



## Industrial Ecology Consultants

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Matthew Lemay  
Manager, Codes & Sustainability  
National Ready Mixed Concrete Association (NRMCA)  
Pittsburg, PA

### Concrete PCR V2.2 and Climate Earth Climate Clarity Ready Mix Conformance

The program operator, National Ready Mixed Concrete Association (NRMCA) has engaged with Industrial Ecology Consultants to perform an external independent verification of the automated Environmental Product Declaration (EPD) generation functionality in the Climate Earth Carbon Clarity Ready Mix/EPD Generator to the revised NSF International Concrete PCR V2.2 to include mobile plant requirements.

**This review was performed to demonstrate conformance** with the following standards, general program instructions, and product category rules:

- International Organization for Standardization. (2000). *Environmental labels and declarations -- General principles* (ISO 14020:2000).
- International Organization for Standardization. (2006). *Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures* (ISO 14025:2006).
- International Organization for Standardization. (2006). *Environmental management -- Life cycle assessment -- Principles and framework* (ISO 14040:2006 / Amd 1:2020).
- International Organization for Standardization. (2020). *Environmental management -- Life cycle assessment -- Requirements and guidelines* (ISO 14044:2006/Amd 1:2017 / Amd 2:2020).
- International Organization for Standardization. (2014). *Environmental management -- Life cycle assessment -- Critical review processes and reviewer competencies: Additional requirements and guidelines to ISO 14044:2006*. (ISO/TS 14071:2014).
- International Organization for Standardization. (2017). *Sustainability in building construction — Environmental declaration of building products*. (ISO 219320:2017).
- National Ready Mixed Concrete Association (2019). *General Program Instructions for Environmental Product Declarations, v2.0, valid June 1, 2019 – May 31, 2024*.
- NSF International. (2022). *Product Category Rules (PCR) for Concrete, v2.2 (including deviation) December*.

The independent third-party verification was conducted by an external expert per ISO 14044:2006 Section 6.2: Critical review by internal or external expert:

Thomas P. Gloria, Ph.D.  
Founder, Chief Sustainability Engineer  
Industrial Ecology Consultants



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### REVIEW SCOPE

The intent of this review was to provide an independent third-party external verification of the Climate Earth Carbon Clarity Ready Mix/EPD Generator to the revised NSF International Concrete PCR V2.2 to include mobile plant requirements.

Documents reviewed include:

- Climate Earth. (2021). Carbon Clarity/EPD Generator - Ready Mix, Master Project Report v2.0.7.
- Climate Earth. (2022). Carbon Clarity/EPD Generator - Ready Mix LCI and Impact Factors v2.7.
- Climate Earth. (2022). CarbonCLARITY EPD Generator-Ready Mix, LCI Addendum v1.0.15.

### REVIEW PROCESS

The review involved the verification based on the requirements set forth by the applicable ISO standards, PCRs, and NRMCA General Program Instructions (GPIs). This review did not include an assessment of the Life Cycle Inventory (LCI) model, however, however, the reviewer has knowledge of the individual datasets used to generate the EPDs contained within the Climate Earth Carbon Clarity/EPD Generator for Ready Mix concrete.

### VERIFICATION STATEMENT

Based on the independent verification objectives, the Climate Earth Carbon Clarity Ready Mix/EPD Generator was found to be in conformance to the revised NSF International Concrete PCR V2.2 to include mobile plant requirements, the applicable ISO standards referenced above, and NRMCA General Program Instructions.

As the External Independent Third-Party Reviewer, I confirm that I have sufficient knowledge and experience of ready mixed concrete products, the relevant PCRs, ISO standards, the Climate Earth Carbon Clarity/EPD Generator for Ready Mix concrete and the geographical area of North America intended to generate EPDs to carry out this verification.

Sincerely,

A handwritten signature in black ink, appearing to read 'Thomas P. Gloria'.

Thomas P. Gloria, Ph.D.  
Founder, Chief Sustainability Engineer  
Industrial Ecology Consultants