



CarbonCure's Global Regulatory Approvals

From the stringent standards of North America and Europe to the evolving frameworks of emerging markets, this guide summarizes the certifications and endorsements that validate CarbonCure as a reliable solution to embodied carbon in concrete.

Regions Covered

North America

- Canadian Standards Association (CSA)
- ASTM International
- American Association of State Highway and Transportation Officials (AASHTO)
- State Departments of Transportation

Europe

- German Institute of Building Technology (DIBt)
- France — EN

Asia

- Building Construction Authority (BCA) of Singapore
- ASTM — Dubai Municipality

Australia/New Zealand

- Australian Standard
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North America

Summary

Country	Organization	Standard	Documentation
Canada	Canadian Standards Association (CSA)	CSA A3000 Annex S	A23.1 Annex S Excerpt
USA	ASTM International	ASTM C494 Type S	Evaluation of Compliance with ASTM C494 Type S Chemical Admixture for Concrete
USA	American Association of State Highway and Transportation Officials (AASHTO)	Product Evaluation & Audit Solutions	CarbonCure – Field Compliance Verification
USA	State Departments of Transportation (DOT)	AASHTO and Approved Products List	CarbonCure approved in six States so far

Canadian Standards Association (CSA)

The [Canadian Standards Association \(CSA\)](#) is one of the largest standards development organizations in North America, conducting research and standards development for various sectors, including electrical, energy, construction, environment, and more.

[CSA A3000](#) is the standard related to the cementitious materials compendium. It addresses the definitions; chemical, physical, and uniformity requirements; tests required; procedures for inspection and sampling; and units of measurement, packaging, marking, and storage for cementitious materials.

CarbonCure Approval

The CSA released A23.1 Annex S, which includes approval for CO₂ to be added to concrete.

ASTM International

[ASTM International](#) (previously known as the American Society for Testing and Materials) develops and publishes technical standards and is instrumental in defining material properties and performance metrics across various industries, including construction, aviation, petroleum, consumer goods, and more.

ASTM C494 Type S covers a specific type of chemical admixture classified as “Specific Performance Admixtures.” Admixtures that fall under this category are defined by specific performance criteria rather than by their chemical makeup or function in the concrete mix.

CarbonCure Approval

CarbonCure was evaluated in accordance with [ASTM C494 Type S](#) and was found to be in compliance.

American Association of State Highway and Transportation Officials (AASHTO)

The [American Association of State Highway and Transportation Officials \(AASHTO\)](#) sets technical standards for all phases of highway system development, including design, construction, maintenance, and operation for highway and transportation departments in the 50 states, the District of Columbia, and Puerto Rico.

Under its [Product Evaluation & Audit Solutions](#) (formerly National Transportation Product Evaluation Program (NTPEP)), member departments can cooperatively evaluate materials, products, and devices of common interest by eliminating duplication of testing.

CarbonCure Approval

In October 2023, [CarbonCure announced](#) concrete made with CarbonCure is compliant with AASHTO standards following independent tests by SGS TEC Services — an independent, accredited laboratory in Lawrenceville, Georgia. Concrete properties of three control mixtures and three CarbonCure mixtures were tested in accordance with AASHTO M194 (ASTM C494) by the independent laboratory, evaluating slump, temperature, density, yield, air content, compressive strength, flexural strength and resistance to rapid freezing and thawing. In short, the CarbonCure mixes performed similarly to the control mixes and met or exceeded the job requirements specified by AASHTO. Additional durability testing also resulted in no negative impact on hardened concrete properties and confirmed the efficacy of CarbonCure in meeting and, in some instances, exceeding industry standards.

State Departments of Transportation

The Department of Transportation (DOT) in each state must provide approval for specific products before they can be used in DOT projects. The general checklist for submitting a product for approval is as follows:

1. Does the state accept Chemical Admixtures for Concrete as a category on their "Approved Products List" or "Qualified Products List"?
2. Under the Chemical Admixtures for Concrete category, will they accept ASTM C494 Type S Admixtures?
3. What are the requirements for submitting a product for approval? (e.g., Are samples required? Do they want to see a demonstration? Are meetings necessary? What testing and supporting documentation is required?)
4. Are they part of the product evaluation program administered through AASHTO Product Evaluation & Audit Solutions?

CarbonCure Approval

Concrete using CarbonCure technology is recognized in six states, with more evaluations underway. It's important to note that different states use the terms "approved" or "qualified." However, being on a state's approved or qualified list doesn't guarantee the product's usage or the acceptance of any submission containing the product.

State	Current Producers	Status	Approval Date
Arizona	CEMEX, Coreslab Structures	Approved	02/01/2024
Colorado	Brannan Sand and Gravel	Approved	2/3/2023
Iowa	Central Iowa Ready Mix, Iowa City Ready Mix	Approved	4/14/2021
Hawaii	Hawaiian Cement, HC&D	Approved (HI doesn't publish approvals or qualifications)	2020
North Carolina	Thomas Concrete, Concrete Supply Co.	Approved	8/9/2023
South Carolina	Thomas Concrete, Port City Ready Mix	Qualified	7/31/2023
Tennessee	Irving Materials, Inc. (imi)	Qualified	10/30/2023
Texas	Lauren Concrete, Redi-Mix Concrete, Alleyton Resource Company LLC, Matagorda Concrete, Locke Solutions, PV Ready Mix LP, Lone Star Ready Mix	While TxDOT does not pre-qualify Type S chemical admixture for concrete, Type S admixtures such as CO ₂ may be submitted for use during the mix design approval process and may be allowed by the local project office in consultation with TxDOT.	02/2024

Europe

Summary

Country	Organization	Standard	Documentation
Germany	German Institute of Building Technology (DIBt)	DIBt	DIBt technical Approval
France	European Norm (EN)	EN 206 NA 5.1.8	Evaluation of Compliance with ASTM C494 Type S Chemical Admixture for Concrete

German Institute of Building Technology (DIBt)

The German Institute of Building Technology (DIBt) deals with the technical assessment and authorization of construction products and types of construction in Germany. These approvals are necessary for products that are not sufficiently covered by European standards.

CarbonCure Approval

In September 2020, concrete made with CarbonCure received a DIBt Technical Approval that certifies its use in Germany. This approval is a significant endorsement of a product's or method's safety, quality, and compliance with German construction standards.

France — EN

European Norm (EN) standards are standards that have been ratified by one of the three recognized European Standardization Organizations (ESOs). When France adopts an EN, it may also produce a National Annex (NA) which can provide additional guidance, specifications, or deviations from the general EN, specific to the conditions or preferences in France.

CarbonCure Approval

Under the French [EN 206 NA](#) standard, Section 5.1.8 Ajouts (Additives) states the use of additions may be incorporated but must be tested to Appendix A. The test requirement in Appendix A is for three batches of concrete to meet the target strength and appropriate slump range. As a result of CarbonCure's implementation and commissioning processes, this produces the required data for each installation to comply with the French Requirements.



Asia

Summary

Country	Organization	Standard	Documentation
Singapore	Building Construction Authority (BCA)	BCA	Green Mark 2021 – Whole Life Carbon
UAE	Dubai Municipality	ASTM	Evaluation of Compliance with ASTM C494 Type S Chemical Admixture for Concrete

Building Construction Authority (BCA) of Singapore

The Building Construction Authority (BCA) of Singapore is a statutory board under the Ministry of National Development that regulates building construction. BCA also plays a significant role in promoting environmental sustainability in Singapore's built environment. One of their initiatives in this regard is the BCA Green Mark Scheme which evaluates a building for its environmental impact and performance.

CarbonCure Approval

CarbonCure enables users to qualify for [2 innovation points](#) in Singapore's Green Mark 2021 for its role in reducing or removing carbon emissions from the construction process.

ASTM — Dubai Municipality

Dubai Municipality develops and adopts various standards, regulations, and guidelines to ensure the quality, safety, and sustainability of construction projects within the emirate. Dubai adopts ASTM C494 Type S Chemical Admixture for Concrete.

CarbonCure Approval

CarbonCure has completed an Evaluation of Compliance with ASTM C494 Type S Chemical Admixture for Concrete for Dubai Municipality.

Other Asian Countries that Adopt ASTM

- Thailand
- Vietnam
- Philippines
- Laos
- Cambodia
- Indonesia

Asian Countries that Adopt European Technical Assessment (ETA)*

- Taiwan
- Singapore
- Malaysia
- Hong Kong

**CarbonCure is starting the assessment process with a certified lab in Europe. Final ETA report expected end of 2024.*

Australia/New Zealand

Summary

Country	Organization	Standard	Documentation
Australia	AS	AS 1478.1	AS 1478.1 Compliance Report
New Zealand	AS	AS 1478.1	AS 1478.1 Compliance Report

Australian Standard

Australian Standard (AS) refers to a series of standards developed and maintained by Standards Australia and covers construction, engineering, health and safety, and more.

AS 1478.1 is the standard for chemical admixtures for concrete, mortar, and grout and covers classifications, composition, conformance criteria, and testing methods for these admixtures.

CarbonCure Approval

CarbonCure has been evaluated and verified compliant in an AS 1478.1 Compliance Report and is approved for use in Australia.

New Zealand — AS

New Zealand adopts AS as its standard.

CarbonCure Approval

CarbonCure has been evaluated and verified compliant in an AS 1478.1 Compliance Report and is approved for use in New Zealand.





Concrete That Matters

CarbonCure has been used on thousands of projects ranging from healthcare to higher education, residential developments, and corporate campuses.

For more information about building with CarbonCure concrete, visit carboncure.com. To get in touch with a CarbonCure representative, send us an email at info@carboncure.com or give us a call at +1 (902) 448-4100 (Worldwide) or +1 (844) 407-0032 (North America).