June 2023

The LEADING Edge

CORTEC Laboratories, Inc.

GREAT TECHNICAL AND WESTERN FARE AT AMPP 2023!

In March, several members of our lab enjoyed attending the annual AMPP corrosion and protective coatings conference, hosted this year in Denver, Colorado. The diverse menu of interesting lectures provided abundant food for thought as our R&D team learned about everything from electrochemical techniques, to CUI, to H_2S, to new raw materials and trends that will be helpful for ongoing product development.

Also of note was a session of the SC-13 Corrosion Monitoring and Measurement Committee that shared about progress on updates to the NACE TM-0208 VIA test standard, a project that Cortec® Laboratories Manager Pavlo Solntsev has been helping the committee with over the last year.

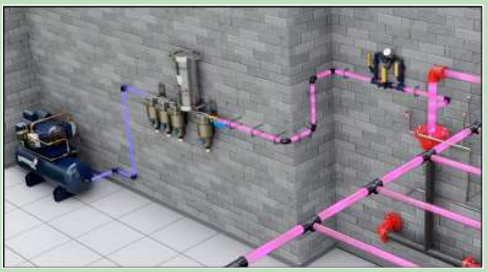
In addition to the abundant technical fare, the Cortec® R&D team topped off one of the evenings by enjoying a unique dining experience with other Cortec® Friends and Family at the Buckhorn Exchange, the oldest restaurant in Denver!

In addition to enjoying a rich technical menu at AMPP, some of our lab members were able to join in with the rest of the Cortec® delegation on a unique Wild West dining experience at the oldest restaurant in Denver.

Product News

Biobased CUI Inhibitor

In December, we earned the USDA Certified Biobased Product Label for CorroLogic® CUI Inhibitor Injection. This product marks two noteworthy achievements in that it (1) takes an advanced approach to a pervasive industry problem and (2) does so using renewable resources. As such, CorroLogic® CUI Inhibitor Injection is a must-try solution for any industry that suffers from corrosion under insulation (CUI) and is looking for more sustainable methods of protection. CorroLogic® CUI Inhibitor Injection contains 100% USA certified biobased content. Learn more: https://www.cortecvci.com/news-alert-new-cortec-cui-inhibitor-earns-usda-certified-biobased-product-label/



Compressed air initially helps the Vapor phase Corrosion Inhibitors in the Vapor Pipe Shield diffuse throughout all branches of the piping system to form an active layer of protection on metal surfaces.

Game-Changer for Fire Sprinkler Protection

In January, we shared how General Air Products had partnered with us to develop a Vapor phase Corrosion Inhibitor delivery system for corrosion mitigation of fire sprinkler systems. General Air Products calls this new Vapor Pipe Shield "A game-changing innovation in corrosion prevention technology for dry [and] pre-action fire sprinkler systems." The Vapor Pipe Shield is a convenient, more dependable alternative to nitrogen blanketing or dried air for protection of fire sprinklers against corrosion. It relies on Cortec® VpCI® Technology—Vapor phase Corrosion Inhibitors that create a protective molecular shield on the inside of the sprinkler piping system. No special equipment is required; the cartridge is compatible with standard sprinkler setups and is easy to install between the air compressor and the piping. Learn more: https://www.cortecvci.com/press-release-general-air-and-cortec-harness-patented-vpci-technology-for-fire-sprinkler-corrosion-mitigation/

Hydrotest Additive for Drinking Water System Components

In March, we had the pleasure of announcing that our newest corrosion inhibitor for hydrostatic testing has been certified to meet ANSI/NSF Standard 61 for use in hydrotesting of drinking water system components.* This opens exciting opportunities for those who fabricate, install, or service drinking water system components held to stringent safety requirements. VpCI®-649 HP also has an extremely low chloride impact (less than 0.6 ppm at 0.3% dosage) for use in systems with tight chloride restrictions. Learn more: https://www.cortecvci.com/press-release-exciting-breakthrough-new-corrosion-inhibitor-for-hydrotesting-drinking-water-systems/

High Viscosity Ashless Oil Additive

In April, we officially introduced M-535 HV, a high viscosity version of our corrosion inhibitor additive M-535 for ashless lubricating systems. M-535 has a base oil viscosity of ISO 46, making it suitable for low viscosity systems such as turbines and compressors. With M-535 HV, the chemistry is identical, but the base oil viscosity is higher, bringing M-535 HV to ISO 320 for compatibility with high viscosity lubricant systems such as those in gearboxes. Learn more: https://www.cortecvci.com/product-release-cortec-releases-new-oil-additive-to-prevent-rust-in-gearboxes/

When used as a surface treatment at concentrations up to 3.0% and drained.

Demo Videos

Our Tech Service team at Cortec® headquarters has helped produce several demo videos that are great for anyone working with Cortec® Coatings or CorrVerter® MCI® rebar passivation.

"How to Test Coating Adhesion" is a three-and-a half-minute video in which Technical Service Manager Rick Shannon demonstrates the crosshatch and tape method on a panel coated with VpCI®-395. This is a method that Rick often recommends to customers who call asking how to know if their first coat of paint has cured sufficiently to topcoat, or if it's okay to paint over an old coating. Watch here: https://www.youtube.com/watch?v=XXVqiZeo4mI

In **"How to Check Coating Cure with Solvent Rub Test,"** Rick Shannon shows another quick way to check coating cure, especially when you are out in the field and limited on time. Watch here: https://www.youtube.com/watch?v=NrdAQiS77uk

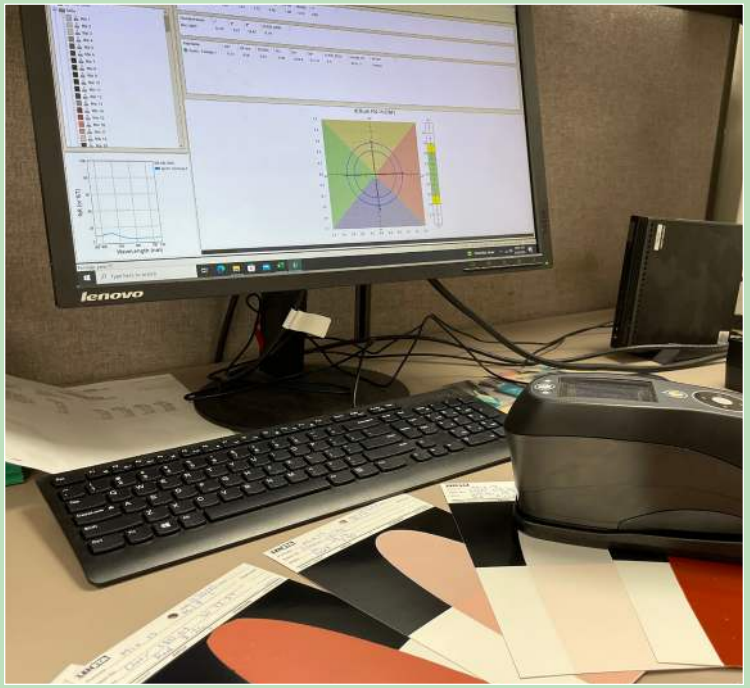
"How to Apply CorrVerter® MCI® Rust Primer to Rusty Rebar" offers step-by-step instructions on how to use Corr-Verter® MCI® when doing concrete repairs. A time-lapse segment shows how the rust converting primer turns from white to dark brown or black as it dries and cures. Watch here: https://www.youtube.com/watch?v=4GtnllwpdzQ

Testing News

New Color Scanner Gets Up and Running!

Our headquarters lab recently replaced its old paint color-matching scanner with an X-Rite scanner tied to more advanced X-Rite Color iControl software. In December, we sent Colin Gardner (Product Development Chemist) and Kasandra Collins (Quality Technician) to X-Rite headquarters for a few days of training on how to use the color matching equipment. Colin returned with some calibration homework. This involved creating 130 paint samples according to mixes specified by X-Rite and scanning them into the computer. The calibration helps train the computer on how much tint to suggest when making formulas for different colors of paints. Now, when someone requests a specific color, Colin can go into the computer and the software will generate a suggested recipe with a grade of how close it will look to the desired color.

In addition to creating formulations for new paint colors, the X-Rite program can be used to do color corrections on batches that have already been made. Kasandra regularly uses the X-Rite for this and other quality assurance purposes and has quickly become a pro! The X-Rite has also come in handy for Colin's concrete fugitive die testing so he can more precisely gauge the effects of weathering and which raw material and concentration will be the best choice.



The new X-Rite scanner uses newer X-Rite Color iControl software to make formulations based on calibrations recorded from 130 samples like those in the foreground.

Testing News

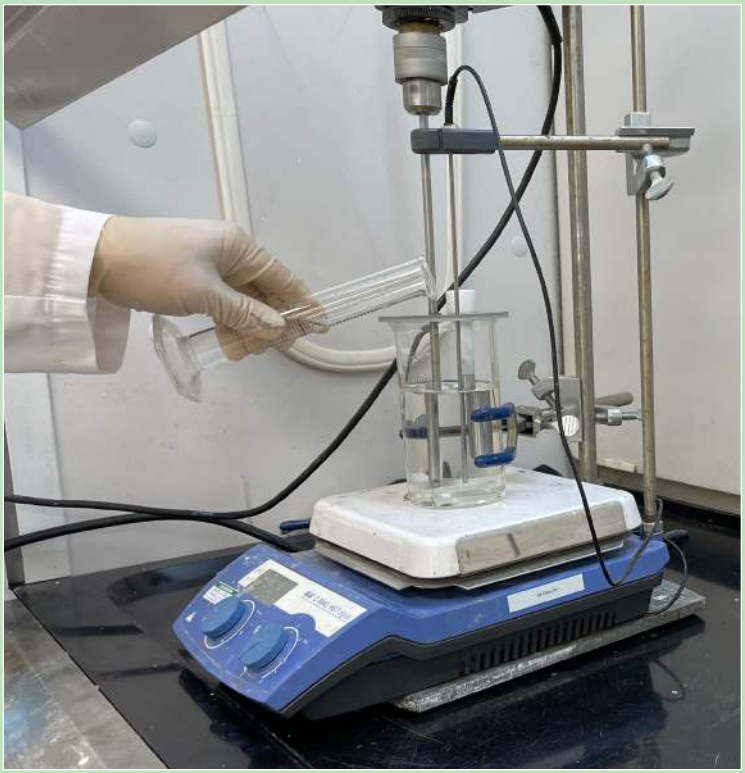
Fugitive Die Testing on MCI® SACIs

From time to time, the Cortec® Production department will ask Cortec® R&D to search for a new raw material that will supply needed product performance characteristics while also meeting other characteristics in regard to availability and pricing. A recent example of this was the request to find a new fugitive die to replace one that was causing supply issues. Fugitive die is useful when applying MCI® SACIs (surface applied corrosion inhibitors) because it turns the concrete pink to show where it has been applied but fades over time after exposure to UV light.

Colin Gardner has taken up the challenge of finding a new fugitive die by testing the irradiance (how much UV energy is needed for fading) of different fugitive dies at various concentrations in the QUV Accelerated Weathering Tester. Historically, the lab has used this equipment to test long-term weathering on metal panels covered with coatings or VpCI® Film by exposing them to varying cycles of humidity, heat, and UV. Since the equipment was not well suited to concrete samples, Colin got creative and found a way to mold small pieces of concrete that would fit inside the test chamber. He treated the concrete with two different MCI® SACIs containing fugitive die at different dilutions to see which ones would show the best fading results. He will continue testing as needed until he finds which die works best and what irradiance levels achieve those results.

Concrete samples treated with MCI® SACI and fugitive die before QUV testing.

Colin placing the concrete samples with fugitive die facing inward to where they will be exposed to accelerated weather testing.



Adding saltwater to the ASTM D665 test for rust prevention of oil-based products.

Testing for Oil-Based Products

There are a variety of tests our lab techs can run either for internal purposes or for customers who need it. One test that is occasionally requested is ASTM D665, the "Standard Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water." Recently, our lab tech Brian Benduha received an internal request from the Production department to perform this ASTM D665 to determine the shelf life of one of our raw materials and see if the corrosion inhibiting properties were still active. The raw material was added to mineral oil along with synthetic seawater to see if any corrosion formed on a metal probe suspended in the fluid.

While this method tests the corrosion inhibiting properties of a chemistry in direct contact with the metal, Cortec® can also run a similar test that evaluates the vapor-phase corrosion inhibiting properties of a product. Since vapor-phase protection is the special feature of the majority of Cortec® products, the latter test will likely be of special interest to those who want to evaluate the corrosion inhibiting properties of their Cortec® oil additives. Contact Cortec® to learn more about our in-house testing options: https://www.corteclaboratories.com/contact-us/

Lab News

EcoCortec® and CorteCros® Labs Expand In-House Testing Capabilities

Cortec's two Croatian plants, EcoCortec® and CorteCros®, have recently added new laboratory equipment to expand their testing capabilities.

The main purposes of installing new equipment at the CorteCros® laboratory (established in 2018) in Split, Croatia, are to (1) monitor the quality of manufactured products; (2) test products in accordance with ISO, ASTM, and NACE standards; and (3) provide testing and technical support to customers on request. Devices added this year include a salt spray chamber, coating applicator, drying time recorder, DFT (dry film thickness) meter, and a crosscut adhesion test kit.

EcoCortec®, in Beli Manastir, Croatia, has also been expanding its laboratory, primarily to provide better onsite technical serves, as well as to conduct testing in accordance with certain ISO, ASTM, and NACE standards. New equipment for 2023 consists of an FTIR, Gamry Potentiostat, GC-MS, Sieve Shaker, salt spray chamber, humidity chamber, UV chamber, dart drop impact tester, polishing machine, and moisture tester. Once all the new equipment is installed, the number of tests EcoCortec® can perform onsite will grow to a list of 25.

If you are located in or around Europe and want to learn more about our testing capabilities and services at CorteCros® and EcoCortec®, contact us today!

EcoCortec®: https://ecocortec.hr/eng/index#footer2-1h
CorteCros®: https://cortecros.com/contact/

New CorteCros® Lab Equipment

B.K. drying time recorder.

Coating applicator.

Crosscut adhesion test kit from TAC.

PosiTest DFT meter.

Lab News

New CorteCros® Lab Equipment

Salt spray chamber.

New EcoCortec® Lab Equipment

Plug polisher for VIA testing according to NACE TM-0208 or Cortec® method.

Left to right at EcoCortec®: Oakland Instrument MT-1528 for Tensile Strength/Elongation, Elmendorf Tearing Tester, Oakland Instrument for Dart Drop Impact (new), SCITEQ bulk density tester, Gilson Company Performer III 3" Sieve Shaker SS-3 (new), Dynisco D 4002 Melt Flow Indexers.

Keywords: Cortec, Cortec Laboratories, MCI, corrosion, corrosion under insulation, SACI, EcoCortec, CorteCros, salt spray testing, QUV testing

CORTEC CORPORATION
Environmentally Safe VpCI®/MCI® Technologies

ISO/IEC-17025 LABORATORY TESTING ACCREDITED
ISO 14001 CERTIFIED ENVIRONMENTAL SYSTEM REGISTERED
ISO 9001 CERTIFIED QUALITY SYSTEM REGISTERED

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