

DIVISION 03 – Concrete Specification

RECOMMENDED SPECIFICATION INSERT LANGUAGE

For incorporating concrete that has undergone in-situ Carbon Dioxide CO₂ Mineralization using CarbonCure technology into concrete specifications and/or procurement policies.

DIVISION 03 – CONCRETE

INTRODUCTION

CarbonCure Technologies is the leader in reducing the carbon footprint of the built environment by incorporating recycled carbon dioxide (CO₂) into the concrete manufacturing process. CarbonCure's technology is currently installed in ready mix concrete producers across Canada, USA and Singapore.

The CarbonCure technology injects CO₂ (captured as waste from emitters) into concrete during the manufacturing process. Once injected, CO₂ chemically converts (in-situ) into a nano-mineral and becomes permanently captured in the concrete.

The in-situ CO₂ mineralization improves the compressive strength of concrete, allowing concrete producers to optimize mix designs and reduce cementitious content. Cement manufacturing generates ~7% of global CO₂ emissions. Reductions in cementitious content decrease concrete's carbon footprint. Cost savings from cementitious reductions offset concrete producer's costs of adopting the technology.

Utilizing CO₂ to optimize cementitious content may require adjustment to specification requirements for minimum cementitious content and/or maximum water-cementitious ratios, as approved by project engineers and designed by concrete producers.

Developers, engineers, architects, specifiers and contractors may reduce the carbon footprint of concrete used in building or infrastructure projects, while ensuring equivalent performance, by requesting concrete that has undergone *in-situ carbon dioxide (CO₂) mineralization* in the specification language.

This document is provided in MS Word to allow for copying and/or modification of specification language, at the discretion of the engineer, architect or specification writer.

Further information about CarbonCure Technologies can be found at www.carboncure.com.

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1. IN-SITU CARBON DIOXIDE MINERALIZATION REQUIREMENTS

1.1 ENVIRONMENTAL / SUSTAINABLE DESIGN REQUIREMENTS

1.1.1 In-situ carbon dioxide mineralization in concrete: Supply concrete that has undergone in-situ carbon dioxide mineralization, such that post-industrial carbon dioxide (CO₂) is injected into the concrete during mixing and chemically converted into a mineral. The concrete may undergo mix optimization whereby the strength enhancement property of CO₂ is utilized to optimize cementitious content, pending that the CO₂-mineralized and optimized concrete mix meets concrete performance requirements as outlined in this specification document. Acceptable technologies: CarbonCure Ready Mix Concrete Technology.

4.1.2 For Canadian projects see CAN/CSA-A23.1 Annex S, Concrete made with carbon dioxide as an additive (revised June 2018).

1.2 VERIFICATION:

1.2.1 Provide concrete producer's verification of in-situ mineralization of carbon dioxide.

1.3 CONCRETE PRODUCT WITH IN-SITU CARBON DIOXIDE MINERALIZATION

1.3.1 Minimum cementitious content and maximum water/cementing materials ratio requirement as outlined by this specification will be reviewed and may be adjusted by the Engineer pending review of submittal, if required. Adjustment of cementitious content and water/cementing materials ratio requirement will be at the sole discretion of the Engineer.

1.4 CARBONCURE REFERENCE AND CONTACT INFORMATION

1.4.1 For CarbonCure ready mix concrete product availability and regional contact information, visit www.carboncure.com/producers.

1.4.2 For general inquiries contact info@carboncure.com or 902-442-4020.

END OF SECTION