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Standard Specification for Cellulosic Fiber Stabilized Thermal Insulation¹

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1. Scope

1.1 This specification covers the composition and physical properties of spray-applied cellulosic fiber stabilized thermal insulation applied to open or closed ceiling spaces, regardless of slope, where temperatures range from -49 to 194°F (-45 to 90°C).

1.2 Stabilized cellulosic fiber thermal insulation is produced by the addition of adhesive(s) to loose-fill cellulosic fiber insulation. The adhesive(s) may be added to the insulation at time of manufacture and, if necessary, activated by the addition of water when installed or the adhesive may be added to the insulation at the time of installation.

1.3 This is a material specification that is not intended to deal with methods of application that are supplied by the manufacturer.

1.4 The values stated in inch-pound units are to be regarded as standard. The SI units given in parentheses are for information only.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- C 167 Test Methods for Thickness and Density of Blanket or Batt Thermal Insulations²
- C 168 Terminology Relating to Thermal Insulating Materials²
- C 739 Specification for Cellulosic Fiber (Wood-Base) Loose-Fill Thermal Insulation²
- C 1149 Specification for Self-Supported Spray Applied Cellulosic Thermal Insulation²
- C 1304 Test Method for Assessing the Odor Emission of Thermal Insulation Materials²
- C 1338 Test Method for Determining Fungi Resistance of Insulation Materials and Facings²
- E 970 Test Method for Critical Radiant Flux of Exposed

Attic Floor Insulation Using a Radiant Heat Energy Source³

3. Terminology

3.1 *Definitions*—For definitions of terms used in this specification, see Terminology C 168.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *shrinkage*—decrease in thickness that occurs from the time of installation until the insulation achieves a stable moisture content.

3.2.2 *stabilized cellulose*—a cellulosic insulation product treated to resist, after drying, further settling of no more than 5 %.

4. Materials and Manufacture

4.1 The basic material shall be recycled cellulosic fiber made from selected paper or paperboard stock. Additives are introduced to provide properties such as flame resistance, processing and handling characteristics. An adhesive is added to the insulation product to resist long-term settling of the insulation after installation and curing.

4.2 The materials are processed into a form suitable for installation by a pneumatic method.

4.3 The adhesive may be added to the product at the time of manufacture or at the time of installation by means of a liquid spray.

5. Physical and Chemical Properties

5.1 *Density*—The density of conditioned stabilized insulation in lb/ft³ (kg/m³) shall be determined in accordance with Section 7.

5.2 *Corrosiveness*—The loose-fill insulation material shall be tested for corrosiveness in accordance with Section 8. The composition of the insulation material shall be such that after testing, no perforation of the 0.003 in. (0.076 mm) metal specimens shall be evident when the specimens are observed over a 40-W appliance light bulb. Notches extending into the coupon 0.1 in. (3 mm) or less from any edge shall be ignored.

5.3 *Critical Radiant Flux*—When tested in accordance with Section 9, the critical radiant flux shall be equal to or greater than 0.11 Btu/ft²·s (0.12 W/cm²). All values shall be reported to two significant digits.

¹ This specification is under the jurisdiction of ASTM Committee C16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.23 on Blanket and Loose-Fill Insulation.

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² *Annual Book of ASTM Standards*, Vol 04.06.

³ *Annual Book of ASTM Standards*, Vol 04.07.