

New Carbon-Storing Concrete Set to Boost Sustainable Construction



A statistic often heard in commercial real estate (CRE) is that buildings are responsible for a large chunk of global carbon dioxide emissions – with operations alone accounting for around 28% according to McKinsey. Add in the carbon impacts of manufacturing and construction, and that number shoots up to 40% of CO₂ emissions, with approximately 24% of a building’s lifetime carbon impacts “baked in” during these initial stages.

Given these facts, reducing the carbon footprint of the industry has become a major focal point for both environmental professionals and government efforts at decarbonization.

To achieve decarbonization, many companies have turned their attention to reducing the amount of carbon produced in the manufacturing process. Some, however, have taken it a step further by finding ways to trap extra carbon during concrete manufacturing.

Locking Up Carbon

A recent Reuters article highlights the efforts of several companies to boost the potential of building materials to act as “carbon sinks” which remove carbon from the atmosphere rather than just reducing the amount that goes into manufacturing.

Canadian firm CarbonCure, for example, has come up with a “green concrete” concept to inject CO₂ directly into concrete mix. The gas then reacts with calcium in the mix to make calcium carbonate – a hard mineral that reduces the amount of cement that must be added to make strong concrete.

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CarbonCure CEO, Rob Niven, notes that the new tech has been retrofitted to 800 concrete plants in 34 countries, in both developed and developing markets. CarbonCure recently deployed the tech in France, as well as in Benin and Gabon.

Other carbon reduction efforts include San Francisco-based Heirloom Technologies, which is working on direct air capture (DAC) of carbon from the atmosphere. The captured carbon can then be combined with CarbonCure's tech, for permanent storage in concrete.

Also in the mix is California-based startup CarbonBuilt, which is working on DAC as well as methods for trapping carbon as part of new concrete to make more sustainable concrete blocks.

Carbon Credits

The promising potential of these technologies has drawn interest from some big players, including Deloitte Canada which signed a multi-year carbon credit deal with CarbonCure in 2023. Heirloom's tech has drawn attention from Microsoft which purchased 315,000 metric tons of CO2 removal from the company late last year.

Meanwhile, CarbonBuilt's low-impact concrete blocks have already found a home with construction companies looking for sustainable alternatives to traditional materials.

Driving Investment

As these deals show, carbon-smart building strategies are drawing increasing attention from companies looking to offset their carbon emissions. There is a growing investor interest in buildings that can prove their environmental, social, and governance (ESG) pedigree.

For commercial real estate, these advancements represent another lever that can be used to market properties and close deals. Combined with knowledge of energy certifications, knowing a building's "baked-in" carbon history can be a powerful tool to add value when finding the perfect property to meet a client's needs.

