STATE OF CALIFORNIA
BUILDING STANDARDS COMMISSION

PUBLIC COMMENT on PROPOSED BUILDING STANDARDS

For Publication in Title 24, California Code of Regulations

See instructions for completing this form on Page 2.

Commenter Contact Information

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Representing:

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Proposed Building Standard

Title 24 Part #: (*select one*) Part 2.5 Section #:

Proposing State Agency: Office of the State Fire Marshal

This comment is intended for review during: (*select one*)

- ○ Code Advisory Committee
- ◉ 45-Day Comment Period
- ○ 15-Day Comment Period
- ○ Commission Meeting

Your recommendation based on the criteria of Health and Safety Code Section 18930(a) printed on the back of this form is: (*select one*)

- ◉ Approve
- ○ Disapprove
- ○ Further Study Required
- ○ Approve as Amended

In support of your recommendation above, provide the rationale based on the criteria of Health and Safety Code Section 18930(a) printed on the back of this form. If you recommend anything other than approve, cite the criteria in your comment. If you oppose a proposed building standard, offer a solution or alternative for the state agency to consider. Please use separate pages if your comment does not fit in this space.

See attached letter

Attachments?

■ Check if you have attached additional pages. The number of pages attached is: 2

For CBSC Office Use Only Date Received: _____ Rulemaking Item #: _____

October 17, 2018

California Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833-2936

RE: Support for Office of the State Fire Marshal's Proposal: Flammability Standards for Building Insulation Materials

Dear California Building Standards Commission:

I am writing to support the Office of the State Fire Marshal's proposal **"Flammability Standards for Building Insulation Materials,"** which would allow the option to specify polystyrene building insulation without added flame retardants in below-grade applications. I believe this change will maintain the fire-safety of buildings while reducing the risks of flame retardant exposure from insulation.

My name is Gail Krowech and I am a retired toxicologist. I worked as a Staff Toxicologist for the Reproductive and Cancer Hazard Assessment Branch of the California Office of Environmental Health Hazard Assessment (OEHHA) for over 25 years. For 10 of those years, I worked in the Safer Biomonitoring and Alternatives Assessment Section where I looked extensively at the scientific literature on flame retardant chemicals. This work was research for Biomonitoring California (www.biomonitoring.ca.gov) and was necessitated by findings that Californians had high levels of brominated flame retardants in their bodies. I am currently working as a retired annuitant for OEHHA. Today, I am writing to you as a private citizen and the views expressed in this letter are my own.

For years, the primary flame retardant used in polystyrene insulation was hexabromocyclododecane (HBCD). There is now a great deal of concern about HBCD. It has been found to persist in the environment and accumulate in biological organisms. It has been found in fish, birds, mammals and people. Studies in laboratory animals have found that HBCD can alter the endocrine system and affect normal hormone functioning. When neonatal mice were exposed to HBCD, the mice displayed significant changes in behavior, learning and memory. Because of HBCD's toxicity, persistence, and bioaccumulation, manufacturers of polystyrene insulation have largely replaced HBCD and are now using a flame retardant polymer called PolyFR. While PolyFR is claimed to be safer because it is a polymer, there is a lack of information on its long-term disposition in the environment, on identification of its breakdown products, and on the disposition and toxicity of these breakdown products. Like HBCD, PolyFR is an additive flame retardant. Additive flame retardants are incorporated into the insulation material but not chemically bound to it. Over time, additive flame retardants can migrate out of the material and into the indoor environment. That is why, for example, HBCD has been found in house dust. Over time, breakdown products from PolyFR, or even unremoved starting material, may also be released from polystyrene insulation. PolyFR is also a brominated flame retardant. Based on my research of the scientific literature, it is my opinion that all brominated flame retardants that have been adequately studied have shown the potential for toxicity, persistence and/or bioaccumulation.

Manufacturers have a long history of replacing chemicals that have been shown to cause human or environmental health harms with chemicals that have not been adequately studied. In subsequent years, these replacement chemicals are also found to have potential or demonstrated human or environmental health effects and they too are replaced. For example, after the major flame retardant used in polyurethane

foam, pentabromodiphenyl ether, was found in high levels in the bodies of Californians, it was largely replaced by tris(1,3-dichloro-2-propyl)phosphate (Chlorinated Tris), a flame retardant that had also replaced Tris, the brominated flame retardant used in children's pajamas which was banned in the late 1970s. When Chlorinated Tris was identified as a carcinogen, another group of chemicals, non-halogenated aromatic phosphates, were widely used as flame retardants in polyurethane foam. At the time, there was a lack of data on these chemicals as well. Now that non-halogenated aromatic phosphates have been further studied, there are health concerns about these flame retardants as well. Based on this history, the lack of information on PolyFR, and the fact that PolyFR is a brominated flame retardant, I believe there is ample reason to have serious concerns about the potential for human and environmental health harms.

A 2017 report released found that[1] when installed below grade, polystyrene insulation without added flame retardants presented no risk of fire spread to the structure and would not endanger occupants or first responders. **Without a fire safety benefit, there is no reason for brominated or other flame retardants to be added to this material.** Flame retardant chemicals have been shown to be ubiquitous in our environments and in our bodies; removing them from below-grade use would reduce their potential harm.

I urge the California Building Standards Commission to approve the OSFM's proposed changes to the Building Code and protect the public's health by allowing building insulation without unnecessary flame retardants.

Sincerely,

Gail Krowech

Gail Krowech, Ph.D.
Retired toxicologist

CC: Chief Dennis Mathisen, Office of the State Fire Marshal

[1] California Office of the State Fire Marshal, Oklahoma State University, Flammability Standards for Building Insulation Materials Phase II Working Group Report. bit.ly/OSUReport