Technical Evaluation Report™ - Canada

A Duly Authenticated Report from an Approved Agency

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OX® IsoRED Ci®, IsoRED Ci® XS, IsoRED Max®, IsoRED Max® WF, IsoRED Max® GF, IsoRED Max® LD, and IsoRED Max® HD Foam Plastic Insulating Sheathing - Canada

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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[1]

1.1 IsoRED Polyiso Foam Insulated Sheathing Products:

1.1.1 IsoRED Ci Polyiso Foam Insulated Sheathing

1.1.2 IsoRED Ci XS Polyiso Foam Insulated Sheathing

1.1.3 IsoRED Max Polyiso Foam Insulated Sheathing

1.1.4 IsoRED Max WF Polyiso Foam Insulated Sheathing

1.1.5 IsoRED Max GF Polyiso Foam Insulated Sheathing

1.1.6 IsoRED Max LD Polyiso Foam Insulated Sheathing

1.1.7 IsoRED Max HD Polyiso Foam Insulated Sheathing

2 Product Description and Materials

2.1 *IsoRED Ci and IsoRED Ci XS*

2.1.1 IsoRED Ci and IsoRED Ci XS are Type 1, Class 1 Dual Faced Rigid Cellular Polyisocyanurate Insulation Board products as defined in ASTM C1289.

2.1.2 IsoRED Ci and IsoRED Ci XS consist of a proprietary polyisocyanurate rigid board with facers on both sides. The facers are designed with a base foil layer, where layers of other material(s) are combined.

2.2 *IsoRED Max, IsoRED Max WF, IsoRED Max FG, IsoRED Max LD, and IsoRED Max HD*

2.2.1 These products are Type 1, 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** and **Figure 2**.

Figure 1. IsoRED Ci (Left) and IsoRED Max (Right)

Figure 2. IsoRED Ci XS

2.4 *Material Availability*

2.4.1 *Thickness:*

2.4.1.1 *IsoRED Ci and IsoRED Ci XS:*

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

2.4.1.2 *IsoRED Max (Including WF, GF, LD and HD):*

2.4.1.2.1 Up to 102 mm (4.0")

2.4.2 *Standard Product Width:*

2.4.2.1 1,219 mm (48")

2.4.3 *Standard Product Length:*

2.4.3.1 2,438 mm (96")

2.4.3.2 2,743 mm (108")

2.4.3.3 3,048 mm (120")

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

3 Applicable Codes and Standards[2]

3.1 *Standards and Referenced Documents*

3.1.1 *AAMA 711: Voluntary Specification for Self Adhering Flashing Used for Installation of Exterior Wall Fenestration Products*

3.1.2 *ANSI ABTG/FS 100: Standard Requirements for Wind Pressure Resistance of Foam Plastic Insulating Sheathing Used in Exterior Wall Covering Assemblies*

3.1.3 *ASTM C203: Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation*

3.1.4 *ASTM C209: Standard Test Methods for Cellulosic Fiber Insulating Board*

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

3.1.6 *ASTM C1289: Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board*

3.1.7 *ASTM D2126: Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging*

3.1.8 *ASTM E96: Standard Test Methods for Water Vapor Transmission of Materials*

3.1.9 *ASTM E119: Standard Test Methods for Fire Tests of Building Construction and Materials*

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

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

3.1.12 *ASTM E1354: Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter*

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

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

3.1.15 *CSA O86: Engineering Design in Wood*

3.1.16 *CWC: Engineering Guide for Wood Frame Construction*

3.2 *Codes*

3.2.1 *NBC—10, 15, 20: National Building Code of Canada*

3.2.2 *NECB—17, 20: National Energy Code of Canada for Buildings*

4 Tabulated Properties Generated from Nationally Recognized Standards

4.1 IsoRED Polyiso Foam Insulated Sheathing Products are used in buildings constructed in accordance with NBC Division B Section 9.23 for wood frame construction.

4.2 IsoRED Ci and IsoRED Ci XS are foamed plastic insulation used as wall sheathing in accordance with NBC Division B Articles 3.1.5.15 and 9.10.17.10.

4.3 IsoRED Max, IsoRED Max WF, IsoRED Max GF, IsoRED Max LD, and IsoRED Max HD are foamed plastic insulation used as wall sheathing in accordance with NBC Division B Articles 3.1.5.15 and 9.10.17.10.

4.4 IsoRED Polyiso Foam Insulated Sheathing Products must be used with full protection from the interior of the building by an approved thermal barrier in accordance with NBC Division B Note A-3.1.4.2.(1)(c), and Sentence 3.1.5.15.(2) and Clause 9.10.17.10(1)(c).

4.5 *Transverse Loads*

4.5.1 As shown in **Table 1**, IsoRED Ci and IsoRED Ci XS may be used to resist wind loads transverse to the face of the wall.

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

4.5.3 As stated in **Section 5.2.7**, performance of IsoRED Max, IsoRED Max WF, IsoRED Max GF, IsoRED Max LD and IsoRED Max HD for wind-pressure resistance is outside the scope of this report.

Table 1. Summary of Specified Pressures for IsoRED Ci and IsoRED Ci XS Resisting Transverse Wind Loads

IsoRED Ci and IsoRED Ci XS Nominal Thickness mm (in)	Hourly 1-in-50 Wind Pressure[1] kPa (psf)
25.4 (1)	2.0 (42)
38.1 (1 1/2)	3.5 (73)

SI: 25.4 mm = 1 in, 1 MPa = 145 psi

1. Hourly Wind Pressure (1-in-50) for selected locations are listed in NBC Division B, Appendix C, Table C-2.

4.6 *Thermal Resistance*

4.6.1 IsoRED Polyiso Foam Insulated Sheathing Products are used as foamed plastic insulation in wall, roof, and ceiling assemblies.

4.6.2 These products meet the continuous insulating sheathing requirements complying with the provisions of NBC Division B Part 5 and Articles 9.36.2.5 and 9.36.2.6.

4.6.3 These innovative products have the thermal properties shown in **Table 2**.

Table 2. IsoRED Polyiso Foam Insulated Sheathing Products Thermal Resistance Properties

Product	Thickness mm (in)	RSI (R) Values[1] $m^2 \cdot °K/W$ ($h \cdot ft^2 \cdot °F/Btu$)
IsoRED Ci and IsoRED Ci XS	50.8 (2.0)	2.3 (13.0)
	39.4 (1.55)	1.8 (10.0)
	25.4 (1.0)	1.1 (6.5)
	19.1 (0.75)	0.9 (5.0)
	12.7 (0.5)	0.6 (3.3)
IsoRED Max, IsoRED Max WF, IsoRED Max GF, IsoRED Max LD, and IsoRED Max HD	101.6 (4.0)	4.4 (25.2)
	88.9 (3.5)	3.9 (22.1)
	76.2 (3.0)	3.3 (19.0)
	63.5 (2.5)	2.8 (16.0)
	50.8 (2.0)	2.3 (13.0)
	39.4 (1.55)	1.8 (10.0)
	25.4 (1.0)	1.1 (6.5)
	19.1 (0.75)	0.9 (5.0)
	12.7 (0.5)	0.6 (3.3)

SI: 25.4 mm = 1 in

1. Thermal values are determined using the ASTM C518 test method at 23.9° C (75° F) mean temperature on material conditioned according to ASTM C1289 Section 11.1 ($°F \cdot ft^2 \cdot h/Btu$).

4.7 *Air Barrier*

4.7.1 Wall and ceiling assemblies constructed with IsoRED Polyiso Foam Insulated Sheathing Products are used to meet air barrier requirements in accordance with NECC Division B Part 3.

4.7.2 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).

4.7.3 These products are defined as air-barrier materials having an air permeance of less than 0.05 $L/(s \cdot m^2)$ which meets Performance Class 1 in accordance with NBC Division B Article 5.4.1.2.

4.8 *Water-Resistive Barrier*

4.8.1 IsoRED Polyiso Foam Insulated Sheathing Products are approved as the second plane of protection in accordance with NBC Division B Article 9.27.3.4 when installed with 73 mm ($2^{7}/_{8}$") OX Commercial SeamTape®, 73 mm ($2^{7}/_{8}$") IsoRED WF SeamTape or 73 mm ($2^{7}/_{8}$") IsoRED 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.

4.8.2 IsoRED Ci and IsoRED Ci XS shall be installed with board joints placed directly over exterior framing spaced a maximum of 610 mm (24") o.c. The fasteners used to attach the board shall be installed in accordance with **Section 6**.

4.8.3 A separate sheathing membrane may also be provided. If a separate sheathing membrane method is used, taping of the sheathing joints is not required.

4.8.4 Flashing of penetrations shall comply with the applicable code and must be installed at all sheathing penetrations. Use qualified flashing tape such as Arctic-Flash® Synthetic Flashing, HomeGuard® Flexible Butyl Flashing, or HomeGuard® RA-plus® Flashing. See **Figure 3**, **Figure 4**, and **Figure 5** for typical penetration flashing details.

4.8.5 Flashing Details – Typical Flanged and Unflanged Penetration and Flanged Window

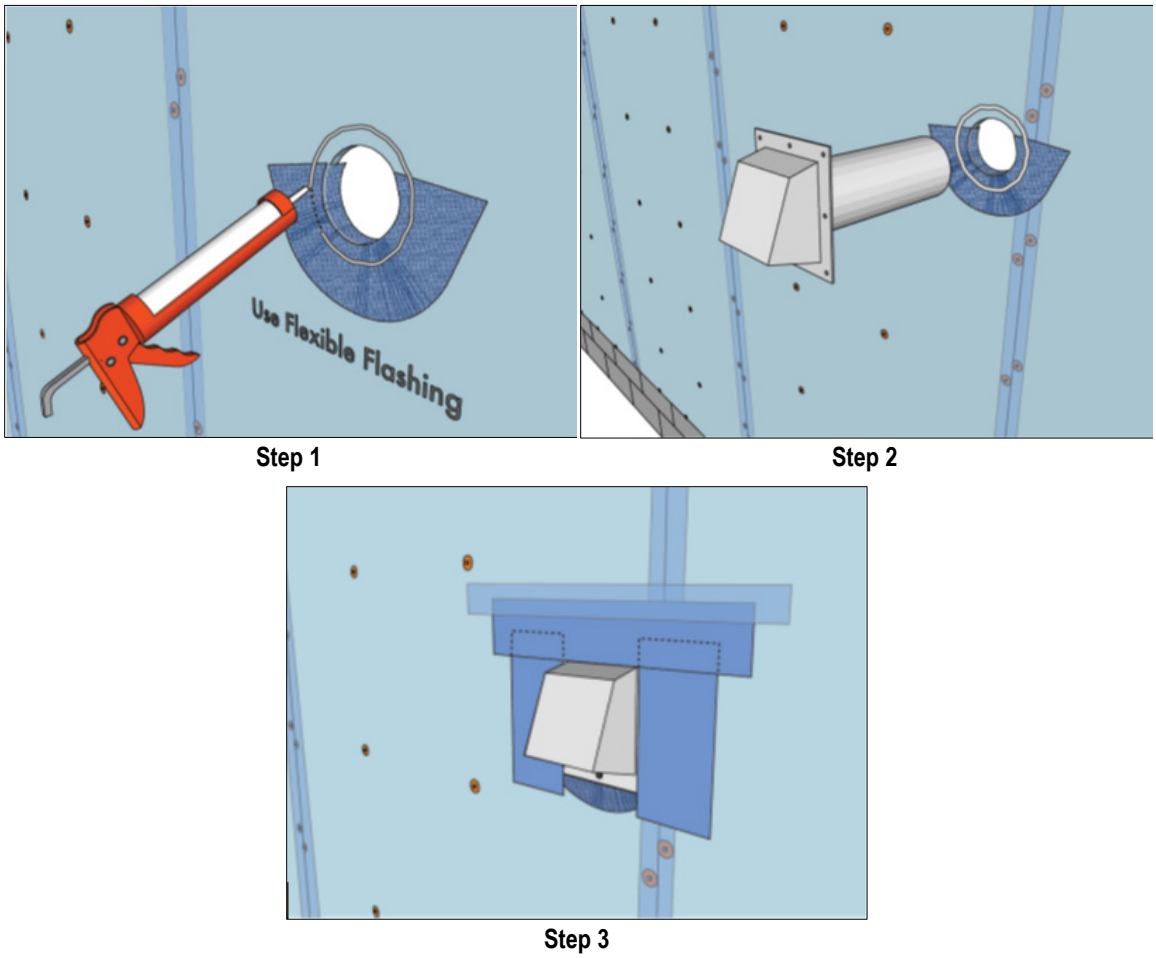


Figure 3. Typical Penetration Flashing Detail – Flanged

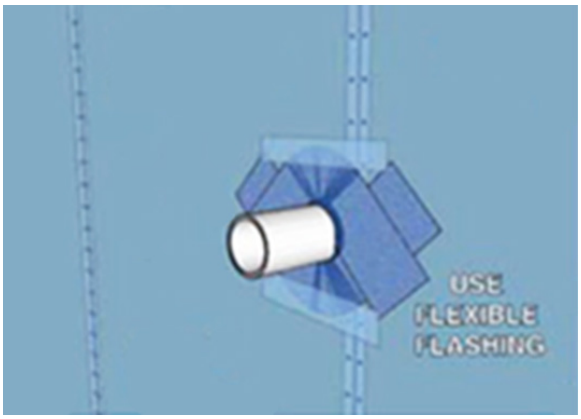
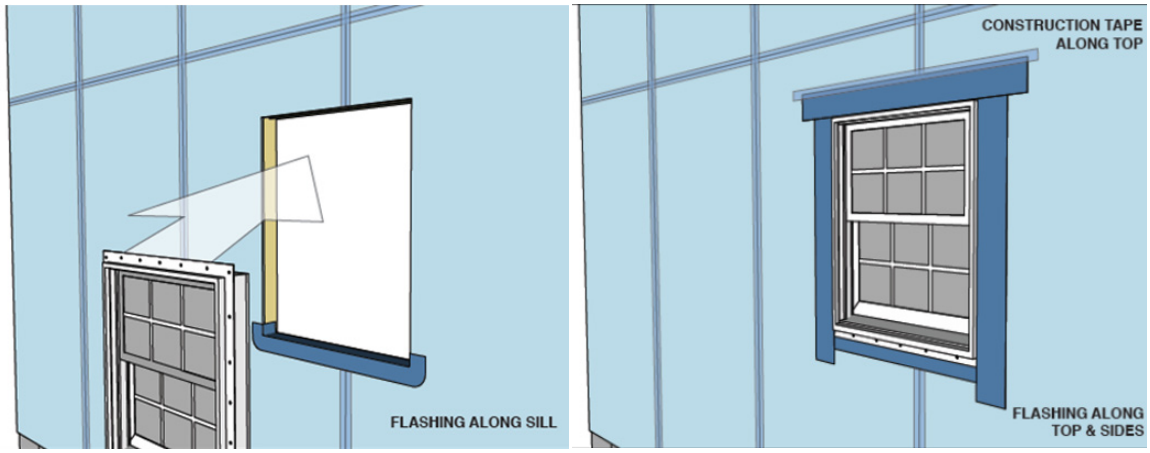


Figure 4. Typical Penetration Flashing Detail – Unflanged



Step 1 **Step 2**

Figure 5. Typical Window Flashing Detail

4.9 *Fire Safety Performance*

4.9.1 *Surface Burning Characteristics:*

4.9.1.1 IsoRED Polyiso Foam Insulated Sheathing Products and IsoRED Max STRONG-R have the flame-spread ratings as shown in **Table 3**, when tested in accordance with CAN/ULC-S102 per NBC Division B Subsection 3.1.12 and Article 9.10.3.2.

Table 3. Surface Burning Characteristics of IsoRED Polyiso Foam Insulated Sheathing Products

Product	Flame Spread	Smoke Developed
IsoRED Ci and IsoRED Ci XS[1]	60	35
IsoRED Max, IsoRED Max WF, IsoRED Max GF, IsoRED Max LD, IsoRED Max HD and IsoRED Max STRONG-R[2]	20	125

1. Tested in accordance with CAN/ULC-S102, with maximum foam thickness of 2".
2. Tested in accordance with CAN/ULC-S102, with maximum foam thickness of 4".

4.9.2 *Thermal Barrier:*

4.9.2.1 IsoRED Polyiso Foam Insulated Sheathing Products shall be fully protected from the interior of the building by an approved thermal barrier as required by NBC Division B Article 9.10.17.10.

4.10 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.

5 Regulatory Evaluation and Accepted Engineering Practice

5.1 IsoRED Polyiso Foam Insulated Sheathing Products comply with the following adopted codes and/or accepted engineering practice for the following reasons:

5.1.1 IsoRED Ci and IsoRED Ci XS have been evaluated to determine:

5.1.1.1 Wind-pressure resistance performance for use as part of an exterior wall covering assembly in accordance with NBC Division B Subsection 4.1.7 and ANSI/ABTG FS 100.

5.1.1.2 Performance in accordance with the foamed plastic requirements of NBC Division B Article 3.1.5.15

5.1.1.3 Performance for use as continuous insulating sheathing in accordance with NBC Division B Part 5 and Article 9.36.2.5 and Article 9.36.2.6

5.1.1.4 Performance for use as a Water-Resistive Barrier (WRB) in accordance with NBC Division B Note A-5.6.2.1

5.1.1.5 Performance for use as a vapor retarder in accordance with NBC Division B Subsection 9.25.4

5.1.1.6 Performance for use as an air barrier in accordance with NBC Division B Section 5.4 and Subsection 9.25.3

5.1.1.7 Performance for surface burning characteristics in accordance with NBC Division B Subsection 3.1.12 and Article 9.10.3.2

5.1.1.8 Performance of IsoRED Ci and IsoRED Ci XS for vertical and lateral fire propagation is outside the scope of this report.

5.2 IsoRED Max, IsoRED Max WF, IsoRED Max GF, IsoRED Max LD and IsoRED Max HD have been evaluated to determine:

5.2.1 Performance in accordance with the foamed plastic requirements of NBC Division B Article 3.1.5.15

5.2.2 Performance for use as continuous insulating sheathing in accordance with NBC Division B Part 5 and Article 9.36.2.5 and Article 9.36.2.6

5.2.3 Performance for use as a vapor retarder in accordance with NBC Division B Subsection 9.25.4

5.2.4 Performance for use as an air barrier in accordance with NBC Division B Section 5.4 and Subsection 9.25.3

5.2.5 Performance for surface burning characteristics in accordance with NBC Division B Subsection 3.1.12 and Article 9.10.3.2

5.2.6 Performance for vertical and lateral fire propagation is outside the scope of this report.

5.2.7 Performance of for wind-pressure resistance and for use as a WRB is outside the scope of this report.

5.3 This report does not address wind-pressure resistance requirements for IsoRED Ci and IsoRED Ci XS used as part of an Exterior Insulation Finish System (EIFS). Refer to the EIFS manufacturer installation instructions for building-code compliance.

5.4 These products shall comply with the material standards listed in **Section 3** and shall be applied to exterior wall construction in accordance with the general requirements of **Section 6**. IsoRED Ci and IsoRED Ci XS shall also comply with the prescriptive wind-pressure resistance requirements of **Section 5.5**.

5.5 IsoRED Ci and IsoRED Ci XS that are required to resist wind pressure in exterior wall covering assemblies, and that are used in accordance with this report, shall also comply with the product marking requirements of **Section 10**, and the conditions of use listed in **Section 9**.

5.6 Any building code, regulation and/or accepted engineering evaluations (i.e., research reports, duly authenticated reports, etc.) that are conducted for this report were performed by DrJ, which is an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDP or approved sources. DrJ is qualified[3] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,[4] respectively.

5.7 Testing and related engineering evaluations are defined as intellectual property and/or trade secrets.[5]

5.8 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise that is also its areas of professional engineering competence.[6]

5.9 Any code specific issues not addressed in this section are outside the scope of this report.

6 Installation

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

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

6.3 *Installation Procedure*

6.3.1 These products may be cut to size with a utility knife, handsaw, or power saw.

6.3.2 Attachment information is provided in **Table 4**.

Table 4. Attachment Information

Application[1]	Stud Spacing[2] mm (in)	Attachment Method	Fastener Spacing
Wood Framing	406 (16") or 610 (24")	Capped nails, capped staples or roofing nails (approximate 25 mm (1") framing embedment)	305 mm (12") Perimeter 305 mm (12") Field
Metal Framing	406 (16") or 610 (24")	Corrosion-resistant self-tapping screws with 25.4 mm (1") diameter cap or washer (approximate 25 mm (1") framing embedment)	305 mm (12") perimeter 305 mm (12") field
Interior Masonry or Concrete	N/A	Suitable construction adhesive or masonry fasteners with 25.4 mm (1") diameter cap or washer, or combination of adhesive & mechanical fasteners (approximate 25 mm (1") embedment into substrate)	Adhesive beads spaced 406 mm (16") horizontally and full-perimeter mechanical fasteners 305 mm (12") perimeter and 305 mm (12") field, spaced 406 mm (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: 25.4 mm = 1 in

1. Butt panels tightly and seal all joints with sealant and/or approved tape where intrusion of bulk moisture or moisture vapor is undesirable.
2. Panels used to resist transverse wind pressure or are used as a WRB, shall be installed on studs spaced a maximum of 410 mm (16") o.c and all panel edges shall be located on framing or blocking.

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

6.3.4 Windows, door openings and other penetrations shall be flashed in accordance with NBC Division B Article 9.7.6.2.

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

7 Substantiating Data

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

7.1.1 Thermal properties testing in accordance with ASTM C518

7.1.2 Material properties testing in accordance with ASTM C1289

7.1.3 Fire-resistance testing in accordance with ASTM E119

7.1.4 Transverse wind pressure testing in accordance with ASTM E330

7.1.5 Water penetration testing in accordance with ASTM E331

7.1.6 Air permeance testing in accordance with ASTM E2178

7.1.7 Surface burning characteristics testing in accordance with CAN/ULC S102

7.2 IsoRED Ci and IsoRED Ci XS Quality Control Manuals, in accordance with a third-party quality control program, with inspections conducted by an approved agency.

7.3 Information contained herein is the result of testing and/or data analysis by sources that conform to the evaluation requirements of NBC Volume 1 Relationship of the NBC to Standards Development and Conformity Assessment and/or professional engineering regulations. DrJ relies upon accurate data to perform its ISO/IEC 17065 evaluations.

7.4 Where appropriate, DrJ's analysis is based on provisions that have been codified into law through provincial, territorial, or local adoption of codes and standards. The developers of these codes and standards are responsible for the reliability of published content. DrJ analysis may use code-adopted provisions as a control sample. A control sample versus a test sample establishes a product as being equivalent to that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

7.5 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, listings, certified reports, duly authenticated reports from approved agencies, and research reports prepared by approved agencies and/or approved sources provided by the suppliers of products, materials, designs, assemblies and/or methods of construction. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this report, may be dependent upon published design properties by others.

7.6 *Testing and Engineering Analysis*

7.6.1 The strength, rigidity and/or general performance of component parts and/or the integrated structure are determined by suitable tests that simulate the actual conditions of application that occur and/or by accepted engineering practice and experience.

7.7 Where additional condition of use and/or code compliance information is required, please search for IsoRED Polyiso Foam Insulated Sheathing Products on the DrJ Certification website.

8 Findings

8.1 As outlined in **Section 4**, IsoRED Polyiso Foam Insulated Sheathing Products have performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.

8.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, IsoRED Polyiso Foam Insulated Sheathing Products shall be approved for the following applications:

8.2.1 Wind-pressure resistance performance for use as part of an exterior wall covering assembly in accordance with in accordance with NBC Division B Subsection 9.23.13 and ANSI/ABTG FS100

8.2.2 Performance in accordance with the foamed plastic requirements NBC Division B Article 3.1.5.15

8.2.3 Performance for use as continuous insulating sheathing in accordance with NBC Division B Part 5 and Article 9.36.2.5

8.2.4 Performance for use as a WRB in accordance with NBC Division B Note A-5.6.2.1

8.2.5 Performance for use as a vapor retarder in accordance with NBC Division B Subsection 9.25.4

8.2.6 Performance for use as an air barrier in accordance with NBC Division B Section 5.4 and Subsection 9.25.3

8.2.7 Surface burning characteristics in accordance with NBC Division B Subsection 3.1.12 and Article 9.10.3.2

8.3 When installed in accordance with the manufacturer installation instructions and this report, IsoRED Max, IsoRED Max WF, IsoRED Max GF, IsoRED Max LD and IsoRED Max HD comply with, or are a suitable alternative to, the applicable sections of the codes listed in **Section 3** for the following applications:

8.3.1 Performance in accordance with the foamed plastic requirements of NBC Division B Article 3.1.5.15

8.3.2 Performance for use as continuous insulating sheathing in accordance with NBC Division B Part 5 and Article 9.36.2.5

8.3.3 Performance for use as a vapor retarder in accordance with NBC Division B Subsection 9.25.4

8.3.4 Performance for use as an air barrier in accordance with NBC Division B Section 5.4 and Subsection 9.25.3

8.3.5 Surface burning characteristics in accordance with NBC Division B Subsection 3.1.12 and Article 9.10.3.2

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

8.5 These innovative products have been evaluated in the context of the codes listed in **Section 3** and are compliant with all known provincial, territorial, and local building codes. Where there are known variations in provincial, territorial, or local codes applicable to this report, they are listed here:

8.5.1 No known variations

8.6 NBC Volume 1 Relationship of the NBC to Standards Development and Conformity Assessment:

> **Certification**
>
> Certification is the confirmation by an independent organization that a product, service, or system meets a requirement…Certification bodies publish lists of certified products and companies…Several organizations, including the Canadian Construction Materials Centre (CCMC), offer such evaluation services.
>
> **Evaluation**
>
> An evaluation is a written opinion by an independent professional organization that a product will perform its intended function. An evaluation is very often done to determine the ability of an innovative product, for which no standards exist, to satisfy the intent of the Code requirement...

8.7 ISO/IEC 17065 accredited third-party certification bodies,[7] including but not limited to, Standards Council of Canada (SCC)[8] and ANSI National Accreditation Board (ANAB),[9] confirm that product certification bodies have the expertise to provide technical evaluation services within their scope of accreditation. All SCC and ANAB product certification bodies meet NBC requirements to offer evaluation services for alternative solutions.[10]

8.7.1 DrJ is an ISO/IEC 17065 ANAB-Accredited Product Certification Body – Accreditation #1131[11] and employs professional engineers.[12]

8.8 Through ANAB accreditation and the IAF Multilateral Agreements, this report can be used to obtain product approval in any jurisdiction or country that has IAF MLA Members & Signatories to meet the Purpose of the MLA – "*certified once, accepted everywhere*." IAF specifically says, "*Once an accreditation body is a signatory of the IAF MLA, it is required to recognise certificates and validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA, with the appropriate scope*."[13]

8.9 Product certification organizations, accredited by the SCC and ANAB, are defined as equivalent evaluation services:

8.9.1 Canada-United States-Mexico Agreement (CUSMA), Article 11.6 Conformity Assessment confirms mutual recognition by stating, "*...each Party shall accord to conformity assessment bodies located in the territory of another Party treatment no less favorable than that it accords to conformity assessment bodies located in its own territory or in the territory of the other Party*."

8.9.2 The SCC National Conformity Assessment Principles states, "*SCC is a member of a number of international organizations developing voluntary conformity assessment agreements that help ensure the international acceptance of Canadian conformity assessment results. Signatories to these agreements (like SCC) recognize each other's accreditations as being equivalent to their own*."[14]

8.10 Building official approval of a licensed professional engineer is performed by verifying the professional engineer and/or their business entity are listed by the engineering regulators of the relevant jurisdiction.

9 Conditions of Use

9.1 Material properties shall not fall outside the boundaries defined in **Section 4**.

9.2 As defined in **Section 4**, where material and/or engineering mechanics properties are created for load resisting design purposes, the resistance to the applied load shall not exceed the ability of the defined properties to resist those loads using the principles of accepted engineering practice.

9.3 As listed herein, IsoRED Polyiso Foam Insulated Sheathing Products shall be:

9.3.1 Fully protected from the interior of the building by an approved 15-minute thermal barrier or ignition barrier where required by the applicable code

9.4 These products shall not be used as a structural nailing base for claddings.

9.5 In areas where termites are known to occur, and foundations are insulated or otherwise finished in a manner that could conceal a termite infestation, in accordance with NBC Division B Article 9.3.2.9, a metal or plastic barrier shall be installed through the insulation to control the passage of termites behind or through the insulation.

9.6 Walls sheathed with these products must not be used to resist horizontal loads from concrete or masonry walls.

9.7 When using these products, the stud walls shall be braced by other materials in accordance with the applicable code.

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

9.8.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an approved source, shall be approved when signed and sealed.

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

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

9.8.4 At a minimum, these innovative products shall be installed per **Section 6** of this report.

9.8.5 This report shall be reviewed for code compliance by the AHJ in concert with the duties and powers granted to the building official by the provincial regulations governing such duties and powers.

9.8.6 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, inspections, and any other regulatory requirements that may apply.

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

9.10 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.

10 Identification

10.1 IsoRED Polyiso Foam Insulated Sheathing Products, as listed in **Section 1.1**, are identified by a label on the board or packaging material bearing the manufacturer name, product name, this report number, and other information to confirm code compliance.

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

11 Review Schedule

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

11.2 For information on the status of this report, please contact DrJ Certification.

Notes

[1] For more information, visit drjcertification.org or call us at 608-310-6748.

[2] Unless otherwise noted, all references in this report are from the 2020 version of the NBC. This alternative solution is also approved for use with the 2010 and 2015 NBC and the standards referenced therein.

[3] 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.

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

[5] 18 U.S. Code § 1831 - Economic espionage - Whoever, intending or knowing that the offense will benefit any foreign government, foreign instrumentality, or foreign agent, knowingly steals, or without authorization appropriates, takes, carries away, or conceals, or by fraud, artifice, or deception obtains a trade secret shall be fined not more than $5,000,000 or imprisoned not more than 15 years, or both. Any organization that commits any offense described shall be fined not more than the greater of $10,000,000 or 3 times the value of the stolen trade secret to the organization, including expenses for research and design and other costs of reproducing the trade secret that the organization has thereby avoided. https://www.law.cornell.edu/uscode/text/18/part-I/chapter-90.

[6] ANAB is part of the USMCA and IAF MLA, where the purpose of these agreements are to ensure mutual recognition of accredited certification and validation/verification statements between agreement signatories, and subsequent acceptance of ANAB accredited certification and validation/verification statements by professional engineers based upon having one universal approval process for the timely approval of innovative materials, products, designs, services, assemblies and/or methods of construction.

[7] https://anabpd.ansi.org/Accreditation/product-certification/DirectoryListingAccredited?menuID=1&prgID=1

[8] https://iaf.nu/en/member-details/?member_id=91

[9] https://iaf.nu/en/member-details/?member_id=14

[10] NBC Division A Clause A-1.2.1.1.(1)(b) provides information on code compliance via alternative solutions and defines alternative solutions as *"...achiev[ing] at least the minimum level of performance required by Division B."* NBC Division C Section 2.3 includes additional guidance for documentation of alternative solutions.

[11] https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?&prgID=1&OrgId=2125&statusID=4

[12] Through ANAB accreditation and the IAF MLA, DrJ certification can be used to obtain material, product, design, or method of construction approval in any jurisdiction or country that has IAF MLA Members & Signatories to meet the Purpose of the MLA – "*certified once, accepted everywhere*".

[13] https://iaf.nu/en/about-iaf-mla/#:~:text=required%20to%20recognise

[14] The National Conformity Assessment Principles states, "*Product regulations and standards may vary from country to country. If these are set arbitrarily, they could be deemed as protectionist. The World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT Agreement) is intended to ensure that technical regulations, standards and conformity assessment procedures of member countries do not create unnecessary obstacles to trade. Under the TBT Agreement, members of the WTO agree to use international standards, including conformity assessment standards and guides, as a basis for their technical requirements.*"