ICC EVALUATION SERVICE®

ICC-ES Evaluation Report

ESR-5150

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DIVISION: 07 00 00—THERMAL AND MOISTURE
Section: 07 21 00— Thermal Insulation

REPORT HOLDER:

GENYK

EVALUATION SUBJECT:

ELITE 2.0 SPRAY-APPLIED POLYURETHANE FOAM PLASTIC INSULATION

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015 and 2012 *International Building Code®* (IBC)
- 2021, 2018, 2015 and 2012 *International Residential Code®* (IRC)
- 2021, 2018, 2015 and 2012 *International Energy Conservation Code®* (IECC)

Properties evaluated:

- Physical Properties
- Surface-burning characteristics
- Thermal resistance (*R*-values)
- Vapor permeability

2.0 USES

ELITE 2.0 insulation is a closed cell spray foam insulation used as a nonstructural thermal insulating material for Type V construction under the IBC and dwellings under the IRC. The insulation may be used as a vapor retarder when installed in accordance with Section 3.4. The insulation is for use in wall cavities, floor assemblies, ceiling assemblies or attics and crawl spaces when installed in accordance with Section 4.4.

3.0 DESCRIPTION

3.1 ELITE 2.0 INSULATION:

ELITE 2.0 insulation is a medium density rigid spray-applied cellular polyurethane foam plastic insulation. It is a two component, closed-cell, one-to-one by volume spray foam system with a nominal density of 2.0 pcf (32.0 kg/m^3). The foam is produced by blending Polymeric Isocyanate (A component) with the ELITE 2.0 resin (B component). The Polymeric Isocyanate (A component) has a shelf life of 12 months when stored in factory-sealed containers at temperatures between 50°F (10°C) and 100°F (37°C). ELITE 2.0 resin (B component) has a shelf life of 6 months when stored in factory-sealed containers at temperatures between 50°F (10°C) and 77°F (25°C).

3.2 Surface-burning Characteristics:

ELITE 2.0 insulation, at a maximum thickness of 4 inches (102 mm) and a nominal density of 2 pcf (32 kg/m^3), 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 (UL 723). There are not any thickness limitations when covered by a code-prescribed thermal barrier.

3.3 Thermal Resistance (*R*-values):

ELITE 2.0 insulation has a thermal resistance, *R*-value, at a mean temperature of 75°F (24°C) as shown in table 1.

3.4 Vapor Permeance:

ELITE 2.0 insulation has a vapor permeance of between 0.1 perm ($5.7x10^{-12}$ kg/Pa-s-m^2) and 1 perm ($5.7x10^{-11}$ kg/Pa-s-m^2) at a minimum thickness of 2 inches (52 mm) and may be used where a Class II vapor retarder is required by the applicable code.

4.0 INSTALLATION

4.1 General:

ELITE 2.0 insulation must be installed in accordance with the manufacturer's published installation instructions and this report. A copy of the manufacturer's published installation must be available at all times during installation.

4.2 Application:

ELITE 2.0 insulation must be applied using spray equipment specified in the manufacturer's published installation instructions. ELITE 2.0 insulation must be applied when the ambient and substrate temperature is between 14°F (-10°C) and 95°F (35°C). The insulation must be used in areas that have a service temperature no greater than 176°F (80°C). The foam plastic must not be used in electrical outlets or junction boxes, or in continuous contact with rain or water. The substrate must be clean, dry and free of frost, ice, loose debris or contaminations that will interfere with adhesion of the spray foam insulation. The ELITE 2.0 product is applied in passes having a maximum thickness of 2 inches (52 mm) per pass. When multiple passes are required, applicators should wait until the core temperature of the foam has dropped below 100°F (38°C) before subsequent passes can be sprayed.

4.3 Thermal Barrier:

4.3.1 Application with a Prescriptive Thermal Barrier: Elite 2.0 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 thermal

barrier complying with and installed in accordance with, IBC Section 2603.4 or IRC Section R316.4, as applicable. When installation is within an attic or crawl space as described in Section 4.4, a thermal barrier is not required between the foam plastic and the attic or crawl space, but is required between the insulation and the interior of the building.

4.4 Ignition Barrier – Attics and Crawl Spaces:

4.4.1 Application with a Prescriptive Ignition Barrier: When ELITE 2.0 insulation is installed within attics or crawl spaces where entry is made only for service of utilities, an ignition barrier must be installed in accordance with IBC section 2603.4.1.6 and IRC Sections R316.5.3 and R316.5.4, as applicable. The ignition barrier must be consistent with the requirement for the type of construction required by the applicable code, and must be installed in a manner such that the foam plastic insulation is not exposed. The attic or crawl space area must be separated from the interior of the building by an approved thermal barrier as described in Section 4.3.1.

5.0 CONDITIONS OF USE

ELITE 2.0 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 This evaluation report and the manufacturer's published installation instructions, when required by the code official, must be submitted at the time of permit application.

5.2 ELITE 2.0 insulation and applicable coating must be installed in accordance with the manufacturer's published installation instructions, this report and the applicable code. The instructions within this report govern if there are any conflicts between the manufacturer's published installation instructions and this report.

5.3 ELITE 2.0 insulation must be separated from the interior of the building by an approved thermal barrier, as described in Section 4.3.1. In attics and crawl spaces, the insulation must be separated from the interior of the attic or crawl space by an ignition barrier, as described in Section 4.4.1.

5.4 ELITE 2.0 insulation must be protected from the weather during application.

5.5 ELITE 2.0 insulation must be applied by installers approved by GENYK.

5.6 Use of ELITE 2.0 insulation in areas where probability of termite infestation is "very heavy" must be in accordance with IBC Section 2603.8 (2012 IBC Section 2603.9) or IRC R318.4, as applicable.

5.7 Jobsite certification and labeling of the insulation must comply with IRC Section N1101.10.1 and N1101.10.1.1 (2012 IRC Section N1101.12.1 and N1101.12.1.1) and IECC Sections C303.1.1, C303.1.1.1, R303.1.1 and R303.1.1.1, as applicable.

5.8 ELITE 2.0 insulation is produced under a quality control program with inspections by ICC-ES

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation (AC377), dated April 2020 (editorially revised July 2020).

6.2 Report on water vapor transmission tests in accordance with ASTM E96 (desiccant method).

7.0 IDENTIFICATION

7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-5150) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.

7.2 In addition, components for ELITE 2.0 insulation are identified with the manufacturer's name (GENYK), address and telephone number; the product trade name (ELITE 2.0); product type (A or B component); use instructions; the density; the flame-spread and smoke-developed indices; the evaluation report number (ESR-5150).

7.3 The report holder's contact information is the following:

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

THICKNESS (inches)	*R*-VALUE (°F.ft^2.h/Btu)
1	6.8
2	13
3.5	23
4	27
5	33
6	40
7	46
8	58
9	59
10	66
11	72
12	85

For **SI:** 1 inch = 25.4 mm; 1°F.ft^2.hr/Btu = 0.176 110 k.m^2/W.

[1]Calculated *R*-values are based on tested K-values at 1- and 3.5-inch thicknesses.
**R*-values greater than 10 are rounded to the nearest whole number.