

Technical Evaluation Report™ - Canada

A Duly Authenticated Report from an Approved Agency

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Performance Characteristics of Owens Corning® EZSheath™ Panel - Canada

Trade Secret Report Holder:

Owens Corning® (OC™)

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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

Section: 06 16 13 - Insulated Sheathing

DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION

Section: 07 21 00 - Thermal Insulation

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

Section: 07 27 00 - Air Barriers

1 Innovative Product Evaluated¹

1.1 Owens Corning® EZSheath™ Structural Insulated sheathing

2 Product Description and Materials

2.1 The innovative product evaluated in this report is shown in **Figure 1**.



Figure 1. Owens Corning® EZSheath™

2.2 Owens Corning® EZSheath™ is a structural rigid insulating sheathing product comprised of an extruded polystyrene (XPS) insulation board sandwiched between two proprietary polymer facers (see **Figure 2**).

2.2.1 The rigid foam plastic insulating sheathing (FPIS) is a proprietary XPS insulation sheathing conforming to CAN/ULC S701.1 Type 3.

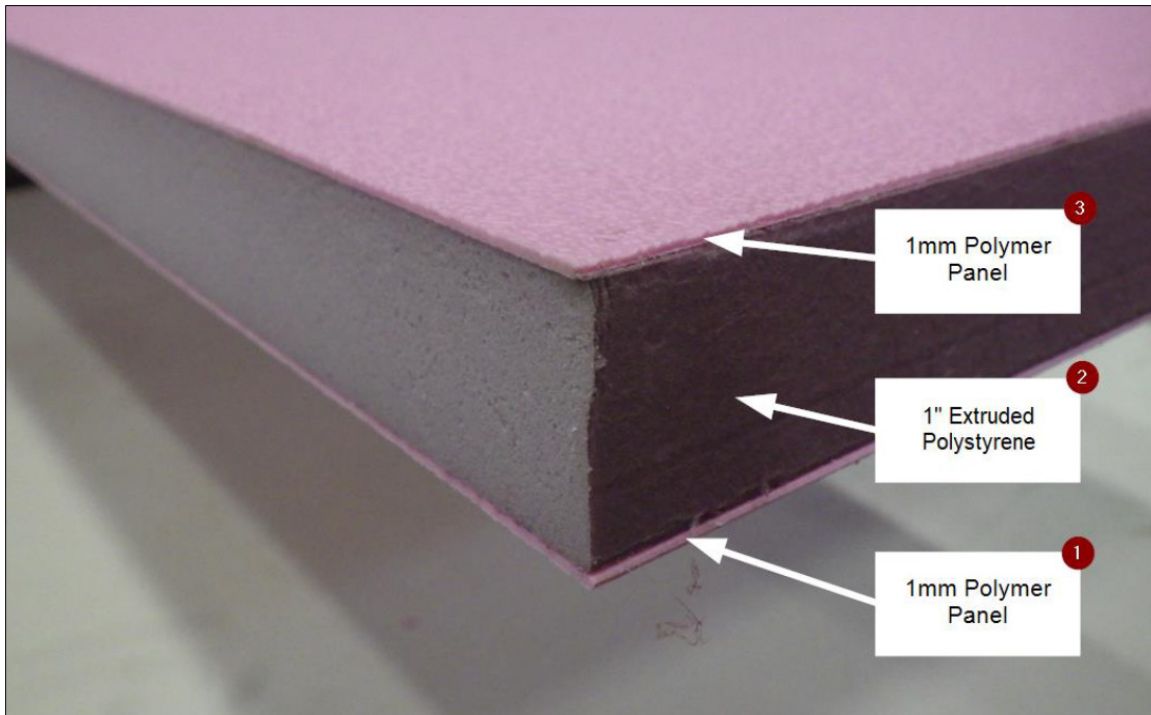


Figure 2. Owens Corning® EZSheath™ - Components (Foam Colored)

2.2.2 The proprietary polymer facers are nominally 1 mm (0.04") thick and may have a haircell texture or a medium matte finish (see **Figure 3**).



Figure 3. Owens Corning® EZSheath™ - Haircell (Left) and Medium Matte (Right)



2.3 Material Availability

2.3.1 Thickness:

2.3.1.1 12.7 mm (1/2") to 76 mm (3")

2.3.2 Standard Product Width:

2.3.2.1 1,219 mm (48")

2.3.3 Standard Lengths:

2.3.3.1 2,438 mm (96")

2.3.3.2 2,749 mm (108")

2.3.3.3 3,048 mm (120")

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

3 Applicable Codes and Standards²

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 C518: Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*

3.2.2 *ASTM C557: Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing*

3.2.3 *ASTM D7989: Standard Practice for Determining Seismic Performance Equivalency to Wood-Frame Shear Walls*

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

3.2.5 *ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials*

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

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

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

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

3.2.10 *ASTM E2357: Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies*

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

3.2.12 *CAN/ULC-S701.1: Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering*

3.2.13 *CSA O86: Engineering Design in Wood*

3.2.14 *CSA S136: North American Specification for the Design of Cold-Formed Steel Structural Members, required for any Canadian CFS-framed supplement*

3.2.15 *CWC: Engineering Guide for Wood Frame Construction*



4 Tabulated Properties Generated from Nationally Recognized Standards

4.1 General

- 4.1.1 Owens Corning® EZSheath™ is a structural insulated sheathing (SIS) panel for use in the following applications:
- 4.1.1.1 Wall sheathing in buildings constructed in accordance with the NBC for light-frame wood and steel construction.
 - 4.1.1.2 Structural wall sheathing to provide lateral load resistance (wind and seismic) for braced wall panels used in light-frame construction.
 - 4.1.1.3 Structural wall sheathing to provide resistance to transverse loads for wall assemblies used in wood construction.
 - 4.1.1.4 A Water-Resistive Barrier (WRB)/sheathing membrane assembly component in accordance with NBC Division B Note A-5.6.2.1 when installed with the evaluated construction tape, supported joints, flashing, penetrations, and transitions described in this report and the [manufacturer installation instructions](#), as specified in **Section 4.4.5**. See the manufacturer product information for further details.
 - 4.1.1.4.1 Where the joints are not taped, a separate WRB shall be installed in accordance with the WRB manufacturer installation instructions.
 - 4.1.1.5 A component of an air-barrier assembly in accordance with NBC Division B Section 5.4, NBC Division B Subsection 9.25.3, and NECB Division B Subsection 3.2.4, where the complete air-barrier assembly is installed in accordance with the evaluated details, manufacturer installation instructions, and this report.
- 4.1.2 Owens Corning® EZSheath™ contains foamed plastics complying with NBC Division B Article 3.1.5.15.

4.2 Structural Applications

4.2.1 General Provisions:

- 4.2.1.1 Except as otherwise described in this report, Owens Corning® EZSheath™ is permitted to 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).
- 4.2.1.1.1 Owens Corning® EZSheath™ shall be permitted to be designed in accordance with NBC Division B Part 9 Article 9.23.13.1, Article 9.23.13.2, and Article 9.23.13.3, for the design of lateral load-resisting systems using the methods and conditions set forth therein as an alternative solution to the selected WSP braced wall panels types in NBC Table 9.23.3.5-C.
- 4.2.1.1.1.1 For NBC Part 9 applications, use of Owens Corning® EZSheath™ as an alternative to WSP-A or other reference framing types requires the equivalency conditions detailed herein.
- 4.2.1.1.1.1.1 For WSP-A alternative use, the benchmark consists of 9.5 mm (³/₈") plywood, OSB, or waferboard on 400 mm maximum stud spacing, fastened with 2.84 mm x 51 mm (6d common) nails at 150 mm (6") o.c. along panel edges.
- 4.2.1.1.1.1.1.1 NBC Appendix Note A-9.23.13.9.(2) identifies WSP-A as having factored shear resistance of 3.28 kN/m with $K_{Wframe} = 1.00$ and $K_{Sframe} = 1.00$.
- 4.2.1.1.1.1.2 Owens Corning® EZSheath™ assemblies are permitted to be evaluated as alternatives to WSP-A where the assembly has factored shear resistance not less than 3.28 kN/m, is installed on wood studs spaced not more than 400 mm (16") o.c. and satisfies the WSP seismic ductility basis through ASTM E2126 and ASTM D7989.

- 4.2.1.1.2 For structural applications designed under NBC Part 4 or other engineered design provisions, the design and installation of Owens Corning® EZSheath™ shear walls shall comply with the applicable provisions of NBC 2025, CSA O86, and the conditions of this report.
- 4.2.1.2 Anchorage for in-plane shear shall be provided to transfer the induced shear force into and out of each shear wall.
- 4.2.1.2.1 Anchorage, hold-downs, collectors, and diaphragm-to-wall load transfer shall be designed or provided in accordance with the adopted code to transfer the applicable factored shear, uplift, and overturning forces.
- 4.2.1.2.2 Prescriptive anchorage is permitted only where the adopted code permits prescriptive design and the project remains within that scope.
- 4.2.1.3 The maximum aspect ratio for Owens Corning® EZSheath™ full height shear wall panel shall be 4:1, unless a more restrictive aspect ratio is required by NBC Part 9, CSA O86, Table 2, or project-specific engineering design.
- 4.2.1.4 The minimum full-height panel width shall be 600 mm (24").
- 4.2.1.5 All panel edges shall be blocked with lumber of a minimum thickness of 38 mm (2" nominal).
- 4.2.1.6 Indentation of the outer polymer facer during installation of fasteners is permitted with no negative impact on factored shear resistances provided:
- 4.2.1.6.1 Indentation depth shall not exceed 1.19 mm ($3/64$ ") (see **Figure 4**).
- 4.2.1.6.2 Penetration of the fastener head through the outer surface of the polymer facer and into the foam plastic sheathing layer during installation is not permitted. In the event that this occurs, consult with the manufacturer for potential solutions.



Figure 4. Fastening Indentation Example



4.2.1.7 Walls shall be constructed in accordance with NBC 2025 Division B, Part 9, Section 9.23, including the wall plate requirements of Subsection 9.23.11, or where engineering design is required, in accordance with NBC 2025 Division B, Part 4 and CSA O86.

4.2.1.7.1 Top plates shall comply with NBC 2025 Division B, Article 9.23.11.3, except where single top plates are permitted by NBC 2025, loadbearing walls shall be framed with not less than two (2) top plates.

4.2.1.7.1.1 Single top plates are permitted where allowed by NBC 2025 Division B, Article 9.23.11.3, including:

4.2.1.7.1.1.1 Sections of loadbearing walls containing lintels where the top plate forms a tie across the lintel;

4.2.1.7.1.1.2 Loadbearing walls where concentrated loads from ceilings, floors, and roofs are not more than 50 mm to one side of the supporting studs; and

4.2.1.7.1.1.3 Non-loadbearing walls.

4.2.1.7.1.2 Joints in top plates shall comply with NBC 2025 Division B, Article 9.23.11.4. Joints in single top plates used in loadbearing walls shall be tied in accordance with NBC 2025 Division B, Sentence 9.23.11.4.(4).

4.2.1.7.1.3 Where Owens Corning® EZSheath™ is used in braced wall bands, top plate splices, laps, ties, and related load-path elements shall comply with the applicable NBC 2025 braced wall band requirements. Where NBC 2025 Division B, Sentence 9.23.11.4.(5) applies, doubled top plate splice connections shall be fastened in accordance with NBC 2025 Division B, Table 9.23.11.4.

4.2.1.7.2 Where the wall assembly is designed under NBC 2025 Division B, Part 4, the single-top-plate or double-top-plate framing configuration shall be included in the project-specific structural design, and load transfer through the top plate, collectors, boundary members, and anchorage shall be designed in accordance with CSA O86.

4.2.2 *Performance-Based Wood-Frame Construction:*

4.2.2.1 Owens Corning® EZSheath™ panels used in wall assemblies designed as shear walls:

4.2.2.1.1 Are permitted to be designed in accordance with the methodology used in CAN/CSA-O86 for WSP using the assemblies and factored resistances listed in this report.

4.2.2.1.1.1 Resist lateral wind load forces using the factored shear strengths set forth in **Table 1**.

4.2.2.1.1.2 Resist seismic load forces using the factored specified shear strengths set forth in **Table 2** when seismic design is required in accordance with NBC Division B Subsection 4.1.8.

4.2.2.1.1.2.1 The ductility response modification factor, R_d , and the overstrength 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.

4.2.2.1.1.3 Resist uplift load forces using the factored uplift loads in **Table 3**.

4.2.2.1.1.4 Owens Corning® EZSheath™ panels are permitted to resist transverse wind load forces using the factored transverse resistances set forth in **Table 4**.

4.2.2.1.1.4.1 Required component-and-cladding loads to be resisted are found in NBC Division B Subsection 4.1.7, Sentence 4.1.7.1.(5).

Table 1. In-plane Shear Performance of Owens Corning® EZSheath™ – Wind^{1,2}

Structural Sheathing Product	Product Thickness, mm (in)	Minimum Fastener Size, mm (in)	Minimum Fastener Embedment, mm (in)	Fastener Spacing, (edge:field) mm (in)	Stud Spacing, mm (in)	GWB Thickness, mm (in)	GWB Fastener Spacing, ³ (edge:field) mm (in)	Factored Unit Shear Capacity, kN/m (plf)	Apparent Shear Stiffness, kN/m (kips/in)
Owens Corning® EZSheath™	12.7 – 25.4 (0.50" – 1.0")	2.87 (0.113") Nail Diameter	35 (1 ³ / ₈ ")	150:300 (6":12")	400 (16") o.c.	-	-	3.14 (215)	906 (5.2)
					600 (24") o.c.			2.83 (194)	857 (4.9)
				75:150 (3":6")	400 (16") o.c.			5.86 (402)	993 (5.7)
					600 (24") o.c.			5.86 (401)	970 (5.5)
		3.33 (0.131") Nail Diameter	35 (1 ³ / ₈ ")	75:150 (3":6")	400 (16") o.c.	-	-	6.55 (449)	1118 (6.4)
					600 (24") o.c.				
	25.4 (1.0")	3.33 (0.131") Nail Diameter	35 (1 ³ / ₈ ")	75:150 (3":6")	400 (16") o.c.	12.7 (1/2")	203:203 (8":8")	7.15 (490)	2055 (11.7)
	25.4 < t ≤ 51 (1.0" < t ≤ 2.0")	3.33 (0.131") Nail Diameter	32 (1 ¹ / ₄ ")	150:300 (6":12")	400 (16") o.c.	-	-	3.18 (218)	904 (5.2)
					600 (24") o.c.			2.55 (175)	590 (3.4)
				75:150 (3":6")	400 (16") o.c.			5.6 (383)	958 (5.5)
					600 (24") o.c.			4.87 (333)	1001 (5.7)
	51 < t ≤ 76 (2.0" < t ≤ 3.0")	3.76 (0.148") Nail Diameter	38 (1 ¹ / ₂ ")	75:150 (3":6")	400 (16") o.c.	-	-	5.59 (383)	1022 (5.8)
	≤ 25.4 (≤ 1.0")	16-gauge, 11 (7/16") Crown	25.4 (1")	75:75 (3":3")	400 (16") o.c.	-	-	6.96 (477)	1185 (6.8)
					600 (24") o.c.	-	-	5.72 (392)	991 (5.7)

SI: 1 in = 25.4 mm, 1 lb/ft = 0.0146 kN/m

1. Tested in accordance with ASTM E564. Listed values are factored wind shear resistances for the evaluated assemblies.
2. Owens Corning® EZSheath™ panels installed with butted joints on nominal 2x studs with a minimum published specific gravity of 0.42 spaced as listed in this table. Listed fasteners shall be spaced as listed and with a minimum edge distance of 9.5 mm (3/8").
3. GWB (minimum lightweight) shall be attached with minimum #6 type W or S screws 32 mm (1¹/₄") long with a minimum edge distance of 9.5 mm (3/8").

Table 2. In-plane Shear Performance and Seismic Design Coefficients of Owens Corning® EZSheath™¹ – Seismic

Product	Product Thickness, mm (in)	Minimum Fastener Diameter, mm (in)	Minimum Penetration, mm (in)	Fastener Spacing (edge:field) mm (in o.c.)	Factored Seismic Unit Shear Capacity, ³ kN/m (plf)	Apparent Shear Stiffness G _a , kN/m (kips/in)	Ductility-Related Force Modification Factor, ⁴ R _d	Over-strength-Related Force Modification Factor, ⁴ R _o	Structural System Limitations and Building Height Limit ⁵ m (ft)			
									Seismic Category ^{6,7}			
									SC1	SC2	SC3	SC4
Owens Corning® EZSheath™	12.7 – 25.4 (0.50" – 1.0")	2.87 (0.113") Nail Diameter	35 (1 ³ / ₈ ")	150:300 (6":12")	2.75 (188)	718 (4.1)	3.0	1.7	NL	NL	30	20
				75:150 (3":6")	5.38 (369)	772 (4.4)	3.0	1.7	NL	NL	30	20
		3.33 (0.131") Nail Diameter	35 (1 ³ / ₈ ")	75:150 (3":6")	7.15 (490) ²	2272 (13.0) ²	2.0	1.7	NL	NL	20	20
					5.96 (409)	1036 (5.9)	3.0	1.7	NL	NL	30	20
	51 (2.0")	3.33 (0.131") Nail Diameter	32 (1 ¹ / ₄ ")	150:300 (6":12")	2.73 (187)	754 (4.3)	3.0	1.7	NL	NL	30	20
				75:150 (3":6")	5.0 (342)	842 (4.8)	3.0	1.7	NL	NL	30	20
	51 < t ≤ 76 (2.0" < t ≤ 3.0")	3.76 (0.148") Nail Diameter	38 (1 ¹ / ₂ ")	75:150 (3":6")	7.15 (490) ²	2272 (13.0) ²	2.0	1.7	NL	NL	20	20
					5.96 (409)	1036 (5.9)	3.0	1.7	NL	NL	30	20

SI: 1 in = 25.4 mm, 1 lb/ft = 0.0146 kN/m, 1-psi = 0.00689 MPa

- Owens Corning® EZSheath™ panels shall be installed with butted joints on nominal 2x studs spaced no greater than 400 mm (16") o.c. Listed nail diameters and penetration are minimums. Fastener edge distance shall be a minimum of 9.5 mm (3/8"). Fastener head shall be flush with the panel surface.
- GWB shall be fastened with minimum #6 type W or S screws 32 mm (1¹/₄") long spaced 203 mm (8") o.c. along the perimeter and in the field. Fasteners shall maintain a minimum edge distance of 9.5 mm (3/8").
- All seismic design parameters follow the equivalency as defined in **Section 4.2.2.1.1.2.1** and **Section 5.1.1.1.3**.
- R_d and R_o are Canadian force modification factors assigned by NBC 2025 Division B Sentence 4.1.8.9.(5) for the equivalent SFRS classification.
- Height limits correspond to the equivalent NBC Table 4.1.8.9 SFRS and are subject to the same restrictions, detailing, and AHJ acceptance.
- NL = Not Limited
- SC = Seismic Category

Table 3. Uplift Performance^{1,3,4} of Owens Corning® EZSheath™

Structural Sheathing Product	Panel Thickness, mm (in)	Minimum Fastener Diameter, ⁴ mm (in)	Minimum Fastener Embedment, mm (in)	Fastener Spacing, mm (in. o.c.)	Stud Spacing, mm (in. o.c.)	Factored Uplift Resistance, kN/m (plf)	Uplift Resistance at Specified Deflection Limits, ² kN/m (plf)		
							1 mm	1.5 mm	3 mm
Owens Corning® EZSheath™	12.7 – 25.4 (0.50" – 1.0")	2.87 (0.113") Nail Diameter	35 (1 ³ / ₈ ")	150:300 (6":12")	400 (16") o.c.	3.35 (230)	4.77 (327)	4.81 (330)	5.11 (350)
					600 (24") o.c.	2.36 (162)	2.90 (199)	3.05 (209)	3.54 (243)
				75:150 (3":6")	400 (16") o.c.	3.17 (217)	4.34 (298)	4.41 (302)	4.80 (329)
					600 (24") o.c.	3.04 (208)	3.10 (212)	3.33 (228)	4.06 (278)
	12.7 – 51 (0.50" – 2.0")	3.33 (0.131") Nail Diameter	32 (1 ¹ / ₄ ")	150:300 (6":12")	400 (16") o.c.	3.35 (230)	4.75 (325)	5.31 (364)	5.42 (371)
					600 (24") o.c.	2.02 (138)	3.75 (257)	3.99 (273)	4.35 (298)
				75:150 (3":6")	400 (16") o.c.	3.64 (249)	4.60 (315)	5.24 (359)	5.76 (395)
					600 (24") o.c.	3.30 (226)	4.48 (307)	4.94 (338)	5.48 (375)
	12.7 – 25.4 (0.50" – 1.0")	3.33 (0.131") Nail Diameter	35 (1 ³ / ₈ ")	75:150 (3":6")	400 (16") o.c.	6.43 (441)	2.36 (161)	2.50 (171)	2.89 (198)
					600 (24") o.c.	4.64 (318)	1.82 (125)	2.01 (138)	2.36 (162)
	12.7 – 76 (0.50" – 3.0")	3.76 (0.148") Nail Diameter	38 (1 ¹ / ₂ ")	75:150 (3":6")	400 (16") o.c.	4.72 (324)	6.04 (414)	6.36 (436)	7.03 (482)
					600 (24") o.c.	4.27 (292)	5.04 (345)	5.32 (364)	5.96 (408)
	12.7 – 25.4 (0.50" – 1.0")	16-gauge, 11 (7/16") Crown	25.4 (1")	75:75 (3":3")	400 (16") o.c.	3.35 (230)	4.77 (327)	4.81 (330)	5.11 (350)
					600 (24") o.c.	2.36 (162)	2.90 (199)	3.05 (209)	3.54 (243)

SI: 1 in = 25.4 mm, 1 lb/ft = 0.0146 kN/m

1. Uplift values apply only to the evaluated sheathing-to-bottom-plate connection and do not replace design of roof-to-wall, stud-to-plate, hold-down, sill, foundation, collector, or overturning load paths.
2. Serviceability values are unfactored and shall be checked using service-level loads; resistance factors are not applied to serviceability limits. Combined shear and uplift requires project-specific engineering unless combined-load testing is provided.
3. Where combined shear and uplift loading is needed, consult a professional engineer.
4. Attachment to wood framing having a minimum specific gravity of 0.42. Fastener edge distance shall be a minimum of 3/8". Fastener head shall be flush with the panel surface.



Table 4. Transverse Load Performance of Owens Corning® EZSheath™^{1,2,3}

Structural Sheathing Product	Panel Thickness (mm)	Minimum Fastener Size ⁷ (mm)	Minimum Fastener Embedment (mm)	Fastener Spacing (in. o.c)	Stud Spacing (mm)	Direction	Factored Transverse Resistance, ⁴ kPa (psf)	Transverse Resistance at Specified Deflection Limits, ^{5,6} kPa (psf)		
								L/180	L/240	L/360
Owens Corning® EZSheath™	12.7 (0.50")	3.33 (0.131") Nail Diameter	35 (1 ³ / ₈ ")	75:150 (3":6")	400 (16") o.c.	Positive or Negative	3.04 (63.6)	2.65 (55.4)	2.15 (44.8)	1.48 (30.8)
							1.80 (37.5)	2.17 (45.4)	1.68 (35.2)	1.20 (25)
		2.87 (0.113") Nail Diameter	48 (1 ⁷ / ₈ ")	150:300 (6":12")	400 (16") o.c.		1.08 (22.6)	1.24 (25.8)	0.94 (19.7)	0.73 (15.3)
					600 (24") o.c.		3.34 (69.8)	2.17 (45.2)	1.69 (35.3)	1.32 (27.7)
				75:150 (3":6")	400 (16") o.c.		2.45 (51.2)	1.32 (27.6)	1.03 (21.5)	0.74 (15.4)
					600 (24") o.c.					
	25.4 (1.0")	3.33 (0.131") Nail Diameter	35 (1 ³ / ₈ ")	75:150 (3":6")	400 (16") o.c.	Negative	3.03 (63.3)	4.73 (98.8)	3.61 (75.4)	2.54 (53)
						Positive	29.21 (610.1)	8.29 (173.1)	6.01 (125.6)	3.91 (81.6)
					600 (24") o.c.	Negative	3.58 (74.7)	2.24 (46.8)	1.78 (37.3)	1.22 (25.5)
						Positive	22.68 (473.7)	1.25 (26.1)	0.82 (17)	0.26 (5.5)
	25.4 (1.0")	2.87 (0.113") Nail Diameter	35 (1 ³ / ₈ ")	150:300 (6":12")	400 (16") o.c.	Positive or Negative	1.83 (38.3)	3.00 (62.7)	2.20 (45.9)	1.53 (32)
					600 (24") o.c.		1.07 (22.3)	1.95 (40.8)	1.52 (31.8)	1.12 (23.3)
				75:150 (3":6")	400 (16") o.c.		3.03 (63.3)	4.73 (98.8)	3.61 (75.4)	2.54 (53)
					600 (24") o.c.		1.72 (36)	2.67 (55.7)	2.02 (42.1)	1.45 (30.3)
	51 (2.0")	3.33 (0.131") Nail Diameter	32 (1 ¹ / ₄ ")	150:300 (6":12")	400 (16") o.c.		2.10 (43.9)	1.50 (31.4)	2.38 (49.7)	2.58 (54)
					600 (24") o.c.		1.73 (36)	2.52 (52.7)	2.45 (51.1)	1.96 (41)
				75:150 (3":6")	400 (16") o.c.		3.37 (70.3)	4.24 (88.6)	3.10 (64.7)	1.94 (40.4)
					600 (24") o.c.		3.01 (62.9)	3.66 (76.4)	2.88 (60.2)	1.90 (39.7)

Table 4. Transverse Load Performance of Owens Corning® EZSheath™^{1,2,3}

Structural Sheathing Product	Panel Thickness (mm)	Minimum Fastener Size ⁷ (mm)	Minimum Fastener Embedment (mm)	Fastener Spacing (in. o.c)	Stud Spacing (mm)	Direction	Factored Transverse Resistance, ⁴ kPa (psf)	Transverse Resistance at Specified Deflection Limits, ^{5,6} kPa (psf)		
								L/180	L/240	L/360
Owens Corning® EZSheath™ Continued	25.4 < t ≤ 76 (1.0" < t ≤ 3.0")	3.76 (0.148") Nail Diameter	38 (1½")	75:150 (3":6")	400 (16") o.c.	Negative	3.03 (63.3)	4.73 (98.8)	3.61 (75.4)	2.54 (53)
						Positive	29.21 (610.1)	8.29 (173.1)	6.01 (125.6)	3.91 (81.6)
					600 (24") o.c.	Negative	3.5 (73.2)	4.33 (90.5)	3.41 (71.2)	2.35 (49.1)
						Positive	22.68 (473.7)	1.25 (26.1)	0.82 (17.0)	0.26 (5.5)
	25.4 (1.0")	16-gauge, 11 (7/16") Crown	25.4 (1")	75:75 (3":3")	400 (16") o.c.	Positive or Negative	3.45 (72.1)	1.91 (39.9)	1.37 (28.7)	0.83 (17.4)
					600 (24") o.c.		4.18 (87.3)	1.02 (21.3)	0.72 (15.0)	0.52 (10.8)

SI: 1 in = 25.4 mm, 1-psf = 0.0479 kN/m²

1. Tested in accordance with ASTM E330.
2. Attachment to wood framing having a minimum specific gravity of 0.42.
3. Values apply to positive or negative transverse wind pressure where the listed value is based on the lower of the evaluated directions.
4. Factored transverse strength resistance shall be checked against strength-level wind demand.
5. Serviceability limits are unfactored and shall be checked against service-level wind demand; no resistance factor is applied to serviceability limits
6. "L" is taken as the stud spacing.
7. Fasteners shall be installed with the head in contact with the face of the structural sheathing. Fastener edge distance shall be a minimum of 3/8" on all sides of the board.

4.2.3 Supplemental Wind-Borne Debris Impact and Cyclic Pressure Performance:

4.2.3.1 Owens Corning® EZSheath™ wall assemblies were evaluated for supplemental high-wind performance in accordance with TAS 201, TAS 202, and TAS 203.

4.2.3.1.1 The TAS testing included in this report as supplemental test evidence for wind-borne debris impact resistance, uniform static air pressure resistance, and cyclic wind pressure resistance.

4.2.3.1.2 For wind-borne debris impact resistance, the evaluated assembly successfully passed the requirements of TAS 201.

4.2.3.1.2.1 TAS 201 impact recognition is based on the large missile impact protocol. The missile consists of a 4.1 kg (9 lb) 38 mm x 89 mm timber member and impacting the test specimen at 15.2 m/s (50 ft/s).

4.2.3.1.3 For wind resistance, the evaluated assembly achieved a design wind pressure of ±5.75 kPa (±120-psf) when tested in accordance with the uniform static air pressure resistance testing, TAS 202, and the cyclic wind pressure resistance testing, TAS 203.

- 4.2.3.2 The evaluated wall assembly is as follows, walls shall be sheathed with 12.7 mm ($\frac{1}{2}$ ") thick Owens Corning® EZSheath™ panels using minimum 3.33 mm diameter by 65 mm long (8d common) nails spaced 75 mm (3") o.c. along the edge and 150 mm (6") o.c. in the field. See **Figure 5** and **Figure 6**.
- 4.2.3.2.1 Wall framing shall be applied to minimum 38 mm x 140 mm (nominal 2 x 6), No. 2 Spruce-Pine-Fir, and spaced not more than 400 mm (16") on center.
- 4.2.3.2.2 At a minimum, wall sheathing shall be continuous over three or more supports.

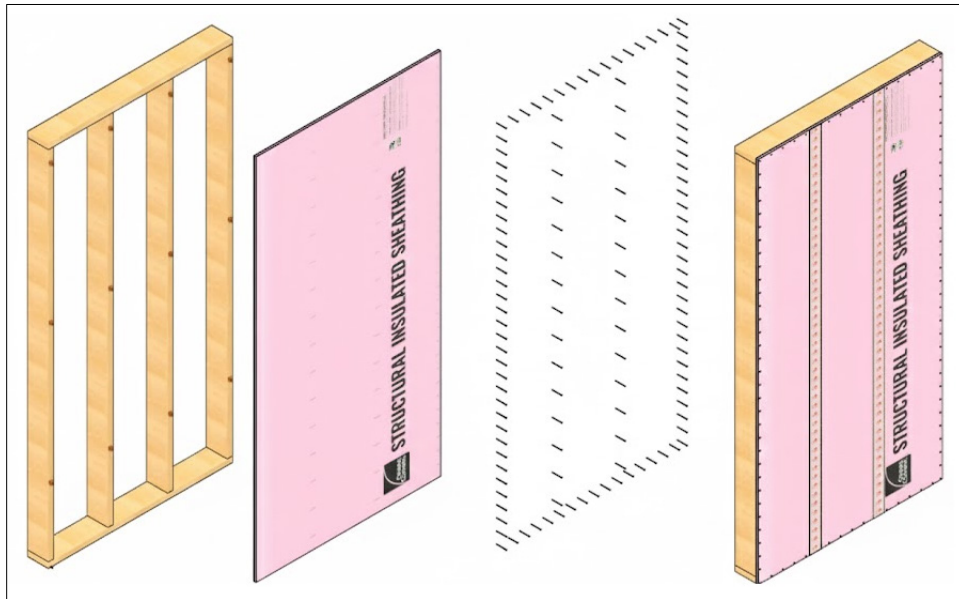


Figure 5. Owens Corning® EZSheath™ – Installation Overview

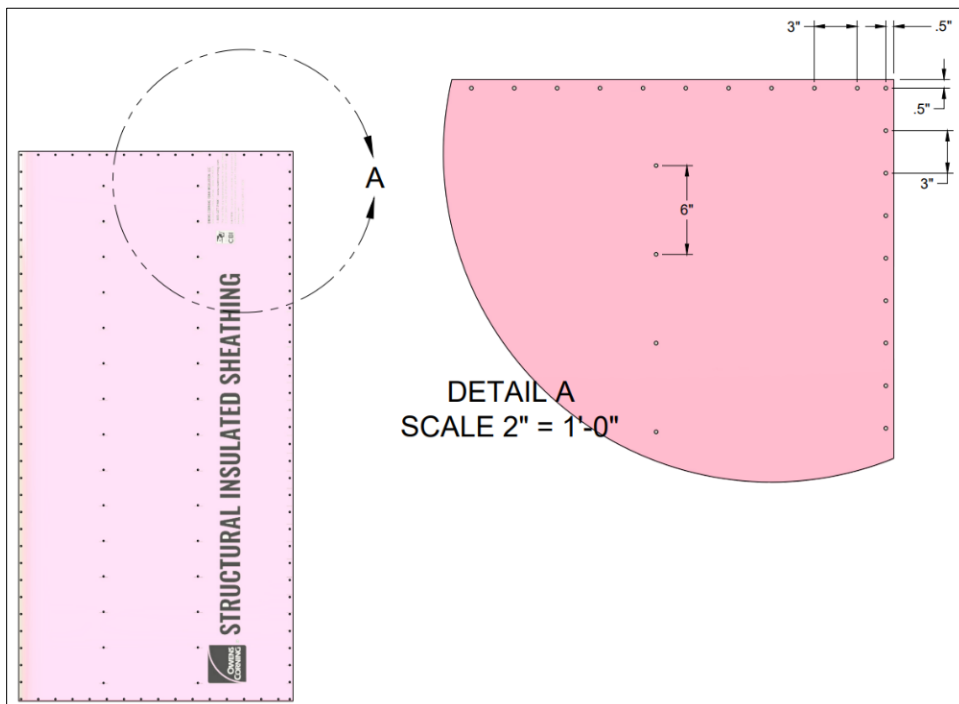


Figure 6. Owens Corning® EZSheath™ - Fastening Pattern



4.2.4 Cold-Formed Steel-Framed Construction:

- 4.2.4.1 Where applicable, design and installation of cold-formed steel-framed structural walls or shear walls shall be in accordance with NBC 2025 Division B, Part 4, Section 4.3, CSA S136, and the conditions of this report.
- 4.2.4.1.1 Cold-formed steel studs, tracks, blocking, bridging, collectors, chord members, boundary members, anchorage, and other load-path elements shall be designed by the registered design professional in accordance with NBC 2025 and CSA S136.
- 4.2.4.1.2 Owens Corning® EZSheath™ panels are recognized for use on cold-formed steel framing only for the specific assemblies, framing members, fasteners, fastener spacing, stud spacing, and limitations listed in this report.
- 4.2.4.1.3 Owens Corning® EZSheath™ panels used on cold-formed steel framing are not prescriptive steel sheet-sheathed or wood structural panel-sheathed shear walls. Use as a seismic force-resisting system requires testing, research, and analysis demonstrating equivalent seismic performance to an NBC-listed cold-formed steel SFRS, where required by NBC 2025 Division B, Article 4.1.8.9.
- 4.2.4.2 Owens Corning® EZSheath™ panels used in cold-formed steel-framed construction resist lateral wind load forces using the factored unit shear loads (in force per linear wall length) set forth in **Table 5**.
- 4.2.4.3 Owens Corning® EZSheath™ panels used in cold-formed steel-framed construction resist lateral seismic forces using the factored unit shear loads (in force per linear wall length) set forth in **Table 6**.

Table 5. In-plane Shear Performance for Owens Corning® EZSheath™ on 16-Gauge 50-ksi CFS Studs^{1,3} – Wind

Structural Sheathing Product	Product Thickness ⁵ mm (in)	Fastener Type ^{2,4}	Maximum Fastener Spacing, (edge:field) mm (in)	Maximum Stud Spacing mm (in)	Factored Unit Shear Capacity, kN/m (plf)	Apparent Shear Stiffness, kN/m (kips/in)
Owens Corning® EZSheath™	12.7 – 25.4 (0.50" – 1.0")	0.100" x 1½" Aerosmith® VersaPin®	100:150 (4":6")	600 (24") o.c.	7.55 (517)	818 (4.7)
		0.100" x 1½" Aerosmith VersaPin	150:300 (6":12")	600 (24") o.c.	4.35 (298)	970 (5.5)

SI: 1 in = 25.4 mm, 1 lb/ft = 0.0146 kN/m

- Table values apply to wind in-plane shear resistance only.
- Cold-Formed Steel (CFS) studs shall be minimum 16-gauge, 345 MPa (50-ksi) steel studs. Studs, tracks, blocking, bridging, anchorage, collectors, chord/boundary members, and other CFS framing elements shall be designed in accordance with NBC 2025 and CSA S136.
- Owens Corning® EZSheath™ panels shall be attached to CFS studs with the specified fasteners with a minimum edge distance of 9.5 mm (⅜"). Fastener shall not penetrate through the exterior polymer facer.
- Where GWB is not installed on the interior face of the wall, the wall shall be constructed with mid-height horizontal bracing installed every other cavity space.
- Listed fastener length is based on 25.4 mm (1.0") panels. For 12.7 mm (0.5") panels, reduced fastener length is permitted only where specifically allowed by this report and the manufacturer's installation instructions.

Table 6. In-plane Shear Performance and Seismic Design Coefficients for Light-Frame (Steel) Walls Sheathed with Owens Corning® EZSheath™^{4,5} – Seismic

Product	Product Thickness (mm)	Maximum Stud ¹ Spacing (mm)	Factored Seismic Unit Shear Capacity kN/m (plf)	Apparent Shear Stiffness, G _a kN/m (kips/in)	Ductility-Related Force Modification Factor, ⁴ R _d	Over-strength-Related Force Modification Factor, ⁴ R _o	Structural System Limitations and Building Height Limit, (m)			
							Seismic Category ⁶			
							SC1	SC2	SC3	SC4
Owens Corning® EZSheath™	12.7 – 25.4 (0.50" – 1.0")	600 (24") o.c.	7.55 (517) ²	818 (4.7)	2.5	1.7	20	20	20	20
		600 (24") o.c.	4.35 (298) ³	970 (5.5)	2.5	1.7	20	20	20	20

SI: 1 in = 25.4 mm, 1 lb/ft = 0.0146 kN/m, 1-psi = 0.00689 MPa

- CFS studs shall be minimum 16-gauge, 345 MPa (50-ksi) structural studs.
- Owens Corning® EZSheath™ panels attached to studs with minimum 0.100" x 1 1/2" Aerosmith VersaPin spaced 100 mm (4") along the edge and 150 mm (6") in the field with a minimum edge distance of 9.5 mm (3/8").
- Owens Corning® EZSheath™ panels attached to studs with minimum 0.100" x 1 1/2" Aerosmith VersaPin spaced 150 mm (6") along the edge and 300 mm (12") in the field with a minimum edge distance of 9.5 mm (3/8").
- The tabulated R_d, R_o, and height limits are permitted per NBC Sentence 4.1.8.9.(5) where testing, and analysis demonstrated that the CFS-framed Owens Corning® EZSheath™ assembly provides seismic performance at least equivalent to the corresponding NBC-listed screw-connected CFS shear wall SFRS.
- CFS studs, tracks, anchorage, collectors, chord/boundary members, overturning restraint, hold-downs, and load-path elements shall be designed in accordance with NBC 2025 and CSA S136.
- SC = Seismic Category

4.3 Fastener Connections

- 4.3.1 Owens Corning® EZSheath™ panels were evaluated for fastener withdrawal resistance and lateral resistance for use as a proprietary sheathing/nailbase.
- 4.3.2 Factored fastener connection values are listed in **Table 7**. These values apply only to the listed fastener, sheathing and substrate configuration, and can be used in project-specific cladding or attachment design.

Table 7. Fastener Connection Performance¹

Structural Sheathing Product	Factored Withdrawal Capacity, N (lb)	Factored Lateral ² Capacity, N (lb)
Owens Corning® EZSheath™	109 (25)	339 (76)

SI: 1 in = 25.4 mm, 1 lb = 4.45 N

- Minimum fastener diameter shall be 0.099" and shall be of sufficient length to penetrate through the thickness of the panel and protrude 3/8" beyond the opposite side of the panel.
- Evaluated with a 1/4" ASTM A36 steel plate side member.

4.4 Water-Resistive Barrier (WRB)

- 4.4.1 Owens Corning® EZSheath™ may be used as a WRB as prescribed in NBC Division B Note A 5.6.2.1 when installed on exterior walls as described in this section.
- 4.4.2 Owens Corning® EZSheath™ shall be installed with board joints placed directly over exterior framing spaced a maximum of 600 mm (24") o.c.
 - 4.4.2.1 Vertical joints shall be supported by framing members.
 - 4.4.2.2 Horizontal joints shall be supported by framing members or blocking.

- 4.4.3 The fasteners used to attach the board shall be installed in accordance with **Table 1** through **Table 6**, and **Section 6**, as applicable.
- 4.4.4 A separate WRB may also be used. If a separate WRB method is used, sealing of the sheathing joints is not required.
- 4.4.5 Flashing must be installed at all sheathing penetrations and shall comply with all of the applicable code sections.
 - 4.4.5.1 All joints between sheathing panels shall be covered by minimum 76 mm (3") wide evaluated self-adhered tape, except where a separate WRB is provided. Tape, flashing, and transition details shall be installed in accordance with the manufacturer installation instructions and the applicable NBC requirements for environmental separation:
 - 4.4.5.1.1 Tape for window openings as an approved assembly is specified as minimum 6" (152 mm) wide FlashSealR® Foam Flashing Tape.
 - 4.4.5.1.2 Tape for the head, sill, and jamb of the window and Owens Corning® EZSheath™ wall assemblies shall be minimum 4" (102 mm) wide Owens Corning® JointSealR® Foam Joint Tape.
 - 4.4.5.1.3 Tape for the seams between Owens Corning® EZSheath™ panels and penetrations as an approved assembly is specified as 3" wide JointSealR Foam Joint Tape.
- 4.4.6 See **Figure 7**, **Figure 8**, and **Figure 9** for typical penetration flashing details.



Figure 7. Typical Seam Flashing Detail

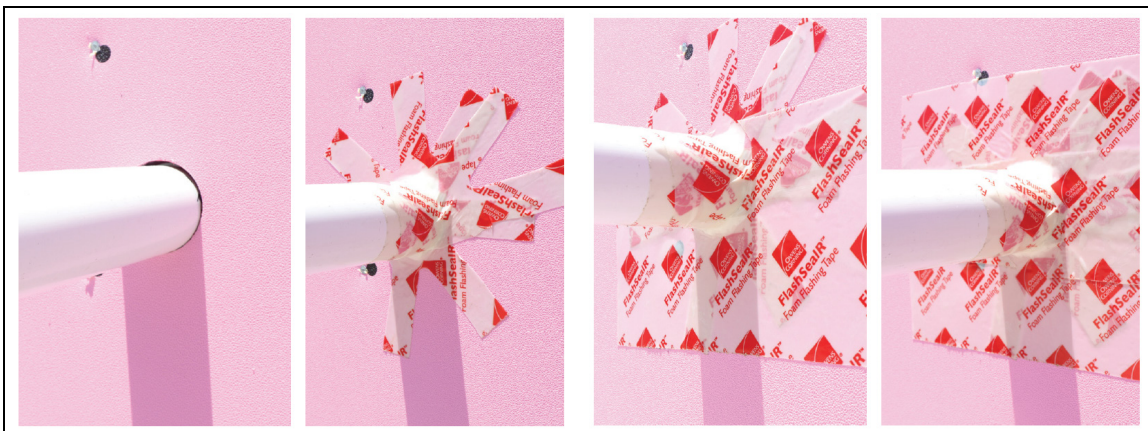


Figure 8. Typical Penetration Flashing Detail – Unflanged



Figure 9. Typical Window Flashing Detail

4.5 Air Barrier

- 4.5.1 Owens Corning® EZSheath™ wall assemblies were evaluated to assess air leakage performance in accordance with ASTM E2357. Canadian air-barrier recognition applies to the evaluated assembly, including panel joints, perimeter transitions, penetrations, openings, tapes, and sealants.
- 4.5.1.1 Opaque assemblies and assemblies with penetrations (e.g., pipes, ducts, junction boxes, windows, etc.) sheathed with Owens Corning® EZSheath™ panels met the requirements for use as an air barrier assembly and air permeance is provided in **Table 8**.
- 4.5.2 When used as part of a continuous air barrier assembly, Owens Corning® EZSheath™ panels shall be installed in accordance with **Table 1** through **Table 6**, **Section 4.5**, and **Section 6**, as applicable.
- 4.5.3 All sheathing edges at the top and bottom of wall assemblies, joints between sheathing panels, penetrations, openings, and transitions to adjacent air barrier materials shall be sealed in accordance with the evaluated assembly details and applicable NBC/NECB requirements.

Table 8. Air Barrier Properties^{1,2,3}

Product	Wall Construction Type	Air Permeability [L/(s·m ²)]
Owens Corning® EZSheath™	Opaque	< 0.2
	Penetrated	< 0.2

Imperial Units: 1 L/(s·m²) = 0.2 cfm/ft²

1. Tested in accordance with ASTM E2357.

2. Air permeability reading taken at 75 Pa.

3. Minimum thickness of the Owens Corning® EZSheath™ panels shall be 1/2".



4.6 Thermal Resistance (RSI-Values and R-Values)

- 4.6.1 Owens Corning® EZSheath™ meet the continuous insulated sheathing requirements complying with the provisions of NECB Division B Part 3.
- 4.6.2 Owens Corning® EZSheath™ have the thermal resistances shown in **Table 9**.

Table 9. Owens Corning® EZSheath™ Thermal Resistance Properties

Structural Sheathing Product	Thickness mm (in)	R-Value (h·ft ² ·°F/BTU)	RSI (m ² ·K/W)
Owens Corning® EZSheath™	12.7 (0.5")	2.5	0.44
	14.7 (0.58")	3.0	0.53
	25.4 (1.0")	5.0	0.88
	38.1 (1.5")	7.5	1.32
	50.8 (2.0")	10.0	1.76
	63.5 (2.5")	12.5	2.20
	76.2 (3.0")	15.0	2.64
SI: 1 in = 25.4 mm, 1 °F·ft ² ·h/BTU = 0.1761 K·m ² /W			

4.7 Thermal Barrier Requirements – Attic, Crawl Space, or Other Uninhabitable Space Applications

- 4.7.1 Installation shall be fully protected from the interior of the building by an approved 15-minute thermal barrier or ignition barrier as required by NBC Division B Article 9.10.17.10.

4.8 Fire Safety Performance

- 4.8.1 Owens Corning® EZSheath™ panels were evaluated for performance under fire exposure are provided in **Table 10**.
- 4.8.1.1 Surface burning characteristics were evaluated in accordance with ASTM E84.
- 4.8.1.1.1 ASTM E84 results are supporting data only and is not intended to be used as a direct substitute for CAN/ULC-S102 or CAN/ULC-S102.2 classification unless accepted by the AHJ.
- 4.8.1.2 The ASTM tests listed below may be retained as supporting material-characterization data only for Owens Corning® EZSheath™ panels.
- 4.8.1.2.1 Burning extent/burning rate in accordance with ASTM D635
- 4.8.1.2.2 Self-ignition temperature in accordance with ASTM D1929
- 4.8.1.2.3 Smoke density in accordance with ASTM D2843

Table 10. Fire Performance of Owens Corning® EZSheath™ Panels

Evaluated Property		Owens Corning® EZSheath™ Component	Reference Standard	Assessed Performance
Burning Rate		Panel Facer	ASTM D635	25.4 mm/minimum (1.0 in./minimum)
Burning Extent				72 mm (3 in.)
Combustibility Classification				C-2
Self-Ignition Temperature			ASTM D1929	> 343°C (> 650°F)
Smoke Density			ASTM D2843	≤ 75
Surface Burning Characteristics	Flame Spread Index	Panel Facer	ASTM E84	< 75
	Smoke Developed Index			≤ 450
	Flame Spread Index	Foam Core		< 25
	Smoke Developed Index			< 450

- 4.9 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 Owens Corning® EZSheath™ complies with the following adopted codes and/or accepted engineering practice for the following reasons:
- 5.1.1 Owens Corning® EZSheath™ was evaluated to determine:
- 5.1.1.1 Structural performance under lateral load conditions for both wind and seismic loading in accordance with NBC Division B Subsection 9.23.13 and NBC Division B Subsection 4.1.8.
- 5.1.1.1.1 Structural performance under lateral load conditions for both wind and seismic loading in accordance with NBC Division B Part 4 Structural Loads and Procedures and the CWC Engineering Guide for Wood Frame Construction.
- 5.1.1.1.2 **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 (i.e., all seismic design categories).
- 5.1.1.1.3 The basis for equivalency testing is outlined in Sentence 4.1.8.9.(5) of NBC, Division B:

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 R_d and R_o corresponding to the equivalent type in that Table. (See Note A-4.1.8.9.(5).).



- 5.1.1.2 Resistance to uplift loads for wall assemblies used for light-frame wood construction in accordance with NBC Division B Article 9.23.3.4.
- 5.1.1.3 Resistance to transverse loads for wall assemblies used in light-frame wood construction in accordance with NBC Division B Subsection 4.1.7.
- 5.1.1.4 Performance for use as foamed plastic insulation in accordance with the NBC Division B Article 3.1.5.15.
- 5.1.1.5 Performance for use as thermal insulation in accordance with NBC Division B Article 9.36.2.5 and NECB Division B Article 3.2.1.2.
- 5.1.1.6 Performance for use as an air barrier material in accordance with NBC Division B Article 9.36.2.10.
- 5.1.1.7 Performance for use as a water-resistive barrier in accordance with NBC Division B Note A-5.6.2.1.
- 5.1.1.8 Performance for 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 qualified⁴ 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 *Orientation*
 - 6.3.1 Owens Corning® EZSheath™ panels may be installed vertically or horizontally over studs with framing that have a nominal thickness of not less than 51 mm (2") and spaced a maximum of 600 mm (24") o.c.
 - 6.3.2 Sheathing joints must be butted at framing members and all panel edges shall be blocked. A single row of fasteners must be applied to each panel edge into the stud or blocking below. Do not tack product to framing, but fasten each panel completely after fastening begins.
- 6.4 *Installation*
 - 6.4.1 *General:*
 - 6.4.1.1 Fasteners shall be installed with a nominal edge distance of 9.5 mm ($\frac{3}{8}$ ") for both Owens Corning® EZSheath™ panels and GWB.
 - 6.4.1.2 Where hold-down straps are used, install structural sheathing first, remove foam at strap location, then install the strap over the face of the structural sheathing backer and attach per the manufacturer installation instructions.
 - 6.4.1.3 Where required, gypsum wallboard shall be a minimum 12.7 mm ($\frac{1}{2}$ ") and installed with a minimum of #6 x 1 $\frac{1}{4}$ " (32 mm) Type W or S screws. The fastener spacing shall be a maximum of 200 mm (8") o.c. along the edge and in the field.



6.4.2 Owens Corning® EZSheath™:

- 6.4.2.1 For light-frame wood walls, Owens Corning® EZSheath™ panels shall be fastened with minimum 2.87 mm (0.113") diameter nails with a 35 mm (1³/₈") minimum embedment into stud or 16-gauge staples with 11.1 mm (7/₁₆") crown and 25.4 mm (1") minimum embedment into the stud unless otherwise specified in **Section 4**.
 - 6.4.2.1.1 Fastener spacing shall be a maximum of 150 mm (6") o.c. along the edge and 300 mm (12") o.c. in the field for nail installation and maximum of 75 mm (3") o.c. along the edge and 75 mm (3") o.c. in the field for staple installation unless otherwise permitted in **Section 4**.
 - 6.4.2.1.2 Always fasten staples with the crown parallel to the framing member.
- 6.4.2.2 For light-frame steel walls, Owens Corning® EZSheath™ panels shall be fastened with minimum 0.100" x 1¹/₂" Aerosmith VersaPin nails.
 - 6.4.2.2.1 Unless otherwise stated in **Section 4**:
 - 6.4.2.2.1.1 Knurled nails shall be of sufficient length that the knurled portion of the shank must penetrate completely through the steel thickness.
 - 6.4.2.2.1.2 Fastener spacing shall be a maximum of 150 mm (6") o.c. along the edge and 305 mm (12") o.c. in the field unless otherwise stated in **Section 6**.

6.4.3 GWB:

- 6.4.3.1 For NBC Division B Part 9 applications, gypsum nail fasteners shall be spaced a maximum of 150 mm (6") o.c. on vertical wall supports and 300 mm (12") o.c. along intermediate supports.
- 6.4.3.2 For NBC Division B Part 9 applications, gypsum screw fasteners shall be spaced a maximum of 150 mm (6") o.c. on vertical wall supports and 300 mm (12") o.c. along intermediate supports.
- 6.4.3.3 Where required, gypsum wallboard shall be a minimum 12.7 mm (1/2") thickness and shall be attached with #6 x 32 mm (1¹/₄") Type W or S screws, diameter 3.3 mm (0.13") spaced as shown in **Section 4**.

6.5 Penetrations and Window Treatments

- 6.5.1 Owens Corning® EZSheath™ panels must be installed with appropriate flashing and counter flashing in conformance with accepted building standards and in compliance with local building codes and the flashing manufacturer installation instructions.

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 Lateral load testing for use as an alternative material for wind design and seismic design in accordance with ASTM E564 and ASTM E2126
 - 7.1.1.1 Lateral load testing and data for determining comparative equivalency for use as an alternative material for seismic design in accordance with ASTM E2126 and analysis per ASTM D7989
 - 7.1.2 Transverse load testing in accordance with ASTM E330
 - 7.1.3 Uplift (axial tension) testing in accordance with ASTM E72
 - 7.1.4 Test reports and data for determining use as a WRB material in accordance with ASTM E331
 - 7.1.5 Test reports and data for determining use as a component of an air barrier in accordance with ASTM E2357
 - 7.1.6 Surface burning characteristics testing in accordance with ASTM E84
 - 7.1.7 Smoke density testing in accordance with ASTM D2843



- 7.1.8 Burning rate testing in accordance with ASTM D635
- 7.1.9 Self-ignition temperature testing in accordance with ASTM D1929
- 7.1.10 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 Owens Corning® EZSheath™ on the [DrJ Certification website](#).

8 Findings

- 8.1 As outlined in **Section 4**, Owens Corning® EZSheath™ has 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, Owens Corning® EZSheath™ 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 and braced wall bands.
 - 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 and double-top-plate applications.
 - 8.2.4 Use as a nailbase as permitted per the factored withdrawal and lateral capacities.
 - 8.2.5 Performance for use as a WRB in accordance with NBC Division B Note A-5.6.2.1.
 - 8.2.6 Performance for use as an air barrier in accordance with NBC Division B Section 5.4, Subsection 9.25.3, and NECB Division B Subsection 3.2.4.
 - 8.2.7 Performance of the foamed-plastic component for conformance to NBC Division B Article 3.1.5.15.
 - 8.2.8 Performance for use as foamed-plastic insulating sheathing in accordance with NBC Division B Article 9.36.2.5 and NECB Division B Article 3.2.1.2.
 - 8.2.9 Surface burning characteristics in accordance with NBC Division B Subsection 3.1.12 and Article 9.10.3.2.



- 8.3 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Owens Corning.
- 8.4 This innovative product has been evaluated in the context of the codes listed in **Section 3** and is 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 #1131¹² 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, Owens Corning® EZSheath™ shall be subject to the following conditions:
- 9.2.1 Design loads shall be determined in accordance with the building code adopted by the authority having jurisdiction for the project location. For engineered design under NBC 2025 Division B, Part 4, wind loads shall be determined in accordance with Subsection 4.1.7 and earthquake loads shall be determined in accordance with Subsection 4.1.8. For buildings within the scope of NBC 2025 Division B, Part 9, bracing design shall comply with Subsection 9.23.13 where applicable.
- 9.2.1.1 The values listed in this report are factored resistances or serviceability limits, as specifically identified in the applicable table. Factored resistances shall be checked against strength-level factored load effects. Serviceability limits shall be checked against serviceability-level load effects. Resistance factors shall not be applied to serviceability limits.
- 9.2.1.2 Design loads shall be determined in accordance with the building code adopted by the jurisdiction in which the project is to be constructed.
- 9.2.1.2.1 Loads applied shall remain within the limits set forth in **Section 4**:
- 9.2.1.2.1.1 Factored unit shear loads are listed in **Table 1** for wind and **Table 2** for seismic.
- 9.2.1.2.1.1.1 The factored shear resistances listed in this report do not include design of collectors, hold-downs, anchorage, foundation connections, diaphragm connections, or overturning restraint.
- 9.2.1.2.1.2 Transverse design loads shall remain within those described in **Table 4**.
- 9.2.1.2.1.2.1 Transverse wind resistance shall be checked separately for strength and serviceability. The factored transverse strength resistance shall be checked against strength-level wind demand. The transverse serviceability limit shall be checked against service-level wind demand. No resistance factor shall be applied to transverse serviceability limits.
- 9.2.1.2.1.2.2 Where a single transverse wind value is listed for positive or negative pressure, the value shall be based on the lower of the evaluated positive and negative pressure directions. The value is permitted to be used for either direction only within the assembly conditions listed in **Table 4**.
- 9.2.1.2.1.3 Axial loads (uplift) shall remain within the values in **Table 3**.
- 9.2.1.2.1.3.1 Uplift values listed in this report apply only to the evaluated sheathing-to-bottom-plate connection or other connection specifically identified in the applicable table. They do not establish complete roof-to-foundation uplift load-path capacity.
- 9.2.1.2.1.4 Combined in-plane shear and uplift shall be evaluated by project-specific engineering unless combined-load testing is specifically listed in this report. In the absence of combined-load testing, a conservative linear interaction check shall be used unless otherwise justified by engineering analysis accepted by the authority having jurisdiction.
- 9.2.2 Where Owens Corning® EZSheath™ is used as an alternative to a NBC Part 9 WSP reference bracing type, the assembly shall satisfy the equivalency requirements stated in this report, including the required factored shear resistance, installation conditions, and, where seismic bracing is required, the required cyclic/seismic equivalency basis.
- 9.2.2.1 For wood-framed engineered applications, studs, plates, blocking, boundary members, collectors, anchorage, hold-downs, and other wood load-path elements shall be designed in accordance with NBC 2025 Division B, Part 4 and CSA O86.



- 9.2.3 When installed as a wall sheathing, but not installed per structural requirements, light-framed walls shall be braced by other means.
- 9.2.4 When used as a WRB, installation shall be in accordance with **Section 4.4**.
- 9.2.4.1 Joints, seams, penetrations, openings, transitions, and terminations shall be taped, sealed, flashed, and detailed in accordance with the evaluated assembly, this report, and the manufacturer installation instructions.
- 9.2.4.1.1 Where joints are not treated as required, a separate water-resistive barrier or sheathing membrane shall be installed.
- 9.2.5 Where Owens Corning® EZSheath™ is used as part of an air barrier assembly, the complete air barrier assembly, including joints, penetrations, openings, transitions, and terminations, shall be installed in accordance with the evaluated assembly, this report, and the manufacturer installation instructions.
- 9.2.6 Thermal resistance values listed in this report apply only to the panel thicknesses and material properties evaluated. Compliance with NBC Part 9 energy provisions, NECB requirements, or provincial and territorial energy-code requirements shall be verified for each project.
- 9.2.7 All panel edges shall be supported by wall framing or solid blocking a minimum of 2" nominal (1½" actual) thickness.
- 9.2.8 Owens Corning® EZSheath™ contains foam plastic insulation. Installation shall comply with the applicable NBC requirements for foam plastic insulation, including required protection from the interior of the building, flame-spread classification, concealed-space limitations, fire blocking, and any applicable cladding or exterior wall requirements.
- 9.2.8.1 In areas where termites are known to occur and foundations are insulated or otherwise finished in a manner that could conceal a termite infestation in accordance with NBC Division B Article 9.3.2.9, a metal or plastic barrier shall be installed through the insulation to control the passage of termites behind or through the insulation.
- 9.2.8.2 Where a thermal barrier, ignition barrier, gypsum wallboard layer, or other protective covering is required by the adopted code, the protective covering shall be installed in accordance with the adopted code, this report, and the manufacturer installation instructions.
- 9.3 The manufacturer installation instructions shall be shipped to the jobsite with the materials or otherwise be available on the jobsite for inspection.
- 9.4 Owens Corning® EZSheath™ is manufactured under a quality control program with quality control inspections established by the governing legislation of the adopting province or territory, as described in NBC Volume 1 commentary on Conformity Assessment.
- 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 This innovative product has an internal quality control program and a third-party quality assurance program.
- 9.5.4 At a minimum, this innovative product 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 this innovative product 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 Owens Corning® EZSheath™, as listed in **Section 1.1**, is 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.owenscorning.com/en-us/insulation/products/ezsheath.

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.*"