



Standard Test Method for Critical Radiant Flux of Exposed Attic Floor Insulation Using a Radiant Heat Energy Source¹

This standard is issued under the fixed designation E970; 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 fire-test-response standard describes a procedure for measuring the critical radiant flux of exposed attic floor insulation subjected to a flaming ignition source in a graded radiant heat energy environment in a test chamber. The specimen is any attic floor insulation. This test method is not applicable to those insulations that melt or shrink away when exposed to the radiant heat energy environment or the pilot burner.

1.2 This fire-test-response standard measures the critical radiant flux at the point at which the flame advances the farthest. It provides a basis for estimating one aspect of fire exposure behavior for exposed attic floor insulation. The imposed radiant flux simulates the thermal radiation levels likely to impinge on the floors of attics whose upper surfaces are heated by the sun through the roof or by flames from an incidental fire in the attic. This fire-test-response standard was developed to simulate an important fire exposure component of fires that develop in attics, but is not intended for use in estimating flame spread behavior of insulation installed other than on the attic floor.

1.3 The values stated in SI units are to be regarded as standard. The values given in parentheses are for information only.

1.4 The text of this standard references notes and footnotes that provide explanatory information. These notes and footnotes, excluding those in tables and figures, shall not be considered as requirements of this standard.

1.5 *This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire hazard or fire risk assessment of the materials, products, or assemblies under actual fire conditions.*

¹ This test method is under the jurisdiction of ASTM Committee E05 on Fire Standards and is the direct responsibility of Subcommittee E05.22 on Surface Burning.

Current edition approved July 1, 2017. Published July 2017. Originally approved in 1983. Last previous edition approved in 2014 as E970 – 14. DOI: 10.1520/E0970-17.

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.*

1.7 The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

1.8 *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:²

- C167 Test Methods for Thickness and Density of Blanket or Batt Thermal Insulations
- C665 Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing
- C739 Specification for Cellulosic Fiber Loose-Fill Thermal Insulation
- C764 Specification for Mineral Fiber Loose-Fill Thermal Insulation
- E84 Test Method for Surface Burning Characteristics of Building Materials
- E122 Practice for Calculating Sample Size to Estimate, With Specified Precision, the Average for a Characteristic of a Lot or Process
- E176 Terminology of Fire Standards
- E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods
- E631 Terminology of Building Constructions
- E648 Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

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.

*A Summary of Changes section appears at the end of this standard