Designation: C 727 – 90 (Reapproved 1996)ε1

Standard Practice for Installation and Use of Reflective Insulation in Building Constructions[1]

This standard is issued under the fixed designation C 727; 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.

ε[1] NOTE—Keywords were added editorially in March 1996.

1. Scope

1.1 This practice has been prepared for use by the designer, specifier, and installer of reflective insulation for use in building construction. The scope is limited to recommendations relative to the use and installation of thermal insulation consisting of one or more surfaces, having an emittance of 0.1 or less such as metallic foil or metallic deposits unmounted or mounted on substrates and facing enclosed air spaces.

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

1.3 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 supercede local, state, or federal codes.

1.4 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 construction that affect the installation of insulation.

1.5 The values given in inch-pound units are to be regarded as standard. The SI units in parentheses are for information only.

1.6 *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 168 Terminology Relating to Thermal Insulating Materials[2]

C 755 Practice for Selection of Vapor Retarders for Thermal Insulations[2]

2.2 *NFPA Standards:*

NFPA 31 Standard for the Installation of Oil Burning Equipment[3]

NFPA 54 National Fuel Gas Code[3]

NFPA 211 Standard for Chimneys, Fireplaces, and Vents[3]

2.3 *Code of Federal Regulations:*

16 CFR 460 Federal Trade Commission Trade Regulation Rule: Labeling and Advertising of Home Insulation[4]

3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice refer to Terminology C 168

3.2 *Descriptions of Terms Specific to This Standard:*

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

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

3.2.3 *owner*—the person, partnership, corporation, agency, or other entity owning the 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.

3.2.4 *reflective insulation system*—thermal insulation consisting of one or more low emittance surfaces, bounding one or more enclosed air spaces.

3.2.5 *vapor retarder*—any material (membrane or paint) that has a water vapor permeance (perm) rating of 57 ng/(Pa·s·m^2) (1 perm) or less as defined in Practice C 755.

4. Significance and Use

4.1 This practice recognizes that effectiveness, safety, and durability of reflective insulation depends 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 of the structure in which it is

[1] This practice is under the jurisdiction of ASTM Committee C-16 on Thermal Insulationand is the direct responsibility of Subcommittee C16.21 on Reflective Insulation.

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

[3] Available from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

[4] Federal Register, Vol 45, No. 160, Aug. 15, 1980. Available from Department of Housing and Urban Development, 451 7th St. N.W., Washington, D.C. 20410.