



Public Input No. 145-NFPA 101-2024 [Section No. 3.3.227 [Excluding any Sub-Sections]]

The A raised area within a building used for the presentation of music, plays, or other entertainment intended for entertainment and presentations . (SAF-AXM)

Statement of Problem and Substantiation for Public Input

This is part of a group of changes to requirements for platforms and stages. These changes seek reflect stages today where the current requirements address stages before the electric light bulb was in common use. This definition change reflects that the only requirements - current and proposed - for platforms deal with the construction of the platform and what may be under it, between the building's floor and the platform. It broadens the definition slightly to include raised floor areas used for purposes beyond "entertainment and presentation of music, plays, or other entertainment" such as lecture, speaking, product presentation, etc.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]</u>	Public Input requiring this change

Submitter Information Verification

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Submittal Date: Tue May 28 10:14:42 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 198-NFPA 101-2024 [Section No. 3.3.257.1]

3.3.257.1* Festival Seating.

A form of audience/spectator accommodation in which no seating, other than a floor or finished ground level, is provided for the audience/spectators gathered to observe a performance. (SAF-AXM)

General admission areas within assembly occupancies that are without seating and where large groups of patrons stand to attend the event.

Statement of Problem and Substantiation for Public Input

1. The term “festival seating” is a misnomer, in that it is (a) not restricted to festivals and (b) involves the absence of seats.
2. The term used for assembly occupancies without reserved or fixed seating where most people stand varies considerably, but with a common theme of “general admission,” so that term should be integrated into the definition.
3. The reason this term is important is that it describes a situation – unreserved standing room areas – that can lead to certain crowd management and occupant load challenges about which the Code offers potentially life-saving guidance. Therefore, the definition should direct users to those risks and the Code’s important risk mitigation guidance, not to people sitting on the floor.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 199-NFPA 101-2024 [Section No. A.3.3.257.1]</u>	

Submitter Information Verification

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Committee: SAF-AXM

Committee Statement

Resolution: The proposed definition is tied to general admission, which is defined by the dictionary as paid admission. Festival seating can occur in non-ticketed events. The task group has been retained to further study the issue.



Public Input No. 147-NFPA 101-2024 [Section No. 3.3.285]

3.3.285 Stage.

A space within a building used for entertainment and utilizing drops or scenery or other stage effects or presentation and intended for use with curtains, scenery, and stage properties . (SAF-AXM)

3.3.285.1 Legitimate Stage Type 3 Stage .

A stage with a stage height greater than 50 ft (15 m) measured from the lowest point on the stage floor to the highest point of the roof or floor deck above, 40 ft (12.2 m) and a stage area greater than 5000 square feet (465 square meters) and all stages serving an assembly occupant load greater than 2000. (SAF-AXM)

3.3.285.2 Regular Type 2 Stage.

A stage with a stage height of 50 ft- 40 ft (15 m- 12.2 m) or less measured from the lowest point on the stage floor to the highest point of the roof or floor deck above and a stage area of 5000 square feet (465 square meters) or less . (SAF-AXM)

3.3.285.3 Type 1 Stage .

A stage with a stage height of 20 ft (6.1 m) or less and a stage area of 2000 square feet (186 square meters) or less. (SAF-AXM)

Statement of Problem and Substantiation for Public Input

This is part of a group of changes to requirements for platforms and stages. These changes seek reflect stages today where the current requirements address stages before the electric light bulb was in common use. These definition changes make clear that there will be combustibles - curtains, scenery, and stage properties - above what is normal for an assembly occupancy. It then categorizes stages by heights and areas as a measure of the fire hazard presented by the amount combustibles possible and likely on these stages, rather than how they are installed, supported, and moved.

This is also a start to clarify the code use of the term “stage” referring to the floor area and floor construction versus “stage” as in the use and the construction of the entire room.

The measurement methods are moved to the requirements.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]	Public Input requiring this change
Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]	

Submitter Information Verification

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Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 146-NFPA 101-2024 [Section No. 3.3.312.2]

3.3.312.2 Proscenium Wall | .

The wall that separates the stage from the auditorium or house. _ (SAF-AXM)

Statement of Problem and Substantiation for Public Input

This is part of a group of changes to requirements for platforms and stages. These changes seek reflect stages today where the current requirements address stages before the electric light bulb was in common use. Other public inputs if accepted would delete this term from the code.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]	Public Input requiring this change
Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]	

Submitter Information Verification

Submitter Full Name: William Conner
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Submittal Date: Tue May 28 10:27:34 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 4-NFPA 101-2024 [New Section after 12.1.7.1.2]

New section 12.1.7.1.3*

For assembly occupancies with fixed seating, the Occupant Load shall be calculated by taking the number of fixed seats and increasing it by 10%.

Add new annex note:

A.12.1.7.1.3 The additional 10% is intended to accommodate attendees in wheelchairs that do not take any of the fixed seats, people that stand in front of the room to address the assembly, and people that stand along walls during popular events. The egress system needs to address all of these common occurrences.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
PC47-101_SAF-AXM.pdf	101_PC#47	

Statement of Problem and Substantiation for Public Input

NOTE: This Public Input appeared as "Reject but Hold" in Public Comment No. 47 of the (A2023) Second Draft Report for NFPA 101 and per the Regs. at 4.4.8.3.1 and needs to be reconsidered by the TC for the next edition of the document.

I submitted this proposal as a Public Input last cycle to Table 7.3.1.2 and it was rejected by the Means of Egress Committee. I re-submitted the proposal this cycle (see PI 323) and the Means of Egress Committee determined that it was not within their jurisdiction and sent it to you for deliberation.

Unfortunately, it never got to you. Staff has suggested that I submit this Public Comment in order to make sure that you address this serious situation.

In the Means of Egress Committee's reason for rejection last cycle, they stated that, "No data has been provided to substantiate the proposed revision." That Committee Statement was incorrect. I supported the proposed change as a means to account for people in wheelchairs and people who stand up in front of the room that do not have a seat. The egress system needs to account for these people as well as the people in seats. The occupant load needs to include these people so that the egress capacity is actually adequate to handle them. In this cycle, I am adding the very common situation of people standing that don't have a seat at popular events. The Occupant Load needs to address all of these critical situations.

I find it hard to believe that the Means of Egress Committee does not believe that people in wheelchairs roll into assembly occupancies with fixed seats and do not move into one of the fixed seats, leaving it open for another person. It would seem to me that the Americans with Disabilities Act (ADA) specifically requires the Occupant Load to account for people in wheelchairs. Does the NFPA really need me to remind them that if people in wheelchairs are not counted in the occupant load that is used to determine egress capacity, these people can sue the NFPA?

I also find it hard to believe that the Means of Egress Committee doubts that people stand in front of lecture halls, theaters, and other assembly spaces without using a seat and that people stand along the walls in popular activities when all of the seats are taken. I have witnessed this occurring at NFPA conferences. Since the Occupant Load in the past has not been required to account for these people, should we have shut down the program and kicked people out? Or should we make sure that the Occupant Load is sufficient to handle the situations we know are going to occur? Do I really need to

build a case that by only counting the fixed seats for the Occupant Load in a fixed seating assembly occupancy, you are ignoring the people that are not in seats?

Asking specifically about the 10% number is appropriate. The Means of Egress Committee never actually questioned this number, but I can share how it was obtained. The ADA Standards for Accessible Design require a certain number of spaces to be added to fixed seat assembly spaces based on the number of fixed seats. The requirements vary between 1% and 8% for spaces with more than 50 seats (meeting the definition of Assembly). Since the justification for this proposed change is more than just ADA acceptance (such as a professor standing up in front of a class), the 8% number was rounded up to 10% so that there would be one simple rule that would help everyone comply with the ADA and account for everyone who was reasonably going to be in the room.

Alternatively, the committee could refer to the ADA Standards For Accessible Design to figure out how many additional people they should add to the occupant load, but that would be more cumbersome for the user. The 10% number is reasonable, easy to calculate, and provides a number that helps everyone meet the ADA Standards for Accessible Design regardless of the number of seats.

Note that this has not been proposed for existing buildings because it might cause serious problems with door widths and stairwells, which are difficult to retrofit. It is hoped that by incorporating these changes in new situations that egress capacity will improve over time as new buildings replace old ones and renovations force compliance with newer versions of the Code.

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Submittal Date: Mon Jan 15 14:40:04 EST 2024

Committee: SAF-AXM

Committee Statement

Resolution: Wheelchair spaces are included in the fixed seat-count as determined by the DOJ ADA standards. Standing room occupant load should be evaluated as concentrated assembly separately with the appropriate occupant load factor (e.g., 7 ft²/person).



Public Input No. 51-NFPA 101-2024 [Section No. 12.2.2.3]

12.2.2.2.3

Any door in a required means of egress from an area having an occupant load of 400- 50 or more persons shall be permitted to be provided with a latch or lock only if the latch or lock is panic hardware or fire exit hardware complying with 7.2.1.7, unless otherwise permitted by one of the following:

- (1) This requirement shall not apply to delayed-egress electrical locking systems as permitted in 12.2.2.2.5.
- (2) This requirement shall not apply to sensor-release of electrical locking systems as permitted in 12.2.2.2.6.

Statement of Problem and Substantiation for Public Input

Building Code, section 1010.2.9 require a Group A and E occupancies with 50 or more occupants be provided with panic hardware. This is a difference in the Building and Fire codes that lead to confusion by plans examiners and contractors/business owners. Since the Building Code that shows 50 persons is more stringent, than this section is irrelevant as their code will take precedent since it is more stringent. Recommending to have both codes mirror each other.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 52-NFPA 101-2024 [Section No. 13.2.2.2.3]	
Public Input No. 53-NFPA 101-2024 [Section No. 14.2.2.2.2]	
Public Input No. 54-NFPA 101-2024 [Section No. 15.2.2.2.2]	
Public Input No. 52-NFPA 101-2024 [Section No. 13.2.2.2.3]	
Public Input No. 53-NFPA 101-2024 [Section No. 14.2.2.2.2]	
Public Input No. 54-NFPA 101-2024 [Section No. 15.2.2.2.2]	

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Committee: SAF-AXM

Committee Statement

Resolution: [FR-6589-NFPA 101-2024](#)

Statement: Building Code, section 1010.2.9 require a Group A and E occupancies with 50 or more occupants be provided with panic hardware. This is a difference in the Building and Fire codes that lead to confusion by plans examiners and contractors/business owners. Since the Building Code that shows 50 persons is more stringent, than this section is irrelevant as their code will take precedent since it is more stringent. Recommending to have both codes mirror each other. The threshold for assembly occupancies is 50 occupants and all new assembly occupancies should be provided with panic hardware.



Public Input No. 259-NFPA 101-2024 [New Section after 12.2.2.6]

Door Locking to Prevent Unwanted Entry.

Doors to assembly occupancies in college and university instructional buildings, and exterior doors which provide access into college and university assembly occupancies, shall be capable of being locked to prevent unwanted entry. The locking means shall comply with all of the following conditions:

- (1) The locking means shall be capable of being engaged without opening the door.
- (2) For egress, locks and latches shall not require the use of a key, a tool, or special knowledge or effort for operation from the egress side .
- (3) The operation of the releasing mechanism shall release all latching and all locking devices of the door leaf with not more than one motion in a single linear or rotational direction.
- (4) The releasing mechanism shall not require tight grasping, tight pinching, or twisting of the wrist to operate.
- (5) The releasing mechanism for unlocking and unlatching shall be located at a height not less than 34 in. (865 mm) and not exceeding 48 in. (1220 mm) above the finished floor.
- (6) Locks, if remotely engaged, shall not inhibit egress.
- (7) Interior doors, and not less than one exterior door on each face of the building, shall be capable of being unlocked and opened from outside the room or building with the necessary key or other credential.
- (8) The locking means shall not impair the operation or affect the listing of the door closer, lockset, panic hardware, or fire exit hardware.
- (9) Modifications to required fire door assemblies, including door hardware, shall be in accordance with NFPA 80.

Statement of Problem and Substantiation for Public Input

This proposal addresses new assembly occupancies in college and university instructional buildings, and is intended to complement current requirements in 38.2.2.2.2. revised with proposed revisions. This proposal requires egress doors from college and university assembly occupancies to be lockable from the inside of the room, and also requires exterior doors of buildings which provide access to college and university assembly occupancies to be lockable from the egress side of the door.

These proposed requirements are consistent with current best practices of design and construction of new schools, and are consistent with recommendations by a wide range of school safety and security advocates, including the U.S. Dept. of Homeland Security (DHS), and the Partner Alliance for Safer Schools (PASS).

Several poignant examples:

The Sandy Hook Advisory Commission's Final Report, dated March 6, 2015, of the investigation of the tragedy at Sandy Hook Elementary School in Newtown, Connecticut, Dec. 14, 2012, recommends:

1. Requiring classroom and other safe-haven areas to have doors that can be locked from the inside.
2. All exterior doors in K-12 schools be equipped with hardware capable of implementing a full perimeter lockdown.

The May 24, 2022 incident at Robb Elementary, Uvalde, Texas, confirmed the importance of the ability to lock exterior doors from the interior of the building. Reportedly, the door the gunman used to enter

the Robb Elementary building was lockable only from the outside of the building (same with other exterior doors), and from the inside it was not possible to determine if the exterior door was locked to prevent entry. These exterior doors were required, by policy, to be kept locked and closed. The interior classroom doors in Robb Elementary reportedly could only be locked from outside the classroom, and teachers were required, by policy, to keep the classroom doors locked and closed. But, there was no way to confirm whether the exterior handle was locked from the inside of the classroom. For convenience, reportedly teachers would use rocks to prop open exterior doors, and they used door stops, wedges, and magnets to prevent interior door locks from latching.

Despite billions of dollars invested in hardening schools nationally, 1 in 4 U.S. public schools lack classroom doors that can be locked from the inside, according to a survey conducted two years ago by the National Center on Education Statistics, a federal research office.

Doors that can be quickly and easily locked can mean the difference between life and death when a shooter is on school grounds. Safety commissions, teachers, fire safety groups, and both gun rights and gun control groups have all advocated for doors which can be locked from the inside since the Columbine High School, Columbine, Colorado, shooting in 1999.

Sources:

<https://passk12.org/>

<https://www.cisa.gov/topics/physical-security/school-safety>

<https://passk12.org/>

https://portal.ct.gov/-/media/Malloy-Archive/Sandy-Hook-Advisory-Commission/SHAC_Final_Report_3-6-2015.pdf

https://house.texas.gov/_media/pdf/committees/reports/87interim/Robb-Elementary-Investigative-Committee-Report-update.pdf

<https://apnews.com/article/politics-shootings-texas-school-safety-2c97d26b56e8b081aa725ee2235e4a3b>

<https://www.nbcnews.com/news/us-news/uvalde-classrooms-lacked-security-door-locks-rcna37358>

https://nces.ed.gov/programs/digest/d21/tables/dt21_233.50.asp

<https://www.cft.org/california-teacher/our-fight-win-security-doorlocks>

<https://www.firemarshals.org/resources/Documents/NASFM%20Classroom%20Door%20Security%2020210217.pdf>

<https://www.defensivestrategies.org/downloads/NRA-National-School-Shield-Report.pdf>

<https://everytownresearch.org/report/how-to-stop-shootings-and-gun-violence-in-schools/>

The proposed requirements do not mandate the use of specific locks or lock functions – that should be left up to the schools and educational institutions.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 253-NFPA 101-2024 [Section No. 14.2.2.2.4]	
Public Input No. 255-NFPA 101-2024 [Section No. 16.2.2.2.6]	
Public Input No. 257-NFPA 101-2024 [Section No. 38.2.2.2.2]	
Public Input No. 253-NFPA 101-2024 [Section No. 14.2.2.2.4]	
Public Input No. 255-NFPA 101-2024 [Section No. 16.2.2.2.6]	
Public Input No. 257-NFPA 101-2024 [Section No. 38.2.2.2.2]	

Submitter Information Verification

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Submittal Date: Mon Jun 03 18:13:00 EDT 2024

Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision would mandate a security feature, which is not within the scope of NFPA 101.



Public Input No. 294-NFPA 101-2024 [Section No. 12.2.2.2.6]

12.2.2.2.6

Doors in the means of egress shall be permitted to be equipped with an ~~approved~~ access control system ~~complying with 7.2.1.6.2~~ , provided the doors are readily openable from the egress side without the use of a key, tool, special knowledge or effort , and such doors shall not be locked from the egress side when the assembly occupancy is occupied. (See 7.2.1.1.3.)

Statement of Problem and Substantiation for Public Input

First, background info: Section 7.2.1.6.2 is Sensor-Release of Electrical Locking Systems. Prior to the 2018 edition of NFPA 101, this system was previously named “Access-Controlled Egress Door Assemblies”, which was a bit of a confusing name. There is no mention and there are no provisions in 7.2.1.6.2 about access control systems. Access control systems control or prevent access or ingress into a building, space, or room.

This proposal assumes the technical committee desires to retain requirements for where access control systems are installed on doors in the means of egress. With that in mind, “approved” is recommended to be deleted as AHJ’s typically don’t approve access control systems, and the other revisions are intended to convey what may be the committee’s intent with this section.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 295-NFPA 101-2024 [Section No. 13.2.2.2.6]	
Public Input No. 295-NFPA 101-2024 [Section No. 13.2.2.2.6]	

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Committee: SAF-AXM

Committee Statement

Resolution: The reference to 7.2.1.6.2 is needed to maintain the permission to use sensor-release of electrical locking systems.



Public Input No. 171-NFPA 101-2024 [New Section after 12.2.5.7]

12.2.5.7.10 Steps in Aisle Accessways

12.2.5.7.10.1

Steps in aisle accessways shall be marked as for aisles in Section 12.2.5.8.10

12.2.5.7.10.1

Steps in aisle accessways shall be illuminated as for aisles in Section 7.8

Statement of Problem and Substantiation for Public Input

Steps in aisle access ways is a more recent development. These steps, whether for a transition from one level to another within the row or to separate the aisle accessway from the higher surface that chairs are mounted on for sightlines, are usually a single step with the known hazard, unexpected as explained in NFPA 101 annex note A.7.1.7.2. Similar to marking and because these are usually between rows of fixed seating which blocks illumination, these should be illuminated as well.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 172-NFPA 101-2024 [Section No. 7.8.1.1]</u>	

Submitter Information Verification

Submitter Full Name: William Conner
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Submittal Date: Thu May 30 14:58:10 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: FR-6653-NFPA 101-2024

Statement: Steps in aisle accessways is a more recent development. These steps, whether for a transition from one level to another within the row or to separate the aisle accessway from the higher surface that chairs are mounted on for sightlines, are usually a single step with the known hazard, unexpected as explained in A.7.1.7.2. Similar to marking and because these are usually between rows of fixed seating which blocks illumination, these should be illuminated as well.



Public Input No. 148-NFPA 101-2024 [New Section after 12.4.7]

12.4.7.1 Stage Height and Stage Area

12.4.7.1.1 Stage Height. Stage height shall be measured from the lowest point on the stage floor to the highest point of the underside of the roof or floor deck above the stage.

12.4.7.1.2 Stage Area. Stage areas shall be measured to include the entire performance area and adjacent backstage and support areas not separated from the performance area by fire-resistance-rated construction.

12.4.7.1.2.1 In spaces where the stage and audience areas are flexible, stage area shall be permitted to be calculated as not more than 50% of the stage and auditorium space.

Statement of Problem and Substantiation for Public Input

Move of this requirements for measuring stage height and stage area used in the definitions and fundamental to the requirements that follow. If mot contrary tothe NFPA Manual of Style, these could be definitions.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]</u>	

Submitter Information Verification

Submitter Full Name: William Conner
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Submittal Date: Tue May 28 11:01:31 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]

12.4.7.3 Stage Construction

12.4.7.3.1 Type 1 stages shall be constructed of the materials required for the building construction type in which they are located.

12.4.7.3.1.1 The stage, assembly area its serving, and non-separated contiguous accessory spaces shall be separated from rest of building by 1 hour construction.

12.4.7.3.2 Type 2 stages shall be constructed of the materials required for the building construction type in which they are located.

12.4.7.3.2.1 The stage, assembly area its serving, and non-separated contiguous accessory spaces shall be separated from rest of building by 1 hour construction.

12.4.7.3.2.2 The stage shall be equipped with vents per 12.4.7.5

Exception: Vents are not required if the assembly occupant load the stage serves is 300 or less.

12.4.7.3.3 Type 3 stages shall be constructed of materials required for Type I buildings.

12.4.7.3.3.1 The stage and assembly area shall be separated from rest of building by 2 hour construction.

12.4.7.3.3.2 The stage shall be equipped with vents per 12.4.7.5

Statement of Problem and Substantiation for Public Input

This change along with the deletion of requirements for a proscenium wall is at the center of the group of changes to requirements for platforms and stages. These changes seek reflect stages as designed and constructed today in the 21st century. The requirements for design and construction of theatres and performing arts stages in the current editions of NFPA 101 and NFPA 5000 (as well as the IBC and IFB) are based on the designs of theatres from the mid 1800s to the very early 1900s, what one ASTC member referred to as the great age of theatre fires. The average life of a theatre was five years before being destroyed by fire. This is well documented by Edwin Otho Sachs in his (three volume plus a supplement) Modern Opera Houses and Theatres, published in the 1890s and his Fires and Public Entertainments: A Study of Some 1100 Notable Fires at Theatres, Music Halls, Circus Buildings and Temporary Structures During the Last 100 Years. I have seen these books presented to this committee as substantiation for many of the current requirements yet very much has changed in 125 years.

1. Theatres in 1900s and up the advent of movies and commercial television were the entertainment. They were businesses, operated for profit, and generally were stand alone buildings, or in actuality two buildings - auditorium and stage. They were heavily booked and used for as many performances as possible. Now the overwhelming majority are in schools: more than 30,000 K-12; more than 5000 higher education, and probably fewer than 1000 Broadway, touring venues, regional producing theatres, and not-for-profit community theatres and many - K-12 and university - are not heavily used and more importantly, not used much at all for events using scenery and stage properties. Of great importance these are rarely stand alone buildings but instead the stage and auditorium are a part of a much larger building. Note the long standing requirements for separation between stage and audience but little or none for the corridors along side the stage that serve as exit access for the audience, or the classrooms or lounges that are now included in a performing arts building.

2. Scenery was much more plentiful and nearly all composed of combustible fabric and wood. From

John R Freeman PE report on the Iroquois Theatre fire:

"On the Iroquois stage at the time of the fire there was more than ten thousand square yards of canvas, or two and one-half acres, and in addition about three thousand square yards, or half an acre, of gauze. To hang this required nearly eleven miles in length of 5/8 inch manila rope, and in the frames, battens, braces, profiles and set pieces, the stage carpenter of the Iroquois tells me, after making careful estimate, that there was about eight thousand square feet of white pine lumber. The total weight of this fuel was more than ten tons, all dry as tinder, and all set or hung in a way to give the quickest possible exposure and spread to the flames."

That is around 10 psf of combustibles. A mixture of factors including labor costs to produce that much scenery, use of wire rope and steel for much of the stage equipment, much less wood and other combustibles used construction, and much more reliance on projections than painted cloth. A "big" play in a high school is likely to be in the 2 to 4 psf range. Compared with big box stores and factories, even residential occupancies, this is small.

3. Lighting during the great age of theatre fires was open flame or open arc lighting. It was sparks from an arc light that started the fire at the Iroquois. The Rhoads Opera House fire in Boyertown PA, January 13, 1908: "The fire started when a kerosene lamp being used for stage lighting was knocked over, starting a fire on the stage."

The electric light bulb ended almost all theatre fire. Since the early 1900s there have been a few fires where electric incandescent lighting ignited drapery. Incandescent theatre lights are hot. But since the early 2000's LED theatre lighting has taken over and they are not hot. The advent of LED lighting alone justifies many of these changes.

4. Fire sprinklers were unheard of on stages in early 1900s, but since 1960s have been required and have been effective. Chicago Public Library new auditorium and Peace Center for the Arts in Greenville both had fires in 1990s - drapery covering incandescent lights - and a single fire sprinkler extinguished the fire. Its important to keep in mind that the lighting over stage is typically around 25' off the floor and the combustibles above that well within 50' for the roof and sprinklers, challenging the conventional thoughts on sprinkler efficacy being limited to 50' above the floor.

5. Smoke ventilation reliability has improved substantially. From the Handbook of Smoke Control Engineering:

"Smoke is recognized as the major killer in building fires. Smoke control in large-volume spaces is based on a long history of experience and research going back to the 1881 Ring Theater fire in Vienna that killed 449 people. After that fire, the Austrian Society of Engineers conducted reduced-scale fire tests that showed how roof vents over the stage would have protected the audience from smoke. Thirty years later, such smoke vents worked as intended in the Palace Theater fire in Edinburgh, Scotland."

Of note, on May 9, 1911 the vents over the Palace Theaters stage allowed all 2000+ occupants to egress (in the now enshrined 200 seconds) while the fire safety curtain failed to close, just as it failed to close at the Iroquois. Unfortunately, the Iroquois vents were not completed and did not open. The move to listed and labeled vents in place of site built designs as well as engineered smoke control and more emphasis on testing and inspection provides significant back up to the fire sprinklers.

6. Means of egress has substantially improved, largely to the credit of codes and standards. Inward swinging doors, narrow and steep stairs, unfamiliar and user unfriendly door hardware, and other egress restrictions were a part of the deaths in most of not all of these historic theatre fires. What was common and permitted was in common use. Today greater widths, seven-eleven stairs, minimum door widths and greatly improved and standardized door hardware, emergency illumination, and more all contribute to a much safer and more reliable means of egress from places of assembly.

Its time for these codes and standards to address the 21st century stage.

This is a link to an article: "Origins of the 50-ft Stage Rule for Fire Safety Curtains" which includes a link to a public domain digital version of Freeman's On the Safeguarding of Lives in Theatres. It is the best report on the Iroquois Theatre fire and most comprehensive study of theatre fires I'm aware of.

A relatively recent documentary on the Rhoads Opera House fire in Boyertown PA is available at

<https://www.youtube.com/watch?v=iSCGwWb9zfE>. It is around 45 minutes.

Supporting material sent to NFPA include:

The BCMC report of 1992 which was generally incorporated into the Life Safety Code and the Building Construction and Safety Code . The second was created to show what this group of public inputs would result in if accepted.

The following supporting material is available here: <https://shorturl.at/UF7Kt>

1. BCMC REPORT ON STAGES, PLATFORMS AND SOUND STAGES 1992
2. matrix for based on public inputs
3. "The Development of the Model Codes In the United States since the Iroquois Theatre Fire of 1903" presented at Safe-T 91
4. "Fire Protection for Stages without Reliance on the Fire Safety Curtain" presented at the Theatre and Engineering Conference in 2002
5. drawing showing flexible theatre example and stage area by drawing versus by proposed 50%

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 145-NFPA 101-2024 [Section No. 3.3.227 [Excluding any Sub-Sections]]	definition changes coordinating with and supporting this public input
Public Input No. 146-NFPA 101-2024 [Section No. 3.3.312.2]	definition changes coordinating with and supporting this public input
Public Input No. 147-NFPA 101-2024 [Section No. 3.3.285]	definition changes coordinating with and supporting this public input
Public Input No. 148-NFPA 101-2024 [New Section after 12.4.7]	criteria for measuring for stage types
Public Input No. 149-NFPA 101-2024 [Section No. 12.4.7.10]	revision to fire protection to align with new stage types
Public Input No. 150-NFPA 101-2024 [New Section after 12.4.7.10]	additional fire protection requirement
Public Input No. 151-NFPA 101-2024 [Sections 12.4.7.6, 12.4.7.7]	delete proscenium wall requirements consistent with changes in this public input
Public Input No. 152-NFPA 101-2024 [Section No. 12.4.7.5.2.1]	revisions to coordinate with this public input
Public Input No. 154-NFPA 101-2024 [Sections 12.4.7.4.1, 12.4.7.4.2]	revisions to coordinate with this public input
Public Input No. 155-NFPA 101-2024 [Section No. 12.4.7.3]	revisions to coordinate with this public input
Public Input No. 145-NFPA 101-2024 [Section No. 3.3.227 [Excluding any Sub-Sections]]	
Public Input No. 146-NFPA 101-2024 [Section No. 3.3.312.2]	
Public Input No. 147-NFPA 101-2024 [Section No. 3.3.285]	
Public Input No. 151-NFPA 101-2024 [Sections 12.4.7.6, 12.4.7.7]	
Public Input No. 152-NFPA 101-2024 [Section No. 12.4.7.5.2.1]	
Public Input No. 154-NFPA 101-2024 [Sections 12.4.7.4.1, 12.4.7.4.2]	
Public Input No. 155-NFPA 101-2024 [Section No. 12.4.7.3]	

Submitter Information Verification

Submitter Full Name: William Conner
Organization: Bill Conner Associates LLC
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Street Address:
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Zip:
Submittal Date: Tue May 28 13:27:53 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 155-NFPA 101-2024 [Section No. 12.4.7.3]

12.4.7.3 Stage Construction Floors .

12.4.7.3.1

Regular stages shall be of the materials required for the building construction type in which they are located. In all cases, In Types 1, 2, and 3 stages the finish floor shall be permitted to be of wood.

12.4.7.3.2

Legitimate stages shall be constructed of materials required for Type I buildings, except that the area extending from the proscenium opening to the back wall of the stage, and for a distance of 6 ft (1830 mm) beyond the proscenium opening on each side, In Types 2 and 3 stages up to 50% of the stage floor area shall be permitted to be constructed of unprotected steel or heavy timber covered with a wood floor not less than 1½ in. (38 mm) in actual thickness.

12.4.7.3.3

Openings through stage floors shall be equipped with tight-fitting traps with approved safety locks, and such traps shall comply with one of the following:

- (1) The traps shall be of wood having an actual thickness of not less than 1½ in. (38 mm).
- (2) The traps shall be of a material that provides fire and heat resistance at least equivalent to that provided by wood traps having an actual thickness of not less than 1½ in. (38 mm).

Statement of Problem and Substantiation for Public Input

This is part of a group of changes to requirements for platforms and stages. These changes seek reflect stages today where the current requirements address stages before the electric light bulb was in common use. This change attempts to clarify that this section refers to the construction stage floor, not the entire stage including floor, walls, and roof or floor above.

The permission to use wood flooring is probably redundant as there are very few spaces that can't have wood flooring.

The ability to construct the stage floor to be "trapped", where a portion of the stage floor can be opened to space below, should not be restricted to type 3 ("legitimate") stages. The most common use on type 2 stages is likely the orchestra pit with portable cover. The current requirements envisions a stage of 100 years ago. The 50% limitation simply reflects the inexactitude of the current "6' beyond the proscenium opening" which itself may be wall to wall.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]</u>	Public Input requiring this change
<u>Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]</u>	

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Submission Date: Tue May 28 13:05:13 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 154-NFPA 101-2024 [Sections 12.4.7.4.1, 12.4.7.4.2]

Sections 12.4.7.4.1, 12.4.7.4.2

12.4.7.4.1

Workshops, storerooms, permanent dressing rooms, and other accessory spaces contiguous to and for use with Type 1 and Type 2 stages shall be separated from each other and other building areas by 1-hour-fire-resistance-rated construction and protected openings.

12.4.7.4.2 –

~~The separation requirements of 12.4.7.4.1 shall not be required for stages having a floor area not exceeding 1000 ft² (93 m²).~~

Statement of Problem and Substantiation for Public Input

This is part of a group of changes to requirements for platforms and stages. These changes seek reflect stages today where the current requirements address stages before the electric light bulb was in common use. The changes in this section are for coordination with the proposed stage type categories. It does raise the criteria from 1000 to 2000 square feet for not being separated. Accessory spaces like this requirements attempts to address are not common to the type 1 stage.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]</u>	Public Input requiring this change
<u>Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]</u>	

Submitter Information Verification

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Submittal Date: Tue May 28 12:53:56 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 153-NFPA 101-2024 [Section No. 12.4.7.5 [Excluding any Sub-Sections]]

~~Regular Type 2~~ stages in excess of 1000 ft² (93 m²) and ~~legitimate Type 3~~ stages shall be provided with emergency ventilation to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire, and such ventilation shall be achieved by one or a combination of the methods specified in 12.4.7.5.1 through 12.4.7.5.3.

Statement of Problem and Substantiation for Public Input

This is part of a group of changes to requirements for platforms and stages. These changes seek reflect stages today where the current requirements address stages before the electric light bulb was in common use. This change simply reflects the proposed stage type categorization.

Submitter Information Verification

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Submittal Date: Tue May 28 12:48:46 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 152-NFPA 101-2024 [Section No. 12.4.7.5.2.1]

12.4.7.5.2.1

Roof vents used for compliance with 12.4.7.5.1.1 shall be in accordance with NFPA 204.

(A) –

Vents

Vents shall be designed to maintain the smoke level at not less than

6 ft

6 ft (

1830 mm

1830 mm) above the highest level of assembly seating or above the top of the proscenium opening where a proscenium wall and opening protection are provided

-

(B) –

~~Vents for regular stages shall comply with NFPA 204;~~

~~however,~~

~~vent~~

~~vents shall be permitted to provide a net free vent area of~~

~~5 percent~~

~~5 percent of the stage area, in lieu of the engineering analysis required by~~

~~NFPA 204~~

~~NFPA 204 .~~

Statement of Problem and Substantiation for Public Input

This change combines allows the alternate sizing method currently only acceptable for vents over "regular" stages and permits it for all stages of any height. This change simply recognizes what was and remains the practice before (A) was added by this committee several editions ago. This is also consistent with a widely used building code.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]</u>	Public Input requiring this change
<u>Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]</u>	

Submitter Information Verification

Submitter Full Name: William Conner

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Submission Date: Tue May 28 12:33:25 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 151-NFPA 101-2024 [Sections 12.4.7.6, 12.4.7.7]

~~Sections 12.4.7.6, 12.4.7.7~~

~~12.4.7.6 – Proscenium Walls.~~

~~Legitimate stages shall be completely separated from the seating area by a proscenium wall of not less than 2-hour fire-resistive, noncombustible construction.~~

~~12.4.7.6.1 –~~

~~The proscenium wall shall extend not less than 48 in. (1220 mm) above the roof of the auditorium in combustible construction.~~

~~12.4.7.6.2 –~~

~~All openings in the proscenium wall of a legitimate stage shall be protected by a fire assembly having a minimum 1 1/2 -hour fire protection rating.~~

~~12.4.7.6.3 –~~

~~The main proscenium opening used for viewing performances shall be provided with proscenium opening protection as described in 12.4.7.7 .~~

~~12.4.7.6.4 –~~

~~Proscenium walls shall not be required in smoke-protected assembly seating facilities constructed and operated in accordance with 12.4.3 .~~

~~12.4.7.7 – Proscenium Opening Protection.~~

~~12.4.7.7.1 –~~

~~Where required by 12.4.7.6 , the proscenium opening shall be protected by a listed, minimum 20-minute opening protective assembly, a fire curtain complying with NFPA 80 or an approved water curtain complying with NFPA 13.~~

~~12.4.7.7.2 –~~

~~Proscenium opening protection provided by other than a fire curtain shall activate upon automatic detection of a fire and upon manual activation.~~

Statement of Problem and Substantiation for Public Input

This is part of a group of changes to requirements for platforms and stages. These changes seek reflect stages today where the current requirements address stages before the electric light bulb was in common use.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]	Public Input requiring this change and replacing it
Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]	

Submitter Information Verification

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Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 150-NFPA 101-2024 [New Section after 12.4.7.10]

12.4.7.10.1 Fire protection

12.4.7.10.1 Buildings with a type 2 or type 3 stage shall be protected by an approved, supervised automatic sprinkler system in compliance with Section 9.7.

Statement of Problem and Substantiation for Public Input

This is part of a group of changes to requirements for platforms and stages. These changes seek reflect stages today where the current requirements address stages before the electric light bulb was in common use. Recognizing the potential fire hazard created by the curtains, scenery, and stage properties on a stage and to protect the occupants in other areas of the building, the entire building should be protected by fire sprinklers. Overwhelming, it will be by the requirements for assembly occupancies.

This is an example of the current code being based upon a stage and auditoriums model of 100+years ago, where theatres were stand alone structures and usually consisting of two separate buildings - the auditorium and the stage - with a 3 or 4 or later 2 hour wall between them and a 5 minute opening protective to cover the proscenium opening. Stages and auditoriums today are inevitably within a much larger building with many other spaces and uses, typically a k-12 school, a university classroom building, or a municipal performing arts center.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 149-NFPA 101-2024 [Section No. 12.4.7.10]</u>	should be part of same proposal
<u>Public Input No. 149-NFPA 101-2024 [Section No. 12.4.7.10]</u>	
<u>Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]</u>	

Submitter Information Verification

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Submission Date: Tue May 28 11:31:00 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke

management related to stages.



Public Input No. 149-NFPA 101-2024 [Section No. 12.4.7.10]

12.4.7.10 Fire Protection.

Every stage ~~Types 1, 2, and 3 stages~~ shall be protected by an approved, supervised automatic sprinkler system in compliance with Section 9.7.

12.4.7.10.1

Protection shall be provided throughout the stage ~~and in storerooms, workshops, permanent dressing rooms, and other accessory spaces contiguous to stages~~ area .

12.4.7.10.2

Sprinklers shall not be required for Type 1 stages 1000 ft² (93 m²) or less in area and 50 ft (15 m) or less in height where stage area where both of the following criteria are met:

- (1) Curtains, scenery, or other combustible hangings are not retractable vertically.
- (2) Combustible hangings are limited to borders, legs, a single main curtain, and a single backdrop.

12.4.7.10.3

Sprinklers shall not be required under stage areas less than 48 in. (1220 mm) in clear height that are used exclusively for chair or table storage and lined on the inside with 5/8 in. (16 mm) type X gypsum panels or an approved equivalent.

Statement of Problem and Substantiation for Public Input

This is part of a group of changes to requirements for platforms and stages. These changes seek to reflect stages today where the current requirements address stages before the electric light bulb was in common use. The changes to this section on fire protection maintain that all of the stage area of all three types of stages be protected by fire sprinklers.

These proposed changes work together with another change to require buildings with type 2 and 3 stages are fully sprinklered.

The deletion in 12.4.7.10.1 is based on (1) in low hazard stages - under 1000 square feet Type 1 stages - the contiguous accessory spaces already separated from the stage and from each other by fire resistive construction do not present a significant hazard and that these stages are usually in buildings without sufficient water supply and (2) in type 2 and 3 stages those spaces are required to be protected by fire sprinklers.

Overwhelmingly, these stages are in assembly occupancies already required to be fully sprinklered.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 150-NFPA 101-2024 [New Section after 12.4.7.10]</u>	should be part of same proposal
<u>Public Input No. 150-NFPA 101-2024 [New Section after 12.4.7.10]</u>	
<u>Public Input No. 156-NFPA 101-2024 [New Section after 12.4.7.3]</u>	

Submitter Information Verification

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Submittal Date: Tue May 28 11:14:57 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 110-NFPA 101-2024 [Section No. 12.7.6.1]

12.7.6.1

Assembly occupancies shall be provided with a minimum of one trained crowd manager or crowd manager supervisor. Where the occupant load exceeds 250, additional trained crowd managers or crowd manager supervisors shall be provided at a ratio of one crowd manager or crowd manager supervisor for every 250 occupants, unless otherwise permitted by one of the following:

- (1) This requirement shall not apply to assembly occupancies used exclusively for religious worship with an occupant load not exceeding 500.
- (2) The ratio of trained crowd managers to occupants shall be permitted to be reduced or eliminated where, in the opinion of the authority having jurisdiction, the existence of an approved, supervised automatic sprinkler system and the nature of the event warrant.

Statement of Problem and Substantiation for Public Input

In certain uses, the need for crowd managers may not even justify a single crowd manager. As an example, an overnight gym that is fire sprinkler protected with a calculated occupant load of 300 but an actual demonstrated use of <50 occupants at anytime would have questionable value for a crowd manager. In many cases, an overnight gym may not even have on duty staff so the requirement for a crowd manager would force the full costs of an employee on the owner/tenant just to meet the crowd manager requirement.

Submitter Information Verification

Submitter Full Name: Anthony Apfelbeck
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Street Address:
City:
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Submittal Date: Fri May 17 14:47:28 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The crowd manager is not intended to be a dedicated employee. Rather, it is training provided to employees who will be on site when the occupancy is open for business. The code currently allows the ratio to be reduced. Ch. 4 allows the AHJ to review equivalency.



Public Input No. 45-NFPA 101-2024 [Section No. 12.7.6.1]

12.7.6.1

~~Assembly occupancies~~ occupancies with an occupant load of more than 99 persons, shall be provided with a minimum of one trained crowd manager or crowd manager supervisor. Where the occupant load exceeds 250, additional trained crowd managers or crowd manager supervisors shall be provided at a ratio of one crowd manager or crowd manager supervisor for every 250 occupants, unless otherwise permitted by one of the following:

- (1) This requirement shall not apply to assembly occupancies used exclusively for religious worship with an occupant load not exceeding 500.
- (2) The ratio of trained crowd managers to occupants shall be permitted to be reduced where, in the opinion of the authority having jurisdiction, the existence of an approved, supervised automatic sprinkler system and the nature of the event warrant.

Statement of Problem and Substantiation for Public Input

The requirement as written requires assembly occupancies with 50 or more occupants to need a crowd manager. This can be a fast-food restaurant with an occupant load of 51 people. As a fire code official, it is difficult and near impossible to enforce that these occupancies meet this requirement due to high employee and management turnover. If we are lucky enough to get an assembly to do it, these employees are not there the following year. Which adds costs to these businesses to continue to certify employees. With such a low occupant load and small facility, the tasks for a crowd manager to perform are minimal. The code requirements for an assembly occupancy become more stringent when over 99 people are allowed such as panic hardware and potentially sprinklers depending on the use and this proposal will be in line with that.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 46-NFPA 101-2024 [Section No. 13.7.6.1]	

Submitter Information Verification

Submitter Full Name: Tommy Demopoulos
Organization: Tamarac Fire Rescue
Street Address:
City:
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Zip:
Submittal Date: Fri Mar 22 15:55:31 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The code currently permits the ratio to be reduced and Ch. 4 permits the AHJ to evaluate equivalency.



Public Input No. 323-NFPA 101-2024 [Section No. 12.7.6.2]

12.7.6.2*

The crowd manager and crowd manager supervisor shall receive approved training in crowd management techniques. The minimum required training for a Crowd Manager shall be 4 hours of training administered by a recognized training provider. The minimum required training for a Crowd Manager Supervisor shall be a minimum 6 hrs of training administered by a recognized training provider.

Statement of Problem and Substantiation for Public Input

Prepared by Vincent Quintero:
The Crowd Manager Task Force Group Proposal

The intent of this document is to further enhance the code requirements identified the training requirements for a crowd manager and crowd manager supervisor in 12/13.7.6.2. This citing identifies and is supported in the appendix version of 12/13.7.6.2 specific subject matter content that is highly recommended and should be included in this training. 12/13.7.6.4 formulate a more defined and concise crowd manager and crowd manager supervisor areas, in enhancing the code requirement as outlined in the appendix of 12/13.7.6.2.

History

The language within the appendix version of 12/13.7.6.2 were developed through a task group chaired by Harold Hansen, CFE, a member of the Assembly Occupancy Technical Committee, provided his professional expertise as the former director of Life Safety and Security for the IAVM. Another member of this task group included Vincent Quintero for the developing a crowd managers program created for his former employer and the Event Managers Organization located in the State of Florida and numerous crowd manager presentation conducted throughout the United States of America. If my memory is clear the task group was small, and I believe the other member was Jake Paul with his multiple years of experience on the human behavior element combined with his experiences with litigation and testimony at numerous crowd related events throughout the world. Perhaps Phil Sherman was another member unfortunately and sorry, but I don't remember.

Fortunately, our task group was able to compile a comprehensive list which was incorporated into the life safety code in 2015 Edition of NFPA 101. Complete as it was, organizations and developers institute the crowd manager and crowd manager supervisor time frame that works best for their groups. Some training is multiple days, some one day, some is four hour whichever the program, all should capture the minimum requirements identified in A12/13/7/6/2. A group identified as the Entertainment Services and Technology Association (ESTA) and Event Safety Alliance (ESA), created a crowd manager training program which has been certified by ANSI ES1.9-2020 Crowd Management. Their document is vastly filled with many International and American based professional references. The NFPA 101 Life Safety Code 12/13.7.6.4 is also referenced as a minimum standard. A complement to NFPA, the Assembly Occupancy Technical Committee, and the work of our small task group. Doing something right sets for positive measures moving forward. However, the problem remains that no specific timeline or training platform was ever introduced as a standardized mechanism. This is where I think we need to address.

Premises

As previously mentioned, organizations develop training which best suits their needs. Now that the electronic training platform has become one of the premiere formats, it's now maybe necessary that we incorporate specific timeline in ensuring the Life Safety Code maintains the premiere education guideline reference publication for the safety of all occupants. On the internet there exist far too many online crowd manager training platforms. Some platforms (online or in person) may utilize a minimum of 15-minutes, 30-minutes, 45-minutes, or longer to certify their trainees.

Over the years crowd manager and crowd manager supervisor roles and responsibilities have tremendously increased. The current state of the world on numerous fronts has increased the demand

for more enhanced safety and security measures for public gatherings. The Life Safety Code adoption of the appendix language in 12/13.7.6.2, combined with the ANSI ES1.9-2020 Crowd Management document provides significant substantiation to support the advancement of a timeline. Several code cycles back, with the evolving active shooting incidents plaguing of communities, NFPA recognized this with the adoption of NFPA 3000. NFPA 3000 outlines a more cohesive network in addressing active shooter situations. To the best of my knowledge there are no 15, 30, 45-minute online certification trainings available. Why? Because the information is too immense and requires a vast amount of time to complete.

Conclusion

As the world continues to experience increased conflicts along the line of terrorist activities both domestic and international, targeting a host of individuals, religious organizations, numerous assembly occupancies, and Soft and Hard Target venues, a more defined crowd manager and crowd manager supervisor program needs to more instituted. The Task Group is proposing that a minimum time frame of 4-hours for crowd manager and an additional 2-hour for crowd manager supervisor. This time frame will provide the minimum time frame meeting the minimum requirements outlined in the appendix section of 12/13.7.6.2.

Submitter Information Verification

Submitter Full Name: Frederick Babson

Organization: Babson Industries LLC

Affiliation: Babson Industries LLC dba Southland Consolidated

Street Address:

City:

State:

Zip:

Submittal Date: Mon Jun 03 23:44:53 EDT 2024

Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which adds minimum training duration requirements, does not ensure that the training delivered will be of high quality and value. The current requirement for approved training in crowd management techniques gives the AHJ the flexibility to mandate training that is appropriate for individual venues. Training requirements will differ for a 100,000-seat stadium and a 50-seat church - one size does not fit all.



Public Input No. 52-NFPA 101-2024 [Section No. 13.2.2.2.3]

13.2.2.2.3

Any door in a required means of egress from an area having an occupant load of 400- 50 or more persons shall be permitted to be provided with a latch or lock only if the latch or lock is panic hardware or fire exit hardware complying with 7.2.1.7, unless otherwise permitted by one of the following:

- (1) This requirement shall not apply to delayed-egress electrical locking systems as permitted in 13.2.2.2.5.
- (2) This requirement shall not apply to sensor-release of electrical locking systems as permitted in 13.2.2.2.6.

Statement of Problem and Substantiation for Public Input

Building Code, section 1010.2.9 require a Group A and E occupancies with 50 or more occupants be provided with panic hardware. This is a difference in the Building and Fire codes that lead to confusion by plans examiners and contractors/business owners. Since the Building Code that shows 50 persons is more stringent, than this section is irrelevant as their code will take precedent since it is more stringent. Recommending to have both codes mirror each other.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 51-NFPA 101-2024 [Section No. 12.2.2.2.3]	
Public Input No. 53-NFPA 101-2024 [Section No. 14.2.2.2.2]	
Public Input No. 54-NFPA 101-2024 [Section No. 15.2.2.2.2]	
Public Input No. 51-NFPA 101-2024 [Section No. 12.2.2.2.3]	
Public Input No. 53-NFPA 101-2024 [Section No. 14.2.2.2.2]	
Public Input No. 54-NFPA 101-2024 [Section No. 15.2.2.2.2]	

Submitter Information Verification

Submitter Full Name: Tommy Demopoulos
Organization: Tamarac Fire Rescue
Street Address:
City:
State:
Zip:
Submittal Date: Mon Mar 25 13:13:26 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: No technical justification has been provided for the proposed retroactive requirement for existing assembly occupancies.



Public Input No. 295-NFPA 101-2024 [Section No. 13.2.2.2.6]

13.2.2.2.6

Doors in the means of egress shall be permitted to be equipped with an ~~approved~~ access control system ~~complying with 7.2.1.6.2~~ , provided the doors are readily openable from the egress side without the use of a key, tool, special knowledge or effort , and such doors shall not be locked from the egress side when the assembly occupancy is occupied. (See 7.2.1.1.3.)

Statement of Problem and Substantiation for Public Input

First, background info: Section 7.2.1.6.2 is Sensor-Release of Electrical Locking Systems. Prior to the 2018 edition of NFPA 101, this system was previously named “Access-Controlled Egress Door Assemblies”, which was a bit of a confusing name. There is no mention and there are no provisions in 7.2.1.6.2 about access control systems. Access control systems control or prevent access or ingress into a building, space, or room.

This proposal assumes the technical committee desires to retain requirements for where access control systems are installed on doors in the means of egress. With that in mind, “approved” is recommended to be deleted as AHJ’s typically don’t approve access control systems, and the other revisions are intended to convey what may be the committee’s intent with this section.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 294-NFPA 101-2024 [Section No. 12.2.2.2.6]	
Public Input No. 294-NFPA 101-2024 [Section No. 12.2.2.2.6]	

Submitter Information Verification

Submitter Full Name: John Woestman
Organization: Kellen Company
Affiliation: Builders Hardware Manufacturers Association
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jun 03 21:15:02 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The reference to 7.2.1.6.2 is needed to maintain permission to use sensor-release of electrical locking systems.



Public Input No. 223-NFPA 101-2024 [New Section after 13.3.4.3.4]

13.3.4.3.4 Carbon Monoxide Alarms and Carbon Monoxide Detection Systems.

13.3.4.3.4.1* Existing assembly occupancies shall be provided with carbon monoxide alarms or carbon monoxide detectors and warning equipment in accordance with Section 9.12 in the locations specified as follows:

- (1) On the walls or ceilings of rooms containing permanently installed fuel-burning appliances or fuel-burning fireplaces
- (2) Centrally located within occupiable spaces served by the first supply air register from permanently installed fuel-burning HVAC systems
- (3)* Centrally located within occupiable spaces adjacent to an attached garage

13.3.4.3.4.2 Carbon monoxide alarms or carbon monoxide detectors and warning equipment as specified in 13.3.4.3.4 shall not be required in the following locations:

- (1) Garages
- (2) Occupiable spaces with attached garages that are open parking structures as defined in 3.3.293.8.2
- (3) Occupiable spaces with attached garages that are mechanically ventilated in accordance with the mechanical code

Statement of Problem and Substantiation for Public Input

The carbon monoxide (CO) problem is well known and documented. It is a danger to humans as a toxic and flammable gas. More than 14,000 people are hospitalized in the United States with unintentional non-fire related CO poisoning each year. And more than 400 of them die (Center for Disease Control, 2022). Deaths are slowly increasing annually, not decreasing. (NFPA, 2024) New assembly occupancies require detection because we collectively acknowledge the problem while considering cost and difficulty. The submitter recognizes the cost and complexity of deploying detection retroactively. Allowing for standalone hardwired or battery power CO alarms allows a quick, cost-effective method to achieve greater protection in the occupancy type that contain the largest gatherings of occupants. The owners/operators of existing assembly occupancies can deploy this themselves should they choose to. One can posit older equipment is more susceptible to malfunctions than new equipment and thus there is a bigger impetus in existing than new to have alarms or detectors present.

Even NFPA (NFPA, 2024) acknowledges the size of the problem. In 2016 fire departments responded to an estimated 79,600 CO incidents, which averages to nine per hour each day. That does not include malfunctioning and unintentional CO alarm calls. Given that new occupancies had CO detection added as a requirement in 2024 and with so many responses by fire departments, this is indicative of a life safety problem that needs to be addressed without unduly burdening the end user. With increased alarms and detection in existing occupancies, more dangerous levels of CO will be found, and more existing assembly occupancies will be safer.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 243-NFPA 101-2024 [New Section after A.13.3.4.2.3]	

Submitter Information Verification

Submitter Full Name: Richard Roberts
Organization: Honeywell Fire Safety
Affiliation: National Carbon Monoxide Awareness Association (NCOAA) and an industry Working Group
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jun 03 14:09:03 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: [FR-6654-NFPA 101-2024](#)

Statement: The revision was developed by a task group on carbon monoxide detection that discussed, at length, changes that would require a basic level of analysis and CO protection for existing occupancies without saddling smaller businesses with an undue burden.



Public Input No. 319-NFPA 101-2024 [New Section after 13.3.4.3.7]

TITLE OF NEW CONTENT

Type your content here ... 13.3.4.4 Carbon Monoxide Detection

13.3.4.4.1 Existing assembly occupancies shall be provided with carbon monoxide and warning equipment in accordance with 9.12 in the locations as specified as follows:

(1) In rooms containing permanently installed fuel-burning appliances or fuel-burning fireplaces

(2) Within occupiable spaces served by the first supply air register from permanently installed fuel-burning HVAC systems

(3) Within occupiable spaces adjacent to an attached garage

13.3.4.4.2 Carbon Monoxide Detectors as specified in 13.4.4.1 shall not be required in the following locations:

(1) Garages

(2) Occupiable spaces with attached garages that are open parking structures as defined in 3.3.293.8.2

(3) Occupiable spaces with attached garages that are mechanically ventilated in accordance with the mechanical code

Statement of Problem and Substantiation for Public Input

The CO Task Group discussed, at length, changes which would require a basic level of analysis and CO protection for existing occupancies without saddling smaller businesses with an undue burden. This is the result.

Submitter Information Verification

Submitter Full Name: Frederick Babson
Organization: Babson Industries LLC
Affiliation: Babson Industries LLC dba Southland Consolidated
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jun 03 23:00:59 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: [FR-6654-NFPA 101-2024](#)

Statement: The revision was developed by a task group on carbon monoxide detection that discussed, at length, changes that would require a basic level of analysis and CO protection for existing occupancies without saddling smaller businesses with an undue burden.



Public Input No. 7-NFPA 101-2024 [New Section after 13.3.4.3.7]

13.4.4.4 Carbon Monoxide Detection

13.3.4.4.1 Existing assembly occupancies shall be provided with carbon monoxide detection and warning equipment in accordance with Section 9.12 in the locations specified as follows:

- (1) On the ceiling of rooms containing permanently installed fuel-burning appliances or fuel-burning fireplaces
- (2) Centrally located within occupiable spaces served by the first supply air register from permanently installed fuel-burning HVAC systems
- (3) * Centrally located within occupiable spaces adjacent to an attached garage

A.13.3.4.4.1 (3) The intent is to require CO detectors in occupiable spaces immediately adjacent, vertically or horizontally, to attached garages, regardless of the presence of openings between the garage and the adjacent occupiable spaces. Other occupiable spaces that are not adjacent to the attached garage do not require CO detectors.

13.3.4.4.2 Carbon monoxide detectors as specified in 13.3.4.4.1 shall not be required in the following locations:

- (1) Garages
- (2) Occupiable spaces with attached garages that are open parking structures as defined in 3.3.282.8.4
- (3) Occupiable spaces with attached garages that are mechanically ventilated in accordance with the mechanical code

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
PC169-101_SAF-AXM.pdf	101_PC#169	

Statement of Problem and Substantiation for Public Input

NOTE: This Public Input appeared as "Reject but Hold" in Public Comment No. 169 of the (A2023) Second Draft Report for NFPA 101 and per the Regs. at 4.4.8.3.1 and needs to be reconsidered by the TC for the next edition of the document.

Existing assembly occupancies currently lack requirements for CO detection in buildings with known CO hazards, including fuel-burning appliances. A CO source in any building that is not monitored by installed CO detection devices is a life safety hazard to occupants. High level CO exposure carries the immediate risk of permanent brain injury and death. The addition of a requirement for CO detection for existing assembly occupancies will prevent further deaths and injuries.

To clarify, the proposed revision being resubmitted is identical to the requirement that is currently in place for new assembly occupancies. If this proposed revision is considered "too onerous to be required retroactively," the committee is urged to develop what it considers to be an adequate requirement. Similar action was taken by other 101 committees who created first revisions, committee input, or formed task groups to create CO detection requirements within their respective chapters (see page 7 of the Correlating Committee First Draft Meeting Minutes https://www.nfpa.org/assets/files/AboutTheCodes/101/101_A2023_SAF_AAC_FD_Minutes_1_22.pdf)

With regard to installation cost, primary consideration must be given to the unique nature of CO exposure and the inability of occupants to sense when they are being exposed. To avoid injury and death, there is no safe alternative to installed CO detection devices. Existing buildings arguably carry the highest risk of exposure due to aging gas appliances and exhaust systems.

Please act to prevent further delay in getting this critical baseline requirement for life safety in place to protect occupants of existing assembly occupancies.

Additional Substantiating Data

According to the recent NFPA Fire Protection Research Foundation report "CO Detection and Alarm Requirements: Literature Review," NFIRS data documents thousands of nonfire CO-related incident calls to assembly occupancies in the U.S. (Figure 9, page 24)

Case examples, including the death of a restaurant manager in NY in 2014, detailed in this same report (Table 5, page 44) demonstrate how quickly these incidents can escalate and cause harm. This particular CO leak also resulted in injuries to 27 people including first responders.

Examples of CO incidents in assembly occupancies appear regularly in news accounts: <https://thejenkinsfoundation.com/category/co-incidents/public-buildings/>

"The lack of an operating alarm can be seen in several of these case studies. Carbon monoxide is colorless and odorless. Its early onset symptoms are not unique or severe, which leads to mistaking them for something else or thinking there is not a serious problem. These symptoms can quickly escalate to severe symptoms, which usually revolves around the victim becoming unconscious. People do not self-rescue when they are able, because they do not realize that they should. If someone does realize there is problem, it is most likely too late. This common sequence combined with CO's toxicity, and a general negligence, makes CO a very dangerous problem that can happen almost anywhere.

Detection is the only safeguard against this problem."

<https://www.nfpa.org/News-and-Research/Data-research-and-tools/Detection-and-Signaling/Carbon-Monoxide-Detection-and-Alarm-Requirements-Literature-Review>

Submitter Information Verification

Submitter Full Name:

Organization: Holds

Street Address:

City:

State:

Zip:

Submission Date: Mon Jan 15 15:04:06 EST 2024

Committee: SAF-AXM

Committee Statement

Resolution: [FR-6654-NFPA 101-2024](#)

Statement: The revision was developed by a task group on carbon monoxide detection that discussed, at length, changes that would require a basic level of analysis and CO protection for existing occupancies without saddling smaller businesses with an undue burden.



Public Input No. 161-NFPA 101-2024 [New Section after 13.4.7]

12.4.7.1 Stage Height and Stage Area

12.4.7.1.1 Stage Height. Stage height shall be measured from the lowest point on the stage floor to the highest point of the underside of the roof or floor deck above the stage.

12.4.7.1.2 Stage Area. Stage areas shall be measured to include the entire performance area and adjacent backstage and support areas not separated from the performance area by fire-resistance-rated construction.

12.4.7.1.2.1 In spaces where the stage and audience areas are flexible, stage area shall be permitted to be calculated as not more than 50% of the stage and auditorium space.

-

Statement of Problem and Substantiation for Public Input

Coordinate with proposed changes to parallel public inputs to chapter 12.

Submitter Information Verification

Submitter Full Name: William Conner

Organization: Bill Conner Associates LLC

Affiliation: 12.4.7.1 Stage Height and Stage Area 12.4.7.1.1 Stage Height. Stage height shall be measured from the lowest point on the stage floor to the highest point of the underside of the roof or floor deck above the stage. 12.4.7.1.2 Stage Area. Stage areas shall be measured to include the entire performance area and adjacent backstage and support areas not separated from the performance area by fire-resistance-rated construction. 12.4.7.1.2.1 In spaces where the stage and audience areas are flexible, stage area shall be permitted to be calculated as not more than 50% of the stage and auditorium space.

Street Address:

City:

State:

Zip:

Submission Date: Thu May 30 10:44:30 EDT 2024

Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 162-NFPA 101-2024 [Section No. 13.4.7.5 [Excluding any Sub-Sections]]

~~Regular Type 2~~ stages in excess of 1000 ft² (93 m²) and ~~legitimate Type 3~~ stages shall be provided with emergency ventilation to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire, and such ventilation shall be achieved by one or a combination of the methods specified in 13.4.7.5.1 through 13.4.7.5.3.

Statement of Problem and Substantiation for Public Input

Coordinate with proposed changes to parallel public inputs to chapter 12.

Submitter Information Verification

Submitter Full Name: William Conner
Organization: Bill Conner Associates LLC
Affiliation: American Society of Theatre Consultants
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 30 10:59:47 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 164-NFPA 101-2024 [Section No. 13.4.7.7]

13.4.7.7 Proscenium Opening Protection.

13.4.7.7.1

On every ~~legitimate stage~~ Type 3 stage with a stage height greater than 50' and where the ~~stage~~ stage is not fully compliant with the chapter 12 requirements for new , the main proscenium opening used for viewing performances shall be provided with proscenium opening protection as follows:

- (1) The proscenium opening protection shall comply with 12.4.7.7 . shall be protected by a listed, minimum 20-minute opening protective assembly, a fire curtain complying with NFPA 80 or an approved water curtain complying with NFPA 13.
- (2) Asbestos shall be permitted in lieu of a listed fabric.
- (3) Manual curtains of any size shall be permitted.

13.4.7.7.2

In lieu of the protection required by 13.4.7.7.1(1), all the following shall be provided:

- (1) A noncombustible opaque fabric curtain shall be arranged so that it closes automatically.
- (2) An automatic, fixed water spray deluge system shall be located on the auditorium side of the proscenium opening and shall be arranged so that the entire face of the curtain will be wetted, and all of the following requirements also shall apply:
 - (3) The system shall be activated by a combination of rate-of-rise and fixed-temperature detectors located on the ceiling of the stage.
 - (4) Detectors shall be spaced in accordance with their listing.
 - (5) The water supply shall be controlled by a deluge valve and shall be sufficient to keep the curtain completely wet for 30 minutes or until the valve is closed by fire department personnel.
- (6) The curtain shall be automatically operated in case of fire by a combination of rate-of-rise and fixed-temperature detectors that also activates the deluge spray system.
- (7) Stage sprinklers and vents shall be automatically operated by fusible elements in case of fire.
- (8) Operation of the stage sprinkler system or spray deluge valve shall automatically activate the emergency ventilating system and close the curtain.
- (9) The curtain, vents, and spray deluge system valve shall also be capable of manual operation.

13.4.7.7.3

Proscenium opening protection provided by other than a fire curtain in accordance with 12.4.7.7 [see 13.4.7.7.1(1)] shall activate upon automatic detection of a fire and upon manual activation.

Statement of Problem and Substantiation for Public Input

Coordinate with proposed changes to parallel public inputs to chapter 12.

Submitter Information Verification

Submitter Full Name: William Conner
Organization: Bill Conner Associates LLC
Affiliation: American Society of Theatre Consultants
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 30 11:05:57 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 165-NFPA 101-2024 [Section No. 13.4.7.10 [Excluding any Sub-Sections]]

~~Every stage~~ Types 1, 2, and 3 stages shall be protected by an approved automatic sprinkler system in compliance with Section 9.7.

Statement of Problem and Substantiation for Public Input

Coordinate with proposed changes to parallel public inputs to chapter 12.

Submitter Information Verification

Submitter Full Name: William Conner
Organization: Bill Conner Associates LLC
Affiliation: American Society of Theatre Consultants
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 30 11:22:48 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which is part of a package of extensive revisions to the requirements for stages, has merit. The package has been referred to a task group for further review and for the development of public comments and a potential Fire Protection Research Foundation project to address sprinkler technology and smoke management related to stages.



Public Input No. 109-NFPA 101-2024 [Section No. 13.7.6.1]

13.7.6.1

Assembly occupancies shall be provided with a minimum of one trained crowd manager or crowd manager supervisor. Where the occupant load exceeds 250, additional trained crowd managers or crowd manager supervisors shall be provided at a ratio of one crowd manager or crowd manager supervisor for every 250 occupants, unless otherwise permitted by one of the following:

- (1) This requirement shall not apply to assembly occupancies used exclusively for religious worship with an occupant load not exceeding 500.
- (2) The ratio of trained crowd managers to occupants shall be permitted to be reduced or eliminated where, in the opinion of the authority having jurisdiction, the existence of an approved, supervised automatic sprinkler system and the nature of the event warrant.

Statement of Problem and Substantiation for Public Input

In certain uses, the need for crowd managers may not even justify a single crowd manager. As an example, an overnight gym that is fire sprinkler protected with a calculated occupant load of 300 but an actual demonstrated use of <50 occupants at anytime would have questionable value for a crowd manager. In many cases, an overnight gym may not even have on duty staff so the requirement for a crowd manager would force the full costs of an employee on the owner/tenant just to meet the crowd manager requirement.

Submitter Information Verification

Submitter Full Name: Anthony Apfelbeck
Organization: Altamonte Springs Building and Fire Safety
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 17 14:38:19 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The crowd manager is not intended to be a dedicated employee. Rather, it is training provided to employees who will be on site when the occupancy is open for business. The code currently allows the ratio to be reduced. Ch. 4 allows the AHJ to review equivalency.



Public Input No. 46-NFPA 101-2024 [Section No. 13.7.6.1]

13.7.6.1

~~Assembly occupancies~~ occupancies with an occupant load of more than 99 persons, shall be provided with a minimum of one trained crowd manager or crowd manager supervisor. Where the occupant load exceeds 250, additional trained crowd managers or crowd manager supervisors shall be provided at a ratio of one crowd manager or crowd manager supervisor for every 250 occupants, unless otherwise permitted by one of the following:

- (1) This requirement shall not apply to assembly occupancies used exclusively for religious worship with an occupant load not exceeding 500.
- (2) The ratio of trained crowd managers to occupants shall be permitted to be reduced where, in the opinion of the authority having jurisdiction, the existence of an approved, supervised automatic sprinkler system and the nature of the event warrant.

Statement of Problem and Substantiation for Public Input

The requirement as written requires assembly occupancies with 50 or more occupants to need a crowd manager. This can be a fast-food restaurant with an occupant load of 51 people. As a fire code official, it is difficult and near impossible to enforce that these occupancies meet this requirement due to high employee and management turnover. If we are lucky enough to get an assembly to do it, these employees are not there the following year. Which adds costs to these businesses to continue to certify employees. With such a low occupant load and small facility, the tasks for a crowd manager to perform are minimal. The code requirements for an assembly occupancy become more stringent when over 99 people are allowed such as panic hardware and potentially sprinklers depending on the use and this proposal will be in line with that.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 45-NFPA 101-2024 [Section No. 12.7.6.1]</u>	

Submitter Information Verification

Submitter Full Name: Tommy Demopoulos
Organization: Tamarac Fire Rescue
Street Address:
City:
State:
Zip:
Submittal Date: Fri Mar 22 16:00:28 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: The code currently permits the ratio to be reduced and Ch. 4 permits the AHJ to evaluate equivalency.



Public Input No. 326-NFPA 101-2024 [Section No. 13.7.6.2]

13.7.6.2*

The crowd manager and crowd manager supervisor shall receive approved training in crowd management techniques. The minimum required training for a Crowd Manager shall be 4 hours of training administered by a recognized training provider. The minimum required training for a Crowd Manager Supervisor shall be a minimum 6 hrs of training administered by a recognized training provider.

Statement of Problem and Substantiation for Public Input

Authored by Vincent Quintero:
The Crowd Manager Task Force Group Proposal

The intent of this document is to further enhance the code requirements identified the training requirements for a crowd manager and crowd manager supervisor in 12/13.7.6.2. This citing identifies and is supported in the appendix version of 12/13.7.6.2 specific subject matter content that is highly recommended and should be included in this training. 12/13.7.6.4 formulate a more defined and concise crowd manager and crowd manager supervisor areas, in enhancing the code requirement as outlined in the appendix of 12/13.7.6.2.

History

The language within the appendix version of 12/13.7.6.2 were developed through a task group chaired by Harold Hansen, CFE, a member of the Assembly Occupancy Technical Committee, provided his professional expertise as the former director of Life Safety and Security for the IAVM. Another member of this task group included Vincent Quintero for the developing a crowd managers program created for his former employer and the Event Managers Organization located in the State of Florida and numerous crowd manager presentation conducted throughout the United States of America. If my memory is clear the task group was small, and I believe the other member was Jake Paul with his multiple years of experience on the human behavior element combined with his experiences with litigation and testimony at numerous crowd related events throughout the world. Perhaps Phil Sherman was another member unfortunately and sorry, but I don't remember.

Fortunately, our task group was able to compile a comprehensive list which was incorporated into the life safety code in 2015 Edition of NFPA 101. Complete as it was, organizations and developers institute the crowd manager and crowd manager supervisor time frame that works best for their groups. Some training is multiple days, some one day, some is four hour whichever the program, all should capture the minimum requirements identified in A12/13/7/6/2. A group identified as the Entertainment Services and Technology Association (ESTA) and Event Safety Alliance (ESA), created a crowd manager training program which has been certified by ANSI ES1.9-2020 Crowd Management. Their document is vastly filled with many International and American based professional references. The NFPA 101 Life Safety Code 12/13.7.6.4 is also referenced as a minimum standard. A complement to NFPA, the Assembly Occupancy Technical Committee, and the work of our small task group. Doing something right sets for positive measures moving forward. However, the problem remains that no specific timeline or training platform was ever introduced as a standardized mechanism. This is where I think we need to address.

Premises

As previously mentioned, organizations develop training which best suits their needs. Now that the electronic training platform has become one of the premiere formats, it's now maybe necessary that we incorporate specific timeline in ensuring the Life Safety Code maintains the premiere education guideline reference publication for the safety of all occupants. On the internet there exist far too many online crowd manager training platforms. Some platforms (online or in person) may utilize a minimum of 15-minutes, 30-minutes, 45-minutes, or longer to certify their trainees.

Over the years crowd manager and crowd manager supervisor roles and responsibilities have tremendously increased. The current state of the world on numerous fronts has increased the demand

for more enhanced safety and security measures for public gatherings. The Life Safety Code adoption of the appendix language in 12/13.7.6.2, combined with the ANSI ES1.9-2020 Crowd Management document provides significant substantiation to support the advancement of a timeline. Several code cycles back, with the evolving active shooting incidents plaguing of communities, NFPA recognized this with the adoption of NFPA 3000. NFPA 3000 outlines a more cohesive network in addressing active shooter situations. To the best of my knowledge there are no 15, 30, 45-minute online certification trainings available. Why? Because the information is too immense and requires a vast amount of time to complete.

Conclusion

As the world continues to experience increased conflicts along the line of terrorist activities both domestic and international, targeting a host of individuals, religious organizations, numerous assembly occupancies, and Soft and Hard Target venues, a more defined crowd manager and crowd manager supervisor program needs to more instituted. The Task Group is proposing that a minimum time frame of 4-hours for crowd manager and an additional 2-hour for crowd manager supervisor. This time frame will provide the minimum time frame meeting the minimum requirements outlined in the appendix section of 12/13.7.6.2.

Submitter Information Verification

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Submittal Date: Mon Jun 03 23:52:42 EDT 2024

Committee: SAF-AXM

Committee Statement

Resolution: The proposed revision, which adds minimum training duration requirements, does not ensure that the training delivered will be of high quality and value. The current requirement for approved training in crowd management techniques gives the AHJ the flexibility to mandate training that is appropriate for individual venues. Training requirements will differ for a 100,000-seat stadium and a 50-seat church - one size does not fit all.



Public Input No. 199-NFPA 101-2024 [Section No. A.3.3.257.1]

A.3.3.257.1 Festival Seating.

Festival seating describes situations in assembly occupancies where live entertainment events are held that are expected to result in overcrowding and high audience density that can compromise public safety. It is not the intent to apply the term *festival seating* to exhibitions; sports events; conventions; and bona fide political, religious, and educational events. Assembly occupancies with 15 ft² (1.4 m²) or more per person should not be considered festival seating.

Festival seating refers to unreserved standing room in an assembly occupancy. Because the absence of chairs or reserved standing areas can result in crowd density greater than 7 ft² (0.65 m²) per person, it is important for the event organizer to plan for the safety issues raised by both moving and stationary crowds in assembly occupancies that use festival seating, regardless of the type of event. For festival seating events in dance halls, nightclubs, and discotheques where the occupant load exceeds 250 people, and in all other assembly occupancies where the occupant load exceeds 1000, event organizers should perform a Life Safety Evaluation to identify relevant crowd management issues, including means of preserving egress routes and plans to avoid localized overcapacity, which can occur both near the attraction and in pockets throughout a standing general admission area. The event organizer can document risk mitigation measures related to festival seating in their Facility Management and Operational Plans.

Assembly occupancies without fixed seating where there is 15ft² (1.4m²) or more per person are unlikely to face either the same egress or standing density challenges, so they should not be considered festival seating. Examples of such excluded areas include a lawn where guests bring folding chairs and picnics to watch a performance, or a school gymnasium or cafeteria.

Statement of Problem and Substantiation for Public Input

A. Critique of the Current Annex

1. The first sentence in the current Annex is substantively wrong. Many unreserved standing room events should NOT be expected to result in “overcrowding and high audience density that can compromise public safety.” For example, a member of this task group recently attended a festival seating concert by a Taylor Swift tribute artist in a New York suburb. There was no issue of overcrowding or high audience density among either the pre-adolescent girls or their mothers, who comprised the vast majority of the crowd. It would not strain the memory of most event professionals to come up with lots of similar examples.
2. The current Annex also is pejorative in a way that casts a negative light on an economically essential part of the live event industry. Streaming has made “record” sales financially irrelevant for all but the biggest artists, which explains the proliferation of big festivals, and the broadcast revenue from live sporting events with audiences drives that industry. To say all these events are likely to compromise public safety is to give an unjustified running start to every personal injury lawyer whose client got hurt at a festival seating event.
3. The Code is a victim of its own success. Because there is a relative dearth of authoritative safety guidance regarding public assembly facilities in the United States, lawyers grasp at whatever they can find. Whether or not the drafters of Code provisions intend for their work to be used in litigation, the certainty is that it will be. We must be mindful of all our foreseeable audiences, not just AHJs and public safety users.
4. In the second sentence of the current Annex, the carve-outs for “exhibitions, sports events,

conventions, and bona fide political, religious, and educational events” appear to be the product of long-ago lobbying efforts. Sports and religious events are notoriously dangerous to crowds. The Hillsborough tragedy immediately comes to mind as a sports venue where festival seating became deadly, and world football has many similar crowd disasters. Religious events, similarly, are obviously fraught with crowd risks, as we are reminded by crush injuries among Hajj pilgrims every year and the Lag B’Omer disaster discussed in the July 13, 2021 issue of NFPA Journal. As for the other carve-outs, what is an “exhibition?” Do conventions, political rallies, or educational events reach the occupant load levels to qualify as festival seating? This sentence serves no legitimate purpose we can see.

5. We’re okay with the third sentence, and we have provided a couple of simple examples in our version.

B. Explanation of the Proposed New Annex

6. The proposed new Annex begins by highlighting the reason festival seating is a proper subject for life safety consideration: it is “unreserved standing room.”

7. The second sentence begins by identifying the resulting problem – the likelihood of crowd density greater than 7 ft² (0.65 m²) per person.

8. Importantly, the sentence then notes that excessive crowd density can imperil both moving crowds (this provision was inspired by the Who ingress disaster in 1979, and ingress and egress crushes at events without reserved seats have been a regular problem since then) and stationary crowds (less common, but no less deadly, such as the Roskilde festival or more recently, Astroworld). We intend to alert event organizers that both crowd situations have hazards, albeit different from each other.

9. The second sentence concludes by excluding no type of event. Anywhere the factors of unreserved spaces and standing room co-exist, there are crowd crush risks that must be assessed and mitigated. Safety doesn’t play favorites.

10. The third sentence is intended to direct users to the valuable tool of a Life Safety Evaluation. Unfortunately, the exceptions in 12.2.5.6.1 compel us to restate those exceptions in our Annex. Thus, the clunky structure of the first two clauses.

11. After referring users to the Life Safety Evaluation, we point them to the safety goals specific to festival seating: “preserving egress routes and plans to avoid localized overcapacity.” We are mindful that 7 ft² per person is expressly designated as an egress figure in the Code, but we also know that figure is weaponized in litigation to suggest that anything denser in a standing area is unreasonably dangerous. This is why we emphasize the potential hazards of both moving and stationary crowds.

12. The last part of the third sentence underscores that unsafe crowd density is not limited to the area immediately behind the stage barricade. Again, Astroworld reminds us that even the middle of a stage right rear barricade area can have dangerous pockets of crowd density. Because we don’t know what causes them, it’s essential that organizers be vigilant and include means of monitoring the entire crowd, not just the most obviously dense areas.

13. The last sentence in the first paragraph is intended to highlight the granular itemization of safety issues in Facility Management and Operational Plans, which we love. This puts meat on the bones of a Life Safety Evaluation, whose description is less detailed.

14. We intentionally do not cite provisions by number because all aspects of festival seating apply equally to new and existing assembly occupancies.

15. The last paragraph of the new Annex simply expands upon the last sentence in the current version. We feel that a specific occupant load figure coupled with common examples will help distinguish circumstances that require a detailed festival seating safety evaluation from those which, because they do not have the same risk profile and do not fall within the definition, do not require the same level of scrutiny.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 198-NFPA 101-2024 [Section No. 3.3.257.1]	Definition of

Submitter Information Verification

Submitter Full Name: Harold Hansen
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Submittal Date: Sat Jun 01 17:46:15 EDT 2024
Committee: SAF-AXM

Committee Statement

Resolution: [FR-6588-NFPA 101-2024](#)

Statement: The revision was developed by a task group on festival seating, the report for which follows:

1. The first sentence in the current Annex is substantively wrong. Many unreserved standing room events should NOT be expected to result in “overcrowding and high audience density that can compromise public safety.” For example, a member of this task group recently attended a festival seating concert by a Taylor Swift tribute artist in a New York suburb. There was no issue of overcrowding or high audience density among either the pre-adolescent girls or their mothers, who comprised the vast majority of the crowd. It would not strain the memory of most event professionals to come up with lots of similar examples.

2. The current Annex also is pejorative in a way that casts a negative light on an economically essential part of the live event industry. Streaming has made “record” sales financially irrelevant for all but the biggest artists, which explains the proliferation of big festivals, and the broadcast revenue from live sporting events with audiences drives that industry. To say all these events are likely to compromise public safety is to give an unjustified running start to every personal injury lawyer whose client got hurt at a festival seating event.

3. The Code is a victim of its own success. Because there is a relative dearth of authoritative safety guidance regarding public assembly facilities in the United States, lawyers grasp at whatever they can find. Whether or not the drafters of Code provisions intend for their work to be used in litigation, the certainty is that it will be. We must be mindful of all our foreseeable audiences, not just AHJs and public safety users.

4. In the second sentence of the current Annex, the carve-outs for “exhibitions, sports events, conventions, and bona fide political, religious, and educational events” appear to be the product of long-ago lobbying efforts. Sports and religious events are notoriously dangerous to crowds. The Hillsborough tragedy immediately comes to mind as a sports venue where festival seating became deadly, and world football has many similar crowd disasters. Religious events, similarly, are obviously fraught with crowd risks, as we are reminded by crush injuries among Hajj pilgrims every year and the Lag B’Omer disaster discussed in the July 13, 2021 issue of NFPA Journal. As for the other carve-outs, what is an “exhibition?” Do conventions, political rallies, or educational events reach the occupant load levels to qualify as festival seating? This sentence serves no legitimate purpose we can see.

5. We’re okay with the third sentence, and we have provided a couple of simple examples in our version.

Explanation of the revision:

6. The new Annex begins by highlighting the reason festival seating is a proper subject for life safety consideration: it is “unreserved standing room.”

7. The second sentence begins by identifying the resulting problem – the likelihood of crowd density greater than 7 ft² (0.65 m²) per person.

8. Importantly, the sentence then notes that excessive crowd density can imperil both moving crowds (this provision was inspired by the Who ingress disaster in 1979, and ingress and egress crushes at events without reserved seats have been a regular problem since then) and stationary crowds (less common, but no less deadly, such as the Roskilde festival or more recently, Astroworld). We intend to alert event organizers that both crowd situations have hazards, albeit different from each other.

9. The second sentence concludes by excluding no type of event. Anywhere the factors of unreserved spaces and standing room co-exist, there are crowd crush risks that must be assessed and mitigated. Safety doesn’t play favorites.

10. The third sentence is intended to direct users to the valuable tool of a Life Safety Evaluation. Unfortunately, the exceptions in 12.2.5.6.1 compel us to restate those exceptions in our Annex. Thus, the clunky structure of the first two clauses.

11. After referring users to the Life Safety Evaluation, we point them to the safety goals specific to festival seating: “preserving egress routes and plans to avoid localized overcapacity.” We are mindful that 7 ft² per person is expressly designated as an egress figure in the Code, but we also know that figure is weaponized in litigation to suggest that anything denser in a standing area is unreasonably dangerous. This is why we emphasize the potential hazards of both moving and stationary crowds.

12. The last part of the third sentence underscores that unsafe crowd density is not limited to the area immediately behind the stage barricade. Again, Astroworld reminds us that even the middle of a stage right rear barricade area can have dangerous pockets of crowd density. Because we don’t know what causes them, it’s essential that organizers be vigilant and include means of monitoring the entire crowd, not just the most obviously dense areas.

13. The last sentence in the first paragraph is intended to highlight the granular itemization of safety issues in Facility Management and Operational Plans, which we love. This puts meat on the bones of a Life Safety Evaluation, whose description is less detailed.

14. We intentionally do not cite provisions by number because all aspects of festival seating apply equally to new and existing assembly occupancies.

15. The last paragraph of the new Annex simply expands upon the last sentence in the current version. We feel that a specific occupant load figure coupled with common examples will help distinguish circumstances that require a detailed festival seating safety evaluation from those which, because they do not have the same risk profile and do not fall within the definition, do not require the same level of scrutiny.



Public Input No. 243-NFPA 101-2024 [New Section after A.13.3.4.2.3]

A.13.3.4.4.1 The intent is to allow hardwired, or battery powered single and multiple station carbon monoxide alarms or carbon monoxide detectors.

A.13.3.4.4.1(3) The intent is to require CO detection in occupiable spaces immediately adjacent, vertically, or horizontally, to attached garages, regardless of the presence of openings between the garage and the adjacent occupiable spaces. Other occupiable spaces that are not adjacent to the attached garage do not require CO detection.

Statement of Problem and Substantiation for Public Input

The carbon monoxide (CO) problem is well known and documented. It is a danger to humans as a toxic and flammable gas. More than 14,000 people are hospitalized in the United States with unintentional non-fire related CO poisoning each year. And more than 400 of them die (Center for Disease Control, 2022). Deaths are slowly increasing annually, not decreasing. (NFPA, 2024) New assembly occupancies require detection because we collectively acknowledge the problem while considering cost and difficulty. The submitter recognizes the cost and complexity of deploying detection retroactively. Allowing for standalone hardwired or battery power CO alarms allows a quick, cost-effective method to achieve greater protection in the occupancy type that contain the largest gatherings of occupants. The owners/operators of existing assembly occupancies can deploy this themselves should they choose to. One can posit older equipment is more susceptible to malfunctions than new equipment and thus there is a bigger impetus in existing than new to have alarms or detectors present. Even NFPA (NFPA, 2024) acknowledges the size of the problem. In 2016 fire departments responded to an estimated 79,600 CO incidents, which averages to nine per hour each day. That does not include malfunctioning and unintentional CO alarm calls. Given that new occupancies had CO detection added as a requirement in 2024 and with so many responses by fire departments, this is indicative of a life safety problem that needs to be addressed without unduly burdening the end user. With increased alarms and detection in existing occupancies, more dangerous levels of CO will be found, and more existing assembly occupancies will be safer.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 223-NFPA 101-2024 [New Section after 13.3.4.3.4]	

Submitter Information Verification

Submitter Full Name: Richard Roberts

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Submittal Date: Mon Jun 03 17:19:09 EDT 2024

Committee: SAF-AXM

Committee Statement

Resolution: The related PI-223 was not incorporated (see also FR-6654). Carbon monoxide detectors should be installed in accordance with NFPA 72.