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DIVISION: 07 – THERMAL AND MOISTURE PROTECTION
Section: 07 24 00 – Exterior Insulation and Finish Systems

REPORT HOLDER:
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REPORT SUBJECT:
FacadesXi xterior Insulation Masonry Veneer System

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2021 and 2018 *International Building Code*® (IBC)
- 2021 and 2018 *International Residential Code*® (IRC)

NOTE: This report references the most recent Code editions cited. Section numbers in earlier editions may differ.

1.2 The FacadesXi xterior Insulation Masonry Veneer System has been evaluated for the following properties (see Table 1):

- Physical properties
- Weather resistance
- Wind resistance
- Surface burning characteristics
- Ignition resistance
- Fire propagation
- Fire resistance

1.3 The FacadesXi xterior Insulation Masonry Veneer System has been evaluated for the following uses (see Table 1):

- Use as an exterior cladding complying with IBC Chapter 14 and IRC Chapter 7
- Use in fire-resistance-rated walls
- Use in all Types of construction (Types I, II, III, IV and V)
- Use as interior wall and finish material in accordance with IBC Section 803 and IRC Section R302.9

2.0 STATEMENT OF COMPLIANCE

The FacadesXi xterior Insulation Masonry Veneer System complies with the Codes listed in Section 1.1, for the properties stated in Section 1.2, and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in Section 6.0.

3.0 DESCRIPTION

3.1 FacadesXi xterior Insulation Masonry Veneer System:

The system is a nonload-bearing exterior wall cladding system that consists of a water-resistive coating, insulation board adhesively attached to the substrate, an integrally reinforced base coat and adhered thin-veneer brick or stone.

3.2 Substrates: Substrates must be one of the following:

- Gypsum sheathing complying with ASTM C1396 or ASTM C1177
- Exposure 1 wood structural panels complying with DOC PS-1 or PS-2
- Exterior Cement board, complying with ASTM C1325
- Concrete or concrete-masonry complying with the Code
- Brick masonry complying with the Code

3.3 Xi-WaterShield: The liquid-applied water-resistive coating is used where a water-resistive barrier is required. The coating is supplied in 5-gallon pails and has a shelf life of 12 months when stored at temperatures between 32° F and 90°F. See CCRR-0450.

3.4 Insulation Board: EPS insulation boards must be minimum Type I complying with ASTM C578 and must also comply with ASTM E2430. XPS insulation must be Styrofoam PanelCore 20 XPS (ICC-ES ESR-2142). The insulation boards must be certified in accordance with ASTM E84 or UL 723 having a flame spread index of 75 or less and a smoke-developed index of 450 or less.

3.5 Xi-Basecoat: The basecoat is supplied in 5-gallon pails and has a shelf life of 12 months when stored at temperatures between 32°F and 90°F. See CCRR-0450.



3.6 Mesh: Mesh complies with ASTM E2098. Minimum mesh weight is as described for the systems described in Section 5.

3.7 Masonry Veneer Mortar: The mortar is supplied in 50 lb. bags and has a shelf life of 12 months when stored at temperatures between 32°F and 90°F. The mortar is mixed in the field with 1.5 to 1.75 gal. of water per bag.

3.8 Adhered Veneers: Thin brick veneer must comply with ASTM C1088. Manufactured stone veneer must comply with ICC-ES AC 51. Natural thin stones complying with IBC Section 1404.10. Maximum thickness, dimensions and weight of masonry veneer are 2-5/8-in.-thick, for manufactured stone and 1-3/4-in.-thick for thin brick, 36 in. in any face dimension and 5ft² in total face area, and weight of 15 lb/ft².

3.9 Sealants: Sealants must comply with ASTM C920, Type S or M, minimum Grade NS, minimum Class 25 or Use O.

4.0 PERFORMANCE CHARACTERISTICS

4.1 Physical Properties: When installed in accordance with this report, the system complies with IBC Section 1407 and with ASTM E2568.

4.2 Liquid-applied Water-resistive Coating: When installed in accordance with this report, Xi-WaterShield complies with ASTM E2570.

4.3 Wind Resistance: Allowable wind loads for specific constructions are described in Table 2.

4.4 Drainage Efficiency: When installed in accordance with Section 5.2, the system has a drainage efficiency of 90% or greater, based on testing in accordance with ASTM E2273.

4.5 Surface Burning Characteristics: The system components have a flame spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84.

4.6 Use in Types I, II, III and IV Construction: When installed in accordance with Section 5.3, the assembly complies with NFPA 285-19 and with NFPA 268-19.

5.0 INSTALLATION

5.1 General: The FacadesXi xterior Insulation Masonry Veneer System must be installed in accordance with the manufacturer's published installation instructions, the

applicable Code, and this Research Report. A copy of the manufacturer's instructions must be available on the jobsite during installation.

5.2 Application:

5.2.1 FacadesXi xterior Insulated Masonry Veneer System - Adhered insulation with Drainage and adhered veneers:

- Sheathing must be attached to framing per Table 2; alternate designs are permitted when demonstrated to be equivalent by the structural engineer, and as acceptable to the building official.
- Flashing shall be provided in accordance with the requirements of IBC Section 1404.4 and IRC Section R703.2.
- Xi-WaterShield is applied over sheathing joints, 2 inches on either side.
- WaterShield Joint Tape is embedded and allowed to dry overnight
- Xi-WaterShield is applied to the entire surface to a 10- to 12-wet-mil thickness and allowed to dry overnight.
- Xi-Base Coat is mixed per the product datasheet and applied to the insulation board using a 1/2-in. x 1/2-in. x 1-1/2-in. notched trowel, with ridges in the vertical direction, and is pressed onto the sheathing. Board joints must be offset from the sheathing joints. The coating must be allowed to dry overnight. Drainage is provided by the spaced adhesive.
- Xi-Base Coat is mixed per the product datasheet and applied to the surface of the insulation board at a thickness of 1/16-in., and while wet, min. 11 oz./yd² Xi-Mesh is embedded into the base coat. The coating must be allowed to dry overnight.
- Masonry Veneer Mortar is mixed per the product datasheet.
- The surface is dampened with clean water.
- A thin layer of Masonry Veneer Mortar is applied to the substrate, approximately 1/8-in. thick. Only install material that will be covered within 15 minutes.
- A layer of Masonry Veneer Mortar, approximately 1/8-in. thick, is applied to the back side of the stone, tile, or brick.
- The veneer is pressed into the wet mortar on the wall and slid into the desired location – sliding back and forth to set the veneer.

5.3 Use in Types I-IV Construction: See Table 3 for assemblies recognized for use in Types I, II, III, and IV construction.





5.4 Use in Fire-resistance-rated Construction: In Type V construction, the system may be applied over combustible exterior fire-resistance-rated walls described in IBC Table 721.1(2) without reducing the fire-resistance rating of the assembly.

5.5 Special Inspections: Special inspection in accordance with IBC Section 1705.1.1 is required for application of the water-resistive barrier (see Section 3.3.3) except when installation is done by an installer or contractor trained by FacadesXi, and a certificate of installation is presented to the Code Official at the completion of the project.

6.0 CONDITIONS OF USE

6.1 Installation must comply with this Research Report, the manufacturer’s published installation instructions, and the applicable Code. In the event of a conflict, this report governs.

6.2 Installation must be by contractors acceptable to FacadesXi, LLC.

6.3 The EPS insulation boards must be separated from the building interior by a thermal barrier complying with the applicable code.

6.4 Special inspection shall be provided in accordance with Section 5.5 of this report.

6.5 In areas where the probability of termite infestation is “very heavy” in accordance with IBC Figure 2603.8 and IRC Figure R318.4, the clearance between foam plastics installed above grade and exposed earth shall not be less than 6 inches.

6.6 Decorative trim shall not be face-nailed through the wall covering.

6.7 The FacadesXi components are manufactured under a quality control program with inspections by Intertek Testing Services NA, Inc.

7.0 SUPPORTING EVIDENCE

7.1 Reports of tests in accordance with ASTM E2568, ASTM C482, ASTM E330, NFPA 268, NFPA 285.

7.2 Intertek Listing Report "FacadesXi xterior Insulation Masonry Veneer System", on the [Intertek Directory of Building Products](#).

8.0 IDENTIFICATION

The FacadesXi xterior Insulation Masonry Veneer System components are identified with the manufacturer’s name, the product name, the lot or batch number, storage instructions, pot life, expiration date, the Intertek Mark as shown below, the Intertek Control Number and the Code Compliance Research Report number (CCRR-0496).



9.0 OTHER CODES

This section is not applicable.

10.0 CODE COMPLIANCE RESEARCH REPORT USE

10.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

10.3 Reference to the <https://bpdirectory.intertek.com> is recommended to ascertain the current version and status of this report.

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TABLE 1 - PROPERTIES EVALUATED

PROPERTY	2021 IBC SECTION ¹	2021 IRC SECTION ¹
Physical properties	1407.2 1403.10	R703.9.1.1
Weather resistance	1403.2.4	R703.9.1.1, R703.1.1, R703.2
Wind resistance	1407.3	R703.1.2
Surface burning characteristics	803	302.9
Fire-resistance-rated construction	703.2	R302
Use in Types I, II, III, and IV construction	2603.5	NA

¹Section numbers in earlier editions of the Code may differ.

TABLE 2 – WIND RESISTANCE

Framing		Substrate	System		
Type	Max. Spacing		Coating	Allowable Wind Load (psf)	
				Neg.	Pos.
2 x 4 Wood, min. s.g. 0.42	16 in. oc	Min. nom. 1/2-in.-thick sheathing described in Section 3.3 fastened with #6 x 1-1/4-in. drywall screws at 8-in. oc	FacadesXi xterior Insulation Masonry Veneer System adhesively applied over min. 1-in.-thick EPS or 1.5 pcf XPS insulation board	29	69
3-5/8-in., No. 18 gage steel	16 in. oc	Min. nom. 1/2-in.-thick sheathing described in Section 3.3 fastened with #6 x 1-1/4-in. drywall screws at 8-in. oc	FacadesXi xterior Insulation Masonry Veneer System adhesively applied over min. 1-in.-thick EPS or 1.5 pcf XPS insulation board	32	69
NA	NA	Concrete, unglazed brick, cement plaster, concrete masonry	FacadesXi xterior Insulation Masonry Veneer System adhered to the substrate	32	See Note 1

¹Maximum positive pressure is limited to the capacity of the concrete, brick concrete masonry or Portland cement plaster substrate, determined in accordance with the applicable code.





TABLE 3 – ASSEMBLIES FOR USE IN TYPES I, II, III, AND IV CONSTRUCTION

Framing ⁴		Interior Sheathing ²		Exterior Sheathing		Insulation Board	Finish
Type	Max. Spacing	Type	Fasteners and spacing ¹	Type	Fasteners and spacing ¹		
3-5/8-in. No. 18 gage steel	16 in. oc	Min. 5/8-in.-thick gypsum board complying with ASTM C1396 or ASTM C1177	#8 x 1-5/8-in. Type S bugle-head screws spaced at 8-in. on the perimeter and 12-in. in the field	Min. 1/2-in.-thick gypsum board complying with ASTM C1177	#8 x 1-5/8-in. Type S bugle-head screws spaced at 8-in. on the perimeter and 12-in. in the field	1 pcf EPS, max. 4in. thick, or 1.5 pcf Styrofoam Panelcore 20 max. 3 in. thick, attached per Table 2	Exterior Insulation Masonry Veneer System applied as described in Section 5.2
2 x 4 fire-retardant treated wood ³	16 in. oc	Min. 5/8-in.-thick gypsum board complying with ASTM C1396 or ASTM C1177	#8 x 1-5/8-in. Type W bugle-head screws spaced at 8-in. on the perimeter and 12-in. in the field	Min. 1/2-in.-thick gypsum board complying with ASTM C1177	#8 x 1-5/8-in. Type W bugle-head screws spaced at 8-in. on the perimeter and 12-in. in the field	1 pcf EPS, max. 4 in. thick, or 1.5 pcf Styrofoam Panelcore 20 max. 3 in. thick, attached per Table 2	Exterior Insulation Masonry Veneer System applied as described in Section 5.2
Concrete, unglazed brick, cement plaster, concrete masonry						1 pcf EPS, max. 4 in. thick, or 1.5 pcf Styrofoam Panelcore 20 max. 3 in. thick, attached per Table 2	Exterior Insulation Masonry Veneer System applied as described in Section 5.2

¹Screw length must be increased proportionally for thicker boards

²Joints in the interior sheathing must be treated with joint compound and intermediate fastener heads must be treated in accordance with ASTM C840 or GA216.

³Fire-retardant-treated wood framing must comply with IBC Section 2303.2.

⁴Openings must be framed with No. 18 gage steel or fire-retardant-treated wood, with 0.04-in. aluminum flashing with a 2-in. leg on the interior and flush with the exterior panels.

⁵Floorlines must be protected with minimum 4-in., 4-pcf mineral wool insulation.

