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Standard Guide for Development of Coverage Charts for Loose-Fill Thermal Building Insulations¹

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1. Scope

1.1 This guide provides information to manufacturers for the development of a loose-fill thermal insulation product coverage chart. This guide is limited to developing a coverage chart from density versus thickness, apparent thermal conductivity versus density, and thickness versus area mass relationships obtained through product testing.

1.2 This guide applies to a wide variety of loose-fill thermal insulation products including mineral fiber (Specification C764), or cellulosic fiber (Specification C739) materials; granular types including vermiculite (Specification C516) and perlite (Specification C549); pelletized products; and any other insulation material that can be installed pneumatically or poured in place.

1.3 Coverage charts for loose-fill insulation products are required by regulation under the United States Federal Trade Commission's 16CFR Part 460. Other countries or local governing agencies may have coverage chart requirements in addition to, or that differ from, those presented in this guide; see the Appendix for examples.

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

1.5 *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 to determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

C168 Terminology Relating to Thermal Insulation

C516 Specification for Vermiculite Loose Fill Thermal Insulation

C549 Specification for Perlite Loose Fill Insulation

C739 Specification for Cellulosic Fiber Loose-Fill Thermal Insulation

C764 Specification for Mineral Fiber Loose-Fill Thermal Insulation

C687 Practice for Determination of Thermal Resistance of Loose-Fill Building Insulation

C1374 Test Method for Determination of Installed Thickness of Pneumatically Applied Loose-Fill Building Insulation

C1574 Guide for Determining Blown Density of Pneumatically Applied Loose-Fill Mineral Fiber Thermal Insulation

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

2.2 Other Referenced Documents:

16CFR Part 460, United States Federal Trade Commission Labeling and Advertising of Home Insulation³

3. Terminology

3.1 *Definitions* – For definitions of terms used in this guide, see Terminology C168.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *constant density*—The uniformity in mass per unit volume of a loose-fill insulation throughout its recommended thickness installation range.

3.2.2 *installed thickness*—The thickness, as measured, immediately after application of a loose-fill insulation.

3.2.3 *settled density*—The mass per unit volume of a loose-fill insulation after which time and/or forces have exerted their effect upon thickness.

3.2.4 *settled thickness*—The thickness, as measured, after which neither time nor forces effect a measurable change.

4. Summary of Guide

4.1 This guide provides several procedures for use in developing loose-fill product coverage chart values from test-derived, best-fit settled density versus settled thickness, apparent thermal conductivity versus density, and installed thickness versus mass per unit area relationships. The settled density versus settled thickness relationship is determined using long-term aging studies or other methods as identified in the material

¹ This guide is under the jurisdiction of ASTM Committee C16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.23 on Blanket and Loose Fill 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 United States Code of Federal Regulations, Title 16, Part 460