

Thermo-Sheath (Black) Structural Sheathing

TER No. 1310-05

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

Section: 06 12 00 – Structural Panels  
Section: 06 12 19 – Shear Wall Panels  
Section: 06 16 00 – Sheathing


**DIVISION: 07 00 00 – THERMAL AND MOISTURE PROTECTION**

Section: 07 25 00 –Weather Barriers  
Section: 07 27 00 – Air Barriers

**1. Products Evaluated:**

- 1.1. Thermo-Sheath (Black) Structural Sheathing
- 1.2. For the most recent version of this Technical Evaluation Report (TER), visit [drjengineering.org](http://drjengineering.org). For more detailed state professional engineering and code compliance legal requirements and references, visit [drjengineering.org/statelaw](http://drjengineering.org/statelaw). DrJ is fully compliant with all state professional engineering and code compliance laws.

***DrJ is a Professional Engineering Approved Source***

 **Learn more about DrJ's Accreditation**

- DrJ is an ISO/IEC 17065 accredited product certification body through ANSI Accreditation Services.
- DrJ provides certified evaluations that are signed and sealed by a P.E.
- DrJ's work is backed up by professional liability insurance.
- DrJ is fully compliant with IBC Section 1703.

## Technical Evaluation Report (TER)

- 1.3. This TER can be used to obtain product approval in any country that is an IAF MLA Signatory (all countries found [here](#)) and covered by an [IAF MLA Evaluation](#) per the [Purpose of the MLA](#) (as an example, see [letter to ANSI](#) from the Standards Council of Canada). Manufacturers can go to jurisdictions in the U.S., Canada and other [IAF MLA Signatory Countries](#) and have their products readily approved by authorities having jurisdiction using [DrJ's ANSI accreditation](#).
- 1.4. Building code regulations require that evaluation reports are provided by an approved agency meeting specific requirements, such as those found in [IBC Section 1703](#). Any agency accredited in accordance with ANSI ISO/IEC 17065 meets this requirement within ANSI's scope of accreditation. For a list of accredited agencies, visit ANSI's [website](#). For more information, see [drjcertification.org](#).
- 1.5. Requiring an evaluation report from a specific private company (i.e. ICC-ES, IAPMO, CCMC, DrJ, etc.) can be viewed as discriminatory and is a violation of international, federal, state, provincial and local anti-trust and free trade regulations.
- 1.6. DrJ's code compliance work:
  - 1.6.1. Conforms to code language adopted into law by individual states and any relevant consensus based standard such as an ANSI or ASTM standard.
  - 1.6.2. Complies with accepted engineering practice, all professional engineering laws and by providing an engineer's seal DrJ takes professional responsibility for its specified scope of work.

## 2. Applicable Codes and Standards:<sup>1</sup>

- 2.1. *2012, 2015 and 2018 International Residential Code (IRC)*
- 2.2. *2012, 2015 and 2018 International Building Code (IBC)*
- 2.3. *2012, 2015 and 2018 International Energy Conservation Code (IECC)*
- 2.4. *2014 and 2017 Florida Building Code (FBC)*
- 2.5. *ANSI/AWC Wind & Seismic – Special Design Provisions for Wind and Seismic (SDPWS)*
- 2.6. *ASCE/SEI 7 – Minimum Design Loads for Buildings and Other Structures*
- 2.7. *ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials*
- 2.8. *ASTM E330/E330M – Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*
- 2.9. *ASTM E2126 – Standard Test Methods for Cyclic (Reversed) Load Test for Shear Resistance of Vertical Elements of the Lateral Force Resisting Systems for Buildings*
- 2.10. *ASTM E2178 – Standard Test Method for Air Permeance of Building Materials*

## 3. Performance Evaluation:

- 3.1. Thermo-Sheath (Black) Structural Sheathing was evaluated to determine:
  - 3.1.1. Structural performance under lateral load conditions (wind and seismic) for use as an alternative to the *IRC* Intermittent Wall Bracing provisions of [IRC Section R602.10](#) Method WSP.
  - 3.1.2. Structural performance under lateral load conditions for use as an alternative to the *IRC* Continuous Wall Bracing provisions of [Section R602.10.4](#) Methods CS-WSP and CS-PF.
  - 3.1.3. Structural performance under lateral load conditions for use as an alternative to the *IBC* Conventional Wall Bracing provisions, [Section 2308.6](#)<sup>2</sup>, Method 3, for Type V construction.
  - 3.1.4. Structural performance under lateral load conditions for both wind and seismic loading for use with the *IBC* performance-based provisions, [Section 2306.1](#) and [2306.3](#) for light-frame wood wall assemblies.

<sup>1</sup> Unless otherwise noted, all references in this code compliant technical evaluation report (TER) are from the 2018 version of the codes and the standards referenced therein, including, but not limited to, *ASCE 7*, *SDPWS* and *WFCM*. This product also complies with the 2000-2015 versions of the *IBC* and *IRC* and the standards referenced therein. As required by law, where this TER is not approved, the building official shall respond in writing, stating the reasons this TER was not approved. For variations in state and local codes, if any see [Section 8](#).

<sup>2</sup> [2012 IBC Section 2308.9.3](#) Method WSP

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**3.1.4.1.** [Table 5](#) provides seismic design coefficients (SDC) that conform to the requirements in *ASCE/SEI 7-10* Section 12.2.1 and Table 12.2-1 for design of wall assemblies in buildings that require seismic design in accordance with *ASCE/SEI 7* (i.e., all seismic design categories).

**3.1.4.2.** The basis for equivalency testing is outlined in Section 12.2.1 of *ASCE/SEI 7*:

Seismic force-resisting systems not contained in Table 12.2-1 are permitted provided analytical and test data are submitted to the authority having jurisdiction for approval that establish their dynamic characteristics and demonstrate their lateral force resistance and energy dissipation capacity to be equivalent to the structural systems listed in Table 12.2-1 for equivalent values of response modification coefficient,  $R$ , overstrength factor,  $\Omega_o$ , and deflection amplification factor,  $C_d$ .

**3.1.4.3.** The SDC evaluation uses the approach found in documentation entitled “Equivalency Characteristics and Parameters for Proprietary Shearwalls Used in Wood Framed or Cold-formed Steel Construction”<sup>3</sup> using code-defined accepted engineering procedures, experience, and technical judgment.

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

**3.1.6.** Resistance to transverse loads for wall assemblies used in light-frame wood construction in accordance with [IRC Section R301.2.1](#) and [IBC Section 1609.1.1](#).

**3.1.7.** Performance for use as a water-resistive barrier (WRB) in accordance with [IRC Section R703.2](#) and [IBC Section 1404.2](#).

**3.1.8.** Performance for use as an air barrier in accordance with [IRC Section N1102.4.1.1](#) and [IECC Section R402.4.1.1](#) and [C402.5.1.1](#)<sup>4</sup>.

**3.2.** Use of Thermo-Sheath (Black) Structural Sheathing in draftstop applications is outside the scope of this evaluation. For this application, see [TER No. 1303-07: Thermo-Sheath Sheathing for Use as Draft Stops in the IBC & IRC](#).

**3.3.** Use of Thermo-Sheath (Black) Structural Sheathing in a PFH portal frame is outside the scope of this evaluation.

**3.4.** Use of Thermo-Sheath (Black) Structural Sheathing to resist uplift loads is outside the scope of this evaluation.

**3.5.** Any code compliance issues not specifically addressed in this section are outside the scope of this evaluation.

## 4. Product Description and Materials:



Figure 1: Thermo-Sheath (Black) Structural Sheathing

**4.1.** Thermo-Sheath (Black) Structural Sheathing is a proprietary wall sheathing consisting of a proprietary fibrous sheathing board laminated with a water-resistant adhesive to facers on one or both sides. Facers may consist of aluminum foil, polyolefin film, aluminized polyolefin or kraft paper.

<sup>3</sup> <http://www.structuremag.org/wp-content/uploads/2014/08/C-StructuralPerformance-Nelson-Aug081.pdf>

<sup>4</sup> [2012 IECC Section C402.4.1.1](#)

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### 4.1.1. Material Availability

4.1.1.1. Thickness: 0.115" (2.92 mm)

4.1.1.2. Standard product width: 48" (1219 mm) or 48¾" (1238 mm)

4.1.1.3. Standard lengths: 96" (2438 mm), 108" (2743 mm), 120" (3048 mm), and other sizes are available by request

## 5. Applications:

### 5.1. General

- 5.1.1. Thermo-Sheath (Black) Structural Sheathing is used as wall sheathing in buildings constructed in accordance with the *IRC and IBC* for light-frame wood construction.
- 5.1.2. Thermo-Sheath (Black) Structural Sheathing is used as structural wall sheathing to provide lateral load resistance (wind and seismic) for braced wall panels used in light-frame wood construction.
- 5.1.3. Thermo-Sheath (Black) Structural Sheathing panels are permitted to be used as wall sheathing in buildings constructed in accordance with the *IBC* requirements for Type V light-frame construction.
- 5.1.4. Thermo-Sheath (Black) Structural Sheathing panels are used as structural wall sheathing to provide resistance to transverse loads for wall assemblies used in light-frame wood construction.
- 5.1.5. Thermo-Sheath (Black) Structural Sheathing is used as a non-structural wall sheathing applied as in-fill to portions of walls that are not designed as shear walls.
- 5.1.6. When Thermo-Sheath (Black) Structural Sheathing is installed in accordance with [Section 6](#), it is an approved alternative WRB in accordance with [IRC Section R703.2](#) and [IBC Section 1404.2](#).
- 5.1.7. Thermo-Sheath (Black) Structural Sheathing is an approved air barrier material when installed in accordance with [Section 5.4](#) and [Section 6](#).

### 5.2. Structural Applications

#### 5.2.1. General Structural Provisions

- 5.2.1.1. Except as otherwise described in this TER, Thermo-Sheath (Black) Structural Sheathing shall be installed in accordance with the applicable building codes listed in [Section 2](#) using the provisions set forth therein for the design and installation of wood structural panels (WSP).
  - 5.2.1.1.1. Thermo-Sheath (Black) Structural Sheathing is 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 TER.
- 5.2.1.2. Anchorage for in-plane shear shall be provided to transfer the induced shear force into and out of each shear wall.
  - 5.2.1.2.1. For wind design, anchor bolt spacing shall not exceed 6' o.c. (1829 mm).
  - 5.2.1.2.2. For seismic design, anchor bolt spacing shall not exceed 4' o.c. (1219 mm).
- 5.2.1.3. The maximum aspect ratio for Thermo-Sheath (Black) Structural Sheathing shall be 4:1.
- 5.2.1.4. The minimum full height panel width shall be 24" (610 mm).
- 5.2.1.5. All panel edges shall be supported with a minimum 2" (51 mm) nominal lumber.
- 5.2.1.6. Installation is permitted for single top plate (advanced framing method) or double top plate applications.
- 5.2.1.7. Where the sheathing from an upper story extends over the rim joist and overlaps a lower story, the sheathing shall be fastened along the sole plate of the story above at 3" o.c. Further, one row of fasteners spaced 12" o.c. shall be located along the bottom third of the rim joist. The sheathing from the story above shall overlap the sheathing on the story below by a minimum of 2". Fastening along the bottom edge of the sheathing from the story above is not required.

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5.2.1.8. Where the application exceeds the limitations set forth herein, design shall be permitted in accordance with code-defined accepted engineering procedures, experience and technical judgment.

### 5.2.2. Prescriptive *IRC* Bracing Applications

5.2.2.1. Thermo-Sheath (Black) Structural Sheathing may be used on braced wall lines as an equivalent alternative to Method WSP of the *IRC*, when installed in accordance with [IRC Section R602.10](#) and this TER.

5.2.2.2. For wind design, required braced wall panel lengths for Thermo-Sheath (Black) Structural Sheathing shall be as shown in [Table 1](#), and shall be used in conjunction with [IRC Table R602.10.3\(2\)](#)<sup>5</sup>, which provides the required adjustments.

5.2.2.3. For seismic design, required braced wall panel lengths for Thermo-Sheath (Black) Structural Sheathing shall be as shown in [Table 2](#), and shall be used in conjunction with [IRC Table R602.10.3\(4\)](#)<sup>6</sup>, which provides the required adjustments.

5.2.2.4. Use of Thermo-Sheath (Black) Structural Sheathing with Method CS-PF is also permitted in accordance with [Section 5.2.4](#), in lieu of WSP specified in accordance with [IRC Section R602.10.6.4](#).

5.2.2.5. Where a building, or portion thereof, does not comply with one or more of the bracing requirements within the prescriptive section of the *IRC*, those portions shall be designed and constructed in accordance with [IRC Section R301.1](#).

5.2.3. Where the application exceeds the limitations set forth herein, design shall be permitted in accordance with accepted engineering procedures, experience and technical judgment.

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<sup>5</sup> [2009 IRC Table R602.10.1.2\(1\)](#) including all footnotes

<sup>6</sup> [2009 IRC Table R602.10.1.2\(2\)](#) including all footnotes

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Required Bracing Lengths for Thermo-Sheath (Black) Structural Sheathing Installed with ½" Gypsum Wallboard @ 16" o.c. Stud Spacing – Wind ( $V_{ult}$ )											
Condition	Braced Wall Line Spacing	Thermo-Sheath (Black) Structural Sheathing Intermittent Sheathing					Thermo-Sheath (Black) Structural Sheathing Continuous Sheathing				
		Nails or Staples 3" o.c. Edges & in the Field					Nails or Staples 3" o.c. Edges & in the Field				
		Length of Wall Line to be Braced (ft)					Length of Wall Line to be Braced (ft)				
		≤ 110 mph	≤ 115 mph	≤ 120 mph	≤ 130 mph	≤ 140 mph	≤ 110 mph	≤ 115 mph	≤ 120 mph	≤ 130 mph	≤ 140 mph
One Story or the Top of Two or Three Stories	10	1.7	1.7	2.1	2.1	2.5	1.2	1.7	1.7	2.1	2.1
	20	2.9	2.9	3.3	4.2	4.6	2.5	2.9	2.9	3.3	4.2
	30	4.2	4.6	5.0	5.8	6.6	3.7	3.7	4.2	5.0	5.8
	40	5.4	5.8	6.6	7.5	8.7	4.6	5.0	5.4	6.2	7.5
	50	6.6	7.5	7.9	9.1	10.8	5.8	6.2	6.6	7.9	9.1
	60	7.9	8.7	9.5	10.8	12.5	6.6	7.5	7.9	9.1	10.8
First Story of Two Stories or Second Story of Three Stories	10	2.9	3.3	3.7	4.2	5.0	2.5	2.9	2.9	3.7	4.2
	20	5.4	6.2	6.6	7.9	9.1	4.6	5.4	5.8	6.6	7.5
	30	7.9	8.7	9.5	11.2	12.9	6.6	7.5	7.9	9.5	10.8
	40	10.4	11.2	12.5	14.5	16.6	8.7	9.5	10.4	12.5	14.1
	50	12.9	13.7	14.9	17.8	20.3	10.8	11.6	12.9	14.9	17.4
	60	14.9	16.6	17.8	20.8	24.1	12.9	14.1	15.4	17.8	20.8
First Story of Three Stories	10	4.6	5.0	5.4	6.2	7.1	3.7	4.2	4.6	5.4	6.2
	20	8.3	9.1	9.5	11.2	13.3	7.1	7.5	8.3	9.5	11.2
	30	11.6	12.9	14.1	16.2	19.1	10.0	10.8	12.0	14.1	16.2
	40	15.4	16.6	18.3	21.2	24.5	12.9	14.1	15.4	18.3	20.8
	50	18.7	20.3	22.4	26.1	30.3	15.8	17.4	19.1	22.0	25.7
	60	22.0	24.1	26.6	31.1	35.7	19.1	20.8	22.4	26.1	30.3

For SI: 1" = 25.4 mm

1. Demonstrates equivalency to [IRC Table R602.10.3\(1\)](#). All adjustment factors from [IRC Table R602.10.3\(2\)](#) shall be applied. Except when used with method CS-PF, a minimum of ½" gypsum sheathing shall be applied to the interior side of the wall assembly and fastened with a minimum 5d cooler nails or 1¼" #6 types W or S screws spaced 8" o.c. at panel edges and 8" o.c. in the field of the panels
2. Demonstrates equivalency to [2009 IRC Table R602.10.1.2\(1\)](#). All adjustment factors from shall be applied. Except when used with method CS-PF, a minimum of ½" gypsum sheathing shall be applied to the interior side of the wall assembly and fastened with a minimum 5d cooler nails or 1¼" #6 types W or S screws spaced 8" o.c. at panel edges and 8" o.c. in the field of the panels.
3. Thermo-Sheath (Black) shall be installed with minimum 0.120" x 1¼" galvanized roofing nail or minimum 15/16" crown x 1¼" leg 16 gauge galvanized staple.
4. Where gypsum wallboard is not applied to the interior side of the wall assembly, bracing lengths shall be multiplied by a factor of 1.7.
5. Linear interpolation is permitted.
6. Wind speeds shown are  $V_{ult}$  in accordance with *ASCE 7-10*. To convert to equivalent  $V_{asd}$  wind speed,  $V_{asd} = V_{ult} / 1.26$ .

**Table 1: Required Bracing Lengths for Thermo-Sheath (Black) Structural Sheathing in Accordance with the IRC Wind Bracing Provisions**

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Required Bracing for Thermo-Sheath (Black) Structural Sheathing Installed with ½" Gypsum Wallboard @ 16" o.c. Stud Spacing – Seismic									
Condition	Braced Wall Line Length (ft)	Thermo-Sheath (Black) Structural Sheathing Intermittent Sheathing				Thermo-Sheath (Black) Structural Sheathing Continuous Sheathing			
		Nails or Staples 3" o.c. Edges & in the Field				Nails or Staples 3" o.c. Edges & in the Field			
		Minimum Length of Braced Wall Panels Required along each Braced Wall Line (ft)				Minimum Length of Braced Wall Panels Required along each Braced Wall Line (ft)			
		SDC C (townhouses only)	SDC D <sub>0</sub>	SDC D <sub>1</sub>	SDC D <sub>2</sub>	SDC C (townhouses only)	SDC D <sub>0</sub>	SDC D <sub>1</sub>	SDC D <sub>2</sub>
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	2.6	3.0	3.3	4.2	2.2	2.5	2.8	3.6
	30	4.0	4.5	5.0	6.3	3.4	3.8	4.2	5.3
	40	5.3	6.0	6.6	8.3	4.5	5.1	5.7	7.0
	50	6.6	7.4	8.3	10.4	5.7	6.4	7.0	8.8
First Story of Two Stories or Second Story of Three Stories	10	2.5	3.1	3.7	4.6	2.2	2.6	3.1	3.9
	20	5.0	6.3	7.4	9.1	4.2	5.3	6.4	7.8
	30	7.4	9.4	11.2	13.7	6.4	8.0	9.5	11.6
	40	10.0	12.4	15.0	18.3	8.5	10.6	12.7	15.5
	50	12.4	15.6	18.7	22.8	10.6	13.3	15.8	19.4
First Story of Three Stories	10	3.7	4.4	5.0	NP	3.1	3.7	4.2	NP
	20	7.4	8.7	10.0	NP	6.4	7.4	8.5	NP
	30	11.2	13.1	15.0	NP	9.5	11.1	12.7	NP
	40	15.0	17.4	19.9	NP	12.7	14.9	16.9	NP
	50	18.7	21.8	24.9	NP	15.8	18.5	21.2	NP

For SI: 1" = 25.4 mm

1. Demonstrates equivalency to [IRC Table R602.10.3\(3\)](#). All adjustment factors from [IRC Table R602.10.3\(4\)](#) shall be applied. Except when used with method CS-PF, a minimum of ½" gypsum sheathing shall be applied to the interior side of the wall assembly and fastened with a minimum 5d cooler nails or 1¼" #6 types W or S screws spaced 8" o.c. at panel edges and 8" o.c. in the field of the panels.
2. Demonstrates equivalency to [2009 IRC Table R602.10.1.2\(2\)](#). All adjustment factors from [IRC Table R602.10.1.2\(3\)](#) shall be applied. Except when used with method CS-PF, a minimum of ½" gypsum sheathing shall be applied to the interior side of the wall assembly and fastened with a minimum 5d cooler nails or 1¼" #6 types W or S screws spaced 8" o.c. at panel edges and 8" o.c. in the field of the panels
3. Thermo-Sheath (Black) shall be installed with minimum 0.120" x 1¼" galvanized roofing nail or minimum 15/16" crown x 1¼" leg 16 gauge galvanized staple.
4. Tabulated bracing lengths are based on the following:
  - a. Soil Class D
  - b. Wall height= 10'
  - c. 10 psf floor dead load
  - d. 15 psf roof/ceiling dead load
  - e. Braced wall line spacing ≤ 25'
5. Linear interpolation is permitted.
6. Where gypsum wallboard is not applied to the interior side of the wall assembly, bracing lengths shall be multiplied by a factor of 1.7.

Table 2: Required Bracing Lengths for Thermo-Sheath (Black) Structural Sheathing in Accordance with the *IRC* Seismic Bracing Provisions

### 5.2.4. Thermo-Sheath (Black) Structural Sheathing CS-PF Portal Frame

**5.2.4.1.** A "Thermo-Sheath (Black) Structural Sheathing CS-PF" was tested and evaluated for equivalency to the *IRC* Method CS-PF (Continuous Sheathed Portal Frame) in accordance with [Section R602.10.6.4](#) and [Table R602.10.6.4](#).

**5.2.4.2.** [IRC Table R602.10.5](#) establishes the contributing length of bracing of the CS-PF. [IRC Table R602.10.5](#) shall be used to determine the equivalent bracing length for the Thermo-Sheath (Black) Structural Sheathing CS-PF. The capacity of Thermo-Sheath (Black) Structural Sheathing CS-PF exceeds the capacity of the *IRC* Method CS-WSP and is, therefore, permitted to be substituted for an equivalent length of bracing.

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## 5.2.4.3. The Thermo-Sheath (Black) Structural Sheathing CS-PF is described as follows:

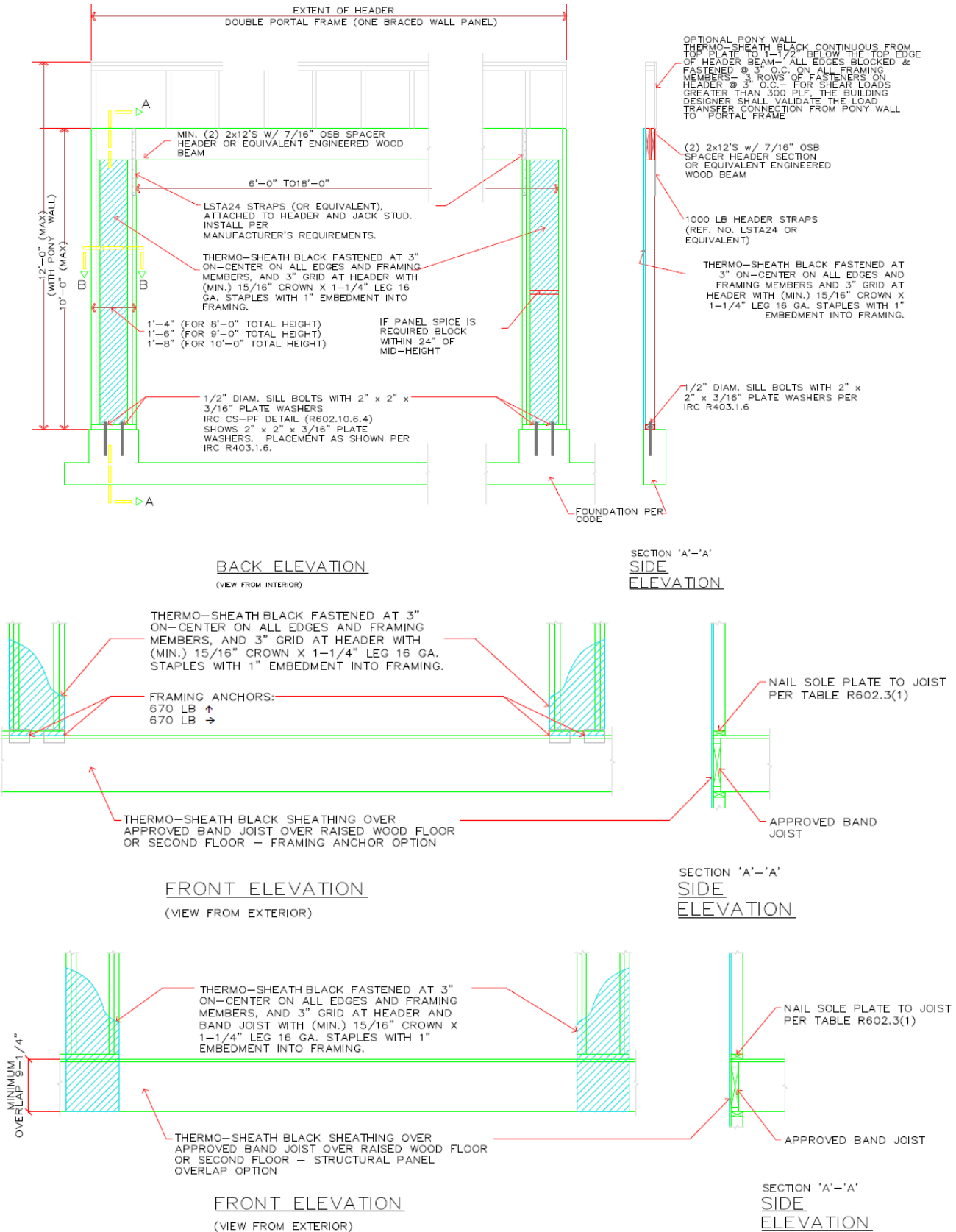


Figure 2: Thermo-Sheath (Black) Structural Sheathing CS-PF



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### 5.2.5. Alternative Prescriptive *IRC* Bracing Applications

5.2.5.1. As an alternative to [Section 5.2.2](#), the following provisions are permitted:

- 5.2.5.1.1. Thermo-Sheath (Black) Structural Sheathing may be used on braced wall lines as an equivalent alternative to Method WSP of the *IRC*, when installed in accordance with [IRC Section R602.10](#) and this TER.
- 5.2.5.1.2. Thermo-Sheath (Black) Structural Sheathing may be used to brace walls of buildings as an alternative to the Continuous Wall Bracing provisions of [IRC Section R602.10.4](#).
- 5.2.5.1.3. Required braced wall panel lengths for Thermo-Sheath (Black) Structural Sheathing shall be as determined by the equivalency factor shown in [Table 3](#) and [IRC Table R602.10.3\(1\)](#) and [R602.10.3\(2\)](#)<sup>7</sup>, including all footnotes.

5.2.5.1.3.1. Bracing lengths in these tables for Method WSP or CS-WSP shall be multiplied by the equivalency factor listed in [Table 3](#).

Thermo-Sheath (Black) Structural Sheathing Wall Bracing Factors per Comparative Equivalency Testing for <i>IRC</i> Prescriptive Wall Bracing Applications	Maximum Stud Spacing (in)	Fastener	Fastener Spacing	Wind
				SPF Framing
				Thermo-Sheath (Black) Structural Sheathing Tested Equivalency Factors to <i>IRC</i> WSP or CS-WSP
Thermo-Sheath (Black) Structural Sheathing	16" o.c.	<sup>15</sup> / <sub>16</sub> " Crown x 1 <sup>1</sup> / <sub>4</sub> " leg Galvanized Staples or 0.120" x 1 <sup>1</sup> / <sub>4</sub> " Galvanized Roofing Nail	3:3	0.83

For SI: 1" = 25.4 mm

1. Fastener heads shall be installed flush to the surface of the sheathing. Staples shall be a minimum 16 gauge.
2. Multiply the bracing lengths in [IRC Table R602.10.3\(1\)](#) and [IRC Table R602.10.3\(2\)](#) Method WSP or CS-WSP (continuous sheathing) as applicable, including all footnotes, by the factors shown here to establish the required bracing length.
3. Multiply the bracing lengths in [2009 IRC Table R602.10.2](#) Method WSP or CS-WSP (continuous sheathing) as applicable, including all footnotes by the factors shown here to establish the required bracing length.
4. Where gypsum wallboard is not applied to the interior side of the wall assembly, bracing lengths shall be multiplied by a factor of 1.7.
5. Valid for single top plate (advanced framing method) wall installations or double top plate wall installations.

**Table 3:** Thermo-Sheath (Black) Structural Sheathing Braced Wall Line Length Equivalency Factors based on Equivalency Testing for Use with the *IRC*

5.2.5.1.3.2. These braced wall line length equivalency factors are based on equivalency testing and are used to comply with Method WSP and CS-WSP of the *IRC*.

5.2.5.1.3.3. Thermo-Sheath (Black) Structural Sheathing tested equivalency factors in [Table 3](#) allow the user to determine the length of bracing required, by multiplying the factor from [Table 3](#) by the length shown in the WSP or CS columns in [IRC Table R602.10.3\(1\)](#), as modified by all applicable factors in [Table R602.10.3\(2\)](#) respectively.

5.2.5.1.4. All *IRC* prescriptive bracing minimums, spacing requirements and rules must still be met.

### 5.2.6. Prescriptive *IBC* Conventional Light-Frame Wood Construction

5.2.6.1. Thermo-Sheath (Black) Structural Sheathing may be used to brace exterior walls of buildings as an equivalent alternative to Method 3 of the *IBC* when installed with ½" (13 mm) gypsum fastened with a minimum 5d cooler nail or #6 Type W or S screw spaced a maximum of 8" o.c. (203 mm) at panel edges and 8" o.c. in the field. Bracing shall be in accordance with the conventional light-frame construction method of [IBC Section 2308.6](#)<sup>8</sup> and this TER.

<sup>7</sup> [2009 IRC Table R602.10.1.2\(1\)](#) and all footnotes

<sup>8</sup> [2012 IBC Section 2308.9.3](#)

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### 5.2.7. Performance-Based Wood-Framed Construction

**5.2.7.1.** Thermo-Sheath (Black) Structural Sheathing panels used in 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 4-6](#).

**5.2.7.2.** Thermo-Sheath (Black) Structural Sheathing panel shear walls are permitted to resist horizontal wind load forces using the allowable shear loads (in pounds per linear foot) set forth in [Table 4](#).

**5.2.7.3.** Thermo-Sheath (Black) Structural Sheathing shear walls that require seismic design in accordance with [IBC Section 1613](#) shall use the seismic allowable unit shear capacities set forth in [Table 5](#).

**5.2.7.3.1.** The response modification coefficient,  $R$ , system overstrength factor,  $\Omega_0$ , and deflection amplification factor,  $C_d$ , indicated in [Table 5](#) shall be used to determine the base shear, element design forces, and design story drift in accordance with *ASCE/SEI 7* Chapter 12 and Section 14.5.

**5.2.7.4.** Thermo-Sheath (Black) Structural Sheathing panels are permitted to resist transverse wind load forces using the allowable transverse loads (in pounds per linear foot) set forth in [Table 6](#).

Thermo-Sheath (Black) Design Values	Thermo-Sheath (Black) Allowable Strength Design (ASD) Capacity (Wind)					
	Thermo-Sheath (Black) Fastener (Spaced 3" o.c. edge / 3" o.c. field)	Joint Treatment	Maximum Stud Spacing (in)	Gypsum Wallboard (GWB)	Gypsum Wallboard Fastener Spacing (in) (edge/field)	Allowable Unit Shear Capacity (plf)
Thermo-Sheath (Black)	1 <sup>5</sup> / <sub>16</sub> " Crown x 1 <sup>1</sup> / <sub>4</sub> " Leg 16 Gauge Staple or 0.120 x 1 <sup>1</sup> / <sub>4</sub> " Roofing Nail	Butted or Lapped	16" o.c.	½" GWB	4/16	515
					8/8	435
					8/16	415
					16/16	370
				No Gyp	-	325

For SI: 1" = 25.4 mm 1 lb/ft = 0.0146 kN/m

- Thermo-Sheath (Black) attached with a minimum 16 gauge, 1<sup>5</sup>/<sub>16</sub>" x 1<sup>1</sup>/<sub>4</sub>" crown staples or 0.120" x 1<sup>1</sup>/<sub>4</sub>" roofing nail. Fasteners are to be spaced a maximum of 3" o.c. at the edges and 3" o.c. in the field with a minimum edge distance of 3/8".
- Gypsum attached with minimum 5d cooler nail or #6 type W or S screws 1<sup>1</sup>/<sub>4</sub>" long. Fastener spacing shall be as required above.
- Thermo-Sheath (Black) Structural Sheathing joints shall be butted at framing members and a single row of fasteners must be applied to each panel edge into the stud below. Alternately, joints may be lapped ¾" with a single row of fasteners along each framing member.
- Linear interpolation between fastening patterns is permitted.

**Table 4:** Allowable Unit Shear Design Values for Thermo-Sheath (Black) Structural Sheathing – Wind

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Thermo-Sheath (Black) Structural Sheathing Allowable Strength Design (ASD) Capacity & Seismic Design Coefficients (Seismic) <sup>1</sup>												
Seismic Force-Resisting System	Maximum Stud Spacing (in)	Gypsum Wallboard (GWB)	Seismic Allowable Unit Shear Capacity (plf)	Apparent Shear Stiffness, $G_a$ (kips/in)	Response Modification Factor, $R^2$	System Overstrength Factor, $\Omega_0^3$	Deflection Amplification Coefficient, $C_d^4$	Structural System Limitations and Building Height (ft) Limit <sup>5</sup>				
								Seismic Design Category				
								B	C	D	E	F
Light-Frame (Wood) Walls Sheathed with Thermo-Sheath (Black) Structural Sheathing	16" o.c.	½" GWB	345	11.0	6.5	3	4	NL	NL	65	65	65
		No GWB	260	7.5	6.5	3	4	NL	NL	65	65	65

For SI: 1" = 25.4 mm 1 lb/ft = 0.0146 kN/m

- All seismic design coefficients follow the equivalency procedures as defined in [Section 3](#) of this TER.
- Allowable Unit shear capacity is based on a safety factor of 2.5 in accordance with *ASCE/SEI 7-10* Chapter 12
- The allowable unit shear capacity is calculated using a factor of safety of 2.5 per *ASCE/SEI 7-10*.
- Response modification coefficient,  $R$ , for use throughout *ASCE 7*. Note  $R$  reduces forces to a strength level, not an allowable stress level.
- The tabulated value of the overstrength factor,  $\Omega_0$ , is permitted to be reduced by subtracting one-half (0.5) for structures with flexible diaphragms.
- Deflection amplification factor,  $C_d$ , for use with *ASCE/SEI 7* Sections 12.8.6, 12.8.7, and 12.9.2.
- NL = Not Limited. Heights are measured from the base of the structure as defined in *ASCE/SEI 7* Section 11.2.
- Gypsum attached with minimum #6 type W or S screws 1¼" long spaced 8" o.c. at panel edges and in the field. Maximum stud spacing is 16" o.c.

Table 5: Seismic Performance of Thermo-Sheath (Black) Structural Sheathing

Load Capacities (psf) for Thermo-Sheath (Black) Structural Sheathing Resisting Out-of-Plane Wind Loads				
	Transverse Wind Load Resistance			
	Positive	Negative	Maximum Stud Spacing	Fastener Schedule
	Allowable Design Value (psf)	Allowable Design Value (psf)		
Thermo-Sheath (Black) Structural Sheathing	125	120	16" o.c.	15/16" crown, 1¼" leg 16 gage galvanized staples, 3" o.c. at the perimeter, 3" o.c. in the field. Staple crowns to be installed parallel to grain.

For SI: 1" = 25.4 mm 1 psf = 0.0479 kN/m<sup>2</sup>

- Design wind load shall be in accordance with [IBC Section 1609.1.1](#).

Table 6: Transverse Load Performance of Thermo-Sheath (Black) Structural Sheathing

	Allowable Components & Cladding Basic Wind Speed $V_{asd}$ per <i>ASCE 7-05</i> (mph)	Allowable Components & Cladding Basic Wind Speed $V_{ult}$ per <i>ASCE 7-10</i> (mph)
	16" o.c. Framing	16" o.c. Framing
Thermo-Sheath (Black) Structural Sheathing	> 170	> 215

For SI: 1" = 25.4 mm 1 mph = 1.61 km/h

- Allowable wind speeds are based on the following: Mean roof height 30', Exposure B, 10 sq ft effective wind area. See the applicable building code for any adjustment need for specific building location and configuration.

Table 7: Basic Wind Speed (mph) for Thermo-Sheath (Black) Structural Sheathing Used in Exterior Wall Covering Assemblies

### 5.3. Water-Resistive Barrier

- 5.3.1. Thermo-Sheath (Black) Structural Sheathing may be used as a WRB as prescribed in [IRC Section R703.2](#) and [IBC Section 1404.2](#) when installed on exterior walls as described in this section.
- 5.3.2. Thermo-Sheath (Black) Structural Sheathing shall be installed in the vertical or horizontal orientation with board joints placed directly over exterior framing (e.g., studs, plates or blocking) spaced a maximum of 16" (406 mm) o.c. The fasteners used to attach the board shall be installed in accordance with [Section 6](#).
- 5.3.3. All seams and joints between boards shall be overlapped ¾" (19 mm) or covered by minimum 1.5" (38 mm) wide DRYline® Sheathing Tape or equivalent.

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- 5.3.4. Flashing must be installed at all sheathing penetrations and shall comply with the all applicable code sections.
- 5.3.5. Where Thermo-Sheath (Black) Structural Sheathing is used intermittently along a braced wall line, Thermo-Sheath (Green) Structural Sheathing may be used as infill between the Thermo-Sheath (Black) Structural Sheathing panels. In this application, the WRB is maintained, provided all seams and joints between boards are overlapped ¾" (19 mm) or covered by an approved construction tape.
- 5.3.6. Thermo-Sheath (Black) Structural Sheathing has water-resistance properties as shown on [Table 8](#).

Thermo-Sheath (Black) Structural Sheathing Water-Resistance Properties (g/s m <sup>2</sup> Pa)		
Water Vapor Transmission	ASTM E96	< 0.3 Perm

Table 8: Thermo-Sheath (Black) Structural Sheathing Water-Resistance Properties

### 5.4. Air Barrier

- 5.4.1. Thermo-Sheath (Black) Structural Sheathing may be used as an air barrier material as prescribed in [IRC Section N1102.4.1.1](#) and [IECC Section R402.4.1.1](#) and [C402.5.1](#).
- 5.4.2. When used as part of a continuous air barrier assembly, Thermo-Sheath (Black) Structural Sheathing shall be installed in accordance with [Section 6](#) and as follows:
  - 5.4.2.1. All sheathing panel edges at the top and bottom of the wall assemblies, and all joints between sheathing panels, shall be sealed with an approved construction tape.
- 5.4.3. Thermo-Sheath (Black) Structural Sheathing is qualified as an air barrier material as shown in [Table 9](#).

Thermo-Sheath (Black) Structural Sheathing Air Barrier Material Properties (L/[s* m <sup>2</sup> ])		
Air Barrier Material Properties	ASTM E2178	< 0.02 perm
1. The Air Barrier Association of America defines an air barrier material as a material with a permeance of less than 0.02 L/(s*m <sup>2</sup> ) @ 75 Pa.		

Table 9: Thermo-Sheath (Black) Structural Sheathing Air Barrier Material Properties

### 5.5. Non-Structural Applications:

- 5.5.1. Where other means of wall bracing are provided, or are not required, and an approved exterior wall covering capable of separately resisting loads perpendicular to the face of the walls is installed over the sheathing, Thermo-Sheath (Black) Structural Sheathing may be used.
- 5.5.2. The sheathing panels are applied to wall framing with minimum 0.120" x 1¼" (3 mm x 32 mm) galvanized roofing nails or 16 gage galvanized staples having a 15/16" (11 mm) crown and 1¼" (32 mm) leg lengths.
- 5.5.3. Fastener spacing shall be a maximum of 6" (152 mm) at the edges and 12" (305 mm) on intermediate members.
  - 5.5.3.1. Stud spacing shall be a maximum of 24" (610 mm) o.c.
  - 5.5.3.2. Minimum fastener penetration into the framing members is ¾" (19 mm).

## 6. Installation:

### 6.1. General

- 6.1.1. Thermo-Sheath (Black) Structural Sheathing shall be installed in accordance with the manufacturer's published installation instructions and this TER. If there are any conflicts between the manufacturer's instructions and this TER, the more restrictive shall govern.
- 6.1.2. A copy of the manufacturer's published installation instructions shall be available at all times on the jobsite during installation.
- 6.1.3. Where required, gypsum wallboard shall be a minimum ½" (13 mm) thickness.

### 6.2. Orientation

- 6.2.1. Thermo-Sheath (Black) Structural Sheathing must be installed vertically or horizontally with all panel edges supported by framing or blocking.

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**6.2.2.** Thermo-Sheath (Black) Structural Sheathing must be installed over studs, with framing that has a nominal thickness of not less than 2" (51 mm) and spaced a maximum of 16" (406 mm) o.c.

### **6.3. Fastener Type**

#### **6.3.1. Thermo-Sheath (Black) Structural Sheathing**

**6.3.1.1.** Minimum  $\frac{15}{16}$ " crown x  $1\frac{1}{4}$ " leg, 16 galvanized staples installed with the underside of the crown flush with the surface of the sheathing.

**6.3.1.2.** Minimum 0.120" x  $1\frac{1}{4}$ " (3 mm x 32 mm) galvanized roofing nail installed with the underside of the head flush with the surface of the sheathing.

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### 6.3.2. Gypsum Wallboard

6.3.2.1. Where required, gypsum wallboard shall be installed with a minimum:

6.3.2.1.1. #6 x 1<sup>1</sup>/<sub>4</sub>" (32 mm) Type W or S screws

6.3.2.1.2. 5d cooler nails

### 6.4. Fastener Spacing

#### 6.4.1. Thermo-Sheath (Black) Structural Sheathing

6.4.1.1. Maximum of 3" o.c. (76 mm) along the edge and 3" o.c. in the field.

#### 6.4.2. Gypsum Wallboard

6.4.2.1. For *IRC* and *IBC* prescriptive applications, gypsum fasteners shall be spaced 8" o.c (203 mm) at panel edges and 8" o.c. at intermediated framing. For engineered design, see [Table 4](#).

### 6.5. Fastener Edge Distance

6.5.1. Fastener edge distance is a minimum of <sup>3</sup>/<sub>8</sub>" (10 mm) for both Thermo-Sheath (Black) Structural Sheathing and gypsum.

6.5.2. Always fasten staples parallel to the framing member.

### 6.6. Treatment of Joints

6.6.1. Thermo-Sheath (Black) Structural Sheathing joints shall be butted at framing members, and a single row of fasteners must be applied to each panel edge into the stud below.

6.6.1.1. Alternately, joints may be lapped <sup>3</sup>/<sub>4</sub>" (19 mm) with a single row of fasteners along each framing member.

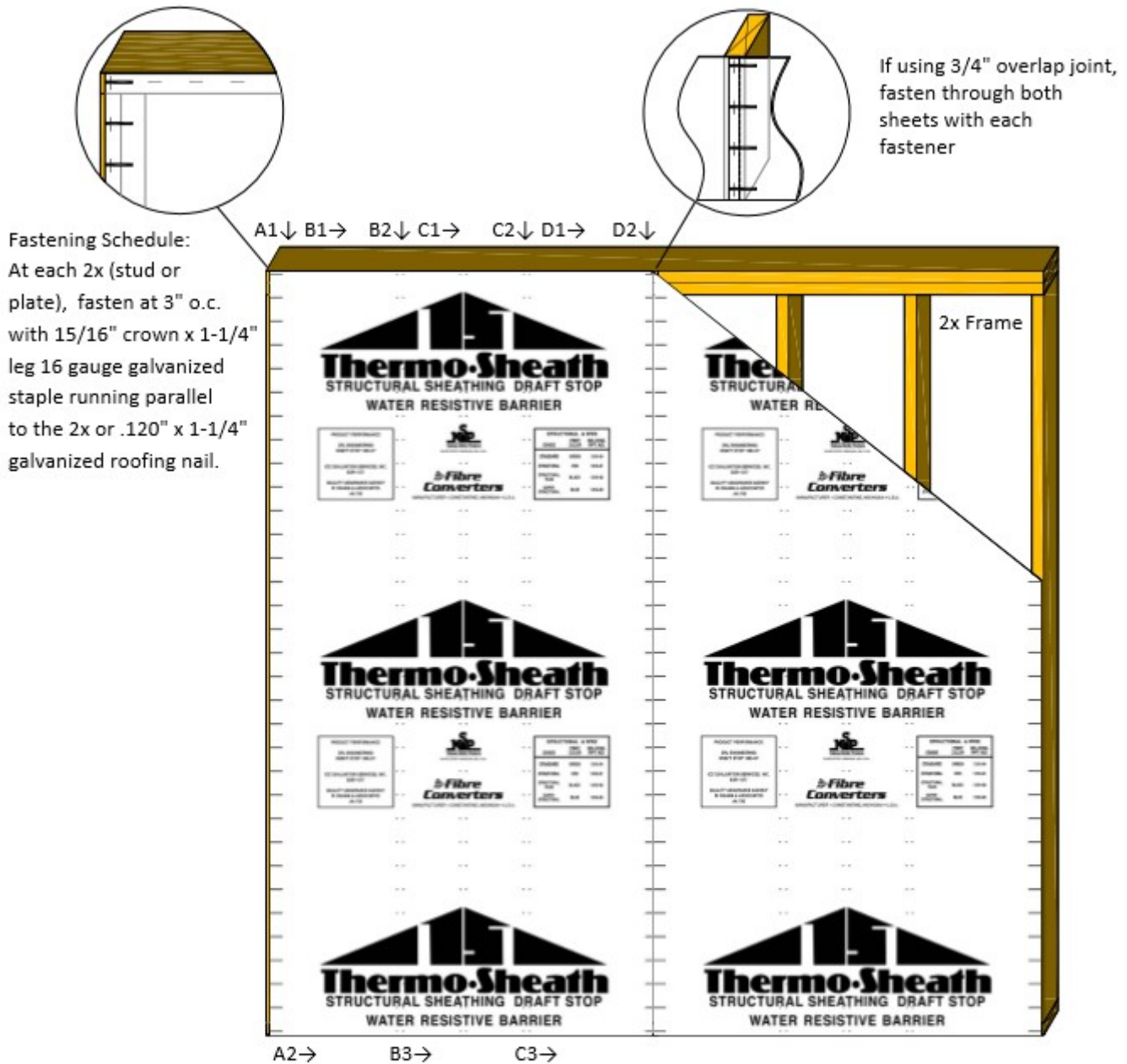
6.6.2. Do not tack Thermo-Sheath (Black) Structural Sheathing to framing, but fasten each panel completely once fastening begins.

### 6.7. Window Treatments

6.7.1. If windows are made to accommodate traditional <sup>1</sup>/<sub>2</sub>" (19 mm) sheathing materials, order windows with adjustable nailing fins from the supplier. Door brick moldings may be planed or routed <sup>3</sup>/<sub>8</sub>" (10 mm), in order to accommodate the different sheathing thickness, either at the jobsite or by the millwork supplier.

6.7.2. Thermo-Sheath (Black) Structural Sheathing must be installed with appropriate flashing and counter flashing in conformance with accepted building standards and in compliance with local building codes and the flashing manufacturer's installation instructions.

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### Fastening Schedule:

Step A – (A1) starting in the top left corner, fasten down the left side of the sheet and then (A2) across the bottom stopping at the next vertical 2x.

Step B – (B1) starting in the top left corner, fasten across the top of the sheet stopping at the next vertical 2x, then (B2) down that 2x starting at the top, and then (B3) across the bottom stopping at the next vertical 2x.

Step C – Repeat step B.

Step D – (D1) starting at the previous vertical 2x, fasten across the top of the sheet stopping at the next vertical 2x. If the last sheet or a butt joint, (D2) fasten starting at the top of the last 2x. If installing another sheet with an overlapping joint, overlap the next sheet and repeat starting with Step A, fastening through both sheets with each fastener.

Figure 3: Installation Instructions

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### 7. Test and Engineering Substantiating Data:

- 7.1. Lateral load testing conducted by SBCRI, based on *ASTM E2126*.
- 7.2. Transverse load testing conducted by SBCRI, based on *ASTM E330/E330M*.
- 7.3. Water-resistive barrier testing conducted by PEI.
- 7.4. Water vapor transmission testing by Intertek based on *ASTM E96*.
- 7.5. Air Barrier material testing by ATI, based on *ASTM E2178*.
- 7.6. The product(s) evaluated by this TER fall within the scope of one or more of the model, state or local building codes for building construction. The testing and/or substantiating data used in this TER is limited to buildings, structures, building elements, construction materials and civil engineering related specifically to buildings.
- 7.7. The provisions of model, state or local building codes for building construction do not intend to prevent the installation of any material or to prohibit any design or method of construction. Alternatives shall use consensus standards, performance-based design methods or other engineering mechanics based means of compliance. This TER assesses compliance with defined standards, accepted engineering analysis, performance-based design methods, etc. in the context of the pertinent building code requirements.
- 7.8. Some information contained herein is the result of testing and/or data analysis by other sources, which DrJ relies on to be accurate, as it undertakes its engineering analysis.
- 7.9. DrJ has reviewed and found the data provided by other professional sources are credible. The information in this TER conforms with DrJ's procedure for acceptance of data from approved sources.
- 7.10. DrJ's responsibility for data provided by approved sources conforms with [IBC Section 1703](#) and any relevant professional engineering law.
- 7.11. Where appropriate, DrJ relies on the derivation of design values, which have been codified into law through codes and standards (e.g., *IRC, WFCM, IBC, SDPWS, NDS, ACI, AISI, PS-20, PS-2*, etc.). This includes review of code provisions and any related test data that aids in comparative analysis or provides support for equivalency to an intended end-use application. Where the accuracy of design values provided herein is reliant upon the published properties of commodity materials (e.g. lumber, steel, concrete, etc), DrJ relies upon grade/properties provided by the raw material supplier to be accurate and conforming to the mechanical properties defined in the relevant material standard.

### 8. Findings:

- 8.1. When installed in accordance with the manufacturer installation instructions and this TER, Thermo-Sheath (Black) Structural Sheathing complies with, or is a suitable alternative to, the applicable sections of the codes listed in [Section 2](#) for the following applications.
  - 8.1.1. Lateral load resistance due to wind and seismic loads carried by shear walls.
  - 8.1.2. Use as an equivalent alternative to the CS-PF as described in [IRC Section R602.10.5](#) and [R602.10.6.4](#).
  - 8.1.3. Transverse load resistance due to components and cladding pressures on building surfaces.
  - 8.1.4. Performance for use as a WRB in accordance with [IRC Section R703.2](#) and [IBC Section 1404.2](#).
  - 8.1.5. Performance for use as an air barrier material in accordance with [IRC Section N1102.4.1.1](#) and [IECC Section R402.4.1.1](#) and [C402.5.1.1](#).
- 8.2. [IBC Section 104.11](#) and [IRC Section R104.11](#) ([IFC Section 104.9](#) is similar) state:

104.11 **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 has been *approved*. An alternative material, design or method of construction shall be *approved* where the *building official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code. ... Where the alternative material, design or method of construction is not *approved*, the *building official* shall respond in writing, stating the reasons the alternative was not *approved*.



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**8.3.** This product has been evaluated with the codes listed in [Section 2](#), and is compliant with all known state and local building codes. Where there are known variations in state or local codes that are applicable to this evaluation, they are listed here:

**8.3.1.** No known variations

**8.4.** This TER uses professional engineering law, the building code, ANSI/ASTM consensus standards and generally accepted engineering practice as its criteria for all testing and engineering analysis. Dr.J's professional engineering work falls under the jurisdiction of each state Board of Professional Engineers, when signed and sealed.

### 9. Conditions of Use:

- 9.1.** Where required by the authority having jurisdiction (AHJ) in which the project is to be constructed, this report and the installation instructions shall be submitted at the time of permit application.
- 9.2.** Any generally accepted engineering calculations needed to show compliance with this TER shall be submitted to the code official for review and approval.
- 9.3.** Design loads shall be determined in accordance with the building code adopted by the jurisdiction in which the project is to be constructed.
- 9.4.** Thermo-Sheath (Black) Structural Sheathing shall not be used as a nailing base.
- 9.5.** Walls sheathed with Thermo-Sheath (Black) Structural Sheathing shall not be used to resist horizontal loads from concrete and masonry walls.
- 9.6.** When Thermo-Sheath (Black) Structural Sheathing is not installed for use as wall bracing, as described in this TER, the walls shall be braced by other materials, in accordance with the applicable code.
- 9.7.** When used as a WRB, Thermo-Sheath (Black) Structural Sheathing seams shall be overlapped  $\frac{3}{4}$ " (19 mm) or covered with minimum 1.5" (38 mm) wide DRYline® Sheathing Tape or equivalent.
- 9.8.** When used as part of a continuous air barrier assembly, all sheathing panel edges at the top and bottom of the wall assemblies, and all joints between sheathing panels, shall be sealed with an approved construction tape.
- 9.9.** When used in accordance with the *IBC* in Seismic Design Categories C, D, E or F, special inspections shall comply with [IBC Section 1705.12](#)<sup>9</sup>.
- 9.10.** When used in accordance with the *IBC* in high wind areas, special inspections shall comply with [IBC Section 1705.11](#)<sup>10</sup>.
- 9.11.** Loads applied shall not exceed those recommended by the manufacturer as follows:
- 9.11.1.** Allowable shear loads do not exceed values in [Table 4](#) for wind loads and [Table 5](#) for seismic loads.
- 9.11.2.** Transverse design loads shall not exceed those described in [Table 6](#), unless an approved exterior wall covering capable of separately resisting loads perpendicular to the face of the walls is installed over the sheathing.
- 9.12.** The manufacturer's installation instructions shall be available on the jobsite for inspection.
- 9.13.** All panel edges shall be supported by wall framing or solid blocking a minimum of 2" (51 mm nominal in thickness).
- 9.14.** Thermo-Sheath (Black) Structural Sheathing is manufactured in Constantine, MI, under a quality control program with quality control inspections in accordance with [IRC Section R109.2](#) and [IBC Section 110.3.8](#) and [110.4](#).
- 9.15.** Design
- 9.15.1.** Building Designer Responsibility
- 9.15.1.1.** Unless the AHJ allows otherwise, the Construction Documents shall be prepared by a Building Designer for the Building and shall be in accordance with [IRC Section R106](#) and [IBC Section 107](#).

<sup>9</sup> [2009 IBC Section 1705.3](#), [2012 IBC Section 1705.11](#)

<sup>10</sup> [2009 IBC Section 1705.4](#), [2012 IBC Section 1705.10](#)

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**9.15.1.2.** The Construction Documents shall be accurate and reliable and shall provide the location, direction and magnitude of all applied loads and shall be in accordance with [IRC Section 301](#) and [IBC Section 1603](#).

### 9.15.2. Construction Documents

**9.15.2.1.** Construction Documents shall be submitted to the Building Official for approval and shall contain the plans, specifications and details needed for the Building Official to approve such documents.

### 9.16. Responsibilities

**9.16.1.** The information contained herein is a product, material, detail, design and/or application TER evaluated in accordance with the referenced building codes, testing and/or analysis through the use of accepted engineering practice, experience and technical judgment.

**9.16.2.** DrJ TERs provide an assessment of only those attributes specifically addressed in the Products Evaluated or Code Compliance Process Evaluated sections.

**9.16.3.** The engineering evaluation was performed on the dates provided in this TER, within DrJ's professional scope of work.

**9.16.4.** This product is manufactured under a third-party quality control program in accordance with [IRC Section R104.4](#) and [R109.2](#) and [IBC Section 104.4](#) and [110.4](#).

**9.16.5.** The actual design, suitability and use of this TER, for any particular building, is the responsibility of the Owner or the Owner's authorized agent, and the TER shall be reviewed for code compliance by the Building Official.

**9.16.6.** The use of this TER is dependent on the manufacturer's in-plant QC, the ISO/IEC 17020 third-party quality assurance program and procedures, proper installation per the manufacturer's instructions, the Building Official's inspection and any other code requirements that may apply to demonstrate and verify compliance with the applicable building code.

## 10. Identification:

**10.1.** Each Thermo-Sheath (Black) Structural Sheathing panel described in this TER is identified by a label on the board or packaging material bearing the manufacturer's name, product name, TER number, and other information to confirm code compliance.

**10.2.** Additional technical information can be found at [fibreconverters.com](http://fibreconverters.com) or [nationalshelter.com](http://nationalshelter.com).

## 11. Review Schedule:

**11.1.** This TER is subject to periodic review and revision. For the most recent version of this TER, visit [drjengineering.org](http://drjengineering.org).

**11.2.** For information on the current status of this TER, contact [DrJ Engineering](#).



- [Mission and Professional Responsibilities](#)
- [Product Evaluation Policies](#)
- [Product Approval – Building Code, Administrative Law and P.E. Law](#)