



Standard Guide for Selection of Fire Test Methods for the Assessment of Upholstered Furnishings in Detention and Correctional Facilities¹

This standard is issued under the fixed designation F 1870; 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 is a fire-test-response standard.

1.2 This guide is intended to provide guidance for the selection of test methods that are applicable to determining fire-test-response characteristics of upholstered furniture items contained within a detention cell.

1.3 This guide is intended for use by those interested in assessing the fire properties of the upholstery products and their component materials or composites, within cells and other areas (such as isolation lounges) of detention and correctional occupancies.

1.4 This guide includes standard test methods promulgated by ASTM, NFPA, Underwriters Laboratories, trade associations and government agencies and other proposed test methods. It does not include industrial materials specification tests. The guide indicates some means by which modifications of standard test methods lead to potential achievement of certain testing goals.

1.5 Use the SI system of units in referee decisions associated with this guide; see Practice E 380. The units given in parentheses are for information only. Some individual standards referenced use inch-pound units for referee decisions.

1.6 This guide contains four types of test methods, namely: (a) generic small-scale methods, (b) specific applications of small-scale test methods to particular products or composites of products, associated with upholstery items, (c) real-scale test methods where actual upholstery products are exposed to heat or flame and (d) guides explaining the concepts involved with room-scale testing.

1.7 The main fire-test-response characteristics investigated in this guide are: ignitability, ease of extinction, flame spread, heat release, smoke obscuration and toxic potency of smoke.

1.8 This standard measures and describes 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.

1.9 Fire testing of products and materials is inherently hazardous, and adequate safeguards for personnel and property shall be employed in conducting these tests. This test method may involve hazardous materials, operations, and equipment.

1.10 *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 123 Terminology of Textiles²

D 1929 Test Method for Ignition Properties of Plastics³

D 2863 Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)⁴

D 3675 Test Method for Surface Flammability of Flexible Cellular Materials Using a Radiant Heat Energy Source⁴

E 162 Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source⁵

E 176 Terminology of Fire Standards⁵

E 380 Practice for Use of the International System of Units (SI) (the Modernized Metric System)⁶

E 603 Guide for Room Fire Experiments⁵

E 662 Test Method for Specific Optical Density of Smoke Generated by Solid Materials⁵

E 906 Test Method for Heat and Visible Smoke Release Rates for Materials and Products⁵

E 1321 Test Method for Determining Material Ignition and Flame Spread Properties⁵

E 1352 Test Method for Cigarette Ignition Resistance of Mock-Up Upholstered Furniture Assemblies⁵

E 1353 Test Methods for Cigarette Ignition Resistance of Components of Upholstered Furniture⁵

E 1354 Test Method for Heat and Visible Smoke Release

¹ This guide is under the jurisdiction of ASTM Committee F-33 on Detention and Correctional Facilities and is the direct responsibility of Subcommittee F33.05 on Furnishings and Equipment.

Current edition approved April 10, 1999. Published June 1999.

² *Annual Book of ASTM Standards*, Vol 07.01.

³ *Annual Book of ASTM Standards*, Vol 08.01.

⁴ *Annual Book of ASTM Standards*, Vol 08.02.

⁵ *Annual Book of ASTM Standards*, Vol 04.07.

⁶ *Annual Book of ASTM Standards*, Vol 14.02.