



# Concrete as a Carbon Removal Pathway

## How Concrete Can Permanently Store CO<sub>2</sub>

### What is concrete?

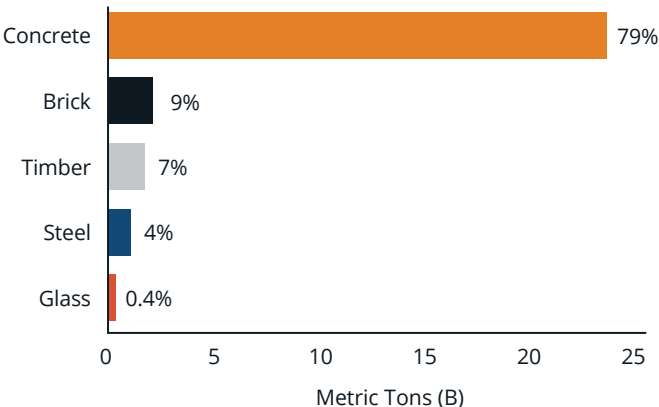
Concrete is the most abundant human-made material on earth. With billions of metric tons poured annually, we rely on it to build our growing world. Due to its mass scale of consumption, concrete provides a huge opportunity for effective carbon removal.

### How is concrete made?

Concrete is made by combining water, cement, and aggregates like sand or gravel. As a building material that is integral to many construction projects, concrete is valued for its strength and durability. There's a strong chance you're sitting in a structure built with concrete as you read this!

### Concrete Stats

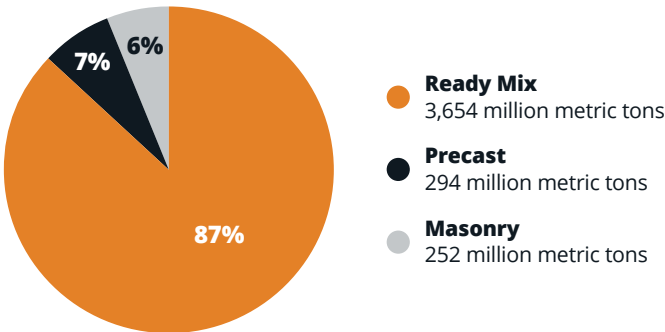
#### Annual world production of concrete compared to other materials



### Fast Facts

- Concrete is the most widely used human-made material in the world with the earliest recordings of concrete structures dating back to 6500 BC.
- We need more sustainable concrete: roughly 18 billion cubic yards (14 billion cubic meters) is poured annually, generating about 7% of global carbon dioxide (CO<sub>2</sub>) emissions.
- There are over 100,000 concrete plants globally and more than 5,000 in the U.S. alone.
- CarbonCure's technologies allow concrete to be used as a pathway to store CO<sub>2</sub> emissions in a way that is permanent, verifiable and scalable.

#### Types of concrete produced annually



## Concrete's environmental impact

Cement gives concrete the strength it's so highly regarded for, but the production of cement is responsible for about 7% of the world's CO<sub>2</sub> emissions—and represents about 90% of the emissions from concrete. Since the world's building stock is expected to double by 2060, the amount of concrete that will need to be poured also presents us with an opportunity to permanently store immense quantities of CO<sub>2</sub>.

## Why store CO<sub>2</sub> in concrete?

CarbonCure's technologies enable concrete producers to beneficially reuse captured carbon. When captured CO<sub>2</sub> is introduced into the concrete mix, it reacts with cement to transform into a mineral that strengthens the concrete. The mineralized CO<sub>2</sub> will never be released back into the atmosphere, even if the concrete is later demolished.

Captured CO<sub>2</sub> can also be introduced to water filled with cement particles to turn concrete waste into revitalized mix materials. This allows concrete producers to reduce the amount of virgin cement and freshwater required in new concrete mixes.

## The impact of sustainable concrete

Mineralized CO<sub>2</sub> in concrete improves the concrete's compressive strength, allowing producers to safely reduce cement content by an average of 4-6% while lowering the carbon footprint of the concrete—with no impact on quality or performance. Concrete producers can also reduce the use of fresh water by 17-20% and virgin cement by 8-10% when using CarbonCure's Ready Mix and Reclaimed Water technologies together. These reductions lead to an improved bottom line and an incentive to incorporate CO<sub>2</sub> into more of their production—further driving down cement usage and carbon emissions.

With the ability to bid on and win new sustainable building projects, concrete producers also have the ability to create more green jobs in their local communities. In addition, producers who use CarbonCure's technologies receive a portion of carbon credit revenues, incentivizing them to adopt more of our technologies and provide maximum carbon savings. This results in a win-win-win for concrete producers, people and the planet.

## CarbonCure's concrete impact

More than 600 CarbonCure systems have been sold around the world in a total of 25 countries. Thousands of commercial, infrastructure and residential projects have been supplied with CarbonCure concrete—from a de-icing pad in an Alberta airport to Amazon's HQ2 in Virginia to roads and high-rises in Hawaii. As a result, more than 160,000 metric tons of CO<sub>2</sub> have been reduced and removed, which is equivalent to taking 34,475 cars off the road. In turn, this generates high-quality carbon credits that deliver immediate, scalable, high-impact climate benefits.

## A vision for the future

Concrete's widespread use creates an excellent opportunity for storing massive quantities of CO<sub>2</sub>, turning concrete from an environmental liability into a tool for building a low-carbon future. We're on a mission to reduce 500 million metric tons of embodied CO<sub>2</sub> emissions annually. We plan to do this by making our concrete technologies standard for all concrete production across the globe. But we need your help!

Purchasing our high-quality carbon credits will help to accelerate the adoption of CarbonCure's technologies to store more CO<sub>2</sub> in concrete and scale the decarbonization of the concrete industry.

## Get in Touch

For more information about CarbonCure Carbon Credits, visit [carboncure.com/carbon-removal](https://carboncure.com/carbon-removal) or email [carbonremoval@carboncure.com](mailto:carbonremoval@carboncure.com).