



Designation: F 2601 – 07

Standard Specification for Fire Safety for Candle Accessories¹

This standard is issued under the fixed designation F 2601; 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 specification prescribes requirements for candle accessories to help ensure a reasonable degree of safety for normal use, thereby improving personal safety and reducing fires, deaths, and injuries.

1.2 This specification is not intended to replace other safety practices such as adult supervision, close monitoring of product when in use, and fire detection, alarm, or suppression systems.

1.3 Candles burn with an open flame. Precautions must be taken to ensure that the flame does not ignite combustible materials and initiate a larger fire. To that end, this specification establishes minimum safety requirements for candle accessories.

1.4

1.5 *This specification 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.² 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:*²

E 136 Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C

E 176 Terminology of Fire Standards

F 1972 Guide for Terminology Relating to Candles and Associated Accessory Items

F 2058 Specification for Candle Fire Safety Labeling

F 2417 Specification for Fire Safety for Candles

2.2 *ANSI Standard:*³

ANSI Z535.4 2002 Product Safety Signs and Labels

2.3 *Federal Standard:*⁴

16 CFR 1500 Hazardous Substances and Articles; Administration and Enforcement Regulations

3. Terminology

3.1 *Definitions*—Certain candle-related terminology has already been addressed in Guide **F 1972**. Certain additional fire-related terminology is found in Terminology **E 176**. The reader is directed to those standards for definitions not found in **3.2**.

3.2 *Definitions of Terms Specific to This Standard:*

3.3 *burn time, n*—total length of time from which the flame propagates away from the ignition source until it goes out on its own.

3.4 *candle accessory, n*—object designed, intended, or marketed for use with a candle.

3.5 *candle burner, n*—device that has an enclosed, but vented, area in which to put a candle, said candle providing a source of heat or light or both.

3.6 *candle ring, n*—type of candle accessory intended to surround the candle with decorative materials in proximity to a candle, excluding containers and holders.

3.7 *ignition, n*—initiation of combustion.

3.7.1 *Discussion*—The combustion is typically evidenced by glow or flame. The combustion may be sustained or transient.

3.8 *noncombustible, adj*—refers to a material that, in the form in which it is used and under the conditions anticipated, does not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat.

3.8.1 *Discussion*—Materials that are reported as passing Test Method **E 136** are considered noncombustible materials.

¹ This specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.45 on Candle Products.

Current edition approved May 1, 2007. Published June 2007.

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 American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁴ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.

3.9 *potpourri burner, n*—candle burner designed to provide a source of heat to warm a reservoir of extraneous material.

word “warning” shall follow the safety alert symbol and will be all uppercase, black text with a orange background. The word



FIG. 1 Warning Label

4. Safety Requirements

4.1 This safety requirement applies to all candle rings with the following exceptions: rings constructed exclusively of noncombustible materials, rings constructed exclusively of live plants or fresh cut flowers, or both, that remain hydrated during their intended life, or items including rings that incorporate barrier technology (see 5.2.4.12-5.2.4.14). Class α is the designation given to candle rings that pass the flammability requirements for candle rings (4.1.2.1). Class β is the designation given to candle rings that do not pass the flammability requirements for candle rings. Class β rings are intended for use with candle systems that provide a barrier designed to keep the candle flame from coming in contact with the candle ring. Class β rings shall carry a safety label affixed to the product. The Class β label shall be visible at the point of sale (4.1.2.2).⁵

4.1.1 Rationale:

4.1.1.1 Candle rings are used in proximity to a known source of ignition (candle flame).

4.1.1.2 Flammable components of candle rings increase the risk of fires when using candle products.

4.1.1.3 Some candle rings have difficulty meeting the flammability requirements for candle rings because of the technical problems in developing complying products. These flammable products, designated Class β , will require a label to alert the consumer at point of purchase of the flammability potential of the product. (See Note 1.)

4.1.2 Performance Requirement:

4.1.2.1 A candle ring, designated as Class α , shall pass the flammability requirements for candle rings if, when tested according to 5.2, it does not ignite or has a burn time less than or equal to an average of 30 s before extinguishing when testing three samples per component. The maximum allowable burn time to extinguish for any one test shall not exceed 60 s. During the test, flaming shall not spread over the entire sample.

4.1.2.2 A candle ring designated as Class β (one that is intended for use with candle systems that provide a barrier designed to keep the candle flame from coming in contact with the candle ring but that fails to comply with the requirement detailed in 4.1.2.1) shall have a conspicuous label attached that shall contain the language in Fig. 1.

4.1.2.3 The label shall contain a safety alert symbol which is a black triangle with a black exclamation point. The signal

⁵ Candle rings that are sold incorporating barrier technology are exempt from the flammability requirements of this standard (5.2.4.13). Candle rings that fail these requirements, are sold without barrier technology, and are intended to be used with barrier technology are Class β rings and shall be labeled.

message shall contain the word flammable in all uppercase text with the warning immediately following. The warning text size shall be at least 10-point font. A sans serif font, such as Arial or Helvetica, shall be used. The label shall be prominently displayed and securely attached to the product. If there are outer wrappings, the warning shall also exist on the outer wrappings. Further recommendations on the prescribed format are found in ANSI Z535.4 2002. Additional information is found in CFR 16 1500 which contains prominences, placements, and conspicuousness labeling requirements.

NOTE 1—It is the intent of Subcommittee F15.45 to review this standard within one year of the date of publication in relation to the permissibility of the labeling option for class β rings.

4.2 *Safety Requirements for Stability*—This safety requirement applies to all accessories intended to be used in direct contact with burning candles.

4.2.1 *Rationale*—This requirement minimizes the hazards of candle accessory/ensemble tip over.

4.2.2 *Performance Requirement*—The candle accessory must not tip over when placed at a minimum 10.0° incline when tested with the candle specified in 5.3.3.1(1) through 5.3.3.1 (2).

4.3 *Safety Requirements for Candle Burners and Potpourri Burners*—This safety requirement applies to potpourri burners, ceramic burners, and any other type of burner designed to use a candle as a source of heat or light or both.

4.3.1 Rationale:

4.3.1.1 Candle burners and potpourri burners can contribute to secondary ignition, excessive flame heights, or end of useful life problems or all. These are often associated with the buildup of heat or soot or both from candles placed in these types of products.

4.3.1.2 Candle burners and potpourri burners meeting the performance requirement listed in 4.3.2 will reduce the risk of fires initiated by candles used with these types of products.

4.3.2 Performance Requirement:

4.3.2.1 A candle burner or potpourri burner shall pass the performance requirements if there is no secondary ignition, excessive flame height, or end-of-useful life problems as detailed in Specification F 2417 when the candle burner is tested with a scented tealight (or other specified or supplied candle) according to the candle burning performance test method found in the Candle Burning Performance Test section of Specification F 2417.

4.3.2.2 A minimum of three identical samples shall be tested eight times each with no failures allowed.