



# Green Verification Report

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## Nordic X-Lam Nordic Structures

## GR-L306

Revised May 9, 2025

Products: Nordic X-Lam

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1. Basis of the green verification report:
  - 2020, 2015, and 2012 National Green Building Standard, ICC 700
  - LEED v4.1 Building Design and Construction
  - LEED v4 for New Construction and Major Renovations
  - ANSI/APA PRG 320-2019 Standard for Performance Rated Cross-Laminated Timber recognized in the 2024 and 2021 IBC and IRC
  - ANSI/APA PRG 320-2017, PRG 320-2012, and PRG 320-2011, recognized in the 2018 IBC and IRC, 2015 IRC, and 2015 IBC, respectively
  - APA W210, Green Verification Checklist – ICC 700-2020
  - APA T415, Green Verification Checklist – ICC 700-2015
  - APA Q415, Green Verification Checklist – ICC 700-2012
  - APA Z415 Green Verification Checklist – LEED v4.1
  - APA R415, Green Verification Checklist – LEED v4
  - APA Product Report PR-L306
  - Documentation supporting green product verification
2. Product description:

Nordic X-Lam cross-laminated timber (CLT) is manufactured with Spruce-Pine-Fir (mainly Black Spruce) lumber in accordance with the E1 or custom layups of ANSI/APA PRG 320 through product qualification and/or mathematical models using principles of engineering mechanics. Nordic X-Lam panels can be used in floor, roof, and wall applications, and is manufactured in a plank billet with nominal widths of 12 to 106-1/4 inches, thicknesses of 3 to 15 inches, and lengths up to 64 feet. The adhesives used to manufacture the CLT products are exterior-type adhesives meeting the requirements of ASTM D2559 and containing no added urea-formaldehyde. The laminating lumber is certified under Forest Stewardship Council Standard FSC-STD-40-004 and FSC-STD-40-005.
3. Green product verification:

Nordic X-Lam CLT products listed in this report are qualified for green construction with points specified in Tables 1 through 5, as independently verified by APA as meeting pertinent criteria of the referenced standards shown in Section 1. Nordic X-Lam products have a product-specific Type III Environmental Product Declaration (EPD). Nordic X-Lam products are also eligible to be marked under the USDA BioPreferred Program, as indicated by the label shown in Figure 1.
4. Limitations:
  - a) Nordic X-Lam CLT shall be designed in accordance with principles of mechanics using the design properties specified in APA Product Report PR-L306 or provided by the manufacturer.
  - b) Nordic X-Lam CLT shall be manufactured in accordance with layup combinations specified in ANSI/APA PRG 320 or proprietary Nordic X-Lam CLT manufacturing specifications documented in the in-plant manufacturing standard approved by APA.

- c) Nordic X-Lam CLT products are produced at Nordic Structures' facilities in Chibougamau, Quebec, under a quality assurance program audited by APA.
  - d) This report is subject to re-examination in one year.
5. Identification:  
Nordic X-Lam CLT described in this report is identified by a label bearing the manufacturer's name (Nordic Structures) and/or trademark, the APA assigned plant number (1112), the product standard (ANSI/APA PRG 320), the APA logo, the CLT grade (E1), the report number GR-L306, and a means of identifying the date of manufacture.

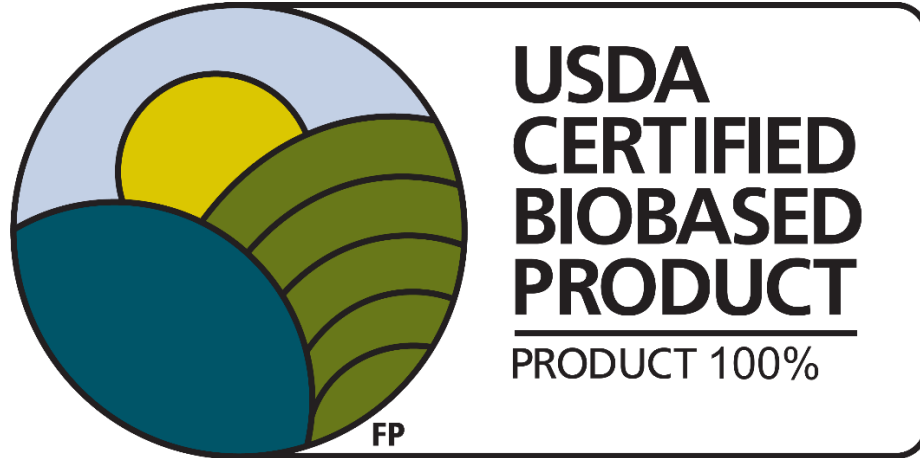


Figure 1. USDA BIO Preferred label for CLT products.

**Table 1. 2020 National Green Building Standard ICC 700-2020**

Points that have been verified as eligible by APA

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<b>606.3 Manufacturing energy:</b> Materials manufactured using a minimum of 33% of the primary manufacturing process energy derived from (1) renewable sources, (2) combustible waste sources, or (3) renewal energy credits (RECs) are used for major components of the building	2 for each material	6
✓	<b>608.1 Resource-efficient materials:</b> Products containing fewer materials are used to achieve the same end-use requirements as conventional products	3 for each material	9
✓	<b>901.4(5) Wood materials:</b> A minimum of 85% of material within a product group is manufactured from composite wood products that contain no added urea-formaldehyde or are in accordance with the CARB	4 for each product group	10

Eligible points that are conditional on construction application<sup>(a)</sup>

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<b>601.2 Material usage:</b> Structural systems are designed or construction techniques are implemented that reduce and optimize material usage. (1) Minimum structural member or element sizes in accordance with advanced framing techniques or structural design standards are selected, (2) Higher-grade or higher-strength of the same materials than commonly specified for structural elements and components in the building are used and sizes are reduced accordingly, (3) Performance-based structural design is used to optimize lateral force-resisting systems	3 for each system or framing technique	9
✓	<b>606.1(1) Biobased products:</b> Two types of biobased materials are used, each for more than 0.5% of the project's projected building material cost	3	8
✓	<b>606.1(2) Biobased products:</b> Two types of biobased materials are used, each for more than 1% of the project's projected building material cost	6	
✓	<b>606.1(3) Biobased products:</b> For each additional biobased material used for more than 0.5% of the project's projected building material cost	1 each with 2 max	

**Table 1. 2020 National Green Building Standard ICC 700-2020 (Continued)**

Eligible points that are conditional on construction application<sup>(a)</sup>

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<b>606.2(2) Wood-based products:</b> A minimum of 2 certified wood-based products are used in major components of the building	4	4
✓	<b>610.1 Life cycle assessment:</b> A life cycle analysis (LCA) tool is used to select environmentally preferable products or assemblies, or LCA is conducted on the entire building <b>610.1.1 Whole-building life cycle assessment:</b> A whole-building LCA is performed in conformance with ASTM E2921 using ISO 14044 compliant life cycle assessment <b>610.1.2 Life cycle assessment for a product or assembly:</b> An environmentally preferable product or assembly is selected for an application based upon the use of an LCA tool that incorporates data methods compliant with ISO 14044 or other recognized standards that compare the environmental impact of products or assemblies	2 to 3 for each product LCA, 3 to 10 for each assembly LCA	15 for whole-building LCA and product and product or assembly LCA (15 for whole-building or 10 for product or assembly)

<sup>(a)</sup> Nordic X-Lam CLT products treated with preservatives meeting AWPAs standards or manufactured with naturally decay-resistant species may be eligible for points in accordance with Section 602.1.6 of ICC 700.

**Table 1. 2020 National Green Building Standard ICC 700-2020 (Continued)**

Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<b>613.2 Resilient Construction – Minimum structural requirements (base design):</b> The building is designed and constructed in compliance with structural requirements in the IBC or IRC as applicable	2	15
✓	<b>613.3 Resilient Construction – Enhanced resilience (10% above base design):</b> Design and construction practices are implemented to enhance the resilience and durability of the structure by designing and building to forces generated by flooding, snow, wind, or seismic (as applicable) that are 10% higher than the base design	3	
✓	<b>613.4 Resilient Construction – Enhanced resilience (20% above base design):</b> Design and construction practices are implemented to enhance the resilience and durability of the structure by designing and building to forces generated by flooding, snow, wind, or seismic (as applicable) that are 20% higher than the base design	5	
✓	<b>613.5 Resilient Construction – Enhanced resilience (30% above base design):</b> Design and construction practices are implemented to enhance the resilience and durability of the structure by designing and building to forces generated by flooding, snow, wind, or seismic (as applicable) that are 30% higher than the base design	10	
✓	<b>613.6 Resilient Construction – Enhanced resilience (40% above base design):</b> Design and construction practices are implemented to enhance the resilience and durability of the structure by designing and building to forces generated by flooding, snow, wind, or seismic (as applicable) that are 40% higher than the base design	12	
✓	<b>613.7 Resilient Construction – Enhanced resilience (50% above base design):</b> Design and construction practices are implemented to enhance the resilience and durability of the structure by designing and building to forces generated by flooding, snow, wind, or seismic (as applicable) that are 50% higher than the base design	15	

**Table 2. National Green Building Standard ICC 700-2015**

Points that have been verified as eligible by APA

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<b>606.3 Manufacturing energy:</b> Materials manufactured using a minimum of 33% of the primary manufacturing process energy derived from (1) renewable sources, (2) combustible waste sources, or (3) renewal energy credits (REC's) are used for components of the building	2 for each material	6
✓	<b>608.1 Resource-efficient materials:</b> Products containing fewer materials are used to achieve the same end-use requirements as conventional products	3 for each material	9
✓	<b>901.4(5) Wood materials:</b> A minimum of 85% of material within a product group is manufactured from composite wood products that contain no added urea-formaldehyde or are in accordance with the CARB	4 for each product group	10

Eligible points that are conditional on construction application<sup>(a)</sup>

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<b>601.2 Material usage:</b> Structural systems are designed or construction techniques are implemented that reduce and optimize material usage. (1) Minimum structural member or element sizes in accordance with advanced framing techniques or structural design standards are selected, (2) Higher-grade or higher-strength of the same materials than commonly specified for structural elements and components in the building are used and sizes are reduced accordingly, (3) Performance-based structural design is used to optimize lateral force-resisting systems	3 for each system or framing technique	9
✓	<b>606.1(1) Biobased products:</b> Two types of biobased materials are used, each for more than 0.5% of the project's projected building material cost	3	8
✓	<b>606.1(2) Biobased products:</b> Two types of biobased materials are used, each for more than 1% of the project's projected building material cost	6	
✓	<b>606.1(3) Biobased products:</b> For each additional biobased material used for more than 0.5% of the project's projected building material cost	1 each with 2 max	
✓	<b>606.2(2) Certified wood:</b> A minimum of 2 certified wood-based products are used in major components of the building	4	4

**Table 2. National Green Building Standard ICC 700-2015 (Continued)**

Eligible points that are conditional on construction application<sup>(a)</sup>

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p><b>610.1 Life cycle assessment:</b> A life cycle analysis (LCA) tool is used to select environmentally preferable products or assemblies, or LCA is conducted on the entire building</p> <p><b>610.1.1 Whole-building life cycle assessment:</b> A whole-building LCA is performed in conformance with ASTM E2921 using ISO 14044 compliant life cycle assessment</p> <p><b>610.1.2 Life cycle assessment for a product or assembly:</b> An environmentally preferable product or assembly is selected for an application based upon the use of an LCA tool that incorporates data methods compliant with ISO 14044 or other recognized standards that compare the environmental impact of products or assemblies</p>	2 to 3 for each LCA, 3 to 10 for each assembly LCA	15 for whole-building LCA and product or assembly LCA (15 for whole-building or 10 for each product or assembly)

<sup>(a)</sup> Nordic X-Lam CLT products treated with preservatives meeting AWPAs standards or manufactured with naturally decay-resistive species may be eligible for points in accordance with Section 602.1.6 of ICC 700.

**Table 3. National Green Building Standard ICC 700-2012**

Points that have been verified as eligible by APA

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<b>606.3 Manufacturing energy:</b> Materials manufactured using a minimum of 33% of the primary manufacturing process energy derived from (1) renewable sources, (2) combustible waste sources, or (3) renewal energy credits (REC's) are used for components of the building	2 for each material	6
✓	<b>608.1 Resource-efficient materials:</b> Products containing fewer materials are used to achieve the same end-use requirements as conventional products	3 for each material	9
✓	<b>901.4(5) Wood materials:</b> A minimum of 85% of material within a product group is manufactured from composite wood products that contain no added urea-formaldehyde or are in accordance with the CARB	4 for each product group	10

Eligible points that are conditional on construction application<sup>(a)</sup>

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<b>601.2 Material usage:</b> Structural systems are designed or construction techniques are implemented that reduce and optimize material usage. (1) Minimum structural member or element sizes in accordance with advanced framing techniques or structural design standards are selected, (2) Higher-grade or higher-strength of the same materials than commonly specified for structural elements and components in the building are used and sizes are reduced accordingly, (3) Performance-based structural design is used to optimize lateral force-resisting systems	3 for each system or framing technique	9
✓	<b>606.1(1) Biobased products:</b> Two types of biobased materials are used, each for more than 0.5% of the project's projected building material cost	3	8
✓	<b>606.1(2) Biobased products:</b> Two types of biobased materials are used, each for more than 1% of the project's projected building material cost	6	
✓	<b>606.1(3) Biobased products:</b> For each additional biobased material used for more than 0.5% of the project's projected building material cost	1 each with 2 max	
✓	<b>606.2(2) Certified wood:</b> A minimum of 2 certified wood-based products are used in major elements of the building such as walls, floors, or roof	4	4



**Table 3. National Green Building Standard ICC 700-2012 (Continued)**

Eligible points that are conditional on construction application<sup>(a)</sup>

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p><b>610.1 Life cycle analysis:</b> A life cycle analysis (LCA) tool is used to select environmentally preferable products or assemblies, or LCA is conducted on the entire building</p> <p><b>610.1.1 Whole-building life cycle analysis:</b> A whole-building LCA is performed using a life cycle assessment and data compliant with ISO 14044 or other recognized standards</p> <p><b>610.1.2 Life cycle analysis for a product or assembly:</b> An environmentally preferable product or assembly is selected for an application based upon the use of an LCA tool that incorporates data methods compliant with ISO 14044 or other recognized standards that compare the environmental impact of products or assemblies</p>	2 to 3 for each material, 3 to 10 for each assembly, or 15 for whole-building LCA	10 for each product or assembly, or 15 for whole-building

<sup>(a)</sup> Nordic X-Lam CLT products treated with preservatives meeting AWP standards or manufactured with naturally decay-resistive species may be eligible for points in accordance with Section 602.1.6 of ICC 700.

**Table 4. LEED v4.1 Building Design and Construction**  
Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p><b>EQ Credit: Low Emitting Materials</b></p> <p><i>Formaldehyde emissions evaluation:</i> Product meets one of the following:</p> <ul style="list-style-type: none"> <li>▪ Certified as ultra-low-emitting formaldehyde (ULEF) product under EPA Toxic Substances Control Act, Formaldehyde Emission Standards for Composite Wood Products (TSCA, Title VI) (EPA TSCA Title VI) or California Air Resources Board (CARB) Airborne Toxic Control Measure (ATCM)</li> <li>▪ Certified as no added formaldehyde resins (NAF) product under EPA TSCA Title VI or CARB ATCM</li> <li>▪ Wood structural panel manufactured according to PS 1-09 or PS 2-10 (or one of the standards considered by CARB to be equivalent to PS 1 or PS 2) and labeled bond classification Exposure 1 or Exterior</li> <li>▪ Structural wood product<sup>(a)</sup> manufactured according to ANSI A190.1 (for structural glued laminated timber), ANSI/APA PRG 320 (for cross-laminated timber), ASTM D5055 (for I-joists), ASTM D5456 (for structural composite lumber), or PS 20-15 (for finger-jointed lumber).</li> </ul>	1-3	3

<sup>(a)</sup> The California Department of Public Health (CDPH) Standard v1.1 states that structural wood products are not required to be evaluated for general VOC emissions.

**Table 4. LEED v4.1 Building Design and Construction (continued)**

Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p><b>MR Credit: Building Life-Cycle Impact Reduction</b></p> <p><b>Option 2. Whole-Building Life-Cycle Assessment</b></p> <p>For new construction (buildings or portions of buildings), conduct a cradle-to grave life-cycle assessment of the project's structure and enclosure and select one or more of the following paths below to earn up to 4 points:</p> <p>Path 1: Conduct a life cycle assessment of the project's structure and enclosure (1 point).</p> <p>Path 2: Conduct a life-cycle assessment of the project's structure and enclosure that demonstrates a minimum of 5% reduction, compared with a baseline building in at least three of the six impact categories listed below, one of which must be global warming potential (2 points).</p> <p>Path 3: Conduct a life cycle assessment of the project's structure and enclosure that demonstrates a minimum of 10% reduction, compared with a baseline building, in at least three of the six impact categories listed below, one of which must be global warming potential (3 points).</p> <p>Path 4: Meet requirements of Path 3 and incorporate reuse and/or salvage materials into the project's structure and enclosure for the proposed design. Demonstrate reductions compared with a baseline building of at least 20% reduction for global warming potential and demonstrate at least 10% reduction in two additional impact categories listed below (4 points).</p> <p>Select at least three of the following impact categories for reduction:</p> <ul style="list-style-type: none"> <li>▪ global warming potential (greenhouse gases), in CO<sub>2</sub>e;</li> <li>▪ depletion of the stratospheric ozone layer, in kg CFC-11e;</li> <li>▪ acidification of land and water sources, in moles H<sup>+</sup> or kg SO<sub>2</sub>e;</li> <li>▪ eutrophication, in kg nitrogen eq or kg phosphate eq;</li> <li>▪ formation of tropospheric ozone, in kg NO<sub>x</sub>, kg O<sub>3</sub> eq, or kg ethene; and</li> <li>• depletion of nonrenewable energy resources, in MJ using CML / depletion of fossil fuels in TRACI.</li> </ul>	1-4	4

**Table 4. LEED v4.1 Building Design and Construction (continued)**

Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
	<p><b>MR Credit: Environmental Product Declarations</b></p> <p><b>Option 1. Environmental Product Declaration (EPD)</b></p> <p>Use at least 20 different permanently installed products sourced from at least five different manufacturers that meet one of the disclosure criteria below.</p> <ul style="list-style-type: none"> <li>▪ Life-cycle assessment and environmental product declarations. <ul style="list-style-type: none"> <li>▪ Products with a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 that have at least a cradle to gate scope are valued as one whole product for the purposes of credit achievement calculation.</li> <li>▪ Product-specific Type III EPD – Internally Reviewed. Products with an internally critically reviewed LCA in accordance with ISO 14071. Products with product-specific internal EPDs which conform to ISO 14025 and EN 15804 or ISO 21930 and have at least a cradle to gate scope are valued as one whole product for the purposes of credit achievement calculation.</li> </ul> </li> <li>▪ Industry-wide Type III EPD --. Products with third-party certification (Type III), including external verification, in which the manufacturer is explicitly recognized as a participant by the program operator. Products with industry-wide EPDs, which conform to ISO 14025, and EN 15804 or ISO 21930 and have at least a cradle to gate scope are valued as one whole product for the purposes of credit achievement calculation.</li> <li>▪ Environmental Product Declarations which conform to ISO 14025 and EN 15804 or ISO 21930 and have at least a cradle to gate scope. <ul style="list-style-type: none"> <li>▪ Product-specific Type III EPD – Products with third-party certification (Type III), including external verification and external critical review are valued as 1.5 products for the purposes of credit achievement calculation.</li> </ul> </li> </ul> <p>For credit achievement calculation, products sourced (extracted, manufactured, purchased) within 100 miles (160 km) of the project site are valued at twice their base contributing number of products, up to a maximum of 2 products.</p>	1 <sup>(b)</sup>	1

<sup>(b)</sup> Nordic X-Lam products have a product-specific Type III EPD.

**Table 4. LEED v4.1 Building Design and Construction (continued)**

Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p><b>MR Credit: Sourcing of Raw Materials</b></p> <p><b>Responsible Sourcing of Raw Materials</b></p> <p>Use products sourced from at least three different manufacturers that meet at least one of the responsible sourcing and extraction criteria below for at least 15%, by cost, of the total value of permanently installed building products in the project (1 point).</p> <p>Use products sourced from at least five different manufacturers that meet at least one of the responsible sourcing and extraction criteria below for at least 30%, by cost, of the total value of permanently installed building products in the project (2 points).</p> <ul style="list-style-type: none"> <li>Wood products. Wood products must be certified by the Forest Stewardship Council or USGBC-approved equivalent. Products meeting wood products criteria are valued at 100% of their cost for the purposes of credit achievement calculation.</li> </ul> <p>Materials reuse. Reuse includes salvaged, refurbished, or reused products. Products meeting materials reuse criteria are valued at 200% of their cost for the purposes of credit achievement calculation.</p> <p>For credit achievement calculation, products sourced (extracted, manufactured, and purchased) within 100 miles (160 km) of the project site are valued at twice their base contributing cost, up to a maximum of 200% of cost.</p>	1-2	2

**Table 4. LEED v4.1 Building Design and Construction (continued)**

Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p><b>MR Credit: Material Ingredients</b></p> <p><b>Option 1. Material Ingredient Reporting</b></p> <p>Use at least 20 different permanently installed products from at least five different manufacturers that use any of the following programs to demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm):</p> <ul style="list-style-type: none"> <li>▪ <i>ANSI/BIFMA e3 Furniture Sustainability Standard.</i> The documentation from the assessor or scorecard from BIFMA must demonstrate the product earned at least 3 points under 7.5.1.3 Advanced Level in e3-2014 or 3 points under 7.4.1.3 Advanced Level in e3-2012.</li> <li>▪ <i>Cradle to Cradle.</i> Product has Material Health Certificate or is Cradle to Cradle Certified™ under standard version 3 or later with a Material Health achievement level at the Bronze level or higher.</li> <li>▪ <i>Declare.</i> The Declare product label must meet the following requirements: <ul style="list-style-type: none"> <li>• Declare labels designated as Red List Free, LBC Red List Free, or Declared.</li> <li>• Declare labels designated as LSBC Red List Approved or LBC Compliant that demonstrate content inventory to 0.1% (1,000 ppm).</li> </ul> </li> <li>• <i>Facts – NSF/ANSI 336: Sustainability Assessment for Commercial Furnishings Fabric</i> at any certification level.</li> <li>• <i>Global Green TAG.</i> Product Health Declaration (PHD) labels issued after January 1, 2020.</li> <li>▪ <i>Health Product Declaration</i> The end use product has a published and complete Health Product Declaration Open Standard</li> <li>▪ <i>Living Product Challenge.</i> The included Declare product label must demonstrate content inventory to 0.1% (1,000 ppm).</li> <li>▪ <i>Manufacturer Inventory.</i> The manufacturer has published complete content inventory for the product following these guidelines: <ul style="list-style-type: none"> <li>• A publicly available inventory of all ingredients identified by name and Chemical Abstract Service Registration Number (CASRN) and/or European Community Number (EC Number).</li> <li>• Materials defined as trade secret or intellectual property may withhold the name and/or CASRN/EC Number but must disclose ingredient/chemical role, amount and Hazard score/class using either: <ul style="list-style-type: none"> <li>• Greenscreen List Translator (LT) score and/or Full Green Screen Benchmark (BM)</li> <li>• The Globally Harmonized System of Classification and Labeling of Chemicals rev.6 (2015 (GHS) <ul style="list-style-type: none"> <li>▪ The hazard screen must be applied to each</li> </ul> </li> </ul> </li> </ul> </li> </ul>	1	1

	<p>trade secret ingredient and the inventory lists the hazard category for each of the health hazards included in Part 3 of GHS (e.g. "GHS Category 2 Carcinogen").</p> <ul style="list-style-type: none"><li>• <i>Product Lens Certification</i></li></ul> <p>Any compliant reports above with third-party verification that includes the verification of content inventory are worth 1.5 products for credit achievement calculations.</p> <p>For credit achievement calculation, products sourced (extracted, manufactured, purchased) within 100 miles (160 km) of the project site are valued at twice their base contributing number of products, up to a maximum of 2 products.</p>		
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**Table 5. LEED v4 New Construction and Major Renovations**

Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<b>EQ Credit: Low Emitting Materials</b>  <b>Composite wood evaluation</b> Structural glued laminated timbers are considered compliant if they are made with moisture resistant adhesives meeting ASTM D2559, have no surface treatments with added urea-formaldehyde resins or coatings, and if they are certified according to Standard for Performance-Rated Cross-Laminated Timber (PRG 320), referenced in ID# LI 10466 LEM Composite Wood <sup>(a)</sup> ( <a href="http://www.usgbc.org/leedaddenda/10466">www.usgbc.org/leedaddenda/10466</a> ). No further VOC emissions testing is required to meet the Low Emitting Materials credit criteria. Nordic X-Lam CLT is manufactured with adhesives that comply with ASTM D2559.	See LEED v4 for calculation methods	3

<sup>(a)</sup> The California Department of Public Health (CDPH) Standard v1.1 states that structural wood products are not required to be evaluated for general VOC emissions.



**Table 5. LEED v4 New Construction and Major Renovations (Continued)**

Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p><b>MR Credit: Building life-cycle impact reduction</b></p> <p><b>Option 4: Whole-building lifecycle assessment</b></p> <p>For new construction (buildings or portions of buildings), conduct a lifecycle assessment of the project's structure and enclosure that demonstrates a minimum of 10% reduction, compared with a baseline building, in at least three of the six impact categories listed below, one of which must be global warming potential. No impact category assessed as part of the lifecycle assessment may increase by more than 5% compared with the baseline building.</p> <p>The baseline and proposed buildings must be of comparable size, function, orientation, and operating energy performance as defined in EA Prerequisite Minimum Energy Performance. The service life of the baseline and proposed buildings must be the same and at least 60 years to fully account for maintenance and replacement. Use the same lifecycle assessment software tools and data sets to evaluate both the baseline building and the proposed building, and report all listed impact categories. Data sets must be compliant with ISO 14044.</p> <p>Select at least three of the following impact categories for reduction:</p> <ul style="list-style-type: none"> <li>• global warming potential (greenhouse gases), in CO<sub>2</sub>e;</li> <li>• depletion of the stratospheric ozone layer, in kg CFC11;</li> <li>• acidification of land and water sources, in moles H<sup>+</sup> or kg SO<sub>2</sub>;</li> <li>• eutrophication, in kg nitrogen or kg phosphate;</li> <li>• formation of tropospheric ozone, in kg NO<sub>x</sub>, kg O<sub>3</sub> eq, or kg ethene; and</li> <li>• depletion of nonrenewable energy resources, in MJ</li> </ul>	3	3

**Table 5. LEED v4 New Construction and Major Renovations (Continued)**

Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p><b>MR Credit: Building product disclosure and optimization – environmental product declarations</b></p> <p><b>Option 1: Environmental Product Declaration</b> Use at least 20 different permanently installed products sourced from at least five different manufacturers that meet one of the disclosure criteria below.</p> <ul style="list-style-type: none"> <li>• Product-specific declaration: Products with a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 that have at least a cradle to gate scope are valued as one quarter (1/4) of a product for the purposes of credit achievement calculation</li> <li>• Environmental Product Declarations which conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 and have at least a cradle to gate scope: <ul style="list-style-type: none"> <li>▪ Industry-wide (generic) EPD -- Products with third-party certification (Type III), including external verification, in which the manufacturer is explicitly recognized as a participant by the program operator are valued as one half (1/2) of a product for purposes of credit achievement calculation.</li> <li>▪ Product-specific Type III EPD -- Products with third-party certification (Type III), including external verification in which the manufacturer is explicitly recognized as the participant by the program operator are valued as one whole product for purposes of credit achievement calculation.</li> </ul> </li> <li>• USGBC approved program – Products that comply with other USGBC approved environmental product declaration frameworks.</li> </ul> <p>For credit achievement calculation, products sourced (extracted, manufactured, purchased) within 100 miles (160 km) of the project site are valued at 200% of their base contributing cost. Structure and enclosure materials may not constitute more than 30% of the value of compliant building products.</p>	1/4 – 1 <sup>(b)</sup>	1

<sup>(b)</sup> Nordic X-Lam products have a product-specific Type III EPD.

**Table 5. LEED v4 New Construction and Major Renovations (Continued)**

Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p><b>MR Credit: Building product disclosure and optimization – sourcing of raw materials</b></p> <p><b>Option 2: Leadership extraction practice</b> Use products that meet the responsible extraction criteria below for at least 25%, by cost, of the total value of permanently installed building products in the project.</p> <ul style="list-style-type: none"> <li>• Biobased materials. Biobased products must meet the Sustainable Agriculture Network's Sustainable Agriculture Standard. Biobased raw materials must be tested using ASTM Test Method D6866 and be legally harvested, as defined by the exporting and receiving country. Exclude hide products, such as leather and other animal skin material. Products meeting biobased materials criteria are valued at 100% of their cost for the purposes of credit achievement calculation.</li> <li>• Wood products. Wood products must be certified by the Forest Stewardship Council or USGBC-approved equivalent. Products meeting wood products criteria are valued at 100% of their cost for the purposes of credit achievement calculation.</li> </ul> <p>For credit achievement calculation, products sourced (extracted, manufactured, and purchased) within 100 miles (160 km) of the project site are valued at 200% of their base contributing cost. For credit achievement calculation, the base contributing cost of individual products compliant with multiple responsible extraction criteria is not permitted to exceed 100% its total actual cost (before regional multipliers) and double counting of single product components compliant with multiple responsible extraction criteria is not permitted and in no case is a product permitted to contribute more than 200% of its total actual cost.</p> <p>Structure and enclosure materials may not constitute more than 30% of the value of compliant building products.</p>	1	1

**Table 5. LEED v4 New Construction and Major Renovations (Continued)**

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p><b>MR Credit: Building product disclosure and optimization – material ingredients</b></p> <p><b>Option 1: Material ingredient reporting</b> Use at least 20 different permanently installed products from at least five different manufacturers that use any of the following programs to demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm)</p> <ul style="list-style-type: none"> <li>• Manufacturer Inventory</li> <li>• Health Product Declaration</li> <li>• Cradle to Cradle</li> <li>• Declare</li> <li>• ANSI/BIFMA e3 Furniture Sustainability Standard</li> <li>• Cradle to Cradle Material Health Certificate</li> <li>• Product Lens Certification</li> <li>• Facts - NSF/ANSI 336</li> <li>• USGBC approved program</li> </ul> <p>Structure and enclosure materials may not constitute more than 30% of the value of compliant building products.</p>	1	1

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