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# ICC-ES Report

# ESR-3753

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Issued 10/2016  
This report is subject to renewal 10/2017.

**DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**  
**SECTION: 07 21 00—THERMAL INSULATION**

**REPORT HOLDER:**

**BRINC BUILDING PRODUCTS, INC.**

**1270 ROUTE 66  
NEW BETHLEHEM, PENNSYLVANIA 16242**

**EVALUATION SUBJECT:**

**THERMALBUCK™**



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# ICC-ES Evaluation Report

**ESR-3753**

Issued October 2016

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**DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**

**Section: 07 21 00—Thermal Insulation**

**REPORT HOLDER:**

**BRINC BUILDING PRODUCTS, INC.**  
1270 ROUTE 66  
NEW BETHLEHEM, PENNSYLVANIA 16242  
(814) 227-9728  
<http://thermalbuck.com>

**EVALUATION SUBJECT:**

**THERMALBUCK™**

**1.0 EVALUATION SCOPE**

**Compliance with the following codes:**

- 2015, 2012 and 2009 *International Building Code*® (IBC)
- 2015, 2012 and 2009 *International Residential Code*® (IRC)
- 2015, 2012 and 2009 *International Energy Conservation Code*® (IECC)

**Properties evaluated:**

- Surface-burning characteristics
- Thermal resistance (*R*-values)
- Physical properties

**2.0 USES**

**2.1 ThermalBuck™:**

ThermalBuck™ is used as a nonstructural thermal insulation element in buildings of Type V construction when installed in accordance with this report. The insulation is for use around the framed window and door openings of exterior walls.

**3.0 DESCRIPTION**

**3.1 General:**

ThermalBuck™ consists of a Type XIV, EPS (expanded polystyrene) thermal insulation profile, factory-applied Polyurethane/Polyurea coating having a 40 mil [0.040 inch (1.02 mm)] - nominal thickness.

ThermalBuck™ has an L-shaped cross-sectional profile and is available in varying lengths. The ThermalBuck™ EPS material complies with ASTM C578 as a Type XIV material, has a maximum thickness of 4 inches (102 mm), a nominal density of 2.4 pcf (32 kg/m<sup>3</sup>), a flame-spread

index (FSI) not exceeding 25 and a smoke-developed index (SDI) not exceeding 450 when tested in accordance with ASTM E84. See Table 1 for thermal resistance (*R*-value) of ThermalBuck™. See Table 2 for various sizes of the ThermalBuck™ profiles.

**4.0 INSTALLATION**

**4.1 General:**

Installation of ThermalBuck™ must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at all times on the jobsite during installation.

ThermalBuck™ is installed around the perimeter of window and door openings of exterior walls. ThermalBuck™ is field-cut to fit the openings. Sealant is applied to the ThermalBuck™ surfaces in contact with the wall opening. Where ThermalBuck™ lengths meet at corners of openings, each ThermalBuck™ end is cut and mitered in a manner such that when the ends are joined, they make contact over the perimeter of both cut edges and the EPS core is not exposed, with only the Polyurethane/Polyurea coating visible. Sealant is added to the mitered ends and then butted together. ThermalBuck™ is then fastened to the wall opening framing with 2-inch (51 mm)-long galvanized roofing nails. The nails are driven through the ThermalBuck™ and into the face of the: lintel, header, trimmer studs and sill framing members that are perpendicular to the length of the exterior wall.

The interior of the building must be separated from the ThermalBuck™ with a thermal barrier as required in IBC Section 2603.4, or IRC Section R316.4, as applicable. Protection against condensation must be provided in accordance with Section 1403.2. A vapor retarder must be provided in accordance with 2015 and 2012 IRC Section R702.7 or 2009 IRC Section R601.3. A water-resistive barrier in compliance with IBC Section 1404.2 and IRC Section R703.2, is required and, when applied over wood-based sheathing, must comply with IBC Section 2510.6 or 2015 IRC Section 703.7.3 or 2012 and 2009 IRC Section R703.6.3. Flashing of windows and doors, incorporating the water-resistive barrier is required in accordance with IBC Section 1405.4 or IRC Section R703.2. The attachment of wall coverings over the ThermalBuck must provide a minimum 1-inch (25.4 mm) penetration of the wall covering fasteners into wood framing members. Exterior wall assembly, exterior finish or a wall covering over the ThermalBuck™ must be structurally adequate to resist the required design wind pressures acting on the wall.

ThermalBuck™ must not be used as a nailing base for exterior siding materials. All fastening must penetrate

through the ThermalBuck™ and into the wall framing or into structural sheathing, as required by the siding manufacturer’s published installation instructions, or in accordance with the applicable code.

**5.0 CONDITIONS OF USE**

The ThermalBuck™ product described in this report comply 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 ThermalBuck™ must be installed in accordance with this report, the manufacturer’s published installation instructions and the applicable code. In the event of a conflict between the installation instructions and this report, this report governs.
- 5.2 The ThermalBuck™ must be separated from the building interior with a thermal barrier complying with the applicable code, such as minimum ½-inch-thick (12.7 mm) gypsum wallboard installed in accordance with the applicable code.
- 5.3 ThermalBuck™ must be protected by a water-resistive barrier complying with IBC Section 1404.2 or IRC Section R703.2, and flashing in accordance with IBC Section 1405.4 or IRC Section R703.4.

5.4 Jobsite certification and labeling of the insulation must comply with 2015 IRC Section 1101.10.1, 2012 IRC Section N1101.12.1, 2009 IRC Section N1101.4 and IECC Section 303.1.1, as applicable.

5.5 Use of ThermalBuck™ as a flashing material is outside the scope of this report.

**6.0 EVIDENCE SUBMITTED**

- 6.1 Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2015
- 6.2 Test reports in accordance with ASTM E84.

**7.0 IDENTIFICATION**

ThermalBuck™ must be packaged in bundles that are labeled with the manufacturer’s name (BRINC Building Products, Inc.) and address; the date of manufacture; the product name (ThermalBuck™); the density (2.4 pcf); the thermal-resistance R-value (when applicable); and the evaluation report number (ESR-3753).

**TABLE 1—MINIMUM R-VALUE (°F·ft²·h/Btu) AT 75°F MEAN TEMPERATURE**

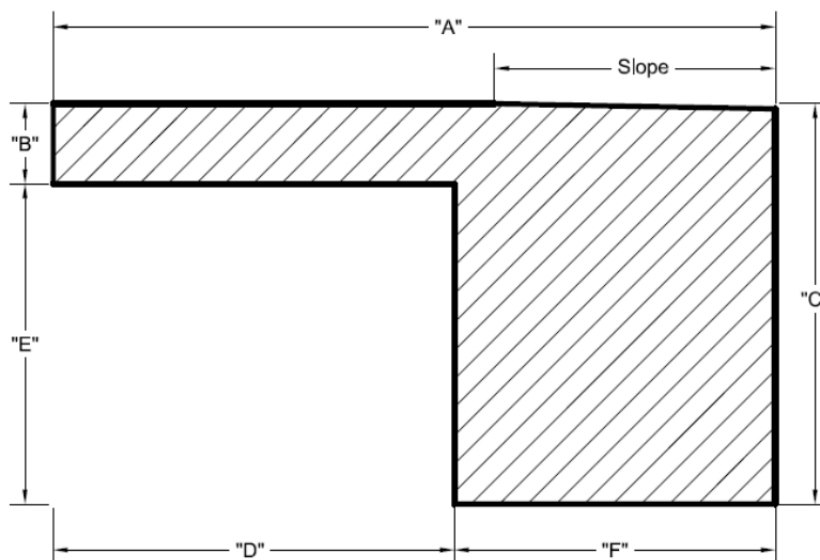
PROPERTY	TYPE XIV
Density, min., lb/ft³ (kg/m³)	2.40 (38.4)
Thermal resistance value, Per inch of thickness at 75°F·ft²·h/Btu (°K·m²/W)	4.20 (0.74)

For SI: 1 lb/ft³ = 16.018 kg/m³, 1°F·ft²·h/Btu = 0.176°K·m²/W, 1inch = 25.4 mm.

**TABLE 2—THERMALBUCK™ CROSS-SECTIONAL DIMENSIONS (inches)**

MODEL	DIMENSION									
	A	B	C	C	C	D	E	E	E	F
W0505	3.0	0.5	2.5	4.0	6.0	2.5	2.0	3.5	5.5	0.5
W0510	3.5	0.5	2.5	4.0	6.0	2.5	2.0	3.5	5.5	1.0
W0515	4.0	0.5	2.5	4.0	6.0	2.5	2.0	3.5	5.5	1.5
W0520	4.5	0.5	2.5	4.0	6.0	2.5	2.0	3.5	5.5	2.0
W0525	5.0	0.5	2.5	4.0	6.0	2.5	2.0	3.5	5.5	2.5
W0530	5.5	0.5	2.5	4.0	6.0	2.5	2.0	3.5	5.5	3.0
W0535	6.0	0.5	2.5	4.0	6.0	2.5	2.0	3.5	5.5	3.5
W0540	6.5	0.5	2.5	4.0	6.0	2.5	2.0	3.5	5.5	4.0

For SI: 1inch = 25.4 mm.



**FIGURE 1—THERMALBUCK™ CROSS-SECTIONAL VIEW**