



Designation: E 2067 – 02

Standard Practice for Full-Scale Oxygen Consumption Calorimetry Fire Tests¹

This standard is issued under the fixed designation E 2067; 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 practice deals with methods to construct, calibrate, and use full scale oxygen consumption calorimeters to help minimize testing result discrepancies between laboratories.

1.2 The methodology described herein is used in a number of ASTM test methods, in a variety of unstandardized test methods, and for research purposes. This practice will facilitate coordination of generic requirements, which are not specific to the item under test.

1.3 The principal fire-test-response characteristics obtained from the test methods using this technique are those associated with heat release from the specimens tested, as a function of time. Other fire-test-response characteristics also are determined.

1.4 This practice is intended to apply to the conduction of different types of tests, including both some in which the objective is to assess the comparative fire performance of products releasing low amounts of heat or smoke and some in which the objective is to assess whether flashover will occur.

1.5 This practice does not provide pass/fail criteria that can be used as a regulatory tool, nor does it describe a test method for any material or product.

1.6 For use of the SI system of units in referee decisions, see IEEE/ASTM SI-10. The units given in parentheses are provided for information only.

1.7 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.

NOTE 1—This is the standard caveat described in section F2.2.2.1 of the Form and Style for ASTM Standards manual for fire-test-response standards. In actual fact, this practice does not provide quantitative measures.

1.8 Fire testing of products and materials is inherently hazardous, and adequate safeguards for personnel and property shall be employed in conducting these tests. Fire testing involves hazardous materials, operations, and equipment. See also Section 7.

¹ This practice is under the jurisdiction of ASTM Committee E05 on Fire Standards and is the direct responsibility of Subcommittee E05.13 on Large Scale Fire Tests.

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1.9 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:

- D 5424 Test Method for Smoke Obscuration of Insulating Materials Contained in Electrical or Optical Fiber Cables When Burning in a Vertical Cable Tray Configuration²
- D 5537 Test Method for Heat Release, Flame Spread and Mass Loss Testing of Insulating Materials Contained in Electrical or Optical Fiber Cables When Burning in a Vertical Cable Tray Configuration²
- D 6113 Test Method for Using a Cone Calorimeter to Determine Fire-Test-Response Characteristics of Insulating Materials Contained in Electrical or Optical Fiber Cables²
- E 84 Test Method for Surface Burning Characteristics of Building Materials³
- E 176 Terminology of Fire Standards³
- E 603 Guide for Room Fire Experiments³
- E 662 Test Method for Specific Optical Density of Smoke Generated by Solid Materials³
- E 906 Test Method for Heat and Visible Smoke Release Rates for Materials and Products³
- E 1354 Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter³
- E 1474 Test Method for Determining the Heat Release Rate of Upholstered Furniture and Mattress Components or Composites Using a Bench Scale Oxygen Consumption Calorimeter³
- E 1537 Test Method for Fire Testing of Upholstered Furniture³
- E 1590 Test Method for Fire Testing of Mattresses³
- E 1623 Test Method for Determination of Fire and Thermal Parameters of Materials, Products and Systems Using and Intermediate Scale Calorimeter (ICAL)³
- E 1740 Test Method for Determining the Heat Release Rate

² Annual Book of ASTM Standards, Vol 10.02.

³ Annual Book of ASTM Standards, Vol 04.07.