Listing and Technical Evaluation Report™

A Duly Authenticated Report from an Approved Agency

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Wood Framed Wall Assemblies with OX EP Sheathing and Enverge NexSeal 2.0 Closed Cell SPF

Trade Secret Report Holder:

Amrize Building Envelope, LLC

Phone: 800-345-8881 Website: www.oxengineeredproducts.com

CSI Designations:

DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES	DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION
Section: 06 12 00 - Structural Panels	Section: 07 21 00 - Thermal Insulation
Section: 06 12 19 - Shear Wall Panels	Section: 07 21 13 - Foam Board Insulation
Section: 06 16 00 - Sheathing	Section: 07 21 29 - Sprayed Insulation
Section: 06 16 13 - Insulated Sheathing	Section: 07 25 00 - Water-Resistive Barriers/Weather Barriers
Section: 06 16 53 - Moisture-Resistant Sheathing Board	Section: 07 27 00 - Air Barriers

1 Innovative Products Evaluated[1]

1.1 OX Engineered Wood Framed Wall Assemblies with Enverge NexSeal 2.0 Closed Cell SPF

2 Product Description and Materials

2.1 OX Engineered Wood Framed Wall Assemblies are wall systems consisting of Ox Engineered Products as the exterior sheathing and Enverge NexSeal 2.0 Closed Cell SPF sprayed wall cavities.

2.1.1 *OX Engineered Products:*

2.1.1.1 ThermoPLY® Structural Sheathing

2.1.1.2 OX-IS™ and OX-IS™ HS (High Shear) Structural Insulated Sheathing

2.1.1.3 IsoRED Ci® Polyiso Insulation

2.1.2 *ThermoPLY Structural Sheathing:*

2.1.2.1 ThermoPLY is comprised of pressure-laminated plies consisting of high-strength cellulosic fibers. These fibers are treated to be water resistant and are bonded with a proprietary water-resistant adhesive. A protective polymer layer or foil-faced surface is applied on both sides of the panel.

2.1.2.2 *Nominal Thickness:*

2.1.2.2.1 ThermoPLY Green: 0.078"

2.1.2.2.2 ThermoPLY Red: 0.113"

2.1.2.2.3 ThermoPLY Blue: 0.135"

2.1.3 *OX-IS and OX-IS HS Structural Insulated Sheathing:*

2.1.3.1 OX-IS and OX-IS HS are structural composite sheathing products, from exterior to interior, consisting of an integrated water and air barrier exterior facer, a proprietary rigid, closed-cell polyisocyanurate (polyiso) foam plastic insulating sheathing conforming to ASTM C1289 Type 1 Class 1, and a proprietary fibrous sheathing board.

2.1.3.1.1 The structural sheathing is constructed of specially treated fiber plies that are pressure-laminated with a water resistance adhesive.

2.1.4 *IsoRED Ci Polyiso Insulation:*

2.1.4.1 IsoRED Ci is a rigid polyiso insulation conforming to ASTM C1289 Type 1 Class 1.

2.1.4.1.1 The closed-cell polyiso foam core is bonded to facers on both sides. The facers are designed with a base foil layer, which is then combined with layers of other material(s).

2.2 As needed, review material properties for design in **Section 6** and the regulatory evaluation in **Section 8**.

3 Definitions[2]

3.1 New Materials[3] are defined as building materials, equipment, appliances, systems, or methods of construction, not provided for by prescriptive and/or legislatively adopted regulations, known as alternative materials.[4] The design strength and permissible stresses shall be established by tests[5] and/or engineering analysis.[6]

3.2 Duly authenticated reports[7] and research reports[8] are test reports and related engineering evaluations that are written by an approved agency[9] and/or an approved source.[10]

3.2.1 These reports utilize intellectual property and/or trade secrets to create public domain material properties for commercial end-use.

3.2.1.1 This report protects confidential Intellectual Property and trade secretes under the regulation, 18.US.Code.90, also known as Defend Trade Secrets Act of 2016 (DTSA).[11]

3.3 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is accredited and listed in the ANAB directory.

3.4 An approved source is *"approved"* when a professional engineer (i.e., Registered Design Professional, hereinafter RDP) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.[12]

3.5 Testing and/or inspections conducted for this duly authenticated report were performed by an ISO/IEC 17025 accredited testing laboratory, an ISO/IEC 17020 accredited inspection body, and/or a licensed RDP.

3.5.1 The Center for Building Innovation (CBI) is ANAB[13] ISO/IEC 17025 and ISO/IEC 17020 accredited.

3.6 The regulatory authority shall enforce[14] the specific provisions of each legislatively adopted regulation. If there is a non-conformance, the specific regulatory section and language of the non-conformance shall be provided in writing[15] stating the nonconformance and the path to its cure.

3.7 The regulatory authority shall accept duly authenticated reports from an approved agency and/or an approved source with respect to the quality and manner of use of new materials or assemblies as provided for in regulations regarding the use of alternative materials, designs, or methods of construction.[16]

3.8 ANAB is an International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA) signatory. Therefore, recognition of certificates and validation statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA with the appropriate scope shall be approved.[17] Thus, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent,[18] and can be used in any country that is an MLA signatory found at this link: https://iaf.nu/en/recognised-abs/

3.9 Approval equity is a fundamental commercial and legal principle.[19]

4 Applicable Local, State, and Federal Approvals; Standards; Regulations[20]

4.1 *Local, State, and Federal*

4.1.1 Approved in all local jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured local jurisdictions: Austin, Baltimore, Broward County, Chicago, Clark County, Dade County, Dallas, Detroit, Denver, DuPage County, Fort Worth, Houston, Kansas City, King County, Knoxville, Las Vegas, Los Angeles City, Los Angeles County, Miami, Nashville, New York City, Omaha, Philadelphia, Phoenix, Portland, San Antonio, San Diego, San Jose, San Francisco, Seattle, Sioux Falls, South Holland, Texas Department of Insurance, and Wichita.[21]

4.1.2 Approved in all state jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured states: California, Florida, New Jersey, Oregon, New York, Texas, Washington, and Wisconsin.[22]

4.1.3 Approved by the Code of Federal Regulations Manufactured Home Construction: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14[23] and Part 3280[24] pursuant to the use of ISO/IEC 17065 duly authenticated reports.

4.1.4 Approved means complying with the requirements of local, state, or federal legislation.

4.2 *Standards*

4.2.1 *ANSI/AWC SDPWS: Special Design Provisions for Wind and Seismic*

4.2.2 *ASCE/SEI 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures*

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

4.2.4 *ASTM D7989: Standard Practice for Demonstrating Equivalent In-Plane Lateral Seismic Performance to Wood-Frame Shear Walls Sheathed with Wood Structural Panels*

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

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

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

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

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

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

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

4.3 Structural performance for shear wall assemblies used as lateral force resisting systems in Seismic Design Categories A through F have been tested and evaluated in accordance with the following standards:

4.3.1 *ASCE/SEI 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures*

4.3.2 *ASTM D7989: Standard Practice for Demonstrating Equivalent In-Plane Lateral Seismic Performance to Wood-Frame Shear Walls Sheathed with Wood Structural Panels*

4.3.2.1 ASTM D7989 is accepted engineering practice used to establish Seismic Design Coefficients (SDC).

4.3.2.2 Tested data generated by ISO/IEC 17025 approved agencies and/or professional engineers, which use ASTM D7989 as their basis, are defined as intellectual property and/or trade secrets.

4.3.2.3 All professional engineering evaluations are defined as an independent design review (i.e., listings, certified reports, duly authenticated reports from approved agencies, and/or research reports, are prepared independently by approved agencies and/or approved sources, when signed and sealed by licensed professional engineer pursuant to registration law.

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

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

4.4 *Regulations*

4.4.1 *IBC – 18, 21, 24: International Building Code®*

4.4.2 *IRC – 18, 21, 24: International Residential Code®*

4.4.3 *IECC – 18, 21, 24: International Energy Conservation Code®*

5 Listed[25]

5.1 Equipment, materials, products, or services included in a List published by a nationally recognized testing laboratory (i.e., CBI), an approved agency (i.e., CBI and DrJ), and/or and approved source (i.e., DrJ), or other organization(s) concerned with product evaluation (i.e., DrJ), that maintains periodic inspection (i.e., CBI) of production of listed equipment or materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

6 Tabulated Properties Generated from Nationally Recognized Standards

6.1 *General*

6.1.1 OX Engineered Products are structural sheathing panels for use in the following applications as:

6.1.1.1 Wall sheathing in buildings constructed in accordance with the IBC and IRC for light-frame wood and steel construction.

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

6.1.1.3 Structural wall sheathing to provide resistance to transverse loads for wall assemblies used in wood construction.

6.1.1.4 Insulating sheathing applied as in-fill to portions of walls that are not designed as braced wall panels or shear walls.

6.1.1.5 Insulated sheathing in accordance with the IRC Section N1102, IECC Section R402, and IECC Section C402.

6.1.1.6 An approved Water-Resistive Barrier (WRB) in accordance with IBC Section 1403.2 and IRC Section R703.2, when installed with approved construction tape on all sheathing seams. See the manufacturer product information for further details.

6.1.1.6.1 Where the joints are not taped, a separate WRB shall be installed in accordance with the WRB manufacturer installation instructions.

6.1.1.7 An air barrier material as part of an air barrier assembly in accordance with IRC Section N1102.5 and IECC Section C402.6.1[26] in accordance with the manufacturer installation instructions and this report.

6.1.2 OX-IS, OX-IS HS, IsoRED Ci, and Enverge NexSeal 2.0 are foam plastic insulation products that comply with IBC Section 2603 and IRC Section R303.[27]

6.2 *Structural Applications*

6.2.1 *General Provisions:*

6.2.1.1 Except as otherwise described in this report, the OX Engineered Products shall be installed in accordance with the applicable building codes listed in **Section 4** using the provisions set forth herein for the design and installation of WSP.

6.2.1.2 OX Engineered Products shall be permitted to be designed in accordance with SDPWS for the design of shear walls using the methods set forth therein, including the perforated shear wall methodology, and subject to the SDPWS boundary conditions, except as specifically allowed in this report.

6.2.1.3 Anchorage for in-plane shear shall be provided to transfer the induced shear force into and out of each shear wall.

6.2.1.3.1 For wind design, anchor bolt spacing shall not exceed 6' o.c.

6.2.1.3.2 For seismic design, anchor bolt spacing shall not exceed 4' o.c.

6.2.1.4 The maximum aspect ratio for the OX Engineered Products shall be 4:1.

6.2.1.5 The minimum full height panel width shall be 24".

6.2.1.6 All panel edges shall be blocked with a minimum 2" nominal lumber.

6.2.1.7 *Fastening:*

6.2.1.7.1 Permitted fasteners used to attach OX Engineering Products shall be in accordance with **Table 1**.

Table 1. Permitted Fasteners for Installation of OX Engineered Products

Structural Sheathing Product	Fastener Type	Minimum Fastener Size	Minimum Length	Fastener Spacing (edge:field) (in)
ThermoPLY (Green, Red, Blue)	Staple, Galvanized	16-gauge, 7/16" crown	1 1/4"	3:3
	Roofing Nail	0.120" diameter with a 3/8" diameter head	1 1/4"	3:3
0.50" OX-IS or 0.50" OX-IS HS	Staple, Galvanized	16-gauge, 7/16" crown	See Footnote 1	3:3
	Nail	0.113" diameter with a 3/8" diameter head or 2" cap	See Footnote 2	
1.0" to 1.7" OX-IS	Staple, Galvanized	16-gauge, 7/16" crown	See Footnote 1	3:3
0.50" to 1.7" IsoRED Ci	Nail	0.090" diameter galvanized nails with 1" plastic cap	See Footnote 3	12:16

SI: 1 in = 25.4 mm

1. Staples used to attach OX-IS or OX-IS HS products shall be of sufficient length to achieve a minimum penetration of 1" into framing members.
2. Fastening of 0.50" OX-IS or 0.50" OX-IS HS with 0.113" diameter with a 3/8" diameter head or 2" cap permitted, provided that the conditions in the respective tables in **Section 6** are followed.
3. Nails used to attach 0.50" IsoRED Ci shall be of sufficient length to achieve a minimum penetration of 1. "" into framing members. Nails used to attach 1.0" IsoRED Ci and thicker shall be of sufficient length to achieve a minimum penetration of 1" into framing members.

6.2.1.7.2 For OX-IS and OX-IS-HS products, fasteners may be countersunk beneath the outer surface of the foam plastic sheathing layer.

6.2.1.7.3 For ThermoPLY products and IsoRED Ci, fasteners shall be flush with the top surface.

6.2.1.8 Installation is permitted for single top plate or double top plate applications.

6.2.1.8.1 Walls with single top plate shall constructed in accordance with IBC Section 2308.9.3.2[28] or IRC Section R602.3.2.

6.2.2 *Simplified IRC Bracing Provisions:*

6.2.2.1 *General:*

6.2.2.1.1 OX Engineered Wood Framed Wall Assemblies are permitted to be used in accordance with the IRC simplified bracing method of IRC Section R602.12 as modified herein.

6.2.2.1.2 **Table 2** through **Table 11**, in this subsection of the report, are based on the provisions of IRC Section R602.12. All provisions therein shall be observed, except that these tables shall replace IRC Table R602.12.4, and the corresponding OX Engineered sheathing product shall replace the sheathing material.

6.2.2.1.2.1 All other provisions of the IRC simplified bracing method shall be met.

6.2.2.1.3 Enverge NexSeal 2.0 Closed Cell SPF shall be applied within the wall cavities of the wall assemblies. Minimum SPF thickness shall be 1".

6.2.2.1.4 Cripple walls or wood-framed basement walls in a walkout condition, shall be designated as the first story and the stories above shall be redesignated as the second and third stories, respectively, and shall be prohibited in a three-story structure.

6.2.2.1.5 Minimum 1/2" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.

6.2.2.1.5.1 Where GWB is not applied to the interior side of the wall assembly, bracing lengths in IRC Table R602.10.3(1) and IRC Table R602.10.3(3), as modified by all applicable factors in IRC Table R602.10.3(2) and IRC Table R602.10.3(4), shall be used.

6.2.2.2 *ThermoPLY:*

6.2.2.2.1 OX Engineered Wood Framed Wall Assemblies sheathed with ThermoPLY products are permitted to be used in accordance with the IRC simplified bracing method of IRC Section R602.12 as modified by:

6.2.2.2.1.1 **Table 2** and **Table 3** for assemblies sheathed with ThermoPLY Green

6.2.2.2.1.2 **Table 4** and **Table 5** for assemblies sheathed with ThermoPLY Red

6.2.2.2.1.3 **Table 6** and **Table 7** for assemblies sheathed with ThermoPLY Blue

6.2.2.2.1.4 All other provisions of the IRC simplified bracing method shall be met.

Table 2. Simplified Bracing for ThermoPLY Green with ≥ 1.0" Spray Foam – 16" o.c.[1,2,3,4,5,6]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60
115	One Story or Top of Two or Three Story	10	1	1	2	2	3	3	1	1	2	2	3	3
	First of Two Story or Second of Three Story		1	2	3	4	5	5	1	2	3	4	5	5
	First of Three Story		2	3	4	5	7	8	2	3	4	5	7	8
	One Story or Top of Two or Three Story	15	2	2	3	3	4	4	2	2	3	3	4	4
	First of Two Story or Second of Three Story		2	3	4	5	6	6	2	3	4	5	6	6
	First of Three Story		3	4	5	6	8	9	3	4	5	6	8	9
130	One Story or Top of Two or Three Story	10	1	2	2	3	3	4	1	2	2	3	3	4
	First of Two Story or Second of Three Story		2	3	4	5	6	7	2	3	4	5	6	7
	First of Three Story		2	4	5	7	8	10	2	4	5	7	8	10
	One Story or Top of Two or Three Story	15	2	3	3	4	4	6	2	3	3	4	4	6
	First of Two Story or Second of Three Story		3	4	5	6	7	9	3	4	5	6	7	9
	First of Three Story		3	5	6	8	9	11	3	5	6	8	9	11

Table 2. Simplified Bracing for ThermoPLY Green with ≥ 1.0" Spray Foam – 16" o.c.[1,2,3,4,5,6]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60

SI: 1 in = 25.4 mm, 1 mph = 1.61 km/h

1. Interpolation shall not be permitted.
2. Actual lengths of the sides of the circumscribed rectangle shall be rounded to the next highest unit of 10 when using this table.
3. For Exposure Category C, multiply bracing units by a factor of 1.20 for a one-story building, 1.30 for a two-story building, and 1.40 for a three-story building.
4. Maximum stud spacing is 16" o.c.
5. ThermoPLY Green attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.

Table 3. Simplified Bracing for ThermoPLY Green with ≥ 1.0" Spray Foam – 24" o.c.[1,2,3,4,5,6]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60
115	One Story or Top of Two or Three Story	10	1	1	2	2	3	3	1	1	2	2	3	3
	First of Two Story or Second of Three Story		2	3	3	4	5	6	2	3	3	4	5	6
	First of Three Story		2	3	5	6	7	8	2	3	5	6	7	8
	One Story or Top of Two or Three Story	15	2	2	3	3	4	4	2	2	3	3	4	4
	First of Two Story or Second of Three Story		3	4	4	5	6	7	3	4	4	5	6	7
	First of Three Story		3	4	6	7	8	9	3	4	6	7	8	9
130	One Story or Top of Two or Three Story	10	1	2	2	3	3	4	1	2	2	3	3	4
	First of Two Story or Second of Three Story		2	3	4	5	6	7	2	3	4	5	6	7
	First of Three Story		3	4	6	7	9	11	3	4	6	7	9	11
	One Story or Top of Two or Three Story	15	2	3	3	4	4	6	2	3	3	4	4	6
	First of Two Story or Second of Three Story		3	4	5	6	7	9	3	4	5	6	7	9
	First of Three Story		4	5	7	8	10	13	4	5	7	8	10	13

Table 3. Simplified Bracing for ThermoPLY Green with ≥ 1.0" Spray Foam – 24" o.c.[1,2,3,4,5,6]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60

SI: 1 in = 25.4 mm, 1 mph = 1.61 km/h

1. Interpolation shall not be permitted.
2. Actual lengths of the sides of the circumscribed rectangle shall be rounded to the next highest unit of 10 when using this table.
3. For Exposure Category C, multiply bracing units by a factor of 1.20 for a one-story building, 1.30 for a two-story building, and 1.40 for a three-story building.
4. Maximum stud spacing is 24" o.c.
5. ThermoPLY Green attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.

Table 4. Simplified Bracing for ThermoPLY Red with ≥ 1.0" Spray Foam – 16" o.c.[1,2,3,4,5,6]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60
115	One Story or Top of Two or Three Story	10	1	1	2	2	2	3	1	1	2	2	2	3
	First of Two Story or Second of Three Story		1	2	3	3	4	5	1	2	3	3	4	5
	First of Three Story		2	3	4	5	6	7	2	3	4	5	6	7
	One Story or Top of Two or Three Story	15	2	2	3	3	3	4	2	2	3	3	3	4
	First of Two Story or Second of Three Story		2	3	4	4	5	6	2	3	4	4	5	6
	First of Three Story		3	4	5	6	7	8	3	4	5	6	7	8

Table 4. Simplified Bracing for ThermoPLY Red with ≥ 1.0" Spray Foam – 16" o.c.[1,2,3,4,5,6]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60
130	One Story or Top of Two or Three Story	10	1	2	2	2	3	3	1	2	2	2	3	3
	First of Two Story or Second of Three Story		2	3	3	4	5	6	2	3	3	4	5	6
	First of Three Story		2	3	5	6	7	9	2	3	5	6	7	9
	One Story or Top of Two or Three Story	15	2	3	3	3	4	4	2	3	3	3	4	4
	First of Two Story or Second of Three Story		3	4	4	5	6	7	3	4	4	5	6	7
	First of Three Story		3	4	6	7	8	10	3	4	6	7	8	10

SI: 1 in = 25.4 mm, 1 mph = 1.61 km/h

1. Interpolation shall not be permitted.
2. Actual lengths of the sides of the circumscribed rectangle shall be rounded to the next highest unit of 10 when using this table.
3. For Exposure Category C, multiply bracing units by a factor of 1.20 for a one-story building, 1.30 for a two-story building, and 1.40 for a three-story building.
4. Maximum stud spacing is 16" o.c.
5. ThermoPLY Red attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.

Table 5. Simplified Bracing for ThermoPLY Red with ≥ 1.0" Spray Foam – 24" o.c.[1,2,3,4,5,6]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60
115	One Story or Top of Two or Three Story	10	1	1	2	2	3	3	1	1	2	2	3	3
	First of Two Story or Second of Three Story		1	2	3	4	5	5	1	2	3	4	5	5
	First of Three Story		2	3	4	5	7	8	2	3	4	5	7	8
	One Story or Top of Two or Three Story	15	2	2	3	3	4	4	2	2	3	3	4	4
	First of Two Story or Second of Three Story		2	3	4	5	6	6	2	3	4	5	6	6
	First of Three Story		3	4	5	6	8	9	3	4	5	6	8	9
130	One Story or Top of Two or Three Story	10	1	2	2	3	3	4	1	2	2	3	3	4
	First of Two Story or Second of Three Story		2	3	4	5	6	7	2	3	4	5	6	7
	First of Three Story		2	4	5	7	8	10	2	4	5	7	8	10
	One Story or Top of Two or Three Story	15	2	3	3	4	4	6	2	3	3	4	4	6
	First of Two Story or Second of Three Story		3	4	5	6	7	9	3	4	5	6	7	9
	First of Three Story		3	5	6	8	9	11	3	5	6	8	9	11

SI: 1 in = 25.4 mm, 1 mph = 1.61 km/h

1. Interpolation shall not be permitted.
2. Actual lengths of the sides of the circumscribed rectangle shall be rounded to the next highest unit of 10 when using this table.
3. For Exposure Category C, multiply bracing units by a factor of 1.20 for a one-story building, 1.30 for a two-story building, and 1.40 for a three-story building.
4. Maximum stud spacing is 24" o.c.
5. ThermoPLY Red attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.

Table 6. Simplified Bracing for ThermoPLY Blue with ≥ 1.0" Spray Foam – 16" o.c.[1,2,3,4,5,6]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60
115	One Story or Top of Two or Three Story	10	1	1	2	2	2	2	1	1	2	2	2	2
	First of Two Story or Second of Three Story		1	2	2	3	4	4	1	2	2	3	4	4
	First of Three Story		2	3	3	4	5	6	2	3	3	4	5	6
	One Story or Top of Two or Three Story	15	2	2	3	3	3	3	2	2	3	3	3	3
	First of Two Story or Second of Three Story		2	3	3	4	5	5	2	3	3	4	5	5
	First of Three Story		3	4	4	5	6	7	3	4	4	5	6	7
130	One Story or Top of Two or Three Story	10	1	1	2	2	3	3	1	1	2	2	3	3
	First of Two Story or Second of Three Story		1	2	3	4	4	5	1	2	3	4	4	5
	First of Three Story		2	3	4	5	6	7	2	3	4	5	6	7
	One Story or Top of Two or Three Story	15	2	2	3	3	4	4	2	2	3	3	4	4
	First of Two Story or Second of Three Story		2	3	4	5	5	6	2	3	4	5	5	6
	First of Three Story		3	4	5	6	7	8	3	4	5	6	7	8

SI: 1 in = 25.4 mm, 1 mph = 1.61 km/h

1. Interpolation shall not be permitted.
2. Actual lengths of the sides of the circumscribed rectangle shall be rounded to the next highest unit of 10 when using this table.
3. For Exposure Category C, multiply bracing units by a factor of 1.20 for a one-story building, 1.30 for a two-story building, and 1.40 for a three-story building.
4. Maximum stud spacing is 16" o.c.
5. ThermoPLY Blue attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.

Table 7. Simplified Bracing for ThermoPLY Blue with ≥ 1.0" Spray Foam – 24" o.c.[1,2,3,4,5,6]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60
115	One Story or Top of Two or Three Story	10	1	1	2	2	2	3	1	1	2	2	2	3
	First of Two Story or Second of Three Story		1	2	3	3	4	5	1	2	3	3	4	5
	First of Three Story		2	3	4	5	6	7	2	3	4	5	6	7
	One Story or Top of Two or Three Story	15	2	2	3	3	3	4	2	2	3	3	3	4
	First of Two Story or Second of Three Story		2	3	4	4	5	6	2	3	4	4	5	6
	First of Three Story		3	4	5	6	7	8	3	4	5	6	7	8
130	One Story or Top of Two or Three Story	10	1	2	2	2	3	3	1	2	2	2	3	3
	First of Two Story or Second of Three Story		2	3	3	4	5	6	2	3	3	4	5	6
	First of Three Story		2	3	5	6	7	9	2	3	5	6	7	9
	One Story or Top of Two or Three Story	15	2	3	3	3	4	4	2	3	3	3	4	4
	First of Two Story or Second of Three Story		3	4	4	5	6	7	3	4	4	5	6	7
	First of Three Story		3	4	6	7	8	10	3	4	6	7	8	10

SI: 1 in = 25.4 mm, 1 mph = 1.61 km/h

1. Interpolation shall not be permitted.
2. Actual lengths of the sides of the circumscribed rectangle shall be rounded to the next highest unit of 10 when using this table.
3. For Exposure Category C, multiply bracing units by a factor of 1.20 for a one-story building, 1.30 for a two-story building, and 1.40 for a three-story building.
4. Maximum stud spacing is 24" o.c.
5. ThermoPLY Blue attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.

6.2.2.3 *OX-IS and OX-IS HS Structural Insulated Sheathing:*

6.2.2.3.1 OX Engineered Wood Framed Wall Assemblies sheathed with OX-IS or OX-IS HS (where applicable) are permitted to be used in accordance with the IRC simplified bracing method of IRC Section R602.12 as modified by the following:

6.2.2.3.2 **Table 8** and **Table 9** for assemblies sheathed with 0.50" OX-IS or 0.50" OX-IS HS

6.2.2.3.3 **Table 10** and **Table 11** for assemblies sheathed with 1.00" OX-IS or 1.70" OX-IS.

6.2.2.3.3.1 All other provisions of the IRC simplified bracing method shall be met.

6.2.2.3.4 OX-IS attached with minimum 16-gauge, $^{7}/_{16}$" crown staples fastened 3":3" (edge:field) and penetrate a minimum of 1.0" into the stud. Fasteners are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be in contact with the panel surface. Countersinking fastener into the foam sheathing is permitted.

6.2.2.3.4.1 As an alternative, OX-IS or OX-IS HS products may be attached with minimum 0.113" diameter ($^{3}/_{8}$" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum $^{1}/_{2}$" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.

Table 8. Simplified Bracing for 0.50" OX-IS or 0.50" OX-IS HS with ≥ 1.0" Spray Foam – 16" o.c.[1,2,3,4,5,6,7]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60
115	One Story or Top of Two or Three Story	10	1	1	2	2	2	3	1	1	2	2	2	3
	First of Two Story or Second of Three Story		1	2	3	3	4	5	1	2	3	3	4	5
	First of Three Story		2	3	4	5	6	7	2	3	4	5	6	7
	One Story or Top of Two or Three Story	15	2	2	3	3	3	4	2	2	3	3	3	4
	First of Two Story or Second of Three Story		2	3	4	4	5	6	2	3	4	4	5	6
	First of Three Story		3	4	5	6	7	8	3	4	5	6	7	8
130	One Story or Top of Two or Three Story	10	1	2	2	2	3	3	1	2	2	2	3	3
	First of Two Story or Second of Three Story		2	3	3	4	5	6	2	3	3	4	5	6
	First of Three Story		2	3	5	6	7	8	2	3	5	6	7	8
	One Story or Top of Two or Three Story	15	2	3	3	3	4	4	2	3	3	3	4	4
	First of Two Story or Second of Three Story		3	4	4	5	6	7	3	4	4	5	6	7
	First of Three Story		3	4	6	7	8	9	3	4	6	7	8	9

Table 8. Simplified Bracing for 0.50" OX-IS or 0.50" OX-IS HS with ≥ 1.0" Spray Foam – 16" o.c.[1,2,3,4,5,6,7]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60

SI: 1 in = 25.4 mm, 1 mph = 1.61 km/h

1. Interpolation shall not be permitted.
2. Actual lengths of the sides of the circumscribed rectangle shall be rounded to the next highest unit of 10 when using this table.
3. For Exposure Category C, multiply bracing units by a factor of 1.20 for a one-story building, 1.30 for a two-story building, and 1.40 for a three-story building.
4. Maximum stud spacing is 16" o.c.
5. 0.50" OX-IS or 0.50" OX-IS HS attached with minimum 16-gauge, $^{7}/_{16}$" crown staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples shall be of sufficient length to achieve a minimum penetration of 1" into the framing members and shall be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. As an alternate to Table Footnote 5 above, 0.50" OX-IS or 0.50" OX-IS HS may be attached with minimum 0.113" diameter ($^{3}/_{8}$" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum $^{1}/_{2}$" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
7. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.

Table 9. Simplified Bracing for 0.50" OX-IS with ≥ 1.0" Spray Foam – 24" o.c.[1,2,3,4,5,6,7]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60
115	One Story or Top of Two or Three Story	10	1	1	2	2	3	3	1	1	2	2	3	3
	First of Two Story or Second of Three Story		1	2	3	4	4	5	1	2	3	4	4	5
	First of Three Story		2	3	4	5	6	7	2	3	4	5	6	7
	One Story or Top of Two or Three Story	15	2	2	3	3	4	4	2	2	3	3	4	4
	First of Two Story or Second of Three Story		2	3	4	5	5	6	2	3	4	5	5	6
	First of Three Story		3	4	5	6	7	8	3	4	5	6	7	8
130	One Story or Top of Two or Three Story	10	1	2	2	3	3	4	1	2	2	3	3	4
	First of Two Story or Second of Three Story		2	3	4	5	5	6	2	3	4	5	5	6
	First of Three Story		2	4	5	6	8	9	2	4	5	6	8	9
	One Story or Top of Two or Three Story	15	2	3	3	4	4	6	2	3	3	4	4	6
	First of Two Story or Second of Three Story		3	4	5	6	6	7	3	4	5	6	6	7
	First of Three Story		3	5	6	7	9	10	3	5	6	7	9	10

SI: 1 in = 25.4 mm, 1 mph = 1.61 km/h

1. Interpolation shall not be permitted.
2. Actual lengths of the sides of the circumscribed rectangle shall be rounded to the next highest unit of 10 when using this table.
3. For Exposure Category C, multiply bracing units by a factor of 1.20 for a one-story building, 1.30 for a two-story building, and 1.40 for a three-story building.
4. Maximum stud spacing is 24" o.c.
5. 0.50" OX-IS or 0.50" OX-IS HS attached with minimum 16-gauge, $^{7}/_{16}$" crown staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples shall be of sufficient length to achieve a minimum penetration of 1" into the framing members and shall be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. As an alternate to Table Footnote 5 above, 0.50" OX-IS or 0.50" OX-IS HS may be attached with minimum 0.113" diameter ($^{3}/_{8}$" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum $^{1}/_{2}$" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
7. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.

Table 10. Simplified Bracing for 1.00" OX-IS or 1.70" OX-IS with ≥ 1.0" Spray Foam Spray Foam – 16" o.c.[1,2,3,4,5,6,7]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60
115	One Story or Top of Two or Three Story	10	1	1	2	2	2	3	1	1	2	2	2	3
	First of Two Story or Second of Three Story		1	2	3	3	4	5	1	2	3	3	4	5
	First of Three Story		2	3	4	5	6	7	2	3	4	5	6	7
	One Story or Top of Two or Three Story	15	2	2	3	3	3	4	2	2	3	3	3	4
	First of Two Story or Second of Three Story		2	3	4	4	5	6	2	3	4	4	5	6
	First of Three Story		3	4	5	6	7	8	3	4	5	6	7	8
130	One Story or Top of Two or Three Story	10	1	2	2	2	3	3	1	2	2	2	3	3
	First of Two Story or Second of Three Story		2	2	3	4	5	6	2	2	3	4	5	6
	First of Three Story		2	3	5	6	7	8	2	3	5	6	7	8
	One Story or Top of Two or Three Story	15	2	3	3	3	4	4	2	3	3	3	4	4
	First of Two Story or Second of Three Story		3	3	4	5	6	7	3	3	4	5	6	7
	First of Three Story		3	4	6	7	8	9	3	4	6	7	8	9

SI: 1 in = 25.4 mm, 1 mph = 1.61 km/h

1. Interpolation shall not be permitted.
2. Actual lengths of the sides of the circumscribed rectangle shall be rounded to the next highest unit of 10 when using this table.
3. For Exposure Category C, multiply bracing units by a factor of 1.20 for a one-story building, 1.30 for a two-story building, and 1.40 for a three-story building.
4. Maximum stud spacing is 16" o.c.
5. 1.00" OX-IS or 1.70" OX-IS attached with minimum 16-gauge, $^{7}/_{16}$" crown staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples shall be of sufficient length to achieve a minimum penetration of 1" into the framing members and shall be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. As an alternate to Table Footnote 5 above, 1.00" OX-IS or 1.70" OX-IS may be attached with minimum 0.113" diameter ($^{3}/_{8}$" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum $^{1}/_{2}$" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
7. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.

Table 11. Simplified Bracing for 1.00" OX-IS or 1.70" OX-IS with ≥ 1.0" Spray Foam Spray Foam – 24" o.c.[1,2,3,4,5,6,7]

Ultimate Design Wind Speed (mph)	Story Level	Eave to Ridge Height (ft)	Minimum Number of Bracing Units Required (Long Side)						Minimum Number of Bracing Units Required (Short Side)					
			Length of Short Side (ft)						Length of Long Side (ft)					
			10	20	30	40	50	60	10	20	30	40	50	60
115	One Story or Top of Two or Three Story	10	1	1	2	2	3	3	1	1	2	2	3	3
	First of Two Story or Second of Three Story		1	2	3	4	4	5	1	2	3	4	4	5
	First of Three Story		2	3	4	5	6	7	2	3	4	5	6	7
	One Story or Top of Two or Three Story	15	2	2	3	3	4	4	2	2	3	3	4	4
	First of Two Story or Second of Three Story		2	3	4	5	5	6	2	3	4	5	5	6
	First of Three Story		3	4	5	6	7	8	3	4	5	6	7	8
130	One Story or Top of Two or Three Story	10	1	2	2	3	3	3	1	2	2	3	3	3
	First of Two Story or Second of Three Story		2	3	4	4	5	6	2	3	4	4	5	6
	First of Three Story		2	4	5	6	8	9	2	4	5	6	8	9
	One Story or Top of Two or Three Story	15	2	3	3	4	4	4	2	3	3	4	4	4
	First of Two Story or Second of Three Story		3	4	5	5	6	7	3	4	5	5	6	7
	First of Three Story		3	5	6	7	9	10	3	5	6	7	9	10

SI: 1 in = 25.4 mm, 1 mph = 1.61 km/h

1. Interpolation shall not be permitted.
2. Actual lengths of the sides of the circumscribed rectangle shall be rounded to the next highest unit of 10 when using this table.
3. For Exposure Category C, multiply bracing units by a factor of 1.20 for a one-story building, 1.30 for a two-story building, and 1.40 for a three-story building.
4. Maximum stud spacing is 24" o.c.
5. 1.00" OX-IS or 1.70" OX-IS attached with minimum 16-gauge, $^{7}/_{16}$" crown staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples shall be of sufficient length to achieve a minimum penetration of 1" into the framing members and shall be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. As an alternate to Table Footnote 5 above, 1.00" OX-IS or 1.70" OX-IS may be attached with minimum 0.113" diameter ($^{3}/_{8}$" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum $^{1}/_{2}$" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
7. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.

6.2.3 *Prescriptive IRC Bracing Applications:*

6.2.3.1 *General:*

6.2.3.1.1 Bracing lengths are the results of comparative equivalency testing and analysis using both tested and published design values as points of comparison. DrJ relies upon the design values published in the codes and standards listed in **Section 4** that are adopted into law and that the manufacturer of those products stand behind. DrJ performs all equivalency analysis based on legally defined design values, the responsibility for which is the manufacturer of those products or the members of the associations that publish those design values.

6.2.3.1.2 OX Engineered Products may be used on braced wall lines as an equivalent alternative to the IRC Method WSP and Method CS WSP, when installed in accordance with IRC Section R602.10 and this report.

6.2.3.1.3 Minimum $^1/_2$" GWB shall be installed as part of the wall assembly and shall be fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.

6.2.3.1.3.1 Where GWB is not applied to the interior side of the wall assembly, bracing lengths shall be multiplied by a factor of 1.4.

6.2.3.1.4 The OX Engineered products demonstrate equivalency to IRC Table R602.10.3(1). All adjustment factors from IRC Table R602.10.3(2) shall be applied.

6.2.3.1.5 Modified IRC bracing lengths are based on the corresponding equivalency factor from in **Table 32**.

6.2.3.2 *Bracing Requirements Based on Wind Speed:*

6.2.3.2.1 *ThermoPLY:*

6.2.3.2.1.1 For wind design, required braced wall panel lengths for ThermoPLY-sheathed exterior walls with SPF applied in the wall cavities shall be as shown in the following:

6.2.3.2.1.1.1 **Table 12** and **Table 13** for assemblies sheathed with ThermoPLY Green

6.2.3.2.1.1.2 **Table 14** and **Table 15** for assemblies sheathed with ThermoPLY Red.

6.2.3.2.1.1.3 **Table 16** and **Table 17** for assemblies sheathed with ThermoPLY Blue

6.2.3.2.1.2 **Table 12** through **Table 17** shall be used in conjunction with IRC Table R602.10.3(2), which provides the required adjustments.

Table 12. ThermoPLY Green with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c. Wind[1,2,3,4,5,6]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140
One Story or the Top of Two or Three Stories	10	1.5	2.0	2.0	2.5	2.5	2.9	1.5	1.5	2.0	2.0	2.5	2.5
	20	2.5	3.4	3.4	3.9	4.9	5.4	2.5	2.9	3.4	3.4	3.9	4.9
	30	3.9	4.9	5.4	5.9	6.9	7.8	3.4	4.4	4.4	4.9	5.9	6.9
	40	4.9	6.4	6.9	7.8	8.8	10.3	3.9	5.4	5.9	6.4	7.4	8.8
	50	5.9	7.8	8.8	9.3	10.8	12.7	4.9	6.9	7.4	7.8	9.3	10.8
	60	6.9	9.3	10.3	11.3	12.7	14.7	5.9	7.8	8.8	9.3	10.8	12.7
First Story of Two Stories or Second Story of Three Stories	10	2.9	3.4	3.9	4.4	4.9	5.9	2.5	2.9	3.4	3.4	4.4	4.9
	20	4.9	6.4	7.4	7.8	9.3	10.8	4.4	5.4	6.4	6.9	7.8	8.8
	30	6.9	9.3	10.3	11.3	13.2	15.2	5.9	7.8	8.8	9.3	11.3	12.7
	40	9.3	12.3	13.2	14.7	17.2	19.6	7.8	10.3	11.3	12.3	15.2	16.7
	50	11.3	15.2	16.2	17.6	21.1	24.0	9.8	12.7	13.7	15.2	17.6	20.6
	60	13.2	17.6	19.6	21.1	24.5	28.4	11.3	15.2	16.7	18.1	21.1	24.5
First Story of Three Stories	10	3.9	5.4	5.9	6.4	7.4	8.3	3.4	4.4	4.9	5.4	6.4	7.4
	20	7.4	9.8	10.8	11.3	13.2	15.7	6.4	8.3	8.8	9.8	11.3	13.2
	30	10.3	13.7	15.2	16.7	19.1	22.5	8.8	11.8	12.7	14.2	16.7	19.1
	40	13.2	18.1	19.6	21.6	25.0	28.9	11.3	15.2	16.7	18.1	21.6	24.5
	50	16.7	22.1	24.0	26.5	30.9	35.8	14.2	18.6	20.6	22.5	26.0	30.4
	60	19.6	26.0	28.4	31.4	36.8	42.1	16.7	22.5	24.5	26.5	30.9	35.8

SI: 1 in. = 25.4 mm, 1 mph = 1.61 km/h

1. Linear interpolation is permitted.
2. Wind speeds are V_{ult} in accordance with ASCE 7-22. Convert to equivalent V_{asd} wind speed per IBC Section 1609.3.1.
3. Maximum stud spacing is 16" o.c.
4. ThermoPLY Green attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. All adjustment factors from IRC Table R602.10.3(2) shall be applied.

Table 13. ThermoPLY Green with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c. Wind[1,2,3,4,5,6]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140
One Story or the Top of Two or Three Stories	10	1.6	2.2	2.2	2.7	2.7	3.3	1.6	1.6	2.2	2.2	2.7	2.7
	20	2.7	3.8	3.8	4.4	5.5	6.0	2.7	3.3	3.8	3.8	4.4	5.5
	30	4.4	5.5	6.0	6.5	7.6	8.7	3.8	4.9	4.9	5.5	6.5	7.6
	40	5.5	7.1	7.6	8.7	9.8	11.4	4.4	6.0	6.5	7.1	8.2	9.8
	50	6.5	8.7	9.8	10.4	12.0	14.2	5.5	7.6	8.2	8.7	10.4	12.0
	60	7.6	10.4	11.4	12.5	14.2	16.4	6.5	8.7	9.8	10.4	12.0	14.2
First Story of Two Stories or Second Story of Three Stories	10	3.3	3.8	4.4	4.9	5.5	6.5	2.7	3.3	3.8	3.8	4.9	5.5
	20	5.5	7.1	8.2	8.7	10.4	12.0	4.9	6.0	7.1	7.6	8.7	9.8
	30	7.6	10.4	11.4	12.5	14.7	16.9	6.5	8.7	9.8	10.4	12.5	14.2
	40	10.4	13.6	14.7	16.4	19.1	21.8	8.7	11.4	12.5	13.6	16.9	18.5
	50	12.5	16.9	18.0	19.6	23.4	26.7	10.9	14.2	15.3	16.9	19.6	22.9
	60	14.7	19.6	21.8	23.4	27.3	31.6	12.5	16.9	18.5	20.2	23.4	27.3
First Story of Three Stories	10	4.4	6.0	6.5	7.1	8.2	9.3	3.8	4.9	5.5	6.0	7.1	8.2
	20	8.2	10.9	12.0	12.5	14.7	17.4	7.1	9.3	9.8	10.9	12.5	14.7
	30	11.4	15.3	16.9	18.5	21.3	25.1	9.8	13.1	14.2	15.8	18.5	21.3
	40	14.7	20.2	21.8	24.0	27.8	32.2	12.5	16.9	18.5	20.2	24.0	27.3
	50	18.5	24.5	26.7	29.4	34.3	39.8	15.8	20.7	22.9	25.1	28.9	33.8
	60	21.8	28.9	31.6	34.9	40.9	46.9	18.5	25.1	27.3	29.4	34.3	39.8

SI: 1 in. = 25.4 mm, 1 mph = 1.61 km/h

1. Linear interpolation is permitted.
2. Wind speeds are V_{ult} in accordance with ASCE 7-22. Convert to equivalent V_{asd} wind speed per IBC Section 1609.3.1.
3. Maximum stud spacing is 24" o.c.
4. ThermoPLY Green attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. All adjustment factors from IRC Table R602.10.3(2) shall be applied.

Table 14. ThermoPLY Red with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c. Wind[1,2,3,4,5,6]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140
One Story or the Top of Two or Three Stories	10	1.3	1.8	1.8	2.2	2.2	2.6	1.3	1.3	1.8	1.8	2.2	2.2
	20	2.2	3.1	3.1	3.5	4.4	4.8	2.2	2.6	3.1	3.1	3.5	4.4
	30	3.5	4.4	4.8	5.3	6.2	7.0	3.1	4.0	4.0	4.4	5.3	6.2
	40	4.4	5.7	6.2	7.0	7.9	9.2	3.5	4.8	5.3	5.7	6.6	7.9
	50	5.3	7.0	7.9	8.4	9.7	11.4	4.4	6.2	6.6	7.0	8.4	9.7
	60	6.2	8.4	9.2	10.1	11.4	13.2	5.3	7.0	7.9	8.4	9.7	11.4
First Story of Two Stories or Second Story of Three Stories	10	2.6	3.1	3.5	4.0	4.4	5.3	2.2	2.6	3.1	3.1	4.0	4.4
	20	4.4	5.7	6.6	7.0	8.4	9.7	4.0	4.8	5.7	6.2	7.0	7.9
	30	6.2	8.4	9.2	10.1	11.9	13.6	5.3	7.0	7.9	8.4	10.1	11.4
	40	8.4	11.0	11.9	13.2	15.4	17.6	7.0	9.2	10.1	11.0	13.6	15.0
	50	10.1	13.6	14.5	15.8	18.9	21.6	8.8	11.4	12.3	13.6	15.8	18.5
	60	11.9	15.8	17.6	18.9	22.0	25.5	10.1	13.6	15.0	16.3	18.9	22.0
First Story of Three Stories	10	3.5	4.8	5.3	5.7	6.6	7.5	3.1	4.0	4.4	4.8	5.7	6.6
	20	6.6	8.8	9.7	10.1	11.9	14.1	5.7	7.5	7.9	8.8	10.1	11.9
	30	9.2	12.3	13.6	15.0	17.2	20.2	7.9	10.6	11.4	12.8	15.0	17.2
	40	11.9	16.3	17.6	19.4	22.4	26.0	10.1	13.6	15.0	16.3	19.4	22.0
	50	15.0	19.8	21.6	23.8	27.7	32.1	12.8	16.7	18.5	20.2	23.3	27.3
	60	17.6	23.3	25.5	28.2	33.0	37.8	15.0	20.2	22.0	23.8	27.7	32.1

SI: 1 in. = 25.4 mm, 1 mph = 1.61 km/h

1. Linear interpolation is permitted.
2. Wind speeds are V_{ult} in accordance with ASCE 7-22. Convert to equivalent V_{asd} wind speed per IBC Section 1609.3.1.
3. Maximum stud spacing is 16" o.c.
4. ThermoPLY Red attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. All adjustment factors from IRC Table R602.10.3(2) shall be applied.

Table 15. ThermoPLY Red with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c. Wind[1,2,3,4,5,6]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140
One Story or the Top of Two or Three Stories	10	1.5	2.0	2.0	2.5	2.5	2.9	1.5	1.5	2.0	2.0	2.5	2.5
	20	2.5	3.4	3.4	3.9	4.9	5.4	2.5	2.9	3.4	3.4	3.9	4.9
	30	3.9	4.9	5.4	5.9	6.9	7.8	3.4	4.4	4.4	4.9	5.9	6.9
	40	4.9	6.4	6.9	7.8	8.8	10.3	3.9	5.4	5.9	6.4	7.4	8.8
	50	5.9	7.8	8.8	9.3	10.8	12.7	4.9	6.9	7.4	7.8	9.3	10.8
	60	6.9	9.3	10.3	11.3	12.7	14.7	5.9	7.8	8.8	9.3	10.8	12.7
First Story of Two Stories or Second Story of Three Stories	10	2.9	3.4	3.9	4.4	4.9	5.9	2.5	2.9	3.4	3.4	4.4	4.9
	20	4.9	6.4	7.4	7.8	9.3	10.8	4.4	5.4	6.4	6.9	7.8	8.8
	30	6.9	9.3	10.3	11.3	13.2	15.2	5.9	7.8	8.8	9.3	11.3	12.7
	40	9.3	12.3	13.2	14.7	17.2	19.6	7.8	10.3	11.3	12.3	15.2	16.7
	50	11.3	15.2	16.2	17.6	21.1	24.0	9.8	12.7	13.7	15.2	17.6	20.6
	60	13.2	17.6	19.6	21.1	24.5	28.4	11.3	15.2	16.7	18.1	21.1	24.5
First Story of Three Stories	10	3.9	5.4	5.9	6.4	7.4	8.3	3.4	4.4	4.9	5.4	6.4	7.4
	20	7.4	9.8	10.8	11.3	13.2	15.7	6.4	8.3	8.8	9.8	11.3	13.2
	30	10.3	13.7	15.2	16.7	19.1	22.5	8.8	11.8	12.7	14.2	16.7	19.1
	40	13.2	18.1	19.6	21.6	25.0	28.9	11.3	15.2	16.7	18.1	21.6	24.5
	50	16.7	22.1	24.0	26.5	30.9	35.8	14.2	18.6	20.6	22.5	26.0	30.4
	60	19.6	26.0	28.4	31.4	36.8	42.1	16.7	22.5	24.5	26.5	30.9	35.8

SI: 1 in. = 25.4 mm, 1 mph = 1.61 km/h

1. Linear interpolation is permitted.
2. Wind speeds are V_{ult} in accordance with ASCE 7-22. Convert to equivalent V_{asd} wind speed per IBC Section 1609.3.1.
3. Maximum stud spacing is 24" o.c.
4. ThermoPLY Red attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. All adjustment factors from IRC Table R602.10.3(2) shall be applied.

Table 16. ThermoPLY Blue with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c. Wind[1,2,3,4,5,6]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140
One Story or the Top of Two or Three Stories	10	1.1	1.5	1.5	1.9	1.9	2.2	1.1	1.1	1.5	1.5	1.9	1.9
	20	1.9	2.6	2.6	3.0	3.7	4.1	1.9	2.2	2.6	2.6	3.0	3.7
	30	3.0	3.7	4.1	4.4	5.2	5.9	2.6	3.3	3.3	3.7	4.4	5.2
	40	3.7	4.8	5.2	5.9	6.7	7.8	3.0	4.1	4.4	4.8	5.6	6.7
	50	4.4	5.9	6.7	7.0	8.1	9.6	3.7	5.2	5.6	5.9	7.0	8.1
	60	5.2	7.0	7.8	8.5	9.6	11.1	4.4	5.9	6.7	7.0	8.1	9.6
First Story of Two Stories or Second Story of Three Stories	10	2.2	2.6	3.0	3.3	3.7	4.4	1.9	2.2	2.6	2.6	3.3	3.7
	20	3.7	4.8	5.6	5.9	7.0	8.1	3.3	4.1	4.8	5.2	5.9	6.7
	30	5.2	7.0	7.8	8.5	10.0	11.5	4.4	5.9	6.7	7.0	8.5	9.6
	40	7.0	9.3	10.0	11.1	13.0	14.8	5.9	7.8	8.5	9.3	11.5	12.6
	50	8.5	11.5	12.2	13.3	15.9	18.1	7.4	9.6	10.4	11.5	13.3	15.5
	60	10.0	13.3	14.8	15.9	18.5	21.5	8.5	11.5	12.6	13.7	15.9	18.5
First Story of Three Stories	10	3.0	4.1	4.4	4.8	5.6	6.3	2.6	3.3	3.7	4.1	4.8	5.6
	20	5.6	7.4	8.1	8.5	10.0	11.8	4.8	6.3	6.7	7.4	8.5	10.0
	30	7.8	10.4	11.5	12.6	14.4	17.0	6.7	8.9	9.6	10.7	12.6	14.4
	40	10.0	13.7	14.8	16.3	18.9	21.8	8.5	11.5	12.6	13.7	16.3	18.5
	50	12.6	16.7	18.1	20.0	23.3	27.0	10.7	14.1	15.5	17.0	19.6	22.9
	60	14.8	19.6	21.5	23.7	27.8	31.8	12.6	17.0	18.5	20.0	23.3	27.0

SI: 1 in. = 25.4 mm, 1 mph = 1.61 km/h

1. Linear interpolation is permitted.
2. Wind speeds are V_{ult} in accordance with ASCE 7-22. Convert to equivalent V_{asd} wind speed per IBC Section 1609.3.1.
3. Maximum stud spacing is 16" o.c.
4. ThermoPLY Blue attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. All adjustment factors from IRC Table R602.10.3(2) shall be applied.

Table 17. ThermoPLY Blue with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c. Wind[1,2,3,4,5,6]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140
One Story or the Top of Two or Three Stories	10	1.3	1.7	1.7	2.2	2.2	2.6	1.3	1.3	1.7	1.7	2.2	2.2
	20	2.2	3.0	3.0	3.5	4.4	4.8	2.2	2.6	3.0	3.0	3.5	4.4
	30	3.5	4.4	4.8	5.2	6.1	7.0	3.0	3.9	3.9	4.4	5.2	6.1
	40	4.4	5.7	6.1	7.0	7.8	9.1	3.5	4.8	5.2	5.7	6.5	7.8
	50	5.2	7.0	7.8	8.3	9.6	11.3	4.4	6.1	6.5	7.0	8.3	9.6
	60	6.1	8.3	9.1	10.0	11.3	13.1	5.2	7.0	7.8	8.3	9.6	11.3
First Story of Two Stories or Second Story of Three Stories	10	2.6	3.0	3.5	3.9	4.4	5.2	2.2	2.6	3.0	3.0	3.9	4.4
	20	4.4	5.7	6.5	7.0	8.3	9.6	3.9	4.8	5.7	6.1	7.0	7.8
	30	6.1	8.3	9.1	10.0	11.7	13.5	5.2	7.0	7.8	8.3	10.0	11.3
	40	8.3	10.9	11.7	13.1	15.2	17.4	7.0	9.1	10.0	10.9	13.5	14.8
	50	10.0	13.5	14.4	15.7	18.7	21.3	8.7	11.3	12.2	13.5	15.7	18.3
	60	11.7	15.7	17.4	18.7	21.8	25.2	10.0	13.5	14.8	16.1	18.7	21.8
First Story of Three Stories	10	3.5	4.8	5.2	5.7	6.5	7.4	3.0	3.9	4.4	4.8	5.7	6.5
	20	6.5	8.7	9.6	10.0	11.7	13.9	5.7	7.4	7.8	8.7	10.0	11.7
	30	9.1	12.2	13.5	14.8	17.0	20.0	7.8	10.4	11.3	12.6	14.8	17.0
	40	11.7	16.1	17.4	19.1	22.2	25.7	10.0	13.5	14.8	16.1	19.1	21.8
	50	14.8	19.6	21.3	23.5	27.4	31.8	12.6	16.5	18.3	20.0	23.1	27.0
	60	17.4	23.1	25.2	27.8	32.6	37.4	14.8	20.0	21.8	23.5	27.4	31.8

SI: 1 in. = 25.4 mm, 1 mph = 1.61 km/h

1. Linear interpolation is permitted.
2. Wind speeds are V_{ult} in accordance with ASCE 7-22. Convert to equivalent V_{asd} wind speed per IBC Section 1609.3.1.
3. Maximum stud spacing is 24" o.c.
4. ThermoPLY Blue attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. All adjustment factors from IRC Table R602.10.3(2) shall be applied.

6.2.3.2.2 *OX-IS and OX-IS HS Structural Insulated Sheathing:*

6.2.3.2.2.1 For wind design, required braced wall panel lengths for OX-IS-sheathed exterior walls with SPF applied in the wall cavities shall be as shown in the following:

6.2.3.2.2.1.1 **Table 18** and **Table 19** for assemblies sheathed with 0.50" OX-IS or 0.50" OX-IS HS

6.2.3.2.2.1.2 **Table 20** and **Table 21** for assemblies sheathed with 1.00" OX-IS or 1.70" OX-IS

6.2.3.2.2.1.3 **Table 18** through **Table 21** shall be used in conjunction with IRC Table R602.10.3(2), which provides the required adjustments.

Table 18. 0.50" OX-IS or 0.50" OX-IS HS with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c. Wind[1,2,3,4,5,6,7]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140
One Story or the Top of Two or Three Stories	10	1.3	1.7	1.7	2.1	2.1	2.6	1.3	1.3	1.7	1.7	2.1	2.1
	20	2.1	3.0	3.0	3.4	4.3	4.7	2.1	2.6	3.0	3.0	3.4	4.3
	30	3.4	4.3	4.7	5.1	6.0	6.8	3.0	3.8	3.8	4.3	5.1	6.0
	40	4.3	5.5	6.0	6.8	7.7	8.9	3.4	4.7	5.1	5.5	6.4	7.7
	50	5.1	6.8	7.7	8.1	9.4	11.1	4.3	6.0	6.4	6.8	8.1	9.4
	60	6.0	8.1	8.9	9.8	11.1	12.8	5.1	6.8	7.7	8.1	9.4	11.1
First Story of Two Stories or Second Story of Three Stories	10	2.6	3.0	3.4	3.8	4.3	5.1	2.1	2.6	3.0	3.0	3.8	4.3
	20	4.3	5.5	6.4	6.8	8.1	9.4	3.8	4.7	5.5	6.0	6.8	7.7
	30	6.0	8.1	8.9	9.8	11.5	13.2	5.1	6.8	7.7	8.1	9.8	11.1
	40	8.1	10.6	11.5	12.8	14.9	17.0	6.8	8.9	9.8	10.6	13.2	14.5
	50	9.8	13.2	14.0	15.3	18.3	20.8	8.5	11.1	11.9	13.2	15.3	17.9
	60	11.5	15.3	17.0	18.3	21.3	24.7	9.8	13.2	14.5	15.7	18.3	21.3
First Story of Three Stories	10	3.4	4.7	5.1	5.5	6.4	7.2	3.0	3.8	4.3	4.7	5.5	6.4
	20	6.4	8.5	9.4	9.8	11.5	13.6	5.5	7.2	7.7	8.5	9.8	11.5
	30	8.9	11.9	13.2	14.5	16.6	19.6	7.7	10.2	11.1	12.3	14.5	16.6
	40	11.5	15.7	17.0	18.7	21.7	25.1	9.8	13.2	14.5	15.7	18.7	21.3
	50	14.5	19.1	20.8	23.0	26.8	31.0	12.3	16.2	17.9	19.6	22.5	26.4
	60	17.0	22.5	24.7	27.2	31.9	36.6	14.5	19.6	21.3	23.0	26.8	31.0

Table 18. 0.50" OX-IS or 0.50" OX-IS HS with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c. Wind[1,2,3,4,5,6,7]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140

SI: 1 in. = 25.4 mm, 1 mph = 1.61 km/h

1. Linear interpolation is permitted.
2. Wind speeds are V_{ult} in accordance with ASCE 7-22. Convert to equivalent V_{asd} wind speed per IBC Section 1609.3.1.
3. Maximum stud spacing is 16" o.c.
4. 0.50" OX-IS or 0.50" OX-IS HS attached with minimum 16-gauge, 7/16" crown staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples shall be of sufficient length to achieve a minimum penetration of 1" into the framing members and shall be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of 3/8". Minimum 1/2" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. As an alternate to Table Footnote 4 above, 0.50" OX-IS or 0.50" OX-IS HS may be attached with minimum 0.113" diameter (3/8" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum 1/2" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.
7. All adjustment factors from IRC Table R602.10.3(2) shall be applied.

Table 19. 0.50" OX-IS or 0.50" OX-IS HS with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c. Wind[1,2,3,4,5,6,7]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140
One Story or the Top of Two or Three Stories	10	1.4	1.9	1.9	2.3	2.3	2.8	1.4	1.4	1.9	1.9	2.3	2.3
	20	2.3	3.3	3.3	3.7	4.7	5.1	2.3	2.8	3.3	3.3	3.7	4.7
	30	3.7	4.7	5.1	5.6	6.5	7.4	3.3	4.2	4.2	4.7	5.6	6.5
	40	4.7	6.0	6.5	7.4	8.4	9.8	3.7	5.1	5.6	6.0	7.0	8.4
	50	5.6	7.4	8.4	8.8	10.2	12.1	4.7	6.5	7.0	7.4	8.8	10.2
	60	6.5	8.8	9.8	10.7	12.1	14.0	5.6	7.4	8.4	8.8	10.2	12.1
First Story of Two Stories or Second Story of Three Stories	10	2.8	3.3	3.7	4.2	4.7	5.6	2.3	2.8	3.3	3.3	4.2	4.7
	20	4.7	6.0	7.0	7.4	8.8	10.2	4.2	5.1	6.0	6.5	7.4	8.4
	30	6.5	8.8	9.8	10.7	12.6	14.4	5.6	7.4	8.4	8.8	10.7	12.1
	40	8.8	11.6	12.6	14.0	16.3	18.6	7.4	9.8	10.7	11.6	14.4	15.8
	50	10.7	14.4	15.3	16.7	20.0	22.8	9.3	12.1	13.0	14.4	16.7	19.5
	60	12.6	16.7	18.6	20.0	23.3	27.0	10.7	14.4	15.8	17.2	20.0	23.3

Table 19. 0.50" OX-IS or 0.50" OX-IS HS with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c. Wind[1,2,3,4,5,6,7]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140
First Story of Three Stories	10	3.7	5.1	5.6	6.0	7.0	7.9	3.3	4.2	4.7	5.1	6.0	7.0
	20	7.0	9.3	10.2	10.7	12.6	14.9	6.0	7.9	8.4	9.3	10.7	12.6
	30	9.8	13.0	14.4	15.8	18.1	21.4	8.4	11.2	12.1	13.5	15.8	18.1
	40	12.6	17.2	18.6	20.5	23.7	27.4	10.7	14.4	15.8	17.2	20.5	23.3
	50	15.8	20.9	22.8	25.1	29.3	33.9	13.5	17.7	19.5	21.4	24.6	28.8
	60	18.6	24.6	27.0	29.8	34.9	40.0	15.8	21.4	23.3	25.1	29.3	33.9

SI: 1 in. = 25.4 mm, 1 mph = 1.61 km/h

1. Linear interpolation is permitted.
2. Wind speeds are V_{ult} in accordance with ASCE 7-22. Convert to equivalent V_{asd} wind speed per IBC Section 1609.3.1.
3. Maximum stud spacing is 24" o.c.
4. 0.50" OX-IS or 0.50" OX-IS HS attached with minimum 16-gauge, $^{7}/_{16}$" crown staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples shall be of sufficient length to achieve a minimum penetration of 1" into the framing members and shall be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. As an alternate to Table Footnote 4 above, 0.50" OX-IS or 0.50" OX-IS HS may be attached with minimum 0.113" diameter ($^{3}/_{8}$" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum $^{1}/_{2}$" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.
7. All adjustment factors from IRC Table R602.10.3(2) shall be applied.

Table 20. 1.00" OX-IS or 1.70" OX-IS with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c. Wind[1,2,3,4,5,6,7]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140
One Story or the Top of Two or Three Stories	10	1.3	1.7	1.7	2.1	2.1	2.5	1.3	1.3	1.7	1.7	2.1	2.1
	20	2.1	2.9	2.9	3.4	4.2	4.6	2.1	2.5	2.9	2.9	3.4	4.2
	30	3.4	4.2	4.6	5.0	5.9	6.7	2.9	3.8	3.8	4.2	5.0	5.9
	40	4.2	5.5	5.9	6.7	7.6	8.8	3.4	4.6	5.0	5.5	6.3	7.6
	50	5.0	6.7	7.6	8.0	9.2	10.9	4.2	5.9	6.3	6.7	8.0	9.2
	60	5.9	8.0	8.8	9.7	10.9	12.6	5.0	6.7	7.6	8.0	9.2	10.9

Table 20. 1.00" OX-IS or 1.70" OX-IS with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c. Wind[1,2,3,4,5,6,7]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140
First Story of Two Stories or Second Story of Three Stories	10	2.5	2.9	3.4	3.8	4.2	5.0	2.1	2.5	2.9	2.9	3.8	4.2
	20	4.2	5.5	6.3	6.7	8.0	9.2	3.8	4.6	5.5	5.9	6.7	7.6
	30	5.9	8.0	8.8	9.7	11.3	13.0	5.0	6.7	7.6	8.0	9.7	10.9
	40	8.0	10.5	11.3	12.6	14.7	16.8	6.7	8.8	9.7	10.5	13.0	14.3
	50	9.7	13.0	13.9	15.1	18.1	20.6	8.4	10.9	11.8	13.0	15.1	17.6
	60	11.3	15.1	16.8	18.1	21.0	24.4	9.7	13.0	14.3	15.5	18.1	21.0
First Story of Three Stories	10	3.4	4.6	5.0	5.5	6.3	7.1	2.9	3.8	4.2	4.6	5.5	6.3
	20	6.3	8.4	9.2	9.7	11.3	13.4	5.5	7.1	7.6	8.4	9.7	11.3
	30	8.8	11.8	13.0	14.3	16.4	19.3	7.6	10.1	10.9	12.2	14.3	16.4
	40	11.3	15.5	16.8	18.5	21.4	24.8	9.7	13.0	14.3	15.5	18.5	21.0
	50	14.3	18.9	20.6	22.7	26.5	30.7	12.2	16.0	17.6	19.3	22.3	26.0
	60	16.8	22.3	24.4	26.9	31.5	36.1	14.3	19.3	21.0	22.7	26.5	30.7

SI: 1 in. = 25.4 mm, 1 mph = 1.61 km/h

1. Linear interpolation is permitted.
2. Wind speeds are V_{ult} in accordance with ASCE 7-22. Convert to equivalent V_{asd} wind speed per IBC Section 1609.3.1.
3. Maximum stud spacing is 16" o.c.
4. 1.00" OX-IS or 1.70" OX-IS attached with minimum $^{7}/_{16}$" crown staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples shall be of sufficient length to achieve a minimum penetration of 1" into the framing members and shall be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. As an alternate to Table Footnote 4 above, 1.00" OX-IS or 1.70" OX-IS may be attached with minimum 0.113" diameter ($^{3}/_{8}$" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum $^{1}/_{2}$" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.
7. All adjustment factors from IRC Table R602.10.3(2) shall be applied.

Table 21. 1.00" OX-IS or 1.70" OX-IS with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c. Wind[1,2,3,4,5,6,7]

Condition	Braced Wall Line Spacing (ft)	Length of Wall Line to be Braced (ft.)											
		Intermittent Sheathing						Continuous Sheathing					
		Wind Speeds (mph)											
		< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140	< 95	≤ 110	≤ 115	≤ 120	≤ 130	< 140
One Story or the Top of Two or Three Stories	10	1.4	1.8	1.8	2.3	2.3	2.7	1.4	1.4	1.8	1.8	2.3	2.3
	20	2.3	3.2	3.2	3.6	4.6	5.0	2.3	2.7	3.2	3.2	3.6	4.6
	30	3.6	4.6	5.0	5.5	6.4	7.3	3.2	4.1	4.1	4.6	5.5	6.4
	40	4.6	5.9	6.4	7.3	8.2	9.6	3.6	5.0	5.5	5.9	6.8	8.2
	50	5.5	7.3	8.2	8.6	10.0	11.8	4.6	6.4	6.8	7.3	8.6	10.0
	60	6.4	8.6	9.6	10.5	11.8	13.7	5.5	7.3	8.2	8.6	10.0	11.8
First Story of Two Stories or Second Story of Three Stories	10	2.7	3.2	3.6	4.1	4.6	5.5	2.3	2.7	3.2	3.2	4.1	4.6
	20	4.6	5.9	6.8	7.3	8.6	10.0	4.1	5.0	5.9	6.4	7.3	8.2
	30	6.4	8.6	9.6	10.5	12.3	14.1	5.5	7.3	8.2	8.6	10.5	11.8
	40	8.6	11.4	12.3	13.7	15.9	18.2	7.3	9.6	10.5	11.4	14.1	15.5
	50	10.5	14.1	15.0	16.4	19.6	22.3	9.1	11.8	12.7	14.1	16.4	19.1
	60	12.3	16.4	18.2	19.6	22.8	26.4	10.5	14.1	15.5	16.8	19.6	22.8
First Story of Three Stories	10	3.6	5.0	5.5	5.9	6.8	7.7	3.2	4.1	4.6	5.0	5.9	6.8
	20	6.8	9.1	10.0	10.5	12.3	14.6	5.9	7.7	8.2	9.1	10.5	12.3
	30	9.6	12.7	14.1	15.5	17.7	20.9	8.2	10.9	11.8	13.2	15.5	17.7
	40	12.3	16.8	18.2	20.0	23.2	26.8	10.5	14.1	15.5	16.8	20.0	22.8
	50	15.5	20.5	22.3	24.6	28.7	33.2	13.2	17.3	19.1	20.9	24.1	28.2
	60	18.2	24.1	26.4	29.1	34.1	39.1	15.5	20.9	22.8	24.6	28.7	33.2

SI: 1 in. = 25.4 mm, 1 mph = 1.61 km/h

1. Linear interpolation is permitted.
2. Wind speeds are V_{ult} in accordance with ASCE 7-22. Convert to equivalent V_{asd} wind speed per IBC Section 1609.3.1.
3. Maximum stud spacing is 24" o.c.
4. 1.00" OX-IS or 1.70" OX-IS attached with minimum $^{7}/_{16}$" crown staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples shall be of sufficient length to achieve a minimum penetration of 1" into the framing members and shall be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. As an alternate to Table Footnote 5 above, 1.00" OX-IS or 1.70" OX-IS may be attached with minimum 0.113" diameter ($^{3}/_{8}$" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum $^{1}/_{2}$" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.
7. All adjustment factors from IRC Table R602.10.3(2) shall be applied.

6.2.3.3 *Bracing Requirements Based on Seismic Design Category:*

6.2.3.3.1 Demonstrates equivalency to IRC Table R602.10.3(3). All adjustment factors from IRC Table R602.10.3(4) shall be applied.

6.2.3.3.1.1 A minimum of $^1/_2$" gypsum sheathing shall be applied to the interior side of the wall assembly and fastened with a #6 x $1^1/_4$" Type W or S screws spaced 16" o.c. at panel edges and 16" o.c. in the field of the panels. Where gypsum wallboard is not applied to the interior side of the wall assembly, bracing lengths shall be multiplied by a factor of 1.5 per IRC Table R602.10.3(4).

6.2.3.3.2 Tabulated bracing lengths are based on the following:

6.2.3.3.2.1 Soil Class D

6.2.3.3.2.2 Wall height = 10'

6.2.3.3.2.3 10 psf floor dead load

6.2.3.3.2.4 15 psf roof/ceiling dead load

6.2.3.3.2.5 Braced wall line spacing ≤ 25'

6.2.3.3.3 *ThermoPLY:*

6.2.3.3.3.1 For seismic design, required braced wall panel lengths for ThermoPLY sheathed exterior walls with SPF applied in the wall cavities shall be as shown in the following:

6.2.3.3.3.1.1 **Table 22** and **Table 23** for assemblies sheathed with ThermoPLY Green

6.2.3.3.3.1.2 **Table 24** and **Table 25** for assemblies sheathed with ThermoPLY Red

6.2.3.3.3.1.3 **Table 26** and **Table 27** for assemblies sheathed with ThermoPLY Blue

6.2.3.3.3.1.4 **Table 22** through **Table 27** shall be used in conjunction with IRC Table R602.10.3(4), which provides the required adjustments.

Table 22. ThermoPLY Green with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c., Seismic[1,2,3,4,5]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
One Story OR the Top of Two or Three Stories	10	1.6	1.7	2.0	2.4	1.4	1.6	1.7	2.1
	20	3.1	3.5	3.9	4.9	2.7	3.0	3.3	4.2
	30	4.7	5.3	5.9	7.4	4.0	4.5	5.0	6.2
	40	6.2	7.0	7.8	9.8	5.3	6.0	6.7	8.3
	50	7.8	8.8	9.8	12.2	6.7	7.5	8.3	10.4
First Story of Two Stories OR Second Story of Three Stories	10	2.9	3.7	4.4	5.4	2.5	3.1	3.7	4.6
	20	5.9	7.4	8.8	10.7	5.0	6.2	7.5	9.2
	30	8.8	11.1	13.2	16.2	7.5	9.4	11.3	13.7
	40	11.8	14.7	17.7	21.6	10.0	12.5	15.0	18.3
	50	14.7	18.4	22.0	27.0	12.5	15.7	18.7	22.9

Table 22. ThermoPLY Green with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c., Seismic[1,2,3,4,5]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
First Story of Three Stories	10	4.4	5.2	5.9	NP	3.7	4.4	5.0	NP
	20	8.8	10.3	11.8	NP	7.5	8.8	10.0	NP
	30	13.2	15.5	17.7	NP	11.3	13.2	15.0	NP
	40	17.7	20.5	23.5	NP	15.0	17.5	20.0	NP
	50	22.0	25.7	29.4	NP	18.7	21.8	25.0	NP

SI: 1 ft = 0.305 m

1. NP = Not Permitted
2. Linear interpolation is permitted.
3. Maximum stud spacing is 16" o.c.
4. ThermoPLY Green attached with minimum 16-gauge, $^{7}/_{16}$" crown x 1$^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. Roofing nails (minimum 0.120" x 1$^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. All adjustment factors from IRC Table R602.10.3(4) shall be applied.

Table 23. ThermoPLY Green with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c., Seismic[1,2,3,4,5]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
One Story OR the Top of Two or Three Stories	10	1.8	1.9	2.2	2.7	1.5	1.8	1.9	2.3
	20	3.5	3.9	4.4	5.5	3.0	3.3	3.7	4.7
	30	5.3	5.9	6.5	8.2	4.5	5.0	5.5	6.9
	40	6.9	7.8	8.7	10.9	5.9	6.7	7.4	9.2
	50	8.7	9.8	10.9	13.6	7.4	8.3	9.2	11.6
First Story of Two Stories OR Second Story of Three Stories	10	3.3	4.1	4.9	6.0	2.8	3.5	4.1	5.1
	20	6.5	8.2	9.8	11.9	5.5	6.9	8.3	10.3
	30	9.8	12.3	14.7	18.0	8.3	10.5	12.5	15.3
	40	13.1	16.3	19.6	24.0	11.1	14.0	16.7	20.4
	50	16.3	20.5	24.5	30.0	14.0	17.5	20.8	25.5

Table 23. ThermoPLY Green with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c., Seismic[1,2,3,4,5]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
First Story of Three Stories	10	4.9	5.8	6.5	NP	4.1	4.9	5.5	NP
	20	9.8	11.4	13.1	NP	8.3	9.8	11.1	NP
	30	14.7	17.2	19.6	NP	12.5	14.6	16.7	NP
	40	19.6	22.9	26.2	NP	16.7	19.5	22.2	NP
	50	24.5	28.6	32.7	NP	20.8	24.3	27.8	NP

SI: 1 ft = 0.305 m

1. NP = Not Permitted
2. Linear interpolation is permitted.
3. Maximum stud spacing is 24" o.c.
4. ThermoPLY Green attached with minimum 16-gauge, $^{7}/_{16}$" crown x 1$^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. Roofing nails (minimum 0.120" x 1$^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. All adjustment factors from IRC Table R602.10.3(4) shall be applied.

Table 24. ThermoPLY Red with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c., Seismic[1,2,3,4,5]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
One Story OR the Top of Two or Three Stories	10	1.5	1.6	1.8	2.2	1.2	1.5	1.5	1.9
	20	2.8	3.2	3.5	4.4	2.4	2.7	3.0	3.8
	30	4.2	4.8	5.3	6.6	3.6	4.0	4.5	5.6
	40	5.6	6.3	7.0	8.8	4.8	5.4	6.0	7.5
	50	7.0	7.9	8.8	11.0	6.0	6.7	7.5	9.3
First Story of Two Stories OR Second Story of Three Stories	10	2.6	3.3	3.9	4.9	2.3	2.8	3.3	4.1
	20	5.3	6.6	7.9	9.6	4.5	5.6	6.7	8.3
	30	7.9	10.0	11.9	14.5	6.7	8.4	10.1	12.3
	40	10.6	13.2	15.9	19.4	9.0	11.3	13.5	16.5
	50	13.2	16.5	19.8	24.2	11.3	14.1	16.8	20.6

Table 24. ThermoPLY Red with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c., Seismic[1,2,3,4,5]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
First Story of Three Stories	10	3.9	4.7	5.3	NP	3.3	3.9	4.5	NP
	20	7.9	9.2	10.6	NP	6.7	7.9	9.0	NP
	30	11.9	13.9	15.9	NP	10.1	11.8	13.5	NP
	40	15.9	18.4	21.1	NP	13.5	15.8	17.9	NP
	50	19.8	23.1	26.4	NP	16.8	19.6	22.4	NP

SI: 1 ft = 0.305 m

1. NP = Not Permitted
2. Linear interpolation is permitted.
3. Maximum stud spacing is 16" o.c.
4. ThermoPLY Red attached with minimum 16-gauge, $^{7}/_{16}$" crown x 1$^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. Roofing nails (minimum 0.120" x 1$^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. All adjustment factors from IRC Table R602.10.3(4) shall be applied.

Table 25. ThermoPLY Red with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c., Seismic[1,2,3,4,5]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
One Story OR the Top of Two or Three Stories	10	1.6	1.7	2.0	2.4	1.4	1.6	1.7	2.1
	20	3.1	3.5	3.9	4.9	2.7	3.0	3.3	4.2
	30	4.7	5.3	5.9	7.4	4.0	4.5	5.0	6.2
	40	6.2	7.0	7.8	9.8	5.3	6.0	6.7	8.3
	50	7.8	8.8	9.8	12.2	6.7	7.5	8.3	10.4
First Story of Two Stories OR Second Story of Three Stories	10	2.9	3.7	4.4	5.4	2.5	3.1	3.7	4.6
	20	5.9	7.4	8.8	10.7	5.0	6.2	7.5	9.2
	30	8.8	11.1	13.2	16.2	7.5	9.4	11.3	13.7
	40	11.8	14.7	17.7	21.6	10.0	12.5	15.0	18.3
	50	14.7	18.4	22.0	27.0	12.5	15.7	18.7	22.9

Table 25. ThermoPLY Red with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c., Seismic[1,2,3,4,5]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
First Story of Three Stories	10	4.4	5.2	5.9	NP	3.7	4.4	5.0	NP
	20	8.8	10.3	11.8	NP	7.5	8.8	10.0	NP
	30	13.2	15.5	17.7	NP	11.3	13.2	15.0	NP
	40	17.7	20.5	23.5	NP	15.0	17.5	20.0	NP
	50	22.0	25.7	29.4	NP	18.7	21.8	25.0	NP

SI: 1 ft = 0.305 m

1. NP = Not Permitted
2. Linear interpolation is permitted.
3. Maximum stud spacing is 24" o.c.
4. ThermoPLY Red attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. All adjustment factors from IRC Table R602.10.3(4) shall be applied.

Table 26. ThermoPLY Blue with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c., Seismic[1,2,3,4,5]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
One Story OR the Top of Two or Three Stories	10	1.2	1.3	1.5	1.8	1.0	1.2	1.3	1.6
	20	2.4	2.7	3.0	3.7	2.0	2.3	2.5	3.2
	30	3.6	4.0	4.4	5.6	3.1	3.4	3.7	4.7
	40	4.7	5.3	5.9	7.4	4.0	4.5	5.1	6.3
	50	5.9	6.6	7.4	9.2	5.1	5.7	6.3	7.8
First Story of Two Stories OR Second Story of Three Stories	10	2.2	2.8	3.3	4.1	1.9	2.4	2.8	3.5
	20	4.4	5.6	6.6	8.1	3.7	4.7	5.7	7.0
	30	6.6	8.4	10.0	12.2	5.7	7.1	8.5	10.4
	40	8.9	11.1	13.3	16.3	7.5	9.5	11.3	13.8
	50	11.1	13.9	16.6	20.4	9.5	11.9	14.1	17.3

Table 26. ThermoPLY Blue with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c., Seismic[1,2,3,4,5]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
First Story of Three Stories	10	3.3	3.9	4.4	NP	2.8	3.3	3.7	NP
	20	6.6	7.8	8.9	NP	5.7	6.6	7.5	NP
	30	10.0	11.7	13.3	NP	8.5	9.9	11.3	NP
	40	13.3	15.5	17.8	NP	11.3	13.2	15.1	NP
	50	16.6	19.4	22.2	NP	14.1	16.5	18.9	NP

SI: 1 ft = 0.305 m

1. NP = Not Permitted
2. Linear interpolation is permitted.
3. Maximum stud spacing is 16" o.c.
4. ThermoPLY Blue attached with minimum 16-gauge, $^{7}/_{16}$" crown x 1$^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. Roofing nails (minimum 0.120" x 1$^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. All adjustment factors from IRC Table R602.10.3(4) shall be applied.

Table 27. ThermoPLY Blue with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c., Seismic[1,2,3,4,5]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
One Story OR the Top of Two or Three Stories	10	1.4	1.5	1.7	2.2	1.2	1.4	1.5	1.8
	20	2.8	3.1	3.5	4.4	2.4	2.7	3.0	3.7
	30	4.2	4.7	5.2	6.6	3.6	4.0	4.4	5.5
	40	5.5	6.3	7.0	8.7	4.7	5.3	5.9	7.4
	50	7.0	7.8	8.7	10.9	5.9	6.7	7.4	9.2
First Story of Two Stories OR Second Story of Three Stories	10	2.6	3.3	3.9	4.8	2.3	2.8	3.3	4.1
	20	5.2	6.6	7.8	9.5	4.4	5.5	6.7	8.2
	30	7.8	9.8	11.7	14.3	6.7	8.4	10.0	12.2
	40	10.5	13.0	15.7	19.1	8.9	11.1	13.3	16.3
	50	13.0	16.4	19.6	23.9	11.1	13.9	16.6	20.4
First Story of Three Stories	10	3.9	4.6	5.2	NP	3.3	3.9	4.4	NP
	20	7.8	9.1	10.5	NP	6.7	7.8	8.9	NP
	30	11.7	13.7	15.7	NP	10.0	11.7	13.3	NP
	40	15.7	18.2	20.9	NP	13.3	15.6	17.7	NP
	50	19.6	22.9	26.1	NP	16.6	19.4	22.2	NP

SI: 1 ft = 0.305 m

1. NP = Not Permitted
2. Linear interpolation is permitted.
3. Maximum stud spacing is 24" o.c.
4. ThermoPLY Blue attached with minimum 16-gauge, $^{7}/_{16}$" crown x $1^{1}/_{4}$" leg staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. Roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) are a permitted alternate fastener. Similarly, fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface. Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. All adjustment factors from IRC Table R602.10.3(4) shall be applied.

6.2.3.3.4 *OX-IS and OX-IS HS Structural Insulated Sheathing:*

6.2.3.3.4.1 For seismic design, required braced wall panel lengths for OX-IS-sheathed exterior walls with SPF applied in the wall cavities shall be as shown in the following:

6.2.3.3.4.1.1 **Table 28** and **Table 29** for assemblies sheathed with 0.50" OX-IS or 0.50" OX-IS HS

6.2.3.3.4.1.2 **Table 30** and **Table 31** for assemblies sheathed with 1.00" OX-IS or 1.70" OX-IS

6.2.3.3.4.1.3 **Table 28** through **Table 31** shall be used in conjunction with IRC Table R602.10.3(4), which provides the required adjustments.

Table 28. 0.50" OX-IS or 0.50" OX-IS HS with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c. Seismic[1,2,3,4,5,6]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
One Story OR the Top of Two or Three Stories	10	1.4	1.5	1.7	2.1	1.2	1.4	1.4	1.8
	20	2.7	3.1	3.4	4.3	2.3	2.6	2.9	3.7
	30	4.1	4.6	5.1	6.4	3.5	3.9	4.3	5.4
	40	5.4	6.1	6.8	8.5	4.6	5.2	5.8	7.2
	50	6.8	7.6	8.5	10.6	5.8	6.5	7.2	9.0
First Story of Two Stories OR Second Story of Three Stories	10	2.6	3.2	3.8	4.7	2.2	2.7	3.2	4.0
	20	5.1	6.4	7.6	9.3	4.3	5.4	6.5	8.0
	30	7.6	9.6	11.5	14.0	6.5	8.2	9.8	11.9
	40	10.2	12.7	15.3	18.7	8.7	10.9	13.0	15.9
	50	12.7	16.0	19.1	23.4	10.9	13.6	16.2	19.9
First Story of Three Stories	10	3.8	4.5	5.1	NP	3.2	3.8	4.3	NP
	20	7.6	8.9	10.2	NP	6.5	7.6	8.7	NP
	30	11.5	13.4	15.3	NP	9.8	11.4	13.0	NP
	40	15.3	17.8	20.4	NP	13.0	15.2	17.3	NP
	50	19.1	22.3	25.5	NP	16.2	18.9	21.7	NP

SI: 1 ft = 0.305 m

1. NP = Not Permitted
2. Linear interpolation is permitted.
3. Maximum stud spacing is 16" o.c.
4. 0.50" OX-IS or 0.50" OX-IS HS attached with minimum 16-gauge, $^{7}/_{16}$" crown staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples shall be of sufficient length to achieve a minimum penetration of 1" into the framing members and shall be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. As an alternate to Table Footnote 3 above, 0.50" OX-IS or 0.50" OX-IS HS may be attached with minimum 0.113" diameter ($^{3}/_{8}$" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum $^{1}/_{2}$" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.
7. All adjustment factors from IRC Table R602.10.3(4) shall be applied.

Table 29. 0.50" OX-IS or 0.50" OX-IS HS with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c. Seismic[1,2,3,4,5,6]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
One Story OR the Top of Two or Three Stories	10	1.5	1.6	1.9	2.3	1.3	1.5	1.6	2.0
	20	3.0	3.3	3.7	4.7	2.5	2.8	3.2	4.0
	30	4.5	5.0	5.6	7.0	3.8	4.3	4.7	5.9
	40	5.9	6.7	7.4	9.3	5.0	5.7	6.4	7.9
	50	7.4	8.3	9.3	11.6	6.4	7.1	7.9	9.9
First Story of Two Stories OR Second Story of Three Stories	10	2.8	3.5	4.2	5.1	2.4	3.0	3.5	4.4
	20	5.6	7.0	8.3	10.2	4.7	5.9	7.1	8.8
	30	8.3	10.5	12.6	15.3	7.1	8.9	10.7	13.0
	40	11.2	13.9	16.8	20.5	9.5	11.9	14.2	17.4
	50	13.9	17.5	20.9	25.6	11.9	14.9	17.7	21.8
First Story of Three Stories	10	4.2	4.9	5.6	NP	3.5	4.2	4.7	NP
	20	8.3	9.7	11.2	NP	7.1	8.3	9.5	NP
	30	12.6	14.7	16.8	NP	10.7	12.5	14.2	NP
	40	16.8	19.5	22.3	NP	14.2	16.7	19.0	NP
	50	20.9	24.4	27.9	NP	17.7	20.7	23.7	NP

SI: 1 ft = 0.305 m

1. NP = Not Permitted
2. Linear interpolation is permitted.
3. Maximum stud spacing is 24" o.c.
4. 0.50" OX-IS or 0.50" OX-IS HS attached with minimum 16-gauge, $^{7}/_{16}$" crown staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples shall be of sufficient length to achieve a minimum penetration of 1" into the framing members and shall be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. As an alternate to Table Footnote 3 above, 0.50" OX-IS or 0.50" OX-IS HS may be attached with minimum 0.113" diameter ($^{3}/_{8}$" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum $^{1}/_{2}$" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.
7. All adjustment factors from IRC Table R602.10.3(4) shall be applied.

Table 30. 1.00" OX-IS or 1.70" OX-IS with ≥ 1.0" Spray Foam Required Bracing Lengths – 16" o.c. Seismic[1,2,3,4,5,6]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
One Story OR the Top of Two or Three Stories	10	1.4	1.5	1.7	2.1	1.2	1.4	1.4	1.8
	20	2.7	3.0	3.4	4.2	2.3	2.6	2.9	3.6
	30	4.1	4.6	5.0	6.3	3.5	3.9	4.3	5.3
	40	5.3	6.0	6.7	8.4	4.6	5.1	5.7	7.1
	50	6.7	7.5	8.4	10.5	5.7	6.4	7.1	8.9
First Story of Two Stories OR Second Story of Three Stories	10	2.5	3.2	3.8	4.7	2.2	2.7	3.2	4.0
	20	5.0	6.3	7.5	9.2	4.3	5.3	6.4	7.9
	30	7.5	9.5	11.3	13.9	6.4	8.1	9.7	11.8
	40	10.1	12.6	15.1	18.5	8.6	10.8	12.9	15.7
	50	12.6	15.8	18.9	23.1	10.8	13.5	16.0	19.7
First Story of Three Stories	10	3.8	4.5	5.0	NP	3.2	3.8	4.3	NP
	20	7.5	8.8	10.1	NP	6.4	7.5	8.6	NP
	30	11.3	13.3	15.1	NP	9.7	11.3	12.9	NP
	40	15.1	17.6	20.2	NP	12.9	15.0	17.1	NP
	50	18.9	22.1	25.2	NP	16.0	18.7	21.4	NP

SI: 1 ft = 0.305 m

1. NP = Not Permitted
2. Linear interpolation is permitted.
3. Maximum stud spacing is 16" o.c.
4. 1.00" OX-IS or 1.70" OX-IS attached with minimum 16-gauge, $^{7}/_{16}$" crown staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples shall be of sufficient length to achieve a minimum penetration of 1" into the framing members and shall be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. As an alternate to Table Footnote 3 above, 1.00" OX-IS or 1.70" OX-IS may be attached with minimum 0.113" diameter ($^{3}/_{8}$" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum $^{1}/_{2}$" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.
7. All adjustment factors from IRC Table R602.10.3(4) shall be applied.

Table 31. 1.00" OX-IS or 1.70" OX-IS with ≥ 1.0" Spray Foam Required Bracing Lengths – 24" o.c. Seismic[1,2,3,4,5,6]

Condition	Braced Wall Line Length (ft)	Minimum Total Length (ft) of Braced Wall Panels Required Along Each Braced Wall Line							
		Intermittent Sheathing				Continuous Sheathing			
		Seismic Design Category (SDC)							
		C	D_0	D_1	D_2	C	D_0	D_1	D_2
One Story OR the Top of Two or Three Stories	10	1.5	1.6	1.8	2.3	1.3	1.5	1.5	1.9
	20	2.9	3.3	3.6	4.6	2.5	2.8	3.1	3.9
	30	4.4	4.9	5.5	6.9	3.8	4.2	4.6	5.8
	40	5.8	6.5	7.3	9.1	4.9	5.6	6.2	7.7
	50	7.3	8.1	9.1	11.4	6.2	7.0	7.7	9.6
First Story of Two Stories OR Second Story of Three Stories	10	2.7	3.4	4.1	5.0	2.4	2.9	3.4	4.3
	20	5.5	6.9	8.1	10.0	4.6	5.8	7.0	8.6
	30	8.1	10.3	12.3	15.0	7.0	8.7	10.5	12.8
	40	10.9	13.6	16.4	20.0	9.3	11.6	13.9	17.0
	50	13.6	17.1	20.5	25.0	11.6	14.6	17.4	21.3
First Story of Three Stories	10	4.1	4.8	5.5	NP	3.4	4.1	4.6	NP
	20	8.1	9.5	10.9	NP	7.0	8.1	9.3	NP
	30	12.3	14.4	16.4	NP	10.5	12.2	13.9	NP
	40	16.4	19.1	21.8	NP	13.9	16.3	18.5	NP
	50	20.5	23.9	27.3	NP	17.4	20.3	23.2	NP

SI: 1 ft = 0.305 m

1. NP = Not Permitted
2. Linear interpolation is permitted.
3. Maximum stud spacing is 24" o.c.
4. 1.00" OX-IS or 1.70" OX-IS attached with minimum 16-gauge, $^{7}/_{16}$" crown staples fastened 3" o.c. at panel edges and 3" o.c. in the field. Staples shall be of sufficient length to achieve a minimum penetration of 1" into the framing members and shall be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$". Minimum $^{1}/_{2}$" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
5. As an alternate to Table Footnote 3 above, 1.00" OX-IS or 1.70" OX-IS may be attached with minimum 0.113" diameter ($^{3}/_{8}$" head or 2" cap) nails fastened 3":3" (edge:field). Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Minimum $^{1}/_{2}$" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
6. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.
7. All adjustment factors from IRC Table R602.10.3(4) shall be applied.

6.2.3.4 Required braced wall panel lengths shall be as determined by the equivalency factor shown in **Table 32**, IRC Table R602.10.3(1), and IRC Table R602.10.3(3), including all footnotes.

6.2.3.5 All other IRC prescriptive bracing minimums, spacing requirements, and rules must still be met.

Table 32. Braced Wall Line Length Equivalency Factors[1,2,6]

Structural Sheathing Product	Maximum Stud Spacing (in)	Fastener[7]	Maximum Fastener Spacing (edge:field) (in)	GWB Fastening Spacing[4,5] (edge:field) (in)	Equivalency Factors[3] to IRC WSP or CS-WSP
ThermoPLY Green	16 o.c.	Minimum 16-gauge Staple, 7/16" Crown, 1 1/4" Leg[8]	3:3	16:16	0.98
	24 o.c.				1.09
ThermoPLY Red	16 o.c.			16:16	0.88
	24 o.c.				0.98
ThermoPLY Blue	16 o.c.			16:16	0.74
	24 o.c.				0.87
0.50" OX-IS or 0.50" OX-IS HS	16 o.c.	Minimum 16-gauge Staple, 7/16" Crown[9]	3:3	16:16	0.85
	24 o.c.				0.93
1.00" OX-IS or 1.70" OX-IS	16 o.c.		3:3	16:16	0.84
	24 o.c.				0.91

SI: 1 in = 25.4 mm

1. Based on equivalency testing for use with the IRC.
2. Framing shall be SPF (specific gravity 0.42), at a minimum. Minimum 1" spray foam shall be applied in wall cavities.
3. Equivalency factors allow the user to determine the length of bracing required, by multiplying the equivalency factor above by the length of bracing shown in the WSP or CS-WSP columns in IRC Table R602.10.3(1) and IRC Table R602.10.3(3), as modified by all applicable factors in IRC Table R602.10.3(2) and IRC Table R602.10.3(4), respectively. Bracing lengths are the results of comparative equivalency testing and analysis using both tested and published design values as points of comparison. DrJ relies upon the design values published in the codes and standards listed in **Section 4** that are adopted into law and that the manufacturer of those products stand behind. DrJ performs all equivalency analysis based on legally defined design values, the responsibility for which is the manufacturer of those products or the members of the associations that publish those design values.
4. Minimum 1/2" GWB shall be installed on the interior side of the wall assembly with minimum #6 Type W screws, 1 1/4" long with a minimum edge distance of 3/8".
5. Where GWB is not applied to the interior side of the wall assembly, bracing lengths in IRC Table R602.10.3(1) and IRC Table R602.10.3(3), as modified by all applicable factors in IRC Table R602.10.3(2) and IRC Table R602.10.3(4).
6. Valid for single top plate wall installations or double top plate wall installations
7. For OX-IS products, penetration into the stud shall be a minimum of 1.0". Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing.
8. ThermoPLY products may be attached roofing nails (minimum 0.120" x 1 1/4" with a 3/8" head) as an equivalent fastener. Similarly, fastener shall be spaced 3" along panel edges and 3" in the field and fastener edge distance shall be a minimum of 3/8". Fastener head shall be flush with the panel surface. Minimum 1/2" GWB fastened 16":16" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.
9. OX-IS products may be attached with minimum 0.113" diameter (3/8" head or 2" cap) nails as an equivalent fastener. Similarly, fastener shall be spaced 3" along panel edges and 3" in the field and fastener edge distance shall be a minimum of 3/8". Nail length shall be sufficient to achieve a minimum penetration of 1" into the framing members. Fastener head shall be flush with the panel surface. Countersinking fasteners into the foam sheathing is permitted. Fastener shall not penetrate beyond the surface of the structural sheathing. Minimum 1/2" GWB fastened 8":8" attached to the interior side of the wall in accordance with IRC Section R702.3.5 and IRC Table R702.3.5.

6.2.4 *Prescriptive IBC Conventional Light-Frame Wood Construction:*

6.2.4.1 OX Engineered Wood Framed Wall Assemblies may be used to brace exterior walls of buildings as an equivalent alternative to Method 3 of the IBC when installed with blocked $^1/_2$" GWB fastened with a minimum #6 Type W or S screw spaced a maximum of 16" o.c. at panel edges and 16" o.c. in the field. Bracing shall be in accordance with the conventional light-frame construction method of IBC Section 2308.10[29] and this report.

6.2.5 *Performance-Based Wood-Framed Construction:*

6.2.5.1 OX Engineered Wood Framed Wall Assemblies designed as shear walls are permitted to be designed in accordance with the methodology used in SDPWS for WSP using the capacities shown in **Table 33**.

6.2.5.2 OX Engineered Wood Framed Wall Assemblies may be designed to resist wind loads resulting from winds up to 200 mph (V_{ult}).

6.2.5.3 OX Engineered Wood Framed Wall Assemblies designed as shear walls are permitted to resist lateral wind load forces using the allowable shear loads (in pounds per linear foot) set forth in **Table 33**.

6.2.5.4 OX Engineered Wood Framed Wall Assemblies designed as shear walls are permitted to resist seismic load forces using the seismic allowable unit shear capacities set forth in **Table 34** when seismic design is required in accordance with IBC Section 1613.

6.2.5.4.1 The response modification coefficient, R, system overstrength factor, Ω_0, and deflection amplification factor, C_d, indicated in **Table 34** shall be used to determine the base shear, element design forces, and design story drift in accordance with ASCE 7 Chapter 12 and Section 14.5.

Table 33. Allowable Stress Design (ASD) Capacity for OX Engineered Wood Framed Wall Assemblies – Wind

Structural Sheathing Product	Product Thickness (in)	Nominal SPF Thickness (in)	Maximum Stud Spacing (in)	Fastener[1,2,3,4]	Maximum Fastener Spacing (edge:field) (in)	Allowable Unit Shear Capacity (plf)
ThermoPLY (Green) [3]	0.078	1.0	16 o.c.	Minimum 16-gauge Staple, 7/16" Crown, 1 1/4" Leg[5]	3:3	330
		2.0				415
		≥ 3.0				495
		1.0	24 o.c.		3:3	295
		2.0				370
		≥ 3.0				435
ThermoPLY (Red) [3]	0.113	1.0	16 o.c.	Minimum 16-gauge Staple, 7/16" Crown, 1 1/4" Leg[5]	3:3	375
		2.0				460
		≥ 3.0				545
		1.0	24 o.c.		3:3	335
		2.0				410
		≥ 3.0				485
ThermoPLY (Blue) [3]	0.135	1.0	16 o.c.	Minimum 16-gauge Staple, 7/16" Crown, 1 1/4" Leg[5]	3:3	450
		2.0				550
		≥ 3.0				650
		1.0	24 o.c.		3:3	375
		2.0				460
		≥ 3.0				540
OX-IS or OX-IS HS	0.50	1.0	16 o.c.	Minimum 16-gauge Staple, 7/16" Crown	3:3	385
		2.0				475
		≥ 3.0				555
		1.0	24 o.c.		3:3	355
		2.0				435
		≥ 3.0				505

Table 33. Allowable Stress Design (ASD) Capacity for OX Engineered Wood Framed Wall Assemblies – Wind

Structural Sheathing Product	Product Thickness (in)	Nominal SPF Thickness (in)	Maximum Stud Spacing (in)	Fastener[1,2,3,4]	Maximum Fastener Spacing (edge:field) (in)	Allowable Unit Shear Capacity (plf)
OX-IS	1.00 – 1.70	1.0	16 o.c.	Minimum 16-gauge Staple, $^{7}/_{16}$" Crown	3:3	395
		2.0				485
		≥ 3.0				565
		1.0	24 o.c.		3:3	360
		2.0				445
		≥ 3.0				520

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

1. ThermoPLY, OX-IS, and OX-IS HS products shall be attached to wood framing with a minimum 16-gauge, $^{7}/_{16}$" crown staples and shall penetrate a minimum of 1.0" into the stud. Fasteners are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$".
2. IsoRED Ci products shall be attached to wood framing with minimum 0.090" diameter galvanized nails with 1" plastic cap and shall penetrate a minimum of 1.0" into the stud. Fastener edge distance shall be a minimum of $^{3}/_{8}$".
3. For ThermoPLY and IsoRED Ci products, fastener head shall be flush with the panel surface.
4. For OX-IS and OX-IS HS products, fastener heads are permitted to be overdriven into foam portion of the panel and be flushed with the structural backer with no reduction in shear capacities.
5. ThermoPLY products may be attached roofing nails (minimum 0.120" x $1^{1}/_{4}$" with a $^{3}/_{8}$" head) as an equivalent fastener. Similarly, fastener shall be spaced 3" along panel edges and 3" in the field and fastener edge distance shall be a minimum of $^{3}/_{8}$". Fastener head shall be flush with the panel surface.

Table 34. Seismic Allowable Unit Shear Capacity & Seismic Design Coefficients (SDC) for OX Engineered Wood Framed Wall Assemblies[1]

Structural Sheathing Product	Thickness (in)		Max. Stud Spacing (in)	Seismic Allowable Unit Shear Capacity[3] (plf)	Apparent Shear Stiffness, G_a (kips/in)	Response Modification Factor, R[4]	System Overstrength Factor, Ω_0[5]	Deflection Amplification Coefficient C_d[6]	Structural System Limitations and Building Height Limit[7,8] (ft)				
	Product	SPF							SDC				
									B	C	D	E	F
ThermoPLY Green	0.078	1.0	16 o.c.	230	6.6	4.0	2.5	4.0	NL	NL	50	NP	NP
		2.0		290	6.6								
		≥ 3.0		345	6.6								
ThermoPLY Red	0.113	1.0	16 o.c.	265	6.5	4.0	2.5	4.0	NL	NL	50	NP	NP
		2.0		320	6.9								
		≥ 3.0		380	6.9								
ThermoPLY Blue	0.135	1.0	16 o.c.	350	9.7	4.0	2.5	4.0	NL	NL	50	NP	NP
		2.0		385	10.0								
		≥ 3.0		495	10.1								
OX-IS or OX-IS HS	0.50	1.0	16 o.c.	270	8.6	4.0	2.5	4.0	NL	NL	50	NP	NP
		2.0		335	8.6								
		≥ 3.0		390	8.6								
OX-IS	1.00 – 1.70	1.0	16 o.c.	275	8.4	4.0	2.5	4.0	NL	NL	50	NP	NP
		2.0		340	8.8								
		≥ 3.0		395	8.9								

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

1. ThermoPLY, OX-IS, and OX-IS HS products shall be attached to wood framing with a minimum 16-gauge, $^{7}/_{16}$" crown staples and shall penetrate a minimum of 1.0" into the stud. Fasteners are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of $^{3}/_{8}$".
2. All seismic design parameters follow the equivalency as defined in **Section 4** and **Section 8** of this report.
3. Response modification coefficient, R, for use throughout ASCE 7. *Note:* R reduces forces to a strength level, not an allowable stress level.
4. The tabulated value of the overstrength factor, Ω_0, is permitted to be reduced by subtracting one-half (0.5) for structures with flexible diaphragms.
5. Deflection amplification factor, C_d, for use with ASCE 7 Sections 12.8.6, 12.8.7, and 12.9.1.2
6. Heights are measured from the base of the structure as defined in ASCE 7 Section 11.2.
7. NL = Not Limited

6.2.6 *Transverse Load Resistance:*

6.2.6.1 OX Engineered Products are permitted to resist transverse wind load forces using the allowable transverse loads (in pounds per linear foot) set forth in **Table 35** and the basic wind speeds in **Table 36**.

6.2.6.2 Required component and cladding loads to be resisted are found in IBC Section 1609.1.1, IRC Table R301.2.1(1),[30] and IRC Table R301.2.1(2).[31]

Table 35. Transverse (Out-of-Plane) Wind Load Resistance of OX Engineered Wood Framed Wall Assemblies with ≥ 1.0" Spray Foam[1,3]

Structural Sheathing Product	Product Thickness (in)	Maximum Stud Spacing (in)	Fastener[4]	Fastener Spacing (edge:field) (in)	Allowable Design Value[2] (psf)
ThermoPLY Green	0.078	16 o.c.	Minimum 7/16" crown, 16-gauge galvanized staples[5]	3:3	175.0
ThermoPLY Red	0.113	16 o.c.			175.0
		24 o.c.			95.0
ThermoPLY Blue	0.135	16 o.c.			175.0
		24 o.c.			95.0
OX-IS or OX-IS HS	0.5	16 o.c.		3:3	175.0
		24 o.c.			95.0
OX-IS	1.0	16 o.c.			175.0
		24 o.c.			95.0
	1.7	16 o.c.			175.0
		24 o.c.			95.0
IsoRED Ci	0.5	16 o.c.	0.090" diameter galvanized nails with 1" plastic cap[6]	12:16	175.0
	1.0	16 o.c	0.090" diameter galvanized nails with 1" plastic cap[5]		141.6
	1.7				

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

1. Tested in accordance with ASTM E330.
2. Applicable to both negative and positive direction loading.
3. Attachment to wood framing having a minimum specific gravity of 0.42.
4. Staple crowns shall be installed parallel to grain.
5. Minimum 1" penetration into the stud.
6. Minimum 1.5" penetration into the stud.

Table 36. Basic Wind Speed for Use with OX Engineered Wood Framed Wall Assemblies with ≥ 1.0" Spray Foam[1,5]

Structural Sheathing Product	Product Thickness (in)	Maximum Stud Spacing (in)	Allowable Components & Cladding Basic Wind Speed (mph)[4]					
			Basic Design Wind Speed[2] (V_{ult})			Allowable Stress Design Wind Speed[3] (V_{asd})		
			Exposure B	Exposure C	Exposure D	Exposure B	Exposure C	Exposure D
ThermoPLY Green	0.078	24 o.c.	200	200	200	155	155	155
ThermoPLY Red	0.113							
ThermoPLY Blue	0.135							
OX-IS or OX-IS HS	0.5	24 o.c.	200	200	200	155	155	155
OX-IS	1.0							
	1.7							
IsoRED Ci	0.5	24 o.c.	200	200	200	155	155	155
	1.0							
	1.7							

SI: 1 mph = 1.61 km/h

1. Design wind load capacity shall be in accordance with ASCE 7-22 as specified in IBC Section 1609.1.1.
2. Allowable wind speeds are based on the following: A building height of 30-feet, GC_p= -1.4 for Zone 5 and an Effective Wind Area of 10 ft², Topographic Factor: K_{zt}=1.0, Ground Elevation Factor: K_e=1.0, Internal Pressure Coefficient, GC_{pi}=+/-0.18 for an enclosed building, K_d = 0.85 for Component and Cladding.
3. IBC Section 1609.3.1: $V_{asd} = V_{ult}\sqrt{0.6}$.
4. Reported V_{ult} is capped at 200 mph. Reported V_{asd} is capped at 155 mph.
5. Attachment to wood framing having a minimum specific gravity of 0.42.

6.2.7 *Uplift Resistance:*

6.2.7.1 OX Engineered Wood Framed Wall Assemblies panels are permitted to resist uplift forces using the allowable uplift loads (in pounds per linear foot) set forth in **Table 37**.

Table 37. Uplift Performance[1,2,3,4,5]

Structural Sheathing Product	Product Thickness (in)	Plate Configuration	Maximum Stud Spacing (in)	Fastener Schedule	Allowable Uplift Capacity (plf)
ThermoPLY Green	0.078	Single	16 o.c.	Minimum 7/16" crown, 1 1/4" leg 16-gauge galvanized staples[6]	310
			24 o.c.		230
ThermoPLY Red	0.113		16 o.c.		310
			24 o.c.		230
ThermoPLY Blue	0.135	Single	16 o.c.		360
			24 o.c.		270
		Double[7]	16 o.c.		630
			24 o.c.		470
OX-IS or OX-IS HS	0.5	Single	16 o.c.		310
			24 o.c.		230
OX-IS	1.0	Single	16 o.c.		360
			24 o.c.		270
		Double[7]	16 o.c.		630
			24 o.c.		470
	1.7	Single	16 o.c.		360
			24 o.c.		270
		Double[7]	16 o.c.		630
			24 o.c.		470

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

1. The capacities shown are for the purpose of providing information on the hold-down capacity of the sheathing to the bottom plate connection independent of lateral loading. Where combined shear and uplift loading is needed, consult a professional engineer.
2. Attachment to wood framing having a minimum specific gravity of 0.42
3. Fastener spacing shall be 3" o.c. at the panel edges and 3" o.c. in the field. Fastener edge distance spacing shall be a minimum of 3/8".
4. Staple crowns to be installed parallel to grain of the framing members.
5. Minimum spray foam insulation thickness shall be 1".
6. For OX-IS products, staples shall be countersunk into the foam and shall be flush with the structural fiberboard backer.
7. Panel edge fastening of 3" o.c. shall be applied both plates.

6.3 *Thermal Resistance (R-Value)*

6.3.1 OX Engineered Wood Framed Wall Assemblies meet the continuous insulated sheathing requirements complying with the provisions of IECC Section C402, IRC Section N1102, and IECC Section R402.

6.3.2 Thermal resistances (R-values) of the components in OX Engineered Wood Framed Wall Assemblies are shown in **Table 38**.

6.3.3 U-factors of OX Engineered Wood Framed Wall Assemblies are shown in **Table 39**.

Table 38. Thermal Resistance (R-values) Properties - Components

Structural Sheathing Product	Thickness (in)	R-Value (h·ft²·°F/Btu)
OX-IS	0.5	3.0
	1.0	6.0
	1.7	10.0
IsoRED Ci	1.0	6.5
	1.7	11
Enverge NexSeal 2.0	1.0	7.2
	1.5	11
	2.0	14
	2.5	18
	3.0	21
	3.5	25
	4.0	28
	4.5	32
SI: 1 in = 25.4 mm, 1 F-ft²-h/Btu = 0.1761 K-m²/W		

Table 39. Thermal Resistance (U-Factors) Properties – OX Engineered Wood Framed Wall Assemblies

Climate Zone	U-factor	Stud Size	Stud Spacing	Sheathing	SPF Thickness (in.)
1 and 2 (U-factor ≤ 0.084)	0.071	2 x 4	16" o.c.	ThermoPLY	3
	0.080	2 x 4	16" o.c.	ThermoPLY - Adv Framing	2
	0.067	2 x 4	16" o.c.	0.50" OX-IS or 0.50" IsoRED Ci	2
	0.070	2 x 4	16" o.c.	1.0" OX-IS or 1.0" IsoRED Ci	1
	0.082	2 x 4	24" o.c.	ThermoPLY	2
	0.068	2 x 4	24" o.c.	ThermoPLY	3
	0.065	2 x 4	24" o.c.	0.50" OX-IS or 0.50" IsoRED Ci	2
	0.070	2 x 4	24" o.c.	1.0" OX-IS or 1.0" IsoRED Ci	1
	0.074	2 x 6	16" o.c.	ThermoPLY	2
	0.083	2 x 6	16" o.c.	0.50" OX-IS or 0.50" IsoRED Ci	1
	0.061	2 x 6	16" o.c.	0.50" OX-IS or 0.50" IsoRED Ci	2
	0.066	2 x 6	16" o.c.	1.0" OX-IS or 1.0" IsoRED Ci	1
	0.073	2 x 6	24" o.c.	ThermoPLY	2
	0.083	2 x 6	24" o.c.	0.50" OX-IS or 0.50" IsoRED Ci	1
	0.066	2 x 6	24" o.c.	1.0" OX-IS or 1.0" IsoRED Ci	1
3 (U-factor ≤ 0.060)	0.056	2 x 4	16" o.c.	0.50" OX-IS or 0.50" IsoRED Ci	3
	0.055	2 x 4	16" o.c.	1.7" OX-IS or 1.7" IsoRED Ci	1
	0.055	2 x 4	16" o.c.	1.0" OX-IS or 1.0" IsoRED Ci	2
	0.046	2 x 4	16" o.c.	1.0" OX-IS or 1.0" IsoRED Ci	3
	0.054	2 x 4	24" o.c.	0.50" OX-IS or 0.50" IsoRED Ci	3
	0.054	2 x 4	24" o.c.	1.7" OX-IS or 1.7" IsoRED Ci	1
	0.053	2 x 4	24" o.c.	1.0" OX-IS or 1.0" IsoRED Ci	2
	0.060	2 x 6	16" o.c.	ThermoPLY	3
	0.050	2 x 6	16" o.c.	0.50" OX-IS or 0.50" IsoRED Ci	3
	0.059	2 x 6	16" o.c.	0.50" OX-IS or 0.50" IsoRED Ci - Adv Framing	2
	0.053	2 x 6	16" o.c.	1.7" OX-IS or 1.7" IsoRED Ci	1
	0.051	2 x 6	16" o.c.	1.0" OX-IS or 1.0" IsoRED Ci	2
	0.058	2 x 6	24" o.c.	ThermoPLY	3
	0.060	2 x 6	24" o.c.	0.50" OX-IS or 0.50" IsoRED Ci	2
	0.049	2 x 6	24" o.c.	0.50" OX-IS or 0.50" IsoRED Ci	3
	0.053	2 x 6	24" o.c.	1.7" OX-IS or 1.7" IsoRED Ci	1
	0.050	2 x 6	24" o.c.	1.0" OX-IS or 1.0" IsoRED Ci	2

Table 39. Thermal Resistance (U-Factors) Properties – OX Engineered Wood Framed Wall Assemblies

Climate Zone	U-factor	Stud Size	Stud Spacing	Sheathing	SPF Thickness (in.)
4, 5, 6, 7, and 8 (U-factor ≤ 0.045)	0.044	2 x 4	16" o.c.	1.7" OX-IS or 1.7" IsoRED Ci	2
	0.043	2 x 4	16" o.c.	1.0" OX-IS or 1.0" IsoRED Ci (Adv Framing)	3
	0.044	2 x 4	24" o.c.	1.7" OX-IS or 1.7" IsoRED Ci	2
	0.045	2 x 4	24" o.c.	1.0" OX-IS or 1.0" IsoRED Ci	3
	0.042	2 x 6	16" o.c.	1.7" OX-IS or 1.7" IsoRED Ci	2
	0.043	2 x 6	16" o.c.	1.0" OX-IS or 1.0" IsoRED Ci	3
	0.042	2 x 6	24" o.c.	1.7" OX-IS or 1.7" IsoRED Ci	2
	0.042	2 x 6	24" o.c.	1.0" OX-IS or 1.0" IsoRED Ci	3

1. U-factor includes exterior cladding and interior GWB.
2. Climate zone U-factor as per 2021 IECC.

6.4 *Surface Burning Characteristics*

6.4.1 The components of OX Engineered Wood Framed Wall Assemblies were evaluated for surface burning characteristics in accordance with ASTM E84 as specified in IBC Section 2603.3, IBC Section 2603.5.4, and IRC Section R303.3.[32]

6.4.1.1 Flame spread and smoke developed indices are provided in **Table 40**.

Table 40. Surface Burning Characteristics[1]

Product	Flame Spread Index	Smoke Developed Index	Classification
ThermoPLY Green	≤ 200	≤ 450	Class C
ThermoPLY Red	≤ 200	≤ 450	Class C
ThermoPLY Blue	≤ 200	≤ 450	Class C
OX-IS[2]	≤ 75	≤ 450	Class B
IsoRED Ci[3]	≤ 75	≤ 450	Class B
Enverge NexSeal 2.0[4]	≤ 25	≤ 450	Class A

1. Tested in accordance with ASTM E84.
2. Evaluated with a maximum foam thickness of 2.25", foam core only. Class A foam variant is available.
3. Evaluated with a maximum foam thickness of 2.0". Class A foam variant is available.
4. Evaluated with a maximum foam thickness of 4.0" and a nominal density of 2.0 pcf (32 kg/m^3).

6.5 Where the application falls outside of the performance evaluation, conditions of use, and/or installation requirements set forth herein, alternative techniques shall be permitted in accordance with accepted engineering practice and experience. This includes but is not limited to the following areas of engineering: mechanics or materials, structural, building science, and fire science.

7 Certified Performance[33]

7.1 All construction methods shall conform to accepted engineering practices to ensure durable, livable, and safe construction and shall demonstrate acceptable workmanship reflecting journeyman quality of work of the various trades.[34]

7.2 The strength and rigidity of the component parts and/or the integrated structure shall be determined by engineering analysis or by suitable load tests to simulate the actual loads and conditions of application that occur.[35]

8 Regulatory Evaluation and Accepted Engineering Practice

8.1 OX Engineered Wood Framed Wall Assemblies comply with the following legislatively adopted regulations and/or accepted engineering practice for the following reasons:

8.1.1 OX Engineered Wood Framed Wall Assemblies were evaluated to determine:

8.1.1.1 Structural performance under lateral load conditions (wind and seismic) for use as an alternative to the IRC Intermittent Wall Bracing provisions specified in IRC Section R602.10, Method WSP (Wood Structural Panel), and the IRC Continuous Wall Bracing provisions specified in IRC Section R602.10.4, Method CS WSP (Continually Sheathed Wood Structural Panel) and CS-PF (Continually Sheathed Portal Frame).

8.1.1.2 Structural performance under lateral load conditions for use as an alternative to the Conventional Wall Bracing provisions specified in IBC Section 2308.6, Method 3, for Type V construction.

8.1.1.3 Lateral force resisting systems for use in both wind and seismic applications follow the performance-based provisions of IBC Section 2306.1, IBC Section 2306.3, and/or SDPWS Section 4.3 for light-frame wood wall assemblies.

8.1.1.3.1 **Table 34** provides SDC that conform to the requirements in ASCE 7 Section 12.2.1, 12.2.1.1, and Table 12.2-1 for design of wall assemblies in buildings that require seismic design.

8.1.1.3.2 The basis for equivalency testing is outlined in Section 12.2.1.1[36] of ASCE 7:

> **Alternative Structural Systems.** Use of seismic force-resisting systems not contained in Table 12.2-1 shall be permitted contingent on submittal to and approval by the Authority Having Jurisdiction and independent structural design review of an accompanying set of design criteria and substantiating analytical and test data. The design criteria shall specify any limitations on system use, including Seismic Design Category and height; required procedures for designing the system's components and connections; required detailing; and the values of the response medication coefficient, R; overstrength factor, Ω_0; and deflection amplification factor, C_d.

8.1.1.3.3 The basis of the seismic evaluation performed as part of this report is based on ASTM D7989 and testing per ASTM E2126 to establish SDC that conform to the requirements of ASCE 7 Section 12.2.1.1.

8.1.1.4 Structural performance under lateral load conditions for use as an alternative to SDPWS Section 4.3 Wood Frame Shear Walls.

8.1.1.5 Resistance to uplift loads for wall assemblies used for light-frame wood construction in accordance with IBC Section 1609 and IRC Section R301.2.1.

8.1.1.6 Resistance to transverse loads for wall assemblies used in light-frame wood construction in accordance with IBC Section 1609.1.1 and IRC Section R301.2.1.

8.1.1.7 Performance for use as foam plastic insulation in accordance with the IBC Section 2603 and IRC Section R303.[37]

8.1.1.8 Performance for use as insulated sheathing in accordance with the IECC Section C402.1.

8.2 Any building code, regulation and/or accepted engineering evaluations (i.e., research reports, duly authenticated reports, etc.) that are conducted for this Listing 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[38] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,[39] respectively.

8.3 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise, which is also its areas of professional engineering competence.

8.4 Any regulation specific issues not addressed in this section are outside the scope of this report.

9 Installation

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

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

9.3 *Orientation*

9.3.1 OX Engineered Wood Framed Wall Assemblies may be installed vertically or horizontally over studs, with framing that has a nominal thickness of not less than 2" (50.8 mm) and spaced a maximum of 24" (610 mm) o.c.

9.3.2 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.

9.3.2.1 ThermoPLY products are permitted to be installed with overlapped joints.

9.4 *Attachment*

9.4.1 *General:*

9.4.1.1 Where used, always fasten staples parallel to the framing member.

9.4.1.2 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.

9.4.2 *OX Engineered Products:*

9.4.2.1 *ThermoPLY, OX-IS, and OX-IS HS:*

9.4.2.1.1 OX-IS and OX-IS HS products are installed with butted joints.

9.4.2.1.2 Minimum $^{7}/_{16}$" crown by $1^{1}/_{4}$" leg, 16-gauge staples with a 1.0" minimum embedment into the stud unless otherwise stated in **Section 6**.

9.4.2.1.3 Fastener spacing shall be a maximum of 3" o.c. along the edge and 3" o.c. in the field unless otherwise permitted in **Section 6**.

9.4.2.1.3.1 Fasteners shall be driven so that the head of the fastener is in contact with the surface of the ThermoPLY Structural Sheathing.

9.4.2.1.3.1.1 Do not overdrive fasteners when installing ThermoPLY Structural Sheathing.

9.4.2.1.3.2 Countersinking fasteners into the foam component of OX-IS and OX-IS HS products is permitted.

9.4.2.1.3.3 In the event where a fastener or fasteners are overdriven, contact the manufacturer for counsel on steps to take and, if needed, a repair to be made.

9.4.2.2 *IsoRED Ci:*

9.4.2.2.1 Minimum 0.090" nail with 1" diameter plastic cap and a minimum 1.0" minimum embedment into the stud unless otherwise stated in **Section 6**.

9.4.2.2.2 Fastener spacing shall be a maximum of 12" o.c. along the edge and 16" o.c. in the field unless otherwise permitted in **Section 6**.

9.4.2.2.2.1 Fasteners shall be driven so that the head of the fastener is in contact with the surface of the IsoRED Ci product. Do not overdrive fasteners.

9.4.2.2.2.2 In the event where a fastener or fasteners are overdriven, contact the manufacturer for counsel on steps to take and, if needed, a repair to be made.

9.4.3 *GWB:*

9.4.3.1 Where required, GWB shall be a minimum $^1/_2$" thickness and shall be attached with the following:

9.4.3.1.1 #6 x $1^1/_4$" Type W or S screws

9.4.3.2 Fastener spacing shall be as shown in **Section 6**.

9.5 *Treatment of Joints*

9.5.1 All sheathing butted panel edges shall be taped or flashed.

9.6 *Window Treatments*

9.6.1 Windows and doors shall be installed in accordance with the manufacturer installation instructions.

9.6.2 Windows, door openings and other penetrations shall be flashed in accordance with IBC Section 1404.4 and IRC Section R703.4.

9.6.3 Follow the manufacturer instructions for installation of claddings and rain screens over these products.

10 Substantiating Data

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

10.1.1 Lateral load testing for use as an alternative material for wind design in accordance with ASTM E72 and ASTM E564

10.1.2 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

10.1.3 Axial tension testing in accordance with ATSM E72

10.1.4 Transverse load testing in accordance with ASTM E330

10.1.5 Surface burning characteristics testing in accordance with ASTM E84

10.1.6 Thermal properties testing in accordance with ASTM C518 from approved sources

10.2 Information contained herein may include the result of testing and/or data analysis by sources that are approved agencies, approved sources, and/or an RDP. Accuracy of external test data and resulting analysis is relied upon.

10.3 Where applicable, testing and/or engineering analysis are based upon provisions that have been codified into law through state or local adoption of regulations and standards. The developers of these regulations and standards are responsible for the reliability of published content. DrJ's engineering practice may use a regulation-adopted provision as the control. A regulation-endorsed control versus a simulation of the conditions of application to occur establishes a new material as being equivalent to the regulatory provision in terms of quality, strength, effectiveness, fire resistance, durability, and safety.

10.4 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, or duly authenticated reports from approved agencies and/or approved sources provided by the supplier. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this duly authenticated report, may be dependent upon published design properties by others.

10.5 *Testing and Engineering Analysis*

10.5.1 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.[40]

10.6 Where additional condition of use and/or regulatory compliance information is required, please search for OX Engineered Wood Framed Wall Assemblies on the DrJ Certification website.

11 Findings

11.1 As outlined in **Section 6**, OX Engineered Wood Framed Wall Assemblies have performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.

11.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, OX Engineered Wood Framed Wall Assemblies shall be approved for the following applications:

11.2.1 Lateral load resistance due to wind and seismic loads carried by shear walls.

11.2.2 Transverse load resistance due to components and cladding pressures on building surfaces.

11.2.3 Performance of the foam plastic component for conformance to IBC Section 2603 and IRC Section R303.[41]

11.2.4 Performance for use as insulating sheathing in accordance with IRC Sections N1102.1, IRC Section N1102.2, and IECC Section C402.

11.3 Unless exempt by state statute, when OX Engineered Wood Framed Wall Assemblies are to be used as a structural and/or building envelope component in the design of a specific building, the design shall be performed by an RDP.

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

11.5 IBC Section 104.2.3[42] (IRC Section R104.2.2[43] and IFC Section 104.2.3[44] are similar) in pertinent part state:

> **104.2.3 Alternative Materials, Design and Methods of Construction and Equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative is not specifically prohibited by this code and has been approved.

11.6 **Approved:**[45] Building regulations require that the building official shall accept duly authenticated reports.[46]

11.6.1 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited.

11.6.2 An approved source is *"approved"* when an RDP is properly licensed to transact engineering commerce.

11.6.3 Federal law, Title 18 US Code Section 242, requires that, where the alternative product, material, service, design, assembly, and/or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved. Denial without written reason deprives a protected right to free and fair competition in the marketplace.

11.7 DrJ is a licensed engineering company, employs licensed RDPs and is an ANAB Accredited Product Certification Body – Accreditation #1131.

11.8 Through the IAF Multilateral Arrangement (MLA), this duly authenticated report can be used to obtain product approval in any jurisdiction or country because all ANAB ISO/IEC 17065 duly authenticated reports are equivalent.[47]

12 Conditions of Use

12.1 Material properties shall not fall outside the boundaries defined in **Section 6**.

12.2 As defined in **Section 6**, 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.

12.3 As listed herein, OX Engineered Wood Framed Wall Assemblies shall not be used:

12.3.1 To resist horizontal loads from concrete and masonry walls, nor

12.3.2 As a nailing base.

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

12.4.1 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.

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

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

12.4.4 At a minimum, these innovative products shall be installed per **Section 9**.

12.4.5 The review of this report by the AHJ shall comply with IBC Section 104.2.3.2 and IBC Section 105.3.1.

12.4.6 These innovative products have an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.7.2, IBC Section 110.4, IBC Section 1703, IRC Section R104.7.2, and IRC Section R109.2.

12.4.7 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, inspection as required by IBC Section 110.3, IRC Section R109.2, and any other regulatory requirements that may apply.

12.5 The approval of this report by the AHJ shall comply with IBC Section 1707.1, where legislation states in part, *"the building official shall make, or cause to be made, the necessary tests and investigations; or the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in Section 104.2.3"*, all of IBC Section 104, and IBC Section 105.3.

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

12.7 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.

13 Identification

13.1 The OX Engineered Wood Framed Wall Assemblies with Enverge NexSeal 2.0 Closed Cell SPF, 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.

13.2 Additional technical information can be found at www.oxengineeredproducts.com.

14 Review Schedule

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

14.2 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 Capitalized terms and responsibilities are defined pursuant to the applicable building code, applicable reference standards, the latest edition of TPI 1, the NDS, AISI S202, US professional engineering law, Canadian building code, Canada professional engineering law, Qualtim External Appendix A: Definitions/Commentary, Qualtim External Appendix B: Project/Deliverables, Qualtim External Appendix C: Intellectual Property and Trade Secrets, definitions created within Design Drawings and/or definitions within Reference Sheets. Beyond this, terms not defined shall have ordinarily accepted meanings as the context implies. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

3 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1702

4 Alternative Materials, Design and Methods of Construction and Equipment: The provisions of any regulation code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by a regulation. Please review https://www.justice.gov/atr/mission and https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3

5 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.2:~:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests

6 The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design of accepted engineering practice. https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.1:~:text=Conformance%20to%20Standards-,The%20design%20strengths%20and%20permissible%20stresses,-of%20any%20structural

7 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1:~:text=the%20building%20official%20shall%20make%2C%20or%20cause%20to%20be%20made%2C%20the%20necessary%20tests%20and%20investigations%3B%20or%20the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies%20in%20respect%20to%20the%20quality%20and%20manner%20of%20use%20of%20new%20materials%20or%20assemblies%20as%20provided%20for%20in%20Section%20104.2.3.

8 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4.2

9 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_agency

10 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_source

11 https://www.law.cornell.edu/uscode/text/18/1832 (b) Any organization that commits any offense described in subsection (a) shall be fined not more than the greater of $5,000,000 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. The federal government and each state have a public records act. To follow DTSA and comply state public records and trade secret legislation requires approval through ANAB ISO/IEC 17065 accredited certification bodies or approved sources. For more information, please review this website: Intellectual Property and Trade Secrets.

12 https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional AND https://apassociation.org/list-of-engineering-boards-in-each-state-archive/

13 https://www.cbitest.com/accreditation/

14 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.1:~:text=directed%20to%20enforce%20the%20provisions%20of%20this%20code

15 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3 AND https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#105.3.1

16 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

17 https://iaf.nu/en/about-iaf-mla/#:~:text=Once%20an%20accreditation%20body%20is%20a%20signatory%20of%20the%20IAF%20MLA%2C%20it%20is%20required%20to%20recognise%20certificates%20and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of%20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope

18 True for all ANAB accredited product evaluation agencies and all International Trade Agreements.

19 https://www.justice.gov/crt/deprivation-rights-under-color-law AND https://www.justice.gov/atr/mission

20 Unless otherwise noted, the links referenced herein use un-amended versions of the 2024 International Code Council (ICC) 2024 International Code Council (ICC) model codes as foundation references. Mississippi versions of the IBC 2024 and the IRC 2024 are un-amended. This material, product, design, service and/or method of construction also complies with the 2000-2012 versions of the referenced codes and the standards referenced therein. As pertinent to this technical and code compliance evaluation, CBI and/or DrJ staff have reviewed any state or local regulatory amendments to assure this report is in compliance.

21 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by the local jurisdiction. https://up.codes/codes/general

22 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by state. https://up.codes/codes/general

23 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3282/subpart-A/section-3282.14

24 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

25 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#p-3280.2(Listed%20or%20certified); https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#listed AND https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#labeled

26 2021 IECC Section C402.5.1

27 2021 IRC Section R316

28 2021 IBC Section 2308.5.3.2

29 2021 IBC Section 2308.6

30 2018 IRC Table R301.2(2)

31 2018 IRC Table R301.2(3)

32 2021 IRC Section R316.3

33 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4

[34] https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=All%20construction%20methods%20shall%20be%20in%20conformance%20with%20accepted%20engineering%20practices%20to%20insure%20durable%2C%20livable%2C%20and%20safe%20housing%20and%20shall%20demonstrate%20acceptable%20workmanship%20reflecting%20journeyman%20quality%20of%20work%20of%20the%20various%20trades

[35] https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=The%20strength%20and%20rigidity%20of%20the%20component%20parts%20and/or%20the%20integrated%20structure%20shall%20be%20determined%20by%20engineering%20analysis%20or%20by%20suitable%20load%20tests%20to%20simulate%20the%20actual%20loads%20and%20conditions%20of%20application%20that%20occur

[36] ASCE 7-5 and 7-10 Section 12.2.1

[37] 2021 IRC Section R316

[38] 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.

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

[40] See Code of Federal Regulations (CFR) Title 24 Subtitle B Chapter XX Part 3280 for definition: https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

[41] 2021 IRC Section R316

[42] 2021 IBC Section 104.11

[43] 2021 IRC Section R104.11

[44] 2018: https://up.codes/viewer/wyoming/ifc-2018/chapter/1/scope-and-administration#104.9 AND 2021: https://up.codes/viewer/wyoming/ibc-2021/chapter/1/scope-and-administration#104.11

[45] Approved is an adjective that modifies the noun after it. For example, Approved Agency means that the Agency is accepted officially as being suitable in a particular situation. This example conforms to IBC/IRC/IFC Section 201.4 (https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#201.4) where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies.

[46] https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

[47] Multilateral approval is true for all ANAB accredited product evaluation agencies and all International Trade Agreements.