

SECTION 01 8113.53 - SUSTAINABLE DESIGN REQUIREMENTS - GREEN GLOBES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes general requirements and procedures for compliance with the Green Building Initiative's (GBI) "Green Globes for New Construction, Version 1.1," (hereafter, "Green Globes").
 - 1. Some Green Globes requirements depend on product selections and may not be specifically identified as Green Globes requirements. Compliance with Green Globes requirements may be used as one criterion to evaluate substitution requests and comparable product requests.
 - 2. A copy of Green Globes Project checklist is attached at the end of this Section for information only.
 - a. Some Green Globes requirements depend on Architect's design and other aspects of Project that are not part of the Work of the Contract.

1.3 DEFINITIONS

- A. Definitions that are a part of Green Globes apply to this Section.
- B. REL: Recommended exposure limit.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at [Project site] <Insert location>. Review Green Globes requirements and action plans for compliance with requirements.

1.5 ADMINISTRATIVE REQUIREMENTS

- A. Respond to questions and requests from Architect about Green Globes requirements that are the responsibility of Contractor, that depend on product selection or product qualities, or that depend on Contractor's procedures. Document responses as informational submittals.
- B. Submit documentation to GBI-authorized Assessor and respond to questions and requests from GBI-authorized Assessor about Green Globes credits that are the responsibility of Contractor, that depend on product selection or product qualities, or that depend on Contractor's procedures until GBI-authorized Assessor has made its determination on Project's Green Globes certification application.

1. Document correspondence with GBI-authorized Assessor as informational submittals.

C. Environmental Management System: Document the following:

1. General Contractor's environmental policy.
2. Regulatory compliance and training.
3. Environmental risk assessment that shows sensitive environmental areas and ranks potential risks that may arise from the construction.
4. Environmental risk management strategies.
5. Environmental management roles, responsibilities, and reporting structure for the construction phase.
6. Site and work instructions for site personnel outlining environmental procedures during construction.
7. Environmental inspection checklists.
8. Records of compliance.

1.6 ACTION SUBMITTALS

A. General: Submit additional sustainable design submittals required by other Specification Sections.

B. Sustainable design submittals are in addition to other submittals.

1. If submitted item is identical to that submitted to comply with other requirements, include an additional copy with other submittal as a record copy of compliance with indicated Green Globes requirements instead of separate sustainable design submittal. Mark additional copy "Sustainable design submittal."

C. Sustainable Design Documentation Submittals:

1. Environmental management system documents.
2. Environmental product declarations.
3. Third-party certifications based on multiple attribute standards.
4. Third-party-certified life-cycle product assessments.
5. Documentation complying with Section 017419 "Construction Waste Management and Disposal."
6. Product Data and laboratory test reports for adhesives and sealants indicating VOC content and compliance with requirements for low-emitting materials.
7. Certificates for carpet and undercarpet adhesives indicating compliance with CRI's Green Label Plus testing program.
8. Product Data and laboratory test reports for paints indicating VOC content and compliance with requirements for low-emitting materials.
9. Laboratory test reports for flooring, insulation, acoustical ceilings, and wall coverings, indicating compliance with requirements for low-emitting materials.
10. Construction indoor-air-quality (IAQ) management plan including the following:
 - a. Product Data for temporary filtration media.
 - b. Product Data for filtration media used during occupancy.
 - c. 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 IAQ management measures, such as protection of ducts and on-site stored or installed absorptive materials.

11. Building Air Flush-Out: Signed statement describing the building air flush-out procedures including the dates when flush-out was begun and completed and statement that filtration media was replaced after flush-out. Include Product Data for filtration media used during flush-out and during occupancy.
12. IAQ testing report from testing and inspecting agency indicating results of IAQ testing and documentation that show compliance with IAQ testing procedures and requirements.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Green Globes coordinator.
- B. 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. Plumbing.
 2. Mechanical.
 3. Electrical.
 4. Specialty items such as elevators and equipment.
 5. Wood-based construction materials.
- C. Sustainable Design Action Plans: Provide preliminary submittals within [seven] [14] [30] [60] <Insert number> days of date established for [commencement of the Work] [the Notice to Proceed] [the Notice of Award] indicating how the following requirements will be met:
 1. List of proposed products with environmental product declarations.
 2. List of proposed products complying with requirements for multiple attribute standards.
 3. List of proposed products complying with requirements for life-cycle product assessments.
 4. General Contractor's environmental policy.
 5. Waste management plan complying with Section 017419 "Construction Waste Management and Disposal."
 6. Construction IAQ management plan.
- D. Sustainable Design Progress Reports: Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with sustainable design action plans.

1.8 QUALITY ASSURANCE

- A. Green Globes Coordinator: Engage an experienced coordinator to coordinate Green Globes requirements. Green Globes coordinator may also serve as waste management coordinator.
 1. Green Globes coordinator shall have previously coordinated at least **[one] [two]** <Insert number> Green Globes projects.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle building materials made of organic material or those that could absorb moisture to prevent deterioration or damage due to moisture, temperature changes,

contaminants, or corrosion, and to prevent collecting organic matter such as leaves, soil, or insects.

- B. Do not deliver or install materials made of organic material or those that could absorb moisture until painting and similar operations that could damage them have been completed in installation areas.
- C. Do not install interior walls, wood floors, ceilings, or HVAC systems until the building envelope is weathertight and has been permitted to dry.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Provide products and procedures necessary to comply with Green Globes requirements referenced in this Section. Although other Sections may specify some requirements that contribute to referenced Green Globes requirements, Contractor shall determine additional materials and procedures necessary to comply with Green Globes requirements indicated.
- B. At least [10] [25] [40] percent of products shall have environmental product declarations that comply with Green Globes requirements.
- C. At least [10] [25] [40] percent of products shall have third-party certifications that are based on multiple attribute standard(s) that comply with Green Globes requirements.
- D. At least [10] [25] [40] percent of products shall have third-party life-cycle product assessments that comply with Green Globes requirements.
- E. At least [10] [25] [40] percent of products shall comply with one of the following:
 - 1. Products shall have environmental product declarations that comply with Green Globes requirements.
 - 2. Products shall have third-party certifications that are based on multiple attribute standard(s) that comply with Green Globes requirements.
 - 3. Products shall have third-party life-cycle product assessments that comply with Green Globes requirements.

2.2 LOW-EMITTING MATERIALS

- A. Adhesives and Sealants: For field applications inside the building, adhesives and sealants shall comply with 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 Foam 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. Single-Ply Roof Membrane Adhesive: 250 g/L.
 19. 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.
 20. Plastic Cement Welding Compounds: 250 g/L.
 21. ABS Welding Compounds: 325 g/L.
 22. CPVC Welding Compounds: 490 g/L.
 23. PVC Welding Compounds: 510 g/L.
 24. Adhesive Primer for Plastic: 550 g/L.
 25. Architectural Sealants: 250 g/L.
 26. Nonmembrane Roof Sealants: 300 g/L.
 27. Single-Ply Roof Membrane Sealants: 450 g/L.
 28. Other Sealants: 420 g/L.
- B. Adhesives and Sealants: For field applications inside the building, adhesives and sealants shall contain no more than half of the chronic REL of VOCs when tested according to the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." The building concentration of formaldehyde shall not exceed half of the indoor REL or 16.5 mcg/cu. m and that of acetaldehyde shall not exceed 9 mcg/cu. m.
- C. Carpet and undercarpet adhesives shall comply with CRI's Green Label Plus testing program.
- D. Paints: For field applications inside the building, wall paints shall comply with the following VOC content limits:
1. Latex Flat Paints: 50 g/L.
 2. Latex Nonflat Paints: 150 g/L.
- E. Paints: For field applications inside the building, wall paints shall contain no more than half of the chronic REL of VOCs when tested according to the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." The building concentration of formaldehyde shall not exceed half of the indoor REL or 33 mcg/cu. m and that of acetaldehyde shall not exceed 9 mcg/cu. m.
- F. Flooring and Other Interior Products: Flooring, floor coverings, insulation, acoustical ceilings, and wall coverings shall contain no more than half of the chronic REL of VOCs when tested according to the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." The building concentration of formaldehyde shall not exceed half of the indoor REL or 33 mcg/cu. m and that of acetaldehyde shall not exceed 9 mcg/cu. m.

PART 3 - EXECUTION

3.1 NONSMOKING BUILDING

- A. Smoking is not permitted within the building or within 25 feet (8 m) of entrances, operable windows, or outdoor-air intakes.

3.2 CLEAN DIESEL PRACTICES

- A. Comply with Green Globes requirements for clean diesel practices.

3.3 CONSTRUCTION WASTE MANAGEMENT

- A. Comply with Section 017419 "Construction Waste Management and Disposal."

3.4 CONSTRUCTION INDOOR-AIR-QUALITY MANAGEMENT

- A. 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," replace filter media for the air-handling system at regular intervals during construction, before building flush-out or IAQ testing, and before occupancy.
 - 2. If parts of the building are occupied during construction, replace filter media for the air-handling system at regular intervals during construction, before building flush-out or IAQ testing, and before final occupancy.

3.5 INDOOR-AIR-QUALITY ASSESSMENT

- A. Flush-Out:
 - 1. After construction ends, prior to occupancy and with all interior finishes installed, perform a building flush-out by supplying a total volume of 14,000 cu. ft. (4 300 000 L) of outdoor air per sq. ft. (sq. m) of floor area while maintaining an internal temperature of at least 60 deg F (16 deg C) and a relative humidity no higher than 60 percent.
 - a. <Insert operating requirements>.
 - 2. If occupancy is desired prior to flush-out completion, the space may be occupied following delivery of a minimum of 3500 cu. ft. (1 070 000 L) of outdoor air per sq. ft. (sq. m) of floor area to the space. Once a space is occupied, it shall be ventilated at a minimum rate of 0.30 cfm per sq. ft. (1.52 L/s per sq. m) of outside air or the design minimum outside air rate, whichever is greater. During each day of the flush-out period, ventilation shall begin a minimum of three hours prior to occupancy and continue during occupancy. These conditions shall be maintained until a total of 14,000 cu. ft./sq. ft. (4 300 000 L/sq. m) of outside air has been delivered to the space.
 - a. <Insert operating requirements>.
- B. Air-Quality Testing:

1. Conduct baseline IAQ testing, after construction ends and prior to occupancy, according to the EPA's "Testing for Indoor Air Quality - Section 01 81 09."
2. Complete HVAC testing, adjusting, and balancing before beginning IAQ testing.
3. Indoor air shall comply with standards and limits in the EPA's "Testing for Indoor Air Quality - Section 01 81 09."
4. For each sampling point where the maximum concentration limits are exceeded, take corrective action until requirements have been met.
5. For each sampling point where the airborne mold and mildew indoor species distribution varies by more than 10 percent from exterior sampling specification, identify the source of mold and/or mildew and remediate with corrective action, then retest until compliant results are attained.
6. If any noncompliant test results occur, provide a written report describing the source(s) of the noncompliant condition(s) and the corrective action(s) implemented.

3.6 CLOSEOUT ACTIVITIES

- A. Walk-through: Arrange for a walk-through by GBI-authorized Assessor to verify compliance with requirements. Cooperate with GBI-authorized Assessor and provide reasonable auxiliary services as requested. Notify GBI-authorized Assessor sufficiently in advance of operations to permit assignment of personnel. Provide access to the Work and incidental labor and facilities necessary to facilitate inspections.

END OF SECTION 01 8113.53

NORTHWESTERN UNIVERSITY
PROJECT NAME _____
JOB # _____

FOR: _____
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