DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 5/31/2021

CODE INFORMATION

Proposed change to: ☑ Building Code ☑ Fire Safety Code

Code section(s): IBC, Sections 1005.3.1 & 1005.3.2, IFC Sections 1005.3.1 & 1005.3.2
NFPA 101 Table 7.3.3.1

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):
Re-instate base IBC provisions allowing reduced egress width factors in sprinklered buildings

Proposed text change, addition or deletion (attach additional information as needed):
See attached

Supporting data and documents (attach additional information as needed)
See attached

☑ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

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Proponent's Signature Jeff Perras **Printed Name**

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Connecticut State Building Code, Sections 1005.3.1 & 1005.3.2
Connecticut State Fire Safety Code, Part III, Sections 1005.3.1 & 1005.3.2

Add Amendment as follows:

Delete CT Amendments entirely.

Connecticut State Fire Safety Code, Part IV, Table 7.3.3.1

Add Amendment as follows:

(Amd.) Table 7.3.3.1 Capacity Factors

	Stairways (width/person)		Level Components and Ramps (width/person)	
Area	**in.**	**mm**	**in.**	**mm**
Board and care	0.4	10	0.2	5
Health care, sprinklered	0.3	7.6	0.2	5
Health care, nonsprinklered	0.6	15	0.5	13
High-hazard contents	0.7	18	0.4	10
All others [a]	0.3	7.6	0.2	5

[a] Capacity factors are permitted to be reduced to 0.2 inch (5 mm) for stairways and 0.15 inch (4 mm) for level components and ramps in buildings protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 9.7 and an emergency voice/alarm communication system installed in accordance with NFPA 72.

Reason Statement:

This change will re-instate in the CT State Building Code (CSBC) the base 2021 IBC & IFC language allowing reduced egress width factors for stairs and other egress components of 0.20 and 0.15 inches per occupant, respectively, in buildings equipped throughout with an automatic sprinkler system and provided with an emergency voice/alarm communication system in all occupancies other than Group H and I-2. This change will also introduce the same allowance in Part IV of the fire safety code so it is clear how to apply these factors in existing buildings provided with these same life safety features.

Historically, formal amendments to the CT State Building Code (CSBC) and CT State Fire Safety Code have maintained required egress width factors of 0.3 and 0.2 inches per occupant for stairs and doors, respectively, regardless of the presence of sprinklers or an emergency voice/alarm communication system. In essence, the credit for added fire suppression and life safety measures is waived in the State of CT. We are not aware of any records, or the supporting technical justification for modifying the base code language to be more stringent. On the contrary, the record of life loss in buildings that are protected by fire suppression is well documented as significantly improving the life safety within buildings. The latest statistics from NFPA indicate that the death rate per 1,000 reported fires was 87% lower in properties with sprinklers compared to those without. Further, the requirement for an emergency voice/alarm communication system (EVACS) provides the ability to communicate instruction to occupants that facilitates evacuation or relocation that may be necessary in fire or other emergencies, leading to a safer and more efficient egress system.

Standard elements of the means of egress which are typically modified to allow the sprinkler + EVACS increases are restricted under the current CSBC as follows:

Element		Component Clear Width	Capacity
Doors	Sprinklered + EVACs	34″	226 persons
	CSBC	34″	179 persons
Stairs	Sprinklered + EVACs	44″	220 persons
	CSBC	44″	146 persons

The impact of this code change on buildings and building design is significant and is happening at a potentially vulnerable moment for the construction industry relative to overcoming the economic impact from COVID-19. Speculative office buildings with a single corridor, or open space and two exit stairs would be allowed to serve a total capacity of 440 occupants under the base IBC. Based on 150 sf per occupant, the building could be built up to 66,000 sf in floor area with a sprinkler and EVACS system based strictly on the calculated means of egress capacity. Using the same scenario in CT under the current code, the maximum occupant load served by the same doors and stairs would be limited to 292 occupants; which would allow a maximum building floor area of 43,800 sf. Essentially, the same building design in CT would be substantially limited in size. These calculations also do not assume the presence of trending agile/social workplace and meeting, conference, and training rooms -based on 15 nsf per occupant -which typically increase occupant loads and would further exacerbate this code impact on CT buildings. The valuable incentives of sprinklers allow for more efficient and resilient buildings.

Continuing this CT amendment may also have unintended consequences. By limiting these incentives, we may see less fire suppression in smaller office and other buildings 4 stories or less, which are otherwise not required to be sprinklered under Chapter 9 and CT General Statutes.

We believe approving this code change will foster a more progressive and substantiated position for the CSBC. This change indicates a more balanced and rational approach to safety in buildings. It recognizes the overwhelming benefits of active fire protection systems as part of the design and operation of buildings. As far as we are aware, CT is the only state which amends this section of the IBC/IFC to be more restrictive. We are penalizing the owners, users, and designers by limiting versatility and capacity of our existing buildings and new physical investments, causing undue economic pressure on development at a time when we can least afford it. Worse still, if not addressed, we run the risk of the value of fire suppression being weighed against return on investment, even a debatable decision in some buildings, rather than embracing enhanced life safety and the economic benefits that come with it.