

ICC-ES Evaluation Report

ESR-1689

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This report is subject to re-examination in two years.

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 24 00—Exterior Insulation and Finish Systems
REPORT HOLDER:

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EVALUATION SUBJECT:
PAREX STANDARD WATERMASTER LCR SYSTEM
1.0 EVALUATION SCOPE
Compliance with the following codes:

- 2009 *International Building Code* (IBC)
- 2009 *International Residential Code* (IRC)

Properties evaluated:

PROPERTY	IBC CHAPTER	IRC CHAPTER
Weather resistance	14	R7
Structural – transverse wind load resistance	16	R6
Fire-resistance-rated construction	7	R3
Exterior insulation and finish systems (EIFS)	14	R7
Surface burning characteristics	26	R3

2.0 USES

The Parex Standard WaterMaster LCR system is an exterior insulation and finish system (EIFS) complying with IBC Section 1408 and IRC Section R703.9. The system complies as an EIFS with drainage in accordance with IBC Section 1408.4.1 and IRC Section R703.9.

The system may be used in fire-resistance-rated, Type V construction when installed in accordance with Section 4.5 of this report.

3.0 DESCRIPTION
3.1 System Components:

See Table 1.

3.2 Insulation Board:

Insulation boards must be one of the following:

- a. Parex WaterMaster Insulation Board, which is expanded polystyrene (EPS) complying with ASTM C 578, Type I, and ASTM E 2430. The board is produced by a molder who participates in an approved third-party quality assurance program, and is labeled in accordance with Section 7.0 of this report. The Parex WaterMaster Insulation Board includes ¹/₄-inch-deep-by- ¹/₂-inch-wide (3.2 mm by 38 mm) corrugations across the width of the boards.
- b. Flat EPS insulation board from a molder with a current evaluation report showing conformance to ASTM E 2430. The board must be labeled in accordance with the applicable report.
- c. Flat EPS insulation board that complies with ASTM C 578, Type I, and ASTM E 2430. The board is produced by a molder who participates in an approved third-party quality assurance program, and is labeled in accordance with the applicable code.

3.3 Substrates:

- Gypsum sheathing complying with ASTM C 1396 or ASTM C 1177
- Fiber cement panels complying with ASTM C 1186 and with the ICC-ES Acceptance Criteria for Fiber Cement Siding Used as Exterior Wall Siding (AC90)
- Fiber cement panels complying with ASTM C 1325 and with the ICC-ES Acceptance Criteria for Reinforced Cementitious Sheets Used as Wall and Ceiling Sheathing and Floor Underlayment (AC376)
- Concrete-masonry complying with the code
- Concrete complying with the code
- Exposure 1 wood structural panels complying with DOC PS-1 or PS-2
- Brick masonry complying with the code

3.4 Water-resistive Barrier:

The barrier must be one of the following:

- 3.4.1 Parex WaterMaster House Wrap 366:** Parex WaterMaster House Wrap 366 is kraft building paper that conforms to the Grade D requirements of UBC Standard 14-1 and has a 60-minute water-resistance rating.

3.4.2 Building Paper: Building paper must be Grade D building paper with 60-minute water resistance, complying with UBC Standard 14-1.

3.4.3 Tyvek StuccoWrap: Tyvek StuccoWrap is equivalent to a Grade D building paper having a 60-minute water-resistance rating. See ESR-2375.

3.5 Sealants:

Sealants must comply with ASTM C 902, Type S or M, minimum Grade NS, minimum Class 25 and Use O.

4.0 DESIGN AND INSTALLATION

4.1 General:

Parex USA Systems must be installed in accordance with the manufacturer's installation instructions, specifications and details. These are available at www.parex.com.

4.2 Drainage Options:

- Parex WaterMaster Insulation Board installed over Grade D Paper
- Flat Insulation Board or WaterMaster Insulation Board installed over Tyvek StuccoWrap

4.3 Wind Design (See Table 2):

Table 2 presents specific assemblies for which test data has been submitted. Other assemblies may be considered for approval by code officials based on testing and/or calculations by a qualified design professional.

4.4 Weather Protection:

The Parex Standard WaterMaster LCR system complies with IBC Section 1403.2 and IRC Section R703.1.1.

4.5 Fire-resistance-rated Construction:

In Type V construction, the Parex Standard WaterMaster LCR system may be attached to the surface of combustible exterior fire-resistance-rated assemblies described in IBC Table 720.1(2) without changing the assigned hourly rating of the assembly. The exterior wall must have a minimum 10-foot (3048 mm) separation distance from adjacent construction.

5.0 CONDITIONS OF USE

The Parex Standard WaterMaster LCR system described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. In the event of a conflict between the manufacturer's instructions and this report, this report governs.

5.2 The insulation board must be separated from the building interior by a thermal barrier complying with the applicable code.

5.3 Installation must be by applicators acceptable to Parex USA, Inc.

5.4 Termination of the systems must not be less than 6 inches (152 mm) above finished grade, in accordance with IBC Section 2603.8 and IRC Section R320.5.

5.5 Adequacy of fasteners for concrete, masonry, brick or portland cement plaster substrates must be demonstrated to the satisfaction of the code official by a proof-load test program consisting of fastener withdrawal from the wall. The average withdrawal strength, in pounds, must be six times the required fastener load.

6.0 EVIDENCE SUBMITTED

6.1 Reports of tests in accordance with ASTM E 2568 and ASTM E 2273.

6.2 Data in accordance with the ICC-ES Acceptance Criteria for EIFS Clad Drainage Wall Assemblies (AC235), dated October 2009.

6.3 Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2009.

6.4 Data in accordance with the ICC-ES Acceptance Criteria for Water-resistive Barriers (AC38), dated October 2009.

7.0 IDENTIFICATION

Each container or package of coating or reinforcing mesh used as part of the Parex Standard WaterMaster LCR system must be labeled with the Parex USA, Inc., name and address; the product name; lot or batch number; quantity of material; storage instructions; pot life; expiration date; and the evaluation report number (ESR-1689).

Parex Standard WaterMaster Insulation Boards must be labeled on the edge of each board with the Parex USA, Inc., name, the plant identification number, the name of the inspection agency (RADCO) and the evaluation report number (ESR-1689). Other foam plastic insulation must be labeled in accordance with the current ICC-ES evaluation report in which it is recognized, or must be labeled as noted in Section 3.2.

TABLE 1—SYSTEM COMPONENTS

System	Water-Resistive Barrier	Insulation Board	Base Coats	Reinforcing Mesh	Finish
Parex WaterMaster LCR	Described in Section 3.4.1 or 3.4.2	WaterMaster Insulation Board	Parex 121, or Parex 301	Standard Reinforcing Mesh, 4.5 oz/yd ² , minimum	DPR Acrylic Finish 300 Series, or DPR Acrylic Finish 500 Series, or DPR Optimum Finish
	Described in Section 3.4.3	Flat Insulation Board			

TABLE 2—WIND LOAD DESIGN

Framing ⁴		Substrate	EPS		
Type	Spacing (inch)		Minimum Thickness (inch)	Attachment	Allowable Wind Load ^{2,3} (psf)
2x4 Wood ¹	16	Any sheathing described in Section 3.3, attached per code	1	2-inch-diameter Wind Devil Plates; Wind Lock WTI, No. 6 bugle head screws to framing; must penetrate 1-inch into wood framing or through steel framing; Pattern B	29
No. 18 gage-steel					
2x4 Wood ¹	16	Min. 7/16-inch wood structural panel, attached per code	1	2-inch-diameter Wind Devil Plates; No. 8 Type W bugle head screws; must penetrate 1/2-inch through sheathing; Pattern A ⁵	18
3 5/8-inch-by-No. 18 gage-steel					
N/A	N/A	Concrete, concrete-masonry, or brick masonry	1	Wind Lock MT Screws; 2-inch-diameter Wind Devil 2 Plates; must penetrate substrate 1-inch; Pattern B	29
2x4 Wood ¹	16		7/16-inch wood structural panel, attached per code	1 1/2	W-3 Wind Devil screws and plates; must penetrate 1/2-inch through sheathing; Pattern A ⁵
2x4 Wood ¹	16	7/16-inch wood structural panel, attached per code	1 1/4	2 3/4-inch Type W screws and Wind Devil II plates; Pattern A ⁵	31

SI: 1 inch = 25.4 mm; 1 psf = 0.0479 kPa.

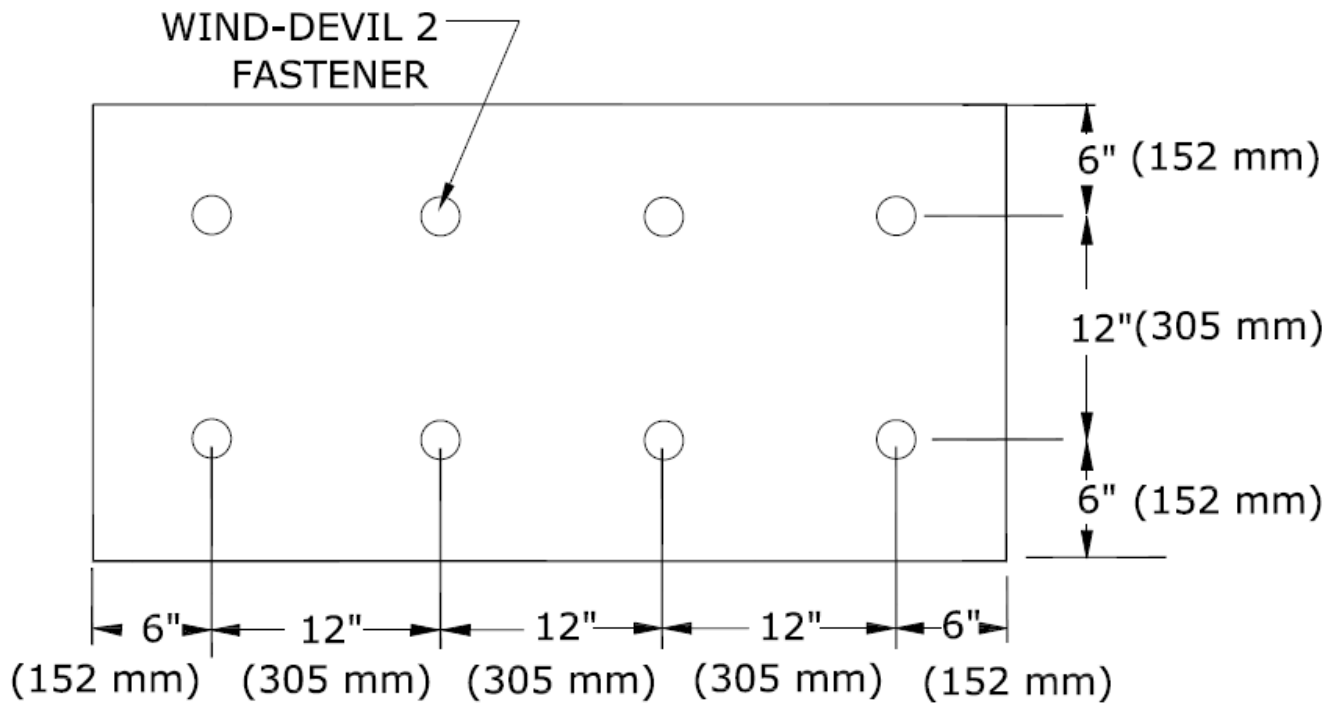
¹Minimum 2x4 wood framing, minimum specific gravity 0.42

²Maximum positive pressure is limited to the capacity of the framing and structural sheathing, or concrete, brick, masonry or Portland cement plaster substrate, determined in accordance with the applicable code.

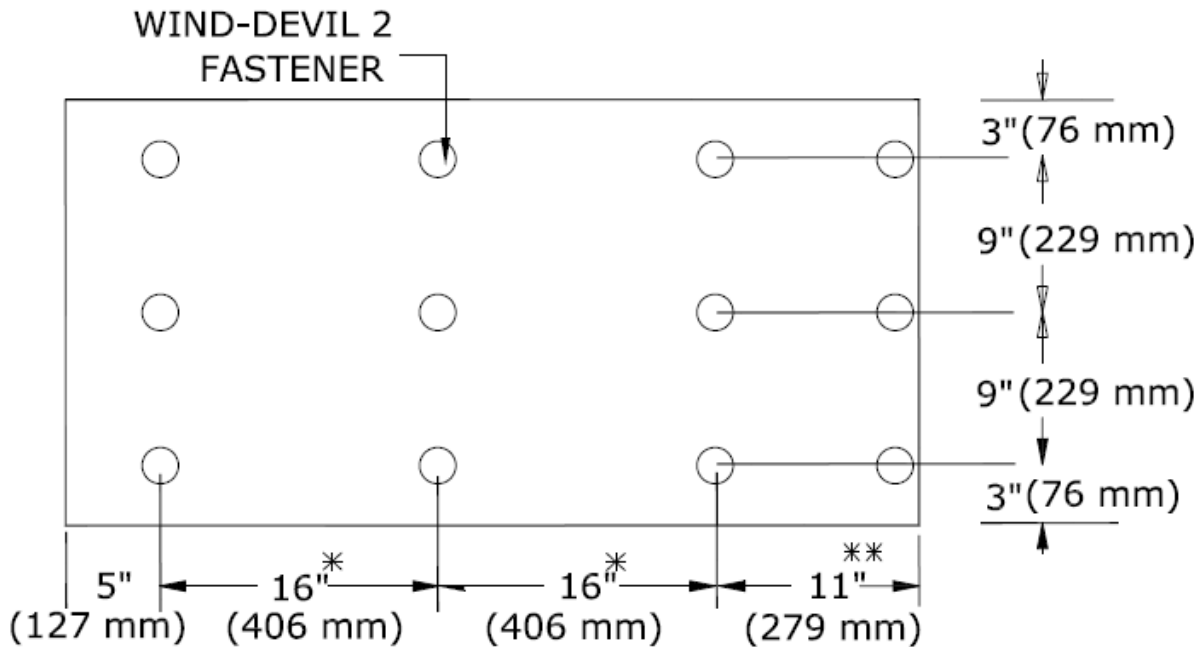
³Maximum positive pressure is limited to 55 psf (2.63 kPa) for gypsum sheathing complying with ASTM C 1396, and is limited to 41 psf (1.96 kPa) for gypsum sheathing complying with ASTM C 1177, or to the capacity of the framing, whichever is lower.

⁴The framing members must be designed to resist all positive and negative transverse design loads with a maximum allowable deflection of 1/240 of the span.

⁵Penetration into studs is not required for Pattern A.



FASTENING PATTERN A



FASTENING PATTERN B

FIGURE 1—FASTENING PATTERNS