



Public Input No. 373-NFPA 101-2021 [New Section after 3.3.52]

3.3.xx Damper

Extract definitions for ceiling radiation damper, combination fire-smoke dampter, corridor damper, fire damper, and smoke damper from NFPA 90A.

Statement of Problem and Substantiation for Public Input

Add the various damper definitions from NFPA 90A to NFPA 101 will add clarity and make NFPA 101 more user friendly.

Submitter Information Verification

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Submittal Date: Tue Jun 01 12:38:17 EDT 2021

Committee: SAF-FIR

Committee Statement

Resolution: [FR-6516-NFPA 101-2021](#)

Statement: The Code includes the use of the terms added. Adding the definitions will help to make NFPA 101 more user friendly and extracting them from NFPA 90A will provide consistency with the use of damper terminologies between NFPA codes and standards.

There are public inputs related to the damper definitions in NFPA 90A. The committee will review any actions taken by the NFPA 90A committee regarding damper definitions at second draft.

Similar action taken in NFPA 5000 via FR-8003.



Public Input No. 331-NFPA 101-2021 [New Section after 8.2.4.5]

TITLE OF NEW CONTENT

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Add New Section 8.2.5 – Fire Barriers and Smoke Barriers Formed by Normally Open, Automatic-Closing Opening Protectives (to be placed at the end of Section 8.2 – Construction and Compartmentation)

8.2.5 Fire Barriers and Smoke Barriers Formed by Normally Open, Automatic-Closing Opening Protectives

8.2.5.1 The use of automatic fire-protection-rated rolling steel fire doors, fire shutters, fire-protective curtain assemblies, etc., to form normally open fire barrier or smoke barrier wall portions or normally open fire-resistive horizontal assembly portions shall be justified with a performance-based design.

8.2.5.2 The required performance-based design shall include a numerical evaluation of reliability. The reliability evaluation results of the proposed system shall not be less than the reliability of fixed fire barrier walls, fixed smoke barrier walls, or fixed fire-resistive horizontal assemblies. The reliability evaluation shall also include, at a minimum, the reliability of the detection system coupled with the reliability of the opening protective device.

8.2.5.2 The required performance-based design shall include a numerical evaluation of reliability. The reliability evaluation results of the proposed system shall not be less than the reliability of fixed fire barrier walls, fixed smoke barrier walls, or fixed fire-resistive horizontal assemblies. The reliability evaluation shall also include, at a minimum, the reliability of the detection system coupled with the reliability of the opening protective device.

8.2.5.3 The required performance-based design shall provide at least the equivalent level of life safety as would be provided by fixed fire barriers or fixed smoke barriers or fixed fire-resistive horizontal assemblies.

8.2.5.4 The required performance-based design shall be performed by a licensed entity approved by the AHJ.

8.2.5.5 The required performance-based design report shall be reviewed by the AHJ, and approved, if deemed acceptable by the AHJ.

Statement of Problem and Substantiation for Public Input

Statement of Problem and Substantiation for Public Input/Comment

Building designers are using rolling steel fire doors and “fire/smoke curtains” to automatically form fire barrier walls and smoke barrier walls for stair enclosures, exit passageways, fire walls, atrium separation, communicating space separation, etc. I am told that this is done by designers to create a sense of “openness.”

I have seen rolling steel fire doors placed in a horizontal orientation to form the top and /or bottom element of vertical opening communicating spaces. I call features used as such “just in time” fire barriers or “just in time” smoke barriers that are intended by designers to create a sense of openness, and to automatically close in an emergency when activated by a fire detection system.

In one extreme case, I have seen a required stair enclosure that, at one particular level that did not require an exit into the stair, have each of its four (4) sides of the “just in time” stair enclosure formed by a normally open, automatic-closing rolling steel fire door. The only fixed rated elements in the stair enclosure at this level were the four fire-resistive structural columns at the corners of the stair enclosure.

2021 IBC Section 707 – Fire Barriers, Section 707.6 – Openings provides a basic opening limitation as follows: “Openings shall be limited to a maximum aggregate width of 25 percent of the length of the wall, and the maximum area of any single opening shall not exceed 156 square feet.” This section has additional requirements and exceptions.

2021 NFPA 221, provides no basic limitation of area for openings in fire barriers other than for glazing in fire doors and fire windows, though 2021 NFPA 221 does provide a numerical limitation of 25 percent of wall width in each story for high-challenge fire walls in Section 5.8 – Opening Protectives, and for fire walls in Section 6.10 – Opening Protectives.

I pose the question: “Does the NFPA Technical Committee think that “just in time” fire barriers in stairway enclosures, in floor assemblies, and in other building compartmentation features for the purpose of “openness” (which is a risk seeking endeavor) is compliant?” I personally think that “just in time” fire barriers, “just in time” smoke barriers, and “just in time” fire-resistive horizontal assemblies are not compliant.

These conditions present many challenges for the AHJ and the Owner including:

1. NFPA 101 does not specially address this issue. The AHJ is usually forced into a defensive position to deal with the proposed design and to negotiate with a formidable design team usually consisting of an (out of town) renowned architectural firm which has the grand design vision of “openness” along the architectural firm’s (out of town) MS-degreed Fire Protection Engineer. The AHJ has virtually no code text or guidance text in NFPA 101 to refer, and the AHJ is left on his/her own to deal with this. (If the Technical Committee thinks these features are compliant, then please state so in the Code. If the Technical Committee thinks these features are not compliant, then please state so in the Code. This would be a great benefit to AHJ’s).
2. Considering the property of fire resistance, the fire protection attributes of normally open, automatic-operating opening protectives such as rolling steel fire doors tested per NFPA 252 Standard Methods of Fire Tests of Door Assemblies are generally less than the fire protection attributes of fire barriers tested per ASTM E119 Standard Test Methods for Fire Tests of Building Construction and Materials.
3. Normally open, automatic-closing “just in time” opening protectives such as rolling steel fire doors and fire/smoke curtains are inherently less reliable than fixed fire barriers and fixed smoke barriers. The AHJ should not be expected to approve less reliable systems than the base code expects. The Owner should not be expected to receive less reliable systems than the base code expects.
4. Opening protectives such as rolling steel fire doors and fire/smoke curtains require a higher level of inspection, testing, and maintenance (ITM), and owner staff training, and all of this is required to go on in perpetuity, compared to the ITM and staff training for fixed fire barriers or of common opening protectives such as swinging fire doors (even if they are normally open and release by an automatic fire detection system).

I am aware of a 2014 article by Professor James Milke in SFPE Magazine, 4th Quarter on reliability of

certain fire protection items. The article was titled “Effectiveness and Reliability of Fire Protection Systems.” The article mentions that the reliability of the general class of fire doors is 80% or 0.80.

I present a hypothetical and very simplistic example here of a required “just-in-time” stair enclosure having five walls (located over three floors) that are formed partially or fully by normally open, automatic-closing rolling steel fire doors.

Let’s assume that the reliability of a fixed fire barrier wall is 90% accounting for construction imperfections in the fire barrier wall materials, fire-resistive joints, and penetration firestops. Note that I have no basis for this number other than the value of 90% used for this hypothetical example is what I think to be a conservatively low value and it is between the bounding conditions of the reliability of the general class of fire doors (80%) and of perfect reliability (100%).

The calculated joint probability that all five normally open, automatic closing rolling steel fire doors will close at the same time in a fire emergency is about $(0.80)^5 = 0.33$ (or 33%).

The calculated joint probability that all five in-place fixed fire barrier walls will be present and effective at the same time in a fire emergency is about $(0.90)^5 = 0.59$ (or 59%).

The above simplistic illustration did not explicitly include the reliability of the fire detection system which would impact the overall reliability of the combined detection system coupled with the “just in time” fire barrier wall features.

There is the practical issue of the risk of an item located under the closing path of the “just-in-time” fire barrier which would result in incomplete closure when needed. This needs to be evaluated whether it is included in the reliability value used for the opening protective, or added discretely as a risk factor that would impact the overall risk.

The use of space at the non-stair side of the “just in time” fire barrier could result in a fuel load greater than that assumed by NFPA 252 Standard Methods of Fire Tests of Door Assemblies. Though a designer may say that this space will be kept clear, this will become an AHJ enforcement issue in perpetuity.

If “just in time” features are approved, then what inspection, testing and maintenance (ITM) shall they be subjected? 2019 NFPA 80 Section 5.2.3.7.3.1 requires that rolling steel fire doors be drop-tested twice. Should a set of multiple rolling steel fire doors used in a “just in time” stair enclosure be drop tested twice as a complete unit? Should a rolling steel fire door used in a horizontal orientation in a rated floor assembly be “slide-tested” twice? What closing time should be expected for any individual rolling steel fire door? How often should ongoing ITM be done to ensure the reliability values used in the system’s justification will be maintained? Initial inspection and testing, and ongoing ITM should be integrated with other systems such as the fire detection system.

A final rhetorical question I pose to proponents of such “just in time” rated walls and rated floors and to the NFPA Technical Committee is: “Using the example just presented, why should AHJ’s, Owners, and Users accept the 33% reliability of normally open, automatic-closing opening protectives when standard and simpler fixed construction provides 59% reliability.”

I personally don’t think that AHJ’s, Owners, Users, and Emergency Responders should have to accept such lesser reliability. If the designer wants to use such normally open and automatic-closing systems for “Openness,” then the designer needs to develop systems and features that provide an equivalent level of life safety to that of standard, non-moving construction in our most basic compartmentation features.

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Submitter Information Verification

Submitter Full Name: Raymond Battalora

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State:**Zip:****Submittal Date:** Tue Jun 01 09:38:04 EDT 2021**Committee:** SAF-FIR

Committee Statement

Resolution: The language submitted is not in a format that is consistent with NFPA 101. The language for performance-based designs belong in Chapter 5. The performance based design presented for acceptance is not well defined and would not result in a consistent application across multiple jurisdictions. The SFPE is developing a performance based design standard that may address this in the future. The submitter does not include adequate references for the data provided in the substantiation. There is currently other language in the code that address the submitter's concern about permissible openings in the means of egress.



Public Input No. 180-NFPA 101-2021 [New Section after 8.5.4.4]

TITLE OF NEW CONTENT

Windows assemblies in smoke barriers may be fixed or operable. Fixed window assemblies shall resist the passage of smoke. Operable window assemblies shall resist the passage of smoke. Latching hardware shall be required on operable windows in smoke barriers, unless specifically exempted by Chapters 11 through 43. Operable windows in smoke barriers shall be self-closing or automatic-closing in accordance with 7.2.1.8. Where required by Chapters 11 through 43, operable windows in smoke barriers that are required to be smoke-leakage-rated shall comply with the requirements of 8.2.2.4

Statement of Problem and Substantiation for Public Input

The proposed change would clarify that fire window assemblies are not required in non-fire-rated smoke barrier walls; and would provide requirements for non-fire-rated window assemblies in non-fire-rated smoke barrier walls consistent with the requirements for the protection of non-fire-rated door openings in non-fire-rated smoke barriers.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 181-NFPA 101-2021 [Section No. 8.5.4.5]	

Submitter Information Verification

Submitter Full Name: Eric Reed
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Submittal Date: Thu May 20 10:40:53 EDT 2021
Committee: SAF-FIR

Committee Statement

Resolution: The requirements in this PI are already addressed by other NFPA standards.



Public Input No. 181-NFPA 101-2021 [Section No. 8.5.4.5]

8.5.4.5

~~Fire window~~ Window assemblies shall additionally comply with 8.3.3 when provided in a fire barrier used as a smoke barrier .

Statement of Problem and Substantiation for Public Input

The proposed change would clarify that window assemblies, when provided in fire-resistance-rated smoke barriers, are required to comply with 8.3.3. Currently, the Code does not state, "Window assemblies in non-fire-resistance rated smoke barrier barriers are required to be fire window assemblies; nor should it. This change would clarify when fire window assemblies are required.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 180-NFPA 101-2021 [New Section after 8.5.4.4]	Adds requirements for non-fire-rated window opening protection in non-fire-rated smoke barriers to help clarify when fire window assemblies are or are not required.

Submitter Information Verification

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Submittal Date: Thu May 20 11:00:32 EDT 2021
Committee: SAF-FIR

Committee Statement

Resolution: The requirements in the PI are redundant with existing requirements in this code. See similar response to PI-180.



Public Input No. 145-NFPA 101-2021 [Section No. 8.6.11.3]

8.6.11.3*

Draftstopping materials shall be not less than ½ in. (13 mm) thick gypsum board panels , ⅝ in. (12 mm) thick wood structural panel, or other approved materials that are adequately supported.

Statement of Problem and Substantiation for Public Input

The Building Code Technical Committee of the Gypsum Association reviewed references to gypsum products throughout NFPA 101 and identified several instances where incorrect terminology was used. This is one of several Public Inputs being submitted to ensure consistency in the use of gypsum terms throughout all codes, standards, and industry publications.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 155-NFPA 101-2021 [Section No. 13.3.1]	
Public Input No. 146-NFPA 101-2021 [Section No. 12.4.7.10.3]	
Public Input No. 148-NFPA 101-2021 [Section No. 13.4.7.10.3]	
Public Input No. 149-NFPA 101-2021 [Section No. 14.3.4.4.1]	
Public Input No. 150-NFPA 101-2021 [Section No. 14.3.4.4.3]	
Public Input No. 151-NFPA 101-2021 [Section No. A.3.3.182]	
Public Input No. 152-NFPA 101-2021 [Section No. A.7.1.3.2.1(1)]	
Public Input No. 153-NFPA 101-2021 [Section No. A.7.1.3.2.1(3)]	

Submitter Information Verification

Submitter Full Name: Timothy Earl
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Submittal Date: Fri May 14 09:41:40 EDT 2021
Committee: SAF-FIR

Committee Statement

Resolution: [FR-6509-NFPA 101-2021](#)

Statement: The change in terminology will make NFPA 101 consistent with industry terminology.

The Building Code Technical Committee of the Gypsum Association reviewed references to gypsum products throughout NFPA 101 and identified several instances where incorrect terminology was used. This is one of several Public Inputs being submitted to

ensure consistency in the use of gypsum terms throughout all codes, standards, and industry publications.



Public Input No. 280-NFPA 101-2021 [Section No. 8.7.3.3]

8.7.3.3* Alcohol-Based Hand-Rub Dispensers.

Where permitted by Chapters 11 through 43, alcohol-based hand-rub dispensers shall be permitted provided they meet all of the following criteria:

- (1) The maximum individual dispenser fluid capacity shall be as follows:
 - (2) 0.32 gal (1.2 L) for dispensers in corridors and areas open to corridors
 - (3) 0.53 gal (2.0 L) for dispensers in rooms or suites of rooms separated from corridors
- (4) Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz (0.51 kg) and shall be limited to Level 1 aerosols as defined in NFPA 30B.
- (5) Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm).
- (6) Not more than an aggregate 10 gal (37.8 L) of alcohol-based hand-rub solution or 1135 oz (32.2 kg) of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gal (37.8 L) or 1135 oz (32.2 kg,) shall be in use outside of a storage cabinet in a single smoke compartment or fire compartment or story, whichever is less in area. One dispenser complying with 8.7.3.3(1) per room and located in that room shall not be included in the aggregated quantity.
- (7) Quantities are permitted to be increased 100 percent in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13.
- (8) Storage of quantities greater than 5 gal (18.9 L) in a single smoke compartment or fire compartment or story, whichever is less in area, shall meet the requirements of NFPA 30.
- (9) Quantities are permitted to be increased 100 percent where stored in approved flammable liquids storage cabinets in accordance with NFPA 30. Where (b) also applies, the increase for both is permitted to be applied accumulatively.
- (10) Quantities are permitted to be increased 100 percent in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13. Where (a) also applies, the increase for both is permitted to be applied accumulatively.
- (11) Dispensers shall not be installed in the following locations:
 - (12) Above an ignition source for a horizontal distance of 1
in
(a) ft . (
25
(a) 305 mm) to each side of the ignition source
(b) To the side of an ignition source within
a
(a) 1
in
(a) ft . (
25 mm
(a) 305 mm) horizontal distance from the ignition source
(b) Beneath an ignition source within
a

(a) 1

in

(a) ft. (

25

(a) 305 mm) vertical distance from the ignition source

(13) Dispensers installed directly over carpeted floors shall be permitted only in sprinklered areas of the building.

(14) The alcohol-based hand-rub solution shall not exceed 95 percent alcohol content by volume.

(15) Operation of the dispenser shall comply with the following criteria:

(16) The dispenser shall not release its contents except when the dispenser is activated, either manually or automatically by touch-free activation.

(17) Any activation of the dispenser shall only occur when an object is placed within 4 in. (100 mm) of the sensing device.

(18) An object placed within the activation zone and left in place shall not cause more than one activation.

(19) The dispenser shall not dispense more solution than the amount required for hand hygiene consistent with label instructions.

(20) The dispenser shall be designed, constructed, and operated in a manner that ensures accidental or malicious activation of the dispensing device is minimized.

(21) The dispenser shall be tested in accordance with the manufacturer's care and use instructions each time a new refill is installed.

Statement of Problem and Substantiation for Public Input

Experience with the high demand for ABHR during the COVID pandemic suggests that the original provisions for use and storage outside of the requirements of NFPA 30 may be overly conservative.

This proposal suggests:

- (1) increases in allowances for ABHR volumes in active use in fully sprinklered buildings.
- (2) increases in allowances for ABHR volumes in storage when flammable liquids storage cabinets are used and/or when stored in fully sprinklered buildings.
- (3) increases the required separation from ignition sources

Coupled with the existing limits on dispenser size and spacing, this is reasonable expansion given that ABHR is water soluble and well within the protection capabilities of sprinkler systems. The increased use of ABHR has created a demand for greater on-hand quantities easily exceeding the previous allowances. The proposed allowances are still below the allowances possible with full NFPA 30 compliance while still providing a reasonable limit on use and storage.

This proposal is submitted as a result of discussions underway in the NFPA 30 ABHR Task Group and is intended to foster discussion and reevaluation of the current ABHR language in NFPA 101 and as extracted by NFPA 1.

Submitter Information Verification

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Submittal Date: Mon May 31 10:51:10 EDT 2021
Committee: SAF-FIR

Committee Statement

Resolution: [CI-6511-NFPA 101-2021](#)

Statement: The committee has formed a task group to review the requirements for ABHR. The task group is looking to incorporate the changes from PI-316 include the following: dispenser capacity, storage volume, dispenser location, dispenser operation and testing, and spill containment and maintenance.

The committee has formed this CI off the proposed changes in PI-316 instead PI-280 and PI-432, as the proposed changes in these PIs were not as comprehensive as the requirements in PI-316.

The Covid-19 viral outbreak led to an increased use of alcohol based hand sanitizer within many different types of occupancies.

These potential changes will allow AHJs to more easily define the overall requirements related to alcohol based hand-rubs. With flashpoints typically around 63°F, this could be classified as IB flammable liquid and with that certain occupancies, such as business and educational, have special MAQ requirements are much more restrictive in the quantity of liquid allowed. This proposal includes sections that pertain to maximum allowable quantities (MAQ's) which have been extracted from NFPA 30 into this document to allow one centralized location for the information needed to fully understand the requirements related to storage of alcohol-based hand sanitizer for each of the types of occupancies. This is an attempt to make this the all-inclusive section for locating the requirements covering Alcohol Based Hand-Rubs.

Currently there is an NFPA 30 task group and an NFPA 1 task group addressing this subject within those standards respectively. So a recommendation should be made to this committee to put forth a committee input and create a task group to review this requirement throughout and ensure correlation with NFPA 1 and NFPA 30 task groups that are already reviewing this.



Public Input No. 316-NFPA 101-2021 [Section No. 8.7.3.3]

8.7.3.3* Alcohol-Based Hand-Rub Dispensers.

Where permitted by Chapters 11 through 43, alcohol-based hand-rub dispensers shall be permitted provided they meet all of the

following criteria:

criteria in 8.7.3.3.1 through 8.7.3.3.5. These requirements shall not apply to individual personal use hand sanitizer containers less than 16 ounces.

8.7.3.3.1 Dispenser Capacity

- (1) The maximum individual dispenser fluid capacity shall be as follows:
 - (2) 0.32 gal (1.2 L) for dispensers in corridors and areas open to corridors
 - (3) 0.53 gal (2.0 L) for dispensers in rooms or suites of rooms separated from corridors
- (4) Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz (0.51 kg) and shall be limited to Level 1 aerosols as defined in NFPA 30B.
- (5) Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm).
- (6) Not more than an aggregate 10 gal (37.8 L) of alcohol-based hand-rub solution or 1135 oz (32.2 kg) of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gal (37.8 L) or 1135 oz (32.2 kg,) shall be in use outside of a storage cabinet in a single smoke compartment or fire compartment or story, whichever is less in area. One dispenser complying with 8.7.3.3(1) per room and located in that room shall not be included in the aggregated quantity.

Storage of

- (7) The alcohol-based hand-rub solution shall not exceed 95 percent alcohol content by volume

8.7.3.3.2 Storage Volume

Indoor storage of alcohol-based hand-rub solution, not in use, quantities greater than 5 gal (18.9 L) in a single smoke compartment or fire compartment or story, whichever is less in area, shall meet the requirements of NFPA 30 as follows .

8.7.3.3.2.1 Maximum Allowable Quantities (MAQs) per Control Area. [30; 9.6]

8.7.3.3.2.2 General Occupancy Limits. [30; 9.6.1]

The maximum allowable quantities (MAQs) of Ignitable (flammable or combustible) liquids allowed in each control area shall not exceed the amounts specified in Table 8.7.3.3.2.1 .

Table 8.7.3.3.2.1 MAQ of Ignitable (Flammable or Combustible) Liquids per Control Area [30; Table 9.6. 1]

<u>Liquid Class(es)#</u>	<u>Quantity</u>		<u>Notes</u>
	<u>gal</u>	<u>L</u>	
<u>IA</u>	<u>30</u>	<u>115</u>	<u>1, 2</u>
<u>IB and IC</u>	<u>120</u>	<u>460</u>	<u>1, 2</u>
<u>IA, IB, IC combined</u>	<u>120</u>	<u>460</u>	<u>1, 2, 3</u>
<u>II</u>	<u>120</u>	<u>460</u>	<u>1, 2</u>
<u>IIIA</u>	<u>330</u>	<u>1,265</u>	<u>1, 2</u>
<u>IIIB</u>	<u>13,200</u>	<u>50,600</u>	<u>1, 2, 4</u>

See Section NFPA 30; 4.2 for details on the classification scheme.

Notes:

- (1) Quantities are permitted to be increased 100 percent where stored in approved liquid

storage cabinets or in safety cans in accordance with the fire code. Where Note 2 also applies, the increase for both notes is permitted to be applied accumulatively.

(2) Quantities are permitted to be increased 100 percent in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13. Where Note 1 also applies, the increase for both notes is permitted to be applied accumulatively.

(3) Containing not more than the maximum allowable quantity per control area of Class IA, Class IB, or Class IC [FP < 100°F (37.8°C)] liquids, individually.

(4) Quantities are not limited in a building equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13 and designed in accordance with the protection criteria contained in Chapter 16 of this code NFPA 30.

Exception: As modified by 8.7.3.3.2.1 and Chapters 10 through 14 of NFPA 30

8.7.3.3.2.3 Special Occupancy Limits. [30; 9.6.2]

8.7.3.3.2.3.1 [30; 9.6.2.1]

For the following occupancies, the MAQs per control area shall not exceed the amounts specified in Table 8.7.3.3.2.3 :

(1) Assembly

(2) Ambulatory health care

(3) Business

(4) Day care

(5) Detention and correctional

(6) Educational

(7) Health care

(8) Mercantile

(9) Residential

-		
Table 8.7.3.3.2.3.1 MAQs — Special Occupancy Limits [30; Table 9.6.2.1]		
	Quantity	
Liquid Class(es)#	gal	L
I and II	10	38
IIIA	60	227
IIIB	120	454

See Section 4.2 of NFPA 30 for details on the classification scheme.

8.7.3.3.3 Dispenser Location

(1) Dispensers shall not be installed in the following locations:

(2) Above an ignition source for a horizontal distance of 1 in. (25 mm) to each side of the ignition source

(3) To the side of an ignition source within a 1 in. (25 mm) horizontal distance from the ignition source

(4) Beneath an ignition source within a 1 in. (25 mm) vertical distance from the ignition source

(5) Dispensers installed directly over carpeted floors shall be permitted only in sprinklered areas of the building.

- (6) ~~The alcohol-based hand-rub solution shall not exceed 95 percent alcohol content by volume.~~

Operation

- (7) Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm).
- (8) In Detention Facilities, dispensers shall only be allowed where permitted by the facility.

8.7.3.3.4 Dispenser Operation, and Testing

Operation of the dispenser shall comply with the following criteria:

- (1) The dispenser shall not release its contents except when the dispenser is activated, either manually or automatically by touch-free activation.
- (2) Any activation of the dispenser shall only occur when an object is placed within 4 in. (100 mm) of the sensing device.
- (3) An object placed within the activation zone and left in place shall not cause more than one activation.
- (4) The dispenser shall not dispense more solution than the amount required for hand hygiene consistent with label instructions.
- (5) The dispenser shall be designed, constructed, and operated in a manner that ensures accidental or malicious activation of the dispensing device is minimized.
- (6) The dispenser shall be tested in accordance with the manufacturer's care and use instructions each time a new refill is installed.

8.7.3.3.5 Spill Containment and Maintenance

Maintenance and Spill Containment of the dispenser shall comply with the following criteria:

- (1) Spill containment for dispensers shall be provided.
- (2) Any alcohol hand rub spilled during a refill process shall be removed following the refill operation.
- (3) Catch basins or spill collection means shall be kept free of accumulated alcohol based hand- rub material and refuse.

Statement of Problem and Substantiation for Public Input

Our current health situation with the latest viral outbreak has led to an increased need to install alcohol based hand sanitizer within many different types of occupancies.

The changes made in this section are suggested to categorize the requirements into individual categories. The sections would not encompass each of the following subjects:

Dispenser Capacity.

Storage Volume.

Dispenser Location.

Dispenser Operation, and Testing.

Spill Containment and Maintenance.

This will allow the AHJ to easily define the overall requirements related to alcohol based hand-rubs. With flashpoints typically around 63°F, this could be classified as IB flammable liquid and with that

certain occupancies, such as business and educational, have special MAQ requirements are much more restrictive in the quantity of liquid allowed. This proposal includes sections that pertain to maximum allowable quantities (MAQ's) which have been extracted from NFPA 30 into this document to allow one centralized location for the information needed to fully understand the requirements related to storage of alcohol-based hand sanitizer for each of the types of occupancies. This is an attempt to make this the all-inclusive section for locating the requirements covering Alcohol Based Hand-Rubs.

Currently Robert Upson is chairing an NFPA 30 task group, and Bruce Johnson is chairing an NFPA 1 task group to address this subject within those standards respectively. So a recommendation should be made to this committee to put forth a committee input and create a task group to review this requirement throughout and ensure correlation with NFPA 1 and NFPA 30 task groups that are already reviewing this.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 324-NFPA 101-2021 [New Section after 11.4.3.6]	
Public Input No. 325-NFPA 101-2021 [Section No. 12.4.6]	
Public Input No. 326-NFPA 101-2021 [Section No. 13.4.6]	
Public Input No. 327-NFPA 101-2021 [Section No. 14.4.5]	
Public Input No. 329-NFPA 101-2021 [Section No. 15.4.5]	
Public Input No. 330-NFPA 101-2021 [Section No. 16.4.5]	
Public Input No. 332-NFPA 101-2021 [Section No. 16.6.4]	
Public Input No. 333-NFPA 101-2021 [Section No. 17.4.5]	
Public Input No. 334-NFPA 101-2021 [Section No. 17.6.4]	
Public Input No. 336-NFPA 101-2021 [Section No. 18.4.4]	
Public Input No. 337-NFPA 101-2021 [Section No. 19.4.4]	
Public Input No. 339-NFPA 101-2021 [Section No. 20.4.4]	
Public Input No. 340-NFPA 101-2021 [Section No. 21.4.4]	
Public Input No. 342-NFPA 101-2021 [Section No. 22.4.7]	
Public Input No. 344-NFPA 101-2021 [Section No. 23.4.7]	
Public Input No. 347-NFPA 101-2021 [Section No. 26.3.2.1]	
Public Input No. 349-NFPA 101-2021 [Section No. 28.4.2]	
Public Input No. 354-NFPA 101-2021 [Section No. 29.4.2]	
Public Input No. 357-NFPA 101-2021 [Section No. 30.4.3]	
Public Input No. 360-NFPA 101-2021 [Section No. 32.2.4]	
Public Input No. 361-NFPA 101-2021 [Section No. 32.3.4.2]	
Public Input No. 363-NFPA 101-2021 [Section No. 33.2.4]	
Public Input No. 364-NFPA 101-2021 [Section No. 33.3.4.2]	
Public Input No. 365-NFPA 101-2021 [Section No. 36.4.6]	
Public Input No. 367-NFPA 101-2021 [Section No. 37.4.6]	
Public Input No. 368-NFPA 101-2021 [Section No. 38.4.4]	
Public Input No. 369-NFPA 101-2021 [Section No. 39.4.4]	
Public Input No. 370-NFPA 101-2021 [Section No. 40.4.3]	
Public Input No. 371-NFPA 101-2021 [Section No. 42.4.3]	

Submitter Information Verification

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Submittal Date: Mon May 31 17:13:18 EDT 2021
Committee: SAF-FIR

Committee Statement

Resolution: [CI-6511-NFPA 101-2021](#)

Statement: The committee has formed a task group to review the requirements for ABHR. The task group is looking to incorporate the changes from PI-316 include the following: dispenser capacity, storage volume, dispenser location, dispenser operation and testing, and spill containment and maintenance.

The committee has formed this CI off the proposed changes in PI-316 instead PI-280 and PI-432, as the proposed changes in these PIs were not as comprehensive as the requirements in PI-316.

The Covid-19 viral outbreak led to an increased use of alcohol based hand sanitizer within many different types of occupancies.

These potential changes will allow AHJs to more easily define the overall requirements related to alcohol based hand-rubs. With flashpoints typically around 63°F, this could be classified as IB flammable liquid and with that certain occupancies, such as business and educational, have special MAQ requirements are much more restrictive in the quantity of liquid allowed. This proposal includes sections that pertain to maximum allowable quantities (MAQ's) which have been extracted from NFPA 30 into this document to allow one centralized location for the information needed to fully understand the requirements related to storage of alcohol-based hand sanitizer for each of the types of occupancies. This is an attempt to make this the all-inclusive section for locating the requirements covering Alcohol Based Hand-Rubs.

Currently there is an NFPA 30 task group and an NFPA 1 task group addressing this subject within those standards respectively. So a recommendation should be made to this committee to put forth a committee input and create a task group to review this requirement throughout and ensure correlation with NFPA 1 and NFPA 30 task groups that are already reviewing this.



Public Input No. 432-NFPA 101-2021 [Section No. 8.7.3.3]

8.7.3.3* Alcohol-Based Hand-Rub Dispensers.

Where permitted by Chapters 11 through 43, alcohol-based hand-rub dispensers shall be permitted provided they meet all of the following criteria:

- (1) The maximum individual dispenser fluid capacity shall be as follows:
 - (2) 0.32 gal (1.2 L) for dispensers in corridors and areas open to corridors
 - (3) 0.53 gal (2.0 L) for dispensers in rooms or suites of rooms separated from corridors
- (4) Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz (0.51 kg) and shall be limited to Level 1 aerosols as defined in NFPA 30B.
- (5) Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm).
- (6) Not more than an aggregate 10 gal (37.8 L) of alcohol-based hand-rub solution or 1135 oz (32.2 kg) of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gal (37.8 L) or 1135 oz (32.2 kg,) shall be installed in use outside of a storage cabinet in a single smoke compartment or fire compartment or story, whichever is less in area. One dispenser complying with 8.7.3.3(1) per room and located in that room shall not be included in the aggregated quantity. a corridor.
- (7) Storage of quantities greater than ~~5~~ 10 gal (~~18.75~~ 37.5 L) in a single smoke compartment or fire compartment or story, ~~whichever is less in area, shall~~ shall be stored in a flammable liquid storage cabinet and meet the requirements of NFPA 30.
- (8) Dispensers shall not be installed in the following locations:
 - (9) Above an ignition source for a horizontal distance of 1

~~in.~~
(a) ft (
~~25~~
(a) 305 mm) to each side of the ignition source
(b) To the side of an ignition source within a 1

~~in.~~
(a) ft (
~~25 mm~~
(a) 305 mm)

~~horizontal~~
(a) horizontal distance from the ignition source
(b) Beneath an ignition source within a 1

~~in.~~
(a) ft (
~~25~~
(a) 305 mm)

~~vertical~~
(a) vertical distance from the ignition source
- (10) Dispensers installed directly over carpeted floors shall be permitted only in sprinklered areas of the building.

- (11) The alcohol-based hand-rub solution shall not exceed 95 percent alcohol content by volume.
- (12) Operation of the dispenser shall comply with the following criteria:
- (13) The dispenser shall not release its contents except when the dispenser is activated, either manually or automatically by touch-free activation.
- (14) Any activation of the dispenser shall only occur when an object is placed within 4 in. (100 mm) of the sensing device.
- (15) An object placed within the activation zone and left in place shall not cause more than one activation.
- (16) The dispenser shall not dispense more solution than the amount required for hand hygiene consistent with label instructions.
- (17) The dispenser shall be designed, constructed, and operated in a manner that ensures accidental or malicious activation of the dispensing device is minimized.
- (18) The dispenser shall be tested in accordance with the manufacturer's care and use instructions each time a new refill is installed.

Additional Proposed Changes

<u>File Name</u>	<u>Description Approved</u>
8.7.3.3_-_DFrable_.docx	8.7.3.3

Statement of Problem and Substantiation for Public Input

The intent of this proposal is to address issues that have arisen during the COVID-19 pandemic concerning the use, storage, or both of alcohol based hand rubs (ABHR) dispensers distributed within occupancies. This proposal revises the current text to be more reasonable during a pandemic since experience has shown the use and storage of ABHR pose a low risk and have become an enforcement issue. The subject proposal is based on current GSA Fire Safety Guidance regarding alcohol-based hand sanitizer use and storage requirements.

It is recommended a task group of members of NFPA 30 and NFPA 101 address the issue of the use, storage, or both of ABHR dispensers distributed within all occupancies.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 439-NFPA 101-2021 [Section No. 38.4.4]</u>	
<u>Public Input No. 444-NFPA 101-2021 [Section No. 39.4.4]</u>	

Submitter Information Verification

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Submission Date: Tue Jun 01 16:01:27 EDT 2021

Committee: SAF-FIR

Committee Statement

Resolution: CI-6511-NFPA 101-2021

Statement: The committee has formed a task group to review the requirements for ABHR. The task group is looking to incorporate the changes from PI-316 include the following: dispenser capacity, storage volume, dispenser location, dispenser operation and testing, and spill containment and maintenance.

The committee has formed this CI off the proposed changes in PI-316 instead PI-280 and PI-432, as the proposed changes in these PIs were not as comprehensive as the requirements in PI-316.

The Covid-19 viral outbreak led to an increased use of alcohol based hand sanitizer within many different types of occupancies.

These potential changes will allow AHJs to more easily define the overall requirements related to alcohol based hand-rubs. With flashpoints typically around 63°F, this could be classified as IB flammable liquid and with that certain occupancies, such as business and educational, have special MAQ requirements are much more restrictive in the quantity of liquid allowed. This proposal includes sections that pertain to maximum allowable quantities (MAQ's) which have been extracted from NFPA 30 into this document to allow one centralized location for the information needed to fully understand the requirements related to storage of alcohol-based hand sanitizer for each of the types of occupancies. This is an attempt to make this the all-inclusive section for locating the requirements covering Alcohol Based Hand-Rubs.

Currently there is an NFPA 30 task group and an NFPA 1 task group addressing this subject within those standards respectively. So a recommendation should be made to this committee to put forth a committee input and create a task group to review this requirement throughout and ensure correlation with NFPA 1 and NFPA 30 task groups that are already reviewing this.

8.7.3.3* Alcohol-Based Hand-Rub Dispensers. Where permitted by Chapters 11 through 43, alcohol-based hand-rub dispensers shall be permitted provided they meet all of the following criteria:

- (1) The maximum individual dispenser fluid capacity shall be as follows:
 - (a) 0.32 gal (1.2 L) for dispensers in corridors and areas open to corridors
 - (b) 0.53 gal (2.0 L) for dispensers in rooms or suites of rooms separated from corridors
- (2) Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz (0.51 kg) and shall be limited to Level 1 aerosols as defined in NFPA 30B.
- (3) Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm).
- (4) Not more than an aggregate 10 gal (37.8 L) of alcohol based hand-rub solution or 1135 oz (32.2 kg) of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gal (37.8 L) or 1135 oz (32.2 kg,) shall be ~~installed in a corridor in use outside of a storage cabinet in a single smoke compartment or fire compartment or story, whichever is less in area. One dispenser complying with 8.7.3.3(1) per room and located in that room shall not be included in the aggregated quantity.~~
- (5) Storage of quantities greater than ~~5 gal (18.9 L)~~ 10 gal (37.8 L) in a single smoke compartment or fire compartment or story, ~~whichever is less in area,~~ shall be stored in flammable liquid storage cabinets and meet the requirements of NFPA 30.
- (6) Dispensers shall not be installed in the following locations:
 - (a) Above an ignition source for a horizontal distance of ~~1 in. (25 mm)~~ 1 foot (305 mm) to each side of the ignition source
 - (b) To the side of an ignition source within a ~~1 in. (25 mm)~~ 1 foot (305 mm) horizontal distance from the ignition source
 - (c) Beneath an ignition source within a ~~1 in. (25 mm)~~ 1 foot (305 mm) vertical distance from the ignition source
- (7) Dispensers installed directly over carpeted floors shall be permitted only in sprinklered areas of the building.



Public Input No. 7-NFPA 101-2020 [New Section after 8.7.5]

8.7.6 Vehicles. Vehicles on display shall comply with [12.7.5.4.1](#) through 12.7.5.4.4.

8.7.6.1 General

8.7.6.1.1 The AHJ shall review plans for location, timeframe, protection measures, where vehicles are being displayed in buildings.

8.7.6.1.2 Fueling or defueling of vehicles shall be prohibited inside the building.

8.7.6.1.3 Vehicles shall not be moved within the building at times during normal operating hours.

8.7.6.2 Gasoline and Diesel Vehicles

8.7.6.2.1 All fuel tank openings shall be locked and sealed in an approved manner to prevent the escape of vapors; fuel tanks shall not contain in excess of one-half their capacity or contain in excess of 10 gal (38 L) of fuel, whichever is less.

8.7.6.2.2 At least one battery cable shall be removed from the batteries used to start the vehicle engine, and the disconnected battery cable shall then be taped.

8.7.6.2.3 Batteries used to power auxiliary equipment shall be permitted to be kept in service.

8.7.6.3 Electric and Hybrid Fueled Vehicles

8.7.6.3.1 The batteries used to power the vehicle shall be permitted to be kept in service.

8.7.6.3.2 Operation of the vehicle shall be controlled by a method approved by the AHJ.

1 8.7.6.3.2 This can be accomplished by removing the keys from the vehicle or ensuring keys are controlled by a supervising individual when operation of the vehicle is demonstrated.

8.7.6.3.3 Fuel used to power the hybrid portion shall comply with 12.7.5.4.2 or 12.7.5.4.4.

8.7.6.4 Hydrogen, LPG/LNG, CNG Fueled Vehicles

8.7.6.4.1 All fuel containers shall be removed from the vehicle.

8.7.6.4.1.1 If a fuel container is needed for display purposes the size of the container shall be approved by the AHJ.

8.7.6.4.1.2 If a fuel container is needed for display purposes, the fuel container shall be fully emptied.

Statement of Problem and Substantiation for Public Input

Currently the requirements to protect vehicles in building are in assembly occupancies. Other occupancies have vehicles on display, e.g. business, and currently there is no way to get to the protection requirements contained in assembly. Consistent with action taken for alcohol hand solutions where general requirement is in core chapter and occupancy chapters can reference if needed. Provisions were updated to address alternate fueled vehicles.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 11-NFPA 101-2020 [Section No. 12.7.5.4]</u>	
<u>Public Input No. 12-NFPA 101-2020 [Section No. 13.7.5.4]</u>	

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Submittal Date: Thu Nov 19 08:06:27 EST 2020
Committee: SAF-FIR

Committee Statement

Resolution: These requirements are not consistent with the requirement of 8.7 or chapter 8 as operational requirements are more fitting within NFPA 1 or an occupancy chapter. Occupancy chapters are not restricted from referencing requirements in another occupancy chapter.



Public Input No. 8-NFPA 101-2020 [New Section after 8.7.5]

8.7.7 Kiosks. Kiosks and similar structures (temporary or permanent) shall meet all of the following requirements:

- (1) (1) Combustible kiosks and similar structures shall be constructed of any of the following materials:
 - (2) (a) Fire-retardant-treated wood complying with the requirements for fire-retardant-impregnated wood in [NFPA 703](#)
 - (3) (b) Light-transmitting plastics complying with the building code
 - (4) (c) Foamed plastics having a maximum heat release rate not greater than 100 kW when tested in accordance with UL 1975, *Fire Tests for Foamed Plastics Used for Decorative Purposes*, or in accordance with [NFPA 289](#) using the 20 kW ignition source
 - (5) (d) Metal composite material (MCM) having a flame spread index not greater than 25 and a smoke developed index not greater than 450 in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or UL 723, *Test for Surface Burning Characteristics of Building Materials*, when tested as an assembly in the maximum thickness intended for use
 - (e) Textiles and films meeting the flame propagation performance criteria contained in [NFPA 701](#)
 - (6) (2) The minimum horizontal separation between kiosks, or groups of kiosks, and other structures shall be 20 ft (6100 mm).
 - (7) (3) Each kiosk, or group of kiosks, or similar structure shall have a maximum area of 300 ft ² (27.8 m ²).

Statement of Problem and Substantiation for Public Input

Currently the requirements to protect kiosks in building are in mercantile occupancies. Other occupancies have kiosks and currently there is no way to get to the protection requirements contained in mercantile. Consistent with action taken for alcohol hand solutions where general requirement is in core chapter and occupancy chapters can reference if needed.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 9-NFPA 101-2020 [Section No. 36.4.4.11]	
Public Input No. 10-NFPA 101-2020 [Section No. 37.4.4.11]	

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Submittal Date: Thu Nov 19 08:15:20 EST 2020

Committee: SAF-FIR

Committee Statement

Resolution: Occupancy chapters are not restricted from referencing requirements in another occupancy chapter. The technical committee is not aware of a driving need to have these requirements outside of the mercantile occupancy chapter.



Public Input No. 151-NFPA 101-2021 [Section No. A.3.3.182]

A.3.3.182 Membrane.

For the purpose of fire protection features, a membrane can consist of materials such as gypsum board panel products, plywood, glass, or fabric. For the purpose of membrane structures, a membrane consists of thin, flexible, water-impervious material capable of being supported by an air pressure of 1½ in. (38 mm) water column.

Statement of Problem and Substantiation for Public Input

The Building Code Technical Committee of the Gypsum Association reviewed references to gypsum products throughout NFPA 101 and identified several instances where incorrect terminology was used. This is one of several Public Inputs being submitted to ensure consistency in the use of gypsum terms throughout all codes, standards, and industry publications.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 145-NFPA 101-2021 [Section No. 8.6.11.3]	
Public Input No. 146-NFPA 101-2021 [Section No. 12.4.7.10.3]	
Public Input No. 148-NFPA 101-2021 [Section No. 13.4.7.10.3]	
Public Input No. 149-NFPA 101-2021 [Section No. 14.3.4.4.1]	
Public Input No. 150-NFPA 101-2021 [Section No. 14.3.4.4.3]	
Public Input No. 155-NFPA 101-2021 [Section No. 13.3.1]	

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Committee: SAF-FIR

Committee Statement

Resolution: [FR-6510-NFPA 101-2021](#)

Statement: The change in terminology will make NFPA 101 consistent with industry terminology.

The Building Code Technical Committee of the Gypsum Association reviewed references to gypsum products throughout NFPA 101 and identified several instances where incorrect terminology was used. This is one of several Public Inputs being submitted to ensure consistency in the use of gypsum terms throughout all codes, standards, and industry publications.

The correlating definition of "Membrane" and associated annex in 5000 belongs to SCM. The TC is requesting that the correlating committee review this annex section in 5000 to correlate any changes.