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DIVISION: 06 00 00 – WOOD, PLASTICS, AND COMPOSITES

Section: 06 17 43 – Rim Boards

REPORT HOLDER:

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REPORT SUBJECT:

TJ® Rim Board, Weyerhaeuser Rim Board and TimberStrand® LSL; for use in rim board applications.

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2015, 2010 National Building Code of Canada (NBC)

1.2 TJ® Rim Board, Weyerhaeuser Rim Board and TimberStrand® LSL; when used as a rim board around the perimeter of engineered wood joists in accordance with the conditions and limitations stated in this Report, complies with the following Sections of the NBC:

- Clause 1.2.1.1. (1)(a), Division A, using the following acceptable solutions from Division B:
- Sentence 4.3.1.1. (1) Design Basis for Wood (CAN/CSA-086-14, “Engineering Design in Wood”)
- Part 9 Applications, Section 9.23 Wood-Frame Construction

Additional Requirements:

Further limitations on design values are based upon evaluation in accordance with ASTM D7672 - Standard Specification for Evaluating Structural Capacities of Rim Board Products and Assemblies.

TJ® Rim Board, Weyerhaeuser Rim Board and TimberStrand® LSL; for use in rim board applications, has been evaluated for the following:

- Structural and Material Properties as indicated in Tables 1 – 3 of this report.

1.3 TJ® Rim Board, Weyerhaeuser Rim Board, and TimberStrand® LSL has been evaluated for the following uses:

- TJ® Rim Board, Weyerhaeuser Rim Board, and TimberStrand® LSL; as described in this report are intended for use as a rim board around the perimeter of engineered wood joists in accordance with the conditions and limitations stated in this Report for Part 4 and Part 9 buildings subject to acceptance by the local authority having jurisdiction (AHJ).

2.0 STATEMENT OF COMPLIANCE

TJ® Rim Board, Weyerhaeuser Rim Board and TimberStrand® LSL complies with the Codes listed in Section 1.1, for the properties stated in Section 1.2 and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in Section 6.

3.0 DESCRIPTION

3.1 TJ® Rim Board and Weyerhaeuser Rim Board - are a composite of wood strand elements with the wood strands oriented at varying angles with respect to the length of the member and bonded together using an exterior-type structural adhesive. The wood species, properties, adhesives, manufacturing parameters and finished product tolerances are as specified in the approved quality documentation or the manufacturing standard. TJ® Rim Board and Weyerhaeuser Rim Board are 28 mm (1.125 inches) thick and are available in depths up to 406 mm (16 inches) deep. They are available in lengths up to 19.5m (64 feet).

3.2 TimberStrand® LSL - is a composite of wood strand elements with the wood fibers primarily oriented along the direction parallel to the length of the member. The wood species, properties, adhesives, manufacturing



parameters and finished product tolerances are as specified in the approved quality documentation or the manufacturing standard. Timberstrand® LSL for rim board applications is available in thicknesses of 32 mm (1.25 inches) to 140 mm (5.5 inches) and depths up to 610 mm (24 inches). It is available in lengths up to 19.5m (64 feet).

4.0 PERFORMANCE CHARACTERISTICS

4.1 Table 1 outlines the specified shear, bending, stiffness and compression perpendicular to grain properties of TJ® Rim Board, Weyerhaeuser Rim Board and TimberStrand® LSL.

4.2 Table 2 outlines the factored vertical load transfer, lateral load transfer and deck ledger capacities and axial stiffness of TJ® Rim Board, Weyerhaeuser Rim Board and TimberStrand® LSL.

4.3 Table 3 outlines the equivalent specific gravity for connections for TJ® Rim Board, Weyerhaeuser Rim Board and TimberStrand® LSL.

5.0 INSTALLATION

5.1 General:

TJ® Rim Board, Weyerhaeuser Rim Board and TimberStrand® LSL; for use in rim board applications must be installed in accordance with the manufacturer's published installation instructions, the applicable Code, and this Research Report. A copy of the manufacturer's instructions must be available on the jobsite during installation.

The product shall be installed as a rim board around the perimeter of engineered wood joists to:

- Transfer vertical loads above the rim board to the support element below.
- Provide floor diaphragm attachment.
- Transfer in plane lateral loads from the diaphragm to the shear wall below.
- Provide lateral support for joists, rafters and beams.
- Provide closure at the ends of joists, rafters and beams.
- Provide an attachment surface for exterior ledgers and finish.

6.0 CONDITIONS OF USE

6.1 Installation must comply with this Research Report, the manufacturer's published installation instructions, and the applicable Code. In the event of a conflict, this report governs.

6.2 TJ® Rim Board and Weyerhaeuser Rim Board are produced at the Weyerhaeuser manufacturing plants located in Elkin, North Carolina and Kenora, Ontario. TimberStrand® LSL is produced at the Weyerhaeuser manufacturing plant located in Kenora, Ontario. All material is manufactured under an approved Quality Control system with follow up inspections by an approved inspection agency.

6.3 The product is intended for structural applications for dry service use. All lumber, wood-based panels and proprietary engineered wood products are intended for dry service conditions. "Dry service" is defined as the in-service environment under which the equilibrium moisture content (MC) of lumber is 15% or less over a year and does not exceed 19% at any time. Wood contained within the interior of dry, heated or unheated buildings has generally been found to have a MC between 6% and 14% according to season and location. During construction, all wood-based products should be protected from the weather to ensure that the 19% MC is not exceeded in accordance with Article 9.3.2.5., Moisture Content, of Division B of the NBC.

6.4 Installation, fabrication, identification and connection details must be in accordance with this report, the manufacturer's published installation instructions, and the applicable code.

6.5 The product must be installed in accordance with the manufacturer's installation guidelines noted in this document for those applications falling within the scope of the document. Applications outside the scope of these installation guidelines shall require engineering on a case-by-case basis.

6.6 For structural applications beyond the scope/limitations of the above referenced Weyerhaeuser publication, or when required by the AHJ, the drawings or related documents shall bear the authorized seal of a professional engineer skilled in wood design and licensed



to practice under the appropriate provincial or territorial legislation.

6.7 The engineer must design in accordance with CAN/CSA-O86, and may use as a guide, the “Engineering Guide for Wood Frame Construction,” published by the Canadian Wood Council.

6.8 Member design and application must be performed in accordance with this report, manufacturer’s published literature or manufacturer’s design software (ForteWEB™ or Javelin®).

6.9 TimberStrand® LSL is considered equivalent to sawn lumber for use as fire blocking material.

6.10 TJ® Rim Board, Weyerhaeuser Rim Board and TimberStrand® LSL is manufactured under a quality control program with inspections by Intertek.

7.0 SUPPORTING EVIDENCE

7.1 Reports of testing demonstrating compliance with ASTM D5456, as referenced in Section 16.3 of CAN/CSA-O86.

7.2 Reports of testing in accordance with ASTM D7672.

7.3 Manufacturer’s specifications / installation instructions.

7.4 “Trus Joist Rim Board Guide for Canada, TJ-8500, dated April 2022.”

7.5 Documentation of an Intertek approved quality control system for the manufacturing of products recognized in this report.

8.0 IDENTIFICATION

the TJ® Rim Board, Weyerhaeuser Rim Board and TimberStrand® LSL; for use in rim board applications described in this Research Report are identified by marking bearing the report holder’s name (Weyerhaeuser), the Intertek CCRR Mark, and Code Compliance Research Report number (CCRR-0222C).

9.0 OTHER CODES

This section is not applicable.

10.0 CODE COMPLIANCE RESEARCH REPORT USE

10.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

10.3 Reference to the <https://bpdirectory.intertek.com> is recommended to ascertain the current version and status of this report.

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TABLE 1: SPECIFIED STRENGTHS⁽¹⁾⁽²⁾

| Grade | Thickness, mm (in) | Modulus of Elasticity MOE, MPa (psi) | Bending, f _b MPa (psi) | Shear, f _v MPa (psi) | Compression Perp. To Grain, f _{cp} ⁽⁴⁾ MPa (psi) |
|------------------------|-----------------------|---|--------------------------------------|------------------------------------|--|
| TimberStrand® LSL | | | | | |
| 1.30E | 32 (1.25) – 140 (5.5) | 8965 (1300000) | 21.65 (3140) ⁽³⁾ | 5.39 (780) | 8.92 (1295) |
| 1.35E | | 9310 (1350000) | 23.41 (3395) ⁽³⁾ | 5.66 (820) | 9.39 (1360) |
| 1.40E | | 9655 (1400000) | 25.18 (3650) ⁽³⁾ | 5.93 (860) | 9.87 (1430) |
| 1.45E | | 9995 (1450000) | 26.94 (3905) ⁽³⁾ | 6.19 (900) | 10.34 (1500) |
| 1.50E | | 10345 (1500000) | 28.70 (4165) ⁽³⁾ | 6.46 (935) | 10.81 (1570) |
| 1.55E | | 10685 (1550000) | 29.60 (4295) ⁽³⁾ | 6.73 (975) | 11.28 (1635) |
| 1.60E | | 11030 (1600000) | 30.90 (4480) ⁽³⁾ | 7.00 (1015) | 11.75 (1705) |
| 1.65E | | 11375 (1650000) | 32.03 (4645) ⁽³⁾ | 7.27 (1055) | 12.23 (1775) |
| 1.70E | | 11720 (1700000) | 33.15 (4810) ⁽³⁾ | 7.54 (1095) | 12.70 (1840) |
| 1.75E | | 12065 (1750000) | 34.66 (5025) ⁽³⁾ | 7.81 (1135) | 13.17 (1910) |
| 1.80E | | 12410 (1800000) | 36.18 (5245) ⁽³⁾ | 8.07 (1170) ⁽⁶⁾ | 13.64 (1980) ⁽⁷⁾ |
| 1.85E | | 12755 (1850000) | 37.69 (5465) ⁽³⁾ | 8.07 (1170) ⁽⁶⁾ | 13.64 (1980) ⁽⁷⁾ |
| 1.90E | | 13100 (1900000) | 39.20 (5685) ⁽³⁾ | 8.07 (1170) ⁽⁶⁾ | 13.64 (1980) ⁽⁷⁾ |
| 1.95E | | 13445 (1950000) | 40.55 (5880) ⁽³⁾ | 8.07 (1170) ⁽⁶⁾ | 13.64 (1980) ⁽⁷⁾ |
| 2.00E | | 13790 (2000000) | 41.90 (6075) ⁽³⁾ | 8.07 (1170) ⁽⁶⁾ | 13.64 (1980) ⁽⁷⁾ |
| 2.05E | | 14135 (2050000) | 43.25 (6275) ⁽³⁾ | 8.07 (1170) ⁽⁶⁾ | 13.64 (1980) ⁽⁷⁾ |
| 2.10E | | 14480 (2100000) | 44.60 (6470) ⁽³⁾ | 8.07 (1170) ⁽⁶⁾ | 13.64 (1980) ⁽⁷⁾ |
| TJ® Rim Board | | | | | |
| 0.6E OSB | 29 (1.125) | 4135 (600000) | 7.80 (1130) ⁽⁵⁾ | 4.70 (685) | 8.92 (1295) |
| 1.0E TimberStrand® LSL | | 6895 (1000000) | 14.45 (2095) ⁽⁵⁾ | 4.70 (685) | 8.92 (1295) |
| Weyerhaeuser Rim Board | | | | | |
| 0.6E | 29 (1.125) | 4135 (600000) | 7.80 (1130) ⁽⁵⁾ | 4.70 (685) | 8.92 (1295) |

(1) Values are for dry service use.

(2) Values must be adjusted as applicable in accordance with CSA O86.

(3) For depths other than 305 mm (12 inches), multiply values by $(305 \text{ mm}/d \text{ mm})^{0.092}$ or $(12 \text{ in}/d \text{ inches})^{0.092}$. For depths less than 89 mm (3.5 inches), use the 89 mm (3.5 inches) factor.

(4) Values may not be increased for duration of load.

(5) Values are applicable for depths up to 406 mm (16 inches) and spans up to 2438 mm (8 feet).

(6) Specified strength conservatively capped at 8.07 MPa

(7) Specified strength conservatively capped at 13.64 MPa





TABLE 2: FACTORED VERTICAL AND LATERAL LOAD CAPACITIES – JOIST ORIENTATION

| Rim Board Product | | TimberStrand® LSL | | | | | | | | | TJ® Rim Board, Weyerhaeuser Rim Board ⁽³⁾ |
|--|--------------|------------------------------|------------------------------|-------------------------------|------------------------------|------------------------------|-------------------------------|------------------------------|------------------------------|-------------------------------|--|
| Rim Grade | | ≥1.3E | | | 1.5E | | | ≥1.55E | | | 0.6E/1.0E |
| Thickness, mm (in) | | ≥32 (1.25) | 38 (1.5) | ≥45 (1.75) | ≥32 (1.25) | 38 (1.5) | ≥45 (1.75) | ≥32 (1.25) | 38 (1.5) | ≥45 (1.75) | 29 (1.125) |
| Factored Uniform Vertical Load, kN/m (lbs/ft) ⁽¹⁾ | | | | | | | | | | | |
| Depth, mm (in) | ≤241 (9.5) | 114.27 ⁽²⁾ (7830) | 137.13 ⁽²⁾ (9395) | 159.98 ⁽²⁾ (10960) | 114.27 ⁽²⁾ (7830) | 137.13 ⁽²⁾ (9395) | 159.98 ⁽²⁾ (10960) | 114.27 ⁽²⁾ (7830) | 137.13 ⁽²⁾ (9395) | 159.98 ⁽²⁾ (10960) | 102.84 ⁽²⁾ (7045) |
| | 302 (11.875) | | | | | | | | | | |
| | 356 (14) | | | | | | | | | | |
| | 406 (16) | 105.81 (7250) | | | | | | | | | |
| | 457 (18) | 91.84 (6295) | 135.01 (9250) | | 104.96 (7190) | | | 108.35 (7425) | | | |
| | 508 (20) | 78.30 (5365) | 121.47 (8325) | | 89.09 (6105) | | | 91.84 (6295) | | | |
| | 559 (22) | 66.87 (4580) | 107.29 (7350) | 150.88 (10340) | 75.76 (5190) | 122.74 (8410) | | 78.09 (5350) | 126.55 (8670) | | |
| | 610 (24) | 57.35 (3930) | 93.96 (6440) | 136.91 (9380) | 64.97 (4450) | 107.08 (7335) | 157.23 (10775) | 66.87 (4580) | 110.25 (7555) | - | |
| Lateral Load ⁽⁴⁾ , kN/m (lbs/ft) | | | | | | | | | | | |
| Depth ⁽³⁾ mm (in) | ≤24 (610) | See Footnote 5 | | | | | | | | | 4.19 ⁽⁶⁾ (285) |
| Concentrated Vertical Load ⁽⁷⁾ , kN (lbs) | | | | | | | | | | | |
| Depth ⁽³⁾ mm (in) | ≤24 (610) | 24.25 (5450) | 29.15 (6555) | 29.15 (6555) | 29.15 (6555) | 29.15 (6555) | 29.15 (6555) | 29.15 (6555) | 29.15 (6555) | 48.18 (10830) | 26.88 (6020) |



TABLE 2: FACTORED VERTICAL AND LATERAL LOAD CAPACITIES – JOIST ORIENTATION (CONT.)

| Rim Board Product | | TimberStrand® LSL | | | | | | | | TJ® Rim Board, Weyerhaeuser Rim Board | | |
|--------------------------------|---|-------------------|------------|------------|------------------|----------|------------|------------------|-------------|--|------------------|--|
| Rim Grade | | ≥1.3E | | | 1.5E | | | ≥1.55E | | | 0.6E/1.0E | |
| Thickness, mm (in) | | ≥32 (1.25) | 38 (1.5) | ≥45 (1.75) | ≥32 (1.25) | 38 (1.5) | ≥45 (1.75) | ≥32 (1.25) | 38 (1.5) | ≥45 (1.75) | 29 (1.125) | |
| Deck Ledger Capacity, kN (lbs) | | | | | | | | | | | | |
| Fastener Type, mm (in) | 12.7 (0.5) Lag | 3.93 (885) | 4.35 (980) | | | | | | 4.68 (1050) | 3.10 (695) | | |
| | 12.7 (0.5) Bolt | 4.68 (1050) | | | | | | | | | 4.48 (1010) | |
| | 12.7 (0.5) Bolt w/ air space ⁽⁸⁾ | 3.97 (890) | | | | | | | | | | |
| Axial Stiffness ⁽⁹⁾ | | | | | | | | | | | | |
| Axial Stiffness | | 1013.54 (147000) | | | 1144.54 (166000) | | | 1172.12 (170000) | | | 1516.86 (220000) | |

- (1) Tabulated uniform vertical load values shall not be increased for duration of load.
- (2) The capacity is limited by a maximum of 3.60 MPa (522 per square inch) per ASTM D7672.
- (3) TJ® Rim Board and Weyerhaeuser Rim Board are limited to a depth of 406 mm (16 inch) or less.
- (4) Additional hardware, blocking, overlapped sheathing, or other attachment details may be designed to transfer loads into and out of the product's wide face.
- (5) These rim board products may be designed as permitted in the applicable code for wood structural panel diaphragms with framing consisting of Douglas-fir larch or southern pine lumber. Products with a thickness greater than or equal 32 mm (1.25 inch) and less than 64 mm (2.5 inch) may be designed as 38 mm (1.5 inch) framing. Products with a thickness greater than or equal to 64 mm (2.5 inch) may be designed as 64mm (2.5 inch) framing.
- (6) Value is applicable to the following nailing schedule:
 - Sheathing to rim board: 8d (3.33 mm x 64mm) or (0.131 in x 2.5 inch) or equivalent at 152mm (6 inch) on center.
 - Rim board to sill plate: 10d pneumatic nails (3.33 mm x 76 mm) or (0.131 inch x 3.0 inch) or equivalent toe-nailed at 152mm (6 inch) on center.
 - I-joist to sill plate: 8d (2.87 mm x 64mm) or (0.113inch x 2.5 inch) or equivalent, one slanted nail into each side of the bottom flange.
 - Rim board to I-joist: 10d pneumatic nails (3.33mm x 76mm) or (0.131 inch x 3.0 inch) or equivalent one each into the top and bottom flange.
- (7) The factored concentrated vertical load capacities require a bearing width of 114mm (4.5 inch). These factored allowable loads shall not be increased for duration of load.
- (8) Maximum 13mm (0.5 inch) shimmed air space.
- (9) Product stiffness in the cross-grain orientation and measured in accordance with ASTM D7672 for vertical rim applications.



TABLE 3: EQUIVALENT SPECIFIC GRAVITY FOR CONNECTIONS

| Product | Equivalent Specific Gravity | | | | | | | |
|---------------------------------------|-----------------------------|-------------------|-------------------|-------------------|-----------------------------------|-----------------------------|-----------------------------------|-----------------------------|
| | Nails and Screws | | | | Bolts ⁽¹⁾ | | Lag Screws ⁽¹⁾ | |
| | Withdrawal | | Dowel Bearing | | Dowel Bearing (Installed in Face) | | Dowel Bearing (Installed in Face) | |
| | Installed in Edge | Installed in Face | Installed in Edge | Installed in Face | Load Parallel to Grain | Load Perpendicular to Grain | Load Parallel to Grain | Load Perpendicular to Grain |
| TimberStrand® LSL | 0.42 | 0.50 | 0.50 | 0.50 | 0.50 | 0.58 | 0.50 | 0.55 |
| TJ® Rim Board, Weyerhaeuser Rim Board | - | 0.42 | - | 0.50 | 0.32 | 0.50 | - | - |

(1) Refer to Table 2 for the capacity of deck ledger connections.