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**Attention: Editor**  
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**PRESS RELEASE**



## **The Power of MCI® Concrete Admixtures as Green Building Materials**

Can something as small as one pint of admixture per cubic yard (0.6 L/m<sup>3</sup>) of concrete have much of an impact on construction when it comes to sustainability? In reality, a seemingly small decision like the choice of an admixture can have far reaching consequences on a structure's environmental impact. [MCI® admixtures](#), in particular, make an ideal option where sustainability is concerned.



### **The Quest for Sustainability**

The quest for green buildings and sustainable construction is on the rise as society thinks more and more about the impact of human activities on the environment. This attitude is reflected in the American Concrete Institute's "[ACI 130R-19: Report on the Role of Materials in Sustainable Concrete Construction](#)," published in 2019. This report discusses how the choice of construction materials can affect sustainability in several respects such as carbon footprint, materials efficiency, construction practices, and service life. Among other topics, an entire chapter is devoted to chemical admixtures and additives. It is here the report underscores the huge potential ROI of concrete admixtures by stating, "Chemical admixtures in and of themselves contribute very little to the total environmental burden of concrete. This addition is dwarfed by the net reduction in the environmental impacts of

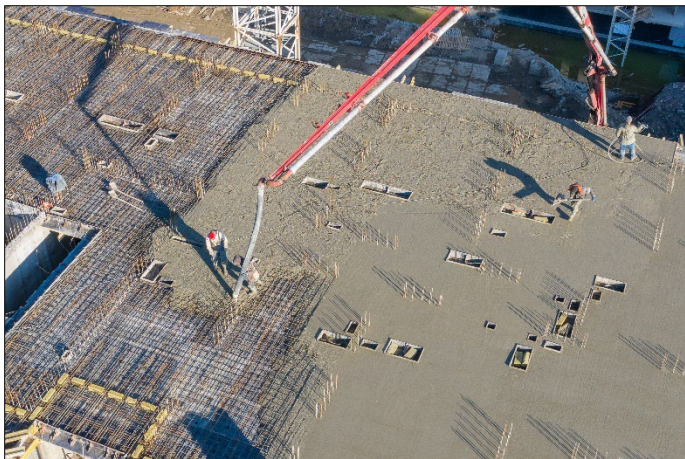
concrete that use of chemical admixtures can provide.” How can such a seemingly small decision reduce the overall environmental impact of the concrete? The answer is by extending the service life of the concrete structure. Theoretically, this reduces the amount of concrete that will be needed for repair or replacement, which in turn reduces the carbon emissions of concrete production (a significant contributor to greenhouse gas) throughout the structure’s life cycle.

### How MCI® Admixtures Extend Service Life

How, then, do MCI® admixtures extend the service life of a concrete structure? The means is corrosion inhibition. Corrosion of embedded reinforcement is one of the primary causes of concrete deterioration leading to repair or replacement. It is often caused by high chloride exposure in coastal environments or regions with severe winters where deicing salts are needed. It can also be the result of concrete carbonation, caused by the



gradual loss of naturally protective high alkalinity levels after decades of exposure to the atmosphere. Corrosion products can cause the reinforcing metal to expand to several times its original size, pushing on the overlying concrete and making it crack or spall, which creates pathways for more corrosives to enter and continue the vicious cycle.



MCI® admixtures dosed into the ready mix at the time of construction fight the corrosion process by forming a molecular protective layer on the rebar. This interrupts the natural corrosion reaction, delaying time to corrosion and reducing corrosion rates once started. ASTM G109 testing has shown MCI® to reduce corrosion rates by five to 13 times when compared to untreated samples. This corrosion reduction can have powerful effects on a structure’s service life and delay time to the first needed

repair by the simple addition of a concrete admixture at a fraction of the entire structure’s cost.

### Other Sustainability Benefits of MCI® Admixtures

Another sustainability advantage is that several MCI® admixtures include biobased content. [MCI®-2005](#) is a USDA Certified Biobased Product that contains 67% USDA certified biobased content. In addition, [MCI®-2005 NS](#) contains 27%



biobased content, [MCI®-2005 AL](#) contains 20% biobased content, and [MCI®-2006 NS](#) contains 25% biobased content. This feature can help green building projects earn credits toward LEED certification (a nationally accepted US benchmark and globally recognized standard in green building) in the “Sourcing of Raw Materials” MR Credit category. By extending service life, MCI® admixtures can also contribute to the “Building Life-Cycle Impact Reduction” MR Credit category for those who use a life-cycle assessment (LCA) to demonstrate the potential reduction in CO<sub>2</sub> emissions.



### Side Benefits of MCI®

Sustainability and life cycle aside, MCI® admixtures offer other practical benefits. Unlike calcium nitrite corrosion inhibitors, they do not accelerate set time, they are dosed independently of expected chloride threshold, and they have minimal impact on physical properties—often showing a marked advantage in workability and ease of finishing compared to CNI. Use of MCI® admixtures has also been known to offer significant cost savings

compared with other strategies of corrosion mitigation such as epoxy coated rebar.

### Small Addition, Big Impact

Ultimately, a small dose of corrosion inhibiting admixture can have a big impact on the sustainability of a structure. It is an excellent way for those engaged in green building to conserve natural resources with the goal of reducing carbon dioxide emissions from the concrete manufacturing process. The even greater benefit of making a structure last longer is that it increases sustainability all around—both for the environment and for the pocketbook of the building owner. Contact Cortec® for further help making small decisions with a big potential impact: <https://www.cortecmci.com/contact-us/>



*Keywords: concrete admixtures, green building materials, MCI admixtures, green buildings, sustainable construction, extend service life, sustainability in construction, building green can help conserve natural resources and reduce carbon dioxide emissions, Cortec, concrete corrosion*

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