

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

Name: _____ Date: _____
Representing: _____
Mailing Address: Number & Street: _____
City: _____ State: _____ Zip Code: _____
Telephone #: _____ Email: _____

Proposed Building Standard

Title 24 Part #: (select one) _____ Section #: _____
Proposing State Agency _____
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.

Attachments?
 Check if you have attached additional pages. The number of pages attached is: _____

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

Instructions for completing this form

1. Use of this form is optional. It helps CBSC and other state proposing agencies to correctly administer your comments.
2. For matters to be considered at a public CBSC Code Advisory Committee (CAC) meeting, written comments should be received at least seven days before the scheduled meeting.
3. For matters subject to a 45-Day or 15-Day public comment period announced by a Notice of Proposed Action (NOPA), written comments **must be received** on or before the close of the comment period identified in the NOPA.
4. Separate comment forms are necessary for CAC and public comment periods.
5. Separate comment forms are necessary for each state agency proposal.
6. This form is available in fill-and-print format at the CBSC website, www.bsc.ca.gov, for you to complete and submit electronically. Or print a blank form and type or complete by hand. You may attach additional pages if necessary.
7. Submit comments to CBSC, 2525 Natomas Park Drive, Suite 130, Sacramento, CA 95833-2936, or by email to cbsc@dgs.ca.gov. Please do not fax comments.
8. Written and oral comments may also be provided at CBSC public meetings to consider the proposed building standards.

For assistance, call CBSC at (916) 263-0916 or email cbsc@dgs.ca.gov.

Building Standards Nine-Point Criteria. Health and Safety Code Section 18930(a) reads:

(a) Any building standard adopted or proposed by state agencies shall be submitted to, and approved or adopted by, the California Building Standards Commission prior to codification. Prior to submission to the commission, building standards shall be adopted in compliance with the procedures specified in Article 5 (commencing with Section 11346) of Chapter 3.5 of Part 1 of Division 3 of Title 2 of the Government Code. Building standards adopted by state agencies and submitted to the commission for approval shall be accompanied by an analysis written by the adopting agency or state agency that proposes the building standards which shall, to the satisfaction of the commission, justify the approval thereof in terms of the following criteria:

- (1) The proposed building standards do not conflict with, overlap, or duplicate other building standards.
- (2) The proposed building standard is within the parameters established by enabling legislation and is not expressly within the exclusive jurisdiction of another agency.
- (3) The public interest requires the adoption of the building standards. The public interest includes, but is not limited to, health and safety, resource efficiency, fire safety, seismic safety, building and building system performance, and consistency with environmental, public health, and accessibility statutes and regulations.
- (4) The proposed building standard is not unreasonable, arbitrary, unfair, or capricious, in whole or in part.
- (5) The cost to the public is reasonable, based on the overall benefit to be derived from the building standards.
- (6) The proposed building standard is not unnecessarily ambiguous or vague, in whole or in part.
- (7) The applicable national specifications, published standards, and model codes have been incorporated therein as provided in this part, where appropriate.
 - (A) If a national specification, published standard, or model code does not adequately address the goals of the state agency, a statement defining the inadequacy shall accompany the proposed building standard when submitted to the commission.
 - (B) If there is no national specification, published standard, or model code that is relevant to the proposed building standard, the state agency shall prepare a statement informing the commission and submit that statement with the proposed building standard.
- (8) The format of the proposed building standards is consistent with that adopted by the commission.
- (9) The proposed building standard, if it promotes fire and panic safety, as determined by the State Fire Marshal, has the written approval of the State Fire Marshal.



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Armin Wolski
wolski@reaxengineering.com

20 October 2018

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

Dear Madam or Sir

This letter is to accompany my comment form for the 45-day Comment Period regarding the State Fire Marshal (SFM) Express Terms (amendments) for the California Building Code (CBC) Part 2, Title 24, 2018 Triennial Code Adoption Cycle. My comments address the amendments proposed for Sections 1005.3.1 and 1005.3.2.

The proposed amendments to these sections would disallow the use of the reduced factors of 0.15 inches of door width/person and 0.20 inches of stair width/person for Group A occupancies when located in buildings equipped with automatic fire sprinklers and voice alarm throughout. These reductions are currently permitted for Group A occupancies and the proposed amendments appear to allow their use for almost all other occupancy groups: B, E, F, R, S, M, U.

Up until 2016 CBC there was confusion regarding exit width requirements in Group A occupancies, in part, due to language in the IBC conflicting with the language in the CBC. Since the publication of the 2016 CBC, designers and reviewers are no longer confused. The design community now understands that *in the aisles of* Group A occupancies, the horizontal exit width component is based on 0.2 inches/person and the vertical or stair width component is based on 0.3 inches per person. However, in buildings with voice alarm and automatic fire sprinklers, for occupants that have left the Group A aisles, the ultimate exit door can be based on 0.15 inches per occupant and any required interior exit stairs can be based on 0.2 inches per occupant. A change back to pre-2016 CBC language will only confuse the designers and plan checkers.

As stated on the comment form, not only would the amendments present the same old confusion, the proposed amendments create a significant economic and practical hardship on the building design and construction industry. I offer the following reasons:

1. If the amendment is ratified as is, buildings that were built under the 2016 CBC would effectively become non-conforming. This makes renovations problematic. Assume a building was built under the 2016 CBC equipped with fire sprinklers and voice alarm with its top floor being a restaurant, meeting space, or similar. In the event that that building owner would like to renovate that floor of their building, perhaps changing it from Group A-3 to Group A-2, occupancy the stairs would likely be considered inadequate and would have to be widened. There would little alternative. In theory, the building owner could install a horizontal exit wall to create more egress

width, however this would seriously impede the functionality of a conference or restaurant space and such walls come as a great expense.

2. The amendment results in more challenges in the design and review process; the amendment obfuscates rather than clarifies. Here is a simple example: Occupants in office buildings with conference rooms or cafeterias greater than 750 square feet would be considered Group A occupants, and therefore different from office occupants in the remaining Group B business/office area. The conference occupants would need a greater width serving them all along their egress path than the other occupants. The conference room or cafeteria occupants would need to be separately “tracked” with an exit width factor of 0.2” per person for doors and 0.3” per person for stairs while the rest of the floor’s occupants would be treated as 0.15” per person for doors and 0.2” per person for stairs. The logic is inconsistent and it creates severe challenges in both designing and reviewing egress plans. This challenge will occur in every mixed use buildings where a Group A occupancy shares space or an egress path with another occupancy. This includes malls, schools, hotels and residential multi-floor building with amenity floors. This will be a problem during the design and review process.

The justifications provided in the State Fire Marshal’s ISOR (Initial Statement of Reasons) is inadequate and presents irrelevant statistics as support. We offer the following thoughts on the published justification:

1. As we understand, the State Fire Marshal is required to provide an economic impact analysis for amendments that may be a financial burden. As this amendment could require wider stairs throughout many mixed-use buildings there are impacts on both initial costs and future opportunity costs in building. Requiring excessive widths of stairs increases initial costs and reduces long-term returns on the financial viability of a real estate development. These costs in turn results in costs to all consumers and the general public. For this reason, the ISOR is inadequate.
2. The cited statistics include the amount of physical damage to the building, but is silent on the fires’ impact on people/occupants. This is in contrast to the proposed amendment which addresses occupant safety. A statistic based on property damage is irrelevant with respect to the proposed amendment. For this reason, the amendment is not justified.
3. The cited statistics are for *ALL* types of Group A occupancies including those without sprinklers and without voice alarm systems. Meaningful statistics would be based on fires in buildings equipped with fire sprinklers and voice alarm systems. For this reason, the statistics do not support the amendment.
4. The cited growth in the number of fires is across all ages of buildings. The statistics do not parcel out the age of the buildings. It is highly likely that the increased number of fires occur in older buildings. Building technology has changed and has resulted in less fires. In contrast to the reported statistics, for those buildings built since 2007 when California adopted the ICC codes, it is more likely that the number of fire incidents has *decreased* not increased. In other words, in the cited statistics, the fires captured by the statistics may be predominantly associated with buildings built decades before, rather than those built within the past 10 using the ICC model codes. For this reason, the statistics do not support the amendment.
5. The OSFM uses a very limited number of years starting from 2013 to justified a potential trend. However, from 2013 to 2014 the number of unwanted fires went down. From 2014 to 2018 the number of fires went up. Therefore this is actually only a four year sample. Does a four year sample show a true trend? What are the 10 year or 20 year statistics? For this reason, the statistics do not support the amendment.

Research has shown that buildings equipped with automatic fire sprinklers throughout are safer for occupants than buildings without automatic fire sprinklers throughout. Research has also shown that voice alarm systems improve occupant egress times by improving response times. It is therefore logical

for the IBC model code to permits the 0.20 inches/occupant for doors and 0.15 inches/occupant for all occupancies with these systems (except Group H and hospitals). There is no reason for the CBC to differ. By taking these facts into consideration the model code body (IBC/IFC) addresses Group A exiting needs adequately. As with all other occupancies, the more occupants, the greater the required exit width. The SFM has not justified any additional need for the State of California to add this amendment to the model code.

The SFM also offers the following as justification in their ISOR:

Sprinklers are a requirement for assembly spaces based on the associated risks of the activities and large amounts of people in those spaces similar to H and I-2 occupancies.

The excerpt suggests that Group A occupancies have the same risks as H and I-2 occupancies. This is not true. Group H occupancies require a greater width factor because the occupancies can contain highly hazardous and flammable materials or liquids which can present an extraordinary fast growing fire or other hazard, in turn necessitating faster than usual egress times, achieved with greater widths. Group I-2 occupancies require a greater width factors because the occupants are slow moving, infirmed or disabled and non-ambulatory occupants all needing more width to maneuver through exits. In summary, the reasons for Group H and Group I-2 exemptions do not correspond to any risk factors associated with Group A occupancies. The “large amounts of people” the ISOR states is not a risk factor in itself since egress width in the code is already regulated such that the larger amounts people will have larger exit width.

Egress is the primary protection of people in buildings by allowing them timely evacuation of building occupants.

Group A assembly occupants have proportionally the same amount of width as all other occupancies. Therefore they have the same expected flow rates through exits as other occupancies. With the same flow rates Group A occupants will exit just as timely as Group M or Group E occupants. There is possibly greater justification for increasing the exit width factors of Group M occupancies (which have a higher fire load typically) or E occupancies (which have small children) than there is for Group A occupancies.

The model code as adopted by California already includes additional requirements unique to Group A occupancies, including main exit width and effectively a special section on “side” exits, or exits that do not converge. Group A occupancies also have special dead end, common path and travel distance limitations.

In accordance with the Building Standards Nine-Point Criteria, under Criteria 7, the amendment is unnecessary:

The applicable national specifications, published standards, and model codes have been incorporated therein as provided in this part, where appropriate.

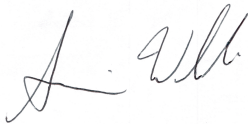
Recommendations

I fully support building regulators in the use of risk-based concepts in the development of amendments and I have written and presented extensively on this subject. However, for the moment, the statistics that were presented were inadequate to justify an amendment to the CBC. Even if it can be argued that Group A occupancies pose a different sort of risk problem than other occupancies, the proposed amendment is so broad that it is impractical as previously discussed, and it affects far too many situations where it makes little sense (conference rooms, office building cafeterias, amenity rooms). One approach is to limit the amendment to the horizontal component, such as doorways. In other words, amend the code to disallow

the reduction for Group A-2 doorways. This would arguable be a far less burden on multi-story buildings yet cover many situations including nightclubs and bars at grade. I'd rather see that the SFM study the issue further over the next years, establish if (or which of the) Group A occupancies would still truly face an increased or different risk (one example might be a basement or underground A-2), and present their new findings to both the California Building Standards Committee and the ICC with a code change proposal. As a member of both the Building Standards Sub Committee on Building Fire and Other and a three-time member of the ICC Egress committee for the 2017, 2018 and 2021 IBC, I put great credence on the ICC process.

As previous alluded to once by a recent State Fire Marshal, the State of California should refrain from amending the building code unless special concerns directly related to California create an obvious need to amend the model code. This amendment has not been shown to require such a need. Instead the SFM's office perceives a general concern that is not well addressed by the ICC model codes, they would best serve the community, if not the country, by preparing and presenting code changes to the ICC where they can be thoroughly debated and vetted.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Wolski', written in a cursive style.

Armin Wolski, P.E