LP SOLIDSTART OSB & LSL RIM BOARD

Floor & Roof Applications
Product Specifications & Design Values

**LP® SolidStart® RIM BOARD**

An integral part of LP’s framing package, OSB and LSL Rim Board from LP Engineered Wood Products provides strong, cost-effective solutions to your framing needs. Designed to match our LP SolidStart I-Joists, they are available in several depths and thicknesses. LP’s SolidStart Rim Board offers straightforward and quick installation as well as high-strength reliability.

**THE ROLE OF RIM BOARD IN A BUILDING**

LP SolidStart Rim Board fills the space between the sill plate and the bottom wall plate, or between the top plate and bottom plate in multi-story construction. In addition to filling the void, rim board is an integral structural component that transfers both lateral and vertical forces. To function properly, rim board must match the depth of framing members. Traditional solid sawn lumber typically does not match engineered wood I-Joists, which is why LP SolidStart Rim Board is a perfect choice. Even for seemingly similar depths, lumber can shrink leaving it shorter than the I-Joist and useless.

**WHAT MAKES LP SOLIDSTART RIM BOARD DIFFERENT?**

LP SolidStart Rim Board is more convenient to use than field ripped rim because it is precision cut to match the depths of LP SolidStart I-Joists and is manufactured in standard lengths of 16’ and 20.’ Here are just a few of the benefits:

**Trouble-Free Workability**

- Easy to saw, drill, plane, file or sand with normal carpentry tools
- I-Joist compatible depths save time on the job-site
- Flat surfaces for easy installation of siding
- Precut depths means less inaccuracies and time involved in ripping in the field

**Just The Right Size**

- I-Joist compatible depths for a perfect match
- LP SolidStart LSL may be available in longer lengths

**Fire Blocking**

- 1” or thicker LP SolidStart Rim Board can be used as an alternate to 23/32” wood structural panel fire blocking
- 1-1/4” or thicker LP SolidStart Rim Board can be used as an alternate to nominally 2” lumber fire blocking

<table>
<thead>
<tr>
<th>Specified Rim Board Weights (PLF)</th>
<th>Type</th>
<th>Thickness</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>9-1/2”</td>
<td>11-7/8”</td>
</tr>
<tr>
<td>LP OSB</td>
<td>1-1/8”</td>
<td>2.9</td>
<td>3.6</td>
</tr>
<tr>
<td>LP LSL</td>
<td>1-1/4”</td>
<td>3.9</td>
<td>4.9</td>
</tr>
<tr>
<td></td>
<td>1-1/2”</td>
<td>4.7</td>
<td>5.9</td>
</tr>
</tbody>
</table>

**MATERIALS & FABRICATION**

LP offers two types of rim board: LP SolidStart OSB Rim Board, fabricated from oriented strand board, and LP SolidStart LSL Rim Board, from Laminated Strand Lumber (LSL). Both types are precision cut to match the depths of LP SolidStart I-Joists.

The type of rim board you choose will depend on your specific project. OSB rim board comes in smaller thicknesses and is perfect for lower lateral load applications. Use LSL rim board where loads are higher such as in commercial and multi-family structures.

**BEAM & HEADER STOCK AS RIM BOARD**

While standard LP LSL may appear to be suited for use as rim board, there are several reasons why it may not be the best choice, including different tolerances on the finished depth and labeling requirements:

- Rim Board products are ripped slightly taller than an I-Joist to ensure that all vertical load is transferred through the rim board rather than through the I-Joist.
- The thickness of rim board is stamped on the product for easy visual confirmation by a building inspector.

**LIFETIME LIMITED WARRANTY**

LP SolidStart Engineered Wood Products are backed by a lifetime limited warranty. Visit LPCorp.com or call 1.888.820.0325 for a copy of the warranty.

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**LP SOLIDSTART RIM BOARD PROFILES**

![LP SOLIDSTART RIM BOARD PROFILES](image-url)
Product Specifications & Design Values

**FACTORED RIM BOARD RESISTANCE**

<table>
<thead>
<tr>
<th>Material</th>
<th>Grade</th>
<th>Thickness</th>
<th>Vertical Load Resistance</th>
<th>Lateral Load Resistance, f_L (plf)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Uniform</td>
<td>Concentrated</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>d ≤ 16&quot;</td>
<td>16&quot; &lt; d ≤ 24&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>d ≤ 24&quot;</td>
<td></td>
</tr>
<tr>
<td>LP OSB</td>
<td>APA C1/Rim Board1</td>
<td>1-1/8&quot;</td>
<td>7339</td>
<td>5004</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-1/4&quot;</td>
<td>10008</td>
<td>6338</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 1-1/2&quot;</td>
<td>11676</td>
<td>7506</td>
</tr>
<tr>
<td>LP LSL</td>
<td>1.35E</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
1. The Factored Vertical Load Resistance shall not be increased for short-term load duration.
2. The Factored Vertical Load Resistance is based on the resistance of the rim board and may need to be reduced based on the bearing resistance of the supporting wall plate or the attached floor sheathing.
3. The Factored Concluded Vertical Load Resistance is assumed to be achieved through a minimum 4-1/2" bearing length (5-stud post).
4. The Factored Lateral Load Resistance is based on a short-term load duration and shall not be increased.
5. The Factored Lateral Load Resistance is based on the connections specified in the Installation details on page 4.
6. Additional framing connectors fastened to the face of the rim board may be used to increase lateral resistance for wind and seismic design.
7. APA C1 grade in product standard ANSI/APA PRR 410-2011 is equivalent to the rim board grade in product standard ANSI/APA PRR-401C.

**FACTORED UNIFORM LOADS (PLF) FOR RIM BOARD HEADERS: MAXIMUM 4’ CLEAR SPAN**

<table>
<thead>
<tr>
<th>Material</th>
<th>Thickness</th>
<th>Rim Board Depth</th>
<th>9-1/2&quot;</th>
<th>11-7/8&quot;</th>
<th>2-Ply 14&quot;</th>
<th>2-Ply 16&quot;</th>
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</thead>
<tbody>
<tr>
<td>LP OSB</td>
<td>1-1/8&quot;</td>
<td></td>
<td>520</td>
<td>915</td>
<td>2410</td>
<td>2890</td>
</tr>
<tr>
<td></td>
<td>1-1/4&quot;</td>
<td>955</td>
<td>1610</td>
<td>5155</td>
<td>6535</td>
<td></td>
</tr>
<tr>
<td></td>
<td>≥ 1-1/2&quot;</td>
<td>1150</td>
<td>2175</td>
<td>6190</td>
<td>7840</td>
<td></td>
</tr>
<tr>
<td>LP LSL</td>
<td>1.35E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
1. This table is for preliminary design for uniform gravity loads only. Final design should include a complete analysis of all loads and connections.
2. The factored load resistances are for a maximum 4’ clear span with minimum bearings for each end (listed in parentheses) based on the bearing resistance of the rim board. For headers bearing on wood plates, the bearing length may need to be increased based on the ratio of the bearing resistance of the rim board divided by the bearing resistance of the plate species.
3. Standard load duration is assumed and shall be adjusted according to code.
4. Depths greater than 11-7/8’ shall be used with a minimum of two plies, as shown. Depths of 11-7/8’ and less may be used as a two-ply header by multiplying the resistance by two.
5. Multiple-ply headers shall be toe-nailed to the plate from both faces. Fasten the floor sheathing to the top of each ply to provide proper lateral support for each ply.
6. For multiple-ply headers supporting top-loads only, fasten plies together with minimum 2-1/2" nails (common wire or spiral) at a maximum spacing of 12” oc. Use 2 rows of nails for 9-1/2” and 11-7/8”. Use 3 rows for depths 14” and greater. Clinch the nails where possible.
7. The designer shall verify proper bearing for the header.
8. Joints in the rim are not allowed over openings and must be located at least 12” from any opening.
9. Refer to the “APA Performance Rated Rim Boards - Limited State Design” (Form No. D340 CA) for additional information including uniform load resistance for smaller openings.
10. Use LP® SolidStart® LSL for headers with clear spans longer than 4’ or for loads greater than tabulated above. See the Design Values table below.

**DESIGN VALUES (SPECIFIED STRESS DESIGN - PSI)**

<table>
<thead>
<tr>
<th>Material</th>
<th>Grade</th>
<th>Thickness</th>
<th>Bending, f_b (ksi)</th>
<th>Modulus of Elasticity, E (ksi)</th>
<th>Shear, f_s (ksi)</th>
<th>Compression, f_c (ksi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LP OSB</td>
<td>APA C1/Rim Board1</td>
<td>1-1/8&quot;</td>
<td>112</td>
<td>0.55</td>
<td>500</td>
<td>997</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-1/4&quot;</td>
<td>3195</td>
<td>1.35</td>
<td>760</td>
<td>1365</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 1-1/2&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LP LSL</td>
<td>1.35E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
1. LP® SolidStart® LSL and OSB Rim Board shall be designed for dry-use conditions only. Dry-use applies to products installed in dry, covered and well ventilated interior conditions in which the equivalent average moisture content in lumber will not exceed 15% nor a maximum of 19%. Adjustments for high temperature are beyond the scope of this guide.
2. The specified strengths and stiffnesses are for standard load duration. Bending, Shear and Compression perpendicular-to-grain, shall be adjusted according to code. Modulus of Elasticity shall not be adjusted for load duration.
3. The specified strengths and stiffnesses are for members supporting loads applied parallel to the wide face (edge” or “beam” orientation).
4. The specified Bending, f_b, for LP SolidStart® Rim Board has been adjusted to account for uniform gravity loads for clear spans up to 4’.
5. The Factored Concentrated Vertical Load Resistance is assumed to be achieved through a minimum 4” bearing length (5-stud post).
6. The Factored Lateral Load Resistance is based on the connections specified in the Installation details on page 4.
7. The designer shall verify proper bearing for the header.
8. Joints in the rim are not allowed over openings and must be located at least 12” from any opening.
9. Refer to the “APA Performance Rated Rim Boards - Limited State Design” (Form No. D340 CA) for additional information including uniform load resistance for smaller openings.
10. Use LP® SolidStart® LSL for headers with clear spans longer than 4’ or for loads greater than tabulated above. See the Design Values table below.

**CONNECTION RESISTANCE FOR SIDE-LOADED 2-PLY RIM BOARD HEADERS (PLF)**

<table>
<thead>
<tr>
<th>Material</th>
<th>Thickness</th>
<th>Minimum Nail Size</th>
<th>3 Rows of Nails at 6&quot; oc</th>
<th>4 Rows of Nails at 6&quot; oc</th>
<th>5 Rows of Nails at 6&quot; oc</th>
<th>5 Rows of Nails at 8&quot; oc</th>
</tr>
</thead>
<tbody>
<tr>
<td>LP OSB</td>
<td>1-1/8&quot;</td>
<td>2-1/2&quot;</td>
<td>1280</td>
<td>1717</td>
<td>2134</td>
<td>2551</td>
</tr>
<tr>
<td></td>
<td>1-1/4&quot;</td>
<td>2-1/2&quot;</td>
<td>1280</td>
<td>1717</td>
<td>2134</td>
<td>2551</td>
</tr>
<tr>
<td></td>
<td>≥ 1-1/2&quot;</td>
<td>3&quot;</td>
<td>1982</td>
<td>2109</td>
<td>2036</td>
<td>2183</td>
</tr>
</tbody>
</table>

**NOTES:**
1. This table represents the factored uniform side-load resistance of the connection for a 2-ply header. The total factored uniform load, including top-load and side-load, shall not exceed the factored uniform load resistance of the header as tabulated above.
2. The tabulated side-load resistance is for standard load duration and shall be adjusted according to code.
3. Use 3 rows of nails for 9-1/2” and 11-7/8”; 4 rows for 14” and 16”; 5 rows for 18” and 20”; 6 rows for 22” and 24” deep rim board.
4. Nails may be either common wire or spiral. The factored resistances are based on spiral nails. Clinch the nails where possible.
5. Headers consisting of more than 2 plies, alternate fastening or higher side loads are possible but require proper design of the connection.
FASTENER VALUES FOR LP SOLIDSTART RIM BOARD

The tabulated Lateral Load Resistance values for LP Rim Board (page 3) are based on the connections specified in the Installation details below. These connections allow for the 3-1/2" nails from the sole plate above into the top edge of the rim, provided the deck nailing is at least 6" oc and the 3-1/2" nails are spaced in accordance with the prescriptive requirements of the code. Decreasing the nail spacing will not necessarily increase the lateral load resistance and may cause splitting. To increase the lateral resistance, other connection details may be designed, such as adding framing anchors nailed to the face of the rim and the edge of the wall plate.

The Fastener Design table below provides information on the equivalent specific gravity for nail, screw, lag and bolt design in accordance with CSA O86 Engineering Design in Wood (Limit States Design). The prescriptive capacities for 1/2" x 4" (min) lag screws are also provided for ledger attachment. The Nail Spacing Requirements table at right provides guidance on the minimum nail spacing and edge distances. End, edge and spacing distances for screws, lags and bolts shall be as specified in CSA O86.

Refer to CCMC report 13319-R for complete connection information for LP SolidStart LSL.

NOTE: Material Safety Data Sheets (MSDS) are available online at LPCorp.com or by contacting customer support at 1-888-820-0325.

FASTENER DESIGN

<table>
<thead>
<tr>
<th>Material</th>
<th>Thickness</th>
<th>Equivalent Relative Density</th>
<th>Factorized Lateral Resistance for 1/2&quot; x 4&quot; Lag Screw o2 (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LP OSB</td>
<td>1-1/8&quot;</td>
<td>Edge 0.46, Face 0.50</td>
<td>751</td>
</tr>
<tr>
<td>LP LSL</td>
<td>≥ 1-1/4&quot;</td>
<td>Edge 0.46, Face 0.50</td>
<td>792</td>
</tr>
</tbody>
</table>

INSTALLATION

RIM TO JOIST CONNECTION

Nail rim to I-Joist with one 8d (box or common) or 10d box nail into each flange.

DECK TO RIM AND RIM TO PLATE CONNECTIONS

- Nail floor sheathing to rim board with 8d nails at 6" oc.
- Nail wall plate through floor sheathing into rim per code.
- Toe-nail rim board to wall plate with 8d nails at 6" oc.

See T&G Trim Requirements detail and table.

FOR PRODUCT CATALOG & COMPLETE WARRANTY DETAILS, VISIT LPCORP.COM

FOR MORE INFORMATION ON THE FULL LINE OF LP SOLIDSTART ENGINEERED WOOD PRODUCTS OR THE NEAREST DISTRIBUTOR, VISIT OUR WEB SITE AT LPCORP.COM.