



UNITED STATES
 CONSUMER PRODUCT SAFETY COMMISSION
 WASHINGTON, DC 20207

Memorandum

Date: JUN - 6 2007

TO : The Commission
 Todd A. Stevenson, Secretary *TAS*

THROUGH: Page C. Faulk, General Counsel *PCF*
 Patricia M. Semple, Executive Director *PS*

FROM : Jacqueline Elder, Assistant Executive Director *J.E.*
 Office of Hazard Identification and Reduction
 Allyson Tenney, Project Manager *AT*
 Directorate for Engineering Sciences

SUBJECT : Status Report on Candle Standards Development Activities

Introduction

A request to the U.S. Consumer Product Safety Commission (CPSC) from the National Association of State Fire Marshals (NASFM) to issue mandatory standards for candles and candle accessories was docketed as a petition, CP 04-1/HP 04-1, on March 10, 2004. In response to the petition, CPSC staff prepared an options briefing package¹ for the Commission which was submitted on July 10, 2006. CPSC staff recommended that the Commission defer a decision on the petition from NASFM to provide the staff with additional time to continue working with ASTM International (ASTM) in developing voluntary consensus standards for candle products and to assess the impact of the ASTM standards.

On July 19, 2006, the Commission voted to defer a decision on the petition in accordance with staff recommendations. Statements were submitted by the Honorable Nancy A. Nord, Acting Chairman, and by the Honorable Thomas H. Moore, Commissioner, directing staff to continue working with ASTM in developing standards for candle products and to provide periodic status updates on the development of the standards to the Commission. This document is the first status report on candle standards development activities.

¹ Staff Briefing Package—*Options to Address Petition from National Association of State Fire Marshals (NASFM) Requesting Mandatory Candle Standards*, submitted to the Commission on July 10, 2006 (available from Office of the Secretary or www.cpsc.gov).

NOTE: This document has not been reviewed or accepted by the Commission.
 Initial *rh* Date *6/6/07*

1-800-638-CPSC (2772) ★ CPSC's Web Site: <http://www.cpsc.gov>

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ASTM International Standards

In 1997, CPSC staff requested ASTM Subcommittee F15.45—*Candle Products* to develop voluntary performance standards for candles to reduce fire hazards² associated with candle products. Several task groups were formed within ASTM Subcommittee F15.45 to develop new voluntary standards for candle products. The task groups were assigned to specifically address Terminology, Labeling, Data Evaluation, Glass Containers, Smoking, Wicks, and Fire Safety. To date, there are six published standards relating to candles and candle products, as listed in Table 1. A discussion of the status of these standards is provided in the following section.

ASTM Designation	Title	Description	Status
ASTM F 1972-05	<i>Standard Guide for Terminology Relating to Candles & Associated Accessory Items</i>	Defines standard terms used to describe candles and candle products	Originally published in 1999; formal review completed in 2005
ASTM F 2058-00	<i>Standard Specification for Cautionary Labeling for Candles Burned in a Home</i>	Specifies cautionary labeling information for candles and candle products	Originally published in 2000; formal review began in 2005; revised standard balloted April 2007
ASTM F 2179-02	<i>Standard Specification for Annealed Soda-Lime-Silicate Glass Containers That Are Produced for Use as Candle Containers</i>	Specifies performance requirements to prevent glass candle containers from shattering	Originally published in 2002; formal review to begin in 2007; standard is expected to be re-approved without changes in 2007
ASTM F 2326-04	<i>Standard Test Method for Collection and Analysis of Visible Emissions from Candles as They Burn</i>	Provides test method to evaluate visible emissions from indoor candle use	Originally published in 2004; formal review to be initiated in 2009
ASTM F 2417-04	<i>Standard Specification for Fire Safety for Candles</i>	Prescribes candle performance requirements (stability, flame height, secondary ignition, and end-of-life behavior)	Originally published in 2004; additions expected in 2007
ASTM F 2601-07	<i>Standard Specification for Candle Accessories</i>	Prescribes requirements for candle accessories (stability and flammability of candle burners and trim rings)	Finalized April 2007; additional provisions are being drafted

Table 1: ASTM Candle-Related Standards

² Based on national fire loss estimates, the four-year average (2000-2003) of fire department attended candle fires was an estimated 14,900 fires resulting in 160 deaths, 1,440 injuries, and \$323.5 million in property loss annually.

ASTM Fire Safety Task Group Activities

Candle Fire Safety Provisions: Since its initial meeting in April 2001, the ASTM Fire Safety Task Group has been meeting regularly to move forward with developing standards for candle performance and fire safety. ASTM F 2417-04, *Standard Specification for Fire Safety for Candles*, was finalized and published in 2004. The standard includes performance requirements for stability,³ flame height,⁴ secondary ignition,⁵ and end-of-useful life behavior.⁶ Although it does allow for more stringent testing and longer burn cycles, the standard specifies a minimum four-hour burn cycle for all tested specimens. An extended eight-hour burn cycle is specified for gel-containing candles.

In addition to the extended burn cycle, the standard includes additional information relevant to gel-containing candles in a non-mandatory appendix. Since publication of the standard, several series of tests of gel-containing candles have been initiated and completed. These tests were conducted in order to further understand the behavior of gel-containing candles and provide supporting data for potentially developing additional provisions. The resulting data did not identify the need for any performance requirements specific to gel-containing candles; any issues identified are already addressed by the provisions in the current standard.

The test data did, however, identify additional information considered relevant to designing improved gel-containing candles. Based on the test data and findings, the Task Group has drafted a more thorough appendix intended to provide practical guidance and recommendations for producing gel-containing candles. The appendix will continue to be non-mandatory. Once the Task Group reaches consensus, the appendix will be balloted for inclusion in the standard.

In addition to the revised information pertaining to gel-containing candles, another possible addition to the standard would address performance issues associated with plastic tealight cups. Language specifically addressing certain types of plastic materials used for tealight cups is being drafted for discussion within the Task Group. If the Task Group reaches consensus, new provisions for plastic tealight cups could be balloted at the same time as the gel appendix for inclusion in the standard.

Candle Accessory Provisions: The ASTM Fire Safety Task Group is also developing a separate standard for candle accessories. A draft standard addressing the stability of candle accessories and ensembles and the flammability of candle/potpourri (tealight) burners and trim rings was balloted in 2006. A negative vote was received and found *non-persuasive* by the Task Group. The Task Group's findings were presented to the Subcommittee for discussion and vote

³ Includes freestanding candles, container candles, tealight candles, and candle/accessory ensembles, but not candles needing holders (such as taper candles), votive candles without holders, or certain religious candles

⁴ Includes all candles except candles intended to be burned outdoors

⁵ Includes all candles except certain religious candles

⁶ Includes votive candles, freestanding candles, container candles, and tealight candles but not taper, birthday, or floating candles

during the ASTM F15.45 Subcommittee meeting in September 2006. By a narrow margin, the Subcommittee disagreed with the Task Group's findings and found the negative vote *persuasive*.

In response to the Subcommittee vote, the Task Group revised the draft standard for re-balloting in November 2006. Again, negative votes were received. The Task Group found the negative votes *non-persuasive* and developed supporting rationale for a vote on the Task Group's recommendations.⁷ The ballot to the Committee and Subcommittee closed March 10, 2007 with enough votes in favor of the standard. However, because of the negatives surrounding the proposed standard, the ASTM Committee on Standards reviewed all documentation to make sure that all ASTM procedures were properly followed. The review was completed in April 2007 and the standard was published. The designation for the new standard is F2601-07.

The Task Group has also been developing additional performance requirements for other types of candle accessories. Additional provisions are being drafted for all candleholders (glass, ceramic, wood, plastic, etc.) and other accessories, such as candle toppers and shades.

ASTM Standards Review

ASTM policy requires that approved, published standards be reviewed every five years for accuracy and completeness. ASTM F-1972-05—*Standard Guide for Terminology Relating to Candles & Associated Accessory Items* completed its formal review and was re-published in 2005.

Currently under formal review is ASTM F2058-00—*Standard Specification for Cautionary Labeling for Candles Burned in a Home*. Significant changes to the standard are being proposed. The revised standard will include proposed changes to (1) Font size (increased to make the warning more readable); larger candles will require larger font sizes on warning labels both on the candle and on the package; (2) Abbreviated warnings for small candles (to maximize the use of smaller labels); (3) Optional use of pictograms; and (4) Equivalent wording for safety warning statements (warnings may differ slightly in verbiage). The revised standard also provides tables and appendices that provide additional guidance and label examples. The revised standard was balloted with a closing date of May 9, 2007.

A formal review of ASTM F2179-02—*Standard Specification for Annealed Soda-Lime-Silicate Glass Containers That Are Produced for Use as Candle Containers* will begin this year.

CPSC Staff Participation

CPSC staff has maintained direct involvement in the activities of the ASTM F15.45 Subcommittee and Task Group by providing supporting data and actively and consistently

⁷ Negative voters were opposed to the labeling provision in the standard; the standard requires trim rings to either meet specified flammability requirements or to be used with a barrier (e.g., glass, metal) between the flame source and the ring. Trim rings that incorporate a barrier or are designed to keep the flame source from coming in contact with the trim ring are required to be labeled in accordance with the specifications in the standard. The provisions were based on the availability of technically feasible and cost-effective options and the long industry lead times (typically one year or more) needed to design and distribute new products. The task group will review the provisions within one year of approval of the standard.

participating in discussions regarding the development of candle standards. CPSC staff plans to continue participation in upcoming meetings of the Subcommittee and Task Group. The next meeting of the F15.45 Subcommittee is scheduled for June 29, 2007. Meetings of the Fire Safety Task Group are scheduled for May 9-10, 2007, August 8-9, 2007, and October 24-25, 2007.