Code Compliance Research Report
CCRR-0450

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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 Exterior Insulation and Finish Systems

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2024, 2021 and 2018 *International Building Code®* (IBC)
- 2024, 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 Exterior Insulation and Finish Systems (EIFS) have been evaluated for the following properties (see Table 1):

- Physical properties
- Weather resistance
- Wind resistance
- Surface burning characteristics

1.3 The FacadesXi EIF systems have been evaluated for the following uses (see Table 1):

- Use as an exterior wall covering complying with IBC Section 1407
- Use as EIFS with drainage in accordance with IBC Section 1407.4.1
- Use in Types I, II, III, IV and V construction
- Use as interior wall and finish material in accordance with IBC section 803 and IRC Section R302.9.
- Xi-WaterShield coating may be used as an alternative to the water-resistive barriers specified in IBC Section 1403.2 and IRC Section R703.2.

2.0 STATEMENT OF COMPLIANCE

The FacadesXi Exterior Insulation and Finish Systems comply 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.

2.1 2024 IBC and IRC Evaluation Reports: The Intertek CCRR is an Evaluation Report for approval of an alternate material, design, or method of construction in accordance with Section 104.2.3.6.1 of the 2024 IBC and Section R104.2.2.6.1 of the 2024 IRC.

3.0 DESCRIPTION

3.1 FacadesXi WaterShield Xterior Insulation 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 a textured protective finish coat.

The system components include solid substrates, Xi-WaterShield, Xi-Basecoat, reinforcing mesh supplied by FacadesXi, and Xi-Acrylic Finish.

3.2 FacadesXi EIFS: The FacadesXi EIF system is a nonload-bearing exterior wall cladding system that consists of a water-resistive barrier, insulation board attached mechanically or adhesively to the substrate, an integrally reinforced base coat and a textured protective finish coat.

When applied over framed walls, the system components include solid substrates; water-resistive barrier; Xi-Basecoat; reinforcing mesh supplied by FacadesXi; and Xi-Acrylic Finish.

When applied over concrete and concrete-masonry substrates the system may be applied without a water-resistive barrier.

3.3 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

3.4 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.

3.5 Water-resistive barriers: Water-resistive barriers used with mechanically attached systems must comply with IBC Section 1403.2 or IRC Section R703.2 or must be certified as complying with ASTM E2556 or ICC-ES AC38.

3.6 Insulation Board: EPS insulation boards must be minimum Type I complying with ASTM C578 and must also comply with ASTM E2430. XPS insulation boards used with mechanically attached systems must comply with ASTM C578, Type X. 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.

3.7 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.

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

3.9 Xi-Acrylic Finish: The finish material is supplied in multiple textures. The finishes are supplied in 5-gallon pails and have a shelf life of 12 months when stored at temperatures between 32°F and 90°F.

3.10 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 EIFS 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 285-23.

5.0 INSTALLATION

5.1 General: The FacadesXi EIFS 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.

Flashing shall be provided in accordance with IBC Section 1404.4 or IRC Section R703.9.1 or IRC R703.9.2.

5.2 Application:

5.2.1 FacadesXi WaterShield Xterior Insulation System - Adhered EIFS with Drainage:

- 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 R703.4.

- 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. 4.2 oz./yd^2 Xi-Mesh is embedded into the base coat. The coating must be allowed to dry overnight.
- Xi-Textured Acrylic Finish may be mixed with a small amount of water for workability, then applied to the surface and floated to a uniform thickness gaged by the aggregate size.

5.2.2 XiFacades EIFS - Mechanically Attached EIFS:

- 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.
- Code compliant water-resistive barriers must be applied in accordance with IBC Section 1403.2 or IRC Section R703.7.3.
- Flashing must be provided in accordance with the requirements of IBC Section 1404.4 and IRC Section R703.4.
- Insulation board must be installed per Table 2.
- 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. 4.2 oz./yd^2 Xi-Mesh is embedded into the base coat. The coating must be allowed to dry overnight.
- Xi-Textured Acrylic Finish may be mixed with a small amount of water for workability, then applied to the surface and floated to a uniform thickness gaged by the aggregate size.

5.2.3 XiFacades EIFS - Adhesive application to Mass Barrier Walls:

- 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 (closer spacing allowable for application without drainage) and is pressed onto the substrate. The coating must be allowed to dry overnight.
- 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. 4.2 oz./yd^2 Xi-Mesh is embedded into the base coat. The coating must be allowed to dry overnight.
- Xi-Textured Acrylic Finish may be mixed with a small amount of water for workability, then applied to the surface and floated to a uniform thickness gaged by the aggregate size.

5.2.4 Xi-WaterShield Liquid Applied Coating: The Xi-WaterShield coating may be used as an alternative to the water-resistive barriers specified in IBC Section 1403.2 and IRC Section R703.2. Application must be as follows:

- 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 R703.4.
- 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.
- Special inspections in accordance with IBC Section 1705.17.1 are required for application of the water-resistive coating for EIFS applications. For other claddings, special inspections are required except when the installation is done by an installer or contractor trained by FacadesXi, LLC, and a certificate of installation is resented to the code official at the completion of the project.

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.

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 IBC Section 1705.17, except as noted in Section 5.2.4 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 R305.4, 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 EIFS.

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 E2570, ASTM E2273, ASTM E330, NFPA 259, NFPA 268, NFPA 285.

7.2 For Xi-WaterShield used as a water-resistive coating with other types of wall coverings: Data in accordance with ICC-ES AC212, approved February 2015.

7.3 Intertek Listing Report "FacadesXi Exterior Insulation and Finish Systems", on the Intertek Directory of Building Products.

8.0 IDENTIFICATION

The FacadesXi EIFS 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-0450).

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.

TABLE 1 - PROPERTIES EVALUATED

PROPERTY	2024 IBC SECTION[1]	2024 IRC SECTION[1]
Physical properties	1407.2	R703.9
Weather resistance	1407.4	R703.9, R703.1.1, R703.2
Wind resistance	1407.3	R703.9, R703.1.2
Surface burning characteristics	803	R302.9
Use in Types I, II, III and IV construction	2603.5	NA

[1]Section numbers in earlier editions of the code may differ.

TABLE 2 – WIND RESISTANCE

Framing		Substrate	EIFS		
Type	Max. Spacing		Coating	Allowable Wind Load (psf)	
				Neg.	Pos.
2 x 4 Wood	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 WaterShield Xterior Insulation System adhesively applied over min. 1-in.-thick EPS or XPS insulation board	40	54
3-5/8-in., No. 20 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 WaterShield Xterior Insulation System adhesively applied over min. 1-in.-thick EPS or XPS insulation board	39	54
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 WaterShield Xterior Insulation System adhesively applied over min. 1-in.-thick EPS or XPS insulation board	51	54
3-5/8-in. No. 18 gage steel	16 in. oc	15/32-in. CDX plywood fastened with #6 x 1-1/4-in. S-12 screws spaced at 6-in. oc on the perimeter and 12-in. oc in the field	FacadesXi EIFS with 1-in.-thick EPS mechanically attached using Wind-Devil 2 plates and UW-1 screws – Pattern A	26	39
3-5/8-in. No. 18 gage steel	16 in. oc	15/32-in. CDX plywood fastened with #6 x 1-1/4-in. S-12 screws spaced at 6-in. oc on the perimeter and 12-in. oc in the field	FacadesXi EIFS with 1-1/2-in.-thick EPS mechanically attached using Wind-Devil 2 plates and UW-2 screws – Pattern A[1]	27	43

3-5/8-in. No. 18 gage steel	16 in. oc	15/32-in. CDX plywood fastened with #6 x 1-1/4-in. S-12 screws spaced at 6-in oc on the perimeter and 12-in. oc in the field	FacadesXi EIFS with 2-in.-thick EPS mechanically attached using Wind-Devil 2 plates and UW-3 screws – Pattern A[1]	28	43
3-5/8-in. No. 18 gage steel	16 in. oc	15/32-in. CDX plywood fastened with #6 x 1-1/4-in. S-12 screws spaced at 6-in oc on the perimeter and 12-in. oc in the field	FacadesXi EIFS with 1-in.-thick EPS mechanically attached using Wind-Devil 2 plates and UW-1 screws – Pattern B[1]	26	30
3-5/8-in. No. 18 gage steel	16 in. oc	15/32-in. CDX plywood fastened with #6 x 1-1/4-in. S-12 screws spaced at 6-in oc on the perimeter and 12-in. oc in the field	FacadesXi EIFS with 1-1/2-in.-thick EPS mechanically attached using Wind-Devil 2 plates and UW-2 screws – Pattern B[1]	26	38
3-5/8-in. No. 18 gage steel	16 in. oc	15/32-in. CDX plywood fastened with #6 x 1-1/4-in. S-12 screws spaced at 6-in oc on the perimeter and 12-in. oc in the field	FacadesXi EIFS with 1-in.-thick EPS mechanically attached using Wind-Devil 2 plates and UW-1 screws – Pattern C1	26	21
3-5/8-in. No. 18 gage steel	16 in. oc	15/32-in. CDX plywood fastened with #6 x 1-1/4-in. S-12 screws spaced at 6-in oc on the perimeter and 12-in. oc in the field	FacadesXi EIFS with 2-in.-thick EPS mechanically attached using Wind-Devil 2 plates and UW-3 screws – Pattern C[1]	26	31
NA	NA	Concrete, unglazed brick, cement plaster, concrete masonry	FacadesXi EIFS adhered to the substrate	51	See Note 2

[1]See Figure 1 for fastener patterns
UW-1: #6 x 1-5/8-in. wood screws
UW-2: #7 x 2-in. wood screws
UW-3: #8 x 2-1/2-in. wood screws

[2]Maximum 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	Coating
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. 8 in. thick, or 1.5 pcf Styrofoam Panelcore 20 max. 4 in. thick, attached per Table 2	WaterShield Xterior Insulation System EIFS applied as described in Section 5.2.1
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. ½-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. 8 in. thick, or 1.5 pcf Styrofoam Panelcore 20 max. 4 in. thick, attached per Table 2	FacadesXi EIFS applied as described in Section 5.2.2
Concrete, unglazed brick, cement plaster, concrete masonry						1 pcf EPS, max. 8 in. thick, or 1.5 pcf Styrofoam Panelcore 20 max. 4 in. thick, attached per Table 2	FacadesXi EIFS applied as described in Section 5.2.3

[1]Screw length must be increased proportionally for thicker boards

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

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

[4]Openings must be framed with No. 18 gage steel or fire-retardant-treated wood.

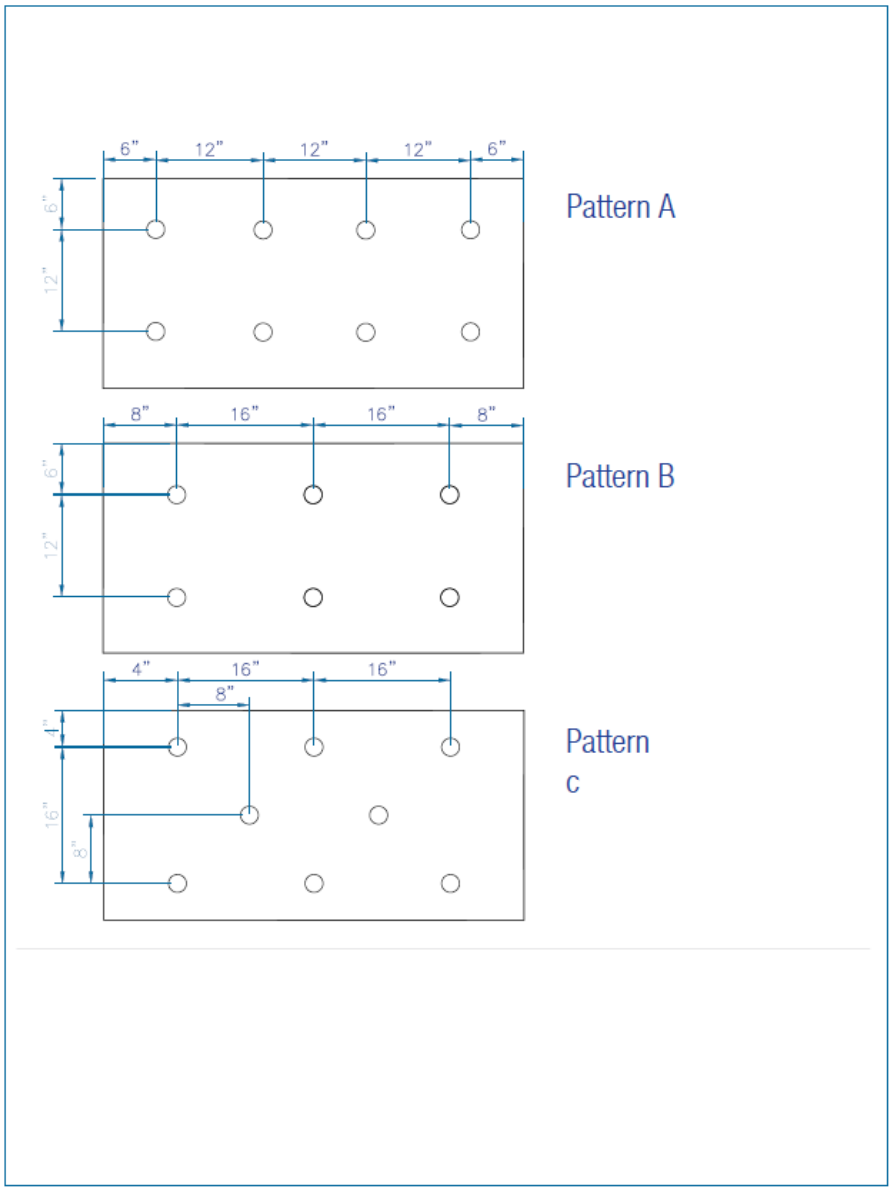


Figure 1 – Fastening Patterns for Insulation Board
See Table 3

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