



Designation: **C1015–06 (Reapproved 2011)^{ε1} C1015 – 17**

Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation¹

This standard is issued under the fixed designation C1015; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

~~^{ε1} NOTE—Note 1 was editorially revised in December 2011.~~

1. Scope

1.1 This practice covers procedures for the installation of cellulosic and mineral fiber loose-fill insulation in ceilings, attics, and floor and wall cavities of new or existing housing and other framed buildings.

1.2 This practice applies only to the installation of dry loose-fill thermal insulation consisting of cellulosic materials or mineral fiber by pneumatic or pouring application.

1.3 This practice covers the installation process from pre-installation inspection through post-installation procedure. It does not cover the production of the insulation materials.

1.4 This practice is not intended to replace the manufacturer's installation instructions, but shall be used in conjunction with such instructions. This practice is not intended to supersede local, state, or federal codes.

1.5 This practice assumes that the installer possesses a good working knowledge of the applicable codes and regulations, safety practices, tools, equipment, and methods necessary for the installation of thermal insulation materials. It also assumes that the installer understands the fundamentals of residential construction that affect the installation of insulation.

1.6 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.

1.7 *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.* For specific precautionary statements, see Section 5.

2. Referenced Documents

2.1 *ASTM Standards:*²

[C168 Terminology Relating to Thermal Insulation](#)

[C739 Specification for Cellulosic Fiber Loose-Fill Thermal Insulation](#)

[C755 Practice for Selection of Water Vapor Retarders for Thermal Insulation](#)

[C764 Specification for Mineral Fiber Loose-Fill Thermal Insulation](#)

2.2 *NFPA/NFPA Standards:*³

[NFPA 31 Standard for the Installation of Oil Burning Equipment](#)

[NFPA 54 National Fuel Gas Code](#)

[NFPA 70 National Electrical Code](#)

[NFPA 211 Standard for Chimneys, Fireplaces, Vents and Solid-Fuel Burning Appliances](#)

2.3 *ICC/ICC Document:*⁴

[International Residential Code 2003](#)

¹ This practice 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 Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169-7471, <http://www.nfpa.org>.

⁴ Available from International Code Council (ICC), 500 New Jersey Ave., NW, 6th Floor, Washington, DC 20001, <http://www.iccsafe.org>.

2.4 ~~Federal~~ *Federal Standard*.⁵

FTC Trade Regulation Rule 16 CRF 460.460 Labeling and Advertising of Home Insulation

3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice, see Terminology C168.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *installer*—the person or persons who apply thermal insulation materials in residential buildings whether or not such person or persons have contracted with the owner to perform the work.

3.2.2 *cellulosic loose-fill thermal insulating materials*—those materials that meet the minimum requirements specified in Specification C739.

3.2.3 *conditioned space*—a space in a residential building that is served by a heating or cooling system.

3.2.4 *mineral fiber loose-fill thermal insulating materials*—those materials that meet the minimum requirements specified in Specification C764.

3.2.5 *owner*—the person, partnership, corporation, agency, or other entity who owns the residential building to be insulated whether such ownership is by virtue of deed, contract, or any other instrument for acquiring legal title under the laws of the state in which the building is located.

3.2.6 *residential building*—a building used for residential occupancy and that has a mechanical or electrical system for heating or for cooling, or for both.

3.2.7 *vapor retarder*—a material (membrane or paint) that has a water vapor permeance rating of 1 perm (5.7×10^{-8} or less). See Practice C755 for more information on vapor retarders.

4. Significance and Use

4.1 This practice recognizes that effectiveness, safety, and durability of insulation depend not only on the quality of the insulating materials, but also on their proper installation.

4.2 Improper installation of insulation can reduce its thermal effectiveness, cause fire risks and other unsafe conditions, and promote deterioration for the structure in which it is installed. Specific hazards that can result from improper installation include fires caused by (1) heat build-up in recessed lighting fixtures; (2) deterioration or failure of electrical wiring components; (3) heat build-up resulting from overcurrent protection devices incorrectly matched to wiring; or (4) deterioration in wood structures and paint failure due to moisture accumulation.

4.3 This practice provides general procedures that will help ensure the installation of insulation in a safe and effective manner. It must be noted that actual conditions in existing buildings vary greatly, and in some cases substantial additional care and precaution must be taken to ensure effective and safe installation.

5. Safety Precautions

5.1 All pneumatic equipment shall be operated in accordance with the recommended operating and safety procedures of the equipment manufacturer and the insulation manufacturer.

5.2 The installer shall wear proper clothing and equipment as recommended by the insulation manufacturer. If in doubt of the effects of the insulation, wear protective clothing, gloves, eye and breathing protection.

NOTE 1—For breathing protection use a NIOSH approved N95 or higher disposable or reusable particulate respirator.

5.3 In areas where insulation will be installed, components of the electrical system shall be in good condition. If the electrical system is faulty, proper inspection and repair must be none.

NOTE 2—The Consumer Product Safety Commission⁶ has identified the following signs of potential electrical deficiencies: Lights dimming, fuses blowing, circuit breakers tripping frequently, electrical sparks and glowing from receptacles, lights flickering, and coverplates on switches and outlets that are warm or hot to the touch.

6. Pre-Installation Preparation

6.1 In the areas where insulation will be installed, the installer shall locate and plan for subsequent blocking around recessed lighting fixtures, motors, fans, blowers, heaters, flues, chimneys, and other heat-producing electrical or mechanical devices.

6.1.1 Install blocking, such as wood, metal, or unfaced mineral wool batts, securely fastened in place around all heat-producing devices to exclude loose fill insulation and permanently maintain the clearances specified in 6.1.2 and 6.1.3, or the exception in

⁵ Federal Register Vol 70, No 103, May 31, 2005. Available from National Archives and Records Administration, 8601 Adelphi Road, College Park Maryland, 20740–6001.

⁶ CPSC Product Safety Fact Sheet No. 518, “Guide to Home Electric Wiring,” available from the Consumer Product Safety Commission, 4330 East West Highway Bethesda, MD 20814.