LOG OF MEETING

DIRECTORATE FOR ENGINEERING SCIENCES

SUBJECT: ASTM Subcommittee F15.45 for Candle Products-Subcommittee Meeting

DATE OF MEETING: September 26, 2003

DATE OF LOG ENTRY: April 28, 2004

SOURCE OF LOG ENTRY: Allyson Tenney, Engineering Sciences

LOCATION: Westin Seattle Hotel, Seattle, Washington

CPSC ATTENDEES: Allyson Tenney, Engineering Sciences

NON-CPSC ATTENDEES: ASTM F 15.45 Subcommittee members and other interested parties

SUMMARY OF MEETING:

The ASTM F15.45 Subcommittee for Candle Products met at the Westin Seattle Hotel in Seattle Washington. Minutes from the meeting are attached.

The next meeting of the Subcommittee is April 23, 2004 in Orlando, Florida.

AMERICAN SOCIETY FOR TESTING AND MATERIALS

SUBCOMMITTEE FOR CANDLE PRODUCTS (45)
OF F-15 COMMITTEE ON CONSUMER PRODUCTS
Westin Seattle Hotel, Seattle, Washington
Friday, September 26, 2003

Minutes

Chairman Jim Becker, of Candle Solutions, called the meeting to order at 8:30 AM. Persons in attendance introduced themselves.

Approval of Minutes

The minutes from the Subcommittee meeting in Baltimore, Maryland on April 11, 2003 were reviewed and approved as amended (respelling Linda Allison's last name) on a motion duly made and seconded.

Approval of Agenda

It was suggested to amend the agenda as proposed to strike the presentation by Michael Matthai, and to move the placement of the report from the Task Group on Visible Emissions. The agenda was accepted as amended without objection.

Membership Report

Jim presented the Subcommittee membership report. There are 76 voting members, and the membership is in balance between producers and consumers. The Subcommittee has 18 non-voting members.

Allyson Tenney of CPSC recently attended an upholstered furniture fire safety meeting that was also attended by National Association of State Fire Marshals (NASFM) representatives. She indicates the NASFM position is that fire safety standards must exist for cigarettes and candles. They will petition CPSC to adopt an improved version of ASTM PS 59, which Allyson believes should be the final version of this ASTM standard. NASFM believes the standard should be mandatory, or in the alternative, it should be upgraded to meet CPSC standards. When or if that petition occurs, CPSC will have to address it. NASFM also continues to support a legislative route for regulation of candles.

Valerie Cooper, of NCA, asked if CPSC is petitioned, what actions would CPSC have to take? Allyson indicates this could eventually require a review of data, comments, findings, cost benefits analysis, etc., leading to possible adoption of the suggested mandatory standard. Valerie commented that the ban on lead wicks took 3-1/2 years to adopt with industry support and speculates the action would take longer without industry support. Jim mentioned the presentation at the NCA meeting yesterday by a lawyer indicating there are potential strong liability issues for companies that do not follow voluntary standards.

Report of Task Group on Visible Emissions

George Pappas of Lumi-Lite Candles, chairperson of the Task Group, recognized the members of the Group.

A standard test method for "Collection and Analysis of Visible Emissions From Candles As They Burn" has been balloted to the F15 full committee. There was one negative vote, and other votes with comment. For purposes of further action on this ballot, it is noted that there are currently 25 voting members of the Subcommittee present, which is more than the 10 minimum needed for a quorum.

Bob Moss, of SEA, Ltd. led the discussion of negative votes and votes with comment. The negative vote was from Andrew Rutkiewic of Product Technology Consulting, who argued that the method measure visible smoke, so the title should include the term "visible smoke" rather than "visible emissions". He feels that the visible emissions from a candle are light. Jim contacted ASTM and determined that the Task Group's preference to change the title to include "Smoke Emissions", in place of "Visible Emissions" would not be considered an editorial change, and would need to be re-balloted. There was a question from the floor regarding the definition of "smoke". George believes the current title is correct – the method measures emissions that can be seen. Carbon emissions could be considered as smoke. He is opposed to including the term soot, because that implies agglomerations that may or may not occur. In addition to smoke, the method measures other things like wax mist, ash, etc. There was a comment that the method could not collect light emissions, but Mr. Rutkiewic, in discussions with Bob, indicates that light emissions can be collected. There was another comment that the title could include the word "particulate", and Mr. Rutkiewic would accept "particulate emissions", but Carl Hudson, of ExxonMobil, points out that light has particle properties and believes the change would not be appropriate. Linda Allison, of S.C. Johnson, believes that calling the measured output "smoke emissions" will open up other arguments about the correctness of the title and suggests "visible byproducts of combustion". Wax mist is not a byproduct of combustion. John Root, of A.I. Root Company, suggests, "unburned particulate matter". Carl could accept that, but Ed Calcote, of Shell Global Solutions, points out that the method would measure partially combusted materials and may not be entirely accurate. There was a suggestion that "visible condensates" could be used, but not everything that collects is a condensate. Linda argues that light cannot be collected on a glass slide, but Bob indicates that Mr. Rutkiewic would argue otherwise. There was a question from the floor regarding the purpose of the method. George indicated the method is for comparison of emissions from candles and is generally qualitative, not quantitative. Carl indicates that the method can be a quantitative tool for measuring change in candle systems. Carl suggested the term "collectible deposits".

Bob Nelson, of Yankee Candles, moved to find the negative vote non-persuasive. He states that, within the context of the intention of the method, the current terminology is correct. Rob Harrington, of Blyth, Inc., further stated that users of the method would understand that the method does not collect electromagnetic emissions. Tom Mazurek, of The Limited, seconded the motion. There was a question about whether Mr. Rutkiewic is concerned about "smoke" or "analysis". Bob Moss indicates Mr. Rutkiewic is concerned with "smoke". The motion was put to a vote, with 23 members voting yes, 0 no, and 2 abstaining. The Subcommittee finds the negative vote non-persuasive. Linda indicates that in the method's significance and use statement, there is an explanation of the intention of the method that furthers the non-persuasive argument.

George made two comments with his affirmative vote on the method. The first comment relates to a typographical error and the change is editorial. The second comment suggests that, in section 8.5 of the method, it should be indicated that the glass slide should be initially positioned prior to lighting the candle. This change could be editorial, and, if so, the change will be made; otherwise, George will withdraw the comment.

Brian Lee, of Hewlett-Packard, suggested a further cleaning procedure for the glass slides with his affirmative vote. Andrew Leach, of S.C. Johnson, indicates the relative error from using pre-cleaned, unused slides vs. slides that are further cleaned is small. Bob Moss indicates the measurement instrument must be zeroed with a slide so the error would be insignificant.

There was a comment received from an unknown individual (the comment was handwritten and no name was indicated) regarding Section 1.4. This section is ASTM's standard disclaimer used in numerous methods, so the comment is not persuasive. The comment made suggestions for required further definitions. It was the sense of the Subcommittee that the definitions are not needed. The commenter suggested use of "shall" for "will" in sections 6 and 10, and it was decided to leave the choice on usage to ASTM editors. It was suggested in sections 8, 9, 11, and 12 to add, "In conducting the procedure, the following discrete steps shall be taken in the sequence set forth below." No one present has ever seen a similar statement in an ASTM method, so it was decided not to make the suggested changes. A comment was made on a typographical error, and the change, which would be editorial, will be made. The commenter suggested that, in section 12.3, a non-existent protocol is being referenced. The section is actually referencing the burn procedure, and specifically the wick trimming procedure, in ASTM PS 59. Carl Hudson indicated that any protocol used consistently by a method user could be chosen to get consistent results, and that the protocol in PS 59 would not be specifically required. The sense of the Subcommittee was to leave the method as is.

The effect of the above actions is that the only item that should need to be further balloted is the non-persuasive finding on the method's title from Mr. Rutkiewic. The Subcommittee should expect to see that ballot in the near future.

Candle Fire Safety Task Group

Jim Becker, chairperson of the Task Group, presented the report. The Task Group has discussed specifications for potential standard votive holders that could be used for fire safety testing and found little difference in performance based on container free-volume. It was noted, however, that the side temperatures of a straight-sided container approached 300°F during testing.

Linda Allison asked the task group to look further into the issue of wick centering in relation to flame impingement on glass. The concern is noted, and may be considered further, but, according to George, the intention of this specific work was to determine, from a performance standpoint, a specific container required for testing of votives.

There was a subgroup formed to work on development of an accessory flammability specification. The Task Group has decided to develop a separate accessories standard because of possible controversy over accessories provisions, and so as not to slow down finalization of the candle fire safety standard.

New IDI information from CPSC continues to indicate a disproportionate number of fire incidences related to gel candles. The Task Group is working on this issue further.

The Task Group has worked to develop an "end of useful life" test for pillars using scorching of a wood block as a surrogate to indicate when the substrate supporting the candle approaches 300°F. Several other testing options exist, and Carl indicates the existence of inexpensive flat plate thermocouples. The Task Group is mindful of potential testing expense to small users. It was commented that use of thermochromic dyes as test indicators might be a possibility. Candle

container temperature, from a fire safety aspect, has been dropped from consideration due to lack of data indicating a problem.

Due to continued IDI data indicating a possible problem related to "exploding" candles, the Task Group discussed a statement that would exclude use of tempered glass for containers, because they can fail more violently than annealed glass. Based on further discussions with members of the Glass Task Group, it appears that tempered glass is not currently covered under requirements in the current glass standard, F 2179.

The Task Group has discussed a British study indicating problems with tealight/potpourri burners relating to secondary ignition of carbon deposits. Fire safety provisions are being considered for further action, as analysis of the IDIs may well indicate that this is a significant problem.

The Task Group will meet again in about two weeks in Columbus, Ohio. Jim discussed further items that the Task Group has indicated a possible need to address in this and future meetings. Among the items are updating references in PS 59 from the obsolete MIL STD 105 to ANSI Z1.4-1993, removing definitions from the fire safety standard that are currently in the terminology standard (F 1972), and reconsidering the flame height specification.

Tom asked if this last item might jeopardize passage of the final standard, as the Subcommittee has generally accepted the 3" height provision for most candles, but Jim indicated that this specification continues to be questioned. John Witham, of Candle-Lite, indicates the current flame height, as a maximum allowable value, has been well rationalized and comments that, at equilibrium, it is expected that flame heights will be less than 3". Ed agrees that Tom has a good point, but reminded the Subcommittee that the current standard has only been reviewed to date at the Subcommittee level. The final standard will need to be passed by the full membership of Committee F15 and ASTM. George asked for a straw poll on the sense of the Subcommittee about requiring flame heights of less than 3". The voters appears closely split on the issue. Tom suggests revisiting differing flame heights for different candle types.

Other issues to be addressed are secondary ignition issues, such as a wick drooping over into the fuel pool, end of useful life issues, stability provisions for figurine-type tealights, possible requirements for gel candles, and wick centering requirements. Linda suggests considering stability of tealight/holder ensembles.

A possible controversial issue is tealights contained in plastic cups, but CPSC data indicates this is a potential problem. Joey Viljoen, of IGI, indicates some plastics may be suitable, and others might not. Tom asks if this will be covered under the end of useful life provisions, but the Task Group has not yet decided. George indicates that deformation of the cup may be as large a problem as cups that actually ignite. Joey again indicates this will depend on the plastic. George asked the Subcommittee for further input on this issue, and Ed suggested contacting Dave Edinburn of Committee D20.

Steven Gordon, of Hot Wax Candles, asked if there is a maximum amount of time that secondary ignition could occur and pass the standard. Jim indicates the current position is that no matter how long a secondary ignition occurs, it is a test failure. George suggested that no matter the time involved, any secondary ignition is indicative of a problem. Steven asked for clarification of the 300°F requirement being considered for pillar scorching. Jim explained that the Task Group believes that temperatures above 300°F are indicative of a potential for causing fires. George further commented that the use of a wood block might be indicative of potential property damage issues.

The Task Group also intends to further explore applicability of the standard to outdoor candles. A question was raised concerning torches, and Jim indicated that torches are not considered to be candles and are not covered.

It may also be necessary to revise wording on the burn cycle for tealights, which burn approximately 4 hours. The Task Group will also reconsider the currently specified 4-hour burn cycle length. Andrew Leach suggests following the maximum length indicated on a product label. There have been strong feelings in the Task Group about requiring a minimum cycle of 4 hours, and George believes that requiring longer intervals would constitute abuse testing. However, longer burn cycles could be chosen to test candles to a higher standard. Linda suggested looking at modification of the candle spacing requirements during testing.

The Task Group has tabled further discussions on exploding candles, as well as for fuel pool temperature and maximum container temperature.

Fire Data Task Group

Jim Becker indicated there is no new data to discuss.

Glass Task Group

Linda Allison, the Task Group co-chairperson, presented the report. F 2179 was published in June 2002. A revision Section 4.1 on Visible Characteristics was balloted in November 2002 and received a negative vote, with arguments accompanying that vote deemed persuasive. The Task Group has developed a list of the visible characteristics that might actually cause performance problems. Wording has been drafted to incorporate these characteristics into the standard and to indicate that containers exhibiting the characteristics should be rejected. This wording is under review by the Task Group member companies. However, a concern has been expressed about one of the listed characteristics, "stones", which does not always cause problems. The hope is that the reviews will be completed at the Task Group and company levels, and that the revised standard can be balloted, by the end of October this year.

Terminology Task Group

Chairperson Eileen Hedrick, of Belmay, presented the report. Eileen recognized the members of the Task Group. Standard F 1972 was approved in June 1999 and will be up for 5-year review in 2004. The Task Group is beginning that 5-year review process and considering new terms for addition to the standard. See Attachment 1 for a summary of proposed changes and definitions. George questioned the need to define "capillary action", and after discussion, it was pointed out that the proposed definition differs from one included in PS 59. It was suggested that the definition for "capillary action" should be changed to match that in PS 59. Many of the currently defined terms continue to be deemed acceptable. An editorial change has been proposed in the "freestanding candle" definition, and there was no objection by the Subcommittee.

Ed expressed a concern about the definition of "tealight candle" with regard to figurine-type tealights, which would not meet the current or proposed definition. It was pointed out that tealights are not normally filled, but pressed. However, as "filled candles" are defined as being produced in the same container in which they are used, the use of "filled" in the "tealight candle" definition makes sense. It was agreed to drop the proposed addition to this definition.

The order of units of measurement in the standard will be revised so that metric units precede English units. The Subcommittee accepted proposed changes to the definition of "votive holder".

There was considerable discussion regarding a proposed change to the "wax" definition. Ed proposed that ASTM Wax Subcommittee D02.10 be allowed to discuss the definition at its meeting in December and come back to the Task Group with a proposal. George suggested that, in the absence of a proposal from D02.10, the added reference temperatures be stricken. Changes to the definition of "wax candle" are proposed, and there was a question as to whether the definition needs to include references to both insect and animal waxes, as the wax industry considers insect waxes to be animal waxes. It was suggested that this issue might be addressed within the wax definition to be proposed.

A complete rewrite of the gel candle definition is proposed. It was suggested to remove the words "larger" and "smaller", which also would remove the need for the words "amount".

"Wax" has been proposed as an additional keyword.

The Task Group needs to determine that none of the changes complicates current trade issues.

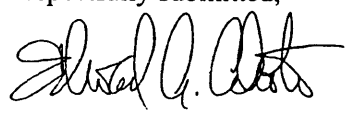
New and Old business

The next meeting of the Subcommittee will be in Orlando, Florida at the Caribe Royale Resort during the week of April 21, 2004. A later notice will be sent regarding the exact date. Valerie pointed out that, because it will be necessary to review the proposed finalization of PS 59, and because of the importance of that activity, the meeting should be scheduled at a time not to conflict with other NCA/ALAFAVE activities.

Carl asked for clarification of the process that would be used to modify a standard that is made mandatory by federal regulation. Allyson indicated that a mandatory standard could only be modified through the regulatory process, not through ASTM.

The meeting was adjourned on a motion made and seconded at 12:02 PM.

Respectfully submitted,



Edward A. Calcote
Secretary, Subcommittee F15.45