



# Green Verification Report

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Roseburg RigidLam® LVL and RigidRim® LVL Rim Board  
Roseburg Forest Products Company

GR-L289

Revised May 31, 2023

Products: RigidLam® LVL and RigidRim® LVL Rim Board

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1. Basis of the green verification report:

- 2020, 2015, and 2012 National Green Building Standard, ICC 700
- LEED v4.1 for Building Design and Construction
- LEED v4 for New Construction and Major Renovations
- ASTM D5456-18, D5456-14b, D5456-13, and D5456-09 recognized in the 2021 International Building Code (IBC) and International Residential Code (IRC), 2018 IBC and IRC, 2015 IBC and IRC, and 2012 IBC and IRC, 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 Reports PR-L289 and PR-L289(C)
- Documentation supporting green product verification

2. Product description:

Roseburg RigidLam® laminated veneer lumber (LVL) is a structural composite lumber product consisting of either Douglas-fir (DF) or Southern pine (SP) veneers laminated with grain parallel to the length of the member in accordance with the in-plant manufacturing standard approved by APA. Roseburg RigidLam DF LVL is available in thicknesses of 1-1/4 to 7 inches, depths of 3-1/2 to 48 inches, and lengths up to 66 feet. RigidLam DF LVL thickness greater than 2-1/2 inches are fabricated by means of a secondary face-bonding process. Roseburg RigidLam SP LVL is available in thicknesses of 1-1/4 to 5-1/2 inches, depths of 3-1/2 to 24 inches, and lengths up to 66 feet.

Roseburg RigidLam LVL studs are made of DF veneers only and are used as wall framing materials in conventional light-frame construction of the applicable code. RigidLam LVL studs are also used as wall framing materials in engineered walls. The minimum thickness of the LVL studs is 1-1/2 inches. The LVL studs described in this report are either 1.6E or 2.1E grade DF LVL.

Roseburg RigidRim® LVL rim board is made of DF veneers only. The Rigid Rim LVL Rimboard described in this report is 1.4E grade LVL and is available in thicknesses of 1-1/2 to 3-1/2 inches. The 3-1/2-inch LVL rim board is face-bonded from 1-3/4-inch thick DF LVL products. The adhesives used to manufacture Roseburg RigidLam LVL and RigidRim LVL rim board meet the requirements of ASTM D5456 and contain no added urea-formaldehyde.

3. Green product verification:

Roseburg RigidLam LVL, RigidLam LVL studs, and RigidRim LVL rim board 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. RFPI RigidLam LVL, RigidLam LVL studs, and RigidRim LVL rim board are also eligible to be marked under the USDA BioPreferred Program, as indicated by the label shown in Figure 1.

4. Limitations:

- a) Roseburg RigidLam LVL and RigidRim LVL rim board shall be designed in accordance with principles of mechanics using the design properties specified in APA Product Report PR-L289 or provided by the manufacturer.
- b) Roseburg RigidLam LVL, RigidLam LVL studs, and RigidRim LVL Rimboard are limited to dry service conditions where the average equilibrium moisture content of solid-sawn lumber is less than 16%.
- c) Roseburg RigidLam DF LVL, RigidLam DF LVL studs, and RigidRim DF LVL Rimboard are produced at Roseburg Forest Products' facility in Riddle, OR. Roseburg RigidLam SP LVL is produced at Roseburg Forest Products' facility in Chester, SC.
- d) Roseburg RigidLam LVL, RigidLam LVL Studs, and RigidRim LVL Rimboard are under a quality assurance program audited by APA.
- e) This report is subject to re-examination in one year.

5. Identification:

The Roseburg RigidLam LVL, RigidLam LVL studs, and RigidRim LVL rim board described in this report are identified by a label bearing the manufacturer's name (Roseburg Forest Products Company) and/or trademark, the APA assigned plant number (1055 for Riddle, OR and 1125 for Chester, SC), the LVL and rim board grade, the APA logo, and a means of identifying the date of manufacture. The RigidLam product name shall be permitted to be labelled as "onCENTER®".

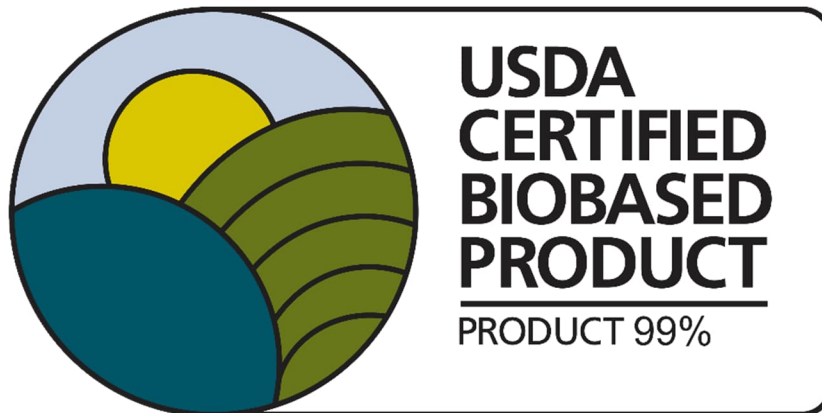


Figure 1. USDA BioPreferred label for LVL

**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>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

	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

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<b>609.1 Regional materials:</b> Regional materials are used for (1) major and/or (2) 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
✓	<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)

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

Points that have been verified as eligible by APA

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<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

	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>609.1 Regional materials:</b> 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 2. 2015 National Green Building Standard ICC 700-2015 (continued)**

Eligible points that are conditional on construction application

	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>610.1.2 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>	<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 3. National Green Building Standard ICC 700-2012**

Points that have been verified by APA

	Section/Criteria	Eligible Points	Possible Maximum Points
✓	<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

	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>609.1 Regional materials:</b> Regional materials are used for major elements or components of the building	2 for each material	10



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

Eligible points that are conditional on construction application

	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>610.1.2 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>	<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 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>  <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: Environmental Product Declarations</b></p> <p><b>Option 1. Environmental Product Declaration (EPD)</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>▪ 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 on 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	1

**Table 5. LEED v4 New Construction and Major Renovations**

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><b>Composite wood evaluation</b>                      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<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.</p>	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>Building product disclosure and optimization – environmental product declarations. Option 1: Environmental Product Declaration</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>• 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	1

APA – *The Engineered Wood Association* is an approved national standards developer accredited by American National Standards Institute (ANSI). APA publishes ANSI standards and Voluntary Product Standards for wood structural panels and engineered wood products. APA is an accredited certification body under ISO/IEC 17065 by Standards Council of Canada (SCC), an accredited inspection agency under ISO/IEC 17020 by International Code Council (ICC) International Accreditation Service (IAS), and an accredited testing organization under ISO/IEC 17025 by IAS. APA is also an approved Product Certification Agency, Testing Laboratory, Quality Assurance Entity, Validation Entity, and Product Evaluation Entity by the State of Florida, and an approved testing laboratory by City of Los Angeles.

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