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

Section: 06 17 43 – Rim Boards

REPORT HOLDER:

Weyerhaeuser

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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 89mm (3.5 inches) factor.

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

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



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.