



Section 018113 - sustainable design requirements

These samples are for pathway 1. Note: These specification samples do not constitute professional advice and should be incorporated at the discretion of professionals on the design team. See the DEQ Housing Guide for Drawings and Specifications Factsheet for more info.

1.1 Section includes

- A. Reporting requirements for products as defined by the chosen pathway per Oregon DEQ Housing Requirements.

1.2 Project goals

- A. This project has been designed to achieve the following sustainable design criteria:
 - 1. 20% reduction for covered products in Pathway 1 of Oregon DEQ Low Carbon Housing Requirements

1.3 Reporting requirements

- A. Contractor(s) should become familiar with the relevant reporting requirements and provide the necessary information and instruction to all subcontractors and installers.

1.4 Definitions

- A. Product Quantity: Amount of product installed in this construction project.
- B. Embodied Carbon Topic Related Definitions
 - 1. DEQ Embodied Carbon Reporting Form: Documentation form including product quantities for covered products, Global Warming Potential Baselines by product type, links to acceptable EPDs, and other required documentation for Pathways 1 and 2.
 - 2. Environmental Product Declaration (EPD): Standardized, independently verified documents that report the environmental impacts of a construction product based on a product life cycle assessment. EPDs must conform to international standards and follow the rules for each product category. An EPD is referred to as a “Type III environmental declaration” in [ISO 14025: 2006](#).
 - a. Acceptable Environmental Product Declaration (EPD)s: Acceptable EPDs must represent the product being installed and the manufacturing facility that product came from. EPDs must have an active validity period (e.g. not expired).
 - 3. Embodied Carbon: The greenhouse gas (GHG) emissions generated by the manufacturing, transportation, installation, maintenance, and disposal of construction materials used in buildings, roads, and other infrastructure.

Translation or other formats

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800-452-4011 | TTY: 711 | deqinfo@deq.oregon.gov

4. Global Warming Potential: The potential climate change impact of a product or process as measured by a life cycle assessment. GWP is reported in units of carbon dioxide equivalent (CO₂e) and is the agreed upon metric for tracking embodied carbon.
5. Global Warming Potential Baseline: Typical cradle to gate (A1-A3) embodied carbon value for a specific product type, measured in kilograms of carbon dioxide equivalent (kgCO₂e) per declared unit.
6. Global Warming Potential Target: A Global Warming Potential performance value that translates a desired reduction from a GWP Baseline into a target GWP value that products aim to fall below.
7. Reduction Claim: A covered product where an Actual GWP is being used to show a percent reduction from Baseline GWP as part of the Embodied Carbon Reporting Form submission.
8. System Boundary: Defines the processes (Stages A1-A4, B, C, etc.) in a product's life cycle that are included in the life cycle assessment.
9. Declared unit: Reference unit in an EPD associated with the reported Global Warming Potential of a product.

1.5 Product reporting

- A. Low-Embodied Carbon Product Reporting Scope: All products covered by "Pathway 1 - Covered Product Types" in Part 2 - LOW-EMBODIED CARBON MATERIALS paragraphs in this section.

1.6 Reference standards

- A. ISO 14025 - Environmental labels and declarations — Type III environmental declarations — Principles and procedures

1.7 Submittals

- A. Submit the Pathway 1 section of the DEQ Embodied Carbon Reporting Form, with evidence of compliance attached.
 1. For all submittals, attach evidence of compliance from either the manufacturer or an independent agency.
 - a. Acceptable evidence includes Acceptable Environmental Product Declarations.
 2. Include Material Quantity and Cost data.
 - a. Acceptable evidence of compliance may include receipts showing quantities and costs of specific products installed.
 3. DEQ Embodied Carbon Reporting Form: Provide embodied carbon updates throughout construction for each optimized product type that includes the following:
 - a. Declared quantity and unit of each applicable material.
 - b. Required Global Warming Potential Baseline

- c. Actual embodied carbon emissions (declared unit quantity x kgCO₂e/declared unit).
- d. Environmental Product Declaration (EPDs) that document actual GWP
- e. Carbon emissions reductions achieved across the pathway

Part 2 products

2.1 Materials, general

- A. Provide products and procedures necessary to meet requirements in this Section. Although other Sections may specify some requirements that contribute to DEQ's Low Embodied Carbon Housing Program, the Contractor shall determine additional materials and procedures necessary to demonstrate achievement of measures contributing to compliance.

2.2 Materials data

- A. DEQ Low Carbon Housing - Pathway 1 Requirements
 - 1. The following product data shall be provided for all covered products for Pathway 1
 - 1) Product quantity for covered products
 - 2) Acceptable Environmental Product Declaration (EPD) for products where a reduction is being claimed
 - 3) Receipts showing cost and quantity of actual product installed for products where a reduction is being claimed
 - 2. The following project-level data shall be provided:
 - 1) DEQ's Embodied Carbon Reporting Form, including all covered product types
 - 3. Covered Product Types
 - a. Structural concrete products of the following types:
 - 1) Ready mix (cast-in-place) concrete
 - b. Reinforcing steel products of the following types:
 - 1) Rebar
 - c. Insulation products of the following types:
 - 1) Board
 - 2) Blanket
 - 3) Foamed-in-place

- 4) Loose-fill
- 5) All other insulation
- d. Flooring products of the following types:
 - 1) Tile
 - 2) Resilient Flooring
 - 3) Carpet
 - 4) Engineered Wood
 - 5) All other flooring

2.3 Low embodied carbon materials

- A. Project Embodied Carbon Optimization: Using Pathway 1, the project has a goal of showing a 20% embodied carbon reduction from Global Warming Potential Baselines across all the covered products for all new products covered by Pathway 1.
 - 1. Embodied Carbon Reductions: Provide an Acceptable Environmental Product Declaration as proof of each product's embodied carbon value where a reduction is being claimed.
 - 2. Monitor the project's progress regarding embodied carbon goals using the DEQ Embodied Carbon Reporting Form, that includes the following:
 - a. Declared quantity and unit of covered materials
 - b. Required Global Warming Potential Baselines by product type
 - c. Actual Global Warming Potential sourced from acceptable EPDs
 - d. Carbon emissions reductions achieved across the covered products.
 - 3. Included Materials: All of the following materials must be included in both baseline and reduction calculations if they are used on the project:
 - a. Low-Embodied Carbon Reporting - Required Product Types
 - 1) Structural concrete products of the following types:
 - a) Ready mix (cast-in-place) concrete
 - 2) Reinforcing steel products of the following types:
 - a) Rebar
 - 3) Insulation products of the following types:

- a) Board
 - b) Blanket
 - c) Foamed-in-place
 - d) Loose-fill
 - e) All other insulation
- 4) Flooring products of the following types:
- a) Tile
 - b) Resilient Flooring
 - c) Carpet
 - d) Engineered Wood
 - e) All other flooring finishes

Part 3 execution

3.1 Sustainable documentation procedures

- A. Submit sustainable design documentation required of Contractor, using procedures defined under Submittals for Information in Section 013000.
- B. Submit the DEQ Embodied Carbon Reporting Form and supporting documentation in accordance with the requirements of Section 013000, as information submittals.
 - 1. Give each form a unique submittal number.
 - 2. Do not combine sustainable design documentation with product data or shop drawing submittals.

Contact

Please email built.environment@deq.oregon.gov if you would like to connect with the program or inquire about our work.

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