
PART 1 GENERAL**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes general requirements and procedures for compliance with certain U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED®) for Core & Shell (CS) 2009 prerequisites and credits needed for the Project to achieve at a minimum LEED® Platinum certification. This project is also required to meet the requirements of the San Francisco Green Building Ordinance (SF GBO) for large scale commercial development as required by the San Francisco Department of Building Inspection (SF DBI) <http://www.sfdbi.org/index.aspx?page=268>.
1. Certain LEED® prerequisites and credit requirements needed to obtain LEED® certification are dependent on material selections, documentation and means and methods of the Work. Each item related to LEED® may not be specifically identified as LEED® requirements in this section. The Contractor should refer to the LEED Reference Guide for Green Building Design and Construction (BD+C) for Core and Shell, 2009 Edition, updated June 2010 as well as all released Addenda at GBCI.org for completed credit descriptions and submittal requirements. Compliance with requirements needed to obtain LEED® prerequisites and credits may be used as one criterion to evaluate substitution requests.
 2. Additional LEED® prerequisites and credits needed to obtain the indicated LEED® certification are dependent on the Architect's design and other aspects of the Project that are not part of the Work of the Contract. Including all credits submitted as part of the LEED® Design Application Credit Submittal. Hence, not all credits required for certification may be described as part of this section.
 3. The Contractor shall designate an on-site point of contact for all LEED® prerequisites and credit documentation, sub contractor supervision and submittal coordination and to manage the Contractors portions of the LEED-Online submittal process.
 4. Documentation for LEED® prerequisites and credits shall be submitted in the format required by the USGBC for review using LEED-Online. Including all required credit audit documentation, completion of LEED® calculators, and LEED® letter templates. Refer to 1.6 of this section for a more detailed explanation of the LEED-Online process and LEED® Construction Credit Submittal. Please also reference the "Submittal Review Process Document", which has been distributed to the Project team and describes the submittal review process that the Contractor shall follow.
 5. A copy of the LEED-BD+C 2009 reference guide should be purchased by the Contractor and available on site at all times to accompany this specification.
 6. Additional information on LEED® and how to purchase copies of the LEED-BD+C reference guide and how to use LEED-Online can be found at <http://www.usgbc.org/leed/rating-systems/core-shell>.
- B. Related Sections include the following:
1. Divisions 1 through 33 Sections for LEED® requirements specific to the Work of each of those Sections. These requirements may or may not include reference to LEED® or LEED® credit submittal requirements.

1.3 DEFINITIONS

- A. Adequate Ventilation: Ventilation, including air circulation and air changes, required to cure materials, dissipate humidity, and prevent accumulation of dust, fumes, vapors and gases.
- B. Certificates of Chain-of-Custody: Certificates signed by manufacturers certifying that wood used to make products was obtained from forests certified by a Forest Stewardship Council (FSC) - accredited certification body to comply with FSC 1.2, "Principles and Criteria." Certificates shall include evidence that mill is certified for chain-of-custody by an FSC-accredited certification body. For more information go to www.fscus.org
- C. Chemical Waste: Includes paints, adhesives, sealants, coatings, petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, organic chemicals, and inorganic wastes.
- D. Construction and Demolition Waste: Includes solid wastes, such as building materials, packaging, rubbish, debris, and rubble resulting from construction, remodeling, and repair and demolition operations.

- E. Environmental Pollution and Damage: The presence of chemical, physical, or biological elements or agents that adversely affect human health or welfare; unfavorably alter ecological balances or the environment of neighboring buildings and environmental areas; or degrade the utility of the environment for aesthetic, cultural or historical purposes.
- F. Environmental Tobacco Smoke (ETS). Secondhand smoke consists of airborne particles emitted from the burning end of cigarettes, pipe and cigars, and exhaled by smokers. The particles contain about 4,000 different compounds, up to 40 of which are known to cause cancer.
- G. Hazardous Materials: Includes pesticides, biocides, carcinogens, and "wet products" as listed by recognized authorities, such as the Environmental Protection Agency (EPA), International Agency for Research on Cancer (IARC), the State of California, and any special local requirements.
- H. Interior Final Finishes: Materials and products that will be exposed at interior occupied spaces, including flooring, wall covering, finish carpentry, and ceilings.
- I. LEED®: Leadership in Energy & Environmental Design, 2009 Green Building Design and Construction Rating System (BD+C) for Core & Shell.
- J. Mechanical Ventilation: Ventilation provided by mechanically powered equipment, such as motor-driven fans and blowers, but not by devices such as wind-driven turbine ventilators and mechanically operated windows.
- K. Municipal Solid Waste Landfill: A permitted facility that accepts solid, non-hazardous waste such as household, commercial, and industrial waste, including construction and demolition waste.
- L. Natural Ventilation: Ventilation provided by thermal, wind or diffusion effects through doors, windows, or other intentional openings in buildings.
- M. Packaged Dry Products: Materials and products that are installed in dry form and delivered to the site in the manufacturer's packaging, including carpets, resilient flooring, ceiling tiles, and insulation.
- N. Post-Consumer Material: Material generate by households or by commercial, industrial and institutional facilities in their role as end-users of products, which can no longer be used for its intended purpose.
- O. Pre-Consumer Material: Material diverted from the waste stream during the manufacturing process (can also be considered post-industrial). Excluded is reutilization of materials such as rework, re-grind or scrape generate in a process and capable of being reclaimed within the same process that generated it.
- P. Regionally Manufactured Materials: Materials that are manufactured within a radius of 500 miles (800 km) from the Project location. Manufacturing refers to the final assembly of components into the building product that is installed at the Project site.
- Q. Regionally Extracted, Harvested, or Recovered Materials: Materials that are extracted, harvested, or recovered and manufactured within a radius of 500 miles (800 km) from the Project site.
- R. Ventilation: the process of supplying air to or removing air from a space for the purpose of controlling air contaminant levels, humidity, or temperature within the space.
- S. Wet Products: Materials and products installed in wet form, including paints, sealants, adhesives, and special coatings.
- T. Recycled Content: The percentage by weight of constituents that have been recovered or otherwise diverted from the solid waste stream, either during the manufacturing process (pre-consumer or post-industrial), or after consumer use (post-consumer).
 - 1. Spills and scraps from the original manufacturing process that are combined with other constituents after a minimal amount of reprocessing for use in further production of the same product are not recycled materials.
 - 2. Discarded materials from one manufacturing process that are used as constituents in another manufacturing process are pre-consumer or post industrial recycled materials.

1.4 MEETINGS

- A. Prime Trade Contractor shall conduct LEED® Certification meetings as required with all subcontractors, in addition to those meetings outlined in Section 01 31 00, "Project Management and Coordination".
1. Prime Trade Contractor's Project Manager.
 2. Owner's Representative.
 3. Prime Trade Contractor's LEED® Representative.
 4. All other attendees designated by Owner's Representative.
 5. Sub-Contractor Representatives as appropriate to stage of work.
- B. At a minimum, LEED® certification goals and issues shall be discussed at the following meetings:
1. Preconstruction Meetings.
 2. Progress Meetings.
 3. Subcontractor Meetings.
 4. Monthly Project LEED® Meetings. Meeting should be scheduled as a part of regularly scheduled job meetings on site.

1.5 SPECIAL PRODUCTS AND SUBSTITUTIONS

- A. In addition to the requirements of Section 01 60 00, "Product Requirements," the special substitution requirements described here apply only to the LEED® certification related materials and requirements and environmental products and procedures identified in this Section.
- B. Notify Owner and Architect when Contractor wishes to substitute materials, equipment, or products that meet the aesthetic and programmatic intent of the Construction Documents and offer equivalent or increased environmental sensitivity to materials, equipment, or products specified to meet LEED® requirements as indicated in the Construction Documents.
- C. Substitutions that may affect LEED® certification must be clearly stated as such.
- D. Comply with the requirements of Section 01 60 00, "Product Requirements," except as follows:
1. Only (1) one request for substitution for each product will be considered. When substitution is not accepted, provide specified product.
 2. Prior to submitting detailed information required under Section 01 60 00, "Product Requirements," submit the following for initial review by the Architect.
 - a. Product data including manufactures names, address, and phone number.
 - b. Include copy of Material Safety Data Sheet (MSDS) for LEED Documentation (Not to be reviewed by Architect).
 - c. Description of the differences of the proposed substitution from specified product related to LEED® requirements. Include description of environmental advantages of proposed substitution over specified product.
 - d. The contractor is responsible for re-submittal of all calculations, and documentation of products or material substitutions that affect LEED® prerequisites and credits referenced in 1.2.A.2 of this Section and applies to any credits previously submitted as part of the LEED® Design Application Submittal and all credits included in the LEED® Construction Submittal. Products that do not meet these requirements should not be submitted for substitution.
 - e. Substitutions of materials and products specified as part of the Contract Documents in the following areas (but not necessarily limited to these items) will require review and potential re-submittal of LEED® Design Application Pre-requisites and Credits:
 - 1) Irrigation System.
 - 2) Storm water System.
 - 3) Roofing products and materials.
 - 4) Plumbing fixtures and controls.
 - 5) Interior and Exterior Lighting systems and controls.
 - 6) HVAC equipment, systems and controls.
 - 7) CO2 monitoring system.
 - f. Substituted products shall not be ordered or installed without written acceptance by the Owner.
 3. Requests for Substitutions:
 - a. Submit a separate request for each LEED® related product substitution.
 - b. Identify product Specification Section and LEED® credit or credits, if applicable.
 - c. List similar projects using product, dates of installation, and names of Contractor and Owner.
 - d. Give itemized comparison of proposed substitution with specified product, listing variations, and reference Specification Section and Article number.
 - e. Include copy of Material Safety Data Sheet (MSDS) if applicable.

- f. Give cost data comparing proposed substitution with specified product and amount of net change to Contract Sum. The cost data should be based on life cycle analysis for each affected product including annual energy consumption and maintenance costs.
- g. State effect of substitution on construction schedule and changes required in other work of products.

1.6 SUBMITTALS

- A. General: Submit additional LEED® submittal requirements included in other Sections of the Specifications.
- B. LEED® submittals shall be prepared and submitted using the LEED-Online Credit web based application and minimum system requirements.
 1. The contractor is responsible for obtaining project access to LEED-Online and joining the Project using the projects 15 digit project access code. Additional instructions on how to access the project can be provided by Environmental Building Strategies (EBS) upon request.
 2. Once the Contractor has joined the project through LEED-Online, the LEED® Project Administrator (Environmental Building Strategies or Architect) will assign the LEED® credits that the contractor is responsible for completing.
 - a. Note: To access the credit templates, the contractor will need to have Adobe Reader or Professional 10.0.9 or higher installed on your computer. Adobe reader is available for download at <http://get.adobe.com/reader/>

NOTE: Each credit template is an editable Adobe PDF document. It may be completed or updated at any time prior to the LEED® Construction Submittal. After you have completed documenting the credit, use the 'Save Template to LEED-Online' button at the lower right hand corner of the last page of the template to save the data.
 3. Additional submittal documentation and back-up requirements should be uploaded to the LEED-Online web site following the instructions for each credit.
- C. LEED® submittals are in addition to other submittals. If submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated LEED® requirements.
- D. Project Materials Cost Data:
 1. Provide a statement indicating estimate total cost for building materials (Divisions 2-10) not including labor, at commencement of Work and provide updates with each application for payment during construction and at substantial completion of the Work
 2. Specific Material cost data for individual components and materials (not including labor) will be required to be provided as part of some LEED® pre-requisite and credits requirements submittals.
 3. Consistent numbers must be applied to various LEED® credits submittals requiring similar material cost data.
 4. Include a separate statement indicating total cost of mechanical and electrical components.
- E. The documentation and performance requirements identified in Section 3.01 – Sustainable Design Requirements, shall be submitted or a detailed status provided as part of the phase of the project identified in Section 01 33 00, "Submittal Procedures."
- F. Complete required LEED-Online Credit Templates declaring that all LEED credit requirements have been met. With final Project submittals provide the following:
 1. Final Summary of Solid Waste Disposal and Diversion.
 2. All approved Substitution Request Forms related to this Section.
- G. LEED Action Plans: Provide preliminary hard copy submittals within 14 days of date established for the Notice to Proceed indicating how the following requirements will be met.
 1. Credit MR 2.1 and 2.2: Construction Waste Management: Waste Management Plan complying with Section 0174 29, "Construction Waste Management."
 2. Credit IEQ 3: Construction IAQ Management Plan During Construction: Construction indoor air quality management plan.

- H. LEED Progress Reports: Prior to the first LEED coordination meeting and concurrent with subsequent LEED coordination meetings, submit reports comparing projected and actual construction and purchasing activities for the following:
1. Credit MR 2.1 and 2.2: Construction Waste Management: Waste reduction progress reports complying with Division 1 Section "Construction Waste Management."
 2. Credit MR 4: Recycled Content: List of proposed Recycled Content materials complying with credit requirements.
 - a. Indicate cost, post-consumer recycled content, and pre-consumer recycled content for each product having recycled content.
 3. Credit MR 5.1 and 5.2: Regional Materials: List of proposed regionally manufactured materials and regionally extracted, harvested, or recovered materials.
 - a. Identify each regionally manufactured material, its source, and cost.
 - b. Identify each regionally extracted, harvested or recovered material, its source, and cost.
 4. Credit MR 6: Certified Wood: List of proposed certified wood products.
 - a. Include statement indicating costs for each product containing certified wood.
 - b. Include statement indicating total cost for wood-based materials used for Project, including non-rented temporary construction.
 5. Credit EQ 3: Construction Indoor Air Quality Management (IAQ) plan During Construction.
 - a. Submit Draft hard copy of plan for review.
- I. LEED® Documentation Submittals:
1. Credit EA 4: Enhanced Refrigerant Management: Product Data for new HVAC equipment indicating absence of HCFC refrigerants, and for clean-agent fire-extinguishing systems indicating absence of HCFC and Halon.
 2. Credit EA 5: Measurement and Verification: Product Data and wiring diagrams for sensors and data collection system used to provide continuous metering of base building energy and water consumption performance over time.
 3. Credit MR 2.1 and 2.2: Construction Waste Management: Comply with Section 01 74 29, "Construction Waste Management." Using the LEED Online credit template:
 - a. Complete the construction waste calculation tables including: General description of each type/category of waste generated; location of receiving agent (recycler/landfill) for waste; quantity of waste diverted (by category) in tons or cubic yards.
 - b. Provide a narrative describing the project's construction waste management approach including a copy of the project's construction waste management plan. Please provide any additional comments or notes to describe special circumstances or considerations regarding the project's credit approach.
 - c. Required audit documentation:
 - 1) Copy of Construction Waste Management Plan.
 - 2) Significant sampling of the hauling/recycling tags/tickets or receipts from the Project.
 - 3) Info from the recycling facilities indicating how the materials were recycled/processed/used.
 - 4) Documentation of the recovery rate (if commingled).
 - 5) Brief narrative explaining how and to where each waste type is diverted if not already included on the LEED® Credit Template.
 4. Credit MR 4.1 and 4.2: Recycled Content: Product Data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content. Using the online v3.0 submittal template:
 - a. Provide total project materials cost for Divisions 3-10, 31 (Section 31.60.00 Foundations) and 32 (Sections 32.10.00 Paving, 32.30.00 Site Improvements, and 32.90.00 Planting) or provide the total project cost for Divisions 3-10, 31 (Section 31.60.00 Foundations) and 32 (Sections 32.10.00 Paving, 32.30.00 Site Improvements, and 32.90.00 Planting) to apply the 45% default materials value.
 - b. Provide a tabulation of each material used on the project that is being tracked for recycled content. The tabulation must include a description of the material, the manufacturer of the material, the product cost, the pre-consumer and/or post-consumer recycled content percentage, and the source of the recycled content data.
 - c. Provide an optional narrative describing any special circumstances or considerations regarding the project's credit approach.
 - d. Required audit documentation:
 - 1) Manufacturer cutsheets, literature or letters highlighting the overall post-consumer and/or post-industrial recycled content percentages (by weight) of each product listed on the template.
 - 2) Materials invoices (showing costs) for each product listed on the template.

5. Credit MR 5.1 and 5.2: Regional Materials: Product Data indicating location of material manufacturer for regionally manufactured materials. Using the online credit template:
 - a. Provide the project's total project cost for Divisions 3-10, 31 (Section 31.60.00 Foundations and 32 (Sections 32.10.00 Paving, 32.30.00 Site Improvements, and 32.90.00 Planting) (for application of the 45% default factor) or total materials cost. Note this report must be consistent across all MR credits.
 - b. Complete the regional materials calculation table. The following will be required to fill in this table: Product name for each tracked material; material manufacturer; total product cost for each tracked material (not including labor); percentage of product by weight, that meets both the extraction and manufacturer criteria; distance between the project site and extraction/harvest/recovery site; distance between the project site and final manufacturing location.
 - c. Provide an optional narrative describing any special circumstance or considerations regarding the project's credit approach.
 - d. Required audit documentation:
 - 1) Manufacturer or vendor literature, cut sheets, letter stating address location of each material's final assembly site.
 - 2) Map (Google Maps or equivalent) indicating distances from each location to the project site.
 - 3) Documentation of the cost/value of each material.
6. Credit MR 6: Certified Wood: Product Data and certificates of chain-of-custody for products containing certified wood. Using the LEED Online submittal template:
 - a. A list of items (and/or components of products) claimed as FSC certified, including product type, manufacturer, and the entity's Chain of Custody (COC) certification number. Each product name can then be cross-referenced with the manufacturer or vendor COC number during the LEED® certification review. Visit <https://us.fsc.org/chain-of-custody-certification.201.htm> for more information.
 - b. Provide an optional narrative describing any special circumstance or considerations regarding the project's credit approach.
 - c. Required audit documentation:
 - 1) Official FSC chain of custody certificates (from SmartWood or SCS) for each material listed, with chain of custody number.
 - 2) Wood materials vendor invoices (showing costs) for all wood products used in the project regardless of if they are claiming FSC certification or not.
7. Credit EQ 3: Construction IAQ Management Plan during Construction, using the online credit template:
 - a. Provide a copy of the project's Indoor Air Quality (IAQ) Management Plan.
 - b. Confirm if the permanently installed air handling equipment was used during construction.
 - c. Provide photos to highlight the implemented construction IAQ practices.
 - d. List all filtration media (manufacturer, model#, MERV rating, location of installed filter) installed during construction and confirm that each unit replaced prior to occupancy.
 - e. Provide an optional narrative describing any special circumstance or non-standard approach taken by the project.
 - f. Required audit documentation:
 - 1) Construction IAQ Management Plan addressing the SMACNA/LEED® requirements.
 - 2) Manufacturer literature, cut sheets, or letters showing the MERV values of filtration media used (during construction and immediately before occupancy).
8. Credit EQ 4.1: Low-emitting Materials: Adhesives & Sealants, product data and material safety data sheets (MSDS) for adhesives and sealants used on the interior of the building indicating VOC content of each product used. Using the online credit template:
 - a. Provide a listing of each indoor adhesive, sealant and sealant primer product used on the project. Include the manufacture's name, product name, specific VOC data (in g/L less water) for each product, and the corresponding allowable VOC from the referenced standard.
 - b. Provide a listing of each indoor aerosol adhesive product used on the project. Include the manufacture's name, product name, specific VOC data (in g/L less water) for each product, and the corresponding allowable VOC from the referenced standard Provide a narrative to describe any special circumstances or non-standard compliance path taken by the project.
 - c. Required audit documentation:
 - 1) Cut sheets and Materials Safety Data Sheet (MSDS), or letter from the manufacturer for each adhesive/sealant used on the interior, with the VOC content (g/L) circled and indicating VOC content of each product used and indicate VOC content in g/L calculated according to 40 CFR 59, Subpart D (EPA method 24).
 - 2) Summary table comparing credit VOC requirements and actual VOC levels for each product.
9. Credit EQ 4.2: Paints & Coatings, using the online credit template:
 - a. Provide a listing of each indoor paint and coating used on the project. Include the manufacture's name, product name, specific VOC data (in g/L, less water) for each product, and the corresponding allowable VOC from the referenced standard.

- b. Provide a narrative to describe any special circumstances or non-standard compliance path taken by the project.
 - c. Required audit documentation:
 - 1) Cut sheets, MSDS, or letter from the manufacturer for each interior paint, with the VOC content (g/L) circled. Indicate VOC content in g/L calculated according to 40 CFR 59, Subpart D (EPA method 24).
 - 2) Summary table comparing credit VOC requirements and actual VOC levels for each product.
10. Credit EQ 4.3: Flooring Systems, using the online credit template:
- a. Provide a listing of carpet products installed in the building interior. Confirm that the products comply with CRI Green Label Plus testing program. For more information visit: www.carpet-rug.org.
 - b. Provide a listing of carpet cushion products installed in the building interior. Confirm that the products comply with CRI Green Label testing program. For more information visit: www.carpet-rug.org.
 - c. Provide a listing of all hard surface flooring in the building interior. Confirm that the product complies with the FloorScore standard. These include, but are not limited to the following flooring products: vinyl, linoleum, laminate flooring, wood coloring, ceramic flooring, rubber flooring and wall base. For more information visit: http://www.rfci.com/index.php?option=com_content&view=article&id=80&Itemid=79.
 - d. Provide a list of all concrete, wood, bamboo, and cork floor finishes such as sealer, stain and finish used in the building interior. Confirm that the products meet the requirements of South Coast Air Quality Management District (SCAQMD) Rule 113, Architectural Coatings, rules in effect on July 1, 2010.
 - e. Provide a narrative to describe any special circumstances or non-standard compliance path taken by the project.
 - f. Required audit documentation:
 - 1) Cut sheets, manufacturer literature or letter, or CRI Green Label Plus/ literature stating that the carpet(s) meets the CRI Green Label IAQ test program criteria.
 - 2) Cut sheets, manufacturer literature or letter, or FloorScore literature stating that the hard surface flooring meets the FloorScore standard.
 - 3) Cut sheets or manufacturer literature or letter showing that all carpet adhesives meet the VOC limit of 50 g/l.
 - 4) Cut sheets or manufacturer literature or letter showing that all concrete, wood, bamboo, and cork floor finishes meet the South Coast Air Quality Management District (SCAQMD) Rule 113, Architectural Coatings, rules in effect on July 1, 2010.
11. Credit EQ 4.4 Composite Woods and Agrifiber Products, using the LEED Online submittal template:
- a. Provide a listing of each composite wood and agrifiber product installed in the building interior. Confirm that the product does not contain any added urea-formaldehyde.
 - b. Provide a narrative to describe any special circumstances or non-standard compliance path taken by the project.
 - c. Required audit documentation:
 - 1) Cut sheets or manufacturer literature or letters indicating the bonding agents for each composite wood and agrifiber material used in the project, showing that no added urea-formaldehyde resins were used in these products.

PART 2 PRODUCTS

2.1 RECYCLED CONTENT OF MATERIALS

- A. Credits MR 4.1 and MR 4.2: Recycled Content: Provide building materials with recycled content such that post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 10 percent (based on cost) of the total value of materials in the Project, or provide building materials with recycled content such that post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 20 percent (based on cost) of the total value of materials in the Project.
 - 1. The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of the assembly to determine the recycled content value.
 - 2. Do not include mechanical and electrical and plumbing components in the calculation.
 - 3. Only include materials permanently installed in the project
 - 4. Furniture may be included; provided it is consistently included in MR credits 3-7.
 - 5. Recycled content of materials shall be defined in accordance with the International Organization for Standardization document, *ISO 14021-1999 – Environmental labels and declarations – self declared environmental claims (Type II environmental labeling)*. www.iso.org.

2.2 REGIONAL MATERIALS

- A. Credit MR 5.1 and MR5.2: Regional Materials: Use building materials that have been extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site for a minimum of 10 percent (based on cost) of the total materials value or use building materials that have been extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site for a minimum of 20 percent (based on cost) of the total materials value.
1. Do not include mechanical and electrical and plumbing components in the calculation.
 2. Only include materials permanently installed in the Project.
 3. Furniture may be included; provided it is consistently included in MR credits 3-7.

2.3 CERTIFIED WOOD

- A. Credit MR 6.0: Certified Wood: Provide a minimum of 50 percent (by cost) of wood-based materials that are produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2, "Principles and Criteria." www.fscus.org.
1. Wood-based materials include but are not limited to the following materials when made from made wood, engineered wood products, or wood-based panel products:
 - a. Rough carpentry.
 - b. Miscellaneous carpentry.
 - c. Heavy timber construction.
 - d. Wood decking.
 - e. Metal-plate-connected wood trusses.
 - f. Structural glued-laminated timber.
 - g. Finish carpentry.
 - h. Architectural woodwork.
 - i. Wood paneling.
 - j. Wood veneer wall covering.
 - k. Wood flooring.
 - l. Wood lockers.
 - m. Wood cabinets.

2.4 LOW-EMITTING MATERIALS

- A. Credit EQ 4.1: Adhesives & Sealants: For interior applications use adhesives and sealants that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA method 24). VOC limits listed are from South Coast Air Quality Management District Rule #1168 for adhesives and from Bay Area Air Quality Management District Regulation 8, Rule 51, for sealants and sealant primers:
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. Sub floor Adhesives: 50 g/L.
 5. Plastic Foam (adhesives): 50 g/L.
 6. Indoor 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. Drywall 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. Structural Glazing Adhesives: 100 g/L.
 16. Wood Flooring Adhesive: 100 g/L.
 17. Contact Adhesive: 80 g/L.
 18. Plastic Cement Welding Compounds: 250 g/L.
 19. ABS Welding Compounds: 325g/L.
 20. CPVC Welding Compounds: 490 g/L.
 21. PVC Welding Compounds: 510 g/L.
 22. Adhesive Primer for Plastic: 550 g/L.
 23. Special Purpose Contact Adhesive: 250 g/L.
 24. Structural Wood Member Adhesive: 140 g/L.
 25. Sheet Applied Rubber Lining Operations: 850 g/L.
 26. Top & Trim Adhesive: 250g/L.

27. Non-Membrane Roof: 300 g/L.
 28. Roadway: 250g/L.
 29. Single-Ply Roof Membrane: 45-g/L.
 30. Other Sealants (non architectural): 420 g/L.
 31. Sealant (architectural, non-porous substrates): 250 g/L.
 32. Sealants (architectural, porous substrates): 775 g/L.
 33. Sealants (other architectural): 750 g/L.
 34. Aerosol Adhesives must comply with Green Seal Standard for Commercial Adhesives GS-26 requirements in effect on October 19, 2000.
- B. Credit EQ 4.2: Paints & Coatings: For interior applications use paints and coatings that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA method 24) and the following chemical restrictions:
1. Flat Paints and Coatings: 50 g/L.
 2. Non-Flat Paints and Coatings: 150 g/L.
 3. Anti-Corrosive and anti-rust paints applied to ferrous metals: 250 g/L.
 4. Clear Wood finishes: Varnishes 350 g/L. Lacquer: 550 g/L.
 5. Stains: 250 g/L.
 6. Floor Coatings: 100g/L.
 7. Waterproofing Sealers: 250 g/L.
 8. Sanding Sealers: 275 g/L.
 9. All other sealers: 200g/L.
 10. Restricted Components: Paints and coatings shall not contain any of the following:
 - a. Acrolein.
 - b. Acrylonitrile.
 - c. Antimony.
 - d. Benzene.
 - e. Butyl benzyl phthalate.
 - f. Cadmium.
 - g. Di (2-ethylhexyl) phthalate.
 - h. Di-n-butyl phthalate.
 - i. Di-n-octyl phthalate.
 - j. 1,2-dichlorobenzene.
 - k. Diethyl phthalate.
 - l. Dimethyl phthalate.
 - m. Ethylbenzene.
 - n. Formaldehyde.
 - o. Hexavalent chromium.
 - p. Isophorone.
 - q. Lead.
 - r. Mercury.
 - s. Methyl ethyl ketone.
 - t. Methyl isobutyl ketone.
 - u. Methylene chloride.
 - v. Naphthalene.
 - w. Toluene (methylbenzene).
 - x. 1,1,1-trichloroethane.
 - y. Vinyl chloride.
- C. Credit EQ 4.3: Flooring Systems: Use flooring that meets the following requirements:
1. All carpet installed in the building interior must meet the testing and product requirements of the Carpet and Rug Institute Green Label Plus program.
 2. All carpet cushion installed in the building interior must meet the requirements of the Carpet and Rug Institute Green Label 1 program.
 3. All carpet adhesive must meet the requirements of IEQ Credit 4.1: Adhesives and Sealants, which includes a volatile organic compound (VOC) limit of 50 g/L.
 4. All hard surface flooring must be certified as compliant with the FloorScore2 standard (current as of the date of this rating system, or more stringent version) by an independent third-party. Flooring products covered by FloorScore include vinyl, linoleum, laminate flooring, wood flooring, ceramic flooring, rubber flooring and wall base.
 5. An alternative compliance path using FloorScore is acceptable for credit achievement: 100% of the non-carpet finished flooring must be FloorScore-certified and must constitute at least 25% of the finished floor

- area. Examples of unfinished flooring include floors in mechanical rooms, electrical rooms and elevator service rooms.
6. Concrete, wood, bamboo and cork floor finishes such as sealer, stain and finish must meet the requirements of South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004.
 7. Tile setting adhesives and grout must meet South Coast Air Quality Management District (SCAQMD) Rule 1168. VOC limits correspond to an effective date of July 1, 2005 and rule amendment date of January 7, 2005.
- D. Credit EQ 4.4: Composite Wood & Agrifiber Products: Do not use composite wood and agrifiber products that contain urea-formaldehyde resin.

PART 3 EXECUTION

3.1 FIELD EXECUTION OF LEED® REQUIREMENTS

- A. The Contractor is responsible for ensuring proper field execution of all LEED® prerequisites and submittal requirements, communication with sub-contractors of all requirements and submission of all documentation in a timely manner.
- B. Contractor shall notify Architect, Owner and Environmental Building Strategies immediately of failure to meet any stated LEED® pre-requisite or credit requirement.

3.2 CONSTRUCTION VENTILATION AND PRECONDITIONING

- A. Prime Trade Contractor shall execute the approved Construction IAQ Management Plan as specified in this Section.
- B. During construction Prime Trade Contractor shall meet or exceed the minimum requirements of the SMACNA IAQ Guideline for Occupied Buildings under Construction - 1995.
- C. Temporary Construction Ventilation: Prime Trade Contractor shall Maintain sufficient temporary ventilation of areas where materials are being used that emit VOC's, and maintain ventilation continuously during installation, and until emissions dissipate after installation. If continuous ventilation is not possible via the building's HVAC system(s) then ventilation shall be supplied via open windows and temporary fans, sufficient to provide no less than three air changes per hour. Prime Trade Contractor shall ensure that:
 1. The period after installation shall be sufficient to dissipate odors and elevated concentrations of VOCs. Where no specific period is stated in these Specifications, a time period of 72 hours shall be used.
 2. All areas shall be vented directly to outside. Areas shall not be vented to other enclosed areas.
- D. During dust producing activities (e.g. drywall installation and finishing) ventilation system shall be off, and openings in supply and return HVAC system shall be protected from dust infiltration. Provide temporary ventilation as required.
- E. Preconditioning: Prior to installation, Prime Trade Contractor shall allow products which have odors and VOC emissions to off-gas in dry, well-ventilated space outside of building for 14 calendar days, in order to allow for reasonable dissipation of odors and emissions.

3.3 SEQUENCING

- A. Environmental Issues: Prime Trade Contractor shall complete all interior finish material installation no less than 14 days prior to Substantial Completion to allow for building flush out. Submit notification to Owner's Representative when all interior finish material installation is complete, highlighting the date of completion.

3.4 PROTECTION

- A. Protect stored on-site and installed absorptive materials from moisture damage. Where absorptive materials not intended for wet applications are exposed to moisture, immediately remove from site and dispose of properly.
- B. Protect installed materials using methods that do not support growth of molds and mildews.
 1. Immediately remove from site and properly dispose of materials showing signs of mold and signs of mildew, including materials with moisture stains.

END OF SECTION