

018113  
SUSTAINABLE DESIGN REQUIREMENTS  
LEED FOR NEW CONSTRUCTION VERSION 3 - 2009

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general requirements and procedures for compliance with certain prerequisites and credits needed for Project to obtain "LEED Version 2009 for Building Design and Construction" (LEED v2009 BD+C) certification based on USGBC's LEED v2009 BD+C.
1. Specific requirements for LEED are also included in other Sections.
  2. Some LEED prerequisites and credits needed to obtain LEED certification depend on product selections and may not be specifically identified as LEED requirements. Compliance with requirements needed to obtain LEED prerequisites and credits may be used as one criterion to evaluate substitution requests and comparable product requests.
  3. A copy of the LEED Project checklist is attached at the end of this Section for information only.
    - a. Some LEED prerequisites and credits needed to obtain the indicated LEED certification depend on aspects of Project that are not part of the Work of the Contract.
  4. Definitions included in the "LEED Version 2009 for Building Design and Construction" (LEED v2009 BD+C) Reference Guide and online amendments apply to this Section.
- B. Section includes general requirements and procedures for compliance with certain USGBC LEED prerequisites and credits needed for Project to obtain LEED certification based on USGBC's "LEED 2009 for New Construction."
1. Other LEED prerequisites and credits needed to obtain LEED certification depend on product selections and may not be specifically identified as LEED requirements. Compliance with requirements needed to obtain LEED prerequisites and credits may be used as one criterion to evaluate substitution requests and comparable product requests.
  2. A copy of LEED Project checklist is attached to the end of this Section for information only.
    - a. Some LEED prerequisites and credits needed to obtain the indicated LEED certification depend on Architect's design and other aspects of Project that are not part of the Work of the Contract.

1.2 DEFINITIONS

USGBC's "LEED 2009 for New Construction"

SoCalGas Bakersfield Base  
Vacant land at the NE Corner of McMurtrey Ave.  
& Industrial Parkway Dr., CA 93308  
P.N. 66707.0C  
Addendum #4

- A. **Bio-Based Materials:** Materials that meet the Sustainable Agriculture Network's Sustainable Agriculture Standard. Bio-based raw materials shall be tested using ASTM D 6866 and be legally harvested, as defined by the exporting and receiving country.
- B. **CDPH Standard Method v1.1:** California Department of Public Health (CDPH) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, v. 1.1–2010, for the emissions testing and requirements of products and materials.
- C. **Chain-of-Custody (COC):** A procedure that tracks a product from the point of harvest or extraction to its end use, including all successive stage of processing, transformation, manufacturing, a distribution.
- D. **Chain-of-Custody Certificates:** Certificates signed by manufacturers and fabricators certifying that wood used to make products was obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001.
- E. **Composite Wood and Agrifiber:** Products made of wood particles and/or plant material pressed and bonded with adhesive or resin such as particleboard, medium density fiberboard (MDF), plywood, wheat board, strawboard, panel substrates, and door cores.
- F. **Corporate Sustainability Report:** A third-party verified report that outlines the environmental impacts of extraction operations and activities associated with the manufacturer's product and the product's supply chain.
- G. **Environmental Product Declaration (EPD):** An independently verified report based on life-cycle assessment studies that have been conducted according to a set of common rules for each product category and peer-reviewed.
  - 1. **Product-Specific Declaration:** A product with a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 that has at least a cradle to gate scope.
  - 2. **Industry-Wide (Generic) EPD:** Provide products with third-party certification (Type III), including external verification, in which the manufacturer is explicitly recognized as a participant by the program operator. EPD must conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 and have at least a cradle to gate scope.
  - 3. **Product-Specific Type III EPD:** A product with a third-party certification, including external verification, in which the manufacturer is explicitly recognized by the program operator. EPD must conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 and have at least a cradle to gate scope.
- H. **Extended Producer Responsibility (EPR):** Measures undertaken by the maker of a product to accept its own and sometimes other manufacturers' products as postconsumer waste at the end of the products' useful life.
- I. **Health Product Declaration Open Standard (HPD):** A standard format for reporting product content and associated health information for building products and materials.

- J. Indoor Air Quality (IAQ) Management Plan: Plan developed by the Contractor to provide a healthy indoor environment for workers and building occupants during construction. Plan must meet or exceed the recommendations of the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) "IAQ Guidelines for Occupied Buildings Under Construction."
- K. Leadership Extraction Practices: Products that meet at least one of the responsible extraction criteria, which include: extended producer responsibility; bio-based materials; FSC wood products; materials reuse; recycled content; and other USGBC approved programs.
- L. Material Cost: The dollar value of materials being provided to the site, after Contractor mark-ups, including transportation costs, taxes, fees, and shop labor, but excluding field equipment and field labor costs.
- M. Materials Reuse: Reuse includes salvaged, refurbished, or reused products.
- N. Multi-Attribute Optimization: Third party certified products that demonstrate impact reduction below industry average in at least three of the following six categories: global warming potential; stratospheric ozone depletion; acidification; eutrophication; tropospheric ozone creation; nonrenewable resource depletion.
- O. Recycled Content: Recycled content shall be defined in accordance with the International Organization of Standards document, ISO 14021. Recycled content is the sum of postconsumer recycled content plus one-half the preconsumer recycled content, based on cost.
  - 1. "Postconsumer" material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.
  - 2. "Preconsumer" material is defined as material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials, such as rework, regrind, or scrap, generated in a process and capable of being reclaimed within the same process that generated it.
- P. Regional Materials: Materials that are extracted, harvested, recovered, and manufactured within a radius of 500 miles from the Project site.
- Q. Volatile Organic Compounds (VOC) Emissions Test: Refer to CDPH Standard Method v1.1 definition.

### 1.3 ADMINISTRATIVE REQUIREMENTS

- A. Work of this project includes completed building and application for LEED certification. Work is not complete until Owner has accepted USGBC's final review of LEED certification.
  - 1. Provide documentation required by LEED and LEED review.

- B. Provide materials and procedures necessary to obtain LEED prerequisites and credits required in this Section. Other Sections may specify requirements that contribute to LEED prerequisites and credits. Refer to other sections for additional materials and procedures necessary to obtain LEED prerequisites and credits.
- C. Respond to questions and requests for additional information from Architect and the USGBC regarding LEED credits until the USGBC has made its determination on the project's LEED certification application.
- D. LEED Online Submittals: Upload LEED documentation submittal data directly to USGBC project "LEED Online" website. Complete online forms at least monthly and as necessary to document LEED credits for submittals required in this Section.
- E. LEED Conference: Schedule and conduct a conference at a time convenient to Owner and Architect within 21 days prior to commencement of the work. Advise Architect, Owner's Commissioning Authority, and Owner's Project Manager of scheduled meeting dates.
  - 1. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Owner's Project Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 2. Agenda: LEED goals for the project, Contractor's action plans, and discussion of targeted LEED Prerequisites and Credits.
  - 3. Minutes: Record and distribute minutes to attendees and other entities with responsibilities for obtaining LEED Credits.

#### 1.4 ACTION SUBMITTALS

- A. Sustainable Design LEED Documentation Submittals:
  - 1. Credit EAc3: Product Data and wiring diagrams for sensors and data collection system used to provide continuous metering of building energy-consumption performance over time.
  - 2. Credit MRc4: Product Data for recycled content indicating postconsumer and preconsumer recycled content and cost. 10% of the total cost of materials needs to be of recycled content.
  - 3. Credit MRc5: Product Data indicating location of material manufacturer for regionally manufactured materials. Include statement indicating cost for each regionally manufactured material and for each regionally extracted and manufactured material. 10% of the total cost of materials needs to be of regional materials.
    - a. Include statement indicating distance from manufacturer to Project for each regionally manufactured material.
    - b. Include statement indicating location of and distance from Project to point of extraction, harvest, or recovery for each raw material used in regionally extracted and manufactured materials.

4. Credit IEQc3.1:
  - a. Construction indoor-air-quality management plan.
  - b. Product Data for temporary filtration media.
  - c. Product Data for filtration media used during occupancy.
  - d. Construction Documentation: Six photographs at each of three different times during the construction period, along with a brief description of the SMACNA approach employed, documenting implementation of the indoor-air-quality management measures, such as protection of ducts and on-site stored or installed absorptive materials.
5. Credit IEQc4.1: Product Data for adhesives and sealants used inside the weatherproofing system indicating VOC content of each product used.
6. Credit IEQc4.2: Product Data for paints and coatings used inside the weatherproofing system indicating VOC content of each product used.
7. Credit IEQc4.3: Product Data for all flooring systems used inside the weatherproofing system indicating if the product is FloorScore or GreenLabel Plus and VOC content of each product used.
8. Credit IEQc4.4: Product Data for products containing composite wood or agrifiber products or wood glues indicating that they do not contain urea-formaldehyde resin. This includes receipts that state the specific wood used on the project is "NAUF".

## 1.5 INFORMATIONAL SUBMITTALS

- A. Project Materials Cost Data: Provide statement indicating total cost for materials used for Project. Costs exclude labor, overhead, and profit. Include breakout of costs for the following categories of items:
  1. Furniture.
  2. Plumbing.
  3. Mechanical.
  4. Electrical.
  5. Specialty items such as elevators and equipment.
  6. Wood-based construction materials.
- B. Sustainable Design Action Plans: Provide preliminary submittals within 30 days of date established for commencement of the Work indicating how the following requirements will be met:
  1. Credit MRc2: Construction Waste Management Plan, complying with Section 01 74 19 "Construction Waste Management and Disposal."
  2. Credit MRc4: List of proposed materials with recycled content. Indicate cost, postconsumer recycled content, and preconsumer recycled content for each product having recycled content. 10% of the total cost of materials needs to be of

recycled content.

3. Credit MRc5: List of proposed regionally manufactured materials and regionally extracted and manufactured materials. 10% of the total cost of materials needs to be of recycled content.
    - a. Identify each regionally manufactured material, including its source and cost.
    - b. Identify each regionally extracted and manufactured material, including its source and cost.
  4. Credit IEQc3.1: Construction Indoor Air Quality Plan, complying with Section 01 57 31, "Indoor Air Quality Management."
- C. LEED Progress Reports: Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with LEED action plans for the following:
1. Credit MRc2, Waste reduction progress reports complying with Section 01 74 19 "Construction Waste Management and Disposal."
  2. EQc4.1-4.4, Low emitting materials.
    - a. Low Emitting Materials Tracking Sheet monitoring the project's progress towards targeted LEED Indoor Environmental Quality Credits. Tracking Sheet to be presented at construction meetings.
  3. EQc3.1, Indoor air quality, during construction, complying with Section 01 57 31, "Indoor Air Quality Management."

## 1.6 QUALITY ASSURANCE

- A. LEED Coordinator: Engage an experienced LEED-Accredited Professional to coordinate LEED requirements. LEED coordinator may also serve as waste management coordinator.

## PART 2 - PRODUCTS

### 2.1 MATERIALS, GENERAL

- A. Provide products and procedures necessary to obtain LEED credits required in this Section. Although other Sections may specify some requirements that contribute to these LEED credits, Contractor shall provide additional materials and procedures necessary to obtain LEED credits indicated.

### 2.2 RECYCLED CONTENT OF MATERIALS

- A. Credit MRc4: Building materials shall have recycled content such that postconsumer recycled content plus one-half of preconsumer recycled content for Project constitutes a minimum of 20 percent of cost of materials used for Project.

1. Cost of postconsumer recycled content plus one-half of preconsumer recycled content of an item shall be determined by dividing weight of postconsumer recycled content plus one-half of preconsumer recycled content in the item by total weight of the item and multiplying by cost of the item.
2. Do not include plumbing, mechanical and electrical components, and specialty items such as elevators and equipment in the calculation.

### 2.3 REGIONAL MATERIALS

- A. Credit MRc5, Option 1: Not less than 20 percent of materials (by cost) shall be regionally manufactured materials.
  1. Manufactured or extracted materials must be within a 500-mile radius of the project site to be considered regional.

### 2.4 LOW-EMITTING MATERIALS

- A. Credit IEQc4.1: For field applications that are inside the weatherproofing system, adhesives and sealants shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
  1. Wood Glues: 30 g/L.
  2. Metal-to-Metal Adhesives: 30 g/L.
  3. Adhesives for Porous Materials (except Wood): 50 g/L.
  4. Subfloor Adhesives: 50 g/L.
  5. Plastic Form Adhesives: 50 g/L.
  6. Carpet Adhesives: 50 g/L.
  7. Carpet Pad Adhesives: 50 g/L.
  8. VCT and Asphalt Tile Adhesives: 50 g/L.
  9. Cove Base Adhesives: 50 g/L.
  10. Gypsum Board and Panel Adhesives: 50 g/L.
  11. Rubber Floor Adhesives: 60 g/L.
  12. Ceramic Tile Adhesives: 65 g/L.
  13. Multipurpose Construction Adhesives: 70 g/L.
  14. Fiberglass Adhesives: 80 g/L.
  15. Contact Adhesive: 80 g/L.
  16. Structural Glazing Adhesives: 100 g/L.
  17. Wood Flooring Adhesive: 100 g/L.
  18. Structural Wood Member Adhesive: 140 g/L.
  19. Single-Ply Roof Membrane Adhesive: 250 g/L.
  20. Special-Purpose Contact Adhesive (Contact Adhesive That Is Used to Bond Melamine Covered Board, Metal, Unsupported Vinyl, Rubber, or Wood Veneer 1/16 Inch or Less in Thickness to Any Surface): 250 g/L.
  21. Top and Trim Adhesive: 250 g/L.
  22. Plastic Cement Welding Compounds: 250 g/L.
  23. ABS Welding Compounds: 325 g/L.
  24. CPVC Welding Compounds: 490 g/L.
  25. PVC Welding Compounds: 510 g/L.
  26. Adhesive Primer for Plastic: 550 g/L.

27. Sheet-Applied Rubber Lining Adhesive: 850 g/L.
28. Aerosol Adhesive, General-Purpose Mist Spray: 65 percent by weight.
29. Aerosol Adhesive, General-Purpose Web Spray: 55 percent by weight.
30. Special-Purpose Aerosol Adhesive (All Types): 70 percent by weight.
31. Other Adhesives: 250 g/L.
32. Architectural Sealants: 250 g/L.
33. Nonmembrane Roof Sealants: 300 g/L.
34. Single-Ply Roof Membrane Sealants: 450 g/L.
35. Other Sealants: 420 g/L.
36. Sealant Primers for Nonporous Substrates: 250 g/L.
37. Sealant Primers for Porous Substrates: 775 g/L.
38. Modified Bituminous Sealant Primers: 500 g/L.
39. Other Sealant Primers: 750 g/L.

B. Credit IEQc4.2: For field applications that are inside the weatherproofing system, paints and coatings shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:

1. Flat Paints and Coatings: VOC not more than 50 g/L.
2. Nonflat Paints and Coatings: VOC not more than 150 g/L.
3. Dry-Fog Coatings: VOC not more than 400 g/L.
4. Primers, Sealers, and Undercoaters: VOC not more than 200 g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
6. Zinc-Rich Industrial Maintenance Primers: VOC not more than 340 g/L.
7. Pretreatment Wash Primers: VOC not more than 420 g/L.
8. Clear Wood Finishes, Varnishes: VOC not more than 350 g/L.
9. Clear Wood Finishes, Lacquers: VOC not more than 550 g/L.
10. Floor Coatings: VOC not more than 100 g/L.
11. Shellacs, Clear: VOC not more than 730 g/L.
12. Shellacs, Pigmented: VOC not more than 550 g/L.
13. Stains: VOC not more than 250 g/L.

C. Credit IEQc4.3: All flooring systems including resilient flooring, rubber flooring, and prefinished wood flooring all must be FloorScore or Greenguard Gold certified. Carpeting and carpet cushion need to be CRI Green Label Plus or Green Label certified (respectively).

D. Credit IEQc4.4: Composite wood, agrifiber products, and adhesives shall not contain urea-formaldehyde resin.

## PART 3 - EXECUTION

### 3.1 NONSMOKING BUILDING

A. Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.



### 3.2 REFRIGERANT REMOVAL

- A. Prerequisite EAp3: Remove CFC-based refrigerants according to Section 024119 "Selective Demolition" from existing HVAC&R equipment indicated to remain and replace with refrigerants that are not CFC based. Replace or adjust existing equipment to accommodate new refrigerant as described in HVAC Sections.

### 3.3 CONSTRUCTION INDOOR-AIR-QUALITY MANAGEMENT

- A. Credit IEQc3.1: Comply with SMACNA's "SMACNA IAQ Guideline for Occupied Buildings under Construction."
  - 1. If Owner authorizes use of permanent heating, cooling, and ventilating systems during construction period as specified in Section 015000 "Temporary Facilities and Controls," install filter media having a MERV 13 according to ASHRAE 52.2 at each return-air inlet for the air-handling system used during construction.
  - 2. Replace air filters immediately prior to occupancy.

END OF SECTION 018113