



Standard Practice for Installation and Use of Radiant Barrier Systems (RBS) in Building Construction¹

This standard is issued under the fixed designation C 1158; 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.

1. Scope

1.1 This standard has been prepared for use by the designer, specifier, and installer of RBS (radiant barrier systems) for use in building construction. The scope is limited to recommendations relative to the use and installation of RBS including a surface(s) normally having a far-infrared emittance of 0.1² or less, such as metallic foil or metallic deposits unmounted or mounted on substrates. Some examples that this standard is intended to address include: (1) low emittance surfaces in vented or unvented building envelope cavities intended to retard radiant transfer across the airspace; (2) low emittance surfaces at interior building surfaces intended to retard radiant transfer to or from building inhabitants; and (3) low emittance surfaces at interior building surfaces intended to reduce radiant transfer to or from radiant heating or cooling systems. See Figs. 1-4 for typical examples of use.

1.2 This standard covers the installation process from pre-installation inspection through post-installation procedure. It does not cover the production of the radiant barrier materials. (See Specification C 1313.)

1.3 This standard 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 standard assumes that the installer possesses a good working knowledge of the application codes and regulations, safety practices, tools, equipment, and methods necessary for the installation of radiant barrier materials. It also assumes that the installer understands the fundamentals of building construction that affect the installation of RBS.

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 determine the applicability of regulatory limitations prior to use.* For specific precautionary statements, see Sections 5 and 7.

1.6 When the installation or use of radiant barrier materials, accessories and systems, may pose safety or health problems, the manufacturer shall provide the user appropriate current information regarding any known problems associated with the recommended use of the company's products and shall also recommend protective measures to be employed in their safe utilization. The user shall establish appropriate safety and health practices and determine the applicability of regulatory requirements prior to use.

2. Referenced Documents

2.1 ASTM Standards:³

C 168 Terminology Relating to Thermal Insulation

C 1313 Specification for Sheet Radiant Barriers for Building Construction Applications

2.2 NFPA Standards:⁴

NFPA 54 National Fuel Gas Code

NFPA 211 Standard for Chimneys, Fireplaces and Vents

2.3 Other Documents:

CPSC Product Safety Fact Sheet No. 18 "The Home Electrical System"⁵

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this standard practice refer to Terminology C 168.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *applicator*—the person or persons who apply radiant barrier materials in buildings.

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

3.2.3 *open air space*—a vented building cavity (for example, a vented attic) or a large conditioned or unconditioned building space.

NOTE 1—A large building space is defined as a one whose minimum

¹ This practice is under the jurisdiction of ASTM Committee C16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.21 on Reflective Insulation.

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² The as manufactured emittance of a radiant barrier product should be stated on the label.

³ 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.

⁴ Available from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

⁵ Available from U.S. Consumer Product Safety Commission, Washington, DC 20207.