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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Proposed Building Standard

Title 24 Part #: (*select one*) Part 2 Section #: TABLE 1004.5

Proposing State Agency: 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.

We are writing in opposition to the proposed SFM amendment modifying the occupant load factor for business areas from 150 sq ft per occupant to 100 sq ft per occupant due to a lack of sufficient justification that demonstrates unique fire safety hazards in California. We also recommend that TABLE 1004.5 of the 2018 International Fire Code also be amended. We are also willing to compromise on a proposed modification shown in the attached.

Attachments?

■ Check if you have attached additional pages. The number of pages attached is: 4

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.

Continued from Form DGS BSC-25

I had the privilege to chair the Building Fire and Other Code Advisory Committee on behalf of the California Building Officials and voiced concerns in a submitted public comment prior to the hearing as well as during discussion on item # 14 of the SFM CBC proposals at the hearing. The committee voted 4-3 to approve the proposed amendment with one member absent. The three dissenting voters, which included myself, raised objections due to a lack of a demonstrated need for the amendment and the lack of adequate technical justification. We believe that applying the SFM proposed amendment to all occupancies state wide will cause confusion and misapplication since business areas are not identified in Section 1.11.1 in Chapter 1 of the CBC and CFC.

The SFM proposes to modify a regulation (Table 1004.5, Business Areas) that has been vetted through ICC under code change E9-15 which was submitted by the US General Services Administration as a two-part code change that also includes the addition of Section 1004.6. The SFM does not propose deletion of Section 1004.6 when modifying the occupant load factor to 100 sq ft per occupant. It appears that the ICC neglected to include a correlation amendment to the IFC. Additionally, the equivalent table in the International Fire code was not modified by the proposal possibly since the IFC and therefore the CFC are maintenance codes that require existing business areas to be maintained as constructed. It makes sense use of the new occupant load factor should be by obtaining a building permit and not through a maintenance inspection.

As part of the justification the SFM states that the code change is proposed to be statewide to all business areas under the authority of Health and Safety Code Section 13110 which is for fire and panic safety. The Initial Statement of Reasons (ISOR) does not identify data or loss history in business occupancies and business areas to warrant the proposed amendment to apply it statewide to all business areas regardless of whether they occur in State owned or State lease buildings.

The Occupant load factors are regularly updated in the IBC and NFPA 101 and are better vetted there. When the 2015 IBC changed the occupant load factor for the ground floor on mercantile occupancies from 30 to 60 from sq ft per occupant the SFM correctly did not amend the 2016 CBC.

It is not clear that the SFM has the statutory to regulate all business occupancies or all business areas in other than State Owned and Occupied buildings such as Community Colleges, University of California etc. We propose that TABLE 1004.5 be modified to include two rows for Business areas and thus show the 100 and 150 sq ft occupant load factors. The preference is to adopt the IBC regulation as published.

Recommendation: Approval as Amended per Section 18930(a) criteria 4 and 7 Recommend that with additional technical jsutification that the SFM amend TABLE 1004.5 of both the CBC and CFC to include both the 150 and the proposed 100 sq ft per occupant load to address business areas in State Owned or Occupied Buildings. Alternatively on amend the IFC to harmonize the tables.

MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT FUNCTION OF SPACE	OCCUPANT LOAD FACTOR [a]
Business areas Concentrated business use areas	150 gross See Section 1004.8
[SFM] Business areas in State Owned or State Occupied Buildings Concentrated business use areas	100 gross See Section 1004.8
Concentrated business use areas	See Section 1004.8

E 9-15

Table 1004.1.2, 1004.6 (New); (IFC[BE] Table 1004.1.2, 1004.6 (New))

Proponent: Dave Frable, representing US General Services Administration

2015 International Building Code

TABLE 1004.1.2
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR[a]
Business area Concentrated business use areas	~~100~~150 gross See Section 1004.6

(Portions of table not shown remain unchanged)

For SI: 1 square foot = 0.0929 m^2, 1 foot = 304.8 mm.

a. Floor area in square feet per occupant.

Add new text as follows:

1004.6 Concentrated business use areas The occupant load factor for concentrated business use shall be applied to telephone call centers, trading floors, electronic data processing centers and similar business use areas with a higher density of occupants than would normally be expected in a typical business occupancy environment. The occupant load for concentrated business use areas shall be the actual occupant load, where approved by the code official, but not less than one occupant per 100 square foot gross of occupiable floor space.

Reason: The intent of this code change proposal is to revise the current maximum floor area allowance per occupant in Table 1004.1.2 for business occupancies from 100 ft^2/occupant (gross) to 150 ft^2/occupant (gross) for determining the means of egress requirements in business areas and to create a new occupant load sub-category for concentrated use areas in business occupancies having a higher density of occupants than would normally be expected in a typical business occupancy environment.

Our rationale is based on several past research studies that have concluded that the 100 ft^2/occupant (gross) occupant load factor for business occupancies is very conservative which has led to requiring Group B occupancies and office buildings in general to have additional egress capacity and a greater number of exits to accommodate an "over-estimated" building population. We believe the increase from 100 ft^2/occupant (gross) to 150 ft^2/occupant (gross) for business occupancies is still a conservative figure; yet reasonable, based on recent changes in office building design as well as changes in the North American workplace and work style trends; such as work station configurations, flexible work schedules, telecommuting, work at home, etc.

The existing occupant load factor of 100 ft^2/occupant (gross) for business occupancies first appeared in the 3rd edition of the Building Exits Code that was published in 1934. The occupant load factor of 100 ft^2/occupant (gross) was specified for office, factory, and workrooms. All occupant load factors were based on the gross floor area of the building, such that no deduction was permitted for corridors, closets, restrooms, or other subdivisions. To our knowledge there is no formal record indicating the basis of the occupant load factors included in the 1934 Buildings Exits Code. However, it seems likely that the results from a National Bureau of Standards (NBS) [now referred to as National Institute of Standards and Technology (NIST)] study published in 1935 were the most likely basis of the occupant load factors adopted into the 1934 Code. However, since the initial NBS study in 1935, several other studies have been conducted to determine the occupant load factors for various occupancies. One common similarity of each of the studies was that all of the subsequent studies have concluded that the 100 ft^2/occupant (gross) occupant load factor for business occupancies is conservative. Studies conducted between 1966 and 1992 have indicated that occupant load factors in business occupancies ranged from 150 ft^2/occupant (gross) to 278 ft^2/occupant (gross). In addition, a 1995 study of 23 Federal sector and private sector office buildings also indicated a mean occupant load factor of 248 ft^2/occupant for all office buildings.Lastly, a recent project to study the appropriateness of the 100 ft^2/occupant load factor for business occupancies has been undertaken by the NFPA Fire Protection Research Foundation. The study was conducted by WPI undergrad students. The recommendations of this study have indicated that it is reasonable to increase the occupant load factor to 150 ft^2/occupant in business occupancies and to create a new occupant load sub-category for concentrated use areas in business occupancies.

Based on the points stated above and the occupant load factor ranges cited in recent studies, I believe it would be reasonable to increase the occupant load factor of 100 ft^2/occupant (gross) in Table 1004.1.2 for determining the means of egress requirements in Business areas to 150 ft^2/occupant (gross) and to create a new occupant load sub-category for concentrated use areas in business occupancies having a range between 50 ft^2-100 ft^2/occupant depending on the work environment configuration.

Cost Impact: Will not increase the cost of construction
The overall outcome of this code change should not increase the cost of construction in most situations.

E 9-15 : T1004.1.2-FRABLE5100

Committee Reason: The modification basically disapproves added sentence to Section 1004.1.1.1. The proposed language would force the total occupant load to one exit rather than divided between the exits. A safety factor is already in the capacity calculations. There is no need to effectively double the occupant load for the floor.

The approval is for the added language to Section 1026.4. This needs to be coordinated with the approved language in Section E123-15. The proposed language clarifies requirement for when the actual occupant load is less than the capacity of the exit. This reflects actual conditions.

Assembly Action : **None**

E 7-15

Committee Action: **Approved as Modified**

1004.3 Multiple Function Occupant Load. Where an area under consideration contains multiple functions having ~~both gross and net. or~~ different occupant load factors, ~~of gross or net are on the same floor they shall be included in the calculation of~~ the design occupant load ~~using the~~ for such area shall be based on the floor area of each function calculated independently.

Committee Reason: The modification to Section 1004.3 simplifies the suggested language for the new section 1004.3, and supports and clarifies the main issue for the change.

The main change clarifies application of the occupant load when facilities include both gross and net areas.

Assembly Action : **None**

E 8-15

Committee Action: **Disapproved**

Committee Reason: The testimony was about simultaneous occupancy, however, there is no requirement in the text that this space could not be a conference room used by the public and not just the occupants on the floor. This could result in inadequate design for exit access doors from the assembly space; or with multiple conference rooms on a floor, cause a problem for adequate sizing of the exits for the floor. An option might be a limit on the room size to allow for a lower capacity the rather than to calculate an occupant load first, and then reduce the occupant load.

Assembly Action : **None**

E 9-15

Committee Action: **Approved as Modified**

1004.6 Concentrated business use areas. The occupant load factor for concentrated business use shall be applied to telephone call centers, trading floors, electronic data processing centers and similar business use areas with a higher density of occupants than would normally be expected in a typical business occupancy environment. ~~The~~ Where approved by the code official, the occupant load for concentrated business use areas shall be the actual occupant load, ~~where approved by the code official,~~ but not less than one occupant per ~~100~~ 50 square foot gross of occupiable floor space.

Committee Reason: The modification from 100 sq.ft. per occupant to 50 sq.ft. per occupant as a maximum for concentrated business areas is appropriate. The documentation shows that a worst case scenario of 50 sq.ft. per person occurred in these high density spaces.

The supporting date substantiates an increase for the typical office spaces. There were concerns raised about areas where high costs of space would result in a higher density in an office as well as maintain the occupant load during the life of a building as different tenants change.

Assembly Action : **None**

E 10-15

Committee Action: **Disapproved**

Committee Reason: There are no qualifiers for size limits for the conference rooms. The testimony was about simultaneous