

# ICC-ES Evaluation Report

ESR-2423

Reissued September 2023


This report also contains:

- CBC Supplement

Subject to renewal September 2024

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<p><b>DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION</b></p> <p><b>Section: 07 25 00—Water-Resistive Barriers/Weather Barriers</b></p> <p><b>Section: 07 27 00—Air Barriers</b></p>	<p><b>REPORT HOLDER: OWENS CORNING ROOFING AND ASPHALT, LLC</b></p>	<p><b>EVALUATION SUBJECT:</b></p> <p><b>MOISTURE MASTER™/SHIELD™, MOISTURE MASTER™ ELITE, PL1 HOUSEWRAP, PL2 HOUSEWRAP, PL3 HOUSEWRAP, AND PL4 HOUSEWRAP</b></p>	
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## 1.0 EVALUATION SCOPE

### 1.1 Compliance with the following codes:

- 2018, 2015, 2012, 2009 and 2006 [International Building Code® \(IBC\)](#)
- 2018, 2015, 2012, 2009 and 2006 [International Residential Code® \(IRC\)](#)

### Properties evaluated:

- Physical properties
- Surface-burning characteristics
- Air barrier
- Types I, II, III and IV Construction

### 1.2 Evaluation to the following green code(s) and/or standards:

- 2022 [California Green Building Standards Code \(CALGreen\)](#), Title 24, Part 11
- 2021, 2018, 2015 and 2012 [International Green Construction Code® \(IgCC\)](#)
- 2020, 2017, 2014 and 2011 ANSI/ASHRAE/USGBC/IES Standard 189.1—Standard for the Design of High-Performance Green Buildings, Except Low-Rise Residential Buildings
- 2020, 2015, 2012 and 2008 ICC 700 [National Green Building Standard™](#) (ICC 700-2020, ICC 700-2015, ICC 700-2012 and ICC 700-2008)

### Attributes verified:

See Section 2.0

## 2.0 USES

Moisture Master™/Shield™, Moisture Master™ Elite, PL1 Housewrap, PL2 Housewrap, PL3 Housewrap, and PL4 Housewrap are used as water-resistive barriers on the exterior side of exterior walls of buildings in any construction type under the IBC and construction under the IRC. The barriers are alternates to water-resistive barriers complying with 2018 IBC Section 1403.2 (2015, 2012, 2009 and 2006 IBC Section 1404.2) and IRC Section R703.2 and are also considered equivalent to Grade D 60-minute paper, as specified in 2012, 2009 and 2006 IBC Section 2510.6 and 2018 and 2015 IRC Section R703.7.3 (2012, 2009 and 2006 IRC Section R703.6.3).

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Moisture Master™/Shield™ or Moisture Master™ Elite may be used behind exterior cement plaster when installed as described in Section 4.2.

PL1 Housewrap, PL2 Housewrap, PL3 Housewrap, and PL4 Housewrap may be used as air barrier materials under IRC Section N1102.4.1 when installed as described in Section 4.3.

The attributes of the water-resistive barriers have been verified as conforming to the provisions of (i) CALGreen Section 5.407.1 for water-resistive barriers; (ii) ICC 700-2020 Section 602.1.8, 11.602.1.8, 1202.6 and 13.104.1.4; (iii) ICC 700-2015 Section 602.1.8, 11.602.1.8 and 12.6.602.1.8; (iv) ICC 700-2012 Section 602.1.8, 11.602.1.8 and 12.5.602.1.8; and (v) ICC 700-2008 Section 602.9 for water-resistive barriers.

The attributes of the PL1 Housewrap, PL2 Housewrap, PL3 Housewrap, and PL4 Housewrap water-resistive barriers have been verified as conforming to the provisions of (i) CALGreen Section A4.407.5 for air barriers; (ii) 2021 IgCC Section 701.3.1.2, 2018 IgCC Section 701.3.1.1 and 2012 and 2015 IgCC Section 605.1.2.1 for air barriers; and (iii) 2020 ASHRAE 189.1 Section 7.3.1.2, 2017 and 2014 ASHRAE 189.1 Section 7.3.1.1 and 2011 ASHRAE 189.1 Section 7.4.2.9 for air barriers; (iv) ICC 700-2015 Section 602.1.8, 11.602.1.8 and 12.6.602.1.8; (v) ICC 700-2012 Section 602.1.8, 11.602.1.8 and 12.5.602.1.8; and (vi) ICC 700-2008 Section 602.9 for water-resistive barriers. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

## 3.0 DESCRIPTION

### 3.1 Moisture Master™/Shield™:

Moisture Master™/Shield™ is made of a woven polyolefin base scrim coated on one side with a polyolefin coating. The membrane is perforated and has a nominal thickness of 0.005 inch (0.127 mm) and a basis weights of 2.06 oz/yd<sup>2</sup> (70 g/m<sup>2</sup>). The membrane is available in rolls of varying sizes. Moisture Master™/Shield™ demonstrates a Class A performance when tested in accordance with ASTM E84.

### 3.2 Moisture Master™ Elite:

Moisture Master™ Elite is made of a nonwoven polyolefin base scrim and a vapor-permeable coating. The membrane is nonperforated and has a nominal thickness of 0.008 inch (0.20 mm) and a basis weight of 2.9 oz/yd<sup>2</sup> (98 g/m<sup>2</sup>). The membrane is available in rolls of varying sizes. Moisture Master™ Elite demonstrates a Class A performance when tested in accordance with ASTM E84.

### 3.3 PL1 Housewrap:

PL1 Housewrap is made of two nonwoven polyolefin sheets, a scrim, and a vapor-permeable/adhesive lamination coating/film. The Housewrap is nonperforated, has a basis weight of 3.1 oz/yd<sup>2</sup> (105 g/m<sup>2</sup>), and is available in 9-foot or 10-foot widths in various lengths and multiple colors. PL1 Housewrap demonstrates a Class A performance when tested in accordance with ASTM E84.

### 3.4 PL2 Housewrap:

PL2 Housewrap is made of two nonwoven polyolefin sheets and a vapor-permeable/adhesive lamination coating/film. The Housewrap is nonperforated, has a basis weight of 2.8 oz/yd<sup>2</sup> (95 g/m<sup>2</sup>), and is available in 9-foot or 10-foot widths in various lengths and multiple colors. PL2 Housewrap demonstrates a Class A performance when tested in accordance with ASTM E84.

### 3.5 PL3 Housewrap:

PL3 Housewrap is made of a nonwoven polyolefin base and a vapor-permeable/adhesive lamination coating/film. The Housewrap is nonperforated, has a basis weight of 2.8 oz/yd<sup>2</sup> (95 g/m<sup>2</sup>), and is available in 9-foot or 10-foot widths in various lengths and multiple colors. PL3 Housewrap demonstrates a Class A performance when tested in accordance with ASTM E84.

### 3.6 PL4 Housewrap:

PL4 Housewrap is made of a nonwoven polyolefin base and a vapor-permeable/adhesive lamination coating/film. The Housewrap is nonperforated, has a basis weight of 4.7 oz/yd<sup>2</sup> (160 g/m<sup>2</sup>), and is available in 9-foot or 10-foot widths in various lengths and multiple colors. PL4 Housewrap demonstrates a Class A performance when tested in accordance with ASTM E84.

### 3.7 Vapor Permeance:

The water-resistive barriers have a vapor permeance of 5 perms or greater when tested in accordance with ASTM E96 Procedure A (desiccant method) and qualifies as a vapor permeable membrane as defined in IBC Section 202 or IRC Section R202.

## 4.0 INSTALLATION

### 4.1 Use as Water-resistive Barrier:

Master™/Shield™, Moisture Master™ Elite, PL1 Housewrap, PL2 Housewrap, PL3 Housewrap, and PL4 Housewrap must be installed after wall framing is completed and before windows and doors are installed. The roll must be placed a minimum of 24 inches (610 mm) from the starting corner and fastened to framing with minimum No. 12 gage corrosion-resistant nails having plastic washer heads or No. 16 gage corrosion-resistant staples with minimum 1-inch (25.4 mm) crowns. The membrane is unrolled around the building and fastened with nails or staples spaced between 12 and 18 inches (305 to 457 mm) at each vertical stud line. A minimum overlap of 6 inches (152 mm) must be provided for both vertical and horizontal seams.

### 4.2 Use Behind Exterior Cement Plaster (Stucco):

When use is over wood-based sheathing in exterior plaster applications, Moisture Master™/Shield™ and Moisture Master™ Elite must be applied over sheathing in accordance with 2012, 2009 and 2006 IBC Section 2510.6 or 2018 and 2015 Section R703.7.3 (2012, 2009 and 2006 IRC Section R703.6.3), as applicable. For cementitious exterior wall coatings or exterior insulation and finish systems, application of Moisture Master™/Shield™ or Moisture Master™ Elite must be in accordance with the ICC-ES evaluation report on the exterior coating. Flashing must be provided in accordance with the applicable code.

### 4.3 Use as Air Barrier:

When used as air barriers, PL1 Housewrap, PL2 Housewrap, PL3 Housewrap, and PL4 Housewrap must be installed in accordance with the manufacturer's installation instructions and this report.

### 4.4 Use in Construction Types I through IV:

Moisture Master™/Shield™, Moisture Master™ Elite, PL1 Housewrap, PL2 Housewrap, PL3 Housewrap, and PL4 Housewrap may be used in Construction Types I through IV, when installed in accordance with the manufacturer's installation instructions and this report. Under the 2018, 2015 and 2012 IBC, use on buildings of Types I thru IV construction is limited to buildings with a maximum height of 40 feet (12.2 m) above grade.

## 5.0 CONDITIONS OF USE:

The Moisture Master™/Shield™, Moisture Master™ Elite, PL1 Housewrap, PL2 Housewrap, PL3 Housewrap, and PL4 Housewrap water-resistive barriers described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The installation complies with the applicable code, this report and the manufacturer's published installation instructions. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.
- 5.2 The water-resistive barriers must be covered with an approved exterior wall covering complying with the applicable code.
- 5.3 The products must not be installed where ASTM E2556 Type I or II building paper is required.
- 5.4 The products are manufactured under a quality control program with inspections by ICC-ES.

## 6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the [ICC-ES Acceptance Criteria for Water-resistive Barriers \(AC38\)](#), dated August 2016 (Editorially revised June 2019).
- 6.2 Air permeance testing in accordance with ASTM E2178 for the PL1, PL2, PL3, and PL4 Housewraps.
- 6.3 Surface-burning characteristics testing in accordance with ASTM E84.

## 7.0 IDENTIFICATION

- 7.1 Each roll of Moisture Master™/Shield™, Moisture Master™ Elite, PL1 Housewrap, PL2 Housewrap, PL3 Housewrap, and PL4 Housewrap described in this report is marked with the manufacturer's name (Owens Corning Roofing and Asphalt, LLC) and address, product name, date of manufacture, traceability information and the evaluation report number (ESR-2423).
- 7.2 The report holder's contact information is the following:  
**OWENS CORNING ROOFING AND ASPHALT, LLC**  
**ONE OWENS CORNING PARKWAY**  
**TOLEDO, OHIO 43659**  
**(740) 321-6345**  
[www.owenscorning.com](http://www.owenscorning.com)

# ICC-ES Evaluation Report

# ESR-2423 CBC and CRC Supplement

Reissued September 2023

This report is subject to renewal September 2024.

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**DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**  
**Section: 07 25 00—Water-Resistive Barriers/Weather Barriers**  
**Section: 07 27 00—Air Barriers**

## REPORT HOLDER:

OWENS CORNING ROOFING AND ASPHALT, LLC

## EVALUATION SUBJECT:

MOISTURE MASTER™/SHIELD™, MOISTURE MASTER™ ELITE, PL1 HOUSEWRAP, PL2 HOUSEWRAP, PL3 HOUSEWRAP, AND PL4 HOUSEWRAP

## 1.0 REPORT PURPOSE AND SCOPE

### Purpose:

The purpose of this evaluation report supplement is to indicate that Moisture Master™/Shield™, Moisture Master™ Elite, PL1 Housewrap, PL2 Housewrap, PL3 Housewrap, and PL4 Housewrap, described in ICC-ES evaluation report ESR-2423, have also been evaluated for compliance with the code(s) noted below.

### Applicable code edition(s):

- 2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 *California Residential Code* (CRC)
- 2019 *California Energy Code* (CEC)

## 2.0 CONCLUSIONS

### 2.1 CBC:

The Moisture Master™/Shield™, Moisture Master™ Elite, PL1 Housewrap, PL2 Housewrap, PL3 Housewrap, and PL4 Housewrap, described in Sections 2.0 through 7.0 of the evaluation report ESR-2423, comply with CBC Chapter 14, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of the CBC. Use as an air barrier must be in accordance with the CEC.

#### 2.1.1 OSHPD:

The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

#### 2.1.2 DSA:

The applicable DSA Sections of the CBC are beyond the scope of this supplement.

### 2.2 CRC:

The Moisture Master™/Shield™, Moisture Master™ Elite, PL1 Housewrap, PL2 Housewrap, PL3 Housewrap, and PL4 Housewrap, described in Sections 2.0 through 7.0 of the evaluation report ESR-2423, comply with CRC Chapter 7, provided the design and installation are in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report and the applicable provisions of the CRC. Use as an air barrier must be in accordance with the CEC.

This supplement expires concurrently with the evaluation report, reissued September 2023.