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# ICC-ES Evaluation Report

# ESR-3033

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Reissued 11/2015  
This report is subject to renewal 11/2017.

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

**REPORT HOLDER:**

**GENERAL COATINGS MANUFACTURING CORP.**

**1220 EAST NORTH AVENUE  
FRESNO, CALIFORNIA 93725**

**EVALUATION SUBJECT:**

**ULTRA-THANE 230 WALL FOAM, SPRAY-APPLIED FOAM INSULATION**



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Reissued November 2015

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

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

**REPORT HOLDER:**

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**EVALUATION SUBJECT:**

**ULTRA-THANE 230 WALL FOAM, SPRAY-APPLIED FOAM INSULATION**

**1.0 EVALUATION SCOPE**

**Compliance with the following codes:**

- 2009 *International Building Code*® (IBC)
- 2009 *International Residential Code*® (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:**

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

**2.0 USES**

Ultra-Thane 230 Wall Foam spray-applied polyurethane foam plastic insulation is used as nonstructural thermal insulating material in buildings of Type V-B (IBC) construction, and in dwellings under the IRC. The insulation is for use in wall cavities, floor/ceiling assemblies, or in attics and crawl spaces when installed in accordance with Section 4.0.

**3.0 DESCRIPTION**

**3.1 General:**

The Ultra-Thane 230 Wall Foam system is a two-component, spray-applied, closed-cell, semirigid insulation with a nominal in-place density of 2.0 pcf. The insulation is

produced in the field by combining an isocyanate component A with a resin component B in a one-to-one volume ratio. Components have a shelf life of six months when stored in factory-sealed containers at temperatures between 40°F (4.5°C) and 75°F (24°C). The liquid components are supplied in 55-gallon (208 L) drums.

**3.2 Surface-burning Characteristics:**

The insulation has a flame-spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 at a maximum thickness of 4 inches (102 mm).

**3.3 Thermal Resistance (*R*-values):**

The insulation has thermal resistance (*R*-values) at a mean temperature of 75°F (24°C) as shown in Table 1.

**4.0 INSTALLATION**

**4.1 General:**

Ultra-Thane 230 Wall Foam insulation must be installed in accordance with the manufacturer's published installation instructions and this report. The manufacturer's published instructions and this report must be strictly adhered to and a copy of the manufacturer's published installation instructions must be available at all times on the jobsite during installation.

**4.2 Application:**

The insulation is spray-applied at the jobsite using a heated airless sprayer, capable of maintaining a temperature between 120°F (49°C) and 140°F (60°C), to combine Part A and Part B components at a one-to-one volume ratio, as specified in the manufacturer's published installation instructions. The insulation is applied in passes having a minimum thickness of 1/2 inch (12.7 mm) and a maximum thickness of 2 inches (51 mm) per pass, up to the total thickness specified in Section 3.2 of this report. The insulation passes must be allowed to fully expand prior to application of an additional pass. The maximum service temperature must be no greater than that specified in the manufacturer's installation instructions. The insulation must not be used in electrical outlet or junction boxes or in contact with rain, water (e.g., condensation, ice, snow), or soil. The substrate must be free of moisture, frost or ice, loose scales, rust, oil, and grease or other surface contaminants. The spray-applied foam insulation must be protected from weather during and after installation.

**4.3 Thermal Barrier:**

Ultra-Thane 230 Wall Foam insulation must be separated from the interior of the building by an approved thermal

barrier of 1/2-inch-thick (12.7 mm) gypsum wallboard or an equivalent 15-minute thermal barrier complying with, and installed in accordance with, IBC Section 2603.4 or IRC Section R316.4, as applicable, except where installation is in an attic or crawl space as described in Section 4.4.

**4.4 Ignition Barriers:**

When installation is in attics and crawl spaces, where entry is made only for service of utilities, the insulation must be protected against ignition in accordance with IBC Section 2603.4.1.6 or IRC Section R316.5.3 or R316.5.4, as applicable. Ventilation in the attic or crawl space must be provided in accordance with the applicable code.

**5.0 CONDITIONS OF USE**

The Ultra-Thane 230 Wall Foam insulation 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 insulation must be installed in accordance with the manufacturer’s published installation instructions, this report and the applicable code. If there are any conflicts between the manufacturer’s published installation instructions and this report, this report governs.
- 5.2 The insulation has been evaluated only for interior use in Type V-B construction under the IBC, and dwellings in accordance with the IRC.
- 5.3 The thickness and density of the insulation must not exceed that stated in Section 3.2.
- 5.4 The insulation must be protected from exposure to weather during and after application.
- 5.5 The insulation must be applied by contractors certified by General Coatings, The Spray Foam and Coatings Company.
- 5.6 The spray-applied foam insulation must be separated from the building interior as described in Sections 4.3 and 4.4.
- 5.7 Use of insulation in areas where the probability of termite infestation is “very heavy” must be in accordance with IBC Section 2603.8 or IRC Section R318.4.
- 5.8 Jobsite certification and labeling of the insulation must comply with IRC Sections N1101.4 and N1101.4.1 and IECC Sections 303.1.1 and 303.1.1.2, as applicable.
- 5.9 The Part A and Part B components are produced in Fresno, California, under a quality control program with inspections by ICC-ES.

**6.0 EVIDENCE SUBMITTED**

Data in accordance with the ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation (AC377), dated April 2016.

**7.0 IDENTIFICATION**

The Part A and Part B components for the Ultra-Thane 230 Wall Foam insulation are packaged in 55-gallon (208 L) drums bearing labels with the report holder’s name (General Coatings Manufacturing Corp.) and address; the date of manufacture and the lot number; the product name (Ultra-Thane 230); the mixing instructions; the density; the flame-spread and smoke-developed indices; and the evaluation report number (ESR-3033).

**8.0 OTHER CODES**

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

- 2006 *International Building Code*® (2006 IBC)
- 2006 *International Residential Code*® (2006 IRC)
- 2006 *International Energy Conservation Code*® (2006 IECC)

The products comply with the above-mentioned codes as described in Sections 2.0 through 7.0 of this report, with the revisions noted below:

- **Application with a Prescriptive Thermal Barrier:** See Section 4.3, except the approved thermal barrier must be installed in accordance with Section R314.4 of the 2006 IRC.
- **Application with a Prescriptive Ignition Barrier:** See Section 4.4, except attics must be vented in accordance with Section 1203.2 of the 2006 IBC, and crawl space ventilation must be in accordance with Section 1203.3 of the 2006 IBC, as applicable. Additionally, an ignition barrier must be installed in accordance with Sections R314.5.3 or R314.5.4 of the 2006 IRC, as applicable.
- **Protection against Termites:** See Section 5.7, except use of the insulation in areas where the probability of termite infestation is “very heavy” must be in accordance with Section R320.5 of the 2006 IRC.
- **Jobsite Certification and Labeling:** See Section 5.8, except jobsite certification and labeling must comply with Sections 102.1.1 and 102.1.11, as applicable, of the 2006 IECC.

**TABLE 1—THERMAL RESISTANCE (R-VALUES)**

THICKNESS (INCHES)	R-VALUE <sup>1</sup> (°F.ft <sup>2</sup> .h/Btu)
1	5.9
1.5	9
2	12
3	19
3.5	22
4	26

For SI: 1 inch = 25.4 mm; 1°F.ft<sup>2</sup>.h/Btu = 0.176 110°K.m<sup>2</sup>/W.

<sup>1</sup>R-values are calculated based on tested K values at 1-inch and 4-inch thicknesses.