



Designation: C1936 – 23

# Standard Test Method for Corrosiveness of Mineral-Fiber or Cellulosic-Fiber Insulation by Comparison to Control<sup>1</sup>

This standard is issued under the fixed designation C1936; 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 method provides a qualitative measure of the corrosiveness of mineral-fiber or cellulose fiber insulation by comparison to a control.

1.2 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

**A109/A109M** Specification for Steel, Strip, Carbon (0.25 Maximum Percent), Cold-Rolled

**B152/B152M** Specification for Copper Sheet, Strip, Plate, and Rolled Bar

**B209/B209M** Specification for Aluminum and Aluminum-Alloy Sheet and Plate

**C168** Terminology Relating to Thermal Insulation

**G1** Practice for Preparing, Cleaning, and Evaluating Corrosion Test Specimens

## 3. Terminology

3.1 *Definitions*—Terminology **C168** shall be considered as applicable to the terms used in these test methods.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee **C16** on Thermal Insulation and is the direct responsibility of Subcommittee **C16.31** on Chemical and Physical Properties.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

## 4. Summary of Test Method

4.1 Individually assemble five each of specially cleaned steel, copper, and aluminum test plates between pieces of insulation. Insulation is held uniformly against each side of the test plate with wire screens and rubber bands.

4.2 Assemble an equal number of cleaned metal test plates between pieces of washed sterile cotton in an identical manner.

4.3 Vertically suspend the samples in a humidity test chamber at  $95 \pm 3\%$  relative humidity and temperature of  $120 \pm 3^\circ\text{F}$  ( $49 \pm 2^\circ\text{C}$ ) for time periods determined by the type of metal being tested. Steel is tested for  $96 \pm 2$  h. Copper and aluminum are tested for  $720 \pm 5$  h.

4.4 After the appropriate test period, compare the test plates exposed to the insulation to the control plates exposed to sterile cotton for severity of corrosion. The insulation is considered to have passed this test if the corrosion attributed to the insulation is not significantly worse than that of the washed sterile cotton controls.

## 5. Significance and Use

5.1 The fiber composition and the type of binder used in the manufacture of mineral fiber insulation can sometimes create a potential for corrosion on certain metals in the presence of water or water vapor.

5.2 The fiber composition and type of fire retardant used in the manufacture of cellulosic fiber insulation can sometimes create a potential for corrosion on certain metals in the presence of water or water vapor.

5.3 This method is used to determine the relative corrosion potential of mineral or cellulosic fiber insulation on specific metals under elevated temperature and high humidity conditions only.

## 6. Apparatus

6.1 *Woven Wire Screen*,  $1\frac{1}{2} \pm \frac{1}{4}$  by  $4\frac{1}{2} \pm \frac{1}{4}$  in. ( $38 \pm 6.3$  by  $114 \pm 6.3$  mm), made of Type 304 stainless steel,  $0.063 \pm 0.005$ -in. ( $1.60 \pm 0.13$ -mm) wire,  $\frac{7}{16} \pm \frac{1}{16}$ -in. ( $11 \pm 1.6$ -mm) open square grid.

6.2 *Rubber Bands*, No. 12.