



**DEPARTMENT OF FORESTRY & FIRE PROTECTION  
OFFICE OF THE STATE FIRE MARSHAL  
Flammability Standards for Building Insulation Materials  
(AB 127) Working Group Meeting Notes  
December 18, 2014  
Go-To Meeting**



**CHAIRPERSON PRESENT:**

Kevin Reinertson, Division Chief- Office of the State Fire Marshal (OSFM) 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)  
Jesse Beitel, Sr. Scientist / Principal- Hughes Associates, representing the American Chemistry Council (ACC)  
Payam Bozorgchami, Contract Manager- Efficiency, Renewables, and Demand Analysis Division, California Energy Commission  
Rian Evitt, Code Compliance Officer- San Ramon Valley Fire Protection District, representing the Northern California Fire Prevention Officers Association (NorCal FPO)  
Michael D. Fischer, Director of Codes & Regulatory Affairs- Kellen Company, representing the Polyisocyanurate Insulation Manufacturers Association (PIMA)  
Andrew Henning, Deputy State Fire Marshal- Office of the State Fire Marshal (OSFM) Code Development & Analysis Division  
Marcelo M. Hirschler, President & Technical Director- GBH International, representing the American Chemistry Council's North American Flame Retardant Alliance (NAFRA)  
Avery Lindeman, Science & Policy Associate- Green Science Policy Institute  
Donald Lucas, Ph.D., Combustion Scientist- Environmental Energy Technologies Division- Lawrence Berkeley National Laboratory  
Chris Martin, Assistant Legal Counsel- North American Insulation Manufacturers Association (NAIMA)  
Lorraine A. Ross, President- Intech Consulting Inc., representing the Extruded Polystyrene Insulation Manufacturers Association (XPSA)  
Adria Smith, Deputy Fire Marshal- Riverside County 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)  
John Woestman, Codes and Standards, Composite Lumber Manufacturers Associate- Kellen Company, representing the Extruded Polystyrene Foam Association (XPSA)

**GUESTS PRESENT:**

Kathleen Almand, P.E., FSFPE- NFPA's Fire Protection Research Foundation  
George Combs, Senior Principal Scientist, Product Development and Technical Support, Rigid/Specialties and Raw Materials, Polyurethanes, Bayer MaterialScience LLC  
Megan Haltrate- NFPA  
Anthony Hammonds- NST

## I. CALL TO ORDER

**Welcome / Self Introductions:** Chief Kevin Reinertson called the meeting to order at 1006 hours and the participating working group members and guests introduced themselves.

## II. THE NOVEMBER 20<sup>TH</sup> MEETING NOTES

Chief Reinertson advised the working group members to email him and Andrew Henning any edification requests for the November 20<sup>th</sup> meeting notes within thirty days after which time the notes will be finalized.

## III. REVIEW OF THE WORKING DRAFT DOUCMENT

Chief Hoover will write the Message From the State Fire Marshal section of the report.

The working group discussed the paragraph regarding subgrade applications. Marcelo Hirschler opined that the working group had agreed during the last meeting that everything should be under grade but everything is not under grade in the proposal contained in Appendix H. Chief Reinertson advised that the working group had discussed the exposed areas around the perimeter, such as on the exterior of the wall, and agreed that they have a barrier around them and are actually not exposed. Marcelo requested to point out for the record that the areas are not underground and they don't have thermal barriers. Chief advised that Marcelo is referring to everything at the foundation walls and asked if there's language that could be inserted after "slab sub-grade" to reflect that. Marcelo opined that the word "primarily" could be inserted in the sentence so that it reads "primarily in under-slab subgrade applications".

Chief advised that the Working Group Scope paragraph discusses the manufacturing, transportation, warehouse, storage, distribution and construction issues that the working group had not addressed but will still need to be addressed before the SFM moves any regulations. Chief Reinertson would like to make this paragraph more clear and include an introductory statement and bullet points regarding specifically what was not addressed. The working group members reviewed and edited this paragraph. Chief advised that he wrote the sentence that contains the language "when and if code changes are proposed" so that when Chief Hoover or anyone else reads the report, they will know that this is something that will need to be circled back to at a later date and he would prefer to keep that language as it's written. Paul Wermer asked how this will be circled back to and evaluated in terms of the manufacturing process in any meaningful way because when the whole process is examined, there are many places where the components are significantly the same. The common FR's are highly flammable and are contained in only one of the components that are shipped and not in the others so a significant component that does not contain FR's is being shipped. If the actual flammability of the materials is examined, once they ignite in the sorts of conditions that are seen on construction sites, how is comparative testing going to be completed to show that the FR's in the actual-use space perform differently than the currently-marketed products? Paul has not seen or heard anything to demonstrate that such data exists. Chief advised that would be part of the evaluation which could be started in today's meeting and therefore push out the working group's timeline. Chief would prefer to state that these items here were not addressed by this working group for this report that's going to Chief Hoover and they will be addressed at a later date either by SFM, this working group or a new working group that will be reconvened. Lorraine Ross agreed with Chief Reinertson and added that there's plenty of information out there that demonstrates that when certain foam insulations went from certain types of blowing agents to pentane, there were significant changes required in the manufacturing plants of those products that resulted

in multi-million dollar modifications. This working group has not been able to agree on this issue or the below-grade issue and Lorraine thinks that it's time to move on.

Chief moved the discussion to the Recommendations section on page 22. This section addresses the different assemblies that were created, the proof of concept testing and under-floor subgrade use. The working group discussed and edited this section. Chief Reinertson advised that there is no issue when non-FR insulation is installed between earth and slab and the working group members alluded to that fact in their responses to question 10. Mike Fischer advised that the word limitation that was placed on the responses prevented the working group members from including all of the words that they wanted to include in their responses and answering the questions thoroughly. There were other considerations that were not addressed in the working group members' responses such as penetrations through the slab that can occur in plumbing. Mike is not willing to concede that there are no issues in the subgrade scenario absent further studies or testing; if pipes are run down there for sewage, water supply or electrical conduits, for example, issues could arise. Chief advised that the sentence being discussed says that "the insulation, once installed and concealed between earth and concrete slab, did not appear to represent a major risk." So, there may be a risk, but not a major risk and that's what the sentence says. Mike Fischer agreed with Chief that everything is relative and that the word "major" helps clarify the risk level but still, the working group members reached their word limitations in their responses and were therefore unable to thoroughly answer the question. The working group discussed whether or not to keep the third sentence regarding manufacturing and transportation. Paul Wermer opined that the topic is completely covered in the reference to the working group scope focus. Lorraine Ross disagreed with Paul and thinks that it should stay because a lot of people page down to the conclusion of the report and skip reading the body. Paul said that if people do that then they're not reading the document appropriately and are taking portions out of context which isn't a good idea.

Chief moved the discussion to Appendix H. Lorraine thinks that the first sentence needs work; it states that "proposed language was submitted" which sounds as if it's been submitted to the CBC which has not been done- it was only discussed. The working group discussed the first sentence at length and edited it. Marcelo asked Chief Reinertson to use the words "flame-retarded" anywhere in the document where the abbreviation "FR" exists. Chief responded that he has made a note to himself regarding that issue; he would like to use the same terms consistently throughout the document.

Chief advised that the edifications that the working group suggested during the last meeting have been made to the report and it's now ready to move from "draft" status to "completed report" status to submit to Chief Hoover who will add her portion and, based on the recommendations and other sections contained in the report, move it forward as she determines necessary per the statute. Chief asked if the working group members would like to scroll through the report one last time before finalizing it. Marcelo opined that the working group should go through the report one last time page by page. Chief acknowledged that the working group can do that and he also mentioned that the photos that are currently contained in the report may or may not be kept and they may have to be put in a different format; they will have to be reviewed by the executive staff. The Cal Fire logo may replace some of the pictures. Chief Hoover will add the "Message From The Chief" section at a later date. Over the last several weeks, Andrew and Chief Reinertson have edited / cleaned up the Acknowledgments section that contains the list of members who have attended the working group meetings so that it accurately reflects those who have participated and contributed to the creation of the report. Chief Reinertson thanked the members for their participation in the working group over the past year. Chief will continue to verify that the Table of Contents links to the page numbers are all contained in the report and are accurate. Andrew Henning and Chief Reinertson will add PDF's regarding the Assembly Bill and letters that were submitted to OSFM.

Andrew asked the working group members if they're happy with the Definitions section. Dwayne advised that there are a couple of standards that are referenced in the Definitions section that are not in the

Referenced Standards section. Specifically, ASTM E1354 for the cone calorimeter and also NFPA 275 (that's under thermal barrier) are not in the Referenced Standards section. Marcelo offered to email Andrew copies of the titles of the documents that Dwayne referenced. The working group members further discussed and edited this section.

Donald Lucas suggested removing the words "interested parties" contained in the last bullet after "Proofs of Concept Testing" in the Executive Summary section because he thinks that if there's going to be a smaller separate second group then it should be an expert sub-committee comprised of fire service operations personnel, fire marshals and fire and combustion experts. Andrew advised that manufacturers and other parties should be encompassed in the second group; SFM will determine who will be in the group. Chief Reinertson advised that the term "interested parties" encompasses labor who plays a very large role in this issue. Lorraine thinks that transparency is important in all aspects of decision making today and it should stay as it is.

The working group discussed and edited the Sources of Data section. Dwayne Sloan advised that NFPA 286 allows testing on the walls alone without testing on the ceiling if the walls only are being evaluated. The working group members had indicated in the past that they plan on testing three walls and one ceiling; should it remain that way or be changed to reflect what's allowed in NFPA 286? This applies to both sections that contain the room corner test including the Appendix Test Method section 12-7-6.7. Non-FR foam is intended for walls but not necessarily for ceilings but the report has been written in such a manner as to test both the wall and the ceiling together. Andrew Henning advised that if non-FR's are being added to the walls then it will be in the floor-ceiling space assembly, too. Marcelo agreed with Andrew and advised that if a type of ceiling or parts of the walls are eliminated then it becomes an incomplete assessment; he's strongly in favor of leaving it as is. Dwayne thinks that if someone wants to have the non-FR foam in walls only but not necessarily use those non-FR foams in a ceiling or floor-ceiling assembly, then this method does not provide for that scenario. If the working group members think that most manufacturers produce non-FR foam that they want to use in both walls and floor-ceiling assemblies, then Dwayne is fine with leaving the report as it's written but it's not permitted by NFPA 286. Jesse Beitel advised that the working group is repeating the work that they completed on the acceptance criteria. The working group agreed to keep both walls and ceilings because vertical and horizontal systems or sloped ceilings are not allowed. Dwayne added that the title of ASTM E84 is incorrect in the Referenced Documents section. Marcelo offered to email the correct title to Andrew Henning.

Marcelo asked if the working group addressed the thermal insulation materials or did they just point out that they exist? He recalls foam plastics only being addressed. Andrew advised that the Reports Subgroup discussed this issue at length edited the list of materials contained in the report.

John Woestman advised that the report contains references to both foam plastic insulation and plastic foam insulation; which use of the term is correct and should all of the references be the same? Lorraine Ross advised that the correct term is foam plastic insulation. Chief will edit the report accordingly.

Chief Reinertson thanked the subgroup who worked on reformulating and editing the document; they did a good job.

The working group discussed applications that do and do not require compliance with C578. Lorraine Ross advised that there are a couple of different levels of regulation; the code expressly calls out a few and within the state of CA, the regulation that comes out of BEARHFTI requires compliance with C578 and C578 itself has flammability requirements so perhaps this portion of the report needs further expansion. BEARHFTI puts in the ASTM standards for all foam insulation- not just EPS and XPS; manufacturers provide information that they conform with R value requirements. Marcelo opined that another issue is that

listing organizations will always require compliance with specifications. Chief Reinertson opined that the word “most” covers this issue; if there’s an application that’s not required, then it falls outside of “most”.

Marcelo offered to email Andrew Henning the titles of the UL Standards so that he can update those in the report. He already sent them for E84, NFPA 275 and ASTM 1354 and will send E108 now. John Woestman advised that neither ICC-AC12 or ICC-AC377 are standards; they’re acceptance criteria but are not standards so should not be called “standards” in the report. Lorraine advised that they’re hurdles that have to be met; they can be called ancillary compliance documents or something to that effect- they do have public hearings. The working group edited the report accordingly.

#### **IV. ADJOURNMENT**

The meeting was adjourned at 1220 hours.