BUREAU OF ELECTRONIC AND APPLIANCE REPAIR,
HOME FURNISHINGS AND THERMAL INSULATON

INITIAL STATEMENT OF REASONS

Hearing Date: September 17, 2018 @ 9:00 A.M.

Subject Matter of Proposed Regulations: Amendment of Flammability Standards

Sections Affected: Title 4 of the California Code of Regulations, sections 1374 and 1374.3

Background:

Since 1975, the Bureau has developed several flammability standards called technical bulletins. These performance-based standards do not prescribe the use of flame-retardant chemicals, manufacturing methods, or specific materials to meet the standards. Rather, the Bureau encourages the industry to use innovative solutions and products to achieve flame resistance without compromising the environment. Manufacturers must strictly adhere to state and federal laws governing the manufacture and sale of upholstered furniture and bedding products.

Technical Bulletin (TB) 133 was developed and adopted by the Bureau in January 1991 in response to requests the Bureau received from fire departments, interior designers, architects, fire safety officials, and members of the public asking for a fire performance standard for furniture. The intent of this test procedure was to test seating furniture for use in occupancies that are identified as, or considered to be, public occupancies. Such facilities might include, but are not limited to, jails, prisons, nursing care homes, health care facilities, public auditoriums, hotels, and motels.

In June 2013, the Bureau adopted TB 117-2013, the current general standard for upholstered furniture in California, by revising the original, outdated TB 117 standard from 1975. The intent of TB 117 and TB 117-2013 was to require manufacturers to produce upholstered furniture that is safer from hazards associated with smoldering ignition. TB 117-2013 addresses both home and public occupancies and provides methods for smolder resistance of cover fabrics, barrier materials, resilient filling materials, and decking materials for use in upholstered furniture. In comparison, TB 133 is the older, outdated standard that specifically addresses certain types of furniture for public occupancies.

<u>Specific purpose of each adoption, amendment, or repeal</u>

The specific purpose for amending section 1374 is to align the regulatory language with the new general standard for upholstered furniture set forth in TB 117-2013. This

amendment is needed to remove the reliance on the outdated TB 133 standard for furniture in public occupancies.

In addition, in September 2017 after an extensive public hearing and presentation of evidence, the Consumer Product Safety Commission (Commission) issued consumer protection guidance in the Federal Register regarding the public's exposure to non-polymeric organohalogen flame retardants. These flame retardants are typically added to foams, textiles, and polymers during or after production of upholstered furniture. Organohalogen flame retardants (OFRs) are an additive, non-reactive component that are not chemically bound to foam, textiles, and polymers. The OFRs may be released from the product through degradation of the material that releases dust particles into the air. This release leads to the exposure to these chemicals and the associated health risks. The Commission voted to initiate rulemaking under the Federal Hazardous Substances Act and convene a Chronic Hazard Advisory Panel to further study the effects of OFRs (as a class of chemicals) on consumer health. In the interim, the Commission noted they have "serious concerns regarding the potential toxicity of OFRs, and the risks of exposure, particularly of vulnerable populations, to OFRs," and requests that manufacturers of children's products, furniture, mattresses, and electronics casings eliminate the use of such chemicals in these products.[1]

Based on the Commission's findings and the existence of California's TB 117-2013 general upholstered furniture standard, the Bureau finds the continued use of the TB 133 standard unnecessary, and not in the public interest due to the risks associated with exposure to added flame retardants.

1. Problem being addressed:

   TB 133 is no longer commonly used and is obsolete in most areas of the state. There is an overlap between the TB 117-2013 standard and the TB 133 standard, which causes confusion within the furniture industry. In addition, added OFRs currently required to meet the TB 133 standard, present significant health risks to consumers, as established by overwhelming scientific research (details on page 4). The combination of confusion between the standards and the added health risks to consumers shows a clear need for a change to the regulatory language. By aligning the regulatory language with the TB 117-2013 standard, both problems are addressed.

2. Anticipated benefits from this regulatory action:

   This regulatory action is projected to lower costs of upholstered seating furniture used in public buildings and reduce the use of flame retardants in component materials, which are currently commonly applied to foams, textiles, and polymers during or after production of upholstered furniture to meet the existing TB 133 standard. In addition, by reducing the use of flame retardant chemicals to meet the TB 133 standard, this action is anticipated to improve public health by reducing exposure to OFRs.

Specific purpose of each adoption, amendment, or repeal

The specific purpose for amending section 1374.3 is to remove the TB 133 label requirement on furniture in public-occupied buildings and to align the remaining portions of this section to accurately reflect this change. Once section 1374 is amended to reflect the new TB 117-2013 standard, there would no longer be a regulatory need for a TB 133 label on furniture, as specified in section 1374.3. Therefore, to effectuate this purpose and ensure consistency between sections 1374 and 1374.3, the regulatory language pertaining to TB 133 label requirements is being removed from subdivisions (c) and (d) of section 1374.3, and the remaining subsections will be renumbered accordingly.

1. Problem being addressed:

   Continued use of the outdated TB 133 standard is both confusing to manufacturers and a health risk to consumers. The benefits derived from using OFRs to comply with TB 133 do not justify the potential consumer harm and can be alleviated by conforming to the TB 117-2013 standard. With the elimination of the TB 133 standard in section 1374, there is no longer a need for the labeling requirement in section 1374.3.

2. Anticipated benefits from this regulatory action:

   The benefits of this action are a decrease in costs to manufacturers and a decrease in consumer exposure to harmful chemicals. These benefits are gained without a decrease in safety by aligning with the current TB 117-2013 standard. The proposed amendments will conform to changes in section 1374 and simplify labeling requirements.

Factual Basis/Rationale

Factual basis for determination that each proposed change is reasonably necessary to address the problem for which it is proposed:

Considerable safety improvements in public buildings (elaborated below) have been made since the adoption of TB 133. Concerns have also been raised about the health hazards resulting from exposure to flame retardant chemicals for the public and environment. For these reasons, many fire safety officials and advocates believe that the TB 133 standard is outdated and presents an unnecessary risk. Aligning with the TB 117-2013 standard allows for the decrease of the presence of flame retardants while maintaining high safety standards.

At the time of adoption of TB 133, many public buildings were not equipped with automatic fire sprinkler systems and smoke alarms, and smoking in many public buildings was allowed. Since then, however, the requirements in California Fire and

Building codes have been significantly strengthened and all newly-constructed public buildings are required to install working automatic fire sprinkler systems that meet the strict National Fire Protection Association (NFPA) codes and regulations. State-of-the-art fire detection and suppression systems provide enhanced levels of fire protection in commercial buildings. Many existing buildings are now required to install or update fire sprinkler systems, as well as the fire alarm equipment. In addition, smoking is now prohibited in nearly all public buildings, which further reduces the risk of fires associated with smoking materials. In recent years, much emphasis has been placed on public education and awareness in fire safety and most public buildings conduct regular fire drills for their occupants. All these factors have contributed to significant improvements towards fire safety of public buildings and far fewer occurrences of fires in such occupancies.

Underlying Data

Data consistently demonstrates that there is a low risk from fire deaths in structures that may require TB133 compliant furniture.

A 2017 NFPA report[2] on the number of deaths in structure fires by occupancy from 2010-2014 shows the following:

- Residential: 2,640 (97.2%)
- Storage: 26 (1.0%)
- Mercantile or Office: 12 (0.4%)
- Outside or Special Property: 14 (0.5%)
- Public Assembly: 5 (0.2%)
- Educational: 1 (0.0%)
- Health Care or Detention and Correction: 3 (0.1%)
- Industrial, Utility, Defense, Agricultural, or Mining: 1 (0.0%)
- Manufacturing or Processing: 6 (0.2%)
- Unclassified or Unknown Property use: 9 (0.3%)

According to another recent NFPA report on hotel and motel fires, nationwide civilian fire deaths in hotel and motels in 2013 was six people nationwide out of a total of 3,780 fires reported. Upholstered seating furniture was not among the leading factors contributing to ignition in hotel and motel structure fires.[3]

Despite the low fire risk, manufacturers are adding significant amounts of flame retardant chemicals to their materials and components to comply with TB 133 compared to residential furniture, which is designed to meet California's updated general standard for upholstered furniture, TB 117-2013. According to a recent survey of members of the Business and Institutional Furniture Manufacturers Association (BIFMA), furniture companies that manufacture TB 133 compliant furniture confirmed that a great majority of those furniture products contain large amounts of flame retardant chemicals in their components, including the cover fabrics (21.1%), barriers (98.4%) and foams (9.3%), for an overall average of 99.5% of TB 133 product components containing flame retardants, while a very small portion of their residential furniture foams (0.9%) and cover materials (3.1%) contain flame retardant chemicals, due to TB 117-2013.

Extensive scientific research and data over recent years has demonstrated the risk of exposure to flame retardant chemicals. In addition, studies have shown that California residents have higher levels of flame retardants in their bodies compared with residents of other states. Furniture flammability regulations are thought to contribute to these exposures.[4,5]

PentaBDE, a known hazardous chemical, was commonly used as a flame retardant in upholstered furniture until its phase-out in 2005. Since then, a variety of halogenated and organophosphate flame retardants have been increasingly used.[6] These are now ubiquitous in dust and indoor air, as well as in the environment.[7,8,9,10,11] Humans are exposed to halogenated and organophosphate flame retardants through ingestion, skin absorption, and inhalation.[12] Studies have found higher levels of flame retardants in children compared with adults, and current levels of exposure may be a health risk.[13,14] Numerous studies[15,16,17] have linked flame retardants with adverse health impacts, including endocrine disruption, cancer, and reproductive, neurological, developmental, behavioral, and immune impairments.

Flame retardant-treated upholstery fabrics, such as the TB 133 compliant products sold in California today, could be a significant source of indoor flame retardant emissions.[18,19] Reactive, or polymeric, flame retardants may result in fewer exposures to building occupants, but present health and ecological risks throughout the manufacture and disposal stages.[20] When they burn, reactive flame retardants such as halogenated polymers can increase the toxicity of fire effluents, just as additive (non-polymeric) halogenated flame retardants can.[32,21] In addition, products that utilize reactive or oligomeric flame retardants may contain impurities or residuals that can migrate out of products over time, resulting in exposures to building occupants.[22]

TB 117-2013 is a suitable flammability standard for upholstered furniture. Given the heightened health risks associated with TB 133, improvement in fire suppression laws and technology in public occupancies, and the increased costs to comply with TB 133, the Bureau proposes to repeal the TB 133 standard.

Business Impact

This regulation will not have a significant adverse economic impact on businesses and may have a beneficial result. This initial determination is based on the following facts or evidence/documents/testimony:

> Furniture manufacturers have often cited the added cost of manufacturing TB 133 compliant furniture associated with both labor and material costs, including flame retardants. By eliminating TB 133's requirement to add flame retardant chemicals to furniture, manufacturers will likely see reduced costs.
>
> Also, manufacturers often state that meeting the TB 133 standard results in loss of resiliency and comfort, as well as potential degradation of the highly fire-retardant component materials (such as foams that include flame retardants) in

furniture. Elimination of TB 133, may therefore result in manufacturers producing longer-lasting furniture at a lower price, while simultaneously maintaining high safety standards.

Economic Impact Assessment

This regulatory proposal will have the following effects:

- It will not create or eliminate jobs for furniture manufacturers within the State of California because:

  The TB 133 testing standard is not frequently used within the industry, and the removal of this regulatory requirement will have little impact on the overall quantity of furniture produced in this state. The proposed language simply clarifies and makes specific that TB 117-2013 is the current general standard for upholstered furniture in California. As such, it is the Bureau's contention that this change will not create or eliminate jobs.

- It will not create new business or eliminate existing businesses within the State of California because:

  TB 133 compliant furniture comprises only a very small segment of the furniture market in California and nationwide. Nearly all requests for TB 133 furniture are in the form of contract furniture, i.e., when the need arises due to the requirement to meet the mandatory regulations.

- It will not affect the expansion of businesses currently doing business within the State of California because:

  There are a small number of businesses involved in the production of TB 133 compliant products. The Bureau does not anticipate that this regulatory change will have a significant impact on the expansion of businesses in the State.

- This regulatory proposal benefits worker safety with the potential for less exposure to chemical content, which may provide for a healthier working environment.

- This regulatory proposal benefits the state's environment by potentially decreasing the amount of harmful flame retardant components used in the manufacturing process.

Specific Technologies or Equipment

This regulation does not mandate the use of specific technologies or equipment.

Consideration of Alternatives

No reasonable alternative to the regulatory proposal would be either more effective in carrying out the purpose for which the action is proposed or would be as effective or less burdensome to affected private person and equally effective in achieving the purposes of the regulation in a manner that ensures full compliance with the law being implemented or made specific.

Set forth below are the alternatives which were considered and the reasons each alternative was rejected:

Alternative No. 1
Continue to utilize TB 133: Use of the TB 133 standard will mean that consumers will continue to be exposed to large levels of harmful chemicals. Aligning with the TB 117-2013 standard reduces this exposure while still maintaining high fire safety standards and protecting California consumers. TB 133 also creates a confusing regulatory environment for the manufacturers because it is not needed in new developments that are constructed under current building codes.

Alternative No. 2
Develop a new regulatory standard specifically addressing public occupancies: Developing a new standard would require a large investment of time and resources for the Bureau. It is the Bureau's contention that TB 117-2013 adequately addresses the matter and provides appropriate levels of fire safety while reducing environmental exposure to hazardous chemicals.

Studies, Reports or Other Documents Relied Upon

[1] U.S. Consumer Product Safety Commission, Minutes of September 20, 2017 Commission Meeting.

[2] Ahrens, M. (2017). *Fires by Occupancy or Property Type 2010-2014*. Quincy: NFPA Research, Data, and Analytics Division.

[3] Campbell, R. (2015). *Structure Fires in Hotels and Motels*. Quincy: NFPA Fire Analysis & Research.

[4] Butt CM, Hoffman K, Chen A, Lorenzo A, Congleton J, Stapleton HM (2016). Regional comparison of organophosphate flame retardant (PFR) urinary metabolites and tetrabromobenzoic acid (TBBA) in mother-toddler pairs from California and New Jersey. *Environ Internat*. 94:627-634.

[5] Hammel SC, Hoffman K, Lorenzo AM, Chen A, Phillips AL, Butt CM, *et al.* (2017) Associations between flame retardant applications in furniture foam, house dust levels, and residents' serum levels. *Environ Int.* 107:181-189.

[6] Zhang X, Suhring R, Serodio D, Bonnell M, Sundin N, Diamond ML (2016). Novel flame retardants: Estimating the physical-chemical properties and environmental fate of 94 halogenated and organophosphate PBDE replacements. *Chemosphere.* 144:2401-2407.

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[8] Hou R, Xu Y, Wang Z (2016). Review of OPFRs in animals and humans: Absorption, bioaccumulation, metabolism, and internal exposure research. *Chemosphere*. 153:78-90.

[9] Greaves AK, Letcher RJ (2017). A review of organophosphate esters in the environment from biological effects to disctribution and fate. *Bull Environ Contam Toxicol.* 98:2-7.

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[13] Butt CM, Congleton J, Hoffman K, Fang M, Stapleton HM (2014). Metabolites of organophosphate flame retardants and 2-ethylhexyl tetrabromobenzoate in urine from paired mothers and toddlers*. Environ Sci Technol.* 48(17):10432-10438.

[14] Hoffman K, Gearhart-Serna L, Lorber M, Webster TF, Stapleton HM (2017). Estimated tris(1,3-dichloro-2-propyl) phosphate exposure levels for U.S. infants suggest potential health risks. Environ Sci Technol Lett. Available at: http://pubs.acs.org/doi/abs/10.1021/acs.estlett.7b00196

[15] Dishaw LV, Macaulay LJ, Roberts SC, Stapleton HM (2014). Exposures, mechanisms, and impacts of endocrine-active flame retardants. *Curr Opin Pharmacol*. 19:125-133.

[16] Kim YR, Harden FA, Toms LM, Norman RE (2014). Health consequences of exposure to brominated flame retardants: a systematic review. *Chemosphere*. 106:1-19.

[17] Babrauskas V, Stapleton HM (2015). Halogenated flame retardant use in residential settings –are they safe for our health? *Fire Protection Engineering.* 68:11-16, 18, 20, 22.

[18] Kajiwara N, Takigami H (2013). Emission behavior of hexabromocyclododecanes and polybrominated diphenyl ethers from flame-retardant-treated textiles. *Environ Sci Process Impacts.* 15(10):1957-1963.

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