all Cortec business in Asia.

Jessi holds six patents in the field of corrosion inhibitors used in the concrete/construction market and is active as a presenter on corrosion inhibitor technologies. She has authored several technical papers through ICRI, NACE, ACI and other technical forums. Jessi is a past board member for ICRI National and is currently the Marketing Committee Chair. In addition, she sits on the corrosion, nominations and service life/durability committees. She is also a Past President of the Minnesota ICRI Chapter and currently sits on their communications committee. Outside of ICRI, Jessi is an active member of the American Concrete Institute (ACI) and the National Association of Corrosion Engineers (NACE), and sits on several technical committees.

Matthew Sherman

Matthew Sherman has demonstrated long-term service to ICRI and dedication to high quality concrete repairs. His accomplishments include many challenging concrete evaluation and repair projects covering a wide array of structures. He has provided long-term service to the concrete repair industry through technical committee work and leadership, applied research, presentations and publications. Matt is the kind of person who is consistently "there" doing the work, checking technical aspects without claiming the glory. He has won the respect of all of those who have worked with him on projects, technical committees and/or have had the opportunity to know him as friend and colleague. His honesty and fairness has been unwavering.

ICRI CONCRETE REPAIR
Restore | Repurpose | Renew

46 CONCRETE REPAIR BULLETIN MAY/JUNE 2019 WWW.ICRI.ORG

Cortec® MCI® Presented at NACE Conference in Russia

Ivana Liposcak brought Cortec® MCI® to Saint Petersburg for the May 22nd-24th International Conference "Corrosion in the Oil & Gas Industry," organized by NACE International and the Saint Petersburg Polytechnic University. During the event, leading industry specialists from international companies and scientific institutions worldwide gathered to exchange knowledge on innovations and experiences and connect with new customers. Liposcak presented a paper on infrastructure corrosion and the role of Migrating Corrosion Inhibitors in protecting metals in concrete. Cortec® VpCI® and MCI® Technologies have both generated strong interest in the corrosion protection community, and Cortec's team was able to have many beneficial meetings and interactions during a few dynamic days in Saint Petersburg.

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Case Histories

A Dose of MCI®-2005 Brings Multiple Benefits to Gulf State Park Lodge

The Gulf State Park Lodge and surrounding structures in Gulf Shores, Alabama, were the subject of a recent project that emphasized resiliency and sustainability. Located right on the Gulf Coast, the environment is prone to hurricanes and corrosion. Although epoxy-coated rebar was initially specified to provide corrosion protection in the reinforced concrete hotel structure, MCI®-2005 was eventually substituted as a more sustainable, cost-effective, and durable option. Analysis using LIFE-365 service life prediction modeling that accounted for the splash zone, Gulf Coast temperatures, and humidity indicated that using MCI®-2005 concrete admixture to protect metal reinforcement would outperform the service life of using epoxy-coated rebar. Switching to MCI®-2005 provided significant cost savings, and the admixture was ultimately used in the hotel, convention center, learning center, and walking bridges.

Other advantages of MCI®-2005 were that it is certified to meet ANSI/NSF Standard 61 for use in potable water structures, contains 67% USDA Certified Biobased Content, and was manufactured in Sarasota, Florida, within a 500 mile (805 km) radius of Gulf Shores. These eco-friendly characteristics were in line with the overall project's goal to be LEED certified.

The project as a whole ultimately did achieve LEED Gold certification, and M2 Solutions (the distributor of MCI®-2005 for the project) received award recognition for their integral role in the project at the Partners for Environmental Progress (PEP) Annual Awards Meeting in April 2019.

To read the full case history, please visit:

https://www.corteccasehistories.com/?s2member_file_download=access-s2member-level1/ch631.pdf

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Case Histories

Preservation in Progress at Krk Bridge

MCI®-2020 is part of a long-term plan for sustaining the Krk Bridge, which connects the island of Krk to the Croatian mainland. Strong winds that blow salt spray have caused chlorides to accumulate and penetrate into the bridge, resulting in corrosion problems. The bridge is now almost 40 years old and requires constant monitoring and maintenance. Inadequate maintenance in the past combined with the harsh environment have taken a toll on the bridge, and an investigation found the bridge's stability could be in danger if appropriate preservation measures were not taken.

The project investor for the current repair stage (which started at the beginning of 2018), chose MCI®-2020 as part of the preservation program after performing an experimental study of materials from five different producers. MCI®-2020 is applied to concrete in areas where corrosion has already started. The surface is then saturated with water (and excess water removed) before applying a repair mortar that was tested and found to be compatible with MCI®-2020 in a laboratory in Italy. MCI®-2020 met all the project's technical requirements and was economical and easy to apply!

To read the full case history, please visit:

https://www.corteccasehistories.com/?s2member_file_download=access-s2member-level1/ch630.pdf

Satisfactory Application Experience at Tagliamento Bridge Construction Site

Ivana Liposcak recently visited the location in Italy where the new dual carriageway Tagliamento River Bridge is being constructed and the factory site where concrete segments are produced. The bridge project is using MCI®-309 to protect post-tensioning (PT) cables in the concrete bridge segments prior to grouting. The corrosion inhibitor is easily fogged through the post-tension ducts using a low-pressure air hose after the PT strands are placed in the duct. MCI®-309 can be applied even after the strands are stressed. The client likes the product because it is easy and fast to apply, taking only 20 minutes for one PT segment. To learn more about the Tagliamento Bridge project, please visit:

https://www.corteccasehistories.com/?s2member_file_download=access-s2member-level1/ch613.pdf

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Upcoming Events

Cortec® World Sales Meeting

October 2nd-4th, 2019
Saint Paul Hotel
Saint Paul, MN
www.cortecwsm.com

Tradeshows

ICRI 2019 Fall Convention
November 11-13, 2019
Doubletree Hilton Philadelphia Center City
Philadelphia, PA
USA
https://www.icri.org

World of Concrete 2020
February 4-7, 2020
Las Vegas Convention Center
Las Vegas, Nevada
USA
https://www.worldofconcrete.com/en/attendee.html

Images


Disabled Concrete

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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