



**DEPARTMENT OF FORESTRY & FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL
Flammability Standards for Building Insulation Materials
(AB 127) Working Group Meeting Minutes
February 25, 2014
Office of the State Fire Marshal Headquarters
1131 S Street, Sacramento, CA 95811**



CHAIRPERSON PRESENT:

Kevin Reinertson, Division Chief- Office of the State Fire Marshal (SFM) Code Development & Analysis Division

MEMBERS PRESENT:

Eric Banks, Technical Specialist- BASF Corporation, representing the Spray Foam Coalition of the Center for the Polyurethanes Industry (CPI)
Micahel Bedard, Policy Director- Assembly Member Nancy Skinner
Jesse Beitel, Sr. Scientist / Principal- Hughes Associates, representing the American Chemistry Council (ACC)
Michael D. Fischer, Director of Codes & Regulatory Affairs- Kellen Company, representing the Polyisocyanurate Insulation Manufacturers Association (PIMA)
Steve Fischer, Ph.D. Chemist- Department of Consumer Affairs, Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation (BEARHFTI)
Dr. Marcelo M. Hirschler, President & Technical Director- GBH International, representing the American Chemistry Council's North American Flame Retardant Alliance (NAFRA)
Howard Hopper, Regulatory Services Program Manager- Underwriters Laboratories (UL)
Avery Lindeman, Science & Policy Associate- Green Science Policy Institute
Donald Lucas, PH.D., Combustion Scientist- Environmental Energy Technologies Division- Lawrence Berkeley National Laboratory
Justin Malan, Principal/Owner- ECO Consult, representing the U.S. Green Building Council of California (USGBC)
Walter Reiter, Deputy Director- Expanded Polystyrene (EPS) Industry Alliance
Lorraine A. Ross, President- Intech Consulting Inc., representing the Extruded Polystyrene Insulation Manufacturers Association (XPSA)
Veena Singla, Staff Scientist- Health Program, Natural Resources Defense Council (NRDC)
Adria Smith, Deputy Fire Marshal- Fountain Valley Fire Department, representing Cal Chiefs / SoCal Fire Prevention Officers Association
Paul Wermer, Principal- Paul Wermer Sustainability Consulting, representing the U.S. Green Building Council of California (USGBC)
Kevin White, CPAT Director- California Professional Firefighters

MEMBERS ON THE TELEPHONE:

George Collins- (unavailable)
Tony Crimi, President- A.C. Consulting Solutions, representing NAMA
Chris Martin, NAMA
(Name) Pacheco- Communication Workers of Napa
Robert Raymer, P.E., Senior Engineer /Technical Director- California Building Industry Association (CBIA)

I. CALL TO ORDER

Welcome / Self Introductions: Chief Kevin Reinertson called the meeting to order at 1000 hours and the participating working group members introduced themselves.

II. REVIEW OF CODE AND STANDARDS PERTAINING TO FLAMMABILITY REQUIREMENTS AND BUILDING INSULATION

A. Presentation/Debate Announcement: Bob Raymer (CBIA) announced that the Energy Commission, CBIA & Insulation Manufacturers are most likely going to be putting on a presentation and discussion either during the last week of March or the first week of April; they're trying to reserve the SMUD conference room located at S Street & 55th for the presentation location. They will be discussing going to 2" x 6" construction and thicker roofing assemblies for 2017, a change in which the insulation manufacturers have a huge interest.

B. Minutes Review & Revisions: Dr. Hirschler (GBH/NAFRA) asked that the question regarding what metric will be used to assess that the same level of fire safety will be maintained be added to the minutes. Paul Wermer pointed out that the word "**panels**" as written twice on page 3, Section D.1. in the sentence "Wall construction requirements are going to change to 2" x 6" or 2" x 8" panels or staggered between both 2" x 6" and 2" x 8" panels thus there's going to be a huge increase in insulation usage." should be changed to **studs** in both instances. Justin Malan (USGBC) stated that he's concerned with using a voting system to verify or ratify any conclusions or recommendations made given the fact that there's a disproportionate representation of industry vs. other people participating on the workgroup. Chief Reinertson responded that he's looking for more workgroup participation from interested parties who aren't currently represented and that if the workgroup gets to the point where voting has to occur, then SFM will have to determine the voting numbers.

C. Presentations:

1. Current Codes and their History: Jess Beitel (Hughes Associates representing ACC) provided a PowerPoint presentation titled "History of Foam Plastics in the Building Codes".

a. History of Foam Plastics

b. Intent of Codes and Standards

2. Current Fire Tests and Standards: Lorraine Ross (Intech Consulting Inc., representing XPSA) provided a presentation that examined the different fire tests and standards that are required for various types of insulation contained in the California Building Code.

D. Discussions:

Chief Reinertson asked the workgroup to discuss Dr. Hirschler's question regarding what metric will be used to ensure that the same level of fire safety is maintained and to use what the codes are today as a basis for making a determination. Paul Wermer (USGBC) stated that he does not see how E84 on foams relates to building fire safety based on a variety of things that he's read. He sees a rough correlation but materials with very low flame spread indexes go up like a rocket in some circumstances whereas materials with very high flame spread indexes don't go up at all. Jess responded that's generally not

true; typically if there's a very high flame spread index, then the material goes up. A bad E84 test is an indicator for a bad result in all of the other tests. Eric Banks (BASF/CPI) mentioned that the application of the E84 and labeling requirements should ensure that materials that have performed in a certain manner are manufactured and maintained by the quality control system and perform in the same manner to reduce variability. Dr. Hirschler responded that there's a combination of thermal barrier and ASTM E84 and it's known that addition of flame retardants will decrease heat release. If the incident heat source to any combustible material is increased, then there will be more heat release. When material A is compared to material A + a flame retardant under the same incident heat release, there is less heat release with the material that contains the flame retardant. Paul stated that he was referencing the data showing figures 2 and 3 of the Babrauskas paper on reevaluating insulation which was submitted as one of the reference documents and the data clearly shows no clear correlation both in terms of presentation of specimen that's destroyed and time to flashover, which makes him question the validity of E84 in providing any meaningful data. Chief Reinertson advised the group that evaluating whether or not a test standard is correct for a product and what the national standards have been doing is not an option. Paul was involved in discussions with Assembly member Skinner and her staff and he believes that's precisely what's expected of the workgroup. The literature data out there does provide information as to whether the test standards that are being used provide sufficiently meaningful results, certainly in the case of foams, to justify tests that fundamentally mandate incorporation of flame retardants. All of the discussions that he was involved in with Assembly member Skinner led him to believe that she wants to know if these test methods are necessary to ensure fire safety and whether or not they provide that level of understanding, especially in the context of the clear number of alternate test methods that can be used to evaluate assemblies. Dr. Hirschler stated that Skinner's original intent is not what the law says; the law changed from what her original intent was and the workgroup needs to focus on what the law says: "we shall maintain the same level of fire safety". Paul agreed and asked to be shown data that demonstrates that the E84 results correlate to fire safety in various assemblies. If they do not correlate to fire safety, then they are not adding value. Mike Fischer (Kellen/PIMA) stated that the opposite is true; it must be demonstrated that a change made to a regulation does not adversely affect fire safety- the burden that Paul spoke about would be on someone else. A change cannot be made and just assumed not to affect fire safety. Dr. Hirschler stated that it can be demonstrated that the combination of using thermal barrier and a better E84 result results in very good fire safety. So, should the elimination of one of the requirements be done based on how it can be guaranteed that the same level of fire safety is maintained? Dr. Hirschler and his associates are not concerned with whether or not E84 is the test standard; they just want something/a test, because thermal barrier alone is not adequate. Mike Fischer responded that the workgroup just went through the safety record and the reasons why the FTC got involved and he summarized that there was a situation where there were fires that resulted in injuries and deaths; a change in the regulations and standards was made and the performance of the products has significantly improved, so the undoing of history is a different discussion. Lorraine stated that she has a copy of the original Castino document at home and the yellow-covered book in her office and E84 has changed many times since its original inception; the foams have changed, too- there were products without flame retardants and there's nothing in the E84 or anywhere else that mandates the use of flame retardants. If a chemist comes up with a new formulation that meets an E84, then it's inconsequential; these are performance tests- they're not designating components. Dr. Hirschler stated that there are materials, like certain poly foams, that do not need flame retardants to meet the requirements of NFPA 286. That's why the IMO Code requirements based on ISO 9705 contain higher-restricting materials. Avery Lindeman (Green Science Policy Institute) commented that perhaps it would be useful to figure out what the workgroup should be doing since there's some disagreement in terms of what AB 127 is asking for; she does not understand the context of all of the workgroup members in achieving whatever that is; it would be useful to outline and understand before debating metrics for specific evaluation. Paul Wermer stated that the FTC evaluation concluded that E84 was invalid in predicting foams' performance. Lorraine disagreed and stated that the FTC investigation concluded only that the small scale 6" x 2" test was invalid. Paul responded that it also concluded that E84 does not reflect hazards

under actual fire conditions. Lorraine countered that was applied to E84 in every case- not just foam- and it was part of an ASTM representation. Paul reiterated that he thinks that E84 has been called into question there and also later and he has been told that there have been multiple changes to E84 so all of those things are no longer relevant. His question is that specifically with respect to foams, can it be shown how the E84 tests have changed to make the results that are cited in the earlier papers before all of the changes- what are the changes that are relevant to foams that make them a better predictor of foams and the foam fire hazard? Jess responded that one of the charts that Paul had referred to- figure 3- shows that typically if there's high flame spread, then there's flashover; lower flame spread may or may not result in flashovers. Paul brought up the data point on the lower right with a flame spread of 500 on the high end and the time to flashover was four minutes; flashovers were also seen as low as the fifteen-twenty flame spread. Why is the flame spread criteria 75 when it doesn't predict what happens in real fires? Jess pointed out that it gives a rough correlation of what happens; the real fire tests didn't exist until some of this work. E84 is a screening test for foam plastics; they must fall into Class B at least; the Class C's are unacceptable now. Dr. Lucas asked whether or not in some circumstances, such as when putting foam below grade/in contact with earth, is flame retardant needed in the foam? Can the group agree that when putting foam underneath a slab and in contact with the earth, there's no fire safety benefit from adding flame retardants? Jess stated that as a FPE, he would worry about those big slabs in his warehouse because removing the flame retardant will change the flammability of that product. Mike Fischer stated that if that requirement were removed from the code, it wouldn't matter/wouldn't change the formulation because the manufacturer who produces that material in bulk ships it to a job site. Don asked the workgroup to recall that AB 127 asks if are there certain situations where foam insulation could be used without FR's and maintain fire safety; he's giving an example of one case where he thinks that it could- AB 127 is not asking about the supply side and costs, etc. Lorraine suggested that the workgroup add Don's hypothetical to the workgroup's list of questions. Chief Reinertson advised that if there's data out there that reflects tests for non-fire retardant foam, then this group needs to obtain it as part of the literature review. Eric Banks (BASF/CPI) stated that perhaps a better way to pose the question is to ask whether or not there are any assemblies or configurations that could possibly be inherently safe? The workgroup reacted vehemently to Eric's suggestion. Is "encased in concrete" considered to be inherently safe from a fire safety perspective? A workgroup member asked about the FTC's concern with deceptive advertising; did they evaluate the test(s) or were they only concerned with what statements could be made based on that test? Jess responded that there were tests done that showed the problem, Brady Williamson showed some of the early full scale fire tests about how combustible foams burn. The FTC became concerned because there were representations being made; people were coming out and stating that they don't burn. Lorraine commented that one of the classifications on the super small scale test was self-extinguishing- even with non-flame retardant foam- and it was meaningless; that's why this issue arose and test data was examined and the test was pulled completely. The FTC ruled that the terminology "non-burning/self-extinguishing or burning" could not be used. Lorraine pointed out that fire testing is imprecise/a slice; it's not doing a GC evaluation. Don stated that to take a slice and then express with certainty that when it's extrapolated to real-world conditions it will do "X" is a dangerous statement to make. Mike Fischer responded that the fire service record exists; there's forty years of experience with these products and the market share increasing. Jess disagreed and stated that if he runs a room corner test with a bare foam and the ignition source that's used, if he changes the ignition source slightly then the performance will potentially be different. At the end of the day, someone has to make a decision regarding whether or not to allow a product to be used based on some type of test. A prime example is NFPA 286; that was eight years of work with everybody involved. If the European standard test were used, then most American products would fail because they use a much higher fire source. They also regulate it differently than we do; they regulate based on how fast the product goes to flashover; they take everything to flashover. In the U.S. we don't take things to flashover, we put products up against what is thought to be a correct moderate size and regulate based upon whether or not the test is passed- not time to flashover. Jess stated that the only product that E84 truly addresses flame spread of is ceiling tiles. Lorraine related the case study of the

Rhode Island fire which occurred because foam that was not flame retardant was used in an exposed manner; non-flame retardant packaging foam was used as an interior finish. Dr. Lucas pointed out that the code is not meant to cover buildings that are not built to code/in which foreseeable misuse of a material has occurred. Dr. Hirschler advised that two nightclub fires, one in Buenos Aires and another in Santa Maria, Brazil, started due to the exact same cause/conditions as the Rhode Island fire. Dr. Lucas pointed out that indoor fireworks were the ignition source of the Rhode Island fire. Dr. Hirschler stated that if nobody does anything stupid, then there will never be fires. Every time there's a fire, it's because somebody did something stupid. Paul Wermer thinks that it's a stretch to say that insulation inside walls needs to be regulated because people will use Styrofoam from packaging materials to make interior decorations and put them up inside a building without authorization. Lorraine stated that happens all the time. Paul continued opining that the Rhode Island fire was not an issue of improper construction; it was improper interior stage set decoration which is very different from construction. The fire was not caused by improperly built studs, walls or facing; it was caused by things that were tacked to the walls. Dr. Hirschler stated that's exactly what the CBC and CFC regulate. Chief Reinertson asked Dr. Hirschler to change the discussion into a question that the workgroup can address. Dr. Hirschler agreed to do that and stated that his question is how is the performance of foam external to the wall construction, i.e. interior decoration, during a fire relevant to the technical requirements for foam or any insulation that's inside a wall behind a thermal barrier; how do those two relate to each other? Adria Smith (Fountain Valley FD/Cal Chiefs) stated that perhaps it could be helpful for the group to go back to the agenda in defining the scope and try to narrow down the intent of AB 127, pinpoint precisely which insulation materials are of concern and the definition of "building envelope". It will be helpful if the workgroup can come to an agreement regarding what's being discussed, for example if the concern is only with the insulation that's between the walls then the group can stop discussing exposed comp. Paul Wermer proposed narrowing down the discussion to concealed insulation and exposed insulation. Dr. Hirschler asked to define "concealed"; does Paul mean concealed by non-combustible construction or by a thermal barrier, which is combustible? The workgroup agreed to work through that at a later point.

III. DEFINING THE SCOPE OF WORKGROUP ACTIONS

A. Intent of AB 127: Chief Reinertson advised that the workgroup has had a lot of discussion, heard from Assembly member Skinner's office prior to lunch and can examine what's printed in the law and the document from The Daily Journal that expresses the scope of the bill. The first intention of the bill is to maintain overall fire safety. The second intention is to ensure that there's adequate protection from fires that travel between walls and into confined areas, including crawl spaces and attics that contain occupants of the building and/or firefighters who may be in the building during a fire. Chief Reinertson then reviewed the charging language "the State Fire Marshal (SFM), in consultation with the Bureau of Electronic and Appliance Repair, Home Furnishings, and Thermal Insulation (BEARHFTI), shall review the flammability standards for building insulation materials, including whether the flammability standards for some insulation materials can only be met with the addition of chemical flame retardants. The workgroup has developed questions that fit within the scope. The intent of Assembly member Skinner's office is not to generate new data or research but to work with what's already out there.

Discussion: The base code is the 2013 California Building Standards Codes that does not mandate the use of chemical flame retardants, however, mandates fire and smoke development safety standards. There were early discussions regarding chemicals and tests but what was put into the law does not reflect those discussions because there were changes throughout the drafting of AB 127. This workgroup does not have the manpower or time to revise the test standard or its applicability.

Chief Reinertson asked Paul Wermer if he's aware of the existence of an alternative test to E84. Paul responded that he does not know of the existence of an alternative test to E84 but he questions whether or not the E84 test generates meaningful data for the specific applications that it's called for. Walter Reiter (EPS) stated that the legislation has charged the group with reviewing the flammability standards for materials- not applications. The fire and safety codes are material specific- not applications-specific. The workgroup members disagreed with Walter's statement and Jess stated that all of the fire tests except E84 are assembly tests. Walter asked whether or not the workgroup should attach significance to the fact that the legislature has charged the group with reviewing flammability standards for materials. Paul responded that what's been proposed for the workgroup's consideration is updated insulation flammability standards; are the flammability standards now the right set of standards or is the workgroup expected to mandate a test that generates data that's low on the predictor value and does not necessarily address how the material actually performs in a range of fire situations. Mike Fischer inquired if there's current data on the current version of E84 with current marketed products. Paul responded that's what he's asking about; how has the vastly improved rev 500/1000 of E84 test changed the data for foam materials which are the materials that are substantially problematic in the rehabilitation of building fire safety. Mike Fisher stated that there have been changes in the construction codes to recycled content, structural requirements, wind load resistance, compression strength in dealing with moisture problems; it would be impossible to take only one factor from 1974 and compare it to today and claim that it's a predictor. Paul asked how Mike's point relates to E84 and Mike responded that the nature of the materials that are being tested by E84 have changed; they're completely different products today than they were in the 1970's. The insulation is not the same because the materials have changed; there is no foam today that's produced using the same recipe that was used in the past. Adria stated that changing the E84 test standard is a conversation for the ASTM E84 Committee and if there's no viable alternative to E84, then E84 becomes the fire safety metric. So, over time, the workgroup has established that E84 is the metric. Paul responded that the fact that a measurement can be taken does not mean that it tells something that needs to be known. Maintaining a test just because the test exists and is well used and documented puts a number of constraints on the market and on establishing viable alternatives. One of the key issues to Paul is whether or not the E84 test is the right test to use when looking at materials that are most commonly used in various assemblies. Dr. Hirschler asked if Paul is offering an alternative because it appears that Paul is stating that no test should be used because the E84 test is not good enough. Paul responded that the workgroup needs to make sure to understand what the data discloses about availability of assembly testing; there seems to be a lot of that which is referenced in the code handout. Is there a reason to believe that those tests are in fact a necessary and sufficient evaluation of the material performance because Paul suspects that even with E84, many of the other tests are a necessary component. Eric Banks (BASF/CPI) responded that the other tests are necessary, however, the products that are tested in the large scale tests perform to a minimum basic standard that's E84 so if E84 is changed, then what are the potential ramifications? Paul responded that the ramifications would be that other materials could be tested that might not pass the E84 test but would perform equally well in other assembly tests. Jess stated that a Class C or greater foam under EPDM will never make a Class C roof assembly so it can't be used. The foams that are going to be used buried in that EPDM foam insulation, whether they're spray, poly or some other type, is going to contain flame retardants. Paul responded that given Jess' scenario, then there's an assembly test which shows that the application doesn't work and needs fire retardants. Jess responded that product manufacturers would love to be able to pay \$500 for an E84 test to find out where the foam compares when they're preparing to produce it vs. the \$2000 that it takes to perform other tests. Paul responded that nothing is saying that the E84 test can't be used as a screening test if so desired but to mandate it as a screening test and, based on that screening test exclude it from use in assemblies strikes Paul as exactly the sort of thing that he hears industry in general arguing strongly against. Jess would ask a quality control agency such as U.L. what they use for a screening test for classification. Howard Hopper (UL) responded that according to the code, once a product is certified UL has to conduct inspections of ongoing production to verify continued compliance with the requirements and those inspections of whatever has been certified must not have significantly changed

from what was originally submitted. Howard stated that a lot of good issues and concerns have been raised by the workgroup and he would like to see some of the concerns put in writing so that they can be addressed. Perhaps a couple of the questions that the workgroup will address are: 1) what are the significant changes over forty years of E84 testing and 2) what's the role of E84 as a predictor? Howard would like the questions to be put on paper and expanded upon so that the workgroup might better focus on specific issues and come to a consensus. Howard thinks that the workgroup's reference documents are good; old editions of the codes should not be included but that's a minor point. Chief Reinertson distributed a draft document to the workgroup members that he copied from the Smoke Alarm Task Force's report that Howard Hopper created; he would like the workgroup members to start writing their questions on that document. Dr. Hirschler relayed to the workgroup members that Tony Crimi (NAMA) emailed him and he isn't able to speak on the telephone so he asked Dr. Hirschler to speak on his behalf and to mention that he thinks that there's way too much emphasis being placed on E84 as the culprit for why flame retardants are added to foam plastics, particularly in the case of ignition barriers which are not tested- we know nothing about whether they will function at all if foam is used behind them and the same can be said for thermal barriers with ignition barriers. Howard Hopper volunteered to add a definition for the intent of AB 127 to the workgroup's Draft document.

- B. What Insulation Materials Are Included:** Chief Reinertson advised that the workgroup should focus on insulation in exterior walls, attics, roofs and under floors. Lorraine volunteered to add a list of which insulation materials are included to the workgroup's Draft document. Veena Singla (NRDC) commented that the charge in the bill in terms of identifying materials that can only meet standards by adding chemical flame retardants is an important point to consider. Veena thinks the workgroup's evaluation should be for materials that use flame retardants now; not thinking about what could potentially happen in the future if something new is developed because that cannot be evaluated. Dr. Hirschler pointed out that as he discussed earlier in the meeting, just because an insulation is combustible doesn't mean that it needs flame retardants; there are a number of insulations that are combustible and don't need flame retardants. Chief Reinertson advised that there are a lot of insulation materials out there that don't need to be addressed by the workgroup.
- C. Define Building Envelope:** Mike Fischer stated that sometimes crossover definitions occur when speaking code language. For example, "building envelope" doesn't have the same meaning as "building thermal envelope" which is defined in the Energy Code. Paul Wermer is concerned because he sees insulation used within buildings and between floors where they're not part of the thermal envelope as defined. Chief Reinertson advised the workgroup to narrow down the discussion to walls, attics, ceilings and floors. Whether for sound transmission or conditioned vs. unconditioned space, those materials are the same and they have to meet the same requirements in the code.
- D. Occupancies Focused On:** Chief Reinertson began the discussion using cold storage warehouses or large storage buildings where people work as examples of buildings to add to this list. He then asked the workgroup members if they can omit any buildings from the list. Paul inquired if there are occupancies where the risk is so great that they should be made fireproof under any circumstances whatsoever. Chief Reinertson advised that SFM's statutory authority originally targeted high-risk occupancies. There are 10 or so different occupancies in the CBC and although SFM's statutory authority has changed over the years, the five most high-risk occupancies (in any part of the country) when it comes to building occupancies remain the same: assemblies, educational, institutional, residential and high-rise. Paul asked if the workgroup looks at residential and institutional occupancies and decides that the flammability requirements are suitable for those occupancies, does that call into question whether they're suitable for other occupancies? If flammability standards are more stringent for those occupancies, is it conceivable that all of the other occupancies have standards that are less than or equal to? Chief Reinertson responded that there a lot of different elements to high-risk occupancies. Assembly occupancies may not

burn as frequently like residential do but once a building is on fire, the occupancy doesn't matter in terms of firefighter risk, each has their or set of risks and hazards.

The five high-risk occupancies are considered to be high-risk for a multitude of reasons: because they're the most populated buildings, they contain people who are confined or can't fend for themselves or those we live in. The workgroup will also need to include business occupancies (B), mercantile (M), factory (F), storage (S) and utility (U) as part of the focus. Paul asked if the high-rise occupancy includes residential; Chief Reinertson responded that a high-rise building is a high-rise building regardless of occupancy. A Residential building is a residential building whether it's a bungalow, a two-story home or a high-rise apartment building. Paul proposed that the workgroup first look for different criteria or concerns about assembly, residential and institutional occupancies, address those and then discuss if there are conditions in the other occupancies that might expose firefighters to greater risk if those same criteria and standards are met. Chief Reinertson responded that Paul's proposal be added to the workgroup's list of questions because when it comes to firefighter safety, regardless of whether the incident occurs in a warehouse storage building or a large apartment complex, the fact that the building is insulated or not is going to have an impact.

Lorraine asked if the workgroup should take into consideration when examining fire tests that a one or two family dwelling has one set of requirements that are mandated by the Residential Code and a high-rise residential building has another set of requirements that are mandated by the High-Rise Residential Code. Chief Reinertson advised that regardless of occupancy, there's a much higher standard that's applied to high-rise buildings. The workgroup discussed Chief Reinertson's statement and agreed that the big difference between the Residential and High-Rise Codes is in fire-resistance. Lorraine then asked if the workgroup should be looking at the Fire Code. Chief Reinertson responded that building construction for flammability standards comes out of the Building Code or Residential Code; other than what's found in CH 8 of the CFC, it's already in CH 8 of the CBC so he doesn't know if there's anything more that the workgroup can derive out of the CFC. The CFC is heavier in regards to existing buildings which are not part of the workgroup's task. Chief Reinertson advised that he thinks that occupancy isn't going to matter at all, especially since the building envelope has been defined. Emphasis will be placed on the five high-risk occupancies but the other occupancies (B, M, F, S & U) will also be part of the equation.

- E. Individual Materials vs. Assemblies:** The workgroup discussed and agreed that the code is written today based on both individual materials and assemblies. Dr. Hirschler pointed out that insulations have to meet an individual fire test and assemblies have to be based on the thermal barrier. Paul Wermer stated that he wants to make sure that the question is not pre-judging a conclusion; that the workgroup has agreed that they're looking at both individual materials and assemblies and would therefore need to continue with the E84 test as a prerequisite. The workgroup discussed Paul's concern and agreed that they need to keep it in mind when making their recommendations.

IV. GROUP COMMUNICATION

- A. Literature Review:** Chief Reinertson advised that he will work with SFM's Webmaster to create a web page that will be posted on the internet and the work will either be contained in a Zip file or PDF's. Depending upon how the website is set up, he will be sending out either a link just to the website or individual links to the documents. Another benefit of creating a website is that people who aren't on the email list who would like to familiarize themselves with what the workgroup is doing can go to the website to read the agendas, minutes, working document, etc. Paul mentioned that the TB 117 Working Group created a very good website that contained readily accessible documents and outlined all aspects of their work which worked out quite well and contained one of the easiest-to-use resource lists.

Chief Reinertson received documents from Marcello, Lorraine, Avery, Jess and others that will disseminate to the workgroup. Chief Reinertson advised the workgroup members that if they or anyone they know has literature that would be good for the group to start reviewing, then please forward them to him so that he can either post them or vet them out.

There's a lot of industry representation and information available to the workgroup and Chief Reinertson recommends that there should be more representation and information from green, environmental, sustainable, health, and/or general welfare groups to balance out some of the discussions. Chief Reinertson advised the workgroup members not to be concerned about specific up/down votes because as the chair, everything that can be done to make sure that all voices are heard and that the ballot is fair will be made. Bob Raymer (CBIA), BOMA and the Commercial Industry Association has played a major role in prior SFM working groups and committees; everything that SFM does/whatever recommendations are made ultimately affect building owners, occupants, etc. The SFM considers all aspects and side.

Chief Reinertson displayed documents that he received from each workgroup member and they each spoke briefly about/summarized their documents. Howard Hopper volunteered to create and maintain the workgroup's Draft document and Chief Reinertson asked the workgroup members to track changes to their documents before sending them to Howard to incorporate. Howard advised that he will ensure that each workgroup member's initials will be contained in the Draft document next to their changes. Chief Reinertson asked the workgroup members to send Howard their documents no later than Friday, March 14th. Chief Reinertson asked the workgroup members to start their literature reviews, update the Draft document and forward to Howard. Howard advised the workgroup members to revise, build on or cross out any of the questions on the Draft document if they think it's necessary. Howard is going to handle the intent question, Lorraine and Paul are going to handle which insulation materials are included and Paul will define the building envelope using the third paragraph on page nine of the last meeting minutes as a reference.

- B. Next Meeting:** The next workgroup meeting is Thursday, March 20th. The April meeting is scheduled to occur on Thursday, April 17th which is problematic for most workgroup members (spring break week and Easter). The April meeting may be rescheduled for Thursday, April 24th but that's not an ideal day, either, because the Code Hearings are scheduled to occur on Sunday, April 27th – Sunday, May 4th. Chief Reinertson will confirm the date of the April meeting during the next meeting on March 20th. There's a possibility that the April meeting will be a conference call and online GoToMeeting only.

IV. ADJOURNMENT

Chief Reinertson adjourned the meeting at 1550 hours.