



Standard Specification for Reflective Insulation for Building Applications¹

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1. Scope

1.1 This specification covers the general requirements and physical properties of reflective insulations for use in building applications. These insulation materials consist of one or more low emittance surfaces, such as metallic foil or metallic deposits, unmounted or mounted on substrates. Reflective insulations derive thermal performance from surfaces with an emittance of 0.1 or less, facing enclosed air spaces.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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:²

- C168 Terminology Relating to Thermal Insulation
- C177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
- C390 Practice for Sampling and Acceptance of Thermal Insulation Lots
- C518 Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- C727 Practice for Installation and Use of Reflective Insulation in Building Constructions
- C1258 Test Method for Elevated Temperature and Humidity Resistance of Vapor Retarders for Insulation
- C1338 Test Method for Determining Fungi Resistance of

Insulation Materials and Facings

- C1363 Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus
 - C1371 Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emis-someters
 - E84 Test Method for Surface Burning Characteristics of Building Materials
 - E96/E96M Test Methods for Water Vapor Transmission of Materials
 - E2599 Practice for Specimen Preparation and Mounting of Reflective Insulation, Radiant Barrier and Vinyl Stretch Ceiling Materials for Building Applications to Assess Surface Burning Characteristics
- 2.2 TAPPI Standard:
- T512 Creasing of Flexible Packaging Material Paper Specimens for Testing³

3. Terminology

3.1 *Definitions*—Terminology C168 shall apply to the terms in this specification.

4. Ordering Information

4.1 Prior to purchase, for sampling and acceptance procedures, Practice C390 is an option when agreed upon by the purchaser and the manufacturer.

4.2 Specify the required thermal resistance by the direction of the heat flow.

4.3 Specify the width, depth, and total area to be insulated.

4.4 Specify special markings, when required.

5. Materials and Manufacture

5.1 Reflective insulation materials shall consist of low emittance surface(s) with, or without, substrates and adhesives required to meet the specified thermal performance and physical properties.

5.2 Multiple layer reflective insulations shall be designed to attain the intended separation of layers in normal application.

¹ This specification is under the jurisdiction of ASTM Committee C16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.21 on Reflective Insulation.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Technical Association of the Pulp and Paper Industry (TAPPI), 15 Technology Parkway South, Norcross, GA 30092, <http://www.tappi.org>.