



Ernest Maier & CarbonCure: A Success Story

How one of CarbonCure's first customers extended its use of CarbonCure from masonry and ready mix to precast concrete.

Introduction

Ernest Maier's family of companies is committed to delivering high-quality, sustainable products to its community. Driven by the desire to deliver greener concrete, the group began evaluating CarbonCure's technologies way back in 2015.

Since then, Ernest Maier's businesses have successfully used low carbon concrete made with CarbonCure in masonry and ready mix across a range of project types and applications. Today, it is testing CarbonCure Precast in its precast and prestressed products.

Ernest Maier's motivation for adopting CarbonCure's technologies is clear: environmental sustainability.

According to Nate Tarbox, General Manager of Bay Ready Mix—part of the Ernest Maier family—the biggest threat to any concrete producer's business model is the lack of sustainability due to cement consumption. "We're going to come to a stage where society won't tolerate it anymore. Whether you believe in global warming or not, society will dictate the change," he said.

Today, 80-90% of construction projects in the State of Maryland contain sustainability requirements. In an effort to get ahead of the competition and address ever-growing sustainability concerns, Ernest Maier takes a progressive and proactive approach by using CarbonCure.

"In Maryland, the reason I'm not using CarbonCure in 100% of my mixes is that the specifications for State mixes won't allow it."

*Nate Tarbox
General Manager, Bay Ready Mix*



About Ernest Maier

Ernest Maier has been delivering quality construction solutions to the mid-Atlantic region of the United States since 1926. It began as Washington, DC's most trusted masonry block manufacturer and grew through its ambitious acquisition strategy to provide an array of concrete and building solutions to contractors, architects, engineers, designers, and homeowners.

From ready mix concrete to steel systems, the Ernest Maier family of companies manufactures and distributes aggregates, bricks, drainage, hardscapes, insulation, lintels, natural stone, pavers, sand, stone, stormwater solutions, tools, and precast/prestressed concrete.

Ernest Maier acquired Bay Ready Mix in 2015 and Concrete Building Systems (CBS)—a producer of PCI-certified precast structural and prestressed concrete elements—in June 2020. Both companies aligned with Ernest Maier's sustainable values.

Today, Bay Ready Mix delivers sustainable ready mix concrete to Baltimore, Washington, the Eastern Shore, and everywhere in between, while CBS is rolling out CarbonCure Precast to deliver more sustainable precast and prestressed concrete to meet the ever-growing demand for green building materials in the mid-Atlantic region. CBS specializes in double tees, columns for parking decks, jails, stormwater structures, parking stops, planters, gutter splash blocks, and other concrete structures.



Ernest Maier and CarbonCure

Emco Block (part of the Ernest Maier family of companies) was one of CarbonCure's earliest customers—adding CarbonCure Masonry to its product lines in 2015.

When Bay Ready Mix joined Ernest Maier in 2015, it became one of the first producers in the world to implement CarbonCure Ready Mix. Today Bay Ready Mix includes CarbonCure in 80% of its mix designs and reduces up to 8% cement content as a result.

Ernest Maier's newest acquisition, Concrete Building Systems (CBS), is in the process of rolling out CarbonCure Precast. Because of the group's successful history with CarbonCure, it is expected that CBS precast products will gain a 10% minimum cement reduction.

Recognizing the Importance of Sustainability

According to Nate, sustainability is not just a nice-to-have, it's imperative to the resilience of the concrete industry as a whole. There is greater pressure from society to make improvements in all industries, especially those that are big carbon emitters. Nate feels it is time for the concrete industry to make the necessary changes to survive.

"It's almost always assumed—at least in some areas of the United States—that sidewalks will be made out of concrete. But I've lived on the coast and I've seen boardwalks and sidewalks made from recycled plastic. These competitive innovations are coming and we need to have competitive solutions that are as green, if not more so," he said.

Nate and his team are constantly working to convince the departments of transportation to change prescriptive specifications to allow for innovations like CarbonCure.



Evaluating and Implementing CarbonCure

Implementing any new technology to a business introduces risk—especially when you're one of the first companies to try it in a commercial setting. CarbonCure was able to help mitigate risk for Ernest Maier's companies with its comprehensive, cross-functional action plan designed to help customers ramp up effectively.

The team received support from CarbonCure with everything from installation and testing to sales and marketing resources and training to ensure the teams reap the maximum benefits from the partnership.

"In the beginning, I was a little skeptical that I'd see significant cement reductions with CarbonCure. However, CarbonCure has proved itself time and again to be a tremendously solid product and I have not seen a single downside to using it."

*Nate Tarbox
General Manager, Bay Ready Mix*



Installation at All Plants

CarbonCure's dedicated Installation and Maintenance team assisted with the quick installation of the equipment.

"The installation lead time at this point is mere weeks as we already know what the dosage rates look like," said Nate. "Installing the tank and getting the CO₂ gas supplier online is really the main thing. The technology itself is easy to install."

CarbonCure's team also works side-by-side providing ongoing support in the form of training, maintenance, troubleshooting, and data sharing.

"Someone will come out to the site, help us ramp up correctly, and run a series of trials to dial the technology in. In precast, that skillset will be crucial as every mix is customized every time," said Nate.

"I'm anticipating that we'll see greater cement reductions in precast than in ready mix—up to 10% or more."

*Nate Tarbox
General Manager, Bay Ready Mix*



Thorough Mix Evaluation

When testing any new mix design, producers want to ensure customers experience a high-quality and consistent product. To secure the highest quality concrete, CarbonCure's Technical Services and Support (TSS) team works with Bay, Emco, and CBS quality control teams on commissioning trials, optimizing mix designs, testing and analyzing data, and submitting mix designs.

"CarbonCure's TSS team was invaluable during installation as they have such deep knowledge of what we're doing," said Nate.

Customers to date have had only positive experiences with the concrete created with CarbonCure. The TSS team works closely with the Ernest Maier companies to help with ongoing testing, optimization, and support.

"The members of CarbonCure's TSS team are like unpaid employees in our company. We trust them enough to use them as sounding boards for our team. We regularly call them up and run through our mix designs or challenges we come up against—even when it is unrelated to CarbonCure," said Nate.

After its comprehensive testing process, Bay Ready Mix recognized the potential to reduce the cement content of their concrete mix designs to produce more sustainable and economical concrete. It started by reducing cement by 3% and has succeeded in reducing it by 8-10% in some prescriptive to performance mixes.

"CarbonCure performed a second rank test with us. We zeroed in on the area where I was starting to see progress and I was able to go from 6% all the way up to 10%," said Nate.

On the precast side, Nate foresees no problems with CarbonCure due to the high strip strength requirements.

"If you're aiming for 10,000 psi (68.9 MPA) concrete, you'll probably use 800-900 pounds (363-408 kilograms) of cementitious material and your strip strength will be around 7,500 psi (48.3 MPa). I can easily hit that with a lower cement content. When you're trying to go further though, you actually want to slow your reaction down and CarbonCure helps greatly with that."

Market Development Support

The teams at Ernest Maier companies frequently use CarbonCure's customer portal, [myCarbonCure](#), which contains a host of technical resources and marketing resources.

"I'm always looking for quality reasons to talk to our customers. CarbonCure creates these reasons and gives me a talking point to get more time in front of customers," said Nate

The teams can also access production volume and environmental insights and reports within myCarbonCure, plus a carbon saving tracker and marketing materials to showcase their efforts in sustainability with other teams across the Ernest Maier group.

"I like how CarbonCure equates the carbon savings to sequestration by trees. It paints a great picture and helps show people internally what we're up to, besides the mundane stuff that happens every day."

"I'm always looking for quality reasons to talk to our customers. CarbonCure creates these reasons and gives me a talking point to get more time in front of customers."

*Nate Tarbox
General Manager, Bay Ready Mix*

What we've accomplished



300,276 yd³
Of concrete made
with CarbonCure



65,868 Loads
Delivered with
CarbonCure concrete

The Results

For Ernest Maier's companies, the decision to implement CarbonCure was all about doing the right thing for its community and the environment.

"CarbonCure is the most practical way for us to make our concrete more sustainable as it comes at it from both sides of the equation—it traps the carbon dioxide in the concrete and it allows us to reduce the cement content. That's what fires me up about it," said Nate.

The concrete products maintain the same performance the company is renowned for—but with the benefit of significant reductions in cement content for a more profitable mix and a reduced carbon footprint. Ernest Maier is also in the early stages of joining [CarbonCure's Carbon Dioxide Removal Credit Program](#). The team is currently analyzing the first batch of data for verification.

As of December 2021, Ernest Maier has delivered a total of 65,868 truckloads of sustainable concrete, which achieved carbon savings of more than 1,200 metric tons of CO₂. That's equivalent to 1,453 acres (588 hectares) of forest absorbing CO₂ for a year. In future, that number will scale as the other companies in the Ernest Maier family roll it out.





Build for the Future. Build with CarbonCure.

CarbonCure has been used on thousands of projects ranging from healthcare to higher education, residential developments, and corporate campuses.

For more information about building with CarbonCure concrete, visit carboncure.com. To get in touch with a CarbonCure representative, send us an email at info@carboncure.com or give us a call at **+1 (902) 448-4100** (Worldwide) or **+1 (844) 407-0032** (North America).