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ESR-3545

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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:

E.I. DUPONT DE NEMOURS & COMPANY, INC.

**CHESTNUT RUN PLAZA
POST OFFICE BOX 2915
WILMINGTON, DELAWARE 19880-1269**

EVALUATION SUBJECT:

TYVEK® THERMAWRAP™ R5.0



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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:****E.I. DuPONT de NEMOURS & COMPANY, INC.
(DuPONT™)****CHESTNUT RUN PLAZA****POST OFFICE BOX 2915****WILMINGTON, DELAWARE 19880-1269****(800) 448-9835**www.construction.tyvek.com**EVALUATION SUBJECT:****TYVEK® THERMAWRAP™ R5.0****1.0 EVALUATION SCOPE****Compliance with the following codes:**

- 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2012, 2009 and 2006 *International Residential Code*® (IRC)
- 2012, 2009 and 2006 *International Energy Conservation Code*® (IECC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)[†]

[†]The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Water resistance
- Air leakage
- Surface-burning characteristics

2.0 USES

Tyvek® ThermaWrap™ R5.0 is used as a water-resistive barrier on the exterior side of exterior walls on buildings of all construction types under the IBC and construction permitted under the IRC. Under the 2012 IBC, the water-resistive barrier may be used on buildings of Type I, II, III and IV construction that are not greater than 40 feet (12.2 m) in height above grade in accordance with 2012 IBC Section 1403.5.

The product is an alternative to the water-resistive barrier specified in IBC Section 1404.2 and IRC Section R703.2. The nonwoven, flash spunbonded, nonperforated, olefin sheet component of the product is considered equivalent to

a 60-minute Grade D paper in accordance with Section 2510.6 of the IBC and Section R703.6.3 of the IRC, and may be used to provide an air barrier in accordance with Section N1102.4.1 of the IRC, Section C402.4.1 of the 2012 IECC and Section 502.4.3 of the 2009 and 2006 IECC.

3.0 DESCRIPTION**3.1 General:**

Tyvek® ThermaWrap™ R5.0 is a nonwoven, flash spunbonded, nonperforated, olefin sheet that is adhered to a polyester and high-density polyethylene thermal blanket. The nonwoven sheet is manufactured from high-density polyethylene fibers combined with an ultraviolet-stabilizing additive which is bonded with an adhesive to the thermal blanket, which is formed into rolls that are 4 feet (1.2 m) wide by 40 feet (12 m) long. Tyvek® ThermaWrap™ R5.0 has 6-inch (152 mm) noninsulated flaps at the bottom and end. The product has a nominal thickness of 1.5 inches (38 mm) and a basis weight of 21.2 oz/yd² (719 g/m²).

3.2 Air Leakage:

Tyvek® ThermaWrap™ R5.0 has an air leakage rate not exceeding 0.02 L/s-m² [0.004 cfm/ft² at 0.3 w.g. (1.57 psf)] when used to provide an air barrier in accordance with Section N1102.4.1 of the IRC, Section C402.4.1 of the 2012 IECC and Section 502.4.3 of the 2009 and 2006 IECC.

3.3 Surface-burning Characteristics:

Tyvek® ThermaWrap™ R5.0 barrier has a flame-spread index of less than 25 and a smoke-developed index of less than 450, when tested in accordance with ASTM E84.

4.0 DESIGN AND INSTALLATION**4.1 Design:**

Tyvek® ThermaWrap™ R5.0 must be installed in accordance with the manufacturer's published installation instructions and this report. If requested by the code official, a copy of this report must be available at the jobsite during installation. In the event of a conflict between this report and the manufacturer's published installation instructions, this report governs.

The product is installed before or after the windows are installed.

4.2 Water-resistive Barrier:

Tyvek® ThermaWrap™ R5.0 is installed starting from the bottom of the structure. The roll must be placed 6 inches (152 mm) beyond the starting corner and fastened to the stud with corrosion-resistant cap fasteners approved by the manufacturer. The wrap is unrolled around the building and

fastened with cap fasteners along the top edge into every stud. A minimum 6 inches (152 mm) of overlap must be provided for vertical and horizontal seams. The insulation of the second roll must be butted against the insulation of the first roll, ensuring that the 6-inch (152 mm) noninsulated flap overlaps the previous roll. All horizontal and vertical seams, including top and bottom of walls, must be taped. Tyvek® ThermaWrap™ R5.0 must be covered within the time set forth in the report holder's published instructions.

4.3 Air Barrier Material:

When used as a component of an air barrier, the product must be installed in accordance with the manufacturer's published installation instructions and this report.

5.0 CONDITIONS OF USE

The Tyvek® ThermaWrap™ R5.0 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 manufacturer's published installation instructions and this report must be strictly adhered to. In the event of a conflict between this report and the manufacturer's installation instructions, this report governs.
- 5.2** The product must be covered with an approved exterior wall covering complying with the applicable code.
- 5.3** This report provides air leakage rates for the product as a component of an air barrier assembly only. The

design and evaluation of the air barrier assembly of which Tyvek® ThermaWrap™ R5.0 is a component must be provided to the satisfaction of the code official.

- 5.4** This report recognizes the use of Tyvek® ThermaWrap™ R5.0 as a water-resistive barrier and as a component of an air barrier assembly only. Use of this product to provide thermal resistance is outside the scope of this report.

6.0 EVIDENCE SUBMITTED

- 6.1** Data in accordance with the ICC-ES Acceptance Criteria for Water-resistive Barriers (AC38), dated January 2013.
- 6.2** Report of testing in accordance with ASTM E2178.
- 6.3** Report of testing in accordance with ASTM E84.
- 6.4** Report of testing for corrosiveness, fungi resistance and moisture absorption in accordance with Sections 4.3.2, 4.3.3 and 4.3.4 of ICC-ES EG81.

7.0 IDENTIFICATION

Tyvek® ThermaWrap™ R5.0 is identified by a label, on the wrapper, package or container of each roll, bearing the manufacturer's name (E.I. DuPont de Nemours and Company, Inc.) and address, the product name, the manufacturing location (Greensboro, North Carolina), and the evaluation report number (ESR-3545).