



Standard Test Method for Flammability of Marine Surface Finishes¹

This standard is issued under the fixed designation E 1317; 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 covers a procedure for measuring fire properties associated with flammable behavior of surface finishes used on noncombustible substrates aboard ship (Note 1). In particular, these include surface finishes intended for use in ship construction such as deck surfacing materials, bulkhead and ceiling veneers including any adhesives used to fasten the veneers to the bulkheads and ceilings, paints, and exposed treatment of insulating materials.

NOTE 1—This test method has been prepared to closely follow the test procedure of IMO Resolution A.653(16) (1).² Optional provisions not applicable to the domestic use of this test method have been deleted.

1.2 Tests performed according to this test method are intended to yield fire properties that, when appropriately interpreted, are potentially useful to select materials and surface treatments that will limit the rapid growth and spread of fire.

1.3 This test method requires a specific range of specimen radiant thermal exposure for measuring fire properties.

1.4 *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.*

1.5 *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 hazard statements, see Section 7.

2. Referenced Documents

2.1 ASTM Standards:

E 84 Test Method for Surface Burning Characteristics of Building Materials³

E 162 Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source³

E 176 Terminology of Fire Standards³

E 286 Test Method for Surface Flammability of Building Materials Using an 8-ft (2.44-m) Tunnel Furnace⁴

E 648 Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source³

E 970 Test Method for Critical Radiant Flux of Exposed Attic Floor Insulation Using a Radiant Heat Energy Source³

E 1321 Test Method for Determining Material Ignition and Flame Spread Properties³

2.2 Code of Federal Regulations (CFR):

CFR Title 46, Part 164.009, Noncombustible Materials⁵

2.3 ASTM Adjuncts:ASTM

Detailed drawings (19), construction information, and parts list (Adjunct to E1317)⁶

3. Terminology

3.1 *Definitions*—For definitions of general terms used in this test method, refer to Terminology E 176.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *compensating thermocouple, n*—a thermocouple for the purpose of generating an electrical signal representing long-term changes in the stack metal temperatures wherein a fraction of the signal generated is subtracted from the signal developed by the stack-gas thermocouples.

3.2.2 *critical flux at extinguishment, n*—a flux level at the specimen surface corresponding to the distance of farthest advance and subsequent self-extinguishment of the flame on the centerline of a specimen.

3.2.2.1 *Discussion*—The flux reported is based on calibration tests with a special calibration dummy specimen.

3.2.3 *dummy specimen*—a noncombustible (as defined by 46 CFR 164.009) specimen used for standardizing the operating condition of the equipment, roughly 20 mm in thickness with a density of $750 \pm 100 \text{ kg/m}^3$.

3.2.4 *fume stack*—a box-like duct with thermocouples and baffles through which flames and hot fumes from a burning

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.

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² The boldface numbers in parentheses refer to a list of references at the end of this standard.

³ *Annual Book of ASTM Standards*, Vol 04.07.

⁴ Discontinued; see 1992 *Annual Book of ASTM Standards*, Vol 04.07.

⁵ Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

⁶ Detailed drawings are available from ASTM Headquarters. Request ADJE1317.

