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Attention: Editor

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PRESS RELEASE



Cortec's New MCI® Technology Brochure Tackles Age-Old Problem of Infrastructure Deterioration!

Cortec's freshly updated MCI® Technology brochure provides an excellent overview on using Migrating Corrosion Inhibitors (MCIs) to extend the service life of new and existing concrete structures. The brochure explains that corroding concrete reinforcing metal can cause serious problems such as costly repairs, financial losses, and injuries. To counteract these problems, Cortec's patented MCI® Technology proactively delays corrosion onset and keeps rates low after initiation, greatly extending concrete service life.

MCIs are based on a mixed inhibitor technology that affects both anodic and cathodic portions of a corrosion



Durability and Sustainable Construction

Sustainable construction has become a goal for owners across the globe. While much attention has gone to reducing cement use and minimizing power and water consumption, an often overlooked aspect is the durability and service life of the final structure. However, this is undoubtedly one of the key parameters influencing structural sustainability.

By using MCP in severely corrosive environments, structures will have a stronger resistance to corrosion and therefore require greater durability. Increased durability will mean fewer repairs, greater structural integrity, and a longer service life, all leading to greater sustainability.

MCP is made from a renewable raw material, enabling users to earn certain LEED credits. It is an excellent addition to building projects around the world seeking to meet sustainability standards such as the Estidama Pearl Rating System and BREEAM.

Cost Effective Service Life Extension

The Princess Towers in the United Arab Emirates utilize MCP-2005 in the podium substructure, similar to the Burj Khalifa project. The addition of MCP into the project more than doubled the service life of the building, which cost less than 1/10 of a percent of the total construction costs.



ITEM	COST (USD)
Construction Cost	180,000,000
Construction Cost of MCP-2005	136,000 (0.07%)
Service Life (Without MCP)	48 years
Service Life (With MCP)	103 years

Cortec's MCP products not only provide corrosion protection to metals on both new and existing structures, they benefit our environment. We have admixtures derived from renewable resources, and many of our products also meet NSF Standard 61 approval for use in structures holding potable water.





Drinking Water System Component NSF/ANSI 61-38 AL

cell. MCIs can be applied as an admixture or topical treatment that migrates through the concrete pore structure. When the MCIs reach embedded metals, they are ionically attracted to the metal surface where they form a protective molecular layer against corrosive elements.

Structural durability and service life are key (but often overlooked) parameters influencing the increasingly important goal of sustainable construction around the globe. MCI® Technology helps achieve this goal by giving concrete structures greater resistance to corrosion in severe environments. Adding to its sustainability, MCI® is made from a renewable raw material and enables users to

earn certain LEED credits. It is an excellent addition when building according to sustainable standards such as the Estidama Pearl Rating System and BREEAM. The cost-effective advantages are great when considering the use of MCI® in structures such as the UAE Princess Tower, where MCI® doubled the projected service life at less than 1/10 of a percent of total construction costs.

The brochure describes the various MCI® delivery systems that can be used for new construction, repair, and surface treatment. MCI® admixtures offer important advantages over other corrosion inhibiting admixtures that rely on pore blockers or are limited by a chloride threshold. MCI® admixtures work independently of chlorides, protect even when cracks occur, and can actually delay set time for better workability. They also do not affect concrete physical properties when used properly. Various independent testing results show the important advantages of using MCI® to inhibit corrosion.

Comparison of Cortec® MCP Admixtures to Other Inhibitors:

Feature	Cortec® MCP Inhibitor	Calcium Nitrite
Environmentally friendly, derived from renewable resources	TRUE	FALSE
Used in small quantities—less than 1.5 ppm/yd³ (1 liter/m³)	TRUE	FALSE
Required dosage rate is not affected by expected chloride exposure	TRUE	FALSE
Ability to migrate through concrete in water phase at ambient temperatures	TRUE	FALSE
Does not increase shrinkage compared to a control	TRUE	FALSE
Does not require adjustments to concrete mix design (chemical or water)	TRUE	FALSE
Does not affect concrete reactivity	TRUE	FALSE
Does not accelerate concrete set time	TRUE	FALSE
Has UL approval to meet NSF Standard 61 (contact w/ potable water)	TRUE	FALSE
Spills can be flushed with large quantities of water down drain	TRUE	FALSE



Repair

MCP is important for ensuring the longest possible lifespan of concrete restoration projects. MCP not only slows the rate of corrosion begun in deteriorating structures, but also protects against the troublesome ring anode/insipient anode effect that often follows concrete repairs. MCP is ideal and convenient to add to concrete repair mixtures and migrates through adjacent areas after application to protect embedded reinforcement. MCP is also available as a passivating grout for use on exposed rebar, or as a topical treatment to existing surfaces.

The brochure contrasts MCI® admixtures with the shortcomings of calcium nitrite and mentions the important benefits of using MCI® in repairs. MCI® is important for ensuring the longest possible lifespan of concrete restoration projects and protecting against the common troublesome ring anode/insipient anode effect. MCI® can be added to repair mixtures or used as a passivating grout.



For surface treatment, two different types of MCI® topical treatments are available—pure inhibitors that migrate and protect reinforced concrete at the rebar level, and water repellent MCIs that offer extra protection against the ingress of corrosive contaminants. Several MCI® surface treatments have been tested according to U.S. Bureau of Reclamation M-82 Protocol and found to significantly reduce corrosion and cracking at a high level of chloride exposure.

Cortec® also offers excellent solutions for the unique corrosion problems present in post-tensioning applications such as bridges and overpasses. For example, PTC emitters were designed to help

arrest corrosion on the suspension cables of the Severn Bridge located between England and Wales. MCI® Mini Grenades were added to grout cover for cable strands on the Cochrane Bridge in Mobile, Alabama.

Specialty products are also available for multiple aspects of the construction industry. Many of these products are a result of customer suggestions that meet specific end user needs. In addition to Migrating Corrosion Inhibitors, Cortec® offers products for concrete cleaning, rebar storage, and rust conversion.

A helpful MCI® product application guide in the center of the brochure visualizes MCI® application for three different stages of concrete:

- New Concrete
- Existing Structures, No Visible Corrosion Damage
- Existing Structures, Visible Corrosion Damage

[illegible]

The guide contains relevant case histories from around the world that demonstrate the application of MCI[®] at varying construction, maintenance, and repair levels.

The brochure concludes with a helpful product selection guide organized by product type:

- **Admixtures**
 - Amino-Alcohol Based
 - Amine Carboxylate Based
 - Specialty
 - Superplasticizers with Amine Carboxylate Based MCI®
- **Surface Treatments**
 - Amine Carboxylate Based
 - Water repellants with MCI®
 - Coatings
- **Specialty Products**
- **Repair Products**

MCI® Technology is an important key to inhibiting corrosion and increasing durability and sustainability of reinforced concrete. Browsing this freshly updated brochure will provide a helpful introduction to the multiple MCI® options for extending service life of both new and existing concrete structures.

To find out more about Cortec's MCI® product line, please visit:

<http://www.cortecmci.com/>

Find out more about Cortec's innovative corrosion prevention products here:

<http://cortecvci.com/index2.php>

Need a High-Resolution Photo? Please Visit: www.cortecadvertising.com

Cortec® Corporation is the global leader in innovative, environmentally responsible VpCI® and MCI® corrosion control technologies for Packaging, Metalworking, Construction, Electronics, Water Treatment, Oil & Gas, and other industries. Our relentless dedication to sustainability, quality, service, and support is unmatched in the industry. Headquartered in St. Paul, Minnesota, Cortec® manufactures over 400 products distributed worldwide. ISO 9001, ISO 14001:2004, & ISO 17025 Certified. Cortec Website: <http://www.cortecvci.com> Phone: 1-800-426-7832 FAX: (651) 429-1122

Product Selection Guide			
Product	Description	Approximate Coverage Rate	Packaging
Admixtures	MCI-2000	1 gal/100 sq ft (0.0093 gal/sq ft)	1 gal/100 sq ft (0.0093 gal/sq ft)
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Surface Treatments	MCI-2000	1 gal/100 sq ft (0.0093 gal/sq ft)	1 gal/100 sq ft (0.0093 gal/sq ft)
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Specialty Products	MCI-2000	1 gal/100 sq ft (0.0093 gal/sq ft)	1 gal/100 sq ft (0.0093 gal/sq ft)
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Repair Products	MCI-2000	1 gal/100 sq ft (0.0093 gal/sq ft)	1 gal/100 sq ft (0.0093 gal/sq ft)
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