



Green Verification Report

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IB Series I-Joists IB EWP Inc.

GR-L330

Revised July 16, 2020

Products: IB-400, 600, 800 and 900x Prefabricated Wood I-Joists
IB EWP Inc., 480 rue Jocelyn-Bastille C.P. 10, Pohénégamook, Quebec, G0L 1J0, Canada
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1. Basis of the green verification report:
 - 2015, 2012 and 2008 National Green Building Standard, ICC 700
 - LEED v4 for New Construction and Major Renovations
 - 2009 LEED for New Construction and Major Renovations
 - 2009 LEED Canada for New Construction and Major Renovations
 - ASTM D5055-13e1, ASTM D5055-13, and D5055-09 recognized by the 2018 International Building Code (IBC) and International Residential Code (IRC), 2015 IBC and IRC, and 2012 IBC and IRC, respectively
 - DOC PS2-18, Performance Standard for Wood Structural Panels
 - CSA O325-16 Construction Sheathing
 - APA PRI-400, Performance Standard for APA EWS I-Joists
 - APA T415, Green Verification Checklist – ICC 700-2015
 - APA Q415 Green Verification Checklist – ICC 700-2012
 - APA L410, Green Verification Checklist – ICC 700-2008
 - APA R415, Green Verification Checklist – LEED v4
 - APA L415, Green Verification Checklist – LEED
 - APA Product Report PR-L330
 - Documentation supporting green product verification
2. Product description:

IB Series I-joists are made with lumber flanges and OSB web in accordance with the in-plant manufacturing standard approved by APA. The binder adhesives used to manufacture the web materials meet the requirements of DOC PS 2 and CSA O325, and contain no added urea-formaldehyde. The adhesives used to manufacture IB Series I-joists are exterior-type adhesives meeting the requirements of ASTM D5055 and contain no added urea-formaldehyde.
3. Green product verification:

IB Series I-joists listed in this report are qualified for green construction with points specified in Tables 1 and 2, as independently verified by APA as meeting pertinent criteria of the referenced standards shown in Section 1.
4. Limitations:
 - a) IB Series I-joists shall be designed in accordance with principles of mechanics using the design properties specified in APA Product Report PR-L330 or provided by the manufacturer.
 - b) IB Series I-joists are limited to dry service conditions where the average equilibrium moisture content of solid-sawn lumber is less than 16 percent.
 - c) IB Series I-joists are produced at IB EWP Inc. facility in Pohénégamook, Quebec under a quality assurance program audited by APA.
 - d) This report is subject to re-examination in one year.
5. Identification:

The IB Series prefabricated wood I-joists described in this report are identified by a label bearing the manufacturer's name (IB EWP Inc.) and/or trademark, the APA assigned plant

number (1135), the I-joist depth and series, the APA logo, the report number GR-L330, and a means of identifying the date of manufacture.

Table 1. 2015 National Green Building Standard ICC 700-2015

(a) Points that have been verified as eligible by APA

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	608.1 Resource-efficient materials: Products containing fewer materials are used to achieve the same end-use requirements as conventional products	3 for each material	9
✓	901.4(5) Wood materials: 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

(b) Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	601.2 Material usage: 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
✓	606.1(1) Biobased products: Two types of biobased materials are used, each for more than 0.5% of the project's projected building material cost	3	8
✓	606.1(2) Biobased products: Two types of biobased materials are used, each for more than 1% of the project's projected building material cost	6	
✓	606.1(3) Biobased products: For each additional biobased material used for more than 0.5% of the project's projected building material cost	1 each with 2 max	
✓	606.2(2) Wood-based products: A minimum of 2 certified wood-based products are used in major components of the building, such as walls, floors or roof	4	4
✓	609.1 Regional materials: Regional materials are used for major and/or minor components of the building with a minimum of 75% of all products in that component category being sourced regionally	2 for each major component and 1 for each minor component	10

Table 1. 2015 National Green Building Standard ICC 700-2015 (continued)

(b) Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p>610.1 Life cycle assessment: 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>610.1.1 Whole-building life cycle assessment: A whole-building LCA is performed in conformance with ASTM E2921 using ISO 14044 compliant life cycle assessment</p> <p>610.1.2 Life cycle assessment for a product or assembly: 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>	<p>2 to 3 for each product LCA, 3 to 10 for each assembly LCA</p>	<p>15 for whole-building LCA and product or assembly LCA (15 for whole-building or 10 for product or assembly)</p>

Table 2. National Green Building Standard ICC 700-2012

(a) Points that have been verified by APA

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	608.1 Resource-efficient materials: Products containing fewer materials are used to achieve the same end-use requirements as conventional products	3 for each material	9
✓	901.4(5) Wood materials: 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

(b) Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	601.2 Material usage: 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
✓	606.1(1) Biobased products: Two types of biobased materials are used, each for more than 0.5% of the project's projected building material cost	3	8
✓	606.1(2) Biobased products: Two types of biobased materials are used, each for more than 1% of the project's projected building material cost	6	
✓	606.1(3) Biobased products: For each additional biobased material used for more than 0.5% of the project's projected building material cost	1 each with 2 max	
✓	606.2(2) Certified wood: A minimum of 2 certified wood-based products are used in major elements of the building such as walls, floors or roof	4	4
✓	609.1 Regional materials: Regional materials are used for major elements or components of the building	2 for each material	10

Table 2. National Green Building Standard ICC 700-2012 (continued)

(b) Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p>610.1 Life cycle analysis: 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>610.1.1 Whole-building life cycle analysis: A whole-building LCA is performed using a life cycle assessment and data compliant with ISO 14044 or other recognized standards</p> <p>610.1.2 Life cycle analysis for a product or assembly: 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>	<p>2 to 3 for each material, 3 to 10 for each assembly, or 15 for whole-building LCA</p>	<p>10 for each product or assembly, or 15 for whole-building</p>

Table 3. National Green Building Standard ICC 700-2008

(a) Points that have been verified as eligible by APA

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	607.1 Resource-efficient materials: Products containing fewer materials are used to achieve the same end-use requirements as conventional products	3 for each material	9
✓	609.1 Life cycle analysis: A more environmentally preferable product or assembly is selected for an application based upon the use of a Life Cycle Assessment (LCA) tool compliant with ISO 14044 or other recognized standards that compare the environmental impact of building materials, assemblies, or the whole building	3 per product system comparison or 15 for whole building LCA	15
✓	901.4(5) Wood materials: 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

(b) Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	601.2 Material usage: Building-code-compliant structural systems or advanced framing techniques are implemented that optimize material usage	3 for each system or framing technique	9
✓	606.1(1) Biobased products: Two types of biobased materials are used, each for more than 0.5% of the project's projected building material cost	3	8
✓	606.1(2) Biobased products: Two types of biobased materials are used, each for more than 1% of the project's projected building material cost	6	
✓	606.1(3) Biobased products: For each additional biobased material used for more than 0.5% of the project's projected building material cost	1 each with 2 max	
✓	606.2(2) Certified wood: A minimum of 2 certified wood-based products are used for major elements of the building such as walls, floors or roof	4	4
✓	608.1 Indigenous materials: Indigenous materials are used for major elements of the building	2 for each material	10

Table 4. LEED v4 for New Construction and Major Renovations

(a) Points that have been verified as eligible by APA

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p>Low Emitting Materials. Composite wood evaluation Structural composite lumber products 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 Specification for Evaluation of Structural Composite Lumber Products (ASTM D5456), referenced in ID# LI 10466 LEM Composite Wood (www.usgbc.org/leedaddenda/10466). No further VOC emissions testing is required to meet the Low Emitting Materials credit criteria.</p>	See LEED v4 for calculation methods	3

Table 4. LEED v4 for New Construction and Major Renovations (continued)

(b) Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p>Building life-cycle impact reduction. Option 4: Whole-building lifecycle assessment</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"> • global warming potential (greenhouse gases), in CO₂e; • depletion of the stratospheric ozone layer, in kg CFC11; • acidification of land and water sources, in moles H⁺ or kg SO₂; • eutrophication, in kg nitrogen or kg phosphate; • formation of tropospheric ozone, in kg NO_x, kg O₃ eq, or kg ethene; and • depletion of nonrenewable energy resources, in MJ 	3	3

Table 4. LEED v4 for New Construction and Major Renovations (continued)

(b) Eligible points that are conditional on construction application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<p>Building product disclosure and optimization – environmental product declarations. Option 1: Environmental Product Declaration</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"> • 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 • 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"> ▪ 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. ▪ 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. • USGBC approved program – Products that comply with other USGBC approved environmental product declaration frameworks. <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	1

Table 5. 2009 LEED for New Construction and Major Renovations and 2009 LEED Canada for New Construction and Major Renovations

(a) Points that have been verified as eligible by APA

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	IEQ 4.4: Low Emitting Materials: Structural composite lumber products 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 Specification for Evaluation of Structural Composite Lumber Products (ASTM D5456), referenced in ID# LI 10466 LEM Composite Wood (www.usgbc.org/leedaddenda/10466). No further VOC emissions testing is required to meet the Low Emitting Materials credit criteria.	1	1

(b) Eligible points that are conditional on construction location and application

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	MR 5: Regional Materials: Use building materials or products that have been extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site for a minimum of 10% or 20%, based on cost, of the total material value	1 point for 10% and 2 points for 20%	1 point for 10% and 2 points for 20%

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