



Designation: C1559 – 15

# Standard Test Method for Determining Wicking of Fibrous Glass Blanket Insulation (Aircraft Type)<sup>1</sup>

This standard is issued under the fixed designation C1559; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This test method covers a laboratory procedure for evaluating the tendency of, aircraft type, fibrous glass blanket insulation to wick water.

1.2 The wicking characteristics of materials can be affected by environmental conditions such as temperature and humidity. Values obtained as a result of this test method does not adequately describe the wicking characteristics of materials subject to conditions other than those indicated in the test method. (See Specification C800.)

1.3 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.

1.4 *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*:<sup>2</sup>
- C168 Terminology Relating to Thermal Insulation
  - C390 Practice for Sampling and Acceptance of Thermal Insulation Lots
  - C800 Specification for Fibrous Glass Blanket Insulation (Aircraft Type)
  - E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

## 3. Terminology

3.1 *Definitions*—Terminology C168 shall be considered as applying to the terms used in this specification.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee C16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.33 on Insulation Finishes and Moisture.

Current edition approved March 1, 2015. Published June 2015. Originally approved in 2003. Last previous edition approved in 2009 as C1559 – 04(2009). DOI: 10.1520/C1559-15.

<sup>2</sup> 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.

3.1.1 *wicking*—the infiltration of a wetting liquid into a fibrous glass blanket by capillary attraction.

## 4. Summary of Test Method

4.1 The insulation is suspended in de-ionized or distilled water so that the bottom of the specimen is submerged to one inch below the water surface; distance of wicking is noted every 24 h for 96 h and then again at the end of 168 h.

## 5. Significance and Use

5.1 The tendency of the insulation toward wicking can result in an increase in weight and a resultant potential degradation in the properties of the insulation.

## 6. Apparatus

6.1 As described in the Procedure section of this test method.

6.2 *Steel Rule*, accurate to  $\pm 0.05$  in. (1 mm).

## 7. Sampling, Test Specimens, and Test Units

7.1 Six specimens shall be tested for each procedure, cut with the axis parallel to the length and six cut with the axis perpendicular to the length from a representative package. (See Practice C390.)

7.2 The specimens shall be 1- by 6-in. (25.4- by 152.4-mm) by full sample thickness.

7.3 The insulation shall be tested without facing or jacketing.

## 8. Conditioning

8.1 As described in the Procedure section of this test method.

## 9. Procedure A—Wicking as Received

9.1 Condition specimens for at least 24 h at  $73 \pm 4^\circ\text{F}$  ( $23 \pm 2^\circ\text{C}$ ) and  $50 \pm 5\%$  relative humidity.

9.2 With fine wire, fasten loosely six specimens (three cut with the axis parallel to the length and three cut with the axis