

**WS RIM Board**  
**Western Structures Inc.**

**PR-L304**

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Products: WS RIM Board

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1. Basis of the product report:
  - 2018, 2015, and 2012 International Building Code: Section 104.11 Alternative materials
  - 2018, 2015, and 2012 International Residential Code: Section R104.11 Alternative materials
  - 2015 ANSI/AWC Special Design Provisions for Wind and Seismic (SDPWS)
  - ASTM D3737-12 recognized by the 2018 and 2015 IBC and IRC, and ASTM D3737-08 recognized by the 2012 IBC and IRC
  - ASTM D7672-14 and D7672-12 recognized by the 2018 IBC and IRC, and 2015 IBC and IRC, respectively
  - ANSI A190.1-2017 recognized by the 2018 IBC and IRC, and ANSI A190.1-2012 recognized by the 2015 and 2012 IBC and IRC
  - APA Report T2011P-58 and other qualification data
2. Product description:

Western Structures WS RIM is used as rim boards and is manufactured with a proprietary specification. The source laminations are made of 2x4 Douglas-fir lumber end-jointed to form a long length in accordance with ANSI A190.1. The laminations are then face bonded to a specific beam depth up to 14 inches. The glulam is then resawn into WS RIM with net finished thicknesses of 1-1/2 or 1-3/4 inches. The maximum depth of WS RIM is 14 inches.
3. Design properties:

Table 1 lists the allowable design properties for Western Structures WS RIM.
4. Product installation:

Western Structures WS RIM shall be installed in accordance with the recommendations provided by the manufacturer. Permissible field notching and drilling shall be in accordance with the recommendations provided by the manufacturer.
5. Fire-rated assemblies:

The provisions of 2018 and 2015 IBC Section 722 Calculated fire resistance and 2012 IBC Section 722.6.3 Design of fire-resistant exposed wood members shall be applicable to Western Structures WS RIM. Fire-rated rim board assemblies shall be constructed in accordance with the recommendations provided by APA Data File: *APA Rim Board in Fire-Rated Assemblies*, Form D350 ([www.apawood.org/resource-library](http://www.apawood.org/resource-library)) or the manufacturer.
6. Limitations:
  - a) Western Structures WS RIM shall be designed in accordance with the applicable code using the design properties specified in this report.
  - b) Western Structures WS RIM shall be limited to 1-1/2 or 1-3/4 inches in thickness and a maximum of 14 inches in depth.
  - c) Western Structures WS RIM shall be limited to applications where the rim board is continuously supported for the full length and thickness of the product.
  - d) Western Structures WS RIM is limited to dry service conditions where the average equilibrium moisture content of solid-sawn lumber is less than 16 percent.

- e) Western Structures WS RIM is produced by Western Structures Inc. facility in Eugene, Oregon, under a quality assurance program audited by APA.
- f) This report is subject to re-examination in one year.

7. Identification:

The WS RIM boards described in this report are identified by a label bearing the manufacturer's name and/or trademark (Western Structures), the APA assigned plant number (1007), the product grade, the APA logo, the report number PR-L304, and a means of identifying the date of manufacture.

Table 1. Allowable Design Properties for Western Structures WS RIM <sup>(a,b)</sup>

Product	Thickness (in.)	Horizontal Load Transfer Capacity (lbf/ft) <sup>(c,d)</sup>	Vertical Load <sup>(e)</sup>			Lateral Resistance for 1/2-inch-dia. Lag Screws (lbf) <sup>(g)</sup>
			Uniform (lbf/ft)		Concentrated (lbf) <sup>(f)</sup>	
			Nails Spaced at 6 inches o.c.	Depths ≤ 11-7/8 in.	11-7/8 in. < Depth ≤ 14 in.	
WS RIM	1-1/2 or 1-3/4	240	3,000	2,800	2,500	410

For SI: 1 inch = 25.4 mm, 1 lbf = 0.454 kg, 1 psi = 6.9 kPa.

- (a) The rim board depth shall not exceed 14 inches. Only permitted in applications where the rim board is continuously supported for the full length and thickness of the product.
- (b) All design values are applicable to the normal load duration (10 years) for wood products, except for the horizontal load transfer capacity, which is based on the short-term load duration (10 minutes). Design values shall be adjusted for other load durations in accordance with the applicable building code except that the uniform vertical load capacity and concentrated vertical load capacity are not permitted to be increased for any load durations shorter than the normal load duration (10 years). The horizontal load transfer capacity is permitted to be increased by a factor of 1.4 when subjected to wind loads. Toe-nailed connections are not limited by the 150 lbf/ft lateral load capacity noted for Seismic Design Categories D, E and F in Section 4.1.7 of the Special Design Provisions for Wind and Seismic (SDPWS).
- (c) Western Structures WS RIM may be substituted for solid-sawn framing in horizontal wood diaphragms as shown in Table 4.2A of the 2015 SDPWS (for 2018 and 2015 IBC) and 2008 SDPWS (for 2012 IBC), provided the maximum shear values for the diaphragms are limited to the allowable lateral capacity noted in this table.
- (d) 8d common (0.131x2-1/2 inch) nails shall be used to connect the floor sheathing to Western Structures WS RIM and to connect Western Structures WS RIM to the sill plate (toe nail). Two 8d box (0.113x2-1/2 inch) or common (0.131x2-1/2 inch) nails are required to connect each floor joist to the sill plate, and two 8d box (0.113x2-1/2 inch) or common (0.131x2-1/2 inch) nails are required to connect Western Structures WS RIM to the end of each floor joist.
- (e) Compression perpendicular-to-grain capacities of the sill plate and floor sheathing must be checked, and must not be exceeded.
- (f) The concentrated vertical load capacity is based on a 4-1/2-inch bearing length.
- (g) Capacity of lag screw connections between rim board and deck ledgers per lag screw of 1/2 inch in diameter when installed into the face of the WS RIM, 2x spruce-pine-fir side member, and 1/2-inch-thick sheathing with a full penetration of the WS RIM of the lag screw. Minimum end distance of 4 inches is required.

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