Technical Evaluation Report™ - Canada

A Duly Authenticated Report from an Approved Agency

Report No: 1812-01

Issue Date: February 15, 2019

Revision Date: February 27, 2026

Subject to Renewal: April 1, 2027

ThermoPLY® Blue and ThermoPLY® Blue AMG Structural Sheathing - Canada

Trade Secret Report Holder:

Amrize Building Envelope, LLC

26 Century Blvd Ste 205
Nashville, TN 37214-4601
Phone: 800-345-8881
Website: www.oxengineeredproducts.com

CSI Designations:

DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES

Section: 06 12 00 - Structural Panels

Section: 06 12 19 - Shear Wall Panels

Section: 06 16 00 - Sheathing

DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION

Section: 07 25 00 - Water-Resistive Barriers/Weather Barriers

Section: 07 27 00 - Air Barriers

1 Innovative Products Evaluated[1]

1.1 ThermoPLY Blue Structural Sheathing and ThermoPLY Blue AMG Structural Sheathing

1.1.1 Throughout this report, wherever ThermoPLY Blue Structural Sheathing(s) is cited, the provisions are also applicable to ThermoPLY Blue AMG Structural Sheathing.

2 Product Description and Materials

2.1 The innovative products evaluated in this report are shown in **Figure 1**.

Figure 1. ThermoPLY Blue Structural Sheathing and Logo

2.2 ThermoPLY Blue Structural Sheathings are composed of pressure-laminated plies consisting of high strength cellulosic fibers placed in proprietary orientation(s) to provide a given set of strength properties. These fibers are specially treated to be water resistant and are bonded with a proprietary water-resistive adhesive. A protective polymer layer is applied on both sides of the panel, and additionally, foil facings may be applied on one or both faces.

2.3 ThermoPLY Blue Structural Sheathing panels have a nominal thickness of 3.4 mm (0.135") and nominal weight of 2.46 kg per square meter (0.504 lb per square foot).

2.4 *Material Availability*

2.4.1 *Standard Widths:*

2.4.1.1 1,219 mm (48")

2.4.1.2 1,238 mm (48 3/4")

2.4.2 *Standard Lengths:*

2.4.2.1 2,438 mm (96")

2.4.2.2 2,743 mm (108")

2.4.2.3 3,048 mm (120")

2.5 As needed, review material properties for design in **Section 4** and the regulatory evaluation in **Section 5**.

3 Applicable Codes and Standards[2]

3.1 *Codes*

3.1.1 *NBC — 15, 20, 25: National Building Code of Canada*

3.1.2 *NECB — 17, 20, 25: National Energy Code of Canada for Buildings*

3.1.3 *O Reg. 163/24: Ontario Building Code (OBC)[3]*

3.2 *Standards and Referenced Documents*

3.2.1 *ASTM E2126: Standard Test Methods for Cyclic (Reversed) Load Test for Shear Resistance of Vertical Elements of the Lateral Force Resisting Systems for Buildings*

3.2.2 *ASTM E2178: Standard Test Method for Air Permeance of Building Materials*

3.2.3 *ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference*

3.2.4 *ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference*

3.2.5 *ASTM E564: Standard Practice for Static Load Test for Shear Resistance of Framed Walls for Buildings*

3.2.6 *ASTM E72: Standard Test Methods of Conducting Strength Tests of Panels for Building Construction*

3.2.7 *CAN/ULC-S102: Standard Method of Test for Surface Burning Characteristics of building Materials and Assemblies*

3.2.8 *CSA O86: Engineering Design in Wood*

3.2.9 *CWC: Engineering Guide for Wood Frame Construction*

4 Tabulated Properties Generated from Nationally Recognized Standards

4.1 *General*

4.1.1 ThermoPLY Blue Structural Sheathing panels are used in the following applications as:

4.1.1.1 Wall sheathing in buildings constructed in accordance with the NBC Division B Section 9.23 for wood frame construction.

4.1.1.2 Structural wall sheathing to provide lateral load resistance (wind and seismic) for braced wall panels used in light-frame wood construction.

4.1.1.3 Structural wall sheathing to provide resistance to transverse loads for wall assemblies used in light-frame wood construction.

4.1.1.4 Structural wall sheathing to provide resistance to uplift loads for wall assemblies used in light-frame wood construction.

4.1.1.5 An approved alternative WRB when installed in accordance with **Section 4.3** and **Section 6**.

4.1.1.6 An approved air barrier material when installed in accordance with **Section 4.4**, **Section 6**, and the air barrier assembly requirements of NBC 2020 and OBC 2024 Article 9.36.2.10.

4.2 *Structural Applications*

4.2.1 *General Structural Provisions:*

4.2.1.1 Except as otherwise described in this report, ThermoPLY Blue Structural Sheathings shall be installed in accordance with the applicable building codes listed in **Section 3** using the provisions set forth herein for the design and installation of Wood Structural Panels (WSP).

4.2.1.2 ThermoPLY Blue Structural Sheathings are permitted to be designed in accordance with NBC 2020 and OBC 2024 Division B Subsection 9.23.13 for the design of lateral-load-resisting systems. The product is evaluated for use as a Braced Wall Panel material within a Braced Wall Band, as defined in Article 9.23.13.4 through Article 9.23.13.7.

4.2.1.3 Anchorage for in-plane shear shall be provided to transfer the induced shear force into and out of each shear wall in accordance with NBC Division B Subsection 9.23.6.

4.2.1.4 The maximum aspect ratio for ThermoPLY Blue Structural Sheathings shall be 4:1.

4.2.1.4.1 The minimum full-height panel width shall be 610 mm (24").

4.2.1.5 Installation is permitted for single-top-plate or double-top-plate applications.

4.2.2 *Performance-Based Wood-Framed Construction:*

4.2.2.1 ThermoPLY Blue Structural Sheathing panels used in wall assemblies designed as shear walls are permitted to be designed in accordance with the methodology used in CAN/CSA-O86 for WSP using the capacities shown in **Table 1**, **Table 2**, and **Table 3**.

4.2.2.2 ThermoPLY Blue Structural Sheathing shear walls are permitted to resist horizontal wind load forces using the specified shear strengths set forth in **Table 1**.

4.2.2.3 ThermoPLY Blue Structural Sheathing shear walls that require seismic design in accordance with NBC Division B Subsection 4.1.8 shall use the seismic specified shear strengths set forth in **Table 2**.

4.2.2.4 The ductility response modification factor, R_d, and overstrength-related force modification factor, R_o, indicated in **Table 2**, shall be used to determine the base shear, element design forces, and design story drift in accordance with NBC Division B Subsection 4.1.8.

4.2.2.5 ThermoPLY Blue Structural Sheathing panels are permitted to resist uplift load forces using the factored uplift resistances set forth in **Table 3**.

4.2.2.6 ThermoPLY Blue Structural Sheathing panels are permitted to resist transverse wind loads using the specified transverse resistances set forth in **Table 4**.

Table 1. Specified Shear Resistances in Canada for ThermoPLY Blue Structural Sheathings - Wind

Product	Joint Condition[3]	Maximum Stud Spacing mm (in)	Gypsum Wallboard (GWB)[2]	GWB Fastener Spacing[4] (edge/field) mm (in)[5]	Specified Shear Strength kN/m (plf)
ThermoPLY Blue Structural Sheathing[1]	Lapped or Butted	406 (16) o.c.	12.7 mm (1/2") GWB	102/406 (4/16)	11.2 (765)
				203/203 (8/8)	10.0 (685)
				203/406 (8/16)	9.6 (660)
				406/406 (16/16)	8.9 (605)
		610 (24) o.c.		203/406 (8/16)	9.2 (635)
				406/406 (16/16)	8.1 (635)
	Lapped	406 (16) o.c.	No GWB	-	8.2 (560)
		610 (24) o.c.			7.5 (515)
	Butted	406 (16) o.c.			7.7 (530)
		610 (24) o.c.			7.1 (490)

SI: 25.4 mm = 1 in, 1 kN/m = 737.6 lb/ft

1. ThermoPLY Blue Structural Sheathing attached with staples of minimum 16-gauge and a crown of 24 mm (15/16"). Staples shall penetrate a minimum of 25.4 mm (1") into the stud. Fasteners are to be installed with the crown parallel to the framing and spaced a maximum of 76 mm (3") o.c. at the panel edges and 76 mm (3") o.c. in the field. Fastener edge distance shall be a minimum 9 mm (0.35"). Fastener head shall be in contact with the ThermoPLY surface. Roofing nails (minimum 3 mm [0.120"] x 32 mm [1 1/4"] with a 9 mm [0.35"] head) are a permitted alternative fastener.
2. Gypsum attached with minimum #6 type W or S screws 32 mm (1 1/4") long with a minimum edge distance of 9.5 mm (3/8").
3. Where lapped joints are used, the panels shall be overlapped nominally 19 mm (3/4").
4. Straight-line interpolations between fastening patterns is acceptable.
5. ThermoPLY Blue Structural Sheathing installed with the fastener schedules listed in this table provides shear resistance equivalent to or exceeding that of prescriptive wood-based braced wall panels defined in OBC 2024 Table 9.23.13.6.

Table 2. Specified Shear Resistances for Limit States Design and Seismic Design Factors for ThermoPLY Blue Structural Sheathings[1,3,7]

Seismic Force-Resisting System (SFRS)	Joint Condition[4,9]	GWB[10] (edge/field) mm	Maximum Stud Spacing mm (in)[11]	Specified Shear Strength kN/m (plf)	Ductility Factor R_d[5,6]	Over-strength Force Modi-fication Factor R_o[6]	Structural System Limitations & Building Height Limit[8] m (ft)				
							$I_E F_a S_a$ (0.2)				$I_E F_a S_a$ (1.0)
							SC1	SC2	SC3	SC4	SC4
							< 0.2	≥ 0.2 to < 0.35	≥ 0.35 to ≤ 0.75	> 0.75	> 0.3
Light-Frame (Wood) Walls Sheathed with ThermoPLY Blue Structural Sheathing	Lapped or Butted	12.7 mm (1/2") GWB[2]	406 (16) o.c.	10.0 (685)	2.0	1.7	NL	NL	20 (65.6)	20 (65.6)	20 (65.6)
		No GWB		7.7 (530)	3.0	1.7	NL	NL	30 (98.4)	20 (65.6)	20 (65.6)

SI: 25.4 mm = 1 in, 1 kN/m = 737.6 lb/ft

1. ThermoPLY Blue Structural Sheathing attached with staples of minimum 16-gauge and a crown of 24 mm (15/16"). Staples shall penetrate a minimum of 25.4 mm (1") into the stud. Fasteners are to be installed with the crown parallel to the framing and spaced a maximum of 76 mm (3") o.c. at the panel edges and 76 mm (3") o.c. in the field. Fastener edge distance shall be a minimum 9.5 mm (3/8"). Fastener head shall be in contact with the ThermoPLY surface. Roofing nails (minimum 3 mm [0.120"] x 32 mm [1 1/4"] with a 9.5 mm [3/8"] head) are a permitted alternative fastener.
2. Gypsum attached with minimum #6 type W or S screws 32 mm (1 1/4") long spaced 203 mm (8") o.c. at the panel edges and 203 mm (8") o.c. in the field with a minimum edge distance of 9 mm (0.35").
3. All seismic design parameters follow the equivalency as defined in **Section 5** of this report.
4. Where lapped joints are used, the panels shall be overlapped nominally 19 mm (3/4").
5. Response modification coefficient, R_d, for use throughout NBC.
6. For combinations of different types of SFRS acting in the same direction in the same story, R_dR_o shall be taken as the lowest value of R_dR_o corresponding to these systems. See NBC Division B Article 4.1.8.9.
7. Consider the additional system restrictions in Article 4.1.8.10 of NBC Division B.
8. NL = Not Limited. Heights are maximum height limits above grade, as defined in NBC Division B Table 4.1.8.9.
9. ThermoPLY Blue Structural Sheathing may be installed with either lapped joints or butted joints.
10. NBC Table 9.23.13.6 requires 15.9 mm (5/8") thick gypsum with framing 610 mm (24") o.c.
11. ThermoPLY Blue Structural Sheathing installed with the fastener schedules listed in this table provides shear resistance equivalent to or exceeding that of prescriptive wood-based braced wall panels defined in OBC 2024 Table 9.23.13.6.

Table 3. Uplift Performance of ThermoPLY Blue Structural Sheathing – Single Top Plate

Type of ThermoPLY Structural Sheathing	Specified Uplift Resistance[1] kN/m (plf)	Maximum Stud Spacing mm (in)	Fastener Schedule
ThermoPLY Blue: Single Top Plate	5.6 (385)	406 (16) o.c.	Galvanized 16-gauge staples of minimum 24 mm (15/16") crown, 32 mm (1 1/4") legs, or 3 mm (0.120") x 32 mm (1 1/4") roofing nails, 76 mm (3") o.c. perimeter and field. Staple crowns shall be installed parallel to framing.
ThermoPLY Blue: Double Top Plate	11.0 (755)		

SI: 25.4 mm = 1 in, 1 kN/m = 737.6 lb/ft

1. The resistances shown are for the purpose of providing information on the hold-down capacity of the sheathing to the top plate connection independent of lateral loading. Where combined shear and uplift loading is needed, consult a professional engineer.

Table 4. Transverse Load Performance of ThermoPLY Blue Structural Sheathings

Structural Sheathing Product	Maximum Stud Spacing mm (in)	Hourly 1-in-50 Wind Pressure[2] kPa
ThermoPLY Blue Structural Sheathing (3.4 mm)[1,3]	406 (16) o.c.	8.2
	610 (24) o.c.	6.5

SI: 25.4 mm = 1 in, 1 kN/m^2 = 20.9 psf, 1 MPa = 145 psi

1. Fastener Schedule: Galvanized 16-gauge staples of minimum 24 mm ($^{15}/_{16}$") crown, 32 mm ($1^1/_4$") legs, or 3 mm (0.120") x 32 mm ($1^1/_4$") roofing nails, 76 mm (3") o.c. perimeter and field. Staple crowns shall be installed parallel to framing.
2. Hourly Wind Pressure (1-in-50) for selected locations can be located in NBC Division B Appendix C Table C-2.
3. Resistances assume minimum 12.7 mm ($^1/_2$") gypsum wallboard installed on the interior side of the wall. Where gypsum wallboard in not installed on the interior side of the wall, a forty percent (40%) reduction in wind pressure resistance shall be applied.

4.3 *Water-Resistive Barrier (WRB)*

4.3.1 ThermoPLY Blue Structural Sheathings may be used as a WRB as prescribed in with NBC Division B Sentence A-5.9.4.1.(1), when installed on exterior walls as described in this section.

4.3.2 ThermoPLY Blue Structural Sheathings shall be installed with board joints placed directly over exterior framing spaced a maximum of 610 mm (24") o.c. The fasteners used to attach the board shall be installed in accordance with **Section 6**.

4.3.3 All seams and joints between boards shall be butt jointed and sealed with an approved construction tape or overlapped in accordance with **Section 6**. Use approved construction tape, such as 73 mm ($2^7/_8$") OX SeamTape®.

4.3.4 A separate WRB system may also be provided. If a separate WRB system is used, overlapping or taping of the sheathing joints is not required.

4.3.5 Flashing must be installed at all sheathing penetrations and shall comply with all applicable code sections. Approved flashing tapes include ArcticFLASH® Synthetic Flashing, HomeGuard® Flexible Butyl Flashing, and HomeGuard® RA-plus® Flashing.

4.3.6 Different ThermoPLY Structural Sheathing grades may be used adjacent to one another on the same wall line. In this application, the WRB, air barrier, and transverse load resistance is maintained, provided all seams and joints between boards are overlapped or sealed by the approved construction tapes listed in **Section 4.3.3**.

4.4 *Air Barrier*

4.4.1 ThermoPLY Blue Structural Sheathings may be used as a component in air barrier assemblies as prescribed in NBC Division B Article 9.36.2.10, Subsection 9.25.3, and Section 5.4.

4.4.1.1 When evaluated in accordance with ASTM E2178, ThermoPLY Blue Structural Sheathings have an air permeance of <0.05 L/(s•m^2) at a pressure differential of 75 Pa.

4.5 *Fire Safety Performance*

4.5.1 ThermoPLY Blue Structural Sheathings have the flame-spread ratings as shown in **Table 5** when tested in accordance with CAN/ULC S102 per NBC Division B Subsection 3.1.12 and Article 9.10.3.2.

Table 5. Surface Burning Characteristics of ThermoPLY Blue Structural Sheathings

Product	Flame Spread	Smoke Developed
ThermoPLY Blue Structural Sheathing[1]	180	110

1. Tested in accordance with CAN/ULC S102.

4.6 *Non-Structural Applications*

4.6.1 Where other means of wall bracing are provided or are not required, any grade of ThermoPLY Structural Sheathing may be used to provide other wall functions when installed in accordance with this section.

4.6.1.1 The sheathing panels are applied to wall framing with minimum 3 mm (0.120") x 32 mm ($1^1/_4$") galvanized roofing nails or No.16-gauge galvanized staples having a 24 mm ($^{15}/_{16}$") crown and 32 mm ($1^1/_4$") leg lengths.

4.6.1.2 Fastener spacing shall be a maximum of 152 mm (6") at the edges and 305 mm (12") on intermediate members.

4.6.1.3 Stud spacing shall be a maximum of 610 mm (24") o.c.

4.6.1.4 Minimum fastener penetration into the framing members is 25.4 mm (1").

4.6.1.5 Fasten all staples parallel to the framing member with an edge spacing of 9 mm (0.35") minimum.

4.6.1.6 All panels are vertically or horizontally installed with all joints backed by studs, plates, or blocks when water or air barrier functionality is desired.

4.6.2 Incidental tears or penetrations of ThermoPLY Blue Structural Sheathings must be repaired with an approved construction tape. See **Section 4.3.3**.

4.6.3 All joints must be installed in one of the following methods:

4.6.3.1 Joints overlap nominally 19 mm ($^3/_4$").

4.6.3.2 Butted joints are sealed with approved construction tape. See **Section 4.3.3**.

4.7 Alternative techniques shall be permitted in accordance with accepted engineering practice and experience. These provisions for the use of alternative materials, designs, and methods of construction are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed herein. This includes, but is not limited to, the following areas of engineering: mechanics of materials, structures, building science, and fire science.

5 Regulatory Evaluation and Accepted Engineering Practice

5.1 ThermoPLY Blue Structural Sheathings comply with the following adopted codes and/or accepted engineering practice for the following reasons:

5.1.1 ThermoPLY Blue Structural Sheathings have been evaluated to determine:

5.1.1.1 **Table 2** provides Seismic Design Coefficients (SDC) that conform to the requirements in NBC Division B Subsection 4.1.8 for design of wall assemblies in buildings that require seismic design in accordance with NBC.

5.1.1.2 The basis for equivalency testing is outlined in Sentence 4.1.8.9.(5) of NBC: provide Seismic Design Coefficients (SDC) that conform to the requirements in NBC Division B Subsection 4.1.8 for design of wall assemblies in buildings that require seismic design in accordance with NBC.

5.1.1.3 The basis for equivalency testing is outlined in Sentence 4.1.8.9.(5) of NBC:

> If it can be demonstrated through testing, research and analysis that the seismic performance of a structural system is at least equivalent to one of the types of SFRS mentioned in Table 4.1.8.9., then such structural system will qualify for values of Rd and Ro corresponding to the equivalent type in that Table. (See Note A-4.1.8.9.(5).)

5.1.1.4 Structural performance under transverse loads for use to resist factored external wind loads in accordance with NBC Division B Subsection 4.1.7.

5.1.1.5 Structural performance under uplift and gravity loads for use with single top plates in accordance with NBC Division B Article 9.23.11.3.

5.1.1.6 Performance for use as a Water-Resistive Barrier (WRB) in accordance with NBC Division B Note A-5.6.2.1.

5.1.1.7 Performance for use as an air barrier material in accordance with NBC Division B Article 9.36.2.10.

5.1.1.8 Performance of surface burning characteristics in accordance with NBC Division B Subsection 3.1.12 and Article 9.10.3.2.

5.2 Any building code, regulation and/or accepted engineering evaluations (i.e., research reports, duly authenticated reports, etc.) that are conducted for this report were performed by DrJ, which is an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDP or approved sources. DrJ is qualified[4] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,[5] respectively.

5.3 Testing and related engineering evaluations are defined as intellectual property and/or trade secrets.[6]

5.4 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise that is also its areas of professional engineering competence.[7]

6 Installation

6.1 Installation shall comply with the approved construction documents, the manufacturer installation instructions, this report, and the applicable building code.

6.2 In the event of a conflict between the manufacturer installation instructions and this report, contact the manufacturer for counsel on the proper installation method.

6.3 *Installation Procedure*

6.3.1 *General for Structural and WRB Applications:*

6.3.1.1 ThermoPLY Blue Structural Sheathings shall be installed in accordance with the manufacturer published installation instructions and this report. Basic instructions are printed on every ThermoPLY panel as well.

6.3.1.2 Where the ThermoPLY Blue Structural Sheathing extends beyond the bottom of a wall and overlaps the band joist below, fasten the bottom edge of the ThermoPLY Blue Structural Sheathing to the wall bottom plate where it meets the band joist. Due to possible shrinkage of the band joist, do not fasten the sheathing to the band joist, or fasten tightly with one fastener every 305 mm (12") to smooth out, if necessary.

6.3.1.3 Where hold-down straps are used, install ThermoPLY Blue Structural Sheathing first, then install the strap over the face of the structural sheathing and attach per the manufacturer installation instructions.

6.3.2 *Orientation and Backing:*

6.3.2.1 ThermoPLY Blue Structural Sheathings may be installed in either the vertical or the horizontal orientation.

6.3.2.2 To be recognized for the structural values listed in this report, or as a water or air barrier, all joints must be backed by studs, plates, or blocks, and fastened.

6.4 *Fastener Type*

6.4.1 ThermoPLY Blue Structural Sheathings shall have:

6.4.1.1 Minimum 3 mm (0.120") x 32 mm ($1^1/_4$") galvanized roofing nail.

6.4.1.2 Minimum 16-gauge staples with a 24 mm ($^{15}/_{16}$") crown and 32 mm ($1^1/_4$") leg length shall be installed per the staple manufacturer instructions.

6.4.1.3 Fasteners (spaced as prescribed in **Table 6**) shall be driven so that the head of the fastener is in contact with the surface of the ThermoPLY Structural Sheathing. Do not overdrive fasteners.

Table 6. Fastener Spacing of ThermoPLY Blue Structural Sheathings

ThermoPLY Blue Structural Sheathing Application	Maximum Panel Edge Fastener Spacing mm (in)	Maximum Panel Intermediate Fastener Spacing mm (in)
Lateral Shear	76 (3)	76 (3)
Transverse loads		
Uplift loads		
Water-Resistive Barrier	152 (6)	305 (12)
Air Barrier		

6.4.2 *Gypsum Wallboard:*

6.4.2.1 Where required, gypsum wallboard shall be a minimum 12.7 mm (1/2") thickness and shall be attached with #6 x 32 mm (1 1/4") type W or S screws, diameter 3.3 mm (0.13").

6.5 *Fastener Edge Distance*

6.5.1 For NBC Division B Part 9 applications, fastener edge distance is a minimum of 9.5 mm (3/8") for both ThermoPLY Structural Sheathing and gypsum in accordance with NBC Division B, Article 9.29.5.8 and Article 9.29.5.9.

6.6 *Treatment of Joints*

6.6.1 ThermoPLY Blue Structural Sheathing joints may be either butted or overlapped.

6.6.1.1 Lapped joints shall be overlapped by 19 mm (3/4") nominally and fastened with a single row of fasteners. Always run staples parallel with framing.

6.6.1.2 Butt joints shall be placed over framing members and fastened with a single row of fasteners at each panel edge.

6.7 *Window Jamb Adjustments*

6.7.1 If windows are made to accommodate traditional 12.7 mm (1/2") sheathing materials, order windows with adjustable nailing fins from the supplier. Door brick moldings may be planed or routed 9 mm (0.35") in order to accommodate the different sheathing thickness, either at the jobsite or by the millwork supplier.

6.7.2 ThermoPLY Blue Structural Sheathings must be installed with appropriate flashing and counter flashing, in conformance to accepted building standards and in compliance with local building codes and the flashing manufacturer installation instructions.

6.8 The structural installation procedure shall be in accordance with **Figure 2**.

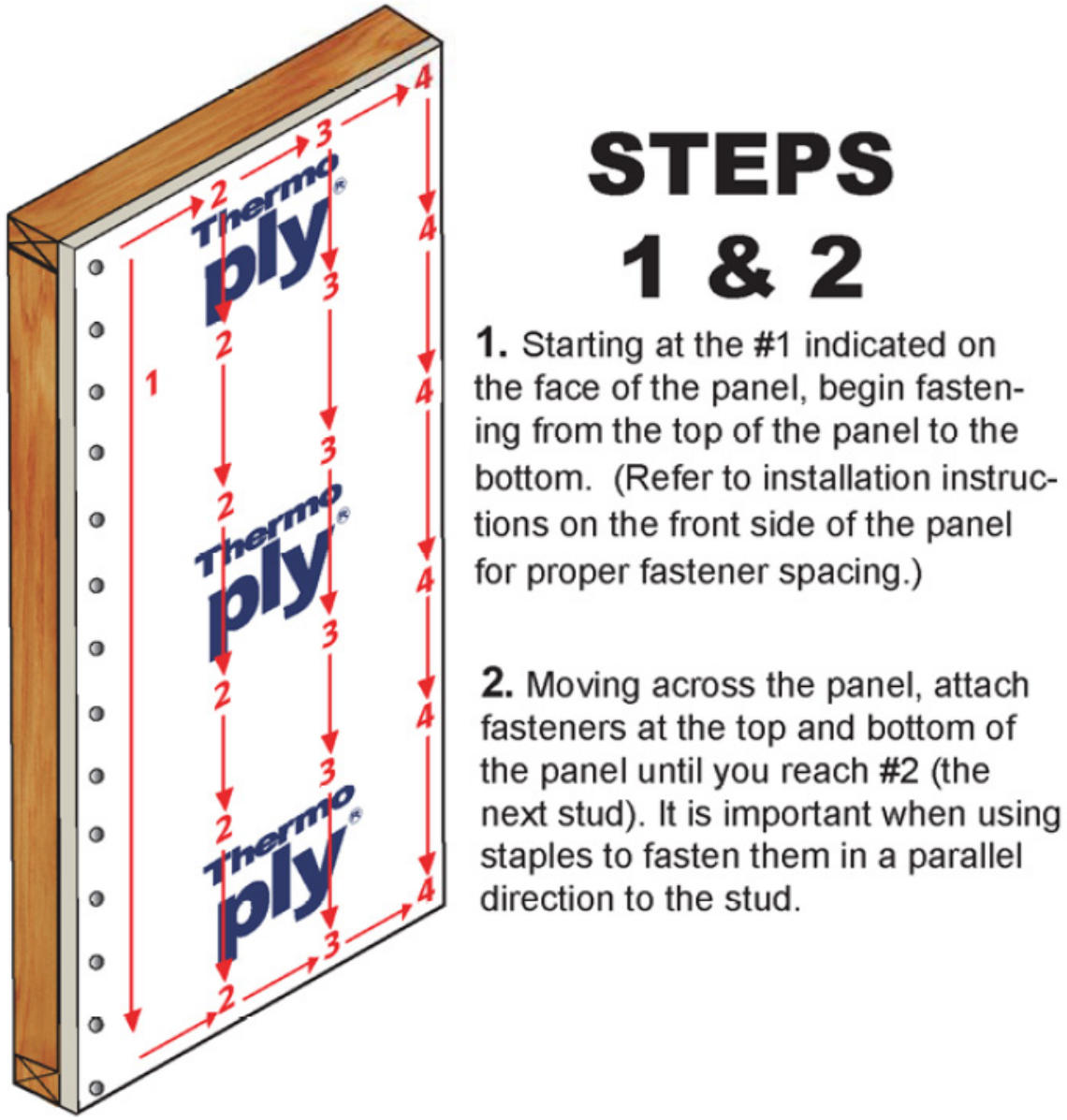

Figure 2. Installation Instructions – WRB Installation Procedure

6.8.1 Overlapped Joint – Install the first panel per **Figure 2**.

6.8.1.1 Overlap the next panel 19 mm ($^3/_4$") over the first panel, and fasten the joint with a common line of fasteners.

6.8.1.2 For ThermoPLY Blue Structural Sheathings, ensure the panel is properly positioned on the wall prior to removal of the adhesive release liners on vertical edges. Fasten the overlapped joint with a common line of fasteners.

6.8.2 Butted Joint with Flashing – Install panels per **Figure 2** with joints butted (no overlap).

6.8.3 Seal butted seams with approved construction tape (see **Section 4.3.3**), after attachment of the wall panels and all fasteners in the wall line.

7 Substantiating Data

7.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:

7.1.1 Transverse load testing in accordance with ASTM E330

7.1.2 Uplift load testing in accordance with ASTM E72

7.1.3 Test reports and data for determining use as a WRB material in accordance with ASTM E331

7.1.4 Test reports and data for determining use as an air barrier, in accordance with ASTM E2178

7.1.5 Lateral load testing and data for determining comparative equivalency for use as an alternative material in accordance with ASTM E2126

7.1.6 Test reports and data for determining surface burning characteristics in accordance with CAN/ULC S102

7.1.7 Test reports and data for determining comparative equivalency for use as an alternative material in accordance with NBC Division A Section 1.2

7.2 Information contained herein is the result of testing and/or data analysis by sources that conform to the evaluation requirements of NBC Volume 1 Relationship of the NBC to Standards Development and Conformity Assessment and/or professional engineering regulations. DrJ relies upon accurate data to perform its ISO/IEC 17065 evaluations.

7.3 Where appropriate, DrJ's analysis is based on provisions that have been codified into law through provincial, territorial, or local adoption of codes and standards. The developers of these codes and standards are responsible for the reliability of published content. DrJ analysis may use code-adopted provisions as a control sample. A control sample versus a test sample establishes a product as being equivalent to that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

7.4 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, listings, certified reports, duly authenticated reports from approved agencies, and research reports prepared by approved agencies and/or approved sources provided by the suppliers of products, materials, designs, assemblies and/or methods of construction. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this report, may be dependent upon published design properties by others.

7.5 *Testing and Engineering Analysis*

7.5.1 The strength, rigidity and/or general performance of component parts and/or the integrated structure are determined by suitable tests that simulate the actual conditions of application that occur and/or by accepted engineering practice and experience.

7.6 Where additional condition of use and/or code compliance information is required, please search for ThermoPLY Blue Structural Sheathing on the DrJ Certification website.

8 Findings

8.1 As outlined in **Section 4**, ThermoPLY Blue Structural Sheathings have performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.

8.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, ThermoPLY Blue Structural Sheathings shall be approved for the following applications:

8.2.1 Lateral (in-plane) load resistance due to wind and seismic loads carried by shear walls.

8.2.2 Transverse (perpendicular-to-plane) load resistance due to components and cladding pressures on building surfaces.

8.2.3 Resistance to uplift loads in single-top-plate applications.

8.2.4 Performance for use as a WRB in accordance with NBC Division B Note A-5.6.2.1.

8.2.5 Performance for use as an air barrier in accordance with NBC Division B Section 5.4 and Subsection 9.25.3.

8.2.6 Surface burning characteristics in accordance with **Table 5**.

8.3 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Amrize Building Envelope, LLC.

8.4 These innovative products have been evaluated in the context of the codes listed in **Section 3** and are compliant with all known provincial, territorial, and local building codes. Where there are known variations in provincial, territorial, or local codes applicable to this report, they are listed here:

8.4.1 No known variations

8.5 NBC Volume 1 Relationship of the NBC to Standards Development and Conformity Assessment:

> **Certification**
>
> Certification is the confirmation by an independent organization that a product, service, or system meets a requirement…Certification bodies publish lists of certified products and companies…Several organizations, including the Canadian Construction Materials Centre (CCMC), offer such evaluation services.
>
> **Evaluation**
>
> An evaluation is a written opinion by an independent professional organization that a product will perform its intended function. An evaluation is very often done to determine the ability of an innovative product, for which no standards exist, to satisfy the intent of the Code requirement...

8.6 ISO/IEC 17065 accredited third-party certification bodies,[8] including but not limited to, Standards Council of Canada (SCC)[9] and ANSI National Accreditation Board (ANAB),[10] confirm that product certification bodies have the expertise to provide technical evaluation services within their scope of accreditation. All SCC and ANAB product certification bodies meet NBC requirements to offer evaluation services for alternative solutions.[11]

8.6.1 DrJ is an ISO/IEC 17065 ANAB-Accredited Product Certification Body – Accreditation #1131[12] and employs professional engineers.[13]

8.7 Through ANAB accreditation and the IAF Multilateral Agreements, this report can be used to obtain product approval in any jurisdiction or country that has IAF MLA Members & Signatories to meet the Purpose of the MLA – "*certified once, accepted everywhere*." IAF specifically says, "*Once an accreditation body is a signatory of the IAF MLA, it is required to recognise certificates and validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA, with the appropriate scope*."[14]

8.8 Product certification organizations, accredited by the SCC and ANAB, are defined as equivalent evaluation services:

8.8.1 Canada-United States-Mexico Agreement (CUSMA), Article 11.6 Conformity Assessment confirms mutual recognition by stating, "*...each Party shall accord to conformity assessment bodies located in the territory of another Party treatment no less favorable than that it accords to conformity assessment bodies located in its own territory or in the territory of the other Party*."

8.8.2 The SCC National Conformity Assessment Principles states, "*SCC is a member of a number of international organizations developing voluntary conformity assessment agreements that help ensure the international acceptance of Canadian conformity assessment results. Signatories to these agreements (like SCC) recognize each other's accreditations as being equivalent to their own*."[15]

8.9 Building official approval of a licensed professional engineer is performed by verifying the professional engineer and/or their business entity are listed by the engineering regulators of the relevant jurisdiction.

9 Conditions of Use

9.1 As defined in **Section 4**, where material and/or engineering mechanics properties are created for load resisting design purposes, the resistance to the applied load shall not exceed the ability of the defined properties to resist those loads using the principles of accepted engineering practice.

9.2 As listed herein, ThermoPLY Blue Structural Sheathings shall not be used:

9.2.1 As a nailing base for claddings, trim, windows and doors. Fastening through the ThermoPLY Blue Structural Sheathings into the framing is acceptable.

9.2.2 To resist horizontal loads form concrete and masonry walls.

9.3 When ThermoPLY Blue Structural Sheathings are installed as a wall sheathing but are not installed per structural requirements, light-framed walls shall be braced by other means. When used as a WRB, installation shall be in accordance with **Section 4.3**.

9.3.1 When ThermoPLY Blue Structural Sheathings are not installed as a WRB, other means of providing a WRB shall be required, as per the code.

9.4 When used in high-wind and high-seismic areas as defined in NBC 2020 and OBC 2024 Division B Subsection 9.23.13, bracing to resist lateral loads shall be designed and constructed in accordance with the simplified or calculation methods prescribed in that Subsection, or designed in accordance with Part 4.

9.5 When required by regulation and enforced by the building official, also known as the Authority Having Jurisdiction (AHJ) in which the project is to be constructed:

9.5.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an approved source, shall be approved when signed and sealed.

9.5.2 This report and the installation instructions shall be submitted at the time of permit application.

9.5.3 These innovative products have an internal quality control program and a third-party quality assurance program.

9.5.4 At a minimum, these innovative products shall be installed per **Section 6** of this report.

9.5.5 This report shall be reviewed for code compliance by the AHJ in concert with the duties and powers granted to the building official by the provincial regulations governing such duties and powers.

9.5.6 The application of these innovative products in the context of this report is dependent upon the accuracy of the construction documents, implementation of installation instructions, inspections, and any other regulatory requirements that may apply.

9.6 Design loads shall be determined in accordance with the building code adopted by the jurisdiction in which the project is to be constructed and/or by the building designer (i.e., owner).

9.7 The actual design, suitability, and use of this report for any particular building, is the responsibility of the owner or the authorized agent of the owner.

10 Identification

10.1 ThermoPLY Blue Structural Sheathing and ThermoPLY Blue AMG Structural Sheathing, as listed in **Section 1.1**, are identified by a label on the board or packaging material bearing the manufacturer name, product name, this report number, and other information to confirm code compliance.

10.2 Additional technical information can be found at www.oxengineeredproducts.com/product/thermo-ply.

11 Review Schedule

11.1 This report is subject to periodic review and revision. For the latest version, visit www.drjcertification.org.

11.2 For information on the status of this report, please contact DrJ Certification.

Notes

1 For more information, visit drjcertification.org or call us at 608-310-6748.

2 Unless otherwise noted, all references in this report are from the 2020 version of the NBC. This alternative solution is also approved for use with the 2010 and 2015 NBC and the standards referenced therein.

3 References in this report to the National Building Code of Canada (NBC) apply to the Ontario Building Code (OBC), unless noted otherwise.

4 Qualification is performed by a legislatively defined Accreditation Body. ANSI National Accreditation Board (ANAB) is the largest independent accreditation body in North America and provides services in more than 75 countries. DrJ is an ANAB accredited product certification body.

5 https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?prgID=1&orgID=2125&statusID=4#:~:text=Bill%20Payment%20Date-,Accredited%20Scopes,-13%20ENVIRONMENT.%20HEALTH

6 18 U.S. Code § 1831 - Economic espionage - Whoever, intending or knowing that the offense will benefit any foreign government, foreign instrumentality, or foreign agent, knowingly steals, or without authorization appropriates, takes, carries away, or conceals, or by fraud, artifice, or deception obtains a trade secret shall be fined not more than $5,000,000 or imprisoned not more than 15 years, or both. Any organization that commits any offense described shall be fined not more than the greater of $10,000,000 or 3 times the value of the stolen trade secret to the organization, including expenses for research and design and other costs of reproducing the trade secret that the organization has thereby avoided. https://www.law.cornell.edu/uscode/text/18/part-I/chapter-90.

7 ANAB is part of the USMCA and IAF MLA, where the purpose of these agreements are to ensure mutual recognition of accredited certification and validation/verification statements between agreement signatories, and subsequent acceptance of ANAB accredited certification and validation/verification statements by professional engineers based upon having one universal approval process for the timely approval of innovative materials, products, designs, services, assemblies and/or methods of construction.

8 https://anabpd.ansi.org/Accreditation/product-certification/DirectoryListingAccredited?menuID=1&prgID=1

9 https://iaf.nu/en/member-details/?member_id=91

10 https://iaf.nu/en/member-details/?member_id=14

11 NBC Division A Clause A-1.2.1.1.(1)(b) provides information on code compliance via alternative solutions and defines alternative solutions as *"...achiev[ing] at least the minimum level of performance required by Division B."* NBC Division C Section 2.3 includes additional guidance for documentation of alternative solutions.

12 https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?&prgID=1&OrgId=2125&statusID=4

13 Through ANAB accreditation and the IAF MLA, DrJ certification can be used to obtain material, product, design, or method of construction approval in any jurisdiction or country that has IAF MLA Members & Signatories to meet the Purpose of the MLA – "*certified once, accepted everywhere*".

14 https://iaf.nu/en/about-iaf-mla/#:~:text=required%20to%20recognise

15 The National Conformity Assessment Principles states, "*Product regulations and standards may vary from country to country. If these are set arbitrarily, they could be deemed as protectionist. The World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT Agreement) is intended to ensure that technical regulations, standards and conformity assessment procedures of member countries do not create unnecessary obstacles to trade. Under the TBT Agreement, members of the WTO agree to use international standards, including conformity assessment standards and guides, as a basis for their technical requirements.*"