

Carbon Mineralization in Concrete and MRV

Why CarbonCure Leads the Industry in Measurement, Reporting and Verification of CO₂ Removal

What is MRV?

MRV stands for the measurement, reporting and verification of carbon dioxide (CO₂) removal. Carbon credit buyers are increasingly concerned about the integrity of the CO₂ they are buying. MRV provides a way to assess the validity of carbon removal credits to ensure they are real. Every carbon removal pathway will have a different quality of MRV based on the combination of each of these key three elements.

M = Measurement

The degree to which the CO₂ removal can be accurately quantified and measured.

R = Reporting

The ability to reliably provide accessible CO₂ measurement data and information in a usable format.

V = Verification

The independent scientific validation of the CO₂ removal methodology and project—and the ability for independent third parties to audit the ongoing CO₂ removal and reduction data for accuracy and completeness.

What is Carbon Mineralization?

Carbon mineralization is the process by which carbon dioxide becomes a solid mineral, such as a carbonate. Once the carbon dioxide has reacted chemically and changed into this highly stable carbonate form, it cannot escape back into the atmosphere. Carbon mineralization is one of the most durable carbon removal pathways, storing the carbon for thousands of years.

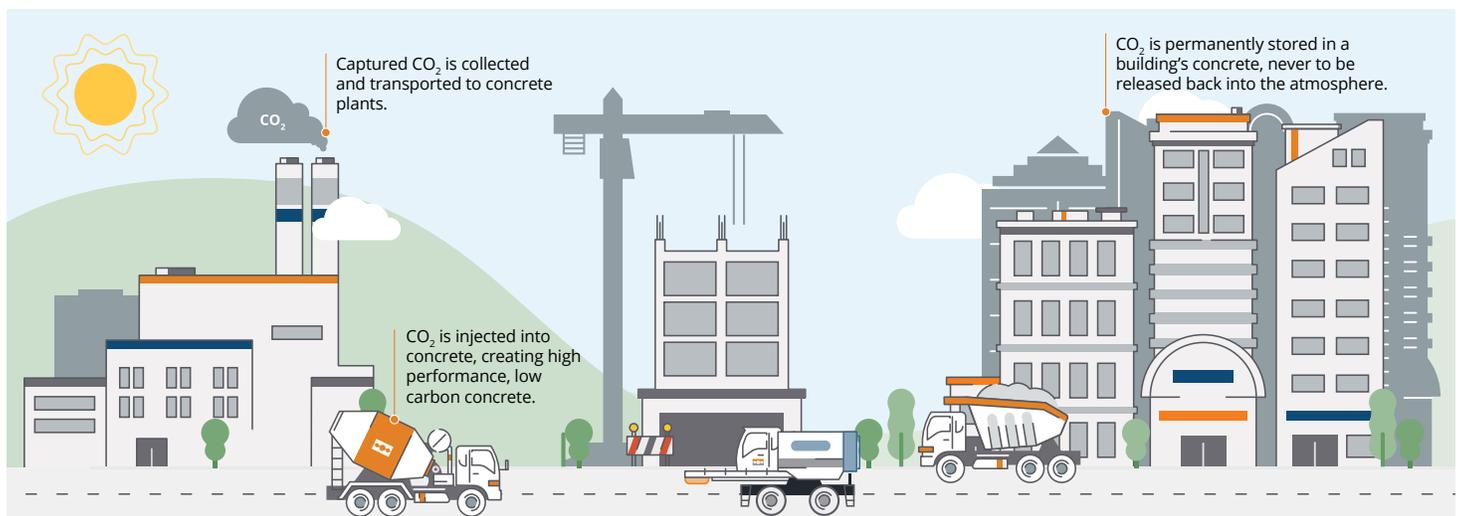
CarbonCure's Technologies for CO₂ Removal

CarbonCure's technologies use carbon mineralization in the production of concrete. When captured CO₂ is introduced into the concrete mix, it reacts with cement to form calcium carbonate, strengthening the concrete. Captured CO₂ can also be injected into concrete wastewater filled with cement particles, reducing waste by turning it into usable mix material.

In addition to removing CO₂, the strength provided by the mineral enables concrete producers to reduce the amount of cement they use, further lowering the carbon footprint of concrete production.

CarbonCure's High-Quality MRV

CarbonCure has a robust system in place today for measurement, reporting and verification (MRV) of our carbon removal credits. Our carbon mineralization technology allows us to measure and gather comprehensive data to prove that each tonne of CO₂ removal you purchase from CarbonCure is real.



CarbonCure's Precision Measurement

CarbonCure's highly measurable, engineered solution does not rely on theoretical modeling, but generates real-world data and includes a comprehensive life-cycle analysis.

- **Engineered solution.** Our technologies inject exact volumes of captured CO₂ in concrete production processes.
- **Precision data collection and transmission.** Sensors and telemetry installed on all our hardware transmit CO₂ injection data to us via a dedicated cellular network connection, providing precise, real-time measurement.
- **Real-world data.** We use ongoing concrete production data—gathered from mix designs, compressive strength testing, cement savings, batching and ticketing—to determine the exact amount of carbon removals and reductions for every single batch.
- **Comprehensive life-cycle analysis.** Extensive data collection for each batch of concrete enables us to measure the net CO₂ savings. This accounts for the emissions associated with electricity used at the CO₂ capture facility and at injection at the concrete plant, and from transportation of the CO₂.

CarbonCure's Comprehensive Reporting

With CarbonCure's carbon removal technologies, we trace every molecule of CO₂ from capture to storage.

- **Built-in reporting.** We're leveraging the same built-in reporting system used by our concrete producer partners, so there's no need to develop a new system for carbon credits.
- **Comprehensive and transparent.** Buyers receive a conveyance certificate with time-stamped logs for each credit along with the number of concrete structures contributed to through their purchase. Additional reports provide the specific metadata for each carbon credit, providing a transparent look through the specific projects and their co-benefits.
- **Reliable data storage.** All data is stored in a database on our secure AWS server which has an auditable log of every credit generated.

CarbonCure's Verification

We provide access to our reports and make all the metadata available to carbon credit buyers and auditors for independent, third-party verification.

- **Internal failsafe.** We conduct our own internal audits, cross-checking our data with that from concrete producers. If there are any discrepancies in a batch of concrete, no carbon credits are generated.
- **Verified by Verra.** Verra has validated our methodology for measuring carbon removal, and we have begun selling Verified Carbon Units (VCUs).
- **Auditable.** We invite carbon credit buyers or their third-party auditors to examine our data to conduct their own due diligence.

Scalable Carbon Removal You Can Trust

With CarbonCure, you can trust that the tonne of CO₂ impact you purchase is real. In addition to our best-in-class MRV, our technology won the prestigious 2020 Carbon XPRIZE for its real-world ability to scale the decarbonization of the concrete industry. So far, we've enabled hundreds of concrete producers around the world to measure and report their success in producing lower carbon concrete. And we can do much more with your help. Your carbon credit purchase will accelerate the adoption of CarbonCure's technologies to make real—measurable, reportable and verifiable—climate impacts.

Get in Touch

For more information about CarbonCure Carbon Credits, visit carboncure.com/carbon-removal or email carbonremoval@carboncure.com.