



Designation: C1483/C1483M – 17 (Reapproved 2022)

# Standard Specification for Exterior Solar Radiation Control Coatings on Buildings<sup>1</sup>

This standard is issued under the fixed designation C1483/C1483M; 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 ( $\epsilon$ ) 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 solar gains on buildings by reflecting solar radiation from roofs and walls. Radiation Control Coating (RCC) is a liquid applied material that cures to form a solid coating having a solar reflectance of at least 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 RCCs designed for exterior application for buildings.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not necessarily exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems has the potential to result in non-conformance with the standard.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

C168 Terminology Relating to Thermal Insulation

C419 Practice for Making and Curing Test Specimens of

<sup>1</sup> 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.

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<sup>2</sup> 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.

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 Emis-someters

D471 Test Method for Rubber Property—Effect of Liquids

D903 Test Method for Peel or Stripping Strength of Adhe-sive Bonds

D2370 Test Method for Tensile Properties of Organic Coat-ings

D2697 Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings

D3274 Test Method for Evaluating Degree of Surface Dis-figuration 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 Gravimetric Determination of Water Vapor Transmission Rate of Materials

E349 Terminology Relating to Space Simulation

E903 Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres

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 Lamp Apparatus for Exposure of 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