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# ICC-ES Evaluation Report

# ESR-2658

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Reissued 03/2018  
This report is subject to renewal 03/2019.

**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:**

**JAMES HARDIE BUILDING PRODUCTS INC.**

**1901 ELM AVENUE  
FONTANA, CALIFORNIA 92337**

**EVALUATION SUBJECT:**

**HARDIEWRAP™ WEATHER BARRIER WATER-RESISTIVE BARRIER**



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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:**

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**EVALUATION SUBJECT:**

**HARDIEWRAP™ WEATHER BARRIER WATER-RESISTIVE BARRIER**

**1.0 EVALUATION SCOPE**

**1.1 Compliance with the following codes:**

- 2009 *International Building Code*® (2009 IBC)
- 2009 *International Residential Code*® (2009 IRC)
- 2009 *International Energy Conservation Code*® (IECC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)<sup>†</sup>

<sup>†</sup>The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

- Other Codes (see Section 8.0)

**Properties evaluated:**

- Water resistance
- Surface burning characteristics
- Air leakage

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

- 2016 California Green Building Standards Code (CALGreen), Title 24, Part 11
- 2015 and 2012 *International Green Construction Code*® (IgCC)
- 2014 and 2011 ANSI/ASHRAE/USGBC/IES Standard 189.1—Standard for the Design of High-Performance Green Buildings, Except Low-Rise Residential Buildings
- 2015, 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2015, ICC 700-2012 and ICC 700-2008)

**Attributes verified:**

- See Section 2.0

**2.0 USES**

HardieWrap™ Weather Barrier is used as a water-resistive barrier on the exterior side of exterior walls of buildings of any construction type under the IBC and construction permitted under the IRC. The product is an alternative to the water-resistive barrier specified in IBC Section 1404.2; the product complies, when installed in two layers, as a water-resistive barrier specified in IBC Section 2510.6; and is an alternative to the water-resistive barrier specified in IRC Section R703.2.

HardieWrap™ Weather Barrier is considered equivalent to a 60-minute Grade D paper in accordance with the exception to Section 2510.6 of the IBC and Section R703.6.3 of the IRC.

HardieWrap™ Weather Barrier may be used as an air barrier material in accordance with IRC Section N1102.4.1 and IECC Sections 402.4 and 502.4.

The attributes of the HardieWrap™ Weather Barrier have been verified as conforming to the requirements of (i) 2013 CALGreen Section 5.407.1 for water-resistive barriers and Section A4.407.5 for air barriers; (ii) 2012 and 2015 IgCC Section 605.1.2.1 for air barriers; (iii) 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 General:**

HardieWrap™ Weather Barrier consists of a nonperforated, nonwoven, polyolefin fabric. Sheets are available in rolls of varying size.

**3.2** HardieWrap™ Weather Barrier has an air leakage rate not exceeding 0.02 L/s/m<sup>2</sup> at 75 Pa [0.004 cfm/ft<sup>2</sup> at 0.3 inch w.g (1.57 psf)] when used as an air barrier material in accordance with IRC Section N1102.4.1 and IECC Sections 402.4 and 502.4.

### 3.3 Surface Burning Characteristics:

HardieWrap™ Weather Barrier has a flame-spread index of less than 25 and smoke-developed index of less than 450, when tested in accordance with ASTM E84.

## 4.0 INSTALLATION

### 4.1 General:

HardieWrap™ Weather Barrier must be installed on the exterior side of exterior walls over exterior sheathing or insulation. The printed side must be installed facing the outside.

The report holder's published installation instructions and this report must be strictly adhered to, and a copy of the instructions must be available at all times on the jobsite during installation. The instructions within this report govern if there are any conflicts between the report holder's published installation instructions and this report.

### 4.2 Application:

HardieWrap™ Weather Barrier must be installed after wall framing is completed. The start of the roll must be placed approximately 2 to 3 feet (0.6 to 0.9 m) from the corner, and fastened using staples, large-headed nails, or roofing nails spaced a maximum of 18 inches (457 mm) on center. The wrap is then unrolled around the building and fastened with large-headed nails, roofing nails or staples spaced a maximum of 32 inches (813 mm) on center, vertically and horizontally. A minimum of 2 inches (51 mm) of overlap is required for the sheets in the horizontal direction, while 6 inches (152 mm) is required in the vertical direction.

When used over foam insulation board, the sheet must be fastened with roofing nails or other large-headed nails long enough to penetrate through the insulation into the framing studs.

When use is over wood-based sheathing in exterior plaster applications, in areas enforcing the IBC and IRC, the membrane must be installed in accordance with IBC Section 2510.6 or IRC Section R703.6.3. For cementitious coatings or exterior insulation and finish systems, application of the barrier must be in accordance with the evaluation report on the exterior coating.

### 4.3 Air Barrier Material:

When HardieWrap™ Weather Barrier is used as an air barrier, the material must be installed in accordance with the report holder's installation instructions and this report.

## 5.0 CONDITIONS OF USE

The HardieWrap™ Weather Barrier 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 The water-resistive barrier listed in this report must be covered by an exterior wall covering complying with the requirements of the applicable code.
- 5.2 The water-resistive barrier recognized in this report may be used in any construction type under the IBC and IRC.
- 5.3 This report is based on air leakage rate for the product as an air barrier only. The design and evaluation of the air barrier assembly, of which the product is a component, is outside the scope of this report.

## 6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with ICC-ES Acceptance Criteria for Water-resistive Barriers (AC38), October 2009.
- 6.2 Reports of tests in accordance with ASTM E84.
- 6.3 Test report on air leakage in accordance with ASTM E2178.

## 7.0 IDENTIFICATION

Sheets are identified with the James Hardie Building Products name and address, the product name and the evaluation report number (ESR-2658).

## 8.0 OTHER CODES

### 8.1 Evaluation Scope:

In addition to the codes referenced in Section 1.0, the products covered in this report were also evaluated for compliance with the requirements of the following codes:

- 2006 *International Building Code*® (2006 IBC)
- 2006 *International Residential Code*® (2006 IRC)
- BOCA® *National Building Code*/1999 (BNBC)
- 1999 *Standard Building Code*® (SBC)
- 1997 *Uniform Building Code*™ (UBC)

### 8.2 Uses:

See Section 2.0, with the following modification: The products are also alternatives to the Type 15 felt specified in BNBC Section 1406.3.6, Type 15 felt specified in SBC Section 2303.3 and Grade D building paper as described in UBC Standard 14-1. The water-resistive barrier recognized in this report is limited to Type 5 construction under the BNBC, Type VI under the SBC and Type V under the UBC.

### 8.3 Description:

See Section 3.0.

### 8.4 Installation:

See Section 4.0, except for the following modification for the UBC: In areas enforcing the UBC, either two layers of the membrane or one layer of the membrane and one layer of an approved water-resistive barrier must be installed in accordance with UBC Section 2506.4.

### 8.5 Conditions of Use:

See Section 5.0.

### 8.6 Evidence Submitted:

See Section 6.0.

### 8.7 Identification:

See Section 7.0.