



## Standard Specification for Cellulosic Fiber Loose-Fill Thermal Insulation<sup>1</sup>

This standard is issued under the fixed designation C 739; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (€) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the Department of Defense.*

€<sup>1</sup> NOTE—Sections 1.1, 4, 12.3.1 and Equation 3 were editorially revised in September 2003.

### 1. Scope

1.1 This specification covers the composition and physical requirements of chemically treated, recycled cellulosic fiber loose-fill type thermal insulation for use in attics or enclosed spaces in housing, and other framed buildings within the ambient temperature range from –45 to 90°C (–49 to 194°F) by pneumatic or pouring application. While products that comply with this specification are used in various constructions, they are adaptable primarily, but not exclusively, to wood joist, rafters, and stud construction.

1.2 The values stated in SI units are to be regarded as the standard. The values in parentheses are provided for information only.

1.3 *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:

B 152 Specification for Copper Sheet, Strip, Plate, and Rolled Bar<sup>2</sup>

C 168 Terminology Relating to Thermal Insulation<sup>3</sup>

C 177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus<sup>3</sup>

C 236 Test Method for Steady-State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box<sup>4</sup>

C 518 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus<sup>3</sup>

<sup>1</sup> 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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<sup>2</sup> Annual Book of ASTM Standards, Vol 02.01.

<sup>3</sup> Annual Book of ASTM Standards, Vol 04.06.

<sup>4</sup> Discontinued, replaced by Test Method C 1363, see 2002 Annual Book of ASTM Standards, Vol 04.06.

C 687 Practice for Determination of Thermal Resistance of Loose-Fill Building Insulation<sup>3</sup>

C 1045 Practice for Calculating Thermal Transmission Properties from Steady-State Conditions<sup>3</sup>

C 1114 Test Method for Steady-State Thermal Transmission Properties by Means of the Thin-Heater Apparatus<sup>3</sup>

E 970 Test Method for Critical Radiant Flux of Exposed Attic Floor Insulation Using a Radiant Heat Energy Source<sup>5</sup>

### 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 *attic*—an enclosed space between the roof and ceiling of the occupied part of a building.

3.2.2 *critical radiant flux*—the level of incident radiant heat energy on the attic floor insulation system at the most distant flame-out point (W/cm<sup>2</sup> (Btu/ft<sup>2</sup>·s)).

### 4. Materials and Manufacture

4.1 The basic material shall be recycled cellulosic fiber made from selected paper, paperboard stock, or ground wood stock, excluding contaminated materials, which may reasonably be expected to be retained in the finished product. Suitable chemicals are introduced to provide properties such as flame resistance, processing, and handling characteristics.

4.2 The basic material may be processed into a form suitable for installation by pneumatic or pouring methods.

### 5. Physical and Chemical Properties

5.1 *Design Density*—The design density shall be determined in accordance with Section 8. Report all units in kg/m<sup>3</sup> (lb/ft<sup>3</sup>).

5.1.1 Design density is not a basis for acceptance or rejection.

5.2 *Corrosiveness*—The loose-fill insulation material shall be tested for corrosiveness as specified in Section 9. The composition of the insulation material shall be such that after

<sup>5</sup> Annual Book of ASTM Standards, Vol 04.07.

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