CARBON CURE™

How Green Concrete Can Reduce Emissions from Public Infrastructure

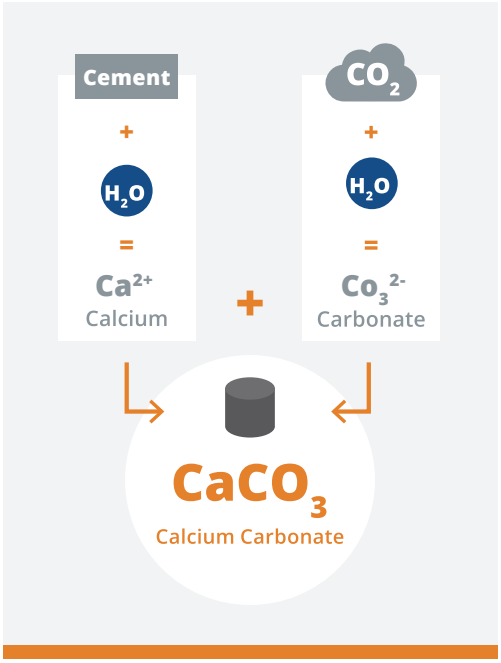
Many local governments are reducing their CO_2 emissions through energy efficiency, renewable energy, and cleaner transportation. Additional reductions are possible through an often overlooked and cost-effective option — green concrete.

As the most widely used material in the world, concrete is responsible for 7% of all global emissions. Concrete used to build roads, bridges, sidewalks, and buildings is commonly the largest source of emissions in the supply chain for local governments. Finding practical methods to adopt "greener" concrete will help governments meet carbon commitments, yet few cities or states have adopted policies to address this issue.

Green Concrete for the Public Sector

Technologies and best practices are already being used to reduce the carbon footprint of concrete. For example Portland limestone cement or solid waste materials, like fly ash and steel slag, have substituted for concrete's most carbon-intensive ingredient, cement, for many years. New innovations like the treatment of concrete with post-industrial waste CO_2 are being specified by architects and engineers around the world. Known as CO_2 mineralization, this process permanently traps CO_2 inside concrete.

These methods meet current standards for strength, safety, and durability. Better yet, they are cost-competitive. They are also fully compatible, and by deploying them together CO_2-reducing benefits can be combined to achieve greater emissions reductions.



CO_2 mineralization uses waste CO_2 in concrete production. In this process CO_2 is converted to a solid mineral (calcium carbonate), permanently removing these emissions from the atmosphere.

DID YOU KNOW?

Concrete and cement account for approximately 7% of annual global emissions.

State and Local Governments Must Lead the Way

One-third of concrete made in North America is used for public infrastructure. Government has enormous power to reduce the embodied carbon of concrete by using smart procurement policies. By supporting a local market for green concrete products, governments can also drive the adoption of sustainable concrete in the private sector.

A growing number of local authorities are already taking action:

The 2017 Buy Clean California Act established the first set of procurement rules to consider the carbon footprint of materials used in public contracts.

Green concrete procurement policies adopted by the City of Honolulu in 2019 (Council Resolution 18-283) became the blueprint for a unanimous resolution by the US Conference of Mayors.

The City of Portland, Oregon requires disclosure of embodied carbon content for concrete used for all city-led projects and provides financial incentives to assist concrete producers in complying with this legislation.

New York State is developing legislation (A08617B) to preferentially procure concrete with low embodied carbon. The proposed legislation combines a tax credit with incentives for carbon capture and utilization.

Options for Procuring More Sustainable Concrete:

Stop using overly stringent prescriptive standards for concrete.

Engineering and concrete associations recommend the use of performance-based standards, which remove barriers to innovative materials and methods to produce concrete, such as CO_2 mineralization.

Measure and manage the carbon content of concrete materials that you purchase.

Environmental Product Declarations can be used to measure the carbon content of concrete. Preferential procurement or mandatory caps on carbon communicate a clear preference for low-carbon products.

Introduce preferential procurement for concrete that utilizes CO_2.

Incentives for concrete made with CO_2 in public contracts will accelerate the innovation needed to further drive down carbon emissions arising from public procurement of construction materials.

Small changes to procurement policies can have a major and lasting impact on the emissions of public governments and agencies. They can also greatly influence trends in the private sector, benefitting all members of the community.

If you're in government and have the ability to influence policy, the time to act is now.

Join the movement of cities choosing lower carbon concrete and learn how you can take action in your own jurisdiction by visiting ***www.carboncure.com/policy***.

DID YOU KNOW?

>5.5 million cubic yards of concrete made with CO_2 have been poured across North America.

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