



Standard Specification for Flexible Glass Fiber Insulation for Metal Buildings¹

This standard is issued under the fixed designation C 991; 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 the classification, composition, and physical properties of flexible glass fiber insulation for use as interior surface of walls and roofs of metal buildings.

1.2 The basic insulation blanket is designed to be post-processed by a laminating process that applies an adhesive bonded facing to provide the interior finish and vapor retarder requirements for the building envelope.

1.3 The thermal values measured in accordance with this specification for both pre-processed and post-processed insulation are for the insulation only and do not include the effects of air-film surface resistance, changes in mean temperature, or compression of insulation at the framing members of the building, through metal conductance of fasteners and other parallel heat-transfer paths due to design or installation techniques.

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

1.5 The following safety caveat pertains to the Test Method section of this specification: *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 177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus²
- C 390 Criteria for Sampling and Acceptance of Preformed Thermal Insulation Lots²
- C 518 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of

The Heat Flow Meter Apparatus²

C 653 Guide for Determination of the Thermal Resistance of Low-Density Blanket-Type Mineral Fiber Insulation²

C 1104 Test Method for Determining Water Vapor Sorption of Unfaced Mineral Fiber Insulation.²

C 1136 Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation²

C 1338 Test Method for Determining Fungi Resistance of Insulation Materials and Facings²

E 84 Test Method for Surface Burning Characteristics of Building Materials³

E 96 Test Methods for Water Vapor Transmission of Materials²

3. Terminology

3.1 *Definitions*—For definitions of terms relating to insulation, refer to Terminology C 168.

4. Classification

4.1 The flexible insulation is furnished in two types, as follows:

4.1.1 *Type I*—Glass processed from the molten state into fibrous form, bonded with a thermosetting resin, and formed into a resilient flexible blanket or batt.

4.1.2 *Type II*—Type I material supplied with a suitable vapor-retarder facing adhered to one surface.

5. Ordering Information

5.1 Type I material shall be ordered by specifying thermal resistance value, length, and width.

5.2 Type II material shall be ordered by specifying thermal resistance value, type of facing, facing permeance, length, width, number of tabs, and tab width.

5.3 Certification, when required, shall be in accordance with Section 12.

6. Physical Properties

6.1 *Type 1 Material:*

6.1.1 *Thermal Resistance*—The thermal resistance of the pre-processed insulation from nine randomly selected specimens, three specimens from each of three rolls, shall be not less than 100% of the R-value agreed upon between the purchaser and the supplier. Use Test Method C 177 or C 518 at 75°F

¹ This specification is under the jurisdiction of ASTM Committee C-16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.23 on Blanket and Loose Fill Insulation.

Current edition approved Jan. 10, 1998. Published June 1998. Originally published as C 991 – 83. Last previous edition C 991 – 92.

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

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