



## Listing and Technical Evaluation Report™

A Duly Authenticated Report from an Approved Agency

Report No: 1306-02



Issue Date: June 24, 2013

Revision Date: May 2, 2025

Subject to Renewal: October 1, 2025

### OX® ISO RED CI®, ISO RED CI® XS, ISO RED MAX®, ISO RED MAX® WF, ISO RED MAX® GF, ISO RED MAX® LD and ISO RED MAX® HD Foam Plastic Insulating Sheathing

Trade Secret Report Holder:

OX Engineered Products, LLC

Phone: 269-435-2425

Website: [www.oxengineeredproducts.com](http://www.oxengineeredproducts.com)

#### CSI Designations:

DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION

Section: 07 20 00 - Thermal Protection

Section: 07 21 00 - Thermal Insulation

Section: 07 22 00 - Roof and Deck Insulation

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

Section: 07 27 00 - Air Barriers

## 1 Innovative Products Evaluated<sup>1</sup>

- 1.1 ISO Red Polyiso Foam Insulated Sheathing Products
  - 1.1.1 ISO RED CI Polyiso Foam Insulated Sheathing
  - 1.1.2 ISO RED CI XS Polyiso Foam Insulated Sheathing
  - 1.1.3 ISO RED MAX Polyiso Foam Insulated Sheathing
  - 1.1.4 ISO RED MAX WF Polyiso Foam Insulated Sheathing
  - 1.1.5 ISO RED MAX GF Polyiso Foam Insulated Sheathing
  - 1.1.6 ISO RED MAX LD Polyiso Foam Insulated Sheathing
  - 1.1.7 ISO RED MAX HD Polyiso Foam Insulated Sheathing

## 2 Product Description and Materials

- 2.1 *ISO RED CI and ISO RED CI XS*
  - 2.1.1 ISO RED CI and ISO RED CI XS are Type I, Class 1 Dual Faced Rigid Cellular Polyisocyanurate Insulation Board products as defined in ASTM C1289.
  - 2.1.2 ISO RED CI and ISO RED CI XS consist of a proprietary polyisocyanurate rigid board with facers on both sides. The facers are designed with a base foil layer, combined with layers of other material(s).

## 2.2 ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD

2.2.1 These products are Type I, Class 2 Dual Faced Rigid Cellular Polyisocyanurate Insulation Board products as defined in ASTM C1289.

2.2.2 These products consist of a proprietary polyisocyanurate rigid board with facers on both sides. The facers are designed with a base foil layer. Facer material thicknesses vary by product.

2.3 The innovative products evaluated in this report are shown in **Figure 1**, **Figure 2** and **Figure 3**.



**Figure 1.** ISO RED CI



**Figure 2.** ISO RED CI XS



**Figure 3. ISO RED MAX**

## 2.4 Material Availability

### 2.4.1 Thickness:

#### 2.4.1.1 ISO RED CI and ISO RED CI XS:

2.4.1.1.1 Range from 0.5" (12.7 mm) up to 2.0" (50.8 mm)

#### 2.4.1.2 ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD:

2.4.1.2.1 Up to 4.0" (102 mm)

### 2.4.2 Standard Product Width:

2.4.2.1 48" (1219 mm)

### 2.4.3 Standard Product Length:

2.4.3.1 96" (2438 mm)

2.4.3.2 108" (2743 mm)

2.4.3.3 120" (3048 mm)

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

## 3 Definitions

3.1 New Materials<sup>2</sup> 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.<sup>3</sup> The design strengths and permissible stresses shall be established by tests<sup>4</sup> and/or engineering analysis.<sup>5</sup>

3.2 Duly authenticated reports<sup>6</sup> and research reports<sup>7</sup> are test reports and related engineering evaluations, which are written by an approved agency<sup>8</sup> and/or an approved source.<sup>9</sup>

3.2.1 These reports contain intellectual property and/or trade secrets, which are protected by the Defend Trade Secrets Act (DTSA).<sup>10</sup>

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



- 3.4 An approved source is “approved” when a professional engineer (i.e., Registered Design Professional) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.<sup>11</sup>
- 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 Registered Design Professional (RDP).
- 3.5.1 The Center for Building Innovation (CBI) is ANAB<sup>12</sup> ISO/IEC 17025 and ISO/IEC 17020 accredited.
- 3.6 The regulatory authority shall enforce<sup>13</sup> 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<sup>14</sup> 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.<sup>15</sup>
- 3.8 ANAB is an International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA) signatory where recognition of certificates, validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA with the appropriate scope, shall be approved.<sup>16</sup> Therefore, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent.<sup>17</sup>
- 3.9 Approval equity is a fundamental commercial and legal principle.<sup>18</sup>

#### 4 Applicable Standards for the Listing; Regulations for the Regulatory Evaluation<sup>19</sup>

##### 4.1 Standards

- 4.1.1 *ANSI/ABTG-FS 100: Standard Requirements for Wind Pressure Resistance of Foam Plastic Insulating Sheathing Used in Exterior Wall Covering Assemblies*
- 4.1.2 *ASTM C203: Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation*
- 4.1.3 *ASTM C209: Standard Test Methods for Cellulosic Fiber Insulating Board*
- 4.1.4 *ASTM C518: Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*
- 4.1.5 *ASTM C1289: Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board*
- 4.1.6 *ASTM D2126: Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging*
- 4.1.7 *ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials*
- 4.1.8 *ASTM E119: Standard Test Methods for Fire Tests of Building Construction and Materials*
- 4.1.9 *ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*
- 4.1.10 *ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain*
- 4.1.11 *ASTM E1354: Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter*
- 4.1.12 *ASTM E2178: Standard Test Method for Air Permeance of Building Materials*
- 4.1.13 *NFPA 259: Standard Test Method for Potential Heat of Building Materials*



- 4.1.14 *NFPA 285-12: Standard Fire Test Method for the Evaluation of Fire Propagation Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components*
- 4.1.15 *NFPA 286: Standard Methods of Fire Test for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*

#### 4.2 Regulations

- 4.2.1 *IBC – 15, 18, 21: International Building Code®*
- 4.2.2 *IRC – 15, 18, 21: International Residential Code®*
- 4.2.3 *CBC—19, 22: California Building Code (Title 24, Part 2)*
- 4.2.4 *FBC-B—20, 23: Florida Building Code – Building<sup>20</sup> (FL 28290)*
- 4.2.5 *FBC-R—20, 23: Florida Building Code – Residential<sup>20</sup> (FL 28290)*

### 5 Listed<sup>21</sup>

- 5.1 Equipment, materials, products or services included in a List published by a nationally recognized testing laboratory (i.e., CBI), approved agency (i.e., CBI and DrJ), and/or approved source (i.e., DrJ) or other organization 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 ISO RED CI and ISO RED CI XS are Foam Plastic Insulating Sheathing (FPIS) used as wall sheathing in accordance with IBC Section 2603 and IRC Section R316 for Type V construction.
- 6.1.2 ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD are FPIS used as wall sheathing in accordance with IBC Section 2603 for Types I, II, III, IV and V construction.
- 6.1.3 Except as provided for in **Section 6.6**, ISO RED CI and ISO RED CI XS must be used with full protection from the interior of the building by an approved thermal barrier in accordance with IBC Section 2603.4 and IRC Section R316.4.
- 6.1.4 ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD are approved for use without the protection of a thermal barrier in accordance with IBC Section 2603.10 and IRC Section R316.6, when applied to walls or ceilings.
- 6.1.5 Where the application exceeds the limitations set forth herein, design shall be permitted in accordance with accepted engineering procedures, experience, and technical judgment.

#### 6.2 Transverse Loads

- 6.2.1 ISO RED CI and ISO RED CI XS may be used to resist wind loads transverse to the face of the wall, as shown in **Table 1**.
- 6.2.2 The required component and cladding loads to be resisted are found in IBC Section 1609.1.1, IRC Table R301.2.1(1)<sup>22</sup> and IRC Table R301.2.1(2).<sup>23</sup>
- 6.2.3 As stated in **Section 8.1.4**, performance of ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD for wind pressure resistance is outside the scope of this report.



**Table 1.** Summary of Transverse Wind Load Resistance of ISO RED CI and ISO RED CI XS<sup>5,7</sup>

ISO RED CI / ISO RED CI XS Nominal Thickness (in)	Maximum Stud Spacing (in o.c.)	Maximum Allowable Design Value <sup>2,3,6</sup> (psf)	Fastener Schedule <sup>4</sup>	Maximum Allowable Wind Speed <sup>1</sup> (mph)	
				Allowable Stress Design Wind Speed, V <sub>asd</sub>	Basic Design Wind Speed, V <sub>ult</sub>
1/2	16	20.6	2" x 0.113" galv. ring shank nail with 1" plastic cap spaced 6" along the edges and 12" in the field	90	120
1/2	24	30.3 <sup>7</sup>	2" x 0.113" galv. ring shank nail with 1" plastic cap spaced 3" along the edges and 3" in the field	110	145
1	16	33.5	1 3/4" x 0.106 nail with 3/8" head spaced 12" along the edges and 12" in the field	120	150
1	24	51.8	2 1/2" x 0.113 galv. ring shank nail with 1" plastic cap spaced 3" along the edges and 3" in the field	150	190
1 1/2	16	65.3	2 3/8" x 0.113" galv. smooth shank, full head nail, 16" along the edges and 16" in the field	155	200

SI: 1 in = 25.4 mm, 1 psf = 0.0479 kN/m<sup>2</sup>, 1 mph = 1.61 km/h

- Calculated in accordance with ASCE 7 Chapter 30 and the following assumptions:
  - A building height of 30-feet, GC<sub>p</sub> = -1.4 for Zone 5 and an Effective Wind Area of 10ft<sup>2</sup>, Topographic Factor: K<sub>zt</sub>=1.0, Ground Elevation Factor: K<sub>e</sub>=1.0, Internal Pressure Coefficient, GC<sub>pi</sub>=+/-0.18 for an enclosed building, K<sub>d</sub> = 0.85 for 'Component and Cladding, Exposure B
  - V<sub>ult</sub> is limited to 200 mph.
- Any required adjustments to these loads for other site conditions shall be in accordance with the applicable building code.
- Allowable design wind pressures are determined in accordance with ANSI/ABTG-FS100 with studs spaced a maximum distance as shown above.
- Fastener schedule shows minimum size of fastener at maximum allowable spacing(s).
- Tabulated values were determined in accordance with ANSI/ABTG FS 100 for a fully-blocked condition (i.e., all horizontal and vertical sheathing joints supported on blocking or framing members) using a Pressure Equalization Factor (PEF) of 0.9 where the allowable wind pressure is 30 psf or less.
- Allowable wind pressures greater than 30 psf were determined using a PEF of 1.0.
- Requires 1/2" gypsum conforming to ASTM C1396, to be installed on the interior side of the wall.

### 6.3 Thermal Resistance

- ISO Red Polyiso Foam Insulated Sheathing Products are FPIS panels used as thermal insulation in wall, roof and ceiling assemblies.
- ISO Red Polyiso Foam Insulated Sheathing Products meet the continuous insulating sheathing requirements complying with the provisions of IRC Section N1102 and IECC Section C402.
- These products have the thermal properties shown in **Table 2**.





**Table 2. Thermal Resistances of ISO RED Polyiso Foam Insulated Sheathing Products**

Product	Nominal Thickness (in)	R-Value <sup>1</sup>
ISO RED CI and ISO RED CI XS	2	13.0
	1½	10.0
	1	6.5
	½	3.3
ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD	4	25.2
	3½	22.1
	3	19.0
	2½	16.0
	2	13.0
	1½	10.0
	1	6.5
	¾	5.0
	½	3.3
SI: 1 in = 25.4 mm 1. Thermal values are determined using the ASTM C518 test method at 75°F mean temperature on material conditioned according to ASTM C1289 Section 11.1 (°F·ft²·hr/Btu)		

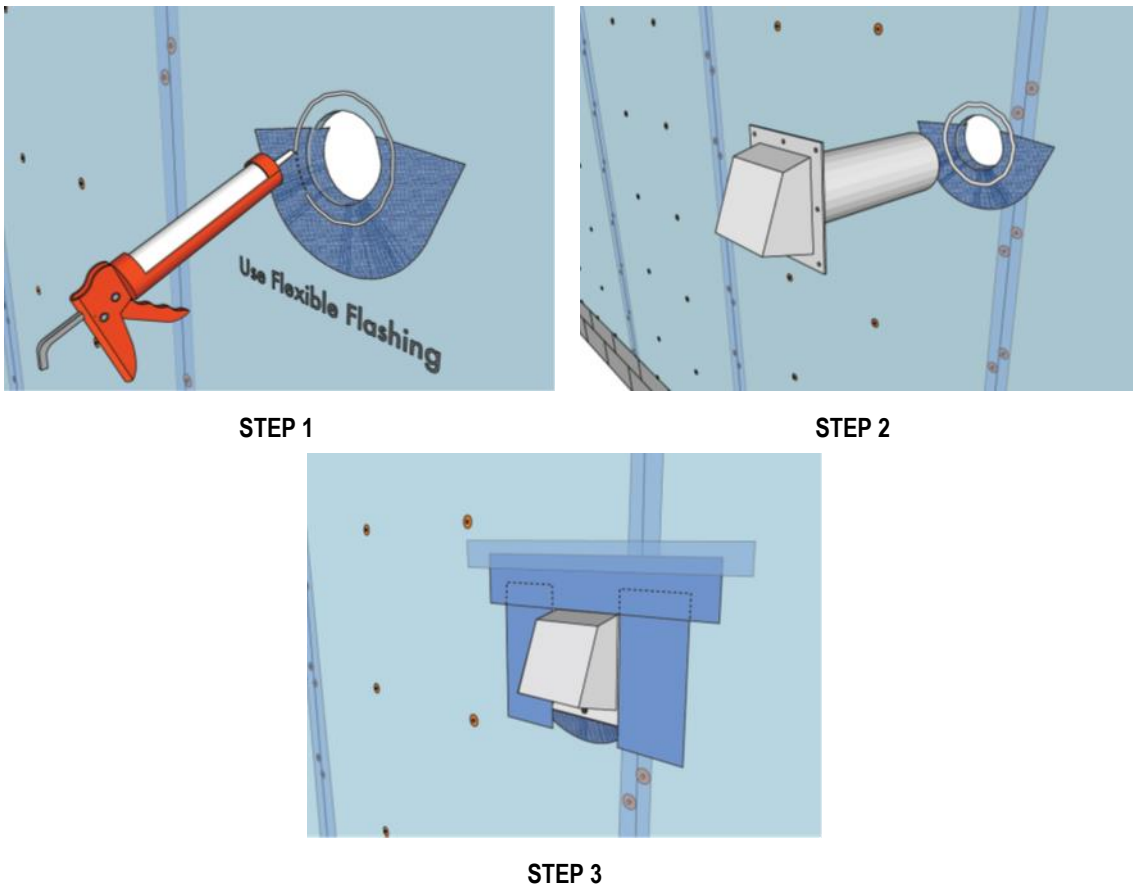
#### 6.4 Air Barrier

- 6.4.1 Wall and ceiling assemblies constructed with ISO Red Polyiso Foam Insulated Sheathing Products are used to meet air barrier requirements in accordance with [IECC Section C402](#).
- 6.4.2 All penetrations shall be flashed and sealed in accordance with the flashing manufacturer installation instructions. Self-adhered flashing tape shall meet AAMA 711 (FortiFlash® Butyl or equivalent).
- 6.4.3 These products are defined as air barrier materials having an air permeance of less than 0.02 L/m²·ft², in accordance with [IECC Section C402.5](#).

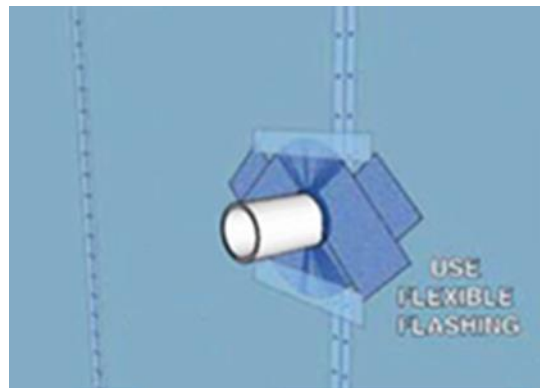
#### 6.5 Water-Resistive Barrier (WRB)

- 6.5.1 ISO Red Polyiso Foam Insulated Sheathing Products are approved WRBs in accordance with [IBC Section 1403.2<sup>24</sup>](#) and [IRC Section R703.2](#), when installed with 27/8" OX Commercial SeamTape®, 27/8" ISO RED® WF SeamTape®, or 27/8" ISO RED® GF SeamTape®. Flashing tape with release liner may be required for effective taping of inside and outside corners. See the manufacturer product information for further details.
- 6.5.2 ISO RED CI and ISO RED CI XS shall be installed with board joints placed directly over exterior framing spaced a maximum of 24" (610 mm) o.c. The fasteners used to attach the board shall be installed in accordance with **Section 9**.
- 6.5.3 A separate WRB may also be provided. If a separate WRB method is used, taping of the sheathing joints is not required.

- 6.5.4 Flashing of penetrations shall comply with the applicable code and must be installed at all sheathing penetrations. Use qualified flashing tape such as ArcticFlash® Synthetic Flashing, HomeGuard® Flexible Butyl Flashing or HomeGuard® RA-plus® Flashing. See **Figure 4**, **Figure 5** and **Figure 6** for typical penetration flashing details.
- 6.5.5 Flashing Details: Typical Flanged (**Figure 4**), Unflanged (**Figure 5**) Penetration and Flanged Window (**Figure 6**).

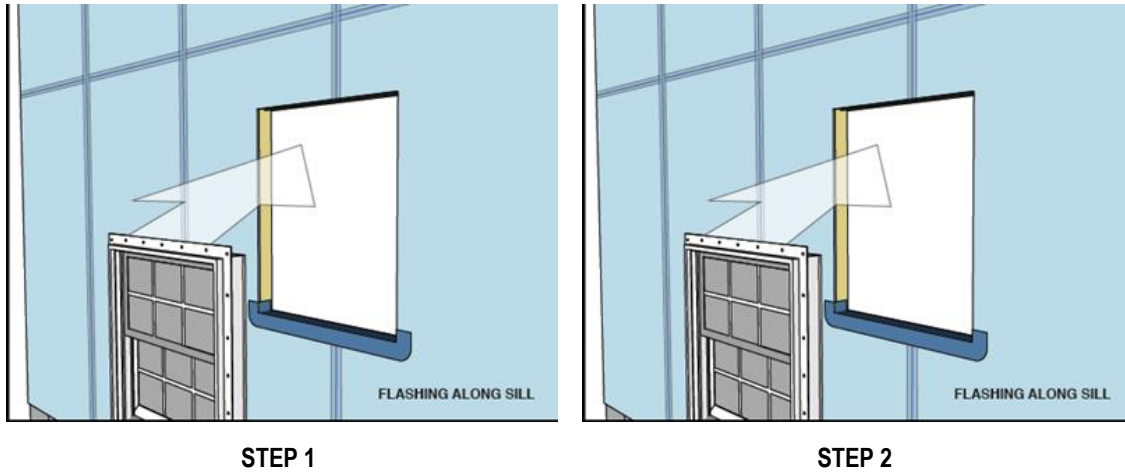


**Figure 4.** Typical Penetration Flashing Detail – Flanged



**Figure 5.** Typical Penetration Flashing Detail – Unflanged





**Figure 6.** Typical Window Flashing Detail

## 6.6 Fire Safety Performance

### 6.6.1 Surface Burning Characteristics:

- 6.6.1.1 ISO Red Polyiso Foam Insulated Sheathing Products have the flame spread and smoke developed ratings as shown in **Table 3** when tested in accordance with ASTM E84 per [IBC Section 2603.3](#) and [IRC Section R316.3](#).

**Table 3.** Surface Burning Performance of ISO Red Polyiso Foam Insulated Sheathing Products

Product	Flame Spread	Smoke Developed	Classification
ISO RED CI and ISO RED CI XS <sup>1</sup>	< 75	< 450	Class B
ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD <sup>2</sup>	< 25	< 450	Class A
1. Tested in accordance with ASTM E84, with maximum foam thickness of 2". 2. Tested in accordance with ASTM E84, with maximum foam thickness of 4".			

### 6.6.2 Vertical and Lateral Fire Propagation:

- 6.6.2.1 ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD were tested to assess performance with regard to vertical and lateral fire propagation in accordance with NFPA 285 and [2018 IBC Section 2603.5.5](#).
- 6.6.2.2 Engineering analysis has also been conducted to assess substitution of other products within the approved wall assemblies.
- 6.6.2.3 The wall assemblies listed in **Table 4** and **Table 5** are approved for use in buildings of Type I-IV construction.



**Table 4. Approved NFPA 285 Wall Assemblies – Brick Cladding<sup>1,2,3,4</sup>**

Wall Component	Materials
<b>Base Wall System</b> Use either 1, 2, 3 or 4.  <b>Note:</b> May use 4 optionally when FRTW framing is allowed by code.	<ol style="list-style-type: none"> <li>1. Cast Concrete Wall</li> <li>2. Concrete Masonry Wall</li> <li>3. 20-gauge (min.) 3<sup>5</sup>/<sub>8</sub>" (min.) steel studs spaced 24" o.c. (max)               <ol style="list-style-type: none"> <li>a. 1 layer – 5/<sub>8</sub>" thick Type X gypsum wallboard on interior</li> <li>b. Lateral bracing every 4'</li> </ol> </li> <li>4. Where allowed in Types I-IV construction, FRTW (Fire Retardant Treated Wood) studs complying with <u>IBC Section 2303.2</u>, minimum nominal 2x4 spaced at a maximum 16" o.c.               <ol style="list-style-type: none"> <li>a. 5/<sub>8</sub>" (min.) Type X gypsum wallboard interior.</li> <li>b. Wall braced at mid-height and fire-stopped at top and bottom.</li> </ol> </li> </ol>
<b>Fire-Stopping in Stud Cavities at Floor Lines</b> Use item 1 or 2.  <b>Note:</b> As an option, use 2 with FRTW framing.	<ol style="list-style-type: none"> <li>1. Any approved 4 pcf mineral fiber based safing insulation in each stud cavity at floor line. Safing thickness must match stud cavity depth.</li> <li>2. Solid FRTW fire blocking at floor line when Base Wall System, Item 4 is used.</li> </ol>
<b>Cavity Insulation</b> Use any option 1-13.	<ol style="list-style-type: none"> <li>1. None</li> <li>2. 1<sup>1</sup>/<sub>2</sub>" (min.) BASF Wallite™ 2 pcf SPF (or equivalent) up to full cavity fill.</li> <li>3. 1<sup>1</sup>/<sub>2</sub>" (min.) Premium Spray Products Foamsulate 20 up to full cavity fill.</li> <li>4. Any noncombustible insulation per ASTM E136.</li> <li>5. Any mineral fiber (Batt or board type Class A ASTM E84 faced or unfaced).</li> <li>6. Any fiberglass (Batt type Class A ASTM E84 faced or unfaced).</li> <li>7. Icynene Classic, Classic Plus, Classic Ultra or Classic Ultra Select; MD-R-210; MD-C-200; or Proseal. Partial cavity fill with a max. air space of 2" or full cavity fill not exceeding 7<sup>5</sup>/<sub>8</sub>". Use with 1/<sub>2</sub>" exterior gypsum sheathing (min.).</li> <li>8. NCFI Polyurethanes, full cavity depth or less of InsulBloc, InsulStar, InsulStar Plus or ThermalStop™ closed cell (2.0 lb/ft<sup>3</sup>) spray polyurethane foam applied using sheathing as substrate and covering the width of the cavity. Use with 1/<sub>2</sub>" exterior gypsum sheathing (min.).</li> <li>9. SWD Urethane Quik-Shield 112 spray polyurethane foam applied using 5/<sub>8</sub>" Type X sheathing as substrate. Air gap must not exceed 2<sup>1</sup>/<sub>2</sub>".</li> <li>10. Demilec Sealection 500 or HeatLok Soy 200, up to full cavity fill. Use with 5/<sub>8</sub>" Type X exterior gypsum sheathing.</li> <li>11. Accella Polyurethane Bayseal® OC and OCX or Bayseal® CC, up to full cavity fill using minimum 1/<sub>2</sub>" exterior gypsum sheathing.</li> <li>12. Lapolla™ Foam-Lok™ FL 2000 with 5/<sub>8</sub>" Type X exterior sheathing in 3<sup>5</sup>/<sub>8</sub>" studs (max.)</li> <li>13. Any cavity insulation which has been tested per ASTM E1354 (at a min. of 20 kw/m<sup>2</sup> heat flux) and shown by analysis to be of equivalent or lesser flammability (based on T<sub>ign</sub>, Pk. HRR) than the foam tested in Item 2 or 3 above.</li> <li>14. Enverge EasySeal .5, Enverge SucraSeal. 3<sup>5</sup>/<sub>8</sub>" (max.). Use with 1/<sub>2</sub>" exterior sheathing.</li> </ol>



**Table 4. Approved NFPA 285 Wall Assemblies – Brick Cladding<sup>1,2,3,4</sup>**

Wall Component	Materials
<b>Exterior Sheathing</b> Use either 1, 2 or 3 (with limitations noted in Cavity Insulation Allowances)  <b>Note:</b> Exterior FRTW sheathing or gypsum wallboard is optional for Base Walls 1 and 2.	<ol style="list-style-type: none"> <li>None (only with Cavity Insulations 1, 2, 4, 5, or 6)</li> <li>Minimum 1/2" exterior gypsum sheathing (unless 5/8" Type X exterior sheathing is otherwise specified with cavity insulations).</li> <li>1/2" (min.) FRTW structural panels complying with <u>IBC Section 2303.2</u> and installed in accordance with the code requirements for Types I-IV construction.</li> </ol>
<b>Water-Resistive Barrier Over Base Wall</b> Use either 1, 2, or 3  <b>Note:</b> Item 3 applies when exterior gypsum sheathing is used.	<ol style="list-style-type: none"> <li>None</li> <li>WRB's over Steel Framing:               <ol style="list-style-type: none"> <li>Kingspan GreenGuard® Max Building Wrap</li> <li>Dupont Tyvek (Various per ESR 2375)</li> <li>Dow Weathermate™</li> <li>Dow Weathermate™ Plus</li> <li>OX ThermoPly</li> </ol> </li> <li>WRBs over exterior sheathing:               <ol style="list-style-type: none"> <li>Henry Air Bloc 32MR</li> <li>Henry Foilskin</li> <li>Henry MetalClad</li> <li>CCW 705 FR-A</li> <li>Kingspan GreenGuard Max Building Wrap</li> <li>Dupont Tyvek (various per ESR-2375)</li> <li>Dow Weathermate</li> <li>Dow Weathermate Plus</li> <li>Any WRB that has been tested per ASTM E1354 (at a min. of 20 kw/m<sup>2</sup> heat flux) and shown by analysis to be of equivalent or lesser flammability (based on T<sub>ign</sub>, Pk. HRR) than the exterior insulation foam core or baseline Item 3a above.</li> </ol> </li> </ol>
<b>Exterior Insulation</b>	Up to 4" thick OX ISO RED MAX, consisting of a single panel or multiple thinner panels
<b>WRB Over Exterior Insulation</b> Use either 1 or 2	<ol style="list-style-type: none"> <li>Aluminum construction tape as tested (or equivalent), max. 6" wide over staggered insulation joints.</li> <li>For use with all Exterior Cladding options as written below:               <ol style="list-style-type: none"> <li>Henry Foilskin</li> <li>Henry MetalClad</li> <li>CCW 705 FR-A</li> <li>Kingspan GreenGuard Max Building Wrap</li> <li>Dupont Tyvek (various per ESR-2375)</li> <li>Dow Weathermate</li> <li>Dow Weathermate Plus</li> <li>Any WRB that has been tested per ASTM E1354 (at a min. of 20 kw/m<sup>2</sup> heat flux) and shown by analysis to be of equivalent or lesser flammability (based on T<sub>ign</sub>, Pk. HRR) than those listed above.</li> </ol> </li> </ol>

**Table 4.** Approved NFPA 285 Wall Assemblies – Brick Cladding<sup>1,2,3,4</sup>

Wall Component	Materials
<b>Exterior Cladding</b> Use 1 through 6  <b>Note:</b> Masonry cladding items 2-6 do not employ an air gap or open joints.	<ol style="list-style-type: none"> <li>1. Brick – Nominal 4" clay brick or veneer with max. 2" air gap behind the brick. Brick ties/anchors 24" o.c. (max.).</li> <li>2. Stucco – Minimum 3/4" thick exterior cement plaster and lath with approved WRB over insulation.</li> <li>3. Limestone – Minimum 2" thick, using any standard non-open joint installation technique such as shiplap.</li> <li>4. Natural Stone Veneer – Minimum 2" thick using any standard non-open joint installation technique.</li> <li>5. Terracotta Cladding – Minimum 1 1/4" thick (solid or equivalent by weight) using any standard non-open joint installation technique such as shiplap.</li> <li>6. Cast Artificial Stone – Minimum 1 1/2" thick complying with ICC-ES AC51 installed using any standard non-joint installation technique such as shiplap.</li> </ol>
SI: 1 in = 25.4 mm, 1 Btu/(hr-ft <sup>2</sup> ) = 0.0032 kW/m <sup>2</sup> <ol style="list-style-type: none"> <li>1. The assembly combinations created herein and the various substitutions of products are based on testing and professional thermal engineering analysis by Priest &amp; Associates Consulting, LLC.</li> <li>2. Acceptance criteria for ASTM E1354 testing have not been well established in the referenced building codes and foam sheathing related sections. The criteria stated here for substitution of products is based on testing and professional thermal engineering analysis by Priest &amp; Associates.</li> <li>3. T<sub>ign</sub> is the time to ignition from the start of the test until the sheathing ignites. Pk. HRR is the peak heat release rate during the test.</li> <li>4. Compliant through the 2018 IBC.</li> </ol>	

**Table 5.** Approved NFPA 285 Wall Assemblies - ACM Cladding<sup>1,2,3,4</sup>

Wall Component	Materials
<b>Base Wall System</b> Use either 1, 2, 3 or 4  <b>Note:</b> May use 4 optionally when FRTW framing is allowed by code	<ol style="list-style-type: none"> <li>1. Cast Concrete Wall</li> <li>2. Concrete Masonry Wall</li> <li>3. 20-gauge (min.) 3 5/8" (min.) steel studs spaced 24" o.c. (max)               <ol style="list-style-type: none"> <li>a. 1 layer – 5/8" thick Type X gypsum wallboard on interior</li> <li>b. Lateral bracing every 4'</li> </ol> </li> <li>4. Where allowed in Types I-IV construction, FRTW (Fire Retardant Treated Wood) studs complying with <a href="#">IBC Section 2303.2</a>, minimum nominal 2x4 spaced at a maximum 16" o.c.               <ol style="list-style-type: none"> <li>a. 5/8" (min.) Type X gypsum wallboard interior.</li> <li>b. Wall braced at mid-height and fire-stopped at top and bottom</li> </ol> </li> </ol>
<b>Fire-Stopping in Stud Cavities at Floor Lines</b>  <b>Note:</b> Use either 1 or 2. As an option, use 2 with FRTW framing	<ol style="list-style-type: none"> <li>1. Any approved 4 pcf mineral fiber based safing insulation in each stud cavity at floor line. Safing thickness must match stud cavity depth.</li> <li>2. Solid FRTW fire blocking at floor line when Base Wall System, Item 4 is used.</li> </ol>



**Table 5. Approved NFPA 285 Wall Assemblies - ACM Cladding<sup>1,2,3,4</sup>**

Wall Component	Materials
<b>Cavity Insulation</b> Use any option 1-13	<ol style="list-style-type: none"> <li>None</li> <li>1 1/2" (min.) BASF Wallite 2 pcf SPF (or equivalent) up to full cavity fill.</li> <li>1 1/2" (min.) Premium Spray Products Foamsulate 220 up to full cavity fill.</li> <li>Any noncombustible insulation per ASTM E136.</li> <li>Any mineral fiber (Batt or board type Class A ASTM E84 faced or unfaced).</li> <li>Any fiberglass (Batt type Class A ASTM E84 faced or unfaced).</li> <li>Icynene Classic, Classic Plus, Classic Ultra or Classic Ultra Select; MD-R-210; MD-C-200; or Proseal. Partial cavity fill with a maximum air space of 2" or full cavity fill not exceeding 7 5/8". Use with 1/2" exterior gypsum sheathing (min.).</li> <li>NCFI Polyurethanes, full cavity depth or less of InsulBloc, InsulStar, InsulStar Plus or ThermalStop™ closed cell (2.0 lb/ft<sup>3</sup>) spray polyurethane foam applied using sheathing as substrate and covering the width of the cavity. Use with 5/8" Type X exterior gypsum sheathing (min.).</li> <li>SWD Urethane Quik-Shield 112 spray polyurethane foam applied using 5/8" Type X sheathing as substrate. Air gap must not exceed 2 1/2".</li> <li>Demilec Sealection 500 or HeatLok Soy 200, up to full cavity fill. Use with 5/8" Type X exterior gypsum sheathing.</li> <li>Accella Polyurethane Bayseal OC and OCX or Bayseal CC, up to full cavity fill using minimum 1/2" exterior gypsum sheathing.</li> <li>Lapolla Foam-Lok FL 2000 with 5/8" Type X exterior sheathing in 3 5/8" studs (max.)</li> <li>Any cavity insulation which has been tested per ASTM E1354 (at a min. of 20 kw/m<sup>2</sup> heat flux) and shown by analysis to be of equivalent or lesser flammability (based on T<sub>ign</sub>, Pk. HRR) than the foam tested in Item 2 or 3 above.</li> <li>Enverge EasySeal .5, Enverge SucraSeal. 3 5/8" (max.). Use with 1/2" exterior sheathing.</li> </ol>
<b>Exterior Sheathing</b> Use either 1 or 2  <b>Note:</b> Exterior FRTW sheathing or gypsum wallboard is optional for Base Walls 1 and 2.	<ol style="list-style-type: none"> <li>Minimum 1/2" exterior gypsum sheathing (5/8" Type X exterior gypsum sheathing required when SPF in cavity).</li> <li>1/2" (min.) FRTW structural panels complying with <a href="#">IBC Section 2303.2</a> and installed in accordance with the code requirements for Types I-IV construction.</li> </ol>
<b>Water-Resistive Barrier Over Base Wall</b> Use any item 1-8	<ol style="list-style-type: none"> <li>None</li> <li>Any WRB that has been tested per ASTM E1354 (at a min. of 20 kw/m<sup>2</sup>) and shown by analysis to be of equivalent or lesser flammability (based on T<sub>ign</sub>, Pk. HRR) than the exterior insulation foam core or baseline Item 3 below.</li> <li>Henry Air Bloc 32MR</li> <li>Kingspan GreenGuard Max Building Wrap</li> <li>Dupont Tyvek (Various per ESR-2375)</li> <li>Dow Weathermate</li> <li>Dow Weathermate Plus</li> <li>WRBs over exterior sheathing:               <ol style="list-style-type: none"> <li>Henry Foilskin</li> <li>Henry MetalClad</li> <li>CCW 705 FR-A</li> <li>Kingspan GreenGuard Max Building Wrap</li> <li>Dupont Tyvek (various per ESR-2375)</li> <li>Dow Weathermate</li> <li>Dow Weathermate Plus</li> </ol> </li> </ol>



**Table 5. Approved NFPA 285 Wall Assemblies - ACM Cladding<sup>1,2,3,4</sup>**

Wall Component	Materials
<b>Exterior Insulation</b>	Up to 4" thick OX ISO RED MAX, consisting of a single panel or multiple thinner panels
<b>WRB Over Exterior Insulation</b> Use any item 1-5	<ol style="list-style-type: none"> <li>1. None</li> <li>2. Aluminum construction tape as tested (or equivalent), max. 6" wide over staggered insulation joints.</li> <li>3. Henry Foilskin</li> <li>4. Henry MetalClad</li> <li>5. CCW 705 FR-A</li> </ol>
<b>Exterior Cladding</b> Use any item 1-11	<ol style="list-style-type: none"> <li>1. Brick – Nominal 4" clay brick or veneer with max. 2" air gap behind the brick. Brick ties/anchors 24" o.c. (max.).</li> <li>2. Stucco – Minimum 3/4" thick exterior cement plaster and lath with an optional secondary water resistive barrier between the exterior insulation and lath. The secondary barrier shall not be full coverage asphalt or self-adhered butyl membrane.</li> <li>3. Limestone – Minimum 2" thick, using any standard installation technique.</li> <li>4. Natural Stone Veneer – Minimum 2" thick using any standard installation technique.</li> <li>5. Cast Artificial Stone – Minimum 1 1/2" thick complying with ICC-ES AC51 installed using any standard installation technique.</li> <li>6. Terracotta Cladding – Minimum 1 1/4" thick, using any standard installation technique.</li> <li>7. Any MCM, ACM (aluminum, steel, copper, zinc) (w/ 1 1/2" ± 1/2" air gap) that has successfully passed NFPA 285 using any standard installation technique.</li> <li>8. Uninsulated sheet metal building panels including aluminum, steel or copper using any standard installation technique.</li> <li>9. Uninsulated Fiber-cement siding using any standard installation technique.</li> <li>10. Stone/Aluminum honeycomb composite building panels that have passed NFPA 285 or equivalent (StoneLite Wall Panels by Stone Panels – ESR-1500)</li> <li>11. Autoclaved-aerated-concrete (AAC) panels that have successfully passed NFPA 285 using any standard installation technique.</li> </ol>
<p>SI: 1 in = 25.4 mm, 1 Btu/(hr-ft<sup>2</sup>) = 0.0032 kW/m<sup>2</sup></p> <ol style="list-style-type: none"> <li>1. The assemblies' combinations created herein and the various substitutions of products are based on testing and professional thermal engineering analysis by Priest &amp; Associates Consulting, LLC.</li> <li>2. Acceptance criteria for ASTM E1354 testing have not been well established in the referenced building codes and foam sheathing related sections. The criteria stated here for substitution of products is based on testing and professional thermal engineering analysis by Priest &amp; Associates.</li> <li>3. T<sub>ign</sub> is the time to ignition from the start of the test until the sheathing ignites. Pk. HRR is the peak heat release rate during the test.</li> <li>4. Compliant through the 2018 IBC.</li> </ol>	





### 6.6.3 Thermal Barrier:

- 6.6.3.1 ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD boards with a maximum thickness of 4" were tested in accordance with NFPA 286 and have met the acceptance criteria of IBC Section 803.1.1.1<sup>25</sup> for use on walls or ceilings without a thermal barrier, in accordance with IBC Section 2603.4 and IBC Section 2603.5.2.
- 6.6.3.2 ISO RED CI and ISO RED CI XS shall be fully protected from the interior of the building by an approved 15-minute thermal barrier or ignition barrier as required by IBC Section 2603.4 and IRC Section R316.4, except as follows:
  - 6.6.3.2.1 When installed in an attic, crawlspace or other uninhabitable space, ISO RED CI and ISO RED CI XS at a maximum thickness of 2", are approved for use without a thermal barrier or ignition barrier. This includes, but is not limited to, knee and gable end walls.
  - 6.6.3.2.2 Use without an approved thermal barrier or ignition barrier is limited to areas where:
    - 6.6.3.2.2.1 ISO RED CI and ISO RED CI XS are installed on the walls only.
    - 6.6.3.2.2.2 Access to the space is required by IRC Section R807.1 or IRC Section R408.4.
    - 6.6.3.2.2.3 Entry is made only for the purposes of repairs or maintenance.

- 6.7 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<sup>26</sup>

- 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.<sup>27</sup>
- 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.<sup>28</sup>

## 8 Regulatory Evaluation and Accepted Engineering Practice

- 8.1 ISO Red Polyiso Foam Insulated Sheathing Products comply with the following legislatively adopted regulations and/or accepted engineering practice for the following reasons:
  - 8.1.1 ISO RED CI and ISO RED CI XS have been evaluated to determine:
    - 8.1.1.1 Wind pressure resistance performance for use as part of an exterior wall covering assembly in accordance with IBC Section 1403.8,<sup>29</sup> IRC Section R703.3 and ANSI/FS100.
    - 8.1.1.2 Performance in accordance with the foam plastic requirements of IBC Section 2603 and IRC Section R316.
    - 8.1.1.3 Performance for use as continuous insulating sheathing in accordance with IRC Section N1102 and IECC Section C402.
    - 8.1.1.4 Performance for use as a WRB in accordance with IBC Section 1403.2<sup>30</sup> and IRC Section R703.2.
    - 8.1.1.5 Performance for use as a vapor retarder in accordance with IBC Section 202, IBC Section 1404.3,<sup>31</sup> IRC Section R202 and IRC Section R702.7.
    - 8.1.1.6 Performance for use as an air barrier in accordance with IECC Section C402.



- 8.1.2 Performance of ISO RED CI and ISO RED CI XS for vertical and lateral fire propagation is outside the scope of this report.
- 8.1.3 ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD have been evaluated to determine:
- 8.1.3.1 Performance in accordance with the foam plastic requirements of [IBC Section 2603](#) and [IRC Section R316](#).
  - 8.1.3.2 Performance for use as continuous insulating sheathing in accordance with [IRC Section N1102](#) and [IECC Section C402](#).
  - 8.1.3.3 Performance for use as a vapor retarder in accordance with [IBC Section 202](#), [IBC Section 1404.3](#), [IRC Section R202](#) and [Section R702.7](#).
  - 8.1.3.4 Performance for use as an air barrier in accordance with [IECC Section C402](#).
  - 8.1.3.5 Performance for use without a thermal barrier in accordance with NFPA 286 and the acceptance criteria of [IBC Section 803.1.1](#).<sup>32</sup>
  - 8.1.3.6 Performance for vertical and lateral fire propagation in accordance with NFPA 285 and [2018 IBC Section 2603.5.5](#).
  - 8.1.3.7 Performance for use as a WRB in accordance with [IBC Section 1403.2](#) and [IRC Section R703.2](#).
- 8.1.4 Performance of ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD for wind pressure resistance is outside the scope of this report.
- 8.2 When used as over-sheathing<sup>33</sup> on light-frame, masonry or concrete exterior walls, ISO Red Polyiso Foam Insulated Sheathing Products are not required to meet the wind pressure resistance requirements of this report.
- 8.3 This report does not address wind pressure resistance requirements for ISO RED CI or ISO RED CI XS used as part of an Exterior Insulation Finish System (EIFS). Refer to the EIFS manufacturer installation instructions for building code compliance.
- 8.4 ISO Red Polyiso Foam Insulated Sheathing Products shall comply with the standards listed in **Section 4** and shall be applied to exterior wall construction in accordance with the general requirements of **Section 6**. ISO RED CI and ISO RED CI XS shall also comply with the prescriptive wind pressure resistance requirements of **Section 6.2**.
- 8.5 ISO RED CI and ISO RED CI XS used in accordance with this report, and that are required to resist wind pressure in exterior wall covering assemblies, shall also comply with the product marking requirements of **Section 13**, and the conditions of use listed in **Section 12**.
- 8.6 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 Engineering, LLC (DrJ), an [ISO/IEC 17065 accredited certification body](#) and a professional engineering company operated by [RDP/approved sources](#). DrJ is qualified<sup>34</sup> to practice product and regulatory compliance services within its scope of accreditation and engineering expertise, respectively.
- 8.7 Engineering evaluations are conducted with DrJ's ANAB [accredited ICS code scope](#) of expertise, which are also its areas of professional engineering competence.
- 8.8 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, the more restrictive shall govern.
- 9.2.1 See the [Foam Sheathing Committee \(FSC\) Best Practices Guide](#) for further details.
- 9.3 *Installation Procedure*
- 9.3.1 These products may be cut to size with a utility knife, handsaw or power saw.
- 9.3.2 Attachment information is provided in **Table 6**.

**Table 6.** Attachment Information

Application <sup>1</sup>	Stud Spacing <sup>2</sup>	Attachment Method	Fastener Spacing <sup>3</sup>
Wood Framing	16" or 24"	Capped nails, capped staples or roofing nails (~1" framing embedment)	12" perimeter 12" field
Metal Framing	16" or 24"	Corrosion-resistant self-tapping screws with 1" diameter cap or washer (~1" framing embedment)	12" perimeter 12" field
Interior Masonry or Concrete	N/A	Suitable construction adhesive or masonry fastener with 1" diameter cap or washer or combination of adhesive and mechanical fasteners (~1" embedment into substrate)	Adhesive beads spaced 16" horizontally & full perimeter Mechanical fasteners 12" perimeter and 12" field spaced 16" horizontally
Exterior Masonry or Concrete Below Grade	N/A	Granular water-draining fill	Only as required to ensure intimate contact to masonry surface or water proofed surface

SI: 1 in = 25.4 mm

- Butt panels tightly and seal all joints where intrusion of bulk moisture or moisture vapor is undesirable with sealant and/or approved tape.
- Panels used to resist transverse wind pressure or that are used as a WRB shall be installed on studs spaced a maximum of 16" o.c and all panel edges shall be located on framing or blocking.
- For required attachments in fire rated construction, consult the manufacturer-approved fire rated assembly details and refer to **Table 4**.

- 9.3.3 Windows and doors shall be installed in accordance with the manufacturer installation instructions.
- 9.3.4 Windows, door openings and other penetrations shall be flashed in accordance with [IBC Section 1404.4](#)<sup>35</sup> and [IRC Section R703.4](#).
- 9.3.5 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 Thermal properties testing in accordance with ASTM C518
  - 10.1.2 Material properties testing in accordance with ASTM C1289
  - 10.1.3 Surface burning characteristics testing in accordance with ASTM E84
  - 10.1.4 Fire resistance testing in accordance with ASTM E119
  - 10.1.5 Transverse wind pressure testing in accordance with ASTM E330
  - 10.1.6 Water penetration testing in accordance with ASTM E331
  - 10.1.7 Air permeance testing in accordance with ASTM E2178
  - 10.1.8 Use in attics and crawlspaces without a thermal barrier or ignition barrier testing in accordance with NFPA 286
  - 10.1.9 Vertical and lateral fire propagation properties testing in accordance with NFPA 285
- 10.2 ISO RED CI and ISO RED CI XS Quality Control Manuals in accordance with a third-party quality control program with inspections conducted by an approved agency.
- 10.3 Engineering analysis on NFPA 285 testing performed by Priest & Associates Consulting, LLC.
- 10.4 Information contained herein may include the result of testing and/or data analysis by sources that are approved agencies, approved sources and/or RDPs. Accuracy of external test data and resulting analysis is relied upon.
- 10.5 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.
- 10.6 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.
- 10.7 Testing and engineering analysis: 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.<sup>36</sup>
- 10.8 Where additional condition of use and/or regulatory compliance information is required, please search for ISO Red Polyiso Foam Insulated Sheathing Products on the DrJ Certification website.



## 11 Findings

- 11.1 As outlined in **Section 6**, ISO Red Polyiso Foam Insulated Sheathing Products have performance characteristics that were tested and/or meet applicable regulations and 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, ISO RED CI and ISO RED CI XS shall be approved for the following applications:
- 11.2.1 Wind pressure resistance performance for use as part of an exterior wall covering assembly in accordance with IBC Section 1403.8,<sup>37</sup> IRC Section R703.3 and ANSI/FS100.
  - 11.2.2 Performance in accordance with the foam plastic requirements of IBC Section 2603 and IRC Section R316.
  - 11.2.3 Performance for use as continuous insulating sheathing in accordance with IRC Section N1102 and IECC Section C402.
  - 11.2.4 Performance for use as a WRB in accordance with IBC Section 1403.2<sup>38</sup> and IRC Section R703.2.
  - 11.2.5 Performance for use as a vapor retarder in accordance with IBC Section 202, IBC Section 1404.3,<sup>39</sup> IRC Section R202 and IRC Section R702.7.
  - 11.2.6 Performance for use as an air barrier in accordance with IECC Section C402.
- 11.3 When used and installed in accordance with this report and the manufacturer installation instructions, the ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD products are approved for the following:
- 11.3.1 Performance in accordance with the foam plastic requirements of IBC Section 2603 and IRC Section R316.
  - 11.3.2 Performance for use as continuous insulating sheathing in accordance with IRC Section N1102 and IECC Section C402.
  - 11.3.3 Performance for use as a vapor retarder in accordance with IBC Section 202, IBC Section 1404.3, IRC Section R202 and IRC Section R702.7.
  - 11.3.4 Performance for use as an air barrier in accordance with IECC Section C402.
  - 11.3.5 Performance for use without a thermal barrier in accordance with NFPA 286 and the acceptance criteria of IBC Section 803.1.1.<sup>40</sup>
  - 11.3.6 Performance for vertical and lateral fire propagation in accordance with NFPA 285 and 2018 IBC Section 2603.5.5.
  - 11.3.7 Performance for use as a WRB in accordance with IBC Section 1403.2 and IRC Section R703.2.
- 11.4 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from OX Engineered Products, LLC.
- 11.5 IBC Section 104.11 (IRC Section R104.11 and IFC Section 104.10)<sup>41</sup> are similar) in pertinent part 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. 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.





- 11.6 **Approved:**<sup>42</sup> Building regulations require that the building official shall accept duly authenticated reports.<sup>43</sup>
- 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 Agreements (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.<sup>44</sup>

## 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, ISO Red Polyiso Foam Insulated Sheathing Products shall not be used:
- 12.3.1 As a structural nailing base for claddings, nor
- 12.3.2 To resist horizontal loads from concrete or masonry walls.
- 12.4 ISO RED CI and ISO RED CI XS shall be fully protected from the interior of the building by an approved 15-minute thermal barrier or ignition barrier where required by the applicable code, except where installed in attics and uninhabited spaces as described in **Section 6.6.3.2**. ISO RED MAX, ISO RED MAX WF, ISO RED MAX GF, ISO RED MAX LD and ISO RED MAX HD are not required to be protected by a thermal barrier when installed in accordance with **Section 6.6.3**.
- 12.5 In areas where the probability of termite infestation is very heavy in accordance with IBC Section 2603.9 or IRC Section R318.4, these products must not be placed on exterior walls located within 6" (152 mm) of the ground.
- 12.6 When using these products, the stud walls shall be braced by other materials in accordance with the applicable code.
- 12.7 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:
- 12.7.1 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.
- 12.7.2 This report and the installation instructions shall be submitted at the time of permit application.
- 12.7.3 These innovative products have an internal quality control program and a third-party quality assurance program.
- 12.7.4 At a minimum, these innovative products shall be installed per **Section 9**.
- 12.7.5 The review of this report by the AHJ shall comply with IBC Section 104 and IBC Section 105.4.





- 12.7.6 These innovative products have an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.4, IBC Section 110.4, IBC Section 1703, IRC Section R104.4 and IRC Section R109.2.
- 12.7.7 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.
- 12.8 The approval of this report by the AHJ shall comply with IBC Section 1707.1, where legislation states in part, “*the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new material or assemblies as provided for in Section 104.11*,” all of IBC Section 104, and IBC Section 105.4.
- 12.9 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).
- 12.10 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 innovative products 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](http://www.oxengineeredproducts.com).

### 14 Review Schedule

- 14.1 This report is subject to periodic review and revision. For the latest version, visit [drjcertification.org](http://drjcertification.org).
- 14.2 For information on the status of this report, please contact [DrJ Certification](#).

### 15 Approved for Use Pursuant to U.S. and International Legislation Defined in Appendix A

- 15.1 ISO Red Polyiso Foam Insulated Sheathing Products are included in this report published by an approved agency that is concerned with evaluation of products or services, maintains periodic inspection of the production of listed materials or periodic evaluation of services. This report states either that the material, product or service meets recognized standards or has been tested and found suitable for a specified purpose. This report meets the legislative intent and definition of being acceptable to the AHJ.



## Appendix A

### 1 Legislation that Authorizes AHJ Approval

- 1.1 **Fair Competition:** State legislatures have adopted Federal regulations for the examination and approval of building code referenced and alternative products, materials, designs, services, assemblies and/or methods of construction that:
  - 1.1.1 Advance innovation
  - 1.1.2 Promote competition so all businesses have the opportunity to compete on price and quality in an open market on a level playing field unhampered by anticompetitive constraints
  - 1.1.3 Benefit consumers through lower prices, better quality, and greater choice
- 1.2 **Adopted Legislation:** The following local, state and federal regulations affirmatively authorize these innovative products to be approved by AHJs, delegates of building departments and/or delegates of an agency of the federal government:
  - 1.2.1 Interstate commerce is governed by the Federal Department of Justice to encourage the use of innovative products, materials, designs, services, assemblies, and/or methods of construction. The goal is to “*protect economic freedom and opportunity by promoting free and fair competition in the marketplace.*”
  - 1.2.2 Title 18 US Code Section 242 affirms and regulates the right of individuals and businesses to freely and fairly have new products, materials, designs, services, assemblies and/or methods of construction approved for use in commerce. Disapproval of alternatives shall be based upon non-conformance with respect to specific provisions of adopted legislation and shall be provided in writing stating the reasons why the alternative was not approved, with reference to the specific legislation violated.
  - 1.2.3 The federal government and each state have a public records act. In addition, each state also has legislation that mimics the federal Defend Trade Secrets Act 2016 (DTSA),<sup>45</sup> where providing test reports, engineering analysis and/or other related IP/TS is subject to prison of not more than ten years<sup>46</sup> and/or a \$5,000,000 fine or 3 times the value of<sup>47</sup> the Intellectual Property (IP) and Trade Secrets (TS).
    - 1.2.3.1 Compliance with public records and trade secret legislation requires approval through the use of Listings, certified reports, Technical Evaluation Reports, duly authenticated reports and/or research reports prepared by approved agencies and/or approved sources.
  - 1.2.4 For new materials<sup>48</sup> that are not specifically provided for in any regulation, the design strengths and permissible stresses shall be established by tests, where suitable load tests simulate the actual loads and conditions of application that occur.
  - 1.2.5 The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design using accepted engineering practice.<sup>49</sup>
  - 1.2.6 The commerce of approved sources (i.e., registered PEs) is regulated by professional engineering legislation. Professional engineering commerce shall always be approved by AHJs, except where there is evidence provided in writing, that specific legislation have been violated by an individual registered PE.
  - 1.2.7 The AHJ 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 IBC Section 104.11.<sup>50</sup>



- 1.3 **Approved<sup>51</sup> by Los Angeles:** The Los Angeles Municipal Code (LAMC) states in pertinent part that the provisions of LAMC are not intended to prevent the use of any material, device or method of construction not specifically prescribed by LAMC. The Department shall use Part III, Recognized Standards in addition to Part II, Uniform Building Code Standards of Division 35, Article 1, Chapter IX of the LAMC in evaluation of products for approval where such standard exists for the product or the material and may use other approved standards that apply. Whenever tests or certificates of any material or fabricated assembly are required by Chapter IX of the LAMC, such tests or certification shall be made by a testing agency approved by the Superintendent of Building to conduct such tests or provide such certifications. The testing agency shall publish the scope and limitation(s) of the listed material or fabricated assembly.<sup>52</sup> The Superintendent of Building Approved Testing Agency Roster is provided by the Los Angeles Department of Building and Safety (LADBS). The Center for Building Innovation (CBI) Certificate of Approval License is TA24945. Tests and certifications found in a DrJ Listing are LAMC approved. In addition, the Superintendent of Building 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 the California Building Code (CBC) Section 1707.1.<sup>53</sup>
- 1.4 **Approved by Chicago:** The Municipal Code of Chicago (MCC) states in pertinent part that an Approved Agency is a Nationally Recognized Testing Laboratory (NRTL) acting within its recognized scope and/or a certification body accredited by the American National Standards Institute (ANSI) acting within its accredited scope. Construction materials and test procedures shall conform to the applicable standards listed in the MCC. Sufficient technical data shall be submitted to the building official to substantiate the proposed use of any product, material, service, design, assembly and/or method of construction not specifically provided for in the MCC. This technical data shall consist of research reports from approved sources (i.e., MCC defined Approved Agencies).
- 1.5 **Approved by New York City:** The 2022 NYC Building Code (NYCBC) states in part that an approved agency shall be deemed<sup>54</sup> an approved testing agency via ISO/IEC 17025 accreditation, an approved inspection agency via ISO/IEC 17020 accreditation, and an approved product evaluation agency via ISO/IEC 17065 accreditation. Accrediting agencies, other than federal agencies, must be members of an internationally recognized cooperation of laboratory and inspection accreditation bodies subject to a mutual recognition agreement<sup>55</sup> (i.e., ANAB, International Accreditation Forum also known as IAF, etc.).
- 1.6 **Approved by Florida:** Statewide approval of products, methods or systems of construction shall be approved, without further evaluation by:
- 1.6.1 A certification mark or listing of an approved certification agency,
  - 1.6.2 A test report from an approved testing laboratory,
  - 1.6.3 A product evaluation report based upon testing or comparative or rational analysis, or a combination thereof, from an approved product evaluation entity, or
  - 1.6.4 A product evaluation report based upon testing, comparative or rational analysis, or a combination thereof, developed, signed and sealed by a professional engineer or architect, licensed in Florida.
  - 1.6.5 For local product approval, products or systems of construction shall demonstrate compliance with the structural wind load requirements of the Florida Building Code (FBC) through one of the following methods:
    - 1.6.5.1 A certification mark, listing or label from a commission-approved certification agency indicating that the product complies with the code,
    - 1.6.5.2 A test report from a commission-approved testing laboratory indicating that the product tested complies with the code,
    - 1.6.5.3 A product-evaluation report based upon testing, comparative or rational analysis, or a combination thereof, from a commission-approved product evaluation entity which indicates that the product evaluated complies with the code,



- 1.6.5.4 A product-evaluation report or certification based upon testing or comparative or rational analysis, or a combination thereof, developed and signed and sealed by a Florida professional engineer or Florida registered architect, which indicates that the product complies with the code, or
- 1.6.5.5 A statewide product approval issued by the Florida Building Commission.
- 1.6.6 The Florida Department of Business and Professional Regulation (DBPR) website provides a listing of companies certified as a Product Evaluation Agency (i.e., EVLMiami 13692), a Product Certification Agency (i.e., CER10642), and as a Florida Registered Engineer (i.e., ANE13741).
- 1.7 **Approved by Miami-Dade County (i.e., Notice of Acceptance [NOA]):** A Florida statewide approval is an NOA. An NOA is a Florida local product approval. By Florida law, Miami-Dade County shall accept the statewide and local Florida Product Approval as provided for in Florida legislation 553.842 and 553.8425.
- 1.8 **Approved by New Jersey:** Pursuant to the 2018 Building Code of New Jersey in IBC Section 1707.1 General,<sup>56</sup> it states: “*In the absence of approved rules or other approved standards, 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 the administrative provisions of the Uniform Construction Code (N.J.A.C. 5:23)*”.<sup>57</sup> Furthermore N.J.A.C 5:23-3.7 states: “*Municipal approvals of alternative materials, equipment, or methods of construction.*”
- 1.8.1 **Approvals:** Alternative materials, equipment or methods of construction shall be approved by the appropriate subcode official provided the proposed design is satisfactory and that the materials, equipment or methods of construction are suitable for the intended use and are at least the equivalent in quality, strength, effectiveness, fire resistance, durability and safety of those conforming with the requirements of the regulations.
- 1.8.1.1 A field evaluation label and report or letter issued by a nationally recognized testing laboratory verifying that the specific material, equipment or method of construction meets the identified standards or has been tested and found to be suitable for the intended use, shall be accepted by the appropriate subcode official as meeting the requirements of the above.
- 1.8.1.2 Reports of engineering findings issued by nationally recognized evaluation service programs such as but not limited to, the Building Officials and Code Administrators (BOCA), the International Conference of Building Officials (ICBO), the Southern Building Code Congress International (SBCCI), the International Code Council (ICC), and the National Evaluation Service, Inc., shall be accepted by the appropriate subcode official as meeting the requirements of the above.
- 1.8.2 The New Jersey Department of Community Affairs has confirmed that technical evaluation reports, from any accredited entity listed by ANAB, meets the requirements of item the previous paragraph, given that the listed entities are no longer in existence and/or do not provide “*reports of engineering findings.*”
- 1.9 **Approved by the Code of Federal Regulations Manufactured Home Construction and Safety Standards:** Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14<sup>58</sup> and Part 3280,<sup>59</sup> the Department encourages innovation and the use of new technology in manufactured homes. The design and construction of a manufactured home shall conform to the provisions of Part 3282 and Part 3280 where key approval provisions in mandatory language follow:
- 1.9.1 “*All construction methods shall be in conformance with accepted engineering practices.*”
- 1.9.2 “*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.*”
- 1.9.3 “*The design stresses of all materials shall conform to accepted engineering practice.*”



- 1.10 Approval by US, Local and State Jurisdictions in General:** In all other local and state jurisdictions, the adopted building code legislation states in pertinent part that:
- 1.10.1 For new materials that are not specifically provided for in this code, the design strengths and permissible stresses shall be established by tests.<sup>60</sup>
  - 1.10.2 For innovative alternatives and/or methods of construction, the building official shall accept duly authenticated reports from approved agencies with respect to the quality and manner of use of new materials or assemblies.<sup>61</sup>
    - 1.10.2.1 An approved agency is “approved” when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is in the ANAB directory.
    - 1.10.2.2 An approved source is “approved” when an RDP is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.<sup>62</sup>
  - 1.10.3 The design strengths and permissible stresses of any structural material...shall conform to the specifications and methods of design of accepted engineering practice performed by an approved source.<sup>63</sup>
- 1.11 Approval by International Jurisdictions:** The USMCA and GATT agreements provide for approval of innovative materials, designs, services, and/or methods of construction through the Agreement on Technical Barriers to Trade and the IAF Multilateral Recognition Arrangement (MLA), where these agreements:
- 1.11.1 State that conformity assessment procedures (i.e., ISO/IEC 17020, 17025, 17065, etc.) are prepared, adopted, and applied so as to grant access for suppliers of like products originating in the territories of other Members under conditions no less favourable than those accorded to suppliers of like products of national origin or originating in any other country, in a comparable situation.
  - 1.11.2 **Approved:** The purpose of the MLA is to ensure mutual recognition of accredited certification and validation/verification statements between signatories to the MLA and subsequently, acceptance of accredited certification and validation/verification statements in many markets based on one accreditation for the timely approval of innovative materials, designs, services, and/or methods of construction.
  - 1.11.3 ANAB is an IAF-MLA signatory where recognition of certificates, validation, and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA, with the appropriate scope, shall be approved.<sup>64</sup>
  - 1.11.4 Therefore, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent.<sup>65</sup>
- 1.12** Approval equity is a fundamental commercial and legal principle.<sup>66</sup>





Issue Date: December 10, 2020  
Subject to Renewal: October 1, 2025

## FBC Supplement to Report Number 1306-02

REPORT HOLDER: OX Engineered Products, LLC

### 1 Evaluation Subject

- 1.1 ISO Red Polyiso Foam Insulated Sheathing Products:
  - 1.1.1 ISO RED CI Polyiso Foam Insulated Sheathing
  - 1.1.2 ISO RED CI XS Polyiso Foam Insulated Sheathing
  - 1.1.3 ISO RED MAX Polyiso Foam Insulated Sheathing
  - 1.1.4 ISO RED MAX WF Polyiso Foam Insulated Sheathing
  - 1.1.5 ISO RED MAX GF Polyiso Foam Insulated Sheathing
  - 1.1.6 ISO RED MAX LD Polyiso Foam Insulated Sheathing
  - 1.1.7 ISO RED MAX HD Polyiso Foam Insulated Sheathing

### 2 Purpose and Scope

- 2.1 Purpose
  - 2.1.1 The purpose of this Report Supplement is to show ISO Red Polyiso Foam Insulated Sheathing Products, recognized in Report Number 1306-02, have also been evaluated for compliance with the codes listed below as adopted by the Florida Building Commission.
- 2.2 *Applicable Code Editions*
  - 2.2.1 *FBC-B—20, 23: Florida Building Code – Building (FL 28290)*
  - 2.2.2 *FBC-R—20, 23: Florida Building Code – Residential (FL 28290)*

### 3 Conclusions

- 3.1 ISO Red Polyiso Foam Insulated Sheathing Products, described in Report Number 1306-02, comply with the FBC-B and FBC-R and are subject to the conditions of use described in this supplement.
- 3.2 Where there are variations between the IBC and IRC and the FBC-B and FBC-R applicable to this report, they are listed here:
  - 3.2.1 FBC-B Section 104.4 and Section 110.4 are reserved.
  - 3.2.2 FBC-R Section R104 and Section R109 are reserved.
  - 3.2.3 FBC-B Section 803.1.1 replaces IBC Section 803.1.1.
  - 3.2.4 FBC-B Section 803.2.1 replaces IBC Section 803.1.1.1.
  - 3.2.5 FBC-B Section 1404.2 replaces IBC Section 1403.2.
  - 3.2.6 FBC-B Section 1404.8 replaces IBC Section 1403.8.
  - 3.2.7 FBC-B Section 1405.3 replaces IBC Section 1404.3.
  - 3.2.8 FBC-B Section 1405.4 replaces IBC Section 1404.4.
  - 3.2.9 FBC-B Section 1609.1.1 replaces IBC Section 1609.1.1.





- 3.2.10 FBC-B Section 2603.3 replaces IBC Section 2603.3.
- 3.2.11 FBC-B Section 2603.4 replaces IBC Section 2603.4.
- 3.2.12 FBC-B Section 2603.9 replaces IBC Section 2603.9.
- 3.2.13 FBC-R Section R301.2.1 replaces IRC Table 301.2.1(1) and IRC Table 301.2.1(2)
- 3.2.14 FBC-R Section R316 replaces IRC Section R316.
- 3.2.15 FBC-R Section R316.3 replaces IRC Section R316.3.
- 3.2.16 FBC-R Section R316.4 replaces IRC Section R316.4.
- 3.2.17 FBC-R Section R316.6 replaces IRC Section R316.6.
- 3.2.18 FBC-R Section R318.8 replaces IRC Section R318.4.
- 3.2.19 FBC-R Section R702.7 replaces IRC Section R702.7.
- 3.2.20 FBC-R Section R703.2 replaces IBC Section R703.2.
- 3.2.21 FBC-R Section R703.3 replaces IBC Section R703.3.
- 3.2.22 FBC-R Section R703.4 replaces IBC Section R703.4.
- 3.2.23 FBC-R Section N1101.1 replaces IRC Section N1102.

#### 4 Conditions of Use

- 4.1 ISO Red Polyiso Foam Insulated Sheathing Products, described in Report Number 1306-02, must comply with all of the following conditions:
  - 4.1.1 All applicable sections in Report Number 1306-02.
  - 4.1.2 The design, installation, and inspections are in accordance with additional requirements of FBC-B Chapter 16 and Chapter 17, as applicable.



## Notes

- 1 For more information, visit [djrcertification.org](http://djrcertification.org) or call us at 608-310-6748.
- 2 <https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1702>
- 3 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/colorado/ibc-2021/chapter/1/scope-and-administration#104.11>
- 4 <https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1706>:-:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests%20as
- 5 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/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1706>:-:text=shall%20conform%20to%20the%20specifications%20and%20methods%20of%20design%20of%20accepted%20engineering%20practice
- 6 <https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1707.1>:-:text=the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies
- 7 <https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1703.4.2>
- 8 [https://up.codes/viewer/wyoming/ibc-2021/chapter/2/definitions#approved\\_agency](https://up.codes/viewer/wyoming/ibc-2021/chapter/2/definitions#approved_agency)
- 9 [https://up.codes/viewer/wyoming/ibc-2021/chapter/2/definitions#approved\\_source](https://up.codes/viewer/wyoming/ibc-2021/chapter/2/definitions#approved_source)
- 10 <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](https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional).
- 11 <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/>
- 12 <https://www.cbiteest.com/accreditation/>
- 13 <https://up.codes/viewer/colorado/ibc-2021/chapter/1/scope-and-administration#104.11>:-:text=to%20enforce%20the%20provisions%20of%20this%20code
- 14 <https://up.codes/viewer/colorado/ibc-2021/chapter/1/scope-and-administration#104.11>:-:text=Where%20the%20alternative%20material%2C%20design%20or%20method%20of%20construction%20is%20not%20approved%2C%20the%20building%20official%20shall%20respond%20in%20writing%2C%20stating%20the%20reasons%20why%20the%20alternative%20was%20not%20approved AND <https://up.codes/viewer/colorado/ibc-2021/chapter/1/scope-and-administration#105.3.1>:-:text=If%20the%20application%20or%20the%20construction%20documents%20do%20not%20conform%20to%20the%20requirements%20of%20pertinent%20laws%2C%20the%20building%20official%20shall%20reject%20such%20application%20in%20writing%2C%20stating%20the%20reasons%20therefore
- 15 <https://up.codes/viewer/colorado/ibc-2021/chapter/17/special-inspections-and-tests#1707.1>:-:text=the%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%20104.11
- 16 <https://iaf.eu/en/about-iaf-mia/#>:-:text=it%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
- 17 True for all ANAB accredited product evaluation agencies and all International Trade Agreements.
- 18 <https://www.justice.gov/crt/deprivation-rights-under-color-law> AND <https://www.justice.gov/atr/mission>
- 19 Unless otherwise noted, all references in this Listing are from the 2021 version of the codes and the standards referenced therein. This material, product, design, service and/or method of construction also complies with the 2000-2021 versions of the referenced codes and the standards referenced therein.
- 20 All references to the FBC-B and FBC-R are the same as the 2021 IBC and 2021 IRC unless otherwise noted in the Florida Supplement at the end of this report.
- 21 <https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#p-3280.2>(Listed%20or%20certified); <https://up.codes/viewer/colorado/ibc-2021/chapter/2/definitions#labeled>
- 22 2018 IRC Table R301.2(2)
- 23 2018 IRC Table R301.2(3)
- 24 2015 IBC Section 1404.2
- 25 2015 IBC Section 803.1.2.1
- 26 <https://up.codes/viewer/colorado/ibc-2021/chapter/17/special-inspections-and-tests#1703.4>
- 27 <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
- 28 <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
- 29 2015 IBC Section 1404.8



[2015 IBC Section 1404.2](#)

[2015 IBC Section 1405.3](#)

[2015 IBC Section 803.1.2](#)

As used in this report, over-sheathing refers to the application of foam sheathing over and directly on the surface of wall sheathing material or solid wall construction, such as masonry or concrete, whereby the substrate is capable of resisting the full design transverse wind load required by the applicable building code or latest edition of the ASCE 7 standard. In addition, cladding is separately installed over foam sheathing in accordance with Section 5.1.5. An over-sheathing application of foam sheathing does not require that the foam sheathing resist wind pressure in accordance with this report.

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.

[2015 IBC Section 1405.4](#)

See Code of Federal Regulations (CFR) [Title 24 Subtitle B Chapter XX Part 3280](#) for definition.

[2015 IBC Section 1404.8](#)

[2015 IBC Section 1404.2](#)

[2015 IBC Section 1405.3](#)

[2015 IBC Section 803.1.2](#)

[2018 IFC Section 104.9](#)

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](#) where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies.

<https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1707.1>

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

<http://www.drjengineering.org/AppendixC> AND <https://www.drjcertification.org/cornell-2016-protection-trade-secrets>

<https://www.law.cornell.edu/uscode/text/18/1832#:~:text=imprisoned%20not%20more%20than%2010%20years>

<https://www.law.cornell.edu/uscode/text/18/1832#:~:text=Any%20organization%20that,has%20thereby%20avoided>

<https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1706.2>

IBC 2021, Section 1706.1 Conformance to Standards

IBC 2021, Section 1707 Alternative Test Procedure, 1707.1 General

See **Section 11** for the distilled building code definition of **Approved**

Los Angeles Municipal Code, SEC. 98.0503. TESTING AGENCIES

<https://up.codes/viewer/california/ca-building-code-2022/chapter/17/special-inspections-and-tests#1707.1>

New York City, The Rules of the City of New York, § 101-07 Approved Agencies

New York City, The Rules of the City of New York, § 101-07 Approved Agencies

<https://up.codes/viewer/new-jersey/ibc-2018/chapter/17/special-inspections-and-tests#1707.1>

<https://www.nj.gov/dca/divisions/codes/codreg/ucc.html>

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

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

IBC 2021, Section 1706 Design Strengths of Materials, 1706.2 New Materials. Adopted law pursuant to IBC model code language 1706.2.

IBC 2021, Section 1707 Alternative Test Procedure, 1707.1 General. Adopted law pursuant to IBC model code language 1707.1.

<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/>

IBC 2021, Section 1706 Design Strengths of Materials, Section 1706.1 Conformance to Standards Adopted law pursuant to IBC model code language 1706.1.

<https://iaf.nu/en/about-iaf>

<https://iaf.nu/en/about-iaf> [mla/#:~:text=it%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](https://iaf.nu/en/about-iaf)

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

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