SECTION  – sustainable design requirements - embodied carbon

For questions regarding the use of this section, please contact Tim Taylor and/or Kaley Blackstock.

THIS SECTION IS REQUIRED FOR ALL PROJECT MANUALS and assists Gensler in meeting our GC3 goals. We are committed to reducing the carbon associated with our projects 80% by 2030. This Section is the first step in a multi-phased evolution of our master specifications. This iteration of the master specifications replaces many previous EPD mandates with embodied carbon restrictions.

This Section does not replace other Sustainable Design Requirement sections but is in addition to those sections. To inquire if your project needs another Sustainable Design Requirement section, reach out to your DM, local sustainability specialist, or Specification Leader. Accompanying this Section is the Project Form -Environmental Product Declarations Reporting Form, which can be found in the MF04 Folder, under Div 00, Blank Forms folder. Select sections have added language mandating the documentation for EPDs and will refer back to this section.

For questions regarding the use of this section, please contact Tim Taylor and/or Kaley Blackstock.

This Section uses the term "Consultant." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.

SECTION 01 81 33 – SUSTAINABLE DESIGN REQUIREMENTS – EMBODIED CARBON

1. GENERAL
   1. related documents
      1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
      2. Related Requirements:
         1. Environmental Product Declarations Reporting Form 00 60 00 – Project Forms.

If the project is pursuing LEED certification, modify the referenced 01 81 13 Section below to suit the project, otherwise remove section references. List additional Sustainable Design Requirements sections if applicable (WELL, LBC, etc.)

* + - 1. Section 01 81 13.14 – Sustainable Design Requirements - LEED v4 BD+C."
      2. Section 01 81 13.17 – Sustainable Design Requirements - LEED v4 ID+C."
      3. Individual sections with embodied carbon submittal requirements.
  1. summary
     1. This Section includes general requirements and procedures for complying with the Gensler Product Sustainability (GPS) Standards v1.1; and the Project's specific sustainable design goals.

This following six sub-paragraphs identify the areas in the specification masters where project performance targets for embodied carbon reductions and other sustainability attributes are located. Modify the list of project goals below to suit the project.

* + 1. Reduction of the total embodied carbon of the project for the following materials categories:
       1. Thermal and roofing insulation.
       2. Non-Structural (interior) metal framing.
       3. Gypsum board.
       4. Sound attenuation blankets.
       5. Acoustical panel ceilings.
       6. Carpet tile.
    2. Related Requirements:
       1. Environmental Product Declarations Reporting Form.
       2. Individual sections with EPD and GWP submittal requirements.
  1. DEFINITIONS AND STANDARDS
     1. Gensler Product Sustainability (GPS) Standards v1.1; represents the Consultant's commitment to reducing carbon emissions in all of our projects by 2030. A critical step in that process is setting sustainability standards for the products that we specify.
     2. The Gensler Product Sustainability (GPS) v1.1 standards establish sustainability performance criteria for the top 12 most commonly used, high-impact product categories selected for our architecture and interior projects. These product categories include:
        1. Acoustic Ceiling Panels, Tiles, and Suspension Grids.
        2. Batt Insulation.
        3. Board Insulation.
        4. Carpet Tile.
        5. Decorative Glass.
        6. Glass Demountable Partitions.
        7. Gypsum Board.
        8. Interior Latex Paint.
        9. Non-Structural Metal Framing.
        10. Resilient Flooring and Base.
        11. Systems Furniture Workstations.
        12. Task Chairs.
     3. The intent of the Gensler Product Sustainability (GPS) Standards v1.1 is to provide clear and concise standards for our design teams; and material and product manufacturers built on industry norms.
     4. The criteria were developed in alignment with initiatives by industry organizations, regulatory standards, and third-party certifications. In particular, we are collaborating with mindful MATERIALS to align with the ongoing development of the Common Material Framework to ensure consistency across the industry for a unified ask for sustainability disclosures. The GPS Standards align with goals and criteria identified by the Carbon Leadership Forum, REACH, ISO, BIFMA, LEED, BREEAM, Living Building Challenge, and the AIA Materials Pledge among others.
     5. The inclusion of the Gensler Product Sustainability (GPS) Standards changes the way in which the Consultant will select materials for inclusion as "Basis of Design" or "Listed Products" meeting the specified criteria. It also adjusts the requirements for material and product Submittals as described in the Division 01 General Requirement sections that follow.

'Carbon dioxide equivalents' is a term that includes methane, VOC emissions, in addition to carbon.

* + 1. Embodied carbon is the amount of carbon dioxide equivalents resulting from the production, shipping, installation, use and disposal of a material.
    2. Environmental Product Declaration (EPD) is a standardized way of reporting the environmental impact of a product or system, including but not limited to embodied carbon. Products with EPDs in accordance with ISO 14025, ISO 21930, or EN 15804 can report a product's Global Warming Potential.
    3. Global Warming Potential (GWP) is the calculated value for tracking embodied carbon and is the amount of equivalent metric tons of carbon dioxide emitted as a result of the life cycle of a material. GWP is reported by an EPD or LCA, and can be reported as total value, by subtotal value for each life-cycle stage, or by individual life-cycle modules.

GWP Stages are defined by the referenced ISO Standards.

* + 1. Production Stage (modules A1-A3): GWP reported for this stage, also known as "cradle-to-gate," includes raw material supply (A1), transport of raw materials to the production site (A2), and manufacturing (A3).

The following are additional GWP Stages within the ISO Standards that are not being measured by Gensler at this time (1/11/24), a short description and commentary are included for information only:

Construction Process Stage (modules A4-A5): GWP values reported for this stage may include transportation from facility to construction site (A4), and assembly and install (A5).

Use Stage (modules B1-B7): GWP values reported for this stage may include use (B1), maintenance (B2), repair (B3), replacement (B4), refurbishment (B5), building operational energy use during product use (B6), and building operational water use during product use (B7). Modules B1 - B7 include a lot of subjectivity in determining longevity, maintenance, and serviceability of the product. Currently each of these factors are determined by the manufacturer but the actual longevity maintenance and serviceability would be site specific. Examples would be field applied exterior coatings and flooring maintenance. If adopting the B1-B7 Stage as a part of determining GWP the editor should note that inclusion of B1-B7 Stage values may skew the GWP value of the product.

End of Life Stage (modules C1-C4): GWP values reported for this stage may include deconstruction (C1), transport to a waste facility (C2), waste processing (C3), and disposal (C4). Life-cycle assessments that include all stages including this stage are considered cradle-to-grave assessments.

Benefits and Loads Beyond the System Boundary (module D): GWP values for this stage are indicated in the life-cycle assessment report.

* + 1. Life-Cycle Assessment (LCA) is a standardized way of quantifying the environmental impact of a product or system, including but not limited to embodied carbon. LCAs must be conducted in accordance with ISO 14044 and report a product's Global Warming Potential.
  1. standards
     1. ISO 14044 Environmental Management Life Cycle Assessment.
     2. ISO 14025 Environmental Labels and Declarations.
  2. coordination

This article is only required if performance targets are established for the project, otherwise remove.

Coordinate with other Sustainable Design Requirements sections referenced in 'Related Documents'. This article can be deleted if other Sustainable Design Requirements sections require monthly coordination meetings.

* + 1. Monthly Embodied Carbon Coordination Meetings: Conduct monthly embodied carbon coordination meetings to review Embodied Carbon Progress Reports.
  1. PREINSTALLATION MEETINGS

This article is only required if performance targets are established for the project, otherwise remove.

Coordinate with other Sustainable Design Requirements sections referenced in 'Related Documents'. This article can be deleted if other Sustainable Design Requirements sections require monthly coordination meetings.

* + 1. Preinstallation Conference: Conduct conference at Project site. Review embodied carbon requirements. Review action plans and documentation requirements.
  1. ADMINISTRATIVE REQUIREMENTS
     1. Embodied Carbon Documentation:
        1. Compile and review all documentation required to support the Project's embodied carbon **[tracking]** goals.

Collect and compile all required EPDs for products requiring embodied carbon documentation.

Retain subparagraph below ONLY if there are performance targets for reducing embodied carbon, otherwise remove. Embodied carbon is tracked using a product's Global Warming Potential value which can be found in an Environmental Product Declaration report.

**[Track and submit to Owner upon substantial completion the total GWP values and total Production Stage GWP values (A1-A3) for products requiring embodied carbon documentation.]**

* 1. INFORMATIONAL SUBMITTALS
     1. General: Submit sustainable product design submittals as a component of combined technical/sustainability submittal as required by other Specification Sections. As noted in Section 01 33 00 – Submittal Procedures, combined submittals are required; review of separated individual technical and sustainability submittals will not be accepted.
     2. Sustainable Design Submittals:
        1. Embodied Carbon Documentation:

The EPD Reporting Form included in Section 00 60 00 "Project Forms" is required for product category listed below. If a system is specified, each product in the system must be counted separately.

Provide the Product-Specific or Industry-Wide Type III EPD in compliance with ISO 14025 or LCA for each product specified, with specific emphasis on the following product categories:

Thermal and roofing insulation.

Non-structural (interior) metal framing.

Gypsum board.

Sound attenuation blankets.

Acoustical panel ceilings.

Carpet tile.

For products in which an EPD or LCA is not available, provide a dated written confirmation on manufacturer's letterhead that an EPD or LCA is not available for the product at time of product submission.

* + 1. Sustainable Materials Preliminary Action Plan: Within 14 days of date established for commencement of the Work, identify products anticipated to be submitted and indicate how requirements will be achieved:

Include paragraph below if embodied carbon reduction targets are established for the project. Gensler has developed a proprietary tool to track embodied carbon on our projects. Be advised that many commercially available carbon trackers are known to skew product values with profit margins. Coordinate with the project sustainability specialist or local design resiliency leader on tracking requirements and tools.

* + - 1. Embodied Carbon Tracking:

Identify products anticipated to be submitted under each embodied carbon tracking product category and estimated quantities (volume, units, or area as applicable).

Embodied carbon materials progress reports in paragraph below are advisable for projects with embodied carbon performance targets. Otherwise, language can be removed.

* + 1. Sustainable Materials Progress Reports: Concurrent with each monthly sustainable design coordination meeting, submit the following reports comparing actual construction and purchasing activities with preliminary action plans:
       1. Sustainable Materials Action Plan updates.

Include updated Embodied Carbon Tracker.

Embodied carbon materials progress reports in paragraph below are advisable for projects with embodied carbon performance targets. Otherwise, language can be removed.

* + 1. Sustainable Design Close-Out Reports: Upon substantial completion, submit to the Owner and Consultant the following completed calculators with supporting documentation.
       1. Embodied Carbon Tracking calculator.
    2. Qualification Data: For Embodied Carbon coordinator.
  1. QUALITY ASSURANCE
     1. Embodied Carbon Coordinator: Engage an experienced professional to coordinate the embodied carbon [tracking and] documentation. The embodied carbon coordinator may also serve as a sustainable design coordinator, a waste management coordinator, and indoor air quality coordinator if required by the Project.
        1. Embodied Carbon Coordinator shall facilitate all Monthly Embodied Carbon Coordination Meetings and compile all Embodied Carbon Progress Reports.
        2. Embodied Carbon Coordinator is responsible for **[embodied carbon tracking and]** compiling product documentation to be provided to the Owner at Substantial Completion.

1. Products

Not Used

1. Execution

Not Used

end of section