



**Designation: C 534 – 99**

AMERICAN SOCIETY FOR TESTING AND MATERIALS  
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## **Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form<sup>1</sup>**

This standard is issued under the fixed designation C 534; 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 (ε) indicates an editorial change since the last revision or reapproval.

### **1. Scope**

1.1 This specification covers preformed flexible elastomeric cellular thermal insulation in sheet and tubular form. This specification covers materials to be used on commercial or industrial systems with operating temperatures from -57 to 104°C (-70 to 220°F).

1.2 The values stated in SI units are to be regarded as the standard. The inch-pound equivalents of SI units, given in parentheses, may be approximate.

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:**

- C 168 Terminology Relating to Thermal Insulating Materials<sup>2</sup>
- C 177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded Hot Plate Apparatus<sup>2</sup>
- C 209 Test Methods for Cellulosic Fiber Insulation Board<sup>2</sup>
- C 390 Criteria for Sampling and Acceptance of Preformed Thermal Insulation Lots<sup>2</sup>
- C 335 Test Method for Steady-State Heat Transfer Properties of Horizontal Pipe Insulation<sup>2</sup>
- C 411 Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation<sup>2</sup>
- C 447 Practice for Estimating the Maximum Use Temperature of Thermal Insulations<sup>2</sup>
- C 518 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus<sup>2</sup>
- C 585 Practice for Inner and Outer Diameters of Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing<sup>2</sup>
- C 692 Test Method for Evaluating the Influence of Thermal Insulations on the External Stress Corrosion Cracking

Tendency of Austenitic Steel<sup>2</sup>

C 795 Specification for Thermal Insulation for use in Contact with Austenitic Stainless Steel<sup>2</sup>

C 871 Test Methods for Chemical Analysis of Thermal Insulation Materials for Leachable Chloride, Fluoride, Silicate, and Sodium Ions<sup>2</sup>

C 1045 Practice for Calculating Thermal Properties from Steady-State Heat Flux Measurements<sup>2</sup>

C 1058 Practice for Selecting Temperatures for Evaluating and Reporting Thermal Properties of Thermal Insulation<sup>2</sup>

C 1114 Test Method for Steady-State Thermal Transmission Properties by Means of the Thin-Heater Apparatus<sup>2</sup>

C 1304 Test Method for Assessing the Odor Emissions of Thermal Insulation Materials<sup>2</sup>

D 883 Terminology Relating to Plastics<sup>3</sup>

D 1622 Test Method for Apparent Density of Rigid Cellular Plastics<sup>3</sup>

D 1667 Specification for Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam)<sup>3</sup>

E 84 Test Method for Surface Burning Characteristics of Building Materials<sup>4</sup>

E 96 Test Methods for Water Vapor Transmission of Materials<sup>2</sup>

### **3. Terminology**

3.1 *Definitions*—Terms used in this specification are defined in Terminology C 168 and in Terminology D 883.

3.2 *Definition of Term Specific to This Standard:*

3.2.1 *cellular elastomeric foam*—a closed-cell foam made of natural or synthetic rubber, or a mixture of the two, and containing other polymers, other chemicals, or both, which may be modified by organic or inorganic additives. These foams have properties similar to those of vulcanized rubber, namely, (1) the ability to be converted from a thermoplastic to a thermosetting state by cross-linking (vulcanization) and (2) the ability to recover substantially its original shape when strained or elongated.

### **4. Classification**

4.1 The types of preformed flexible elastomeric cellular thermal insulation are designated as follows:

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee C-16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.22 on Organic and Nonhomogeneous Inorganic Thermal Insulation.

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<sup>2</sup> Annual Book of ASTM Standards, Vol 04.06.

<sup>3</sup> Annual Book of ASTM Standards, Vol 08.01.

<sup>4</sup> Annual Book of ASTM Standards, Vol 04.07.