



Standard Test Method for Measuring the Ignition Strength of Cigarettes¹

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INTRODUCTION

The most common initiating event in a fatal fire in the United States is the dropping of a lit cigarette onto a bed or piece of upholstered furniture. The cigarette coal heats the furnishing materials to the point where smoldering combustion begins, perhaps followed by a transition to flaming combustion. Since limiting the frequency of ignitions is a principal approach to reducing fire loss, it is desirable to establish a test method for the propensity of a cigarette to ignite soft furnishings. This test method uses standard substrates to determine the extent to which, as the substrate draws heat from the cigarette, the cigarette combustion remains strong enough to be capable of initiating a fire.

1. Scope

1.1 This fire-test-response standard provides a standard measure of the capability of a cigarette, positioned on one of four standard substrates, to generate sufficient heat to continue burning and thus potentially cause ignition of bedding or upholstered furniture.

1.2 This method has value as a predictor of the relative propensity of a cigarette to ignite upholstered furnishings.

1.3 This method is applicable to cigarettes that burn along the length of a tobacco column.

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

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.

1.6 *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.* For specific hazard statements, see Section 6.

¹ This test method is under the jurisdiction of ASTM Committee E05 on Fire Standards and is the direct responsibility of Subcommittee E05.15 on Furnishings and Contents.

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2. Referenced Documents

2.1 ASTM Standards:²

E176 Terminology of Fire Standards

E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

E1352 Test Method for Cigarette Ignition Resistance of Mock-Up Upholstered Furniture Assemblies

E1353 Test Methods for Cigarette Ignition Resistance of Components of Upholstered Furniture

2.2 NFPA Standards:³

NFPA 260 Standard Methods of Tests and Classification Systems for Cigarette Ignition Resistance of Components of Upholstered Furniture

NFPA 261 Standard Method of Test for Determining Resistance of Mock-up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes

2.3 Other Standard:⁴

Standard for the Flammability of Mattresses and Mattress Pads, 16 Code of Federal Regulations, Part 1632

3. Terminology

3.1 *Definitions*—For definitions of terms used in this test method refer to Terminology E176.

3.2 *Definitions of Terms Specific to This Standard:*

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.

³ Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269, <http://www.nfpa.org>.

⁴ Available from the Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001; http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title16/16cfr1632_main_02.tpl.