



Evaluation Listing CCMC 13308-L APA EWS Rim Board and LP® SolidStart® OSB Rim Board – Louisiana-Pacific Corporation

Evaluation Issued:	2008-04-04
Re-evaluated:	2014-06-23
Re-evaluation due:	2017-04-04

Preface: Masterformat 06 17 43.01, Wood-Based Rim Board for Floors

Preface Issued:	2012-02-20
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These Evaluation Listings are in accordance with ANSI/APA PRR 410-2011, “Standard for Performance-Rated Engineered Wood Rim Boards.” The standard applies to structural use panels sawn into rim board dimensions, re-sawn structural glued laminated timber, and structural composite lumber manufactured specifically to meet the performance requirements of rim boards in wood-frame construction.

Rim boards meeting the requirements in ANSI/APA PRR 410 fall under one of three thickness-based rim board grades:

- Grade A, minimum 31.8 mm (1-1/4 in.) thick;
- Grade B, minimum 28.6 mm (1-1/8 in.) thick; or
- Grade C, minimum 25.4 mm (1 in.) thick.

The maximum depth of these rim boards is 610 mm (24 in.). “APA Rim Board Plus” is equivalent to Grade A, B1, or B2 rim boards and “APA Rim Board” is equivalent to Grade C1 or C2 rim boards.

These rim boards are intended for use in engineered wood joist floor assemblies in dry service conditions only, i.e., conditions where the mean equilibrium moisture content of solid sawn lumber is less than 16%. The rim boards are manufactured to meet the standard and are subject to a third-party certification program accredited by the Standards Council of Canada.

Standard

The standard prescriptive and performance requirements are summarized below. This standard addresses the following aspects:

1. dimensions and dimensional tolerances;
2. structural performance:
 - a. horizontal load transfer capacity,
 - b. uniform vertical load capacity,
 - c. 12.7-mm-diameter (1/2 in.) lag screw lateral resistance,
 - d. concentrated vertical load capacity,
 - e. edge nailing durability, and
 - f. physical properties (not applicable to plywood panels, laminated veneer lumber, or glulam material):
 - i. thickness swell,
 - ii. density, and
 - iii. internal bond.

Dimensions and Dimensional Tolerances

Table 1. Dimensions and Dimensional Tolerances

Rim Board Grade	Performance Category	Thickness (mm (in.))	Maximum Depth (mm (in.))	Depth Tolerance ^{1 2} (mm (in.))	Minimum Thickness ³ (mm (in.))	Maximum Thickness (mm (in.))
A	1-1/4	31.8 (1-1/4)	610 (24)	+3.2 (+1/8) -0 (-0)	30.16 (1.188)	33.34 (1.313)
B	1-1/8	28.6 (1-1/8)			27.15 (1.069)	30.00 (1.181)
C	1	25.4 (1)			24.13 (0.950)	26.67 (1.050)

Notes to Table 1:

- ¹ Structural glued laminated timber rim board must be manufactured at a moisture content and depth to ensure that it meets these same tolerances over a range of application moisture contents from 5% to 16%.
- ² The depth of the rim boards manufactured from glulam should be based on a moisture content of approximately 12%.
- ³ The thickness specified on the label with a certain tolerance.

Structural Performance

The horizontal load transfer capacity, uniform vertical load capacity, 12.7 mm (1/2 in.) diameter lag screw lateral resistance, and the concentrated vertical load capacity must meet the values outlined in Table 2. Table 2 outlines the design values for engineered buildings. These factored resistance values for limit states design are produced in accordance with the principles of CSA O86-09, “Engineering Design in Wood.”

To determine the factored resistances, tests are carried out in accordance with the standard, which also specifies sample preparation. All the samples are assembled and nailed in accordance with the nailing schedule shown in Table 3, which complies with the NBC 2010 requirements.

Table 2. Factored Resistances¹ for Performance-rated Engineered Wood Rim Boards Used in Canada²

Rim Board Grade	Performance Category ³	Depth ⁵ Limitations (mm)				
		ϕH^4 (N/mm)	ϕV^5 (N/mm)		ϕZ^6 (kN)	
			$d \leq 610$	$d \leq 406$	$406 < d \leq 610$	$d \leq 610$
A	31.8 mm or higher	4.6	125.4	77.9	2.6	26.0
B1	31.8 mm or higher	3.8	125.4	77.9	2.6	26.0
B2	28.6 mm or higher	3.8	118.1	77.9	2.6	26.0
C1	28.6 mm or higher	3.4	113.0	73.0	2.6	26.0
C2	25.4 mm or higher	3.4	80.3	73.0	2.2	26.0

Notes to Table 2:

- 1 All tabulated values are applicable to the standard term load duration and permitted to be adjusted for other load durations in accordance with the applicable code.
- 2 Imperial conversion: 1 kN/m = 68.52 plf; 1 kN = 224.81 lbf.
- 3 The performance categories for these rim boards refer to the minimum thickness of the rim board.
- 4 ϕH = Factored horizontal (shear) load transfer resistance based on the nailing attachment schedule specified in:
 - the NBC 2010 for the top of the rim board;
 - the APA D340 CA document for the bottom of the rim board (as no rim board to sill plate attachment is currently specified in the NBC 2010); and
 - the I-joist manufacturer’s manual for attachment to the I-joist.
- 5 ϕV = Factored uniform vertical (compression) load resistance. The uniform bearing load must be simultaneously satisfied with the concentrated vertical load capacity, when applicable.
- 6 ϕZ = Factored lateral resistance of a 12.7-mm-diameter lag screw.
- 7 ϕP = Factored concentrated vertical load resistance based on 114-mm bearing length. The concentrated vertical load must be simultaneously satisfied with the uniform bearing load capacity, when applicable.

The nailing schedule in Table 3 was used to prepare the samples to test for the structural performance criteria. It is also the nailing schedule required by the NBC 2010 and should be followed during field installation. Figure 1 graphically displays the nailing requirements.

Table 3. Nailing Schedule for Performance-rated Engineered Wood Rim Boards for Use in Canada¹

Sheathing to Rim Board or Joist	Bottom Plate through Sheathing to Rim Board	Rim Board to Sill Plates (Toe Nail)	Joist to Sill Plate (Slanted)	Rim Board to Joist
51 mm (6d) common @ 150 mm o.c. (6 in. o.c.)	82 mm (12d) common @ 400 mm (15.7 in. o.c.) or 82 mm (12d) common @ 150 mm (6 in. o.c.) ²	82 mm (12d) common @ 150 mm (6 in. o.c.)	2 × 63.5 mm (8d) common	2 × 63.5 mm (8d) common

Notes to Table 3:

- 1 For sample preparation, six nails are required for the sheathing to rim board or joist connection, three nails (or six nails for braced walls in high wind and seismic areas) for bottom plate through sheathing to rim board connection, and six nails for rim board to sill plates (toe nail) connection.
- 2 For braced walls in high wind and seismic areas.

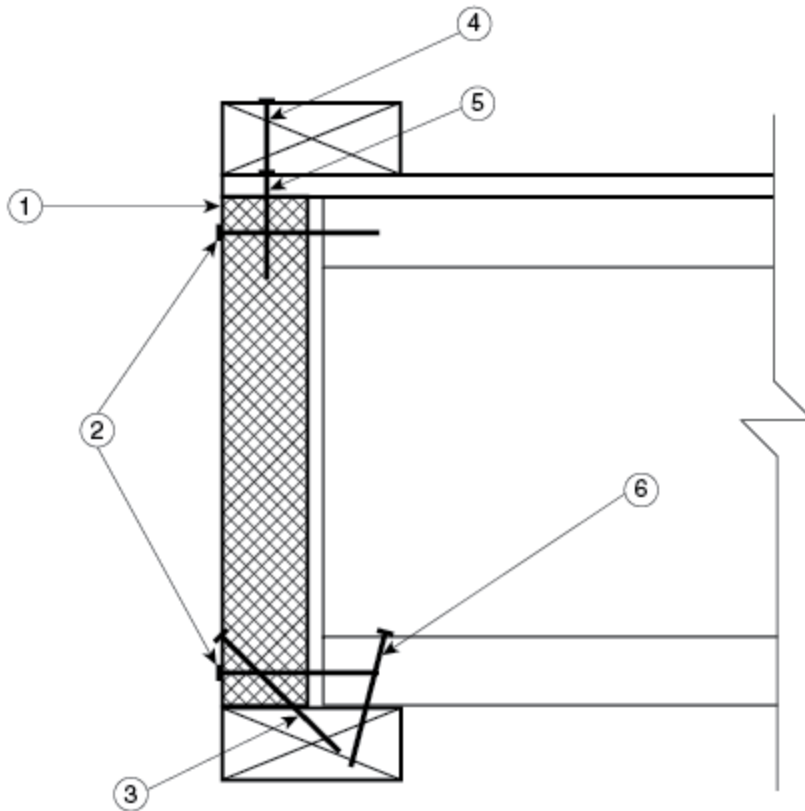


Figure 1. Typical installation for performance-rated engineered wood rim board

1. rim board
2. 63.5-mm nails in centre of top and bottom flanges
3. toe nail as per manufacturer's instructions (typ. 82 mm at 150 mm o.c.)
4. 82 mm at 400 mm o.c. (or 82 mm at 150 mm o.c.)
5. 51 mm at 150 mm o.c.
6. slanted nail I-joist as per manufacturer's instructions (typ. 2 x 63.5 mm)

Edge Nailing Durability Criteria

The mean edge nailing durability of the conditioned samples must be at least 75% of the mean horizontal load transfer capacity of the unconditioned samples.

Physical Properties (not applicable to plywood panels, laminated veneer lumber, or glulam material)

After conditioning, the mean thickness swell must not exceed 10% and the thickness swell of individual samples must not exceed 12%. The density values and internal bond measurements are used to establish quality control values for the quality assurance use.

Vapour Barrier

A 15 ng/Pa×s×m² vapour barrier must be installed on the interior side to address the requirements of Article 9.25.4.2., Vapour Barrier Materials, and Subsection 9.25.5., Properties and Position of Materials in the Building Envelope, of Division B of the NBC 2010.

Engineering Support

Engineering support for performance-rated engineered wood rim boards is provided by either the third-party certification agency or by the manufacturer. Check the product listing for engineering support contact information.

Labelling

All performance-rated engineered wood rim boards must be labelled with the following information:

- Rim Board Grade qualified in accordance with ANSI/APA PRR 410;
- the performance category;
- the labelled rim board thickness;
- the mill name or identification number;
- the qualified agency name or logo;
- the symbol of “ANSI/APA PRR 410” signifying conformance to the standard;
- any manufacturer designations, which must be separated from the grade marks or trademarks of the qualified agency by not less than 152 mm (6 in.); and
- the CCMC Listing number.

National Building Code of Canada (NBC)

NBC References

ANSI/APA PRR 410 is not referenced in the NBC 2010.

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1. Evaluation

The rim boards conform to ANSI/APA PRR 410, which was developed by the APA for Canada. This evaluation is based solely on the APA EWS certification to the ANSI/APA PRR 410 standard.

This evaluation covers rim boards manufactured by Louisiana-Pacific Corporation at the following plants:

- Dawson Creek, British Columbia:
 - Grade B1: 31.8 mm (1-1/4 in.) thick
 - Grade B2: 28.6 mm (1-1/8 in.) thick
 - Grade C1: 28.6 mm (1-1/8 in.) thick
- Hayward, Wisconsin:
 - Grade B1: 31.8 mm (1-1/4 in.) thick
 - Grade C1: 28.6 mm (1-1/8 in.) thick
 - Grade C1: 31.8 mm (1-1/4 in.) thick
 - Grade C2: 25.4 mm (1 in.) thick
- Houlton (New Limerick), Maine:
 - Grade B1: 31.8 mm (1-1/4 in.) thick
 - Grade B2: 28.6 mm (1-1/8 in.) thick
 - Grade C1: 28.6 mm (1-1/8 in.) thick
 - Grade C1: 31.8 mm (1-1/4 in.) thick
 - Grade C2: 25.4 mm (1 in.) thick
- Sagola, Michigan:
 - Grade B2: 28.6 mm (1-1/8 in.) thick
 - Grade C1: 28.6 mm (1-1/8 in.) thick
 - Grade C2: 25.4 mm (1 in.) thick

2. Description

The product is an oriented strandboard (OSB) that is manufactured to serve as a rim board and is available in four grades and three thicknesses, as shown above. The factored resistances of the four grades are outlined in Table 2 of the Preface. The nominal depths are available to match engineered wood joist depths of up to 610 mm (24 in.). Technical product support is provided by APA.

3. Standard and Regulatory Information

See the [Preface](#) and the standard for explanation.

Listing Holder

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Plant(s)

Sagola, MI, U.S.A.
Dawson Creek, BC
Hayward, WI, U.S.A.
New Limerick, ME, U.S.A.

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