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LOG OF MEETING

DIRECTORATE FOR ENGINEERING SCIENCES

SUBJECT: ASTM Subcommittee F15.45 for Candle Products-
Fire Safety Task Group

DATE OF MEETING: December 1-2, 2004

DATE OF LOG ENTRY: March 9, 2005

SOURCE OF LOG ENTRY: Allyson Tenney 
Directorate for Engineering Sciences

LOCATION: Columbus Courtyard by Marriott, Columbus, Ohio

CPSC ATTENDEES: Allyson Tenney, Engineering Sciences

NON-CPSC ATTENDEES: ASTM F 15.45 Fire Safety Task Group members

SUMMARY OF MEETING:

Members of the ASTM F15.45 Fire Safety Task Group (Candle Products) met at the Courtyard by Marriott in Columbus, Ohio and conducted by Chairman Jim Becker. The group continued developing a fire safety standard for candles. Minutes from the meeting are attached.

ASTM INTERNATIONAL
FIRE SAFETY TASK GROUP
OF SUBCOMMITTEE FOR CANDLE PRODUCTS (45)
OF F-15 COMMITTEE ON CONSUMER PRODUCTS
Courtyard by Marriott Hotel Downtown, Columbus, OH
Wednesday-Thursday, December 1-2, 2004

“Draft” Minutes

Wednesday, December 1, 2004

The task group is meeting for the twenty second time since its organization.

The meeting was called to order at 1:00 pm by Chair Jim Becker. Jim welcomed the group and the minutes from the last meeting (October 13-14, 2004) were reviewed. Several occurrences of the word “arsenal” were questioned with the suggestion that “arson” was the proper term. The minutes were approved with “arson” substituted for “arsenal” where appropriate.

Jim thanked the National Candle Association for providing the refreshments and continental breakfast and arranging for the meeting location and arrangements. Jim reported that we are still looking for a secretary for the task group. If none is found, Jim will issue a list of members with secretary assignments for future meetings. Jim thanked Ken Blanchard for volunteering to be secretary for this meeting.

Jim briefly reviewed the substance of a conference call on gel candles and testing that will be conducted in the near future. He sent a copy of the gel conference call minutes of Nov. 1 to committee members. A test protocol has been developed. Samples being made up will be conditioned in closed containers rather than open containers and samples of a duplicate set which contain a lower flash mineral oil will also be tested, as well. The test results will be a topic of a future meeting with dates to be determined.

A second conference call was held on Nov. 22 on the trim ring candle accessory test method. Details of this call will be the subject of today’s meeting and minutes from the call will be distributed in a couple of weeks to all committee members.

Jim Becker discussed the NFPA report on home candle fires for the years 1999-2001. Is there any data to support our efforts to develop a candle accessories standard? In the NFPA report, “decorations” account for approximately 4% of the home candle fires (700 fires over 3 years). 400 (3.0%) of these fires were between January – November and 250 (10.8%) in the month of Dec. This is indicative of the increased usage of candles during the holidays. While there is no definitive data for any particular type of candle accessory (trim rings, holders, etc.), the term “decorations” probably includes all of these types of items that are generally used with a candle. A discussion ensued about the nature of the fires started. Were there candle failures that caused the accessories to burn or was it just the contact with the flame in normal use? This could not be determined from the data. The general consensus among task group members was that this data did indicate that there were incidents involving candle accessories and that we should be pursuing requirements for these types of products in our standard.

Bob Moss showed a video and provided narration on tests of trim rings. Bath and Body Works provided photographs of testing they had conducted by a contract lab. Inherent Fire Retardant material (IFR) is in the material and not applied on the surface (topical). The only sample that wasn't totally consumed in the test was the IFR sample (accessory). The remaining samples were all consumed by the flame with drippings from the samples during the burn tests. Types of FRs were discussed and the fact that we may need to get the FR Chemical Industry involved.

Allison, CPSC, inquired as to whether or not the samples in the video would pass the current test? No was the answer. Propagation of flames in the samples went on for longer than a minute and would not pass the draft test requirements. Allison questioned why is point of ignition at end of ring or outer edge? Is the test method as written "appropriate for all accessories"? There is a proximity issue with source of ignition and a question on what it means to the test method. Allison reported that CPSC conducted 93 more candle fire IDI's since last report. Since Oct about 141 IDIs conducted. Information on when a candle is involved would make a better report for informational purposes. Out of the new cases, 30 involved an accessory or decoration. None involved a trim ring but information is not available to be definitive. Decorations vs. trim rings are unknown as to its use relating to the fire. Tea light holders (like houses, ensembles) were involved. **All this information will be put together and sent to all committee members by CPSC.** Temperature sensitivities are a concern. Allison showed two candle holders. Both made in China and one that looked like a pine cone that was blacked on two cone leaves.

Overall scenario tests of accessories and how to make them safe were discussed. We need to do something or the regulators or public will. Jim B. took off on Allison's comment and that CPSC is not opposed to the committee developing a standard for trim rings or accessories. We just need to fine tune the method of testing. Do we really need to have one test method to fit all rings or a separate test for the materials, etc.? Allison indicated that textiles are somewhat different and must correlate with the standard for trim rings. Textiles or other materials behave like what was on the video. Accessories have a proximity issue with the materials and the flame. Jim H. feels we should be looking at the testing of products and the testing should simulate the pattern or incidents of ignition source. The variable for targeting the issue and define the situation may be difficult. What is the simulation of the problem trying to solve? The point where the fire starts should not be an issue. We should be looking at what happens after it ignites. Real world testing should be considered on the intended use.

Do we need multiple tests for different types of trim rings? Depends on the type of materials and what is the composition of the material. What data is available from CPSC and perhaps we should look at CPSC for guidance? Allison indicated decorative, tea light, and holders need to be addressed. Jim B. indicated that no tests exist on holders. We had a discussion on types of holders and passing the one minute tests. Look at materials instead of products. The problem is the variability in the thickness of the materials. The thinner the material the faster it will burn. Is VO fire retardant? VO is the best and toughest test. Jim H. suggested testing for mass loss and if it loses more than 10%, 20%, etc., it would fail our test. There would be a lower cost for testing. Two possible criteria might be weight loss before and during the fire test and measuring flame

height. He suggested the maximum flame height could not exceed 3 inches and a weight loss of not more than 50%. Jeanne reported that they test their product using the following criteria; if the flame does not travel more than 6 inches, the flame height is less than 3 inches and the flame self-extinguishes in less than a minute it passes the test. Jim H's proposal is concerned with changing the materials used and getting anything off the market when the benefits are not measurable. Dan is not sure that we need to do anything because his company has been in business for 40 years and has had no problems with these types of products. Jim H. suggests that we need to be smarter about the data and collection of data so we can get a better idea of the causes of the accessory fires. Weight loss and time must be considered together. Dan indicated that any FR applied topical would be washed off and defeats the purpose. What data is there to require rings to meet any test?

Do we want to be proactive or reactive? To defend Dan's point we have all worked on available data. How is the trim ring failing? Should we have a barrier of distance between the candle and trim ring? We interpret the data available and there is enough data to consider moving forward. Under the NFPA data it is identified as decorations involved in the fire. There is data that indicates we do have a problem. CPSC has data but do not have good information on the scenario regarding accessories. George indicated we have had this discussion and where we are is not clear. If it looks like a hazard and burns like a hazard, it must be a hazard. Richard says to look at the Dec. numbers and asks if there is a higher use of trim rings during the holidays? Is the consumer use of trim rings or other products higher during the holidays? Ken indicated it is both. They use things intended and not intended to be used with candles during the holidays. George suggests there are two things that must be done and that is candles should not be used in proximity of combustibles and must be addressed for public safety; and the industry must step up to bat.

Ken - if the candle is surrounded by glass does the trim ring have to meet the requirement? Candle ring should be the safe harbor. Jean agrees and high schools, elementary schools and FTD will be selling live botanicals as trim rings. George indicated that every product tested in the video had a label on it "to be used with a candle".

Based on the information of inches per minute all but 1 of the rings passed the test. We are assuming the rings tested were representative of what is available in the marketplace. What needs to be tested? Do we need to put a call out on candle rings for testing? Should CPSC do this? There was much discussion, especially on consumer misuse. Many of the comments related to the fact that we can't regulate consumer misuse. An article from Better Homes and Garden, Dec 2004 issue on page 80 was passed around which has a message on Candle Safety and illustrations of how candles can be used with various accessories.

The discussion then turned to the cost of rings and flame retardant raw materials. Tom indicated that using IFR materials would not be out of reach or a hard economic impact. The price difference of the two was about 30%. Quality and color with IFR is good. Dan indicated that a price increase would be necessary to offset any economical impact. Raw materials used in China indicate the cost would not be 30 % but maybe only 5%. Ken ran a series of safety classes on standards for safety for IGCA members and

the question was how can I compete with what is out there? One possibility would be to run a safety standards class in the community.

Walter commented that NASFM's position is to move forward with something and keep the test simple, but to do something for trim rings sold commercially. Take one small step for candle safety and one giant leap for fire safety. Keeping the ASTM Task Force together in developing the standard is far better than having the federal govt. develop any standard. States can also develop individual standards/rules that may all be different. NY State has just passed a cigarette law that is different than any state.

Jim wants everyone to review the test method and what requirements we propose to go to ballot. Is there an alternate method?

December 2, 2004 (Thursday)

Next meeting proposed is Feb 10-11, 2004 – Marriott Courtyard, Columbus, Ohio

Roger brought up that with the comment Walter made at the closing of the meeting the day before that this might be construed as a threat to get this standard done which could potentially effect how publicly held companies had to deal with these issues as they pertain to the financial impact on their shareholders. What is being said by Walt Smittle is that if we don't do something every state will have requirements. States will take it over and if you want to do business, then the need to comply with the most restrictive state requirements is how you must do business. NASFM went to Congress for legislation and this committee was under the gun to do the fire safety candle standard. Jim H. indicated that working on a standard presents no legal implications imposed. There is a risk from the media and that is not unusual. Development of standards always has pressure. This is not unusual for development of standards to get some action. Level of action for the committee from a legal action under duress is unacceptable. Outside influence is not needed and should not be directed. Dan has to go to his compliance officer regarding this economical issue. Jim H. indicated that statements being made are the consensus standard process and this is not an industry standard. Judy asked if this is a voluntary standard test method? Any standard is voluntary but why did you not want to comply? Jim B. indicated that all companies must do economic analysis regardless of any standard that comes about.

It was also discussed that the members of this committee need to be able to freely speak their feelings in order to come to a consensus agreement on the various subjects that we are dealing with. Walter spoke on the need to express opinions and the statement made was not made to duress any individual or organization in development of a standard. If opinions cannot be expressed then the consensus process is in jeopardy. Jim H. expressed what was said by Walter has been said by many individuals and indicated that expressing their position is vital to the development of standards and the process. Jim B. indicated that he has heard from many members of the task group how open the discussion was with no fear of hard feelings after the meeting because of what was said. He finds that spirit essential for the development of consensus standards so that all parties feel comfortable presenting their views to the rest of the members.

This discussion went on for about an hour. The outcome of it was that the committee didn't feel that Walter's comments were a threat to this committee and that the committee did not feel that it is under duress to come up with this standard.

Jim then led the discussion into the test methods. There were four test methods on the table that had been brought up by various members of the task group during previous meetings leading up to today. They include;

Burn Rate Test – burning so long and measure in inches per minute and weight loss.

Self extinguishment – within a specified time

- weight loss rate
- distance

Material Standard (UL) std is for plastics, VO, V1 and V2

Ignitability or flammability – it ignites or does not ignite.

Jim H. indicated that labeling is a last resort if nothing else can be achieved to maintain the safety of the product. How can labeling be used in the real world, especially on swags, when used by the consumer around a candle?

Something used with the candle is different than what the candle's intended use. Trim rings are used with candles. What standard is needed is the question? We are looking for an improvement to maximize the reduction of fire loss and injury. We are looking for the best method.

Jim B reviewed the different methods the committee considered. The committee voted on the content of the test standard for trim rings. The vote was 20 for the Self extinguish test that would include specified time, weight loss and possible distance applications. 2 voted for the ignitability option. There was a question on type of barriers acceptable for the standard exemption. Would a 2 inch non-combustible barrier next to the candle be acceptable for a barrier and trim ring materials added on the outside of the non-combustible ring? This subject was tabled for future discussion after the method is developed.

The committee voted to include extinguishing within a specified time and weight loss as two requirements for the test. Flame height was discussed regarding the testing of the trim ring. Jim B will bring this issue back after the method is developed. The test that we come up with must be validated.

The test method itself should be looked at and the items for consideration for discussion included the following: flame height, time for extinguishment, flat surface testing (real world application), type of igniter, all type of materials (components) in a ring must be tested whether or not inside or outside of the ring, weight loss measurements on a ring that is tested four times (discussion on how to measure the weight loss), proximity of materials to the candle/source of ignition, test should be within a certain distance of the candle, (testing of candle holder was brought up about the candle safety standard and

why we are not looking at the same principle for this application), flame contact of 60 seconds (once it ignites removing ignition is applicable) and when material starts to burn the clock starts, time of ignition to self-extinguishment to be 60 seconds (X seconds in the draft until testing develops some measurable numbers), conditioning/curing time for samples – 4 hrs.

Everyone agreed that it should be tested on a flat surface and not on a bed of nails so that it would imitate actual working conditions.

Ignition source: A lighter should be used instead of a candle to eliminate dripping molten wax onto the ring thus providing a fuel source on the test piece.

Testing all of the components of the accessory: It was agreed upon that each component of the accessory should be tested for the criteria.

It was discussed that only the components of the accessory within the radius of the candle in the event of a candle failure such as it tips over should be subject to the test. There was much discussion that went back and forth about candle failures within the proximity of the candle. Rich again felt that we were getting hung up on candle failures and need to get back to what happens if it ignites who cares how it ignited. We settled on what happens to the accessory assuming that it has been ignited. The clock starts when the ignition source is pulled away and will be measured as time of ignition to time it self-extinguishes and then it will be weighed to determine % of weight loss.

Conditioning of the samples. They will be conditioned as the testers all agree so that there is standardization between all of the three testing labs.

Is there a flame height needed? At this time it would be appropriate to measure the flame height from the height of the ring. Discussion will be continued at the next meeting.

It was noted that all the plastic plants in China are converting over to IFR plastics for Christmas materials.

Tom, Jeanne and Dave will research the samples.

Jim and Bob will write the “draft” method.

Tom, Jeanne, Dave and Bob will perform the testing.

Respectfully submitted,
Ken, Walter and Jim

PARTICIPANTS

Tom Acklin	Autograph Foliages *
Zina Juroch	Pier 1 Imports *
George Pappas Sr.	Lumi-Lite Candle Co. *
Rich Signorelli	Belmay Inc. *
Thomas Dierker	Atkins & Pearce *
Dan Zipes	Home Interiors & Gifts *
Bob Nelson	Yankee Candle *
Bill Comber	Libbey Glass *
Marcia Oiler	Guild House *
Christy Wheeler	Atkins & Pearce *
Rob Harrington	Blyth Inc *
Jim Hoebel	Consumer *
Kelly Reed	Bath & Body Works *
JoeAnna Antonelli	Bath & Body Works *
Jeanne Weatherly	Bath & Body Works *
David Morrison	Penreco *
Bill Hartke	Bureau Veritas CPS*
Roger Parette	Hanna's *
Kathy Seidenkranz	NCA *
Allyson Tenney	CPSC
Walter Smittle	NASFM *
Jim Becker	Candle Solutions – Chairman *
Bob Moss	Sea Limited – Co Chairman *
Dave Buri	SC Johnson & Son *
Ken Blanchard	IGCA *

* = attended both days