CarbiCrete

Cement-Free Concrete Technology

aci®

November 2024

Making Concrete a Climate Solution

CarbiCrete technology enables the production of cement-free concrete made with steelmaking by-products and captured CO2…avoiding emissions and permanently removing CO2 from the atmosphere

Company Information

2016 Established in **Montreal, Canada**

50 employees

55 granted patents: Canada, US, EU, India, Brazil, China, Japan, South Korea

2 production partners and several ongoing pilots

$40M USD raised since inception:

- FS Investors
- Arc Energy
- FSTQ
- Fondaction
- MKB
- BDC
- Aera VC
- New Climate Ventures
- Innovobot
- Something Good Ventures
- Saint-Gobain
- Harsco

Extensive global **media coverage** including features in:

Bloomberg THE WALL STREET JOURNAL. nature BBC

THE NEW YORKER WIRED FAST COMPANY NETFLIX

Concrete's Cement Problem

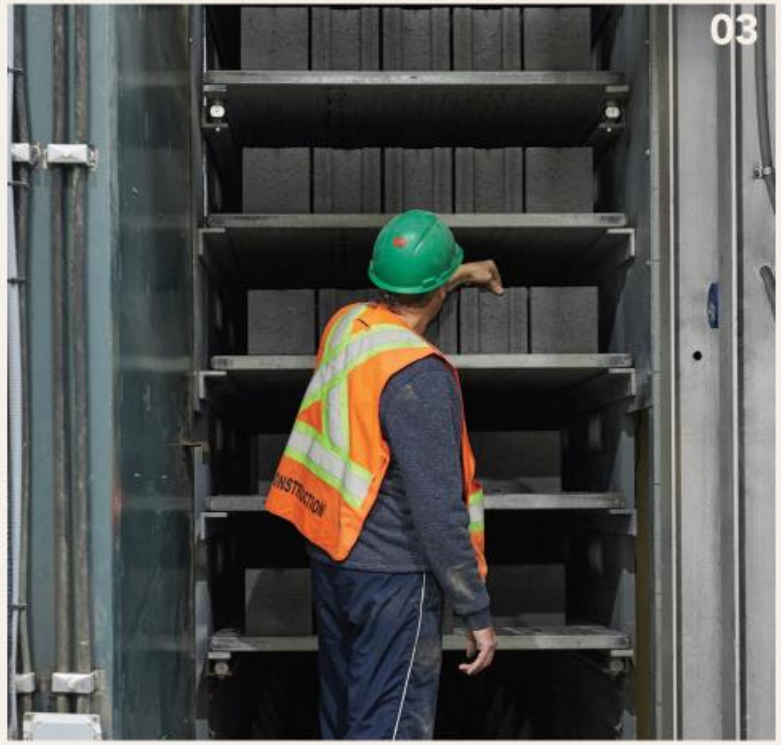
Concrete is the **most consumed substance** on Earth after water

8%

Of global GHG emissions are from cement production

Demand for concrete is increasing but so is the cost of cement

The CarbiCrete Solution



01. No cement

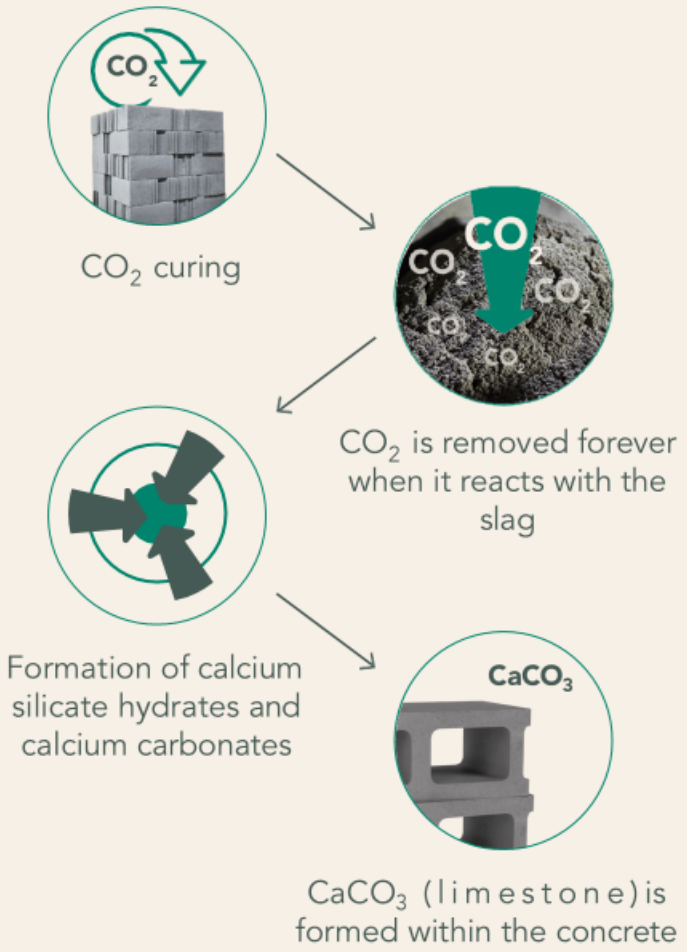
Steel slag, an industrial byproduct that is often landfilled, is a drop-in replacement

02. Standard Equipment

The mixture is formed into concrete products standard molds and machines

03. Carbonation Curing

Products reach full strength in 24 hours and CO2 is permanently removed



Carbonation Curing

Concrete products manufactured using CarbiCrete technology are cured with CO_2. During this process, the CO_2 becomes a solid mineral, giving the concrete its strength and eliminating the carbon permanently.

Where does the CO_2 come from?

CarbiCrete currently uses biogenic CO_2 captured at ethanol plants, but the process is source-agnostic. DAC is an exciting possibility.

CarbiCrete
Fully-Supported Cement-Free Concrete Technology™

Comparing Curing: Cement-Based and Slag-Based Concrete

Cement

Hydraulic:

Can be cured through a reaction with water

Strength gain comes from formation of calcium silicate hydrates and calcium hydroxide

Cured using **Hydration**

Steel Slag

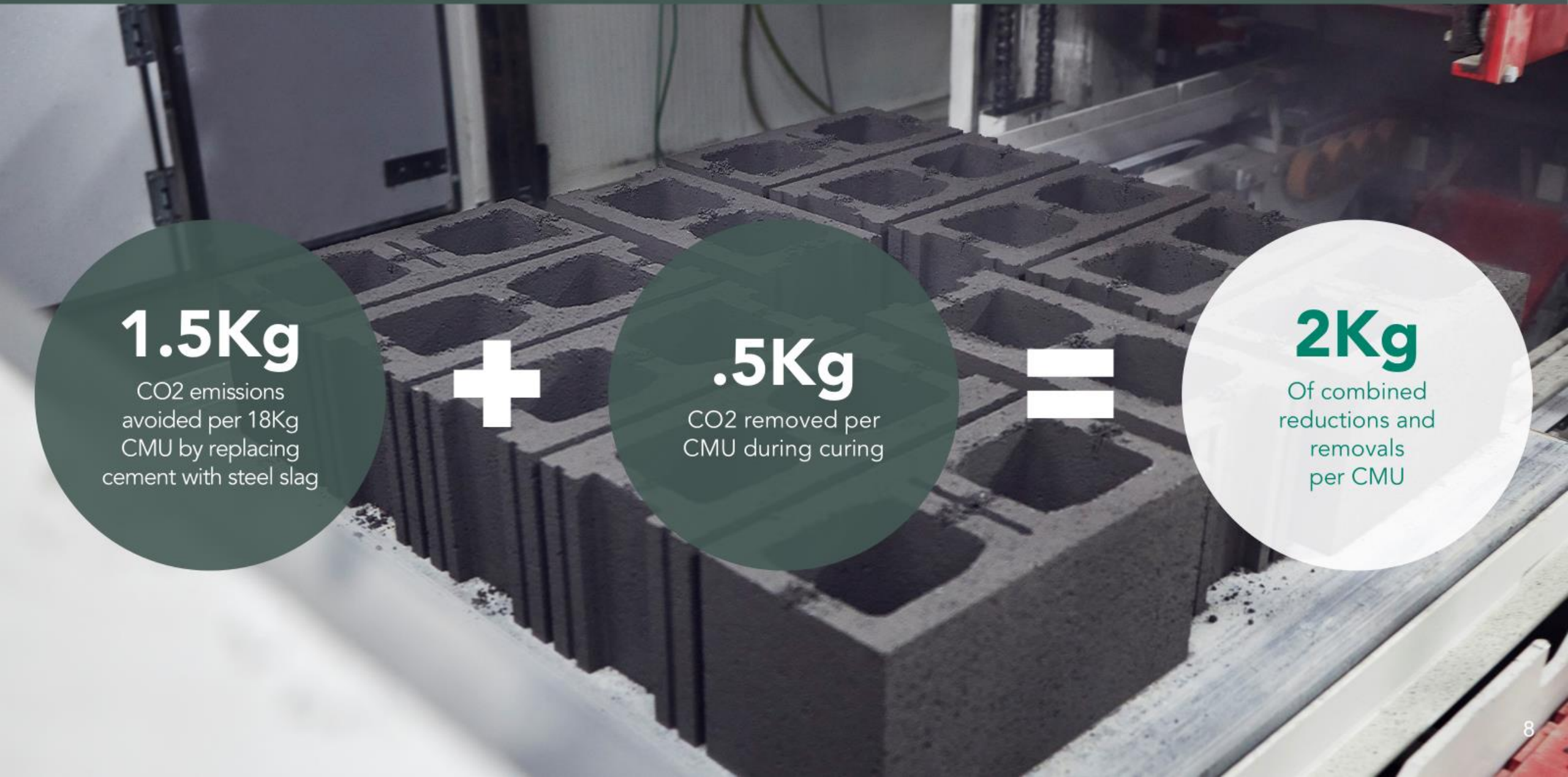
Limited hydraulic properties:

Requires a reaction with CO_2 to be cured

Strength gain comes from formation of calcium silicate hydrates and calcium carbonates

Cured using **Mineralization**

Avoiding Emissions, Removing Carbon



Value Streams and Customer Benefits

Hedge Against Cement Price Increase

Our value proposition improves as cement costs increase (#1 customer buying motive)

Low Carbon Concrete

Entering the green products market will increase customer sales (#2 customer buying motive)

Carbon Credits

Benefits can be used to offset CAPEX or be shared with customer

Improved Working Capital Management

Reducing curing time from 28 days to 24 hours substantially improves workflow

Patio Drummond: From Pilot Partner to First Customer

- 36-month pilot to optimize CarbiCrete process at scale
- Led to first full-scale commercialization of cement-free CMUs in North America (Fall 2023)
- Sales supported by CarbiCrete-led co-operative marketing program
- Increasing production capacity in November 2024
- In discussions around further expansion

PATIO DRUMMOND

Seamless integration

"Implementation was actually easier than we expected."

"On the first trial day, the blocks came out perfect."

"The quality of the products that we're producing with CarbiCrete exceeds all of our expectations."

"We want to use CarbiCrete technology to make all of our products."

Expanding Product Portfolio

Current Portfolio


Concrete Masonry Units (CMUs)


Pavers (Hollandstone)


Concrete Slabs

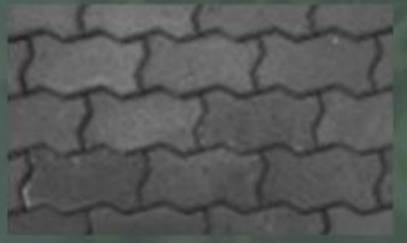

Grow-Through Pavers (Turfstone)


Deck Blocks

Product Development


Retaining Walls

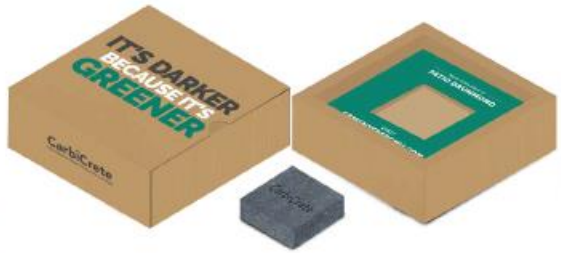

Colored Pavers


Interlocking Pavers


Professional Pavers

Cooperative Marketing

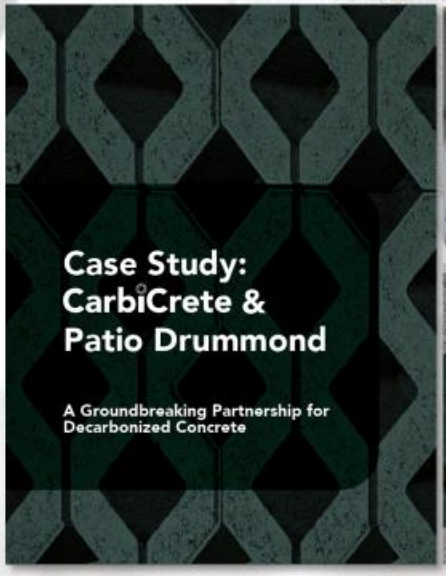
- Helps licensees sell the products they make with CarbiCrete technology
- Targets the AEC community
- Ensures on-brand communication
- Provides messaging, training and branded collateral

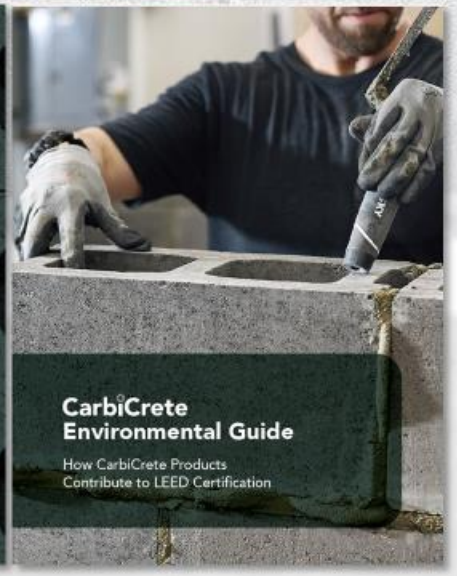


CarbiCrete
CEMENT-FREE DECARBONIZED CONCRETE TECHNOLOGY

Coop Marketing Reinforced by CarbiCrete Communications

- Videos
- Ads
- Media relations
- Printed material
- Social media





Specifying cement-free CMUs

represents the single greatest opportunity for reducing embodied carbon in the built environment.

MEET OR EXCEED ASTM C90 PERFORMANCE REQUIREMENTS

MEET FIRE RESISTANCE, FREEZE/THAW AND ACOUSTIC PROPERTIES REQUIREMENTS HIGHER

COMPRESSIVE STRENGTH (UP TO 30 %)

CONTRIBUTE TO LEED POINTS

CarbiCrete

Fully-Supported Cement-Free Concrete Technology

Feedback from masons

"I find the finish really beautiful. It is less porous than traditional blocks."

"Smooth cutting, with no breaking or crumbling of the CMUs."

"Piercing the holes went surprisingly well. Better than with cement blocks.

No crumbling. I enjoyed piercing with them."

"There is no difference in the installation and mortar application."

EPD: Unprecedented GWP Results for a CMU

Initial Production and Product Use

- Blocks sent for third-party testing: certification and customer validation
- Products used in Spec Mix 500 regional competition
- CMUs used in local community construction project
- Demonstration Project: Aecon Innovation Centre
- Feedback gathered from masons

AECON

LAFARGE

A MEMBER OF HOLCIM

What's Next

New product development / launches

Licensing: Geographic expansion in Canada, France, UK and US

CarbiCrete-dedicated facility in the US

CarbiCrete