



**CERTIFICATION**



**Approved. Sealed. Code Compliant.**

## **Technical Evaluation Report**

**TER 1303-07**

Thermo-Sheath Sheathing for Use as  
Draftstops in the IBC & IRC

**Fibre Converters, Inc.**

**Product:**

**Thermo-Sheath Structural  
Sheathing**

Issue Date:

April 12, 2013

Revision Date:

November 9, 2020

Subject to Renewal:

January 1, 2022



COMPANY  
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- DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES  
SECTION: 06 02 00 - Design Information  
SECTION: 06 05 23 - Wood, Plastic, and Composite Fastenings  
SECTION: 06 11 00 - Wood Framing  
SECTION: 06 12 00 - Structural Panels  
SECTION: 06 12 19 - Shear Wall Panels  
SECTION: 06 16 00 - Sheathing

1 PRODUCTS EVALUATED<sup>1</sup>

- 1.1 Thermo-Sheath Structural Sheathing  
1.1.1 Thermo-Sheath Green Label Structural Sheathing  
1.1.2 Thermo-Sheath Red Label Structural Sheathing  
1.1.3 Thermo-Sheath Black Label Structural Sheathing  
1.1.4 Thermo-Sheath Blue Label Structural Sheathing

2 APPLICABLE CODES AND STANDARDS<sup>2,3</sup>

- 2.1 Codes  
2.1.1 *IBC—12, 15, 18: International Building Code®*

<sup>1</sup> Building codes require data from valid [research reports](#) be obtained from [approved sources](#). Agencies who are accredited through ISO/IEC 17065 have met the [code requirements](#) for approval by the [building official](#). DrJ is an ISO/IEC 17065 ANAB-Accredited Product Certification Body – Accreditation #1131.

Through ANAB accreditation and the [IAF MLA](#), DrJ certification can be used to obtain product approval in any [jurisdiction](#) or country that has [IAF MLA Members & Signatories](#) to meet the [Purpose of the MLA](#) – “certified once, accepted everywhere.”

Building official approval of a licensed [registered design professional](#) (RDP) is performed by verifying the RDP and/or their business entity complies with all professional engineering laws of the relevant [jurisdiction](#). Therefore, the work of licensed RDPs is accepted by [building officials](#), except when plan (i.e., peer) review finds an error with respect to a specific section of the code. Where this TER is not approved, the [building official](#) responds in writing stating the reasons for [disapproval](#).

For more information on any of these topics or our mission, product evaluation policies, product approval process, and engineering law, visit [drjcertification.org](http://drjcertification.org) or call us at 608-310-6748.

<sup>2</sup> Unless otherwise noted, all references in this TER are from the 2018 version of the codes and the standards referenced therein (e.g., *ASCE 7, NDS, ASTM*). This material, design, or method of construction also complies with the 2000-2015 versions of the referenced codes and the standards referenced therein.

<sup>3</sup> All terms defined in the applicable building codes are italicized.



## 2.1.2 IRC—12, 15, 18: International Residential Code®

### 3 PERFORMANCE EVALUATION

- 3.1 This TER examines Thermo-Sheath (Red, Black, Blue, and Green) Sheathing used as a draftstop material based on *IBC* and *IRC* requirements.
- 3.2 Any code compliance issues not specifically addressed in this section are outside the scope of this TER.
- 3.3 Any engineering evaluation conducted for this TER was performed on the dates provided in this TER and within DrJ's professional scope of work.

### 4 PRODUCT DESCRIPTION AND MATERIALS

- 4.1 Thermo-Sheath Sheathing panels are composed of multiple laminated plies consisting of highly water-resistant paperboard fibers adhered with a water-resistant adhesive.
- 4.2 Facings may be either exposed polymer or aluminum foil.
  - 4.2.1 The panels are manufactured in four thicknesses:
    - 4.2.1.1 Thermo-Sheath Green Label Structural Sheathing has a nominal thickness of 0.078" (1.98 mm).
    - 4.2.1.2 Thermo-Sheath Red Label Structural Sheathing has a nominal thickness of 0.105" (2.67 mm).
    - 4.2.1.3 Thermo-Sheath Black Label Structural Sheathing has a nominal thickness of 0.115" (2.92 mm).
    - 4.2.1.4 Thermo-Sheath Blue Label Structural Sheathing has a nominal thickness of 0.137" (3.48 mm).
- 4.3 *Material Availability*
  - 4.3.1 Width: standard 48" and 48¾"; custom widths available upon request
  - 4.3.2 Length: standard 96", 108", and 120"; custom lengths available upon request

### 5 APPLICATIONS

- 5.1 Thermo-Sheath Sheathing is used as an alternate draftstopping material in accordance with *IBC* Section 104.11 and *IRC* Section R104.11.
- 5.2 Use as an alternate material is based on the following code requirements regarding draftstops.
  - 5.2.1 Definitions (see *IBC* Chapter 2 and *IRC* Chapter 2):

**DRAFTSTOP.** A material, device or construction installed to restrict the movement of air within open spaces of concealed areas of building components such as crawl spaces, floor/ceiling assemblies, roof/ceiling assemblies and attics.
  - 5.2.2 Based on the definition, a draftstop is used to restrict the movement of air within open spaces of concealed areas.
  - 5.2.3 Fastening for draftstopping materials shall be adequate to support the weight of the draftstopping material and to minimize the movement of air. No other prescriptive fastening requirements are provided.
  - 5.2.4 Draftstopping may be required in the following locations in accordance with the code sections referenced.
    - 5.2.4.1 *IBC*
      - 5.2.4.1.1 For continuity at fire partitions between the ceiling and deck above, either fireblocking or draftstopping may be required (*IBC* Section 708.4), but it is not required in a corridor if sprinklers are installed (Exception 2.2).<sup>4</sup>
      - 5.2.4.1.2 In floors of structures of combustible construction, draftstopping is required to subdivide floor/ceiling assemblies in prescribed locations, per *IBC* Section 718.3.

<sup>4</sup> 2015 *IBC* Section 708.4, Exception 6



- 5.2.4.1.3 In attics of structures of combustible construction, draftstopping is required to subdivide attic spaces and concealed roof spaces in prescribed locations, per IBC Section 718.4.
- 5.2.4.2 *IRC*
  - 5.2.4.2.1 In combustible construction where there is usable space both above and below the concealed space of a floor/ceiling assembly, draftstopping is required, per IRC Section R302.12.
  - 5.2.4.2.2 Above the fire separation wall in two-family buildings, draftstopping is required in the roof/ceiling assembly above the fire separation wall where the ceiling is protected by no less than 5/8" Type X gypsum board.
- 5.3 Draftstop material requirements are similar in the *IBC* and *IRC*. However, the *IBC* includes a few more prescribed products.
  - 5.3.1 IBC Section 718.3.1:

**Draftstopping materials.** Draftstopping materials shall not be less than 1/2-inch (12.7 mm) gypsum board, 3/8-inch (9.5 mm) wood structural panel, 3/8-inch (9.5 mm) particleboard, 1-inch (25-mm) nominal lumber, cement fiberboard, batts or blankets of mineral wool or glass fiber, or other approved materials adequately supported. The integrity of draftstops shall be maintained.
  - 5.3.2 IRC Section R302.12.1:

**Draftstopping materials.** Draftstopping materials shall not be less than 1/2-inch (12.7 mm) gypsum board, 3/8-inch (9.5 mm) wood structural panels or other approved materials adequately supported. Draftstopping shall be installed parallel to the floor framing members unless otherwise approved by the building official. The integrity of the draftstops shall be maintained.
- 5.4 Thermo-Sheath Sheathing meets the requirements for draftstop materials.
  - 5.4.1 As installed per the manufacturer's instructions, it complies with the code definition with respect to "restricting the movement of air."
  - 5.4.2 As installed per the manufacturer's installation instructions, Thermo-Sheath Sheathing is adequately supported and will remain in place.
  - 5.4.3 Batt or blanket mineral wool or glass fiber only require that they be adequately supported and restrict the movement of air. These products are air-permeable and restrict the passage of air to a lesser degree than Thermo-Sheath Sheathing.
  - 5.4.4 Draftstops are not intended to restrict the passage of heat or flame. The code addresses heat and flame impingement with fire-resistance rated assemblies, thermal barriers, and ignition barriers.

## 6 INSTALLATION

- 6.1 Installation shall comply with the manufacturer's installation instructions and this TER. In the event of a conflict between the manufacturer's installation instructions and this TER, the more restrictive shall govern.
- 6.2 A copy of the manufacturer's published installation instructions shall be available at all times on the jobsite during installation.



### 6.3 Orientation

- 6.3.1 Thermo-Sheath Sheathing is permitted to be installed in the vertical or horizontal orientation on framing with all joints backed by studs, plates, or blocks. For joints not backed by studs, plates, or blocks, the joint shall be taped to ensure impedance of air movement.

### 6.4 Fastener Spacing and Edge Distance

- 6.4.1 Fastener edge distance is a minimum of  $\frac{3}{8}$ " (9.5 mm).
- 6.4.2 Always fasten staples parallel to the framing member.
- 6.4.3 Fasteners shall be spaced to ensure adequate support of Thermo-Sheath Sheathing to remain in place.

### 6.5 Treatment of Joints

- 6.5.1 Sheathing joints may be either butted or overlapped.
- 6.5.2 Lapped joints shall be overlapped by at least  $\frac{3}{4}$ " (19 mm) and fastened with a single row of fasteners.
- 6.5.3 Butt joints shall be placed over framing members and fastened with a single row of fasteners at each panel edge and shall be installed with a small gap ( $\frac{1}{16}$ " to  $\frac{1}{8}$ ") between panels.

## 7 TEST ENGINEERING SUBSTANTIATING DATA

- 7.1 Some information contained herein is the result of testing and/or data analysis by other sources which conform to IBC Section 1703 and relevant professional engineering law. DrJ relies on accurate data from these sources to perform engineering analysis. DrJ has reviewed and found the data provided by other professional sources to be credible.
- 7.2 Where appropriate, DrJ's analysis is based on design values that have been codified into law through codes and standards (e.g., *IBC*, *IRC*, *NDS*, and *SDPWS*). 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, and concrete), DrJ relies upon the grade mark, stamp, and/or design values provided by raw material suppliers to be accurate and conforming to the mechanical properties defined in the relevant material standard.

## 8 FINDINGS

- 8.1 When used and installed in accordance with this TER and the manufacturer's installation instructions, the product(s) listed in Section 1.1 are approved for the following:
  - 8.1.1 Use as a draftstopping material when installed in accordance with the manufacturer's installation instructions and this TER.
- 8.2 IBC Section 104.11 (IRC Section R104.11 and IFC Section 104.9 are similar) states:

**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*.
- 8.3 This product has been evaluated in the context of 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 applicable to this TER, they are listed here.
  - 8.3.1 No known variations



## 9 CONDITIONS OF USE

- 9.1 Thermo-Sheath Sheathing shall be installed in accordance with:
  - 9.1.1 The manufacturer's installation instructions.
  - 9.1.2 The applicable building code.
  - 9.1.3 This TER.
- 9.2 The sheathing materials are manufactured in Constantine, Michigan under a quality control program in accordance with IBC Section 104.4 and 110.4 and IRC Section R104.4 and R109.2.
- 9.3 Where required by the building official, also known as the authority having jurisdiction (AHJ) in which the project is to be constructed, this TER and the installation instructions shall be submitted at the time of permit application.
- 9.4 Any generally accepted engineering calculations needed to show compliance with this TER shall be submitted to the AHJ for review and approval.
- 9.5 Design loads shall be determined in accordance with the building code adopted by the jurisdiction in which the project is to be constructed and/or by the Building Designer (e.g., owner or registered design professional).
- 9.6 At a minimum, this product shall be installed per Section 6 of this TER.
- 9.7 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. Therefore, the TER shall be reviewed for code compliance by the building official for acceptance.
- 9.8 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 The product(s) listed in Section 1.1 are 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).

## 11 REVIEW SCHEDULE

- 11.1 This TER is subject to periodic review and revision. For the most recent version of this TER, visit [drjcertification.org](http://drjcertification.org).
- 11.2 For information on the current status of this TER, contact [DrJ Certification](#).