

PART 1 - GENERAL

- 1.1 RELATED SECTIONS
- .1 Section 01 35 22 - VOC Requirements.
 - .2 Section 01 81 00 - Indoor Air Quality (IAQ) Testing.
 - .3 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .4 Section 31 32 25 - Sediment and Erosion Control.
 - .5 Section 01 47 19 - Indoor Air Quality: During Construction.

- 1.2 OBJECTIVE
- .1 To achieve LEED Silver Certification for this Project under the LEED Canada-NC 2009 edition administered by the Canada Green Building Council (CaGBC).
 - .2 A list of targeted LEED credits are outlined in the LEED scorecard, which is appended with these specifications.

- 1.3 REFERENCES
- .1 Definitions:
 - .1 ESC - Erosion and Sedimentation Control
 - .2 IAQ - Indoor Air Quality.
 - .3 VOC - Volatile Organic Compound.
 - .4 FSC - Forest Stewardship Council.
 - .5 CFC - Chlorofluorocarbons.
 - .6 Chain-of-Custody Certification - certificates signed by manufacturers certifying that wood used to make products was obtained from FSC certified forests. Certificates include evidence that mill is certified for chain-of-custody by FSC-accredited certification body.
 - .7 HCFC - Hydro Chlorofluorocarbons.
 - .8 Rapidly Renewable Materials - materials made from agricultural products that are typically harvested within a ten-year or shorter cycle. Rapidly renewable materials include but are not limited to products made

1.3 REFERENCES
(Cont'd)

- .1 Definitions: (Cont'd)
 - .8 (Cont'd)
from bamboo, cotton, flax, jute, straw, sunflower seed hulls, vegetable oils, and wool.
 - .9 Regionally Manufactured Materials - materials that are manufactured within a radius of 800 km, if transported by truck, or 2400 km if transported by rail or water from project location. Manufacturing refers to the final assembly of components into the building product that is installed at project site.
 - .10 Recycled Content - percentage by weight of constituents that have been recovered or otherwise diverted from solid waste stream, either pre-consumer or post-consumer.
 - .1 Wastes and scraps from manufacturing process that are combined with other materials after minimal amount of reprocessing for use in further production of same product are not recycled materials.
 - .2 Discarded materials from one manufacturing process that are used as materials in another manufacturing process are pre-consumer recycled materials.
- .2 Reference Standards:
 - .1 American Society of Heating Refrigeration and Air-Conditioning (ASHRAE)
 - .1 ANSI/ASHRAE 52.2-2007, Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size (ANSI approved).
 - .2 ASTM International
 - .1 ASTM E 408-71(2008), Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.
 - .2 ASTM C 1371-04a(2010)e1, Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.
 - .3 ASTM E 1918-06, Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.
 - .4 ASTM C 1549-09, Standard Test Method for Determination of Solar

1.3 REFERENCES (Cont'd)

.2 Reference Standards: (Cont'd) .2 (Cont'd)

- Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
- .3 Canada Green Building Council (CaGBC)
 - .1 LEED Canada 2009 for Design and Construction, LEED Canada 2009 for Design and Construction Leadership in Energy and Environmental Design Green Building Rating System Reference Guide.
- .4 CSA International
 - .1 CAN/CSA-ISO 14021-00 (R2009), Environmental Labels and Declarations - Self-Declared Environmental Claims (Type II Environmental Labelling).
 - .2 CAN/CSA-Z809-08, Sustainable Forest Management.
- .5 Carpet and Rug Institute (CRI)
 - .1 CRI Green Label Indoor Air Quality (IAQ) Test Program - Green Label Testing Program.
- .6 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.
- .7 Green Seal Environmental Standards (GS)
 - .1 GS-11-11, Paints and Coatings.
- .8 Scientific Certification Systems (SCS)
 - .1 FloorScore Certification.
- .9 South Coast Air Quality Management District (SCAQMD), California State
 - .1 SCAQMD Rule 1113-A2011, Architectural Coatings.
 - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.
- .10 Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
 - .1 ANSI/SMACNA 008-2008, IAQ Guideline for Occupied Buildings Under Construction.
- .11 Sustainable Forestry Initiative (SFI)
 - .1 SFI-2010-2014 Standard.
- .12 U.S. Environmental Protection Agency (EPA) Compendium of Methods for the Determination of Pollutants in Indoor Air
- .13 United States Federal Trade Commission (US Federal Trade Commission)
 - .1 16 CFR Part 260-2012, Guides for the Use of Environmental Marketing Claims.

1.4 LEED
CONSTRUCTION
COORDINATOR

- .1 Designate an individual responsible for coordinating all LEED related construction activities. The individual shall be a LEED AP or with equivalent, current, CaGBC designation, with demonstrable LEED Project experience. The LEED Coordinator shall have minimum 2 LEED projects' experience with LEED submittals and documentation, including the preparation of the LEED Letter Templates, and in general ensure that all construction related LEED credits targeted in the LEED Scorecard for this project, are monitored, implemented and documented in the the construction of the project.
- .2 LEED construction activities shall include, but are not limited to:
 - .1 Coordinating with subcontractors and ensuring the successful implementation of LEED strategies, programs and plans.
 - .2 Supply the LEED documentation and submittals outlined within this specification section and related sections to the Departmental Representative to demonstrate that the LEED requirements have been met.
 - .3 Reporting construction activity progress to the Departmental Representative as it relates to LEED features in the project.
- .3 The LEED Construction Coordinator is to be regularly on-site during construction.

1.5 LEED KICK-OFF
MEETING

- .1 Prior to mobilization on-site, the LEED Construction Coordinator shall hold a kick-off meeting with the Departmental Representative to review the LEED requirements. Include a review of:
 - .1 LEED certification and performance objectives.
 - .2 LEED requirements and procedures.
 - .3 LEED documentation and submittals.

1.6 LEED
ORIENTATION MEETING

- .1 Prior to start of construction, the LEED Construction Coordinator (in conjunction with the Departmental Representative) shall hold an orientation meeting with the construction team to explain the LEED requirements to the sub-contractors and project staff. Include a review of:
 - .1 LEED certification and performance objectives
 - .2 LEED requirements and procedures.
 - .3 LEED documentation and submittals.

1.7 LEED SITE
POLICIES AND
PROCEDURES

- .1 LEED Coordinator shall advise Contractor of LEED policies and procedures pertaining to execution of LEED Requirements as they related to the Contractor's responsibilities in executing the project to meet the targeted credits.
- .2 In the event there is a discrepancy between LEED requirements and other specified requirements, LEED requirements govern unless otherwise directed by Departmental Representative.
- .3 Departmental Representative has complete authority with respect to interpretation of LEED requirements and rulings.

1.8 LEED
DOCUMENTATION

- .1 Ensure following LEED documentation is delivered to Departmental Representative for review and approval withing following timelines.
 - .1 Upon award of Contract:
 - .1 Estimated overall project costs by Division as required to calculate the requirement for LEED MRc4, MRc5, MRc6 and MRc7.
 - .2 Product VOC identification for IEQc4.1, IEQc4.2, IEQc4.3, IEQc4.4, as per LEED Conformance Submittal Form.
 - .3 LEED Material Submittals for MRc4, MRc5, MRc6, MRc7, and IEQc4.4 as per "LEED Material Information Form".
 - .2 Prior to Mobilization: proposed waste receiving facilities for MRc2 specified in

1.8 LEED
DOCUMENTATION
(Cont'd)

- .1 (Cont'd)
 - .2 Prior to Mobilization: (Cont'd)
Section 01 74 21 - Construction/Demolition
Waste Management and Disposal.
- .2 During construction:
 - .1 Waste diversion information for MRc2
specified in Section 01 74 21 -
Construction/Demolition Waste Management and
Disposal as well as Waste Management Plan.
 - .2 LEED ESC Information for SSp1 as
indicated.
 - .3 LEED IAQ Information for IEQc3 as
indicated.
- .3 Prior to Demobilization:
 - .1 Final overall project costs by Division.
 - .2 Actual material costs.
 - .3 All required LEED documentation.

1.9 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 -
Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions,
printed product literature and data sheets and
include product characteristics, performance
criteria, physical size, finish and
limitations.
 - .2 Submit electronic copies of WHMIS MSDS
in accordance with Section 01 35 43 -
Environmental Procedures.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by
professional engineer registered or licensed
in the Province of Newfoundland and Labrador,
Canada.
- .4 Sustainable Design Submittals:
 - .1 Submit required letters, calculations,
spreadsheets and templates prepared by
Departmental Representative for submittal to
CaGBC.
 - .2 Submit additional LEED submittal
requirements included in other sections.
 - .1 When submitted items are duplicated
to that submitted to comply with other

1.9 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd)

- .4 Sustainable Design Submittals: (Cont'd)
- .2 (Cont'd)
- .1 (Cont'd)
- requirements, submit duplicate copies as separate submittals for compliance with indicated LEED requirements.
- .3 Submit Project Cost Data: provide statement for total cost for building materials used for project. Include cost breakdown indicating total cost of mechanical and electrical components.
- .4 Submit: LEED Action Plans: provide preliminary submittals within 14 days of date for Award of contract indicating how the following requirements will be met.
- .1 Materials and Resources Credit MRc2 Construction Waste Management: prepare Construction Waste Management plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .1 Indicate anticipated waste types, proposed waste receiving facilities and end use.
- .2 Materials and Resources Credit MRc4 Recycled Content 20% (post consumer + ½ post-industrial) Recycled Content.
- .1 Submit list of recycled content products used, including details of required percentages or recycled content materials and products, showing costs and percentages of post-consumer and post-industrial content, and total cost of materials for project.
- .2 Submit verification documentation, when Supplementary Cementing Materials (SCMs) are used, certifying reduction in cement from Base Mix to Actual SCMs Mix, as percentage.
- .3 Materials and Resources: MRc5 Regional Materials: 30% Extracted and Manufactured Regionally Regional Materials Submit list of proposed regionally manufactured materials and regionally extracted, harvested, and recovered materials.
- .1 Submit verification that project incorporates required

1.9 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd)

- .4 Sustainable Design Submittals: (Cont'd)
 - .4 Submit: (Cont'd)
 - .3 Materials and Resources: (Cont'd)
 - .1 (Cont'd)
percentage, 30% of regional materials/products, showing cost, distance from project to furthest site of extraction or manufacture, and total cost of materials for project.
 - .4 Materials and Resources: MRc6 rapidly renewable materials: 5% (based on cost) of materials made from agricultural products that are typically harvested within a ten year or shorter cycle.
 - .5 Certified Wood: Material and Resources Credit MRc7.Submit vendor's/manufacturer's Chain-of-Custody Certificate number for CAN/CSA-Z809 or FSC or SFI certified wood.
 - .1 Submit vendor's/manufacturer's FSC Chain-of-Custody Certificate number.
 - .1 Provide list of products containing wood.
 - .1 Indicate cost.
 - .6 Environment Quality Credit IEQc3.1 and IEQc3.2, Construction IAQ Management Plan: During Construction; and Before Occupancy.
 - .1 Submit Indoor Air Quality (IAQ) Plan for construction and pre-occupancy phases of construction.
 - .7 Low-Emitting Materials Credit IEQc4, (IEQc4.1-Adhesives and Sealants, IEQc4.2-Paints and Coatings, IEQc4.3-Flooring Systems and IEQc4.4-Composite Wood and Agrifibre Products):
 - .1 Submit list of adhesives, sealants, paints, coatings, flooring used in building, showing compliance with VOC and chemical component limits or restriction requirements.
 - .2 Submit list of composite wood products used in building, stating that they contain no added urea-formaldehyde resins, and

1.9 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd)

- .4 Sustainable Design Submittals: (Cont'd)
 - .4 Submit: (Cont'd)
 - .7 (Cont'd)
 - .2 (Cont'd)
laminate adhesives used in building,
stating that they contain no
urea-formaldehyde.
 - .8 Submit LEED Progress Reports: with
Applications for Progress Payments,
submit reports comparing actual
construction and purchasing activities
with LEED action plans for the following:
 - .1 Materials and Resources Credit
MRc2 Construction Waste Management:
Divert 75% From Landfill
Construction Waste Management.
Submit Waste reduction progress
reports in accordance with 01 74 21
- Construction/Demolition Waste
Management and Disposal.
 - .2 Materials and Resources Credit
MRc4 recycled content 20% (post
consumer + $\frac{1}{2}$ post-industrial).
Submit list of recycled content of
materials.
 - .3 Materials and Resources Credit
MRc5 Regional Materials: 30%
Extracted and Manufactured
Regionally. Submit list of
regionally manufactured materials
and regionally extracted, harvested,
or recovered materials.
 - .4 MRc6 Rapidly Renewable
Materials and MRc7 Certified Wood.
- .9 LEED Documentation Submittals:
 - .1 Submit product data for
roofing materials for Sustainable
Sites Credit SSc7.2 Heat Island
Effect: Roof indicating Solar
Reflective Index (SRI)-78 of roofing
materials as per ASTM E 1980.
 - .2 Submit product data for
lighting fixtures for Sustainable
Sites Credit SSc8 Light Pollution
Reduction. Submit data for exterior
lighting fixtures.
 - .3 Submit product data for
plumbing fixture for Water
Efficiency Credits WEp1 Water Use
Reduction: 20% Reduction and WEc3

1.9 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd)

.4 Sustainable Design Submittals:(Cont'd)

.4 Submit:(Cont'd)

.9 (Cont'd)

.3 (Cont'd)

Water Use Reduction: 30% Reduction.
Submit Data for plumbing fixtures
indicating water flow rates.

.4 Submit product data for Energy
and Atmosphere Prerequisite EA-p3
Fundamental Refrigerant Management.

.1 Include product data for
new HVAC equipment indicating
absence of CFC refrigerants and
Phase-out plan to replace CFC
refrigerants in HVAC&R systems
with CFC-free refrigerants
within the Construction Period.

.5 Submit product data for Energy
and Atmosphere Credit EAc5
Measurement and Verification. Submit
product data and wiring diagrams for
meters and data collection systems
for metering of building energy and
water consumption performance.

.6 MRc2 Construction Waste
Management: Divert 75% From
Landfill. Comply with Section
01 74 21 - Construction/Demolition
Waste Management and Disposal.

.7 Maintain manufacturer's data
sheets, letters, etc., in support of
MR credits. Make available for LEED
verification.

.8 Include the following
submittals:

.1 Submit product data and
certification letters for
Materials and Resources Credit
MRc4 Recycled Content: 20%.
Submit 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 products having
recycled content.

.9 Submit product data for
Materials and Resources Credit MRc5

1.9 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd)

.4 Sustainable Design Submittals:(Cont'd)

.4 Submit:(Cont'd)

.9 (Cont'd)

.9 (Cont'd)

Regional Materials: 30% Extracted and Manufactured Regionally. Submit product data indicating location of material manufacturer for regionally manufactured materials. Include the following:

.1 Statement indicating material cost, distance and mode of transportation from manufacturer to project for each regionally manufactured material.

.2 Statement indicating cost and distance from point of extraction, harvest, or recovery to project for each raw material used in regionally manufactured materials.

.10 Submit product data for Materials and Resources Credit MRc6 Rapidly Renewable Materials. Submit product data for rapidly renewable materials.

.1 Include statement indicating costs for each rapidly renewable material.

.11 Submit product data and certificates for Materials and Resources Credit MRc7 Certified Wood. Submit product data and certificates of chain-of-custody for products containing certified wood.

.1 Include statement indicating costs for products containing certified wood.

.2 Include statement indicating total cost for wood-based materials used for project.

.12 Submit product data and shop drawing for Indoor Environmental Quality Credit IEQc1 Outdoor Air Delivery Monitoring. Submit product data and shop drawings for carbon dioxide monitoring system.

1.9 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd)

.4 Sustainable Design Submittals:(Cont'd)

.4 Submit:(Cont'd)

.9 (Cont'd)

.13 Provide submittals for Indoor Environmental Quality Credit IEQc3.1 Construction IAQ Management Plan during construction. Include the following:

.1 Construction indoor air quality management plan.

.2 MERV rating for temporary filtration media as per ASHRAE 52.2. used during construction period.

.3 Product data for filtration media installed before occupancy.

.4 Maintain detailed photo log of the construction IAQ Construction Management Plan practices followed during construction as per LEED letter requirements IEQc3.1.

.14 Provide submittals for Indoor Environmental Quality Credit IEQc3.2 Construction IAQ Management Plan: Before Occupancy. Include the following:

.1 Product data for filtration media used during flush-out and during occupancy.

.2 Upon approval report from testing and inspecting agency indicating results of IAQ testing and documentation showing conformance with IAQ testing procedures and requirements as per the US Environmental Protection Agency Compendium for the Determination of Indoor Air Pollutants.

.15 Submit product data for Indoor Environmental Quality Credit IEQc4.1 Low-Emitting Materials: Adhesives and Sealants. Submit product data for interior adhesives and sealants indicating VOC content of product used. Indicate VOC content in g/L

1.9 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd)

.4 Sustainable Design Submittals: (Cont'd)

.4 Submit: (Cont'd)

.9 (Cont'd)

.15 (Cont'd)

calculated in accordance with SCAQMD Rule 1168.

.16 Submit product data for Indoor Environmental Quality Credit IEQc4.2 Low-Emitting Materials: Paints and Coatings. Submit product data for interior paints and coatings indicating chemical composition and VOC content for products used. Indicate VOC content in g/L calculated in accordance with GS-11 and SCAQMD Rule 1113.

.17 Support product data for Indoor Environmental Air Quality IEQc4.3 Low Emitting Materials, Flooring Systems. Submit product data for flooring indicating product certification and whether it is Green Label Plus, Green Guard or Floorscore.

.18 Submit product data for Indoor Environmental Quality Credit IEQc4.4 Low-Emitting Materials: Composite Wood and Agrifibre Products. Submit product data for composite wood and agrifiber products indicating products contain no urea-formaldehyde resins.

.1 Include product data for adhesives use in fabrication of laminated assemblies.

.19 Submit product data and shop drawing for Indoor Environmental Quality Credit IEQc6.2 Controllability of Systems: Thermal Comfort Non-Perimeter Spaces. Submit product data and shop drawings for sensors and control systems used for individual airflow, temperature and lighting equipment.

.20 Contractor to provide total construction costs in support of LEED materials in order to calculate MRc4, MRc5, etc.

PART 2 - PRODUCTS

2.1 RECYCLED
CONTENT OF
MATERIALS

- .1 Materials and Resources Credits: MRc4
Recycled Content: 20% (post-consumer + $\frac{1}{2}$ post industrial) with a minimum post-consumer recycled content plus 1/2 pre-consumer recycled content of 20% of cost of project materials.
.1 Cost of post consumer recycled content plus one-half of pre-consumer recycled content of materials will be determined by dividing weight of post-consumer recycled content plus one-half of pre-consumer recycled content in material by total weight of material and multiplying by cost of material.
.2 Do not include mechanical and electrical components in calculations.
.3 Recycled content of materials in accordance with 16 CFR Part 260 or CAN/CSA-ISO 1402.
.4 Target Recycled Content Values (by mass).
.1 See table below:

MATERIAL	TARGET RECYCLED CONTENT VALUES (by mass)	
	Minimum Post Consumer	Minimum Post Industrial
Engineered Fill	25%	10%
Asphalt	20%	0%
Concrete (%SCM Content in Cement)	0%	25%
Precast Concrete Products (%SCM Content in Cement)	30%	25%
Concrete Reinforcement	30%	65%
Masonry (%SCM Content in Cement)	0%	25%
Masonry - Light Weight or Acoustic	0%	80%

2.1 RECYCLED .1 (Cont'd)
CONTENT OF .4 (Cont'd)
MATERIALS .1 See table below: (Cont'd)
(Cont'd)

Structural Steel	25%	40%
Steel Deck, Roofing and Siding	20%	25%
Light Steel Framing	25%	5%
Composite Wood	0%	90%
Gypsum	5%	90%
Ceramic Tile	0%	30%
Acoustic Ceiling Tile	5%	40%
Rubber Flooring	60%	5%
Linoleum	0%	35%
Carpet	5%	30%

.2 Any other products and materials
that are not listed but may contain
recycled content shall be given
preference.

.3 Submit supporting documentation for
each product/material listed above.

2.2 REGIONAL .1 Materials and Resources Credit MRc5 Regional
MATERIALS Materials: 30% Extracted and Manufactured
Regionally. Regionally manufactured materials
required by paragraph 2.3.1, supply 30% (by
cost) of building materials that are
regionally extracted, harvested, or recovered.

2.3 RAPID RENEWABLE MATERIALS .1 Material and resources credit MRc6 Rapidly Renewable Materials: 5% of materials (based on cost) made from rapidly renewable materials.

2.4 CERTIFIED WOOD .1 Materials and Resources Credit MRC7 Certified Wood. Supply a minimum of 50% (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 Principles and Criteria.
.1 Wood-based materials include but not limited to the following materials when made from made wood, engineered wood products, or wood-based panel products:
.1 Rough carpentry.
.2 Miscellaneous carpentry.
.3 Finish carpentry.
.4 Architectural woodwork.
.5 Wood cabinets.
.6 Non-vented temporary construction, including bracing, concrete formwork, pedestrian barriers, and temporary protection.
.7 Exterior, prefinished wood siding.

2.5 LOW-EMITTING MATERIALS .1 Indoor Environmental Quality Credit IEQc4.1 Low-Emitting Materials: Adhesives and Sealants. Interior applications requiring adhesives, sealants and sealant primers must comply with SCAQMD Rule 1168.
.2 Indoor Environmental Quality Credit IEQc4.2 Low-Emitting Materials: Paints and Coatings. Interior applications of paints and coatings must comply with the following limits for VOC content when calculated according to GS-11 and SCAQMD Rule 1113.
.3 Indoor Environmental Quality Credit IEQc4.3 Low-Emitting Materials: Flooring Systems.
.4 Low Emitting Materials - Composite Wood and Agriculture Products IEQc4.4. Wood products must not have any added urea formaldehyde.

2.6 NEW PRODUCTS

- .1 Do not use products having any of the following characteristics:
 - .1 Made outside the United States, its territories, Canada or Mexico.
 - .2 Made using or containing CFC's or HCFC's.
 - .3 Made of wood from newly cut old growth timber.
- .2 Where all criteria are met, Contractor must give preference to products that:
 - .1 Are extracted, harvested, and/or manufactured close to the location of the Project.
 - .2 Have longer documented life span under normal use.
 - .3 Result in less construction waste.
 - .4 Are made of vegetable materials that are rapidly renewable.
- .3 Regionally Sourced Products:
 - .1 Overall Project Requirement: Provide materials amounting to a minimum of 20% of the total value of all materials (excluding plumbing, HVAC, electrical, elevators, and other equipment) that have been extracted, harvested, or recovered, as well as manufactured, within a radius of 800 km or 2400 km if shipped by rail or water, from the project site.
 - .1 This provision is applicable to LEED Credit MR; show quantity on LEED report.
 - .2 Specific Product Categories: Provide regionally sourced products as specified elsewhere.
 - .3 LEED Submittals: Indicate location of manufacture; in all cases indicate location of final assembly; for harvested products, indicate location of harvest; for extracted (i.e. mined) products, indicate location of extraction; for products involving multiple manufacturing steps, indicate all locations of manufacture or assembly; provide manufacturer or supplier certification of location information.
 - .4 Products with Recycled Content:
 - .1 Overall Product Requirement: Provide products with recycled content such that the

2.6 NEW PRODUCTS
(Cont'd)

- .4 Products with Recycled Content: (Cont'd)
- .1 Overall Product Requirement: (Cont'd)
sum of post-consumer recycled content plus one-half of the pre-consumer recycled content constitutes at least 20% of the total value of all products installed, except mechanical and electrical components.
- .1 This provision is applicable to LEED Credit MR 4; show quantity and calculations on LEED report.
- .2 Specific Product Categories:
Provide recycled content as specified elsewhere.
- .3 Calculations: Where information about recycled content is required to be submitted:
- .1 Determine percentage of post-consumer and pre-consumer content separately, using guidelines contained in ISO 14021.
- .2 Previously used, reused, refurbished, and salvaged products are not considered recycled.
- .3 Wood fabricated from timber abandoned in transit to original mill is considered reused, not recycled.
- .4 Determine percentage of recycled content of any item by dividing the weight of recycled content in the item by the total weight of all material in the item.
- .5 Determine the value of recycled content of each item separately, by multiplying the content percentage by the value of the item.
- .4 LEED Submittals: State unit cost, post-consumer, post-consumer, and post-industrial content percentages, quantity installed, total material cost, and total recycled content value; attach evidence of contents from either manufacturer or an independent agency.
- .5 Urea-Formaldehyde Prohibition:
- .1 Overall Project Requirement:
Provide composite wood and agrifibre

2.6 NEW PRODUCTS
(Cont'd)

- .4 Products with Recycled Content: (Cont'd)
.1 Overall Product Requirement: (Cont'd)

products having no added
area-formaldehyde resins.

.1 This provision is
applicable to LEED Credit IEQ
4; submit LEED Prohibited
Content Installer Certification
Form.

.2 Require each installer to
certify compliance and submit
product data showing product
content.

.2 Specific Product Categories:
Comply with limitations specified
elsewhere.

.6 Flooring Systems:

.1 Flooring elements installed in
the interior of the building must
meet the testing and product
requirements of CAL (VOC).

.1 This provision is
applicable to LEED Credit IEQ4;
submit LEED Prohibited Content
Installer Certification Forms.

.2 This provision is
applicable to LEED Credit IEQ4;
submit LEED Low-Emitting
Materials Forms.

.3 Require each installer to
certify compliance and submit
product data showing product
content.

.7 Adhesives and Joint Sealants:

.1 Definition: This provision
applies to gunnable, trowelable, and
liquid-applied adhesives, sealants,
and sealant primers used anywhere on
the interior of the building, inside
the weather barrier, including duct
sealers.

.2 Provide only products having
lower volatile organic compounds
(VOC) content than required by South
Coast Air quality Management
District (SCAQMD) Rule No. 1168.

.1 This provision is
applicable to LEED Credit IEQ
4; submit LEED Prohibited

2.6 NEW PRODUCTS
(Cont'd)

- .4 Products with Recycled Content: (Cont'd)
 - .1 Overall Product Requirement: (Cont'd)
 - .1 (Cont'd)
Content Installer Certification Forms.
 - .2 This provision is applicable to LEED Credit IEQ 4; submit LEED Low-Emitting materials Forms.
 - .3 Require each installer to certify compliance and submit product data showing product content.
 - .3 Specific Product Categories: Comply with limitations specified elsewhere.
 - .8 Aerosol Adhesives:
 - .1 Provide only products having lower volatile organic compound (VOC) content than required by Green Seal GS-36.
 - .1 This provision is applicable to LEED Credit IEQ 4; submit LEED Prohibited Content Installer Certification Forms.
 - .2 This provision is applicable to LEED Credit IEQ 4; submit LEED Low-Emitting materials Forms.
 - .3 Require each installer to certify compliance and submit product data showing product content.
 - .9 Paints and Coatings - Volatile Organic Compound (VOC) Content:
 - .1 This provision is applicable to LEED Credit IEQ 4; submit LEED Low-Emitting materials Forms.
 - .2 Provide paints, coatings, and primers applied to interior walls and ceilings that do not exceed the VOC limitations established in Green Seal Standards GS-11:
 - .1 Flats: 50 g/L, maximum.
 - .2 Nonflats: 150 g/L, maximum.
 - .3 Provide anti-corrosive and anti-rust paints applied to interior

2.6 NEW PRODUCTS
(Cont'd)

.4 Products with Recycled Content: (Cont'd)
.1 Overall Product Requirement: (Cont'd)

ferrous metal substrates that do not exceed the VOC limitations established by Green Seal Standards GS-03:

.1 Opaque, High Gloss: 150 g/L, maximum.

.4 Provide clear wood finishes, floor coatings, stains, and shellacs applied to interior elements that do not exceed the VOC limitations established in South Coast Air Quality Management District (SCAQMD) Rule No. 1113:

.1 Clear Wood Finishes:

.1 Varnish: 350 g/L, maximum.

.2 Lacquer: 550 g/L, maximum.

.2 Floor Coatings: 100 g/L, maximum.

.3 Shellacs:

.1 Clear: 730 g/L, maximum.

.2 Pigmented: 550 g/L, maximum.

.4 Sealers:

.1 Waterproofing Sealers: 250 g/L, maximum.

.2 Sanding Sealers; 275 g/L, maximum.

.3 All Other Sealers: 200 g/L, maximum.

.5 Stains: 250 g/L, maximum.

.6 Determination of VOC

Content:

.1 Testing and calculation in accordance with 40CFR 59, Subpart D (EPA Method 24, exclusive of colorants added to a tint base and water added at project site; or other methods acceptable to authorizes having jurisdiction.

PART 3 - EXECUTION

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|---|----|--|
| <u>3.1 PROTECT AND RESTORE HABITAT</u> | .1 | Sustainable Sites Credit SSc5 Protect and Restore Habitat and SSc5.2 Site Development - Maximize Open Space in accordance with Section 01 11 00 - General Requirements of Work. |
| | | |
| <u>3.2 CONSTRUCTION WASTE MANAGEMENT</u> | .1 | Credit MRc2.1 Construction Waste Management: Divert 75% From Landfill. Comply with Section 01 74 21 - Construction/Demolition Waste Management and Disposal. |
| | | |
| <u>3.3 CONSTRUCTION INDOOR AIR QUALITY MANAGEMENT</u> | .1 | Credit IEQc3.1 Construction IAQ Management Plan: During Construction. Comply with SMACNA IAQ Guideline for Occupied Buildings under Construction. |
| | .2 | Obtain written approval from Departmental Representative to operate permanent HVAC systems during construction. Operate permanent HVAC systems in accordance with Section 23 05 01 - Use of HVAC Systems During Construction. Install MERV-8 filter media in accordance with ASHRAE 52.2 at return-air inlets
.1 Replace air filters immediately prior to occupancy building air flush-out. Replacement air filters to be MERV-13 in accordance with ASHRAE 52.2. |
| | .3 | Credit IEQc3.2 Construction IAQ Management Plan: Testing Before Occupancy.
.1 Conduct baseline indoor air quality testing program according to U.S. EPA Compendium for the Determination of Pollutants in Indoor Air.
.1 Testing services will be paid by Owner.
.2 The following Construction IAQ Management Plan measures must be implemented throughout the construction and occupancy phase of any project. |
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- 3.3 CONSTRUCTION .3 (Cont'd)
INDOOR AIR QUALITY .2 (Cont'd)
MANAGEMENT
(Cont'd)
- .1 HVAC Protection: provide project-specific measures to be employed.
 - .1 When possible, HVAC system should be shut down during construction.
 - .2 Source Control: provide project-specific measures to be employed.
 - .1 Product substitution: low emitting paints, adhesives, sealants and carpets must be used when feasible.
 - .3 Pathway Interruption: provide project specific measures to be employed.
 - .4 Housekeeping: provide project specific measures to be employed.
 - .1 Services must utilize best practices for minimizing IAQ problems, such as dust suppression, cleaning frequency, cleaning efficiency, water and spill cleanup, protection of on-site or installed absorptive and porous material.