



Designation: C1483 – 04

Standard Specification for Exterior Solar Radiation Control Coatings on Buildings¹

This standard is issued under the fixed designation C1483; 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 The purpose of this specification is to provide general requirements for products used to reduce thermal loads on buildings by reflecting solar radiation from roofs and walls. Radiation control coating (RCC) is a liquid applied coating having a solar reflectance of 0.8 and an ambient temperature infrared emittance of at least 0.8.

1.2 This specification covers the physical and mechanical properties of liquid-applied radiation control coatings (RCCs) designed for exterior application on buildings or other structures, where ambient air temperatures range from -34 to 54°C (-30 to 130°F). The specification also includes the testing procedures by which the acceptability of the material may be determined.

1.3 The products that comply with this specification may be used for other applications and have other properties not covered by this specification. In such cases, it is advisable to check other specifications that address the applications of interest.

1.4 *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:²

- C168 Terminology Relating to Thermal Insulation
- C419 Practice for Making and Curing Test Specimens of Mastic Thermal Insulation Coatings
- C461 Test Methods for Mastics and Coatings Used With Thermal Insulation
- C1371 Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emisimeters

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

Current edition approved Feb. 1, 2004. Published March 2004. Originally approved in 2000 as C1483-00. DOI: 10.1520/C1483-04.

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.

- D471 Test Method for Rubber Property—Effect of Liquids
- D903 Test Method for Peel or Stripping Strength of Adhesive Bonds
- D2370 Test Method for Tensile Properties of Organic Coatings
- D2697 Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings
- D3274 Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Fungal or Algal Growth, or Soil and Dirt Accumulation
- E84 Test Method for Surface Burning Characteristics of Building Materials
- E96/E96M Test Methods for Water Vapor Transmission of Materials
- E349 Terminology Relating to Space Simulation
- E903 Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres³
- E1175 Test Method for Determining Solar or Photopic Reflectance, Transmittance, and Absorptance of Materials Using a Large Diameter Integrating Sphere
- G155 Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials

3. Terminology

3.1 *Definitions*—Terminology C168 and E349 shall apply to this specification.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *radiation control coating (RCC), n*—a radiation control coating is a material that is designed to have a high solar reflectance (above 0.8) and a high infrared emittance (above 0.8) for long wavelength radiation.

3.2.2 *solar reflectance, n*—solar reflectance is the fraction of incident solar radiation that is reflected.

4. Significance and Use

4.1 It is recognized that the solar reflectance of RCCs will be reduced by soiling, which is caused by the accumulation of dirt, dust and other contaminants on the surface. The soiling, on the roof, will differ from location to location and from environment to environment. It is possible that soiling rates are affected by the slope of the surface, the roughness of the

³ Withdrawn. The last approved version of this historical standard is referenced on www.astm.org.