



NATIONAL FIRE PROTECTION ASSOCIATION

The leading information and knowledge resource on fire, electrical and related hazards

AGENDA

NFPA Building Code/Safety to Life Technical Committee on Fire Protection Features (BLD/SAF-FIR)

NFPA 101/5000 Second Draft Meeting (A2023)

August 1 – 2, 2022
11:00 a.m. – 5:00 p.m. (EDT)

Microsoft Teams Meeting

To join the meeting, please contact kcarey@nfpa.org

1. **Call to order.** Nathan Wittasek.
2. **Introductions.** See committee roster attached.
3. **Chair report.** Nathan Wittasek.
4. **Staff liaison report.** Jennifer Sisco.
5. **Previous meeting minutes.** July 2021 Microsoft Teams Web Conference. See attached.
6. **Review Correlating Committee on Building Code previous meeting minutes.** See attached.
 - a. *Minute item 8.a.* TC scopes.
 - b. *Minute item 10.a.* NPFA 13, 13R, and 13D references. See attached.
 - c. *Minute item 10.b.* Damper definitions.
 - d. *Minute item 10.c.* Draftstop terminology.
 - e. *Minute item 10.d.* Modular rooms.
7. **Review Correlating Committee on Safety to Life previous meeting minutes.** See attached.
 - a. *Minute item 8.a.* TC scope.
 - b. *Minute item 9.b.i.* NPFA 13, 13R, and 13D references. See attached.
 - c. *Minute item 9.b.iii.1.* Fire and smoke damper terminology.
 - d. *Minute item 9.b.iii.2.* Draftstop terminology.
 - e. *Minute item 9.b.iii.3.* ABHR.
8. **NFPA 101 Second Draft.**
 - a. **Referenced publications.** See attached.
 - b. **Extracts.** See attached.
 - c. **Public Comments.** See attached.

- d. **Task group report(s).**
 - i. **ABHR.** Jon Roberts.
 - ii. **Damper Terminology.** Keith Pardoe.
- e. **Presentation(s).**
- f. **Committee Inputs.** See attached.

9. NFPA 5000 Second Draft.

- a. **Referenced publications.** See attached.
- b. **Extracts.** See attached.
- c. **Public Comments.** See attached.
- d. **Task group report(s).**
 - i. **ABHR.** Jon Roberts.
 - ii. **Damper Terminology.** Keith Pardoe.
- e. **Presentation(s).**
- f. **Committee Inputs.** See attached.

10. Other business.

11. Future meetings.

12. Adjournment.

Address List No Phone

06/24/2022

Jen Sisco

SAF-FIR

Fire Protection Features

Safety to Life

Nathan B. Wittasek	SE 08/17/2017	Jen Sisco	08/20/2019
Chair Simpson Gumpertz & Heger (SGH) 1150 S. Olive Street Suite 1600 Los Angeles, CA 90015	SAF-FIR	Secretary (Staff-Nonvoting) National Fire Protection Association One Batterymarch Park Quincy, MA 02169	SAF-FIR
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Principal Ralph Gerdes Consultants, LLC 5510 South East Street Suite E Indianapolis, IN 46227	SAF-FIR	Principal Fort Detrick Fire Department Assistant Fire Chief - Prevention 311 Cheyenne Drive Frederick, MD 21701	SAF-FIR
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Principal American Iron and Steel Institute Northeast Regional Office 45 South Main Street Suite 312 West Hartford, CT 06107-2402	SAF-FIR	Principal AMCA International 30 W. University Drive Arlington Heights, IL 60004	SAF-FIR
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Principal University of Texas at Austin 1 University Station Stop C2600 PO Box 7729 Austin, TX 78713 Alternate: Josh Lambert	SAF-FIR	Principal Simsbury Fire District Deputy Fire Marshal 139 Selden Hill Drive West Hartford, CT 06107 Connecticut State Fire Marshal/Connecticut Fire Marshals Association	SAF-FIR
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Michael Earl Dillon	SE 10/1/1993	Jen Sisco	08/20/2019
Nonvoting Member Dillon Consulting Engineers, Inc. 671 Quincy Avenue Long Beach, CA 90814-1818 TC on Air Conditioning	SAF-FIR	Staff Liaison National Fire Protection Association One Batterymarch Park Quincy, MA 02169	SAF-FIR



NATIONAL FIRE PROTECTION ASSOCIATION

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MINUTES

NFPA Building Code/Safety to Life Technical Committee on Fire Protection Features NFPA 101 and NFPA 5000 First Draft Meeting (A2023)

July 8, 2021

Microsoft Teams Web Conference

- 1. Call to order.** The meeting was called to order by chair N. Wittasek at 11:03 am (ET) on July 8, 2021 via Microsoft Teams.
- 2. Roll call.** The following members were in attendance at the meeting:

NAME	COMPANY
Nathan Wittasek, Chair	Simpson Gumpertz & Heger
Eddie Alday, Principal	Agency for Health Care Administration
John Barrot, Principal	Rizzo Group
Gregory Cahanin, Principal	Cahanin Fire & Code Consulting
David Cook, Principal	Ralph Gerdes Consultants, LLC
Michael Custer, Principal	Fort Detrick Fire Department
Nicholas Dawe, Principal	Cobb County Fire Marshal's Office
John Devlin, Principal	JENSEN HUGHES
Edward Goldhammer, Principal	Hilti
Joseph Graupmann, Principal	Amentum/AECOM Technology
Jack Gump, Principal	Consolidated Nuclear Security
Jeffrey Hugo, Principal	National Fire Sprinkler Association, Inc.
Jonathan Humble, Principal	American Iron and Steel Institute
Michael Ivanovich, Principal	AMCA International
William Koffel, Principal	Koffel Associates, Inc. Rep.: Glazing Industry Code Committee
William McHugh, Jr., Principal	Firestop Contractors International Association
Keith Pardoe, Principal	Pardoe Consulting LLC
Shamim, Rashid-Sumar, Principal	National Ready Mixed Concrete Assn.
Jeffrey Reetz, Principal	Fire and Risk Alliance, LLC
Jon Roberts, Principal	UL LLC
Kurt Roeper, Principal	ASSA ABLOY Rep.: Steel Door Institute
Catherine Stashak, Principal	Office of the Illinois State Fire Marshal
Stephen Tamburello, Principal	Telgian
Raymond O'Brocki, Voting Alternate	American Wood Council
Erin Crowley, Alt. to A. Zivnуска	Code Consultings, Inc.
Thomas Janicak, Alt. to K. Roeper	Ceco Door Products

	Rep.: Steel Door Institute
Josh Lambert, Alt. to W. Jackson	University of Texas at Austin
Lennon Peake, Alt. to W. Koffel	Koffel Associates, Inc. Rep.: Glazing Industry Code Committee
Derek Post, Alt. to J. Reitz	Fire and Risk Alliance, LLC
Jennifer Sisco, Secretary/Staff Liaison	NFPA

The following technical committee principal members were not in attendance (not listed where alternate attended):

NAME	COMPANY
Zainul Abedeen, Principal	WSP Middle East
Jeffrey Dudley, Principal	National Aeronautics & Space Administration
Joseph Higgins, Principal	US Department of the Navy
Ignatius Kapalczynski, Principal	Simsbury Fire District
Jeramie Morris, Principal	Dow, Inc.

The following guests were present:

NAME	COMPANY
Nicholas Resetar	Roetzel and Andress
Rich Walke	Creative Technology Inc.
Thomas Zaremba	Roetzel and Andress

3. **Chair report.** The chair welcomed all committee members, thanked them for their participation, and outlined the rules and expectations for the meeting.
4. **Staff liaison report.** Staff provided an overview of the first draft meeting process and reference publication update process.
5. **Previous meeting minutes.** The June 13, 2019 second draft meeting minutes were approved as submitted.
6. **Correlating committee direction for 2024 editions.** The correlating committee pre-first draft meeting minutes were reviewed. Pursuant to item 7a TC Scope of the minutes, the committee passed a motion stating that the committee had majority consensus that the TC scope is appropriate, however, the alcohol-based hand-rub provisions are outside of the TC scope and is requesting that the correlating committee review these provisions to determine the most appropriate committee to have responsibility for these requirements [see 101 (2021), 8.7.3.3 and 5000 (2021), 8.15.4].
7. **Public Input (PI) review.** The public inputs for NFPA 101 and NFPA 5000 were reviewed, and first revisions were made as necessary. The following task groups were formed during the review of public inputs.
 - a. **ABHR**– A task group was formed to review requirements for alcohol-based hand-rub dispensers including dispenser capacity, storage volume, dispenser location, dispenser operation and testing, and spill containment and maintenance (see 101-CI-6511 and 5000-CI-8005) and provide the technical committee a report at the second draft meeting. The task group is chaired by J. Roberts and members include J. Lambert, W. Koffel, S. Custer, and S. Tamburello.

- b. Damper Terminology – A task group was formed to review the terminology used for dampers throughout NFPA 101 and NFPA 5000 against defined terms (see 101-CI-6517 and 5000-CI-8006). The task group will submit public comments for all recommended changes. The task group is chaired by K. Pardoe and members include L. Peake, W. Koffel, J. Roberts, and W. McHugh.

8. Staff-identified issues.

- a. Podium or pedestal construction. Staff notified the technical committee about a potential gap in requirements in NFPA 101 relating to podium or pedestal type constructed buildings. A committee input was drafted.
- b. Draftstop terminology. Staff notified the technical committee about inconsistencies in the use of draftstop terminology in NFPA 101 and NFPA 5000. First revisions were made as necessary.

9. Other business. None.

10. Future meetings. Second draft meeting will take place in Summer 2022.

11. Adjournment. The meeting was adjourned at 5:00 pm (ET) on July 8, 2021.



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MINUTES

NFPA Correlating Committee on Building Code (BLD-AAC) NFPA 5000 First Draft Meeting (A2023)

January 19, 2022
11:00 a.m. – 1:30 p.m. (ET)

Microsoft Teams Meeting

1. **Call to order.** P. Willse, chair, called the meeting to order at 11:05 on January 19, 2022.
2. **Introductions.** NFPA staff took attendance.
3. **Chair report.** P. Willse welcomed attendees and provided an overview of the meeting.
4. **Staff liaison report.** T. Vecchiarelli provided an overview of the meeting procedures.
5. **Previous meeting minutes.** The minutes from March 2021 Web/Teleconference meeting were approved without revision.
6. **Liaison reports.**
 - a. Sprinkler Project. W. Koffel provided a report on the sprinkler project. NFPA 13's First Draft meetings will be held this summer and no correlation issues were reported.
 - b. Fire Alarm Project: W. Koffel presented on behalf of S. Clary. NFPA 72's First Draft meetings will be held this summer. Cyber security was noted as a significant topic for the next cycle.
7. **Correlating Committee task group reports.**
 - a. Exterior Walls. K. Carr reported on behalf of the task group. The task group submitted several PIs which resulted in multiple FRs during First Draft. SCM has asked the task group to continue their work evaluating some of the PIs.
 - b. Means of escape (grab bars). C. Carson provided a report. No recent action to report. J. Rickard will take over chairing the task group.
 - c. Floor area terminology. No report. The task group has been discharged with thanks.
 - d. Sprinkler supervision task group. J. Hugo provided a report. Nine PIs were submitted by the task group and subsequent FRs were developed by the TCs. The task group will continue their work into Second Draft.
8. **Subject areas for TC focus during 2024 edition revision cycle.**
 - a. TC Scopes. Scope change requests from BLD-END, BLD-FIR and BLD-HEA were reviewed. The NFPA 101 CC established a task group to review scope changes to the SAF

TCs. Since there is an overlap in the requests, no changes are recommended until the SAF task group completes their work and the changes can be correlated between the two documents.

- b. Actions from the TCs were reviewed related to integrated system testing, CO alarms, flammable and combustible liquid terminology, and disability terminology. Various CNs and FCRs were developed on some of these topics.

9. NFPA 5000 First Draft.

- a. **Correlating Review.** The Correlating Committee reviewed the work of the Technical Committees and developed Correlating Notes and First Correlating Revisions as necessary. These will be available in the First Draft Report at www.nfpa.org/5000.

10. Technical Committee Items. T. Vecchiarelli provided a report on various items reported in the TC's meeting minutes. Many of the items were informational in nature and TCs are encouraged to review the January 19, 2022 agenda for a summary of those items. The following items were discussed and are directed to the TCs:

- a. All TCs: NFPA 13, 13R and 13D references. There is inconsistency in the way NFPA 5000 references NFPA 13, 13R, 13D and Chapter 55. The TCs are requested to review the supplemental meeting minute document (to be provided at a later date) and make changes as necessary to create consistency throughout the document. The supplemental document will be posted.
- b. All TCs: Per the request in CI-8006, all TCs are requested to review recommendations from the damper definitions/terminology task group during the Second Draft.
- c. All TCs: Per the request of BLD-FIR, all TCs are requested to review the use of "draft stop" and change it to "draftstop" as needed for consistency with Chapter 3.
- d. All TCs: A joint task group was established to review the requirements for modular rooms and sleep pods.
- e. BLD-BSY: No objections were discussed related to the proposed withdrawal of NFPA 900.
- f. BLD-INT: No objections were discussed related to inflatable amusement devices or modular rooms/sleep pods being addressed within NFPA 5000.
- g. BSF: Per the request of BLD-END, BLD-BSF is requested to add new definitions of CO detectors and alarms.

11. Other Business. No other business was discussed.

12. Future meetings. The next committee meeting will be held in the summer of 2022. A meeting notification will be posted at www.nfpa.org/5000next when the meeting is scheduled. Discussion was heard on returning to in-person meetings.

13. Adjournment. The meeting was adjourned at 1:30 p.m. ET on January 19, 2022.

Attendees

Committee Members:

✓	Willse, Peter	Chair	Portland Fire Marshal's Office
✓	Wooldridge, Jerry	Secretary	Reedy Creek Improvement District
✓	Bellamy, Tracey	Principal	American Fire Sprinkler Association
✓	Frable, David	Principal	US General Services Administration
✓	Hansen, Raymond	Principal	US Department of the Air Force
✓	Hopper, Howard	Principal	UL LLC
✓	Hugo, Jeffrey	Principal	National Fire Sprinkler Association
	Humble, Jonathan	Principal	American Iron and Steel Institute
	Jones, Gerald	Principal	Building Seismic Safety Council/Code
✓	O'Connor, Daniel	Principal	American Hotel & Lodging Association
✓	Quiter, James	Principal	Retired-Arup
✓	Roberts, Richard	Principal	National Electrical Manufacturers
✓	Shah, Faimeen	Principal	Vortex Fire Engineering Consultancy
✓	Vinci, Leon	Principal	American Public Health Association
✓	Denhardt, John	Alternate	American Fire Sprinkler Association
	Keays, Jack	Alternate	Vortex Fire Consulting Inc.
✓	Laramée, Scott	Alternate	American Hotel & Lodging Association
✓	Manley, Bonnie	Alternate	American Iron and Steel Institute
✓	Pauls, Jake	Alternate	American Public Health Association
	Simone, Joseph	Alternate	US Department of the Navy
	Tubbs, Jeffrey	Alternate	Arup
✓	Chrisman, Mark	Nonvoting Member	TC on Building Construction
✓	Collins, David	Nonvoting Member	TC on Means of Egress
	Dawe, Nicholas	Nonvoting Member	TC on Interior Finish & Contents
✓	Greene, Joshua	Nonvoting Member	TC on Building Systems
✓	Grill, Raymond	Nonvoting Member	TC on Building Service and Fire Protection Equipment
✓	Jelenewicz, Chris	Nonvoting Member	TC on Fundamentals
	Kaplan, Moriel	Nonvoting Member	TC on Structures, Construction, and Materials

✓	Koffel, William	Nonvoting Member	TC on Health Care Occupancies
✓	Lambert, Josh	Nonvoting Member	TC on Assembly Occupancies
	Lathrop, James	Nonvoting Member	TC on Residential Occupancies
✓	Mertens, Matthew	Nonvoting Member	TC on Educational and Day-Care Occupancies
✓	Murdock, Amy	Nonvoting Member	TC on Mercantile & Business Occupancies
✓	Rickard, John	Nonvoting Member	TC on Board & Care Facilities
	Sheldon, Steven	Nonvoting Member	TC on Industrial, Storage, and Miscellaneous Occupancies
✓	Wittasek, Nathan	Nonvoting Member	TC on Fire Protection Features
✓	Vecchiarelli, Tracy	Staff Liaison	National Fire Protection Association

Guests:

Kevin Carr, NFPA
Wayne Chip Carson, Carson Associates (SAF-AAC)
Stephen Ganoe, NFPA
Gregory Harrington, NFPA
Robert James, UL
Camille Levy, NFPA
Maria Marks, Siemens Industry, Inc. (SAF-AAC)
Baran Ozden, NFPA
Michael Schmeida, Gypsum Associates
Janna Shapiro, Code Red Consultants
Jennifer Sisco, NFPA

Total number in attendance: 39

NFPA 5000 REFERENCES TO NFPA 13/13D/13R

Items highlighted in green: Retain reference to NFPA 13/13D/13R as these are not requirements for sprinkler systems to be installed in accordance with the applicable standard.

Items highlighted in yellow: Revise standard reference to applicable item in 55.3.1.1 as these are requirements for sprinkler systems to be installed in accordance with the applicable standard.

Items highlighted in pink: Revert reference from 55.3.1.1(X) back to NFPA 13/13D/13R as these are not requirements for sprinkler systems to be installed in accordance with the applicable standard.

8.12.5.2

Where permitted by Chapters 15 through 31 and 33 through 34, unenclosed vertical openings created by convenience stairways shall be permitted as follows:

- (1) The convenience stair openings shall not serve as required means of egress.
- (2) The building shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 55.3.
- (3) *The convenience stair openings shall be protected in accordance with the method detailed for the protection of vertical openings in **NFPA 13**.
- (4) The area of the floor opening shall not exceed twice the horizontal projected area of the stairway.
- (5) Such openings shall not connect more than four contiguous stories unless otherwise permitted by Chapters 15 through 31 and 33 through 34.

8.12.6.2

Any escalators and moving walks not constituting an exit, or serving as a required means of egress, shall have their floor openings enclosed or protected as required for other vertical openings, unless permitted by the following:

- (1) The requirement of 8.12.6.2 shall not apply to escalators in large, open areas such as atriums and enclosed shopping malls.
- (2) *In buildings protected throughout by an approved automatic sprinkler system in accordance with **55.3.1.1(1) or 55.3.1.1(2)**, escalators or moving walk openings shall be permitted to be protected in accordance with the method detailed in **NFPA 13** or in accordance with a method approved by the authority having jurisdiction and the opening shall not connect more than four contiguous stories unless otherwise permitted by Chapters 15 through 31 and 33 through 34.
- (3) Escalators shall be permitted to be protected in accordance with 8.12.6.3.

8.12.6.3

In buildings protected throughout by an approved automatic sprinkler system in accordance with **55.3.1.1(1) or 55.3.1.1(2)**, escalators or moving walk openings shall be permitted to be protected by rolling steel shutters appropriate for the fire resistance rating of the vertical opening protected, and the following criteria shall be met:

- (1) The shutters shall close automatically and independently of each other upon smoke detection and sprinkler operation.
- (2) There shall be a manual means of operating and testing the operation of the shutter.
- (3) The shutters shall be operated not less than once a week to ensure that they remain in proper operating condition.
- (4) The shutters shall operate at a speed not to exceed 30 ft/min (0.15 m/s) and shall be equipped with a sensitive leading edge.
- (5) The leading edge shall arrest the progress of a moving shutter and cause it to retract a distance of approximately 6 in. (150 mm) upon the application of a force not exceeding 20 lbf (90 N) applied to the surface of the leading edge.
- (6) The shutter, following the retraction specified in 8.12.6.3(5), shall continue to close.
- (7) The operating mechanism for the rolling shutter shall be provided with standby power complying with the provisions of Chapter 52.

8.14.1.2

The requirements of 8.14.1.1 shall not apply where any of the following conditions are met:

- (1) Where the space is protected throughout by an approved automatic sprinkler system in accordance with 55.3.1.1(1)
- (2) *Where concealed spaces serve as plenums



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MINUTES

NFPA Correlating Committee on Safety to Life (SAF-AAC) NFPA 101 First Draft Meeting (A2023)

January 18, 2022

Microsoft Teams Meeting

1. **Call to order** – The meeting was called to order by Chair Wayne “Chip” Carson on January 18, 2022 at 11:01 a.m. (EST).
2. **Introductions** – Staff Liaison/Secretary Gregory Harrington called the roll of committee members and guests (pgs. 5-6).
3. **Chair report** – Chair Carson thanked the members and guests for attending virtually and expressed his hope that the committee might be able to meet in person in the near future.
4. **Staff liaison report** – G. Harrington. Staff reviewed the available correlating committee first draft meeting actions as provided in the agenda and reminded the committee of the process being followed for updating referenced publications in NFPA 101 as described in the previous meeting minutes.
5. **Previous meeting minutes.** The March 25, 2021 remote meeting minutes were approved as submitted.
6. **Liaison reports.**
 - i. Sprinkler Project – W. Koffel. The sprinkler standards are currently open for public input with a PI closing date of June 1, 2022. There are no apparent subjects that will create correlation issues with NFPA 101. It was requested that the NFPA 101/5000 staff coordinate with the sprinkler project staff to avoid overlapping meeting dates between the NFPA 13/13R/13D first draft meetings and the NFPA 101/5000 second draft meetings. Staff indicated that every effort will be made to avoid conflicts but there are numerous committees that need to meet within a tight timeframe and staffing and logistical considerations that will likely make it challenging to completely avoid conflicts.
 - ii. Fire Alarm Project – S. Clary. NFPA 72 is currently open for public input with a PI closing date of June 1, 2022. Cybersecurity is a major subject that was introduced as an annex in the 2022 edition and will likely be considered for inclusion in the body of the code for the 2025 edition. Two new technical committee chairs have been appointed: David Lowrey (Fundamentals of Fire Alarm and Signaling Systems) and Andrew Poole (Notification Appliances).
7. **Correlating committee task groups**
 - a. Means of escape (grab bars) – W. Carson. The task group met once since the last report and significant progress has not been made. John Rickard has accepted his appointment as

the new task group chair. A web meeting/teleconference will be scheduled in the coming weeks. The task group was retained on the agenda.

- b. Floor area terminology – (chair vacant). No report. The task group was discharged with thanks.
- c. Sprinkler system supervision – J. Hugo. Numerous public inputs were submitted for the first draft. Some, but not all, were incorporated as first revisions. Public comments will be submitted on behalf of the task group for the second draft stage and a report will be given at the CC second draft meeting. The task group was retained on the agenda.

8. Subject areas for TC focus during 2024 edition revision cycle

- a. TC scopes. The committee reviewed the scope revisions proposed by each technical committee as attached to the meeting agenda. Discussion centered on whether property protection should be included in the SAF-XXX technical committee scopes. It was determined that all of the NFPA 101 TC scopes should be reviewed as a group and the NFPA 5000 BLD-XXX scopes should be reviewed concurrently for consistency. A task group was appointed to review the NFPA 101 and NFPA 5000 TC scopes with the recommended revisions to determine the applicability of property protection for each, to evaluate what constitutes property within the context of each scope, and the inclusion of alcohol based hand rub requirements and special hazard protection within the scope of the TC on Fire Protection Features (SAF-FIR, see item 9.b.iii.3). Task group roster: E. Rosenbaum (TG chair), D. Collins, H. Hopper, W. Koffel, M. Marks, and M. Mertens.
- b. Integrated system testing. Each technical committee reviewed its requirements and determined no action was needed.
- c. Carbon monoxide detection/alarms. Current requirements and the need for any additional requirements were reviewed by the occupancy technical committees with actions taken as indicated in the attached table (pg. 7). See also item 9.b.ii.
- d. Coordinate occupant load factor tables. Each technical committee reviewed its occupant load factors in NFPA 101, Table 7.3.1.2, and determined no action was needed.
- e. Valet trash (SAF-RES). The TC on Residential Occupancies developed first revisions to regulate valet trash services in new and existing apartment buildings.
- f. Flammable and combustible liquid terminology. Each technical committee reviewed its use of the term ‘flammable and combustible liquids’ and developed first revisions as needed for consistency with NFPA 30.
- g. Disability terminology. Each technical committee reviewed public inputs submitted by the NFPA Disability Access Review Advisory Committee (DARAC) and updated language accordingly via first revisions as needed.

9. NFPA 101 First Draft

- a. Correlating committee review/actions on First Draft Report as prepared by the SAF-XXX technical committees. The correlating committee developed correlating notes (CNs) and first correlating revisions (FCRs) based on the review of TC responses to public inputs, TC committee inputs, TC first revisions, and TC ballot final reports. See the first draft report for the correlating committee actions.

b. Technical committee items.

- i. The CC reviewed the actions by various TCs on Global PI-390, assigned to the TC on Building Service and Fire Protection Equipment (SAF-BSF), at the request of the TC on Board and Care Facilities (SAF-BCF, agenda item 9.b.i) and the TC on Residential Occupancies (SAF-RES, agenda item 9.b.vii). TCs are not referencing NFPA 13/13R/13D and 9.7.1.1(1), 9.7.1.1(2), and 9.7.1.1(3) consistently throughout the Code. A suggested approach developed by staff is attached (**pg. 8**). The SAF-XXX TCs are directed to review the attachment and incorporate the suggestions via second revisions if deemed appropriate. The CC will review the TC actions at its second draft meeting and determine the need for any additional revisions for correlation.
- ii. The CC considered the request of the TC on Educational Occupancies (SAF-END) to create definitions for carbon monoxide detectors and alarms in NFPA 101. The addition of new definitions was determined to be technical rather than correlative and must be initiated by a technical committee. The TC on Building Service and Fire Protection Equipment is directed to consider extracting the appropriate definitions from NFPA 72 during the next revision cycle if appropriate for NFPA 101.
- iii. The CC considered the following requests by the TC on Fire Protection Features (SAF-FIR):
 1. Direct TCs to review task group recommendations on smoke and fire damper terminology, to be provided for the second draft meetings – so directed.
 2. Direct TCs to review the use of ‘draft stop’ and change to ‘draftstop’ as needed for consistency with Ch. 3 (28.3.5.4, 29.3.5.4, 30.3.5.4, 31.3.5.5, 36.3.1, 37.3.1) – so directed (SAF-RES and SAF-MER).
 3. Review whether Ch. 8 ABHR requirements are within its scope – see item 8.a for action on TC scopes.
- iv. The CC reviewed the following requests by the TC on Fundamentals of Safety to Life (SAF-FUN):
 1. Review to determine which TC should own definition of ‘fuel-burning appliance’ (FR-6554) and direct applicable TC to consider adding annex note from 720-2015: “Fuel-burning appliances include, but are not limited to, devices used for cooking, heating, lighting, or decorative purposes. Examples are wood stoves, portable space heaters, ranges, furnaces, water heaters, clothes dryers, gas refrigerators, gas lamps, and fuel-burning fireplaces.” The CC determined the definition should remain with SAF-FUN since the term is used by multiple technical committees in their carbon monoxide detection requirements. The CC recommends SAF-FUN consider adding the cited annex note during the second draft stage.
 2. Review proposed definitions of ‘modular room’ (FR-6555) and ‘sleep pod’ (FR-6556) for TC ownership and assign as appropriate. The CC chair intends to appoint a task group after consulting with the TC chairs to review the proposed modular room and sleep pod requirements for their applicability and consistency across the Code. The task group chair, roster,

and specific charge and deliverables are to be determined. See also item 9.b.vi.3 for related request by the TC on Mercantile and Business Occupancies (SAF-MER).

- v. The CC considered the request by the TC on Industrial and Storage Occupancies (SAF-IND) to explain why Ch. 41 is reserved for a future chapter on existing industrial occupancies, but Ch. 43 is not reserved for a future chapter on existing storage occupancies. The CC is not aware of significant confusion by users resulting from Ch. 43 not being reserved. Staff recalled that Ch. 43 was added to the end of the Code body when it was developed for the 2006 edition rather than grouping it with the other core chapters as a new Ch. 12, as that would have resulted in renumbering all the occupancy chapters, which had just been renumbered in the 2000 edition. It was noted if a new chapter is ever developed for existing storage occupancies in the future, it could be numbered as Ch. 43 and the current Ch. 43 could be renumbered as Ch. 44.
- vi. The CC reviewed the following requests by the TC on Mercantile and Business Occupancies (SAF-MER):
 - 1. Alert the TC on Assembly Occupancies (SAF-AXM) of potential revisions to egress requirements for assembly occupancies in mall structures (CI-6604) – SAF-AXM is hereby alerted.
 - 2. Direct the TC on Building Service and Fire Protection Equipment (SAF-BSF) to review proposed 36.4.4.12.2 (FR-6632) and 37.4.4.12.2 (FR-6633) for consistency with Ch. 9 fire alarm and sprinkler requirements – SAF-BSF is so directed.
 - 3. Appoint a multicommittee task group to review the proposed modular room and sleep pod requirements – see item 9.b.iv.2 for the pending appointment of a task group.
- vii. The CC reviewed the request by the TC on Residential Occupancies (SAF-RES) for the CC to provide direction to the TCs on PI-390 as it relates to referencing Sec. 9.7 in lieu of direct references to NFPA 13, NFPA 13R, and NFPA 13D – see item 9.b.i.

10. Other business. There was no other business.

11. Future meetings. The NFPA 101 second draft technical committee meetings will be held in July-August 2022. The NFPA 101 second draft correlating committee meeting will likely be held in December 2022. Staff reported the return to in-person meetings is under discussion and a decision on the upcoming meetings will be made in the coming weeks.

12. Adjournment. The meeting adjourned at 3:37 p.m. (EST).

Attendees:**Committee Members:**

X	Carson, Wayne “Chip”	Chair	Carson Associates, Inc.
X	Harrington, Gregory	Secretary (Staff-	National Fire Protection Association
X	Bush, Kenneth	Principal	Maryland State Fire Marshals Office
X	Gilyeat, Sharon	Principal	Koffel Associates, Inc.
X	Harbuck, Stanley	Principal	American Public Health Association
X	Hopper, Howard	Principal	UL LLC
X	Hugo, Jeffrey	Principal	National Fire Sprinkler Association
X	Lucas, Jeffrey	Principal	International Fire Marshals Association
X	Quiter, James	Principal	Retired-Arup
X	Reiswig, Rodger	Principal	National Electrical Manufacturers
X	Rosenbaum, Eric	Principal	American Health Care Association
	Taluba, Jon	Principal	Greenwood Sales
X	James, Robert	Alternate	UL LLC
X	Marks, Maria	Alternate	National Electrical Manufacturers
X	Pauls, Jake	Alternate	American Public Health Association
	Tubbs, Jeffrey	Alternate	Arup
X	Collins, David	Nonvoting Member	TC on Means of Egress
	Dawe, Nicholas	Nonvoting Member	TC on Interior Finish & Contents
X	Grill, Raymond	Nonvoting Member	TC on Building Service & Fire Protection Equipment
X	Jelenewicz, Chris	Nonvoting Member	TC on Fundamentals
X	Koffel, William	Nonvoting Member	TC on Health Care Occupancies
X	Lambert, Josh	Nonvoting Member	TC on Assembly Occupancies
X	Larrimer, Peter	Nonvoting Member	TC on Alternative Approaches to Life Safety
	Lathrop, James	Nonvoting Member	TC on Residential Occupancies
X	Mertens, Matthew	Nonvoting Member	TC on Educational & Day-Care Occupancies
X	Murdock, Amy	Nonvoting Member	TC on Mercantile & Business Occupancies
X	Rickard, John	Nonvoting Member	TC on Board & Care Facilities
X	Sheldon, Steven	Nonvoting Member	TC on Industrial, Storage, and Miscellaneous Occupancies

X	Wittasek, Nathan	Nonvoting Member	TC on Fire Protection Features
X	Clary, Shane	Alt. to Nonvoting	Signaling Systems Correlating Committee

Guests:

Tracey Bellamy – Telgian (BLD-AAC)
Dorn Bellow – Lee County School District
Kevin Carr - NFPA
John Denhardt – AFSA (BLD-AAC)
David Frable – US General Services Administration (BLD-AAC)
Stephen Ganoë - NFPA
Marvin Garriss – Synergy Consortium Group LLC
Scott Laramée – Aon
Camille Levy - NFPA
Joshua McDonald – AFSA
Baran Ozden - NFPA
Richard Roberts – Honeywell Fire Safety (BLD-AAC)
Michael Schmeida – Gypsum Association
Janna Shapiro – Code Red Consultants, LLC
Puneet Sharma – Jensen Hughes
Jen Sisco - NFPA
Tracy Vecchiarelli - NFPA
Leon Vinci – Health Promotion Consultants (BLD-AAC)
Peter Willse – Portland Fire Marshal’s Office (BLD-AAC)
Jerry Wooldridge – Reedy Creek Improvement District (BLD-AAC)

Total number in attendance: 46

NFPA 101 OCCUPANCY COMMITTEE ACTIONS ON CARBON MONOXIDE DETECTION

TECHNICAL COMMITTEE	ACTION
ASSEMBLY	Resolved PI-211 for existing: "The proposed revision is too onerous to be required retroactively in all existing assembly occupancies lacking additional substantiating data."
BOARD AND CARE	Task group appointed to provide recommendations for existing
DETENTION AND CORRECTIONAL	FR-6662 (New) FR-6663 (Existing)
EDUCATIONAL AND DAY CARE	FR-6747 (Existing Educational) FR-6680 (New Day Care) FR-6681 (Existing Day Care)
HEALTH CARE	CI-6689 (New Health Care) CI-6690 (Existing Health Care) Task group appointed
INDUSTRIAL AND STORAGE	No Action
MERCANTILE AND BUSINESS	No Action
RESIDENTIAL	FR-6640 (Existing One- and Two Family) FR-6646 (Existing Lodging or Rooming) FR-6660 (Existing Apartment Buildings)

NFPA 101 REFERENCES TO NFPA 13/13D/13R

Items highlighted in green: Retain reference to NFPA 13/13D/13R as these are not requirements for sprinkler systems to be installed in accordance with the applicable standard.

Items highlighted in yellow: Revise standard reference to applicable item in 9.7.1.1 as these are requirements for sprinkler systems to be installed in accordance with the applicable standard.

Items highlighted in pink: Revert reference from 9.7.1.1(X) back to NFPA 13/13D/13R as these are not requirements for sprinkler systems to be installed in accordance with the applicable standard.

7.14.2.3

The absence of sprinklers in the normally unoccupied building service equipment support area, as permitted by ~~9.7.1.1(1)~~NFPA 13, shall not cause a building to be classified as nonsprinklered for purposes of applying the provisions of 7.14.2.2.

7.14.3.3

The absence of sprinklers in the normally unoccupied building service equipment support area, as permitted by ~~9.7.1.1(1)~~NFPA 13, shall not cause a building to be classified as nonsprinklered for purposes of applying the provisions of 7.14.3.2.

7.14.5.3

The absence of sprinklers in the normally unoccupied building service equipment support area, as permitted by ~~9.7.1.1(1)~~NFPA 13, shall not cause a building to be classified as nonsprinklered for purposes of applying the provisions of 7.14.5.2.

8.6.9.2

Where permitted by Chapters [11](#) through [43](#), unenclosed vertical openings created by convenience stairways shall comply with all of the following:

- (1) The convenience stair openings shall not serve as required means of egress.
- (2) The building shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section [9.7](#).
- (3)* The convenience stair openings shall be protected in accordance with the method detailed for the protection of vertical openings in NFPA 13.
- (4) In new construction, the area of the floor opening shall not exceed twice the horizontal projected area of the stairway.
- (5) For new construction, such openings shall not connect more than four contiguous stories, unless otherwise permitted by Chapters [11](#) through [43](#).

8.6.9.7

Any escalators and moving walks not constituting an exit shall have their floor openings enclosed or protected as required for other vertical openings, unless otherwise permitted by one of the following:

(1) The requirement of [8.6.9.7](#) shall not apply to escalators in large open areas, such as atriums and enclosed shopping malls.

(2)* In existing buildings protected throughout by an approved automatic sprinkler system in accordance with Section [9.7](#), escalator and moving walk openings shall be permitted to be protected in accordance with the method detailed in **NFPA 13** or in accordance with a method approved by the authority having jurisdiction.

(3) In new buildings protected throughout by an approved automatic sprinkler system in accordance with Section [9.7](#), escalator and moving walk openings shall be permitted to be protected in accordance with the method detailed in **NFPA 13** or in accordance with a method approved by the authority having jurisdiction, and the opening shall not connect more than four contiguous stories unless otherwise permitted by Chapters [11](#) through [43](#).

(4) In buildings protected throughout by an approved automatic sprinkler system in accordance with Section [9.7](#), escalator and moving walk openings shall be permitted to be protected by rolling steel shutters appropriate for the fire resistance rating of the vertical opening and complying with all of the following:

(a) The shutters shall close automatically and independently of each other upon smoke detection and sprinkler operation.

(b) A manual means of operating and testing the operation of the shutters shall be provided.

(c) The shutters shall be operated not less than once a week to ensure that they remain in proper operating condition.

(d) The shutters shall operate at a speed not to exceed 30 ft/min (0.15 m/s) and shall be equipped with a sensitive leading edge.

(e) The leading edge shall arrest the progress of a moving shutter and cause it to retract a distance of approximately 6 in. (150 mm) upon the application of a force not exceeding 20 lbf (90 N) applied to the surface of the leading edge.

(f) The shutter, following the retraction specified in [8.6.9.7\(4\)\(e\)](#), shall continue to close.

(g) The operating mechanism for the rolling shutter shall be provided with standby power complying with the provisions of *NFPA70*.

9.7.1.1*

Each automatic sprinkler system required by another section of this *Code* shall be in accordance with one of the following:

- (1) NFPA 13
- (2) NFPA 13D
- (3) NFPA 13R

9.7.1.3

Sprinkler piping serving hazardous areas as described in 9.7.1.2 shall be provided with an indicating shutoff valve, supervised in accordance with 9.7.1.1(4)NFPA 13 or 9.7.2, and installed in an accessible, visible location between the sprinklers and the connection to the domestic water supply.

9.10.2

Where standpipe and hose systems are installed in combination with automatic sprinkler systems, installation shall be in accordance with the appropriate provisions established by 9.7.1.1(4)NFPA 13 and NFPA 14.

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.

12.7.5.3.7.1

The requirements of 12.7.5.3.7 shall not apply where otherwise permitted by the following:

- (1) Ceilings that are constructed of open grate design or listed dropout ceilings in accordance with NFPA 13 shall not be considered ceilings within the context of 12.7.5.3.7.
- (2) Vehicles, boats, and similar exhibited products having over 100 ft² (9.3 m²) of roofed area shall be provided with smoke detectors acceptable to the authority having jurisdiction.
- (3)* The requirement of 12.7.5.3.7(2) shall not apply where fire protection of multilevel exhibit booths is consistent with the criteria developed through a life safety evaluation of the exhibition hall in accordance with 12.4.2, subject to approval of the authority having jurisdiction.

13.7.5.3.7.1

The requirements of [13.7.5.3.7](#) shall not apply where otherwise permitted by the following:

- (1) Ceilings that are constructed of open grate design or listed dropout ceilings in accordance with **NFPA 13** shall not be considered ceilings within the context of [13.7.5.3.7](#).
- (2) Vehicles, boats, and similar exhibited products having over 100 ft² (9.3 m²) of roofed area shall be provided with smoke detectors acceptable to the authority having jurisdiction.
- (3)* The requirement of [13.7.5.3.7\(2\)](#) shall not apply where fire protection of multilevel exhibit booths is consistent with the criteria developed through a life safety evaluation of the exhibition hall in accordance with [13.4.2](#), subject to approval of the authority having jurisdiction.

18.3.5.10*

Sprinklers shall not be required in clothes closets of patient sleeping rooms in hospitals where the area of the closet does not exceed 6 ft² (0.55 m²), provided that the distance from the sprinkler in the patient sleeping room to the back wall of the closet does not exceed the maximum distance permitted by **NFPA 13**.

18.3.5.11*

Sprinklers in areas where cubicle curtains are installed shall be in accordance with **NFPA 13**.

18.3.5.10*

Sprinklers shall not be required in clothes closets of patient sleeping rooms in hospitals where the area of the closet does not exceed 6 ft² (0.55 m²), provided that the distance from the sprinkler in the patient sleeping room to the back wall of the closet does not exceed the maximum distance permitted by **NFPA 13**.

18.3.5.11*

Sprinklers in areas where cubicle curtains are installed shall be in accordance with **NFPA 13**.

24.3.5.3

Automatic sprinkler systems in accordance with **NFPA 13** [9.7.1.1\(1\)](#), [NFPA 13](#) [9.7.1.1\(2\)](#), or [NFPA 13](#) [9.7.1.1\(3\)](#) shall be permitted.

26.3.6.2.2

In buildings four or fewer stories in height and not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with [NFPA 13](#) [9.7.1.1\(3\)](#) shall be permitted.

26.3.6.2.3*

Systems in accordance with ~~NFPA 13D~~ [9.7.1.1\(2\)](#) shall be permitted where all of the following requirements are met:

- (1) The lodging or rooming house shall not be part of a mixed occupancy.
- (2) Entrance foyers shall be sprinklered.
- (3) Lodging or rooming houses with sleeping accommodations for more than eight occupants shall be treated as two-family dwellings with regard to the water supply.

26.3.6.2.4

In buildings sprinklered in accordance with ~~NFPA 139.7.1.1(1)~~ closets less than 12 ft² (1.1 m²) in area in individual dwelling units shall not be required to be sprinklered.

26.3.6.2.5

In buildings sprinklered in accordance with ~~NFPA 139.7.1.1(1)~~ closets that contain equipment such as washers, dryers, furnaces, or water heaters shall be sprinklered, regardless of size.

28.1.5.2

For the design of automatic sprinkler systems, the classification of contents in **NFPA 13** shall apply.

28.3.5.3

Where an automatic sprinkler system is installed, either for total or partial building coverage, the system shall be in accordance with Section [9.7](#), as modified by [28.3.5.4](#). In hotel or dormitory occupancies up to and including four stories in height that are located in buildings not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with ~~NFPA 13R~~ [9.7.1.1\(3\)](#) shall be permitted.

28.3.5.4

The provisions for draft stops and closely spaced sprinklers in **NFPA 13** shall not be required for openings complying with [8.6.9.1](#) where the opening is within the guest room or guest suite.

29.1.5.2

For the design of automatic sprinkler systems, the classification of contents in **NFPA 13** shall apply.

29.3.5.3*

Where an automatic sprinkler system is installed, either for total or partial building coverage, the system shall be in accordance with Section [9.7](#), as modified by [29.3.5.4](#) and [29.3.5.5](#). In buildings four or fewer stories in height and not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with [NFPA 13R9.7.1.1\(3\)](#) shall be permitted.

29.3.5.4

The provisions for draft stops and closely spaced sprinklers in [NFPA 13](#) shall not be required for openings complying with [8.6.9.1](#) where the opening is within the guest room or guest suite.

30.3.5.1.2

In apartment buildings up to and including four stories in height, that are located in buildings not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with [NFPA 13R9.7.1.1\(3\)](#) shall be permitted.

30.3.5.3* Closets.

In buildings sprinklered in accordance with [NFPA 13R9.7.1.1\(1\)](#), closets shall meet the following requirements:

- (1) Closets of less than 12 ft² (1.1 m²) in individual dwelling units shall not be required to be sprinklered.
- (2) Closets that contain equipment such as washers, dryers, furnaces, or water heaters shall be sprinklered, regardless of size.

30.3.5.4 Convenience Openings.

The draft stop and closely spaced sprinkler requirements of [NFPA 13](#) shall not be required for convenience openings complying with [8.6.9.1](#) where the convenience opening is within the dwelling unit.

31.3.5.2*

Where an automatic sprinkler system is installed, either for total or partial building coverage, the system shall be installed in accordance with Section [9.7](#), as modified by [31.3.5.3](#) and [31.3.5.4](#). In buildings four or fewer stories in height and not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with [NFPA 13R9.7.1.1\(3\)](#) shall be permitted.

31.3.5.4*

In buildings sprinklered in accordance with [NFPA 13R9.7.1.1\(1\)](#) bathrooms not greater than 55 ft² (5.1 m²) in individual dwelling units shall not be required to be sprinklered.

31.3.5.5

The draft stop and closely spaced sprinkler requirements of **NFPA 13** shall not be required for convenience openings complying with [8.6.9.1](#) where the convenience opening is within the dwelling unit.

31.3.5.6.4

Where Option 3 is being used to permit the use of 1 3/4 in. (44 mm) thick, solid-bonded wood-core doors in accordance with [31.2.2.1.3](#), sprinklers shall be provided within the exit enclosures in accordance with **NFPA 139.7.1.1(1)**.

32.2.3.5.3

Where an automatic sprinkler system is installed, for either total or partial building coverage, all of the following requirements shall be met:

(1) The system shall be in accordance with **NFPA 139.7.1.1(1)** and shall initiate the fire alarm system in accordance with [32.2.3.4.1](#).

(2) The adequacy of the water supply shall be documented to the authority having jurisdiction.

32.2.3.5.3.1

In buildings four or fewer stories in height and not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with **NFPA 139.7.1.1(3)** shall be permitted. All habitable areas, closets, roofed porches, roofed decks, and roofed balconies shall be sprinklered.

32.2.3.5.3.2*

An automatic sprinkler system with a 30-minute water supply, and complying with all of the following requirements and with **NFPA 139.7.1.1(2)** shall be permitted:

(1) All habitable areas, closets, roofed porches, roofed decks, and roofed balconies shall be sprinklered.

(2) Facilities with more than eight residents shall be treated as two-family dwellings with regard to water supply.

32.2.3.5.4

Automatic sprinkler systems installed in accordance with **NFPA 139.7.1.1(1)** and **NFPA 139.7.1.1(3)** shall be provided with electrical supervision in accordance with [9.7.2](#).

32.2.3.5.5

Automatic sprinkler systems installed in accordance with ~~NFPA 13D~~9.7.1.1(2) shall be provided with valve supervision by one of the following methods:

Single listed control valve that shuts off both domestic and sprinkler systems and separate shutoff for the domestic system only

(2) Electrical supervision in accordance with 9.7.2

(3) Valve closure that causes the sounding of an audible signal in the facility

32.2.3.5.8

Systems installed in accordance with ~~NFPA 13D~~9.7.1.1(2) shall be inspected, tested, and maintained in accordance with 32.2.3.5.8.1 through 32.2.3.5.8.15, which reference specific sections of NFPA 25. The frequency of the inspection, test, or maintenance shall be in accordance with this *Code*, whereas the purpose and procedure shall be from NFPA 25.

33.2.3.5.3.1*

In prompt evacuation capability facilities, all of the following shall apply:

(1) An automatic sprinkler system in accordance with ~~NFPA 13D~~9.7.1.1(2) shall be permitted.

(2) Automatic sprinklers shall not be required in closets not exceeding 24 ft² (2.2 m²) and in bathrooms not exceeding 55 ft² (5.1 m²), provided that such spaces are finished with lath and plaster or materials providing a 15-minute thermal barrier.

33.2.3.5.3.2

In slow and impractical evacuation capability facilities, all of the following shall apply:

(1) An automatic sprinkler system in accordance with ~~NFPA 13D~~9.7.1.1(2) with a 30-minute water supply, shall be permitted.

(2) All habitable areas and closets shall be sprinklered.

(3) Automatic sprinklers shall not be required in bathrooms not exceeding 55 ft² (5.1 m²), provided that such spaces are finished with lath and plaster or materials providing a 15-minute thermal barrier.

33.2.3.5.3.3

In prompt and slow evacuation capability facilities, where an automatic sprinkler system is in accordance with ~~NFPA 13D~~9.7.1.1(1) sprinklers shall not be required in closets not exceeding 24

ft² (2.2 m²) and in bathrooms not exceeding 55 ft² (5.1 m²), provided that such spaces are finished with lath and plaster or materials providing a 15-minute thermal barrier.

33.2.3.5.3.4*

In prompt and slow evacuation capability facilities in buildings four or fewer stories above grade plane, systems in accordance with **NFPA 13R9.7.1.1(3)** shall be permitted.

33.2.3.5.3.5*

In impractical evacuation capability facilities in buildings four or fewer stories above grade plane, systems in accordance with **NFPA 13R9.7.1.1(3)** shall be permitted. All habitable areas and closets shall be sprinklered. Automatic sprinklers shall not be required in bathrooms not exceeding 55 ft² (5.1 m²), provided that such spaces are finished with lath and plaster or materials providing a 15-minute thermal barrier.

33.2.3.5.8

Systems installed in accordance with **NFPA 13D9.7.1.1(2)** shall be inspected, tested, and maintained in accordance with [33.2.3.5.8.1](#) through [33.2.3.5.8.15](#), which reference specific sections of NFPA 25. The frequency of the inspection, test, or maintenance shall be in accordance with this *Code*, whereas the purpose and procedure shall be from NFPA 25.

33.3.3.5.1.1*

In buildings four or fewer stories above grade plane, systems in accordance with **NFPA 13R9.7.1.1(3)** shall be permitted.

36.3.1 Protection of Vertical Openings.

Any vertical opening shall be protected in accordance with Section [8.6](#), except under any of the following conditions:

(1) In Class A or Class B mercantile occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with [9.7.1.1\(1\)](#), unprotected vertical openings shall be permitted at one of the following locations:

(a) Between any two floors

(b) Among the street floor, the first adjacent floor below, and the adjacent floor (or mezzanine) above

(2) In Class C mercantile occupancies, unprotected openings shall be permitted between the street floor and the mezzanine.

(3) The draft stop and closely spaced sprinkler requirements of **NFPA 13** shall not be required for unenclosed vertical openings permitted in [36.3.1\(1\)](#) and [36.3.1\(2\)](#).

(4) Unenclosed vertical openings in accordance with [8.6.9.2](#) shall be permitted and the provision of [8.6.9.2\(5\)](#) shall not apply.

(5) Unenclosed vertical openings in accordance with [8.6.9.7](#) shall be permitted and the number of contiguous stories shall not be limited.

36.4.4.9.2*

Rooms housing building service equipment, janitor closets, and service elevators shall be permitted to open directly onto exit passageways, provided that all of the following criteria are met:

(1) The required fire resistance rating between such rooms or areas and the exit passageway shall be maintained in accordance with [7.1.3.2](#).

(2) Such rooms or areas shall be protected by an approved, supervised automatic sprinkler system in accordance with [9.7.1.1\(1\)](#), but the exceptions in **NFPA 13** allowing the omission of sprinklers from such rooms shall not be permitted.

(3) Service elevators opening into the exit passageway shall not open into areas other than exit passageways.

(4) Where exit stair enclosures discharge into the exit passageway, the provisions of [7.2.1.5.7](#) shall apply, regardless of the number of stories served.

36.4.5.3 Storage, Arrangement, Protection, and Quantities of Hazardous Commodities.

The storage, arrangement, protection, and quantities of hazardous commodities shall be in accordance with the applicable provisions of the following:

(1) The fire code (*see* [3.3.99](#))

(2) **NFPA 13**

(3) NFPA 30

(4) NFPA 30B

(5) NFPA 400, Chapter [14](#), for organic peroxide formulations

(6) NFPA 400, Chapter [15](#), for oxidizer solids and liquids

(7) NFPA 400, various chapters, depending on characteristics of a particular pesticide

37.3.1 Protection of Vertical Openings.

Any vertical opening shall be protected in accordance with Section [8.6](#), except under any of the following conditions:

(1) In Class A or Class B mercantile occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with [9.7.1.1\(1\)](#), unprotected vertical openings shall be permitted at one of the following locations:

(a) Between any two floors

(b) Among the street floor, the first adjacent floor below, and the adjacent floor (or mezzanine) above

(2) In Class C mercantile occupancies, unprotected openings shall be permitted between the street floor and the mezzanine.

(3) The draft stop and closely spaced sprinkler requirements of **NFPA 13** shall not be required for unenclosed vertical openings permitted in [36.3.1\(1\)](#) and [37.3.1\(2\)](#).

(4) Unenclosed vertical openings in accordance with [8.6.9.2](#) shall be permitted.

37.4.4.9.2*

Rooms housing building service equipment, janitor closets, and service elevators shall be permitted to open directly onto exit passageways, provided that all of the following criteria are met:

(1) The required fire resistance rating between such rooms or areas and the exit passageway shall be maintained in accordance with [7.1.3.2](#).

(2) Such rooms or areas shall be protected by an approved automatic sprinkler system in accordance with [9.7.1.1\(1\)](#), but the exceptions in **NFPA 13** allowing the omission of sprinklers from such rooms shall not be permitted.

(3) Service elevators opening into the exit passageway shall not open into areas other than exit passageways.

(4) Where exit stair enclosures discharge into the exit passageway, the provisions of [7.2.1.5.7](#) shall apply, regardless of the number of stories served.

37.4.5.3 Storage, Arrangement, Protection, and Quantities of Hazardous Commodities.

The storage, arrangement, protection, and quantities of hazardous commodities shall be in accordance with the applicable provisions of the following:

- (1) The fire code (*see* [3.3.99](#))
- (2) NFPA 13
- (3) NFPA 30
- (4) NFPA 30B
- (5) NFPA 400, Chapter 14, for organic peroxide formulations
- (6) NFPA 400, Chapter 15, for oxidizer solids and liquids
- (7) NFPA 400, various chapters, depending on characteristics of a particular pesticide

40.2.6.2* Power-Generation Buildings.

Buildings of noncombustible construction used exclusively for the enclosure of steam generators, steam turbines, gas turbines, heat recovery generators, and flue gas treatment equipment shall be permitted to have a maximum travel distance of 400 ft (122 m), where all special hazards are protected by approved automatic suppression systems in accordance with one or more of the following standards, as applicable:

- (1) NFPA 11
- (2) NFPA 12
- (3) NFPA 13
- (4) NFPA 15
- (5) NFPA 16
- (6) NFPA 17
- (7) NFPA 750
- (8) NFPA 2001

NFPA 101 REFERENCES TO NFPA 13/13D/13R

Items highlighted in green: Retain reference to NFPA 13/13D/13R as these are not requirements for sprinkler systems to be installed in accordance with the applicable standard.

Items highlighted in yellow: Revise standard reference to applicable item in 9.7.1.1 as these are requirements for sprinkler systems to be installed in accordance with the applicable standard.

Items highlighted in pink: Revert reference from 9.7.1.1(X) back to NFPA 13/13D/13R as these are not requirements for sprinkler systems to be installed in accordance with the applicable standard.

8.6.9.2

Where permitted by Chapters [11](#) through [43](#), unenclosed vertical openings created by convenience stairways shall comply with all of the following:

- (1) The convenience stair openings shall not serve as required means of egress.
- (2) The building shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section [9.7](#).
- (3) [\(3\)*](#) The convenience stair openings shall be protected in accordance with the method detailed for the protection of vertical openings in **NFPA 13**.
- (4) In new construction, the area of the floor opening shall not exceed twice the horizontal projected area of the stairway.
- (5) For new construction, such openings shall not connect more than four contiguous stories, unless otherwise permitted by Chapters [11](#) through [43](#).

8.6.9.7

Any escalators and moving walks not constituting an exit shall have their floor openings enclosed or protected as required for other vertical openings, unless otherwise permitted by one of the following:

- (1) The requirement of [8.6.9.7](#) shall not apply to escalators in large open areas, such as atriums and enclosed shopping malls.
- (2) [\(2\)*](#) In existing buildings protected throughout by an approved automatic sprinkler system in accordance with Section [9.7](#), escalator and moving walk openings shall be permitted to be protected in accordance with the method detailed in **NFPA 13** or in accordance with a method approved by the authority having jurisdiction.
- (3) In new buildings protected throughout by an approved automatic sprinkler system in accordance with Section [9.7](#), escalator and moving walk openings shall be permitted to be protected in accordance with the method detailed in **NFPA 13** or in accordance with a method approved by the authority having jurisdiction, and the opening shall not connect more than four contiguous stories unless otherwise permitted by Chapters [11](#) through [43](#).
- (4) In buildings protected throughout by an approved automatic sprinkler system in accordance with Section [9.7](#), escalator and moving walk openings shall be permitted to be protected by rolling steel shutters appropriate for the fire resistance rating of the vertical opening and complying with all of the following:

- (a) The shutters shall close automatically and independently of each other upon smoke detection and sprinkler operation.
- (b) A manual means of operating and testing the operation of the shutters shall be provided.
- (c) The shutters shall be operated not less than once a week to ensure that they remain in proper operating condition.
- (d) The shutters shall operate at a speed not to exceed 30 ft/min (0.15 m/s) and shall be equipped with a sensitive leading edge.
- (e) The leading edge shall arrest the progress of a moving shutter and cause it to retract a distance of approximately 6 in. (150 mm) upon the application of a force not exceeding 20 lbf (90 N) applied to the surface of the leading edge.
- (f) The shutter, following the retraction specified in [8.6.9.7\(4\)](#)(e), shall continue to close.
- (g) The operating mechanism for the rolling shutter shall be provided with standby power complying with the provisions of *NFPA70*.

2.3 Other Publications.

2.3.1 ACI Publications.

American Concrete Institute, 38800 Country Club Drive, Farmington Hills, MI 48331-~~3434~~3439.
www.concrete.org

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~~ANSI/BHMA A156.27, *Power and Manual Operated Revolving Pedestrian Doors*, 2019.~~

~~ANSI/BHMA A156.38, *Low Energy Power Operated Sliding and Folding Doors*, 2014.~~

2.3.3 ASCE Publications.

American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191-4400. www.asce.org

ASCE/SEI 7, *Minimum Design Loads for Buildings and Other Structures*, ~~2016, including Supplement 1,~~
~~2017~~2022.

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2.3.4 ASME Publications.

~~ASME International~~The American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990. www.asme.org

ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, ~~2016~~2019.

ASME A17.3, *Safety Code for Existing Elevators and Escalators*, ~~2017~~2020.

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~~2017~~2012.

2.3.5 ASSP Publications.

American Society of Safety Professionals, 520 N. Northwest Highway, Park Ridge, IL 60068.

ANSI/ASSP A1264.1, *Safety Requirements for Workplace Walking/Working Surfaces and Their Access; Workplace, Floor, Wall and Roof Openings; Stairs and Guardrail/Handrail Systems*, 2017.

2.3.6 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.
www.astm.org

ASTM C1629/C1629M, *Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels*, ~~2018~~2019.

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ASTM D3201/D3201M, *Standard Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Based Products*, ~~2013~~2020.

ASTM D5516, *Standard Test Method for Evaluating the Flexural Properties of Fire-Retardant-Treated Softwood Plywood Exposed to Elevated Temperatures*, 2018.

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ASTM D6305, *Standard Practice for Calculating Bending Strength Design Adjustment Factors for Fire-Retardant-Treated Plywood Roof Sheathing*, ~~2008-2021(2015)~~-e1.

ASTM D6841, *Standard Practice for Calculating Design Value Treatment Adjustment Factors for Fire-Retardant-Treated Lumber*, ~~2016~~2021.

ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, ~~2019a~~2021a.

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ASTM E1966, *Standard Test Method for Fire-Resistive Joint Systems*, 2015 (2019).

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ASTM E2307, *Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-~~Story-story~~ Test Apparatus*, ~~2015b-e1~~2020.

~~ASTM E2374, *Standard Practice for Design, Manufacture, Operation, and Maintenance of Inflatable Amusement Devices*, 2021.[HG1]~~

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ASTM E3082, *Standard Test Methods for Determining the Effectiveness of Fire Retardant Treatments for Natural Christmas Trees*, ~~2017-e1~~2020.

ASTM F851, *Standard Test Method for Self-Rising Seat Mechanisms*, 1987 (~~2013~~2020).

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ASTM F1577, *Standard Test Methods for Detention Locks for Swinging Doors*, 2005 (2019).

ASTM F2374, Standard Practice for Design, Manufacture, Operation, and Maintenance of Inflatable Amusement Devices, 2021a.

ASTM G155, *Standard Practice for Operating Xenon Arc ~~Light Lamp~~ Apparatus for Exposure of ~~Non-Metallic~~ Materials, 20132021.*

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ANSI/BHMA A156.38, Low Energy Power Operated Sliding and Folding Doors, 20142019.

2.3.7 FM Global Publications.

FM Global, 270 Central Avenue, ~~P.O. Box 7500~~, Johnston, RI 02919. www.fmglobal.com

ANSI/FM Approvals 4880, ~~American National Standard for~~ Evaluating the Fire Performance of Insulated Building Panel Assemblies and Interior Finish Materials, 2017.

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2.3.9 NEMA Publications.

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2.3.10 RESNA Publications.

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2.3.11 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096. www.ul.com

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UL 1315, *Metal Waste Paper Containers*, 2017.

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UL 1715, *Fire Test of Interior Finish Material*, 1997, revised ~~2017~~2022.

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2.3.12 U.S. Government Publications.

U.S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-~~0001~~.

Title 16, Code of Federal Regulations, Part 1632, "Standard for the Flammability of Mattresses and Mattress Pads" (FF 4-72, Amended).

2.3.13 Other Publication.

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2.4 References for Extracts in Mandatory Sections.

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NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2022 edition.

NFPA 72®, *National Fire Alarm and Signaling Code*®, ~~2019~~2022 edition.

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NFPA 400, *Hazardous Materials Code*, ~~2019~~2022 edition.

NFPA 415, *Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways*, ~~2016~~2022 edition.

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NFPA 5000®, *Building Construction and Safety Code*®, ~~2021~~2024 edition.

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~~2017~~2022.

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SFPE Guidelines for Substantiating a Fire Model for a Given Application, ~~2011~~2010.

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E.1.2.15 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096. www.ul.com

UL Heating, Cooling, Ventilating and Cooking Equipment Directory, 2018.

UL Product iQ™, www.ul.com.

UL 217, *Smoke Alarms*, ~~2018~~2020, revised 2022.

UL 263, *Fire Tests of Building Construction and Materials*, 2011, revised ~~2019~~2022.

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UL 962, *Household and Commercial Furnishings*, 2014, revised ~~2021~~2022.

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E.1.2.16 U.S. Government Publications.

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Siegmund, G. P., et al. 2010. "Utilized friction when entering and exiting a dry and wet bathtub." *Gait & Posture* 31:473–478.

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E.2 Informational References.

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NFPA 88A, *Standard for Parking Structures*, ~~2019~~-2023 edition.

NFPA 101A, *Guide on Alternative Approaches to Life Safety*, ~~2019~~-2022 edition.

NFPA 301, *Code for Safety to Life from Fire on Merchant Vessels*, ~~2018~~-2023 edition.

NFPA 400, *Hazardous Materials Code*, ~~2019~~-2022 edition.

NFPA 5000®, *Building Construction and Safety Code*®, ~~2021~~-2024 edition.

NFPA 101 (2024) extracts from NFPA 80 (2022)

3.3.25.1.1 Fire Door Assembly.

Any combination of a fire door, a frame, hardware, and other accessories that together provide a specific degree of fire protection to the opening. [80, 20192022] (SAF-FIR)

3.3.25.1.1.1 Horizontal Floor Fire Door Assembly.

A combination of a fire door, a frame, hardware, and other accessories installed in a horizontal plane, which together provide a specific degree of fire protection to a through-opening in a fire resistance-rated floor or roof. [288, 201780, 2022] (SAF-FIR)

3.3.25.2 Fire Window Assembly.

A window or glass block assembly having a fire protection rating. [80, 20192022] (SAF-FIR)

Table 8.3.3.2.2 Minimum Fire Ratings for Opening Protectives in Fire-Resistance-Rated Assemblies and Fire-Rated Glazing Markings

[EXTRACT LIMITED TO TABLE NOTE – TABLE NOT SHOWN]

^aMaximum area of individual exposed lights shall be 1296 in.² (0.84 m²), with no dimension exceeding 54 in. (1.37 m) unless otherwise tested. [80:Table 4.4.5 Note b and 80:4.4.5.1]

Commented [SJ1]: Chapter 8 uses this terminology, recommend changing definition and updating extract tag, there is no change in the definition.

NFPA 5000 (2024) extracts from NFPA 90A (2024)

3.3.141 Damper.

3.3.141.1* Ceiling Radiation Damper.

A listed device installed in a ceiling membrane of a fire-fire-resistance-rated floor-ceiling or roof-ceiling assembly to automatically limit the radiative heat transfer through an air inlet/outlet opening. [90A, 20212024] (BLD-FIR)

A.3.3.141.1 Ceiling Radiation Damper.

Some such devices are listed in UL [Fire Resistance Directory](#) [Online Certifications Direction, Product IQ, www.UL.com/PiQ](#), under the category “Ceiling Damper (CABS).” [90A, 2021]

3.3.141.2 Combination Fire and Smoke Damper.

A listed device installed in the ducts or air transfer openings of fire-resistance-rated walls, barriers, partitions, or floors that meets both the fire damper and smoke damper requirements. [90A, 20212024] (BLD-FIR)

3.3.141.3* Fire Damper.

A listed device installed in an air-distribution system and designed to close automatically upon detection of heat, to interrupt migratory airflow, and to restrict the passage of flame. [90A, 20212024] (BLD-FIR)

A.3.3.141.3 Fire Damper.

Fire dampers are classified for use in either static systems that will automatically shut down in the event of a fire or in dynamic systems that operate in the event of a fire. A dynamic fire damper is tested and rated for closure under airflow.

Some such devices are listed in UL [Online Certifications Directory, Product IQ, www.UL.com/PiQ, Heating, Cooling, Ventilating and Cooking Equipment Directory](#) under

the category of "Fire Dampers for Fire Barrier and Smoke Applications (EMME)." Fire dampers are classified for use in either static systems or for dynamic systems, where the dampers are rated for closure under airflow. [90A, [2021-2024](#)]

3.3.141.4* Smoke Damper.

A [listed](#) device within an air-~~distribution~~ system to control the movement of smoke. [90A, [2021-2024](#)] (BLD-FIR)

A.3.3.141.4 Smoke Damper.

Smoke dampers are subjected to various pressure differentials, ~~are and~~ exposed to elevated temperatures, and [they](#) can be required to open or close against mechanically induced airflow. Some such devices are listed in UL [Online Certifications Directory](#), [Product iQ](#), [www.UL.com/PiQ](#), [Heating, Cooling, Ventilating and Cooking Equipment Directory](#) under the category "Dampers for Fire Barrier and Smoke Applications (EMME)." [90A, [2021-2024](#)]

NFPA 5000 (2024) extracts from NFPA 221 (2024)

3.3.539.1* Fire Protection Rating.

The designation indicating the duration of the fire test exposure to which an opening protective assembly was exposed. [221, [2021-2024](#)] (BLD-FIR)

NFPA 5000 (2024) extracts from NFPA 252 (2022)

3.3.683 Vision Panel.

A glazing material installed in a fire door assembly to allow for viewing through the fire door assembly. [252, [2017-2022](#)] (BLD-FIR)



Public Comment No. 140-NFPA 101-2022 [New Section after 3.3.14.3]

3.3.X Alcohol-Based Hand-Rub (ABHR).

An alcohol-containing preparation designed for application to the hands for reducing the number of visible microorganisms on the hands and containing ethanol or isopropanol in an amount not exceeding 95 percent by volume. [NFPA 30 3.3.1].

Statement of Problem and Substantiation for Public Comment

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.

This Public Comment extracts the definition for Alcohol-Based Hand Rub (ABHR) from NFPA 30. ABHR is classified as a Type IB ignitable liquid based on its flash-point, which is typically around 63°F, however the alcohol-based sanitizing solution is water-soluble and similar in fire risk to distilled spirits due to its quick evaporation rate.

Similar to the existing need found in the standard to allow ABHR dispensers in hospitals and health care facilities, that was addressed back in the 1990s in order to mitigate infection risk in those occupancies, the same infection risks exist in all occupancies and needs to be safely mitigated as the world continues to face the challenges associated with the COVID-19 Pandemic.

This Public Comment provides reasonable increases to the total allowable volumes of ABHR in ABHR dispensers based on the practices and experiences over the past several years and adds reasonable limitations on ABHR volume to address the risks of infection with a balanced approach that also considers the fire-risk of ABHR..

The changes made in this section are suggested to categorize the requirements into individual categories. The sections would encompass each of the following subjects:

- c. Dispenser Capacity.
- d. Storage Volume.
- e. Dispenser Location.
- f. Dispenser Operation, and Testing.
- g. Spill Containment and Maintenance.

Adding this information will allow the AHJ to easily define the overall requirements related to alcohol based hand-rubs. Since ABHR solution is typically classified as Type IB ignitable (flammable or combustible) liquid certain occupancies, such as business, mercantile and educational, currently have special requirements for maximum allowable quantities (MAQ) that are much more restrictive in the quantity of Type IB ignitable that is permitted to be stored and in use.

The intent is for NFPA 101 to extract and incorporate MAQ's from NFPA 30 into this document to allow one centralized location for the information needed to fully understand the requirements related to storage and use 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.

Related Item

- CI 6511

Submitter Information Verification

Submitter Full Name: Kelly Nicoello

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Submittal Date: Mon May 23 14:55:58 EDT 2022

Committee: SAF-FIR



Public Comment No. 219-NFPA 101-2022 [Section No. 3.3.54]

3.3.54 Damper.

3.3.54.1 Combination Fire- and - Smoke Damper.

A ~~device that~~ listed device installed in teh ducts or air transfer openings of fire-resistance-rated walls, barriers, partitions, or floors that meets both fire damper and smoke damper requirements. [90A, 2021] (SAF-FIR)

3.3.54.2* Fire Damper.

A listed device installed in an air distribution system and designed to close automatically upon detection of heat, to interrupt migratory airflow, and to restrict the passage of flame. [90A, 2021] (SAF-FIR)

3.3.54.3* Smoke Damper.

A listed device within an air-distribution system to control the movement of smoke. [90A, 2021] (SAF-FIR)

Statement of Problem and Substantiation for Public Comment

SAF-AAC appointed a task group to review damper terminology throughout NFPA 101 based upon FR 6516 which modified the definitions for various dampers and made the change to extract the definitions from NFPA 90A. The purpose of this Public Comment, submitted on behalf of the Task Group, is to revise the language to be consistent with the definitions in NFPA 90A. It should be noted that the terms proposed are based upon the First Draft Report of NFPA 90A and not necessarily the definitions in Chapter 3 of the First Draft Report for NFPA 101. If NFPA 90A is revised during the Public Comment period it is the intent that these terms would be revised to be consistent with the defined terms being extracted from NFPA 90A.

It should be noted that although Koffel Associates is a consultant to AMCA International, the Public Comment is not identified as being submitted on behalf of AMCA International since the Public Comment was the result of the SAF-AAC Task Group.

Related Item

- FR 6516

Submitter Information Verification

Submitter Full Name: William Koffel

Organization: Koffel Associates, Inc.

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City:

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Submission Date: Tue May 31 15:33:43 EDT 2022

Committee: SAF-FIR



Public Comment No. 45-NFPA 101-2022 [Section No. 8.2.1.3]

8.2.1.3

Where the building or facility includes additions or connected structures of different construction types, the rating and classification of the structure shall be based on one of the following:

- (1) Separate buildings, if a 2-hour or greater vertically aligned fire barrier wall in accordance with NFPA 221 exists between the portions of the building
- (2) Separate buildings, if provided with previously approved separations
- (3) Least fire-resistive construction type of the connected portions, if separation as specified in 8.2.1.3(1) or 8.2.1.3(2) is not provided

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
101_A2023_SAF_AAC_CCN_46.pdf	101_Correlating Committee Note No. 46	✓

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 45 appeared in the First Draft Report on Committee Input No. 6514. Reconsider the action proposed in CI-6514. No code language has been proposed; language proposed for second draft might be construed as new material. Podium/pedestal construction as it relates to "stories in height" is currently addressed by SAF-FUN in 4.6.3(5). Stories in height definitions in 101 and 5000 are currently in alignment; number of stories and stories in height are determined differently (relative to grade plane and level of exit discharge, respectively). Stories in height criteria need to be consistent between 101 and 5000 for occupancy requirements predicated on stories in height. BLD-BLC does not necessarily have the expertise to draft language on the subject applicable to the scope of NFPA 101. Consider appointing a task group to provide recommended revisions to 4.6.3(5) for the next revision cycle.

Related Item

- CI-6514

Submitter Information Verification

Submitter Full Name: CC ON SAF_AAC
Organization: NFPA
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Submission Date: Tue Mar 22 11:57:28 EDT 2022
Committee: SAF-AAC

Copyright Assignment

I, CC ON SAF_AAC, hereby irrevocably grant and assign to the National Fire Protection Association (NFPA) all and full rights in copyright in this Public Comment (including both the Proposed Change and the Statement of Problem and Substantiation). I understand and intend that I acquire no rights, including rights as a joint author, in any publication of the NFPA in which this Public Comment in this or another similar or derivative form is used. I hereby warrant that I am the author of this Public Comment

and that I have full power and authority to enter into this copyright assignment.

☒ By checking this box I affirm that I am CC ON SAF_AAC, and I agree to be legally bound by the above Copyright Assignment and the terms and conditions contained therein. I understand and intend that, by checking this box, I am creating an electronic signature that will, upon my submission of this form, have the same legal force and effect as a handwritten signature



Correlating Committee Note No. 46-NFPA 101-2022 [Section No. 8.2.1.3]

Submitter Information Verification

Committee: SAF-AAC

Submittal Date: Thu Jan 20 12:40:25 EST 2022

Committee Statement and Meeting Notes

Committee Statement: Reconsider the action proposed in CI-6514. No code language has been proposed; language proposed for second draft might be construed as new material. Podium/pedestal construction as it relates to "stories in height" is currently addressed by SAF-FUN in 4.6.3(5). Stories in height definitions in 101 and 5000 are currently in alignment; number of stories and stories in height are determined differently (relative to grade plane and level of exit discharge, respectively). Stories in height criteria need to be consistent between 101 and 5000 for occupancy requirements predicated on stories in height. BLD-BLC does not necessarily have the expertise to draft language on the subject applicable to the scope of NFPA 101. Consider appointing a task group to provide recommended revisions to 4.6.3(5) for the next revision cycle.

Ballot Results

✔ This item has passed ballot

11 Eligible Voters

1 Not Returned

10 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Taluba, Jon

Affirmative All

Bush, Kenneth E.

Carson, Wayne G. Chip

Gilyeat, Sharon S.

Harbuck, Stanley C.

Hopper, Howard

Hugo, Jeffrey M.

Lucas, Jeffrey A.

Quiter, James R.

Reiswig, Rodger

Rosenbaum, Eric R.



Committee Input No. 6514-NFPA 101-2021 [Section No. 8.2.1.3]

[The committee has identified the need to address podium or pedestal type constructed buildings in 8.2.1.3 . BLD-BLC committee has authority of types of construction in NFPA 5000. Staff will notify the BLD-BLC committee about the need for language pertaining to podium or pedestal type construction. SAF-FIR will review any actions taken by BLD-BLC and add provisions addressing podium or pedestal style construction in this section at second draft to align with requirements added to NFPA 5000 by BLC-BLD at first draft.]

8.2.1.3

Where the building or facility includes additions or connected structures of different construction types, the rating and classification of the structure shall be based on one of the following:

- (1) Separate buildings, if a 2-hour or greater vertically aligned fire barrier wall in accordance with NFPA 221 exists between the portions of the building
- (2) Separate buildings, if provided with previously approved separations
- (3) Least fire-resistive construction type of the connected portions, if separation as specified in 8.2.1.3(1) or 8.2.1.3(2) is not provided

Submitter Information Verification

Committee: SAF-FIR

Submittal Date: Thu Jul 08 16:36:46 EDT 2021

Committee Statement and Meeting Notes

Committee Statement: Building construction is within the scope of BLD-BLC. The FIR committee acknowledges the need to include provisions addressing podium or pedestal type construction in this section, but recognizes it is within the scope of BLD-BLC to write these requirements. Therefore, FIR is requesting that BLC-BLD review adding requirements pertaining to podium or pedestal type construction.

Response Message: CI-6514-NFPA 101-2021

Ballot Results

This item has not been balloted



Public Comment No. 63-NFPA 101-2022 [Section No. 8.4.6]

8.4.6 Air-Transfer Openings.

8.4.6.1 General.

The provisions of 8.4.6 shall govern the materials and methods of construction used to protect air-transfer openings in smoke partitions.

8.4.6.2* Smoke Dampers.

Air-transfer openings in smoke partitions shall be provided with approved smoke dampers designed and tested in accordance with the requirements of UL 555S, *Smoke Dampers*, to limit the transfer of smoke.

8.4.6.3 Smoke Damper Ratings.

Smoke damper leakage ratings shall be not less than Class II. Elevated temperature ratings shall be not less than 250°F (140°C).

8.4.6.4 Smoke Detectors.

~~Dampers~~ Smoke dampers in air-transfer openings shall close upon detection of smoke by approved smoke detectors installed in accordance with *NFPA 72*.

Statement of Problem and Substantiation for Public Comment

SAF-AAC appointed a task group to review damper terminology throughout NFPA 101 based upon FR 6516 which modified the definitions for various dampers and made the change to extract the definitions from NFPA 90A. The purpose of this Public Comment, submitted on behalf of the Task Group, is to revise the language to be consistent with the defined terms in Chapter 3. It should be noted that the terms proposed are based upon the First Draft Report of NFPA 90A and not necessarily the definitions in Chapter 3 of the First Draft Report for NFPA 101. If NFPA 90A is revised during the Public Comment period it is the intent that these terms would be revised to be consistent with the defined terms being extracted from NFPA 90A.

It should be noted that although Koffel Associates is a consultant to AMCA International, the Public Comment is not identified as being submitted on behalf of AMCA International since the Public Comment was the result of the SAF-AAC Task Group.

Related Item

- FR 6516

Submitter Information Verification

Submitter Full Name: William Koffel

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Submittal Date: Thu Apr 14 09:19:50 EDT 2022

Committee: SAF-FIR



Public Comment No. 64-NFPA 101-2022 [Section No. 8.5.5.2.2]

8.5.5.2.2

Where a smoke barrier is also constructed as a fire barrier, a combination fire/_ smoke damper designed and tested in accordance with the requirements of UL 555, *Fire Dampers*, and UL 555S, *Smoke Dampers*, shall be installed.

Statement of Problem and Substantiation for Public Comment

SAF-AAC appointed a task group to review damper terminology throughout NFPA 101 based upon FR 6516 which modified the definitions for various dampers and made the change to extract the definitions from NFPA 90A. The purpose of this Public Comment, submitted on behalf of the Task Group, is to revise the language to be consistent with the defined terms in Chapter 3. It should be noted that the terms proposed are based upon the First Draft Report of NFPA 90A and not necessarily the definitions in Chapter 3 of the First Draft Report for NFPA 101. If NFPA 90A is revised during the Public Comment period it is the intent that these terms would be revised to be consistent with the defined terms being extracted from NFPA 90A.

It should be noted that although Koffel Associates is a consultant to AMCA International, the Public Comment is not identified as being submitted on behalf of AMCA International since the Public Comment was the result of the SAF-AAC Task Group.

Related Item

- FR 6516

Submitter Information Verification

Submitter Full Name: William Koffel

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Submittal Date: Thu Apr 14 09:21:12 EDT 2022

Committee: SAF-FIR



Public Comment No. 141-NFPA 101-2022 [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.

EXCEPTION: These requirements shall not apply to individual personal use ABHR containers less than 16 ounces.

8.7.3.3.1 ABHR Dispenser Capacity

(1) The maximum individual dispenser fluid capacity shall be as follows:

(2) 0.

32

(a) 53 gal (

1.2 L

(a) 2.0 L) for dispensers in corridors and areas open to corridors

(b) 1.06 gal (4.0 L) for dispensers in corridors and areas open to corridors

0.53 gal (2

(a) in buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 7.

(b) 1.06 gal (4.0 L) for dispensers in rooms or suites of rooms

separated

(a) separated from corridors.

(3) 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.

(4) Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm).

Not

(5) In buildings without an automatic sprinkler system, 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 (1) per room and located in that room shall not be included in the aggregated quantity.

Storage of quantities greater than 5 gal (18.9 L) in a

(6) In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7, not more than an aggregate 20 gal (75.6 L) of alcohol-based hand-rub solution shall be in use outside of a storage cabinet in a single smoke compartment or fire compartment or story, whichever is less in area, shall meet the requirements of NFPA 30.

(7) One dispenser complying with 8.7.3.3.1(1) per room and located in that room shall not be included in the aggregated quantity.

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

8.7.3.3.3 ABHR Dispenser Operation and Testing

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

8.7.3.3.4 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 Comment

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.

This Public Comment extracts the definition for Alcohol-Based Hand Rub (ABHR) from NFPA 30. ABHR is classified as a Type IB ignitable liquid based on its flash-point, which is typically around 63°F, however the alcohol-based sanitizing solution is water-soluble and similar in fire risk to distilled spirits due to its quick evaporation rate.

Similar to the existing need found in the standard to allow ABHR dispensers in hospitals and health

care facilities, that was addressed back in the 1990s in order to mitigate infection risk in those occupancies, the same infection risks exist in all occupancies and needs to be safely mitigated as the world continues to face the challenges associated with the COVID-19 Pandemic.

This Public Comment provides reasonable increases to the total allowable volumes of ABHR in ABHR dispensers based on the practices and experiences over the past several years and adds reasonable limitations on ABHR volume to address the risks of infection with a balanced approach that also considers the fire-risk of ABHR..

The changes made in this section are suggested to categorize the requirements into individual categories. The sections would encompass each of the following subjects:

- c. Dispenser Capacity.
- d. Storage Volume.
- e. Dispenser Location.
- f. Dispenser Operation, and Testing.
- g. Spill Containment and Maintenance.

Adding this information will allow the AHJ to easily define the overall requirements related to alcohol based hand-rubs. Since ABHR solution is typically classified as Type IB ignitable (flammable or combustible) liquid certain occupancies, such as business, mercantile and educational, currently have special requirements for maximum allowable quantities (MAQ) that are much more restrictive in the quantity of Type IB ignitable that is permitted to be stored and in use.

The intent is for NFPA 101 to extract and incorporate MAQ's from NFPA 30 into this document to allow one centralized location for the information needed to fully understand the requirements related to storage and use 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.

Related Item

- CI 6511

Submitter Information Verification

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Submittal Date: Mon May 23 14:59:39 EDT 2022

Committee: SAF-FIR



Public Comment No. 235-NFPA 101-2022 [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) 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.
- (8) Dispensers shall not be installed in the following locations:
 - (9) Above an ignition source for a horizontal distance of 1 in. (25 mm) to each side of the ignition source
 - (10) To the side of an ignition source within a 1 in. (25 mm) horizontal distance from the ignition source
 - (11) Beneath an ignition source within a 1 in. (25 mm) vertical distance from the ignition source
- (12) Dispensers installed directly over carpeted floors shall be permitted only in sprinklered areas of the building.
- (13) The alcohol-based hand-rub solution shall not exceed 95 percent alcohol content by volume.
- (14) Operation of the dispenser shall comply with the following criteria:
 - (15) The dispenser shall not release its contents except when the dispenser is activated, either manually or automatically by touch-free activation.
 - (16) Any activation of the dispenser shall only occur when an object is placed within 4 in. (100 mm) of the sensing device.
 - (17) An object placed within the activation zone and left in place shall not cause more than one activation.
 - (18) The dispenser shall not dispense more solution than the amount required for hand hygiene consistent with label instructions.
 - (19) The dispenser shall be designed, constructed, and operated in a manner that ensures accidental or malicious activation of the dispensing device is minimized.
- (20) ~~The dispenser shall be tested in accordance with the manufacturer's care and use instructions each time a new refill is installed.~~

This provides unnecessary burden on the support services team to potentially document that ABHRs are tested each time it is changed out. There are sufficient ABHR dispensers inside and outside plus handsinks for proper hand hygiene. The quantity and location are not a life safety requirement and should not fall under the Life Safety code with exception to the maximum quantity permitted within a smoke compartment or non-rated/rated space.

Related Public Comments for This Document

<u>Related Comment</u>	<u>Relationship</u>
Public Comment No. 236-NFPA 101-2022 [Section No. 8.7.3.3]	
<u>Related Item</u>	
• CI-6511-NFPA 101-2021	

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Submittal Date: Wed Jun 01 00:19:27 EDT 2022

Committee: SAF-FIR



Public Comment No. 236-NFPA 101-2022 [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:
 - (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 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) in a single smoke compartment or fire compartment or story, whichever is less in area, shall 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) to each side of the ignition source
 - (b) To the side of an ignition source within a 1 in. (25 mm) horizontal distance from the ignition source
 - (c) Beneath an ignition source within a 1 in. (25 mm) vertical distance from the ignition source
- (7) Dispensers installed directly over carpeted floors shall be permitted only in sprinklered areas of the building.
- (8) The alcohol-based hand-rub solution shall not exceed 95 percent alcohol content by volume.
- (9) Operation of the dispenser shall comply with the following criteria:
 - (a) The dispenser shall not release its contents except when the dispenser is activated, either manually or automatically by touch-free activation.
 - (b) Any activation of the dispenser shall only occur when an object is placed within 4 in. (100 mm) of the sensing device.
 - (c) An object placed within the activation zone and left in place shall not cause more than one activation.
 - (d) The dispenser shall not dispense more solution than the amount required for hand hygiene consistent with label instructions.
 - (e) The dispenser shall be designed, constructed, and operated in a manner that ensures accidental or malicious activation of the dispensing device is minimized.
 - (f) 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 Comment

Committee should confirm coordination with IFC to ensure alignment.

F205-21

IFC: 5001.1, 5705.5, 5705.5.1

Proponents: Jonathan Roberts, representing UL LLC (jonathan.roberts@ul.com)
2021 International Fire Code

Related Public Comments for This Document

<u>Related Comment</u>	<u>Relationship</u>
<u>Public Comment No. 235-NFPA 101-2022 [Section No. 8.7.3.3]</u>	
• Committee Input No. 6511-NFPA 101-2021 [Section No. 8.7.3.3]	<u>Related Item</u>

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Submittal Date: Wed Jun 01 00:25:06 EDT 2022

Committee: SAF-FIR



Committee Input No. 6517-NFPA 101-2021 [Global Input]

Review damper terminology in NFPA 101 for consistency with damper definitions added by FR-6516 and actions taken by NFPA 90A committee. The following definitions were added by FR-6516: combination fire and smoke damper, fire damper, and smoke damper.

Submitter Information Verification

Committee: SAF-FIR

Submittal Date: Fri Jul 09 08:28:29 EDT 2021

Committee Statement

Committee Statement: A task group was formed by the FIR committee to review damper terminology in NFPA 101. FR-6516 adds definitions for dampers to NFPA 101 to be extract from NFPA 90A. There are public inputs in NFPA 90A regarding damper definitions and terminology. The task group will review all damper references in NFPA 101 against the new definitions and actions taken by the NFPA 90A committee to ensure consistency with the newly defined terms. The task group will produce a recommendation for modifications to damper terminology in all sections of NFPA 101 and will provide the report to all affected committees at second draft. The FIR committee is recommending that the correlating committee request all affected TCs to review the task group recommendations, as necessary.

Response Message: CI-6517-NFPA 101-2021



Committee Input No. 6514-NFPA 101-2021 [Section No. 8.2.1.3]

[The committee has identified the need to address podium or pedestal type constructed buildings in 8.2.1.3 . BLD-BLC committee has authority of types of construction in NFPA 5000. Staff will notify the BLD-BLC committee about the need for language pertaining to podium or pedestal type construction. SAF-FIR will review any actions taken by BLD-BLC and add provisions addressing podium or pedestal style construction in this section at second draft to align with requirements added to NFPA 5000 by BLC-BLD at first draft.]

8.2.1.3

Where the building or facility includes additions or connected structures of different construction types, the rating and classification of the structure shall be based on one of the following:

- (1) Separate buildings, if a 2-hour or greater vertically aligned fire barrier wall in accordance with NFPA 221 exists between the portions of the building
- (2) Separate buildings, if provided with previously approved separations
- (3) Least fire-resistive construction type of the connected portions, if separation as specified in 8.2.1.3(1) or 8.2.1.3(2) is not provided

Submitter Information Verification

Committee: SAF-FIR

Submittal Date: Thu Jul 08 16:36:46 EDT 2021

Committee Statement

Committee Statement: Building construction is within the scope of BLD-BLC. The FIR committee acknowledges the need to include provisions addressing podium or pedestal type construction in this section, but recognizes it is within the scope of BLD-BLC to write these requirements. Therefore, FIR is requesting that BLC-BLD review adding requirements pertaining to podium or pedestal type construction.

Response Message: CI-6514-NFPA 101-2021



Committee Input No. 6511-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

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

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.

Submitter Information Verification

Committee: SAF-FIR

Submittal Date: Thu Jul 08 14:41:00 EDT 2021

Committee Statement

Committee 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.

Response CI-6511-NFPA 101-2021
Message:

[Public Input No. 316-NFPA 101-2021 \[Section No. 8.7.3.3\]](#)

[Public Input No. 280-NFPA 101-2021 \[Section No. 8.7.3.3\]](#)

[Public Input No. 432-NFPA 101-2021 \[Section No. 8.7.3.3\]](#)

2.3 Other Publications.

2.3.1 AA Publications.

~~The Aluminum Association, Inc., 1525 Wilson Blvd. 1400 Crystal Drive, Suite 600 430, Arlington, VA 22209 22202.~~

~~Aluminum Design Manual: Part 1A, Aluminum Structures, Allowable Stress Design, and Part 1-B, Aluminum Structures, Load and Resistance Factor Design of Buildings and Similar Type Structures, 2015 2020.~~

ASM 35, *Specifications for Aluminum Sheet Metal Work, Construction Manual Series Section 5*, 2000.

2.3.2 ACI Publications.

American Concrete Institute, 38800 Country Club Drive, Farmington Hills, MI 48331-~~3434~~3439.

ACI 216.1, *Code Requirements for Determining Fire Resistance of Concrete and Masonry Construction Assemblies*, 2014. (~~reapproved 2019~~).

ACI 311.6, *Specification for Testing Ready-Mixed Concrete*, 2018.

ACI 311.7, ~~Specification for Inspection Services Specification for of~~ *Concrete Construction*, 2018.

ACI 318, *Building Code Requirements for Structural Concrete*, 2019.

ACI 332, ~~Residential~~ *Code Requirements for Structural Residential Concrete*, ~~2014~~2020.

ACI 506.2, *Specification for Shotcrete*, 2013. (~~reapproved 2018~~).

ACI 530/530.1, *Building Code Requirements for Masonry Structures*, 2013.

ACI 530.1/ASCE 6/TMS 602, *Specification for Masonry Structures*, 2005. (See previous document for updated version.)[HG1]:

ACI 562, ~~Code Requirements for Evaluation Assessment~~, *Repair, and Rehabilitation of Existing Concrete Structures*, ~~2019~~2021.

2.3.3 AISC Publications.

American Institute of Steel Construction, 130 ~~E-East~~ Randolph ~~St.~~, Suite 2000, Chicago, IL 60601.

ANSI/AISC 341, *Seismic Provisions for Structural Steel Buildings*, 2016.

ANSI/AISC 358, *Prequalified Connections for Special and Intermediate Steel Moment Frames for Seismic Applications, including Supplement No. 1*, 2016 (includes 2018 supplement).

ANSI/AISC 360, *Specification for Structural Steel Buildings*, 2016.

2.3.4 AISI Publications.

American Iron and Steel Institute, 25 Massachusetts Avenue ~~N-W-NW~~, Suite 800, Washington, DC 20001-~~1431~~.

AISI-S100, *North American Specification for the Design of Cold-Formed Steel Structural Members*, 2016 edition. (~~reaffirmed 2020~~) with Supplements ~~1-18 and 2, 2020-20 (reaffirmed 2020)~~. [HG2][HG3]

AISI-S220, *North American Standard for Cold-Formed Steel Framing — Nonstructural Members*, 2020. [HG4][HG5]

AISI-S230, *North American Standard for Cold-Formed Steel Framing — Prescriptive Method for One- and Two-Family Dwellings*, 2019. [HG6][HG7]

AISI-S240, *North American Standard for Cold-Formed Steel Structural Framing*, 2020. [HG8][HG9]

AISI-S400, *North American Standard for Seismic Design of Cold-Formed Steel Structural Systems*, 2020. [HG10][HG11]

2.3.5 ANSI Publications.

American National Standards Institute, Inc., 25 West 43rd Street, 4th floor, New York, NY 10036.

ANSI ASC A14.3, *American National Standards for Ladders — Fixed — Safety Requirements*, 2008 (~~reaffirmed 2018~~).

ANSI A190.1, *Product Standard for Wood Products — Structural Glued Laminated Timber*, ~~2017~~2022.

ANSI A208.1, *Standard for Particleboard*, 2016.

ANSI Z97.1, *For Safety Glazing Materials Used in Buildings — Safety Performance Specifications and Methods of Test*, 2015 ([reaffirmed 2020](#)).

ANSI/NSPI-1, *Standard for Public Swimming Pools*, 2003.

ANSI/NSPI-2, *Standard for Public Spas*, 1999.

ANSI/NSPI-3, *Standard for Permanently Installed ~~Residential~~ Spas*, 1999.

ANSI/~~NSPI~~APSP/ICC-4, *Standard for Aboveground/Onground Residential Swimming Pools*, ~~1999~~[2012](#).

ANSI/NSPI-5, *Standard for Residential Inground Swimming Pools*, 2003.

ANSI/NSPI-6, *Standard for Residential Portable Spas*, 1999.

ANSI/NSPI-8, *Model Barrier Code for Residential Swimming Pools, Spas, and Hot Tubs*, 1996.

ANSI/APA PRG 320, *Standard for Performance-Rated Cross-Laminated Timber*, [2019](#).

ANSI/RESNA ED-1, *Emergency Stair Travel Devices Used by Individuals with Disabilities*, [Volume 1](#), 2019.

2.3.6 ASCE Publications.

American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191-4400.

ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ~~2016~~, ~~with Supplement 1, 2018~~[2022](#).

ASCE/SEI 8, *Standard Specification for the Design of Cold-Formed Stainless Steel Structural Members*, ~~2020~~[2002](#). [HG12]

ASCE/SEI 19, *Structural Applications of Steel Cables for Buildings*, 2016.

ASCE/SEI 24, *Flood Resistant Design and Construction*, 2014.

ASCE/SEI 41, *Seismic Evaluation and Retrofit of Existing Buildings*, 2017.

ASCE/SEI 49, *Wind Tunnel Testing for Buildings and Other Structures*, ~~2012~~[2021](#).

ASCE/SEI 55, *Tensile Membrane Structures*, 2016.

ASCE/~~SEI~~/SFPE 29, *Standard Calculation Methods for Structural Fire Protection*, ~~2019~~[2005](#). [HG13]

2.3.7 ASHRAE Publications.

American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., ~~1791 Tullie Circle, NE, Atlanta, GA 30329-2305~~[180 Technology Parkway NW, Peachtree Corners, GA 30092](#).

ASHRAE Handbook — *Fundamentals*, ~~2017~~[2021](#).

ASHRAE STD 55, *Thermal Environmental Conditions for Human Occupancy*, 2017.

ASHRAE STD 62.1, *Ventilation for Acceptable Indoor Air Quality*, ~~2016~~[2019](#).

ANSI/ASHRAE STD 62.2, *Ventilation and Acceptable Indoor Air Quality in ~~Low-Rise~~ Residential Buildings*, ~~2016~~[2019](#).

ANSI/ASHRAE/IES STD 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, ~~2016~~[2019](#).

ANSI/ASHRAE STD 90.2, *Energy-Efficient Design of Low-Rise Residential Buildings*, 2018.

ANSI/ASHRAE STD 15, *Safety Standard for Refrigeration Systems*, 2019.

2.3.8 ASME Publications.

~~ASME International~~[The American Society of Mechanical Engineers](#), Two Park Avenue, New York, NY 10016-5990.

ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, ~~2016~~[2019](#).

ASME A17.7/CSA B44.7, *Performance-Based Safety Code for Elevators and Escalators*, 2007, reaffirmed ~~2017~~[2012](#).

ASME A18.1, *Safety Standard for Platform Lifts and Stairway Chairlifts*, ~~2017~~[2020](#).

ASME B20.1, *Safety Standard for Conveyors and Related Equipment*, 2018.

ASME B31.3, *Process Piping*, ~~2016~~2020.

2.3.9 ASSP Publications.

American Society of Safety Professionals, 520 N. Northwest Highway, Park Ridge, IL 60068.

ANSI/ASSP A1264.1, *Safety Requirements for Workplace Walking/Working Surfaces and Their Access; Workplace Floor, Wall and Roof Openings; Stairs and Guardrail/Handrail Systems*, 2017.

2.3.10 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.
www.astm.org

ASTM A6/A6M, *Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling*, ~~2017a~~2021.

ASTM A36/A36M, *Standard Specification for Carbon Structural Steel*, ~~2014~~2019.

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Canadian General Standards Board, ~~Place du Portage III, 6B1, 11 Laurier St., Gatineau, Quebec, K1A 1G6~~ Esplanade Laurier, 6th floor East Tower, 140 O'Connor Street, Ottawa, Ontario, K1A 0R5, Canada.

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EIFS Industry Members Association, 513 West Broad Street, Suite 210, Falls Church, VA 22046-3257.

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FM Approval s 4450, *Class I Insulated Steel Deck Roofs*, 1989.

FM Approval s 4470, *Single-Ply, Polymer Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction*, 2016.

ANSI/FM Approval s 4473, ~~Test Standard for~~ *Impact Resistance Testing of Rigid Roofing Materials by Impacting with Freezer Ice Balls*, 2011 (R2020).

ANSI/FM Approval s 4474, ~~Standard for~~ *Evaluating the Simulated Wind Uplift Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures*, ~~2011~~2020.

ANSI/FM Approval s 4476, ~~Approval Standard for~~ *Flexible Photovoltaic Modules*, ~~2011~~2014 (R2022).

ANSI/FM Approval s 4477, ~~American National Standard for~~ *Vegetative Roof Systems*, ~~2016~~2021.

ANSI/FM Approval s 4478, ~~Approval Standard for~~ *Roof-Mounted Rigid Photovoltaic Module Systems*, ~~2014~~2021.

FM Approval s 4880, ~~American National Standard for~~ *Evaluating the Fire Performance of Insulated Building Panel Assemblies and Interior Finish Materials*, 2017.

2.3.19 FRSA/RTI Publications.

Florida Roofing, ~~and Sheet Metal and Air Conditioning Contractors Association, Inc., 4111 Metric Drive~~3855 N. Econlockhatchee Trail, Suite 6, Winter ParkOrlando, FL ~~32792~~32817.

FRSA/~~NTRMA-07320/1, TRI~~ *Florida High Wind Concrete and Clay Roof Tile Installation Manual*, ~~4th-6th~~ edition, ~~2001~~2020.

2.3.20 GA Publications.

Gypsum Association, 962 Wayne Avenue, Suite 620, Silver Spring, MD 20910.

GA-216, ~~Specification for the~~ *Application and Finishing of Gypsum Panel Products*, ~~2018~~2021.

GA-600, *Fire Resistance and Sound Control Design Manual*, ~~2018~~2021.

2.3.21 HPVA Publications.

Decorative Hardwoods Association, 42777 Trade West Dr., Sterling, VA 20166.

ANSI/HPVA HP-1, American National Standard for Hardwood and Decorative Plywood, 20162020.[HG18]

2.3.22 IAPMO Publications.

International Association of Plumbing and Mechanical Officials, 4755 E. Philadelphia Street, Ontario, CA 91761.

UMC, *Uniform Mechanical Code*, ~~2018~~2021.

UPC, *Uniform Plumbing Code*, ~~2018~~2021.

2.3.23* ICC Publications.

International Code Council, 500 New Jersey Avenue, NW, 6th Floor, Washington, DC 20001-~~2070~~.

ICC/ANSI A117.1, Accessible and Usable Buildings and Facilities, 2009.[HG19][HG20]

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ICC 600, *Standard for Residential Construction in High-High-Wind Regions*, ~~2013~~2020.

IRC, *International Residential Code*, ~~2015~~20182021.

2.3.24 IME Publications.

Institute of Makers of Explosives, 1212 New York Ave., NW, Suite 650, Washington, DC 20005.

IME SLP 2, *The American Table of Distances*, June 1991 (incorporates changes through April 2017).

2.3.25 NAAMM Publications.

National Association of Architectural Metal Manufacturers, 800 Roosevelt Rd. Bldg. C, Suite ~~1323~~112, Glen Ellyn, IL 60137.

ANSI/NAAMM FP 1001, *Guide Specifications for Design of Metal Flagpoles Manual*, 2007.

2.3.26 NCMA Publications.

National Concrete Masonry Association, 13750 Sunrise Valley Drive, Herndon, VA 20171.

Design Manual for Segmental Retaining Walls, 3rd edition, 2010.

2.3.27 PCA Publications.

Portland Cement Association, 5420 Old Orchard Road, Skokie, IL 60077-1083.

PCA 100, *Prescriptive Design of Exterior Concrete Walls for One- and Two-Family Dwellings*, 2012.

2.3.28 PTI Publications.

Post-Tensioning Institute, 38800 Country Club Drive, Farmington Hills, MI 48331.

PTI DC10.1, *Design ~~and Construction~~ of Post-Tensioned Slabs-On-Ground*, ~~3rd edition, 2004~~2008, errata 2010.

2.3.29 RMI Publications.

Rack Manufacturers Institute, 8720 Red Oak Boulevard, Suite 201, Charlotte, NC 28217.

RMI/ANSI MH16.1, *Specification for the Design, Testing and Utilization of Industrial Steel Storage Racks*, 2012 ~~(R2019)~~.

RMI/ANSI MH16.3, *Specification for the Design, Testing and Utilization of Industrial Steel Cantilevered Storage Racks*, 2016.

2.3.30 SDI Publications.

Steel Deck Institute, P.O. Box 426, Glenshaw, PA 15116.

ANSI/SDI-QA/QC, *Standard for Quality Control and Quality Assurance for Installation of Steel Deck*, ~~2017~~2022.

SDI-SD-~~370~~, *Standard for Steel Deck*, ~~2021~~2022.

2.3.31 SEAOC Publications.

Structural Engineers Association of California, ~~921 11th Street~~1215 K St., Suite 1100, Sacramento, CA 95814.

SEAOC PV1, *Structural Seismic Requirements and Commentary for Rooftop Solar Photovoltaic Arrays*, 2012.

SEAOC PV2, *Wind Design for Solar Arrays*, 2017.

2.3.32 SJI Publications.

Steel Joist Institute, 140 West Evans Street, ~~Suite 203~~, Florence, SC 29501.

SJI-100, *Standard Specification for K-Series, LH-Series, and DLH-Series Open Web Steel Joists and for Joist Girders*, ~~2015~~2020.

SJI-200, *Standard Specifications for ~~Composite Steel Joists~~, CJ-Series Composite Steel Joists*, ~~2016~~2015.

2.3.33 SFPA/SPC Publications.

Southern Forest Products Association, 6660 Riverside Drive, Suite 212, Metairie, LA 70003 / Southern Pine Council, 2900 Indiana Avenue, Kenner, LA 70065.

Permanent Wood Foundations: Design & Construction Guide, ~~2013~~2001. [HG21]

2.3.34 SFPE Publications.

SFPE, 9711 Washingtonian Blvd., Suite 380, Gaithersburg, MD 20878. www.sfpe.org

SFPE S.01, ~~The~~ *SFPE Engineering Standard on Calculating Fire Exposures to Structures*, 2011.

2.3.35 SPRI Publications.

SPRI, 465 Waverly Oaks Road, Suite 421, Waltham, MA 02452.

ANSI/SPRI/FM 4435 ES-1, *Test Standard for Edge Systems Used with Low Slope Roofing Systems*, 2017.

ANSI/SPRI RP-4, *Wind Design Standard for Ballasted Single-Ply Roofing Systems*, ~~2013~~2022.

ANSI/SPRI VF-1, *External Fire Design Standard for Vegetative Roofs*, 2017.

2.3.36 TIA Publications.

Telecommunications Industry Association, ~~1320-1310~~ North Courthouse Road, Suite ~~200890~~, Arlington, VA 22201.

ANSI/TIA-222-H, *Structural Standard for Antenna Supporting Structures, and Antennas and Small Wind Turbine Support Structures*, 2017.

2.3.37 TPI Publications.

Truss Plate Institute, Inc., ~~218 North Lee St.~~~~2670 Crain Highway~~, Suite ~~312203~~, ~~Alexandria, VA 22314~~~~Waldorf, MD 20601~~.

ANSI/TPI 1, *National Design Standard for Metal Plate Connected Wood Truss Construction*, 2014.

2.3.38 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 9, *Fire Tests of Window Assemblies*, 2009, revised ~~2015~~2020.

UL 10B, *Fire Tests of Door Assemblies*, 2008, revised ~~2015~~2020.

UL 10C, *Positive Pressure Fire Tests of Door Assemblies*, 2016, ~~revised 2021~~.

UL 217, *Smoke Alarms*, ~~2015~~2020, ~~revised 2022~~.

UL 263, *Fire Tests of Building Construction and Materials*, 2011, revised ~~2019~~2022.

UL 294, *Access Control System Units*, 2018.

UL 300, *Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment*, ~~2018~~2019.

UL 300A, *Extinguishing System Units for Residential Range Top Cooking Surfaces*, 2006.

UL 305, *Panic Hardware*, 2012, revised ~~2017~~2022.

UL 555, *Fire Dampers*, 2006, revised ~~2016~~2020.

UL 555C, *Ceiling Dampers*, 2014, ~~revised 2021~~.

UL 555S, *Smoke Dampers*, 2014, revised ~~2016~~2020.

UL 580, *Tests for Uplift Resistance of Roof Assemblies*, 2006, revised ~~2013~~2019.

UL 723, *Test for Surface Burning Characteristics of Building Materials*, 2018.

UL 790, *Standard Test Methods for Fire Tests of Roof Coverings*, ~~2004~~, revised ~~2018~~2022.

UL 924, *Emergency Lighting and Power Equipment*, 2016, revised ~~2018~~2020.

UL 962, *Household and Commercial Furnishings*, 2014, revised ~~2021~~2022.

UL 1034, *Burglary-Resistant Locking Mechanisms*, 2011, revised 2020.

UL 1040, *Fire Test of Insulated Wall Construction*, 1996, revised ~~2017~~2022.

UL 1256, *Fire Test of Roof Deck Constructions*, 2002, revised ~~2013~~2018.

UL 1286, *Office Furnishings*, 2008, revised ~~2018~~2021.

UL 1479, *Fire Tests of Penetration Firestops*, 2015, ~~revised 2021~~.

UL 1489, *Fire Tests of Fire Resistant Pipe Protection Systems Carrying Combustible Liquids*, 2016, ~~revised 2021~~.

UL 1703, *Flat-Plate Photovoltaic Modules and Panels*, 2002, revised ~~2018~~2019.

UL 1715, *Fire Test of Interior Finish Material*, 1997, revised ~~2017~~2022.

UL 1897, *Uplift Tests for Roof Covering Systems*, 2015, ~~revised 2020~~.

UL 1975, *Fire Tests for Foamed Plastics Used for Decorative Purposes*, 2006.

UL 1994, *Luminous Egress Path Marking Systems*, 2015, ~~revised 2020~~.

UL 2079, *Tests for Fire Resistance of Building Joint Systems*, 2015, ~~revised 2020~~.

UL 2218, *Impact Resistance of Prepared Roof Covering Materials*, 2010, revised ~~2018~~2020.

UL 2703, *Mounting Systems, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels*, 2015, revised 2021.

CAN/ULC S102.2, *Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies*, ~~2010~~2018.

2.3.39 U.S. Government Publications.

U.S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC ~~20402~~20401.

CPSC, 16 CFR 1201, *Safety Standard for Architectural Glazing Materials*, 1977.

CPSC, 16 CFR 1209, *Interim Safety Standard for Cellulose Insulation*, 1979.

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Federal Specification UUB-790a, *Specification for Building Paper, Vegetable Fiber: Kraft, Waterproofed, Water Repellent, and Fiber Resistant*, 1992.

Title 18, United States Code, Chapter 40, "Importation, Manufacture, Distribution and Storage of Explosive Materials."

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Title 36, Code of Federal Regulations, Part 1192.

Title 47, *Code of Federal Regulations, Part 15, "Radio Frequency Devices."*

Title 49, *Code of Federal Regulations, Parts 37.41, 37.43, 37.45, 37.49, and 37.51.*

U.S. Department of Commerce Voluntary Product Standard PS 1, *Structural Plywood*, 2009.

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U.S. Department of Commerce Voluntary Product Standard PS 20, *American Softwood Lumber Standard*, 2010.

U.S. Department of Justice, *2010 ADA Standards*, September 15, 2010.^{[HG24][HG25]}

2.3.40 WRI/CRSI Publications.

Wire Reinforcement Institute, 942 E. Main Street, Hartford, CT 06103.^[HG26]

TF 700-R, *Design of Slabs-on-Ground Foundations*, 2007.

2.3.41 Other Publications.

Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, ~~2003~~2020.

2.4 References for Extracts in Mandatory Sections.

NFPA 1, *Fire Code*, ~~2021~~2024 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, ~~2019~~2022 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, ~~2019~~2023 edition.

NFPA 30, *Flammable and Combustible Liquids Code*, ~~2021~~2024 edition.

NFPA 30B, *Code for the Manufacture and Storage of Aerosol Products*, ~~2019~~2023 edition.

NFPA 55, *Compressed Gases and Cryogenic Fluids Code*, ~~2020~~2023 edition.

NFPA 58, *Liquefied Petroleum Gas Code*, ~~2020~~2023 edition.

NFPA 61, *Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities*, 2020 edition.

NFPA 68, *Standard on Explosion Protection by Deflagration Venting*, ~~2018~~2023 edition.

NFPA 72®, *National Fire Alarm and Signaling Code*®, ~~2019~~2022 edition.

NFPA 80, *Standard for Fire Doors and Other Opening Protectives*, ~~2019~~2022 edition.

NFPA 85, *Boiler and Combustion Systems Hazards Code*, ~~2019~~2023 edition.

NFPA 88A, *Standard for Parking Structures*, ~~2019~~2023 edition.

NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, ~~2021-2024~~ edition.

NFPA 99, *Health Care Facilities Code*, ~~2021-2024~~ edition.

NFPA 101®, *Life Safety Code®*, ~~2021-2024~~ edition.

NFPA 102, *Standard for Grandstands, Folding and Telescopic Seating, Tents, and Membrane Structures*, ~~2016-2021~~ edition.

NFPA 140, *Standard on Motion Picture and Television Production Studio Soundstages, Approved Production Facilities, and Production Locations*, ~~2018-2023~~ edition.

NFPA 150, *Fire and Life Safety in Animal Housing Facilities Code*, ~~2019-2022~~ edition.

NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances*, ~~2019-2024~~ edition.

NFPA 221, *Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls*, ~~2021-2024~~ edition.

NFPA 252, *Standard Methods of Fire Tests of Door Assemblies*, ~~2017-2022~~ edition.

NFPA 253, *Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*, ~~2019-2023~~ edition.

NFPA 301, *Code for Safety to Life from Fire on Merchant Vessels*, ~~2018-2023~~ edition.

NFPA 307, *Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves*, 2021 edition.

NFPA 318, *Standard for the Protection of Semiconductor Fabrication Facilities*, ~~2018-2022~~ edition.

NFPA 400, *Hazardous Materials Code*, ~~2019-2022~~ edition.

NFPA 418, *Standard for Heliports*, ~~2016-2021~~ edition.

NFPA 495, *Explosive Materials Code*, ~~2018-2023~~ edition.

NFPA 501, *Standard on Manufactured Housing*, ~~2017-2022~~ edition.

NFPA 703, *Standard for ~~Fire-Fire~~-Retardant-Treated Wood and Fire-Retardant Coatings for Building Materials*, ~~2021-2024~~ edition.

NFPA 731, *Standard for the Installation of Premises Security Systems*, ~~2020-2023~~ edition.

NFPA 909, *Code for the Protection of Cultural Resource Properties — Museums, Libraries, and Places of Worship*, ~~2017-2021~~ edition.

NFPA 914, *Code for the Protection of Historic Structures*, ~~2019-2023~~ edition.

NFPA 921, *Guide for Fire and Explosion Investigations*, 2021 edition.

NFPA ~~1144~~1140, *Standard for ~~Reducing Structure Ignition Hazards from~~ Wildland Fire Protection*, ~~2018-2022~~ edition.

H.1.2 Other Publications.

H.1.2.1 ACI Publications.

American Concrete Institute, 38800 Country Club Drive, Farmington Hills, MI 48331-3434.

ACI/TMS 216.1, *Code Requirements for Determining Fire Resistance of Concrete and Masonry Construction Assemblies*, 2014 ([reapproved 2019](#)).

H.1.2.2 AISC Publications.

American Institute of Steel Construction, 130 ~~East~~-Randolph~~St.~~, Suite 2000, Chicago, IL 60601.

AISC Design Guide 2: *Steel and Composite Beams with Web Openings*, 2003.

H.1.2.3 ANSI Publications.

American National Standards Institute, Inc., 25 West 43rd Street, 4th floor, New York, NY 10036.

ANSI ES1.9, *Crowd Management*, 2020.

ANSI Z2, *Standard Safety Code for Head, Eye and Respiratory Protection*.

ANSI Z535.1, *American National Standard for Safety Colors*, 2017.

H.1.2.4 ASCE Publications.

American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191-4400.

ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ~~2016 with Supplement 1, 2018~~[2022](#).

ASCE/SEI 24, *Flood Resistant Design and Construction*, 2014.

ASCE/SEI 31, *Seismic Evaluation of Existing Buildings*, 2003.

ASCE/SEI 49, *Wind Tunnel Testing for Buildings and Other Structures*, ~~2012~~[2021](#).

ASCE/~~SEI~~/SFPE 29, *Standard Calculation Methods for Structural Fire Protection*, ~~2019~~[2005](#)[\[HGI\]](#).

ASCE, *Tensile Fabric Structures: Design, Analysis, and Construction*, 2013.

H.1.2.5 ASHRAE Publications.

~~American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., 180 Technology Parkway NW, Peachtree Corners, GA 30092~~ASHRAE, Inc., 1791 Tullie Circle, NE, Atlanta, GA 30329-2305.

ASHRAE STD 62.1, *Ventilation for Acceptable Indoor Air Quality*, ~~2016~~[2019](#).

ASHRAE STD 189.1, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*, ~~2014~~[2017](#).

ASHRAE Handbook — *Fundamentals*, ~~2017~~[2021](#).

Klote, J. H., and Milke, J. A., *Design of Smoke Management Systems*, 1992.

H.1.2.6 ASME Publications.

~~The American Society of Mechanical Engineers~~ASME International, Two Park Avenue, New York, NY 10016-5990.

ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, ~~2016~~[2019](#).

H.1.2.7 ASSP Publications.

American Society of Safety Professionals, 520 N. Northwest Highway, Park Ridge, IL 60068.

ANSI/ASSP A1264.2, *Reducing Slip Missteps on Walking-Working Surfaces*, [2022](#)~~Standard for the Provision of Slip Resistance of Walking/Working Surfaces, 2012~~.

H.1.2.8 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM C29/C29M, *Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate*, 2017a.

ASTM C136/C136M, *Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates*, ~~2014~~[2019](#).

ASTM D56, *Standard Test Method for Flash Point by Tag Closed Cup Tester*, ~~2016a~~[2021a](#).

ASTM D86, *Standard Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure*, ~~2018~~2020b.

ASTM D93, *Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester*, ~~2018~~2020.

ASTM D448, *Standard Classification for Sizes of Aggregate for Road and Bridge Construction*, 2012 (2017).

ASTM D1079, *Standard Terminology Relating to Roofing and Waterproofing*, ~~2018~~e12020.

ASTM D2859, *Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials*, 2016 (2021).

ASTM D3278, *Standard Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus*, ~~1996~~, (~~2011~~)2021.

ASTM D3828, *Standard Test Methods for Flash Point by Small Scale Closed Cup Tester*, 2016a (2021).

ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, ~~2019a~~2021a.

ASTM E96/E96M, *Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials*, ~~2022~~Standard Test Methods for Water Vapor Transmission of Materials, 2016.

ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, ~~2018e~~e12020.

ASTM E136, *Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C*, 2019a.

ASTM E648, *Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*, ~~2017a~~2019a e1.

ASTM E736/E736M, *Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members*, ~~2017~~2019.

ASTM E814, *Standard Test Method for Fire Tests of Penetration Firestop Systems*, 2013a (2017).

ASTM E1354, *Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter*, ~~2017~~2022.

ASTM E1472, *Standard Guide for Documenting Computer Software for Fire Models*, 2007 (withdrawn 2011).

ASTM E1592, *Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference*, 2005 (2017).

ASTM E1886, *Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials*, ~~2013a~~2019.

ASTM E1966, *Standard Test Method for Fire-Resistive Joint Systems*, 2015 (2019).

ASTM E1996, *Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes*, ~~2017~~2020.

ASTM E2030, *Guide for Recommended Uses of Photoluminescent (Phosphorescent) Safety Markings*, 2009a (withdrawn 2018).

ASTM E2174, *Standard Practice for On-Site Inspection of Installed Firestops Systems*, ~~2018~~2020a.

ASTM E2280, *Standard Guide for Fire Hazard Assessment of the Effect of Upholstered Seating Furniture within Patient Rooms of Health Care Facilities*, ~~2017~~2021.

ASTM E2307, *Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Systems Using Intermediate-Scale, Multi-~~Story-story~~ Test Apparatus*, ~~2015b~~e12020.

ASTM E2393, *Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers*, ~~2010a~~, (~~2015~~)2020a.

ASTM E2396/E2396M, *Standard Test Method for Saturated Water Permeability of Granular Drainage Media [Falling-Head Method] for Vegetative (Green) Roof Systems*, 2019.

ASTM E2397/E2397M, *Standard Practice for Determination of Dead Loads and Live Loads Associated with Vegetative (Green) Roof Systems*, 2019.

ASTM E2398/E2398M, *Standard Test Method for Water Capture and Media Retention of Geocomposite Drain Layers for Vegetative (Green) Roof Systems*, 2019.

ASTM E2399/E2399M, *Standard Test Method for Maximum Media Density for Dead Load Analysis of Vegetative (Green) Roof Systems*, 2019.

ASTM E2484, *Standard Specification for Multi-Story Building External Evacuation Controlled Descent Devices*, 2008(2015).

ASTM E2513, *Standard Specification for Multi-Story Building External Evacuation Platform Rescue Systems*, 2007 ~~(2012)~~2019 e1).

ASTM E2568, *Standard Specification for PB Exterior Insulation and Finish Systems*, 2017a.

ASTM E2652, *Standard Test Method for Assessing Combustibility of Materials Using a Tube Furnace with a Cone-Shaped Airflow Stabilizer*, at 750°C, 2018.

ASTM E2768, *Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 Min-min Tunnel Test)*, 2011 (2018).

ASTM E2965, *Standard Test for Determination of Low Levels of Heat Release Rate for Materials and Products Using an Oxygen Combustion Calorimeter*, ~~2017~~2022.

ASTM F1637, *Standard Practice for Safe Walking Surfaces*, ~~2019~~2021.

ASTM F1679, *Standard Test Method for Using a Variable Incidence Tribometer (VIT)*, 2004 e1 (withdrawn 2006).

ASTM F2291, *Standard Practice for Design of Amusement Rides ~~or~~ and Devices*, ~~2019~~2021.

H.1.2.9 AWC Publications.

American Wood Council, 222 Catoctin Circle SE, Suite #201, Leesburg, VA 20175.

~~ANSI~~/AWC PWF, *Permanent Wood Foundation Design Specification*, ~~2015~~2021.

AWC *Manual for Engineered Wood Construction*, 2018.

AWC Technical Report No. 10, *Calculating the Fire Resistance of Wood Members and Assemblies*, ~~2018~~2021.

H.1.2.10 BHMA Publications.

Builders Hardware Manufacturers Association, 355 Lexington Avenue, 17th Floor, New York, NY 10017-6603.

ANSI/BHMA A156.10, *Power Operated Pedestrian Doors*, 2017.

ANSI/BHMA A156.19, *Power Assist and Low Energy Power Operated Doors*, ~~2013~~2019.

ANSI/BHMA A156.38, *Low Energy Power Operated Sliding and Folding Doors*, ~~2014~~2019.

ANSI/BHMA A156.41, *Door Hardware Single Motion to Egress*, ~~2017~~2020.

H.1.2.11 CRC Press Publications.

CRC Press, Taylor & Francis Group, 6000 NW Broken Sound Parkway, Suite 300, Boca Raton, FL, 33487.

Endsley, M. R., *Designing for Situation Awareness: An Approach to User-Centered Design*, Second Edition, ~~2003~~2011.

H.1.2.12 Florida Building Code.

Florida Building Commission, 2601 Blair Stone Road, Tallahassee, FL 32399.

TAS 201, *Impact Test Procedures*, 1994.

TAS 203, *Criteria for Testing Products Subject to Cyclic Wind Pressure Loading*, 1994.

H.1.2.13 FM Global Publications.

FM Global, 270 Central Avenue, ~~P.O. Box 7500~~, Johnston, RI 02919-4949.

FM Approvals 4450, *Class 1 Insulated Steel Deck Roofs*, 1989.

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FM Approval 4471, *Class 1 Panel Roofs*, 2010.

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~~ANSI/FM Approvals~~ 4880, ~~American National Standard for~~ Evaluating the Fire Performance of Insulated Building Panel Assemblies and Interior Finish Materials, 2017.

[FM Data Sheet 1-15, Roof Mounted Solar Photovoltaic Panels, 2021.](#)

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FM Data Sheet 1-35, ~~Green-Vegetative~~ Roof Systems, ~~2011~~[2020](#).

FM Data Sheet 1-49, Perimeter Flashing, ~~2016~~[2021](#).

~~FM Global Property Loss Prevention Data Sheet 1-15, "Roof Mounted Solar Photovoltaic Panels," 2014.~~

H.1.2.14 IAPMO Publications.

International Association of Plumbing and Mechanical Officials, 4755 E. Philadelphia Street, Ontario, CA 91761.

UPC, *Uniform Plumbing Code*, ~~2018~~[2021](#).

H.1.2.15 ICC Publications.

International Code Council, 500 New Jersey Avenue, NW, 6th Floor, Washington, DC 20001-2070.

ICC/ANSI A117.1, *American National Standard for Accessible and Usable Buildings and Facilities*, 2009.

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ICC/NSSA 500, *Standard for the Design and Construction of Storm Shelters*, ~~2014~~[2020](#).

ICC/ASHRAE 700, *National Green Building Standard*, ~~2015~~[2020](#).

H.1.2.16 IEC Publications.

International Electrotechnical Commission, 3 rue de Varembé, P.O. Box 131, 1211 Geneva 20, Switzerland.

IEC 60364-1, *Low-Voltage Electrical Installations - Part 1: Fundamental Principles, Assessment of General Characteristics, Definitions*, 2005, Corrigendum 1, 2009.

H.1.2.17 RESNA Publications.

Rehabilitation Engineering and Assistive Technology Society of North America, 1560 Wilson Blvd., Suite 850, Arlington, VA 22209. www.resna.org

ANSI/RESNA ED-1, *Emergency Stair Travel Devices Used by Individuals with Disabilities, Volume 1*, 2019.

H.1.2.18 SFPA/SPC Publications.

Southern Forest Products Association, 6660 Riverside Drive, Metairie, LA 70003 / Southern Pine Council, 2900 Indiana Avenue, Kenner, LA 70065.

~~Permanent Wood Foundations: Design & Construction Guide, 2013~~[2001](#).^{[HG2][HG3]}

H.1.2.19 SFPE Publications.

SFPE, 9711 Washingtonian Blvd., Suite 380, Gaithersburg, MD 20878. www.sfpe.org

SFPE Code Official's Guide to Performance-Based Design Review, 2004.

SFPE Engineering Guide—Evaluation of the Computer Fire Model DETACT-QS, 2002.

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SFPE Handbook of Fire Protection Engineering, ~~fifth~~[5th](#) edition, 2016.

SFPE S.01, *Standard on Calculating Fire Exposures to Structures*, 2011.

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H.1.2.20 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 10B, *Fire Tests of Door Assemblies*, 2008, revised ~~2015~~2020.

UL 10C, *Positive Pressure Fire Tests of Door Assemblies*, 2016, revised 2021.

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UL 723, *Test for Surface Burning Characteristics of Building Materials*, 2018.

UL 924, *Emergency Lighting and Power Equipment*, 2016, revised 2020.

UL 962, *Household and Commercial Furnishings*, 2014, revised ~~2021~~2022.

UL 1034, *Burglary-Resistant Electric Locking Mechanisms*, 2011, revised 2020.

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UL 1479, *Fire Tests of Penetration Firestops*, 2015, revised 2021.

UL 1588, *Outline of Investigation for Roof and Gutter De-Icing Cable Units*, 2002.

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UL 1715, *Fire Test of Interior Finish Material*, 1997, revised ~~2017~~2022.

UL 1897, *Uplift Tests for Roof Covering Systems*, 2015, revised 2020.

UL 2079, *Tests for Fire Resistance of Building Joint Systems*, 2015, revised 2020.

UL 2703, *Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels*, 2015, revised 2021.

UL Fire Resistance Directory, 2018.[HG4]

~~UL Heating, Cooling, Ventilating and Cooking Equipment Directory, 2018.~~

UL Product iQTM, www.ul.com

H.1.2.21 UN Publications.

United Nations Publications, Sales and Marketing Section, Room DC2-853, Dept. I004, New York, NY 10017.

UN Recommendations on the Transport of Dangerous Goods, Model Regulations, ~~19th revised edition~~Rev. 22, 20152021.

H.1.2.22 U.S. Government Publications.

U.S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-~~0001~~.

Title 16 Code of Federal Regulations, Part 1630, *Standard for the Surface Flammability of Carpets and Rugs*, 1993.

Title 18, United States Code, Chapter 40, "Importation, Manufacture, Distribution and Storage of Explosive Materials."

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FEMA P-320, *Taking Shelter from the Storm: Building a Safe Room for Your Home or Small Business*.

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FEMA Technical Bulletin 5-~~93~~, *Free-of-Obstruction Requirements ~~for Buildings Located in Coastal High Hazard Areas~~*, ~~1993~~2020.

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FEMA 356, *Prestandard and Commentary for the Seismic Rehabilitation of Building*, 2000.

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H.1.2.23 Other Publications.

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Waksman, D. and J. Ferguson, "Fire Tests of Building Interior Covering Systems," *Fire Technology*, Institute for Applied Technology, National Bureau of Standards, August 1974.

H.2 Informational References.

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UL 1724, *Outline of Investigation for Fire Tests for Electrical Circuit Protective Systems*, 2006.

UL 2196, *Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables* Tests of Fire-Resistive Cables, ~~2001~~2017, revised ~~2012~~2020.

H.3 References for Extracts in Informational Sections.

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NFPA 88A, *Standard for Parking Structures*, ~~2019~~2023 edition.

NFPA 99, *Health Care Facilities Code*, ~~2021~~2024 edition.

NFPA 101®, *Life Safety Code*®, ~~2021~~2024 edition.

NFPA 221, *Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls*, ~~2021~~2024 edition.

NFPA 301, *Code for Safety to Life from Fire on Merchant Vessels*, ~~2018~~2023 edition.

NFPA 400, *Hazardous Materials Code*, ~~2019~~2022 edition.

NFPA 418, *Standard for Heliports*, ~~2016~~2021 edition.

NFPA 703, *Standard for Fire-Retardant-Treated Wood and Fire-Retardant Coatings for Building Materials*, ~~2017~~2024 edition.

NFPA 914, *Code for the Protection of Historic Structures*, ~~2019~~2023 edition.

NFPA 921, *Guide for Fire and Explosion Investigations*, 2021 edition.

NFPA 5000 (2024) extracts from NFPA 80 (2022)

3.3.39.1.1 Fire Door Assembly.

Any combination of a fire door, a frame, hardware, and other accessories that together provide a specific degree of fire protection to the opening. [80, [2019/2022](#)] (BLD-FIR)

3.3.39.1.2 Floor Fire Door Assembly.

A combination of a fire door, a frame, hardware, and other accessories installed in a horizontal plane, which together provide a specific degree of fire protection to a through-opening in a fire resistance-rated floor. [80, [2019/2022](#)] (BLD-FIR)

3.3.39.2 Fire Window Assembly.

A window or glass block assembly having a fire protection rating. [80, [2019/2022](#)] (BLD-FIR)

Table 8.7.2.2 Minimum Fire Ratings for Opening Protectives in Fire-Resistance-Rated Assemblies and Fire-Rated Glazing Markings

^dMaximum area of individual exposed lights shall be 1296 in.² (0.84 m²), with no dimension exceeding 54 in. (1.37 m) unless otherwise tested. [80:Table 4.4.5 Note b and 80:4.4.5.1]

NFPA 5000 (2024) extracts from NFPA 90A (2024)

3.3.141 Damper.

3.3.141.1* Ceiling [Radiation](#) Damper.

A listed device installed in a ceiling membrane of a ~~fire-fire~~-resistance-rated floor—ceiling or roof—ceiling assembly to automatically limit the radiative heat transfer through an air inlet/outlet opening. [90A, [2021/2024](#)] (BLD-FIR)

A.3.3.141.1 Ceiling [Radiation](#) Damper.

Some such devices are listed in UL [Fire-Resistance Directory Online Certifications Direction, Product IQ, www.UL.com/PiQ](#), under the category “Ceiling Damper (CABS).” [90A, 2021]

3.3.141.2 Combination Fire—~~and~~ Smoke Damper.

A [listed](#) device [installed in the ducts or air transfer openings of fire-resistance-rated walls, barriers, partitions, or floors](#) that meets both ~~the~~ fire damper and smoke damper requirements. [90A, [2021/2024](#)] (BLD-FIR)

3.3.141.3* Fire Damper.

A [listed](#) device installed in an air—distribution system and designed to close automatically upon detection of heat, to interrupt migratory airflow, and to restrict the passage of flame. [90A, [2021/2024](#)] (BLD-FIR)

A.3.3.141.3 Fire Damper.

Fire dampers are classified for use in either static systems that will automatically shut down in the event of a fire or in dynamic systems that operate in the event of a fire. A dynamic fire damper is tested and rated for closure under airflow.

Some such devices are listed in UL [Online Certifications Directory, Product iQ, ~~www.UL.com/PiQ, Heating, Cooling, Ventilating and Cooking Equipment Directory~~](https://www.ul.com/PiQ_Heating_Cooling_Ventilating_and_Cooking_Equipment_Directory) under the category of “Fire Dampers for Fire Barrier and Smoke Applications (EMME).” Fire dampers are classified for use in either static systems or for dynamic systems, where the dampers are rated for closure under airflow. [90A, [20212024](#)]

3.3.141.4* Smoke Damper.

A [listed](#) device within an air- ~~distribution~~ system to control the movement of smoke. [90A, [20212024](#)] (BLD-FIR)

A.3.3.141.4 Smoke Damper.

Smoke dampers are subjected to various pressure differentials, ~~are and~~ exposed to elevated temperatures, and [they](#) can be required to open or close against mechanically induced airflow. Some such devices are listed in UL [Online Certifications Directory, Product iQ, ~~www.UL.com/PiQ, Heating, Cooling, Ventilating and Cooking Equipment Directory~~](https://www.ul.com/PiQ_Heating_Cooling_Ventilating_and_Cooking_Equipment_Directory) under the category “Dampers for Fire Barrier and Smoke Applications (EMME).” [90A, [20212024](#)]

NFPA 5000 (2024) extracts from NFPA 221 (2024)

3.3.539.1* Fire Protection Rating.

The designation indicating the duration of the fire test exposure to which an opening protective assembly was exposed. [221, [20212024](#)] (BLD-FIR)

NFPA 5000 (2024) extracts from NFPA 252 (2022)

3.3.683 Vision Panel.

A glazing material installed in a fire door assembly to allow for viewing through the fire door assembly. [252, [20172022](#)] (BLD-FIR)

**Public Comment No. 38-NFPA 5000-2022 [Section No. 3.3.79]****3.3.79 Ceiling Radiation Damper.**

See 3.3.141.1, Ceiling ~~Damper~~ Radiation Damper .

Statement of Problem and Substantiation for Public Comment

BLD-AAC appointed a task group to review damper terminology throughout NFPA 5000 based upon FR 8003 which modified the definitions for various dampers and made the change to extract the definitions from NFPA 90A. The purpose of this Public Comment, submitted on behalf of the Task Group, is to revise the language to be consistent with the defined terms in Chapter 3. It should be noted that the terms proposed are based upon the First Draft Report of NFPA 90A and not necessarily the definitions in Chapter 3 of the First Draft Report for NFPA 5000. If NFPA 90A is revised during the Public Comment period it is the intent that these terms would be revised to be consistent with the defined terms being extracted from NFPA 90A.

It should be noted that although Koffel Associates is a consultant to AMCA International, the Public Comment is not identified as being submitted on behalf of AMCA International since the Public Comment was the result of the BLD-AAC Task Group.

Related Item

- FR 8003

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Public Comment No. 147-NFPA 5000-2022 [Section No. 3.3.107]

3.3.107 Combination Fire- and - Smoke Damper.

See 3.3.141.2.

Statement of Problem and Substantiation for Public Comment

BLD-AAC appointed a task group to review damper terminology throughout NFPA 5000 based upon FR 8003 which modified the definitions for various dampers and made the change to extract the definitions from NFPA 90A. The purpose of this Public Comment, submitted on behalf of the Task Group, is to revise the language to be consistent with the defined terms in Chapter 3. It should be noted that the terms proposed are based upon the First Draft Report of NFPA 90A and not necessarily the definitions in Chapter 3 of the First Draft Report for NFPA 5000. If NFPA 90A is revised during the Public Comment period it is the intent that these terms would be revised to be consistent with the defined terms being extracted from NFPA 90A.

It should be noted that although Koffel Associates is a consultant to AMCA International, the Public Comment is not identified as being submitted on behalf of AMCA International since the Public Comment was the result of the BLD-AAC Task Group.

Related Item

- FR 8003

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Public Comment No. 146-NFPA 5000-2022 [Section No. 3.3.141]

3.3.141 Damper.

3.3.141.1* Ceiling ~~Damper~~ Radiation Damper .

A listed device installed in a ceiling membrane of a fire resistance-rated floor-ceiling or roof-ceiling assembly to automatically limit the radiative heat transfer through an air inlet/outlet opening. [90A, 2021] (BLD-FIR)

3.3.141.2 Combination Fire- and - Smoke Damper.

A ~~device that~~ listed device installed in the ducts or air transfer openings of fire-resistance-rated walls, barriers, partitions, or floors that meets both the fire damper and smoke damper requirements. [90A, 2021] (BLD-FIR)

3.3.141.3* Fire Damper.

A listed device installed in an air-distribution system and designed to close automatically upon detection of heat, to interrupt migratory airflow, and to restrict the passage of flame. [90A, 2021] (BLD-FIR)

3.3.141.4* Smoke Damper.

A listed device within an air-distribution system to control the movement of smoke. [90A, 2021] (BLD-FIR)

Statement of Problem and Substantiation for Public Comment

BLD-AAC appointed a task group to review damper terminology throughout NFPA 5000 based upon FR 8003 which modified the definitions for various dampers and made the change to extract the definitions from NFPA 90A. The purpose of this Public Comment, submitted on behalf of the Task Group, is to revise the language to be consistent with the defined terms in Chapter 3. It should be noted that the terms proposed are based upon the First Draft Report of NFPA 90A and not necessarily the definitions in Chapter 3 of the First Draft Report for NFPA 5000.

This specific Public Comment revises the definitions to be consistent with the First Draft Report for NFPA 90A. If NFPA 90A is revised during the Public Comment period it is the intent that these terms would be revised to be consistent with the defined terms being extracted from NFPA 90A.

It should be noted that although Koffel Associates is a consultant to AMCA International, the Public Comment is not identified as being submitted on behalf of AMCA International since the Public Comment was the result of the BLD-AAC Task Group.

Related Item

- FR 8003

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Public Comment No. 31-NFPA 5000-2022 [Section No. 8.2.1.1]

8.2.1.1*

The fire resistance ratings of structural elements and building assemblies shall be determined in accordance with the prescriptive requirements of 8.2.2 based on the test procedures set forth in ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or UL 263, *Fire Tests of Building Construction and Materials*, ~~or other approved test methods or~~ or analytical methods in accordance with 8.2.3.

8.2.1.2 The fire resistance ratings of structural elements and building assemblies which have the potential to be exposed to a hydrocarbon fuel fire shall be determined in accordance with ASTM E1529, *Standard Test Methods for Determining Effects of Large Hydrocarbon Pool Fires on Structural Members and Assemblies* or with UL 1709, *Standard for Rapid Rise Fire Tests of Protection Materials for Structural Steel*.

(Also add ASTM E1529 Standard Test Methods for Determining Effects of Large Hydrocarbon Pool Fires on Structural Members and Assemblies. 2016e1 into section 2 on referenced ASTM standards and UL 1709, Standard for Rapid Rise Fire Tests of Protection Materials for Structural Steel, into the section on referenced UL standards)

(Also renumber section 8.2.1.2 and 8.2.1.3 as sections 8.2.1.3 and 8.2.1.4)

Statement of Problem and Substantiation for Public Comment

This public comment (and the original PI, # 76) are not intended to cast aspersions on ASTM E119: it is the correct test and is proposed to be retained. In fact the public comment is intended to reinforce that ASTM E119 is the test that should be used and not "other approved tests" unless the "other" test has been developed by a consensus standard process and has been shown to be more severe (and not less severe) than ASTM E119, with ASTM E1529 being an example.

The problem that this public comment is intended to address is that it is not safe to allow "other approved tests" without clarification. It is clear that there is no guarantee that "other tests" will be equivalent in terms of fire safety to ASTM E119. I assume the committee's reference to section 1.4 is intended to reference section 1.5 on equivalency. Section 1.5.2 on approval of equivalency states that "Alternative systems, methods or devices approved as equivalent by the authority having jurisdiction shall be recognized as being in compliance with this Code." That section applies to all sections of the code and the specific addition of the language of "other approved tests" in this section has the potential to be misleading, since it is not included in other sections. The specific inclusion of those words in this section puts the responsibility on the ahj to consider "other" tests. This is not appropriate or safe. Note that other sections in NFPA 5000 referencing ASTM E119 do not contain those words. Examples are: 8.2.1.4, 8.2.2.4.2.1, 8.2.2.4.3.1, 8.2.3.3.2, and 48.4.1.2. Also, the annex note to 8.2.1.1 discusses only ASTM E119 and UL 263 as equivalent tests.

The annex note to 8.2.1.1 is critical and is the basis for the proposed new mandatory section. When hydrocarbon fuel fires are potentially involved, the use of ASTM E1529 is the appropriate one and not ASTM E119. Adding this new section makes it clear that ASTM E1529 is an approved test to be used for such cases.

An alternate public comment is being submitted without the proposed new added section.

Related Item

- PI76

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Committee:	BLD-FIR



Public Comment No. 32-NFPA 5000-2022 [Section No. 8.2.1.1]

8.2.1.1*

The fire resistance ratings of structural elements and building assemblies shall be determined in accordance with the prescriptive requirements of 8.2.2 based on the test procedures set forth in ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or UL 263, *Fire Tests of Building Construction and Materials*, or ~~other approved test methods or analytical methods~~ or analytical methods in accordance with 8.2.3.

Statement of Problem and Substantiation for Public Comment

This public comment (and the original PI, # 76) are not intended to cast aspersions on ASTM E119: it is the correct test and is proposed to be retained. In fact the public comment is intended to reinforce that ASTM E119 is the test that should be used and not "other approved tests" unless the "other" test has been developed by a consensus standard process and has been shown to be more severe (and not less severe) than ASTM E119, with ASTM E1529 being an example.

The problem that this public comment is intended to address is that it is not safe to allow "other approved tests" without clarification. It is clear that there is no guarantee that "other tests" will be equivalent in terms of fire safety to ASTM E119. I assume the committee's reference to section 1.4 is intended to reference section 1.5 on equivalency. Section 1.5.2 on approval of equivalency states that "Alternative systems, methods or devices approved as equivalent by the authority having jurisdiction shall be recognized as being in compliance with this Code." That section applies to all sections of the code and the specific addition of the language of "other approved tests" in this section has the potential to be misleading, since it is not included in other sections. The specific inclusion of those words in this section puts the responsibility on the AHJ to consider "other" tests. This is not appropriate or safe. Note that other sections in NFPA 5000 referencing ASTM E119 do not contain those words. Examples are: 8.2.1.4, 8.2.2.4.2.1, 8.2.2.4.3.1, 8.2.3.3.2, and 48.4.1.2. Also, the annex note to 8.2.1.1 discusses only ASTM E119 and UL 263 as equivalent tests.

An alternate public comment is being submitted adding also a section for the ASTM E1529 test, in case hydrocarbon fuel fires are potentially involved.

Related Item

- pi76

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Submittal Date: Thu Apr 14 12:55:46 EDT 2022

Committee: BLD-FIR



Public Comment No. 34-NFPA 5000-2022 [Section No. 8.2.3]

8.2.3 Analytical Methods.

8.2.3.1 General.

Analytical methods utilized to determine the fire resistance rating of building assemblies shall comply with 8.2.3.2 or 8.2.3.3.

8.2.3.2* Calculations.

8.2.3.2.1*

Where calculations are used to establish the fire resistance rating of structural elements or assemblies, they shall be permitted to be performed in accordance with ASCE/SFPE 29, *Standard Calculation Methods for Structural Fire Protection*.

8.2.3.2.2

Where calculations are used to establish the fire resistance rating of concrete or masonry elements or assemblies, the provisions of ACI 216.1, *Code Requirements for Determining Fire Resistance of Concrete and Masonry Construction Assemblies*, shall be permitted to be used.

8.2.3.3 Methods.

8.2.3.3.1

Except for the method specified in 8.2.3.2, analytical methods used to calculate the fire resistance rating of building assemblies or structural elements shall be approved.

8.2.3.3.2

Where an approved analytical method is utilized to establish the fire resistance rating of a structural element or building assembly, the calculations shall be based on the fire exposure and acceptance criteria specified in ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or UL 263, *Fire Tests of Building Construction and Materials*.

8.2.3.3.3 *

Extension of fire resistance rating data based on results of tests conducted in accordance with ASTM E119 or UL 263 shall be permitted to be conducted by using the methodology of ASTM E2032, Standard Practice for Extension of Data From Fire Resistance Tests Conducted in Accordance with ASTM E 119 .

A.8.2.3.3.3 ASTM E2032 covers the extension of fire resistance ratings obtained from fire tests performed in accordance with ASTM E119 or UL 263 to constructions that have not been tested. ASTM E119 or UL 263 evaluate the duration for which test specimens will contain a fire, retain their standard integrity, or both during a predetermined test exposure. ASTM E2032 is a standard practice based on principles involving the extension of test data using simple considerations.

(Also add ASTM E2032, Standard Practice for Extension of Data From Fire Resistance Tests Conducted in Accordance with ASTM E 119 . (2021) into section 2 on ASTM referenced standards and on the annex on informational references)

Statement of Problem and Substantiation for Public Comment

The use of ASTM E2032 as a calculation method for assessing fire resistance ratings of assemblies that have not been tested by extension of data is one of the most common means of calculating fire

resistance ratings, and that is what section 8.2.3.2 relates to. Note that section 8.2.1 states that fire resistance ratings are to be determined by testing or by calculation, and it sends the user of the code to section 8.2.3 for calculations. Note also that this is not a "performance-based approach" but simply a pointer to a commonly-used calculation method. Note also that ASTM E2032 is now a standard practice with properly derived standardized rules and requirements.

Related Item

- PI77

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Committee: BLD-FIR



Public Comment No. 40-NFPA 5000-2022 [Section No. 8.8.8.3.1]

8.8.8.3.1

Air-conditioning, heating, and ventilating ductwork and related equipment, including fire dampers, smoke dampers, combination fire- and - smoke dampers, and ceiling radiation dampers, shall be installed in accordance with NFPA 90A or NFPA 90B as specified in Chapter 50, where applicable.

Statement of Problem and Substantiation for Public Comment

BLD-AAC appointed a task group to review damper terminology throughout NFPA 5000 based upon FR 8003 which modified the definitions for various dampers and made the change to extract the definitions from NFPA 90A. The purpose of this Public Comment, submitted on behalf of the Task Group, is to revise the language to be consistent with the defined terms in Chapter 3. It should be noted that the terms proposed are based upon the First Draft Report of NFPA 90A and not necessarily the definitions in Chapter 3 of the First Draft Report for NFPA 5000. If NFPA 90A is revised during the Public Comment period it is the intent that these terms would be revised to be consistent with the defined terms being extracted from NFPA 90A.

It should be noted that although Koffel Associates is a consultant to AMCA International, the Public Comment is not identified as being submitted on behalf of AMCA International since the Public Comment was the result of the BLD-AAC Task Group.

Related Item

- FR 8003

Submitter Information Verification

Submitter Full Name: William Koffel

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Submittal Date: Tue May 03 02:28:22 EDT 2022

Committee: BLD-FIR



Public Comment No. 148-NFPA 5000-2022 [Section No. 8.8.8.5]

8.8.8.5* Fire Damper Actuation Device.

The operating temperature of the heat-actuating device shall be approximately 50°F (27.8°C) above the normal temperature within the duct system, but not less than 160°F (71°C); or it shall be not more than 286°F (141°C) where located in a required smoke control system; or, where a combination fire- and - smoke damper is installed, it shall not exceed 350°F (177°C) where located in a smoke control system.

Statement of Problem and Substantiation for Public Comment

BLD-AAC appointed a task group to review damper terminology throughout NFPA 5000 based upon FR 8003 which modified the definitions for various dampers and made the change to extract the definitions from NFPA 90A. The purpose of this Public Comment, submitted on behalf of the Task Group, is to revise the language to be consistent with the defined terms in Chapter 3. It should be noted that the terms proposed are based upon the First Draft Report of NFPA 90A and not necessarily the definitions in Chapter 3 of the First Draft Report for NFPA 5000. If NFPA 90A is revised during the Public Comment period it is the intent that these terms would be revised to be consistent with the defined terms being extracted from NFPA 90A.

It should be noted that although Koffel Associates is a consultant to AMCA International, the Public Comment is not identified as being submitted on behalf of AMCA International since the Public Comment was the result of the BLD-AAC Task Group.

Related Item

- FR 8003

Submitter Information Verification

Submitter Full Name: William Koffel

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Submittal Date: Tue May 31 16:08:38 EDT 2022

Committee: BLD-FIR



Public Comment No. 151-NFPA 5000-2022 [Section No. 8.8.8.6]

8.8.8.6 Ceiling Radiation Damper Requirements.

8.8.8.6.1

Ceiling radiation dampers or other methods of protecting openings in fire-resistance-rated floor/ceiling or roof/ceiling assemblies shall comply with the construction details of the tested floor/ceiling or roof/ceiling assembly or with listed ceiling air diffusers or listed ceiling radiation dampers.

8.8.8.6.2

Ceiling radiation dampers shall be tested in accordance with UL 555C, *Ceiling Dampers*.

8.8.8.6.3

Ceiling radiation dampers shall not be required where either of the following apply:

- (1) Fire tests in accordance with UL 263, *Fire Tests of Building Construction and Materials*, or ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, have shown that ceiling radiation dampers are not necessary in order to maintain the fire resistance rating of the assembly.
- (2) Exhaust duct penetrations are protected in accordance with 8.8.7, and the exhaust ducts are located within the cavity of a wall and do not pass through another dwelling unit or tenant space.

Statement of Problem and Substantiation for Public Comment

BLD-AAC appointed a task group to review damper terminology throughout NFPA 5000 based upon FR 8003 which modified the definitions for various dampers and made the change to extract the definitions from NFPA 90A. The purpose of this Public Comment, submitted on behalf of the Task Group, is to revise the language to be consistent with the defined terms in Chapter 3. It should be noted that the terms proposed are based upon the First Draft Report of NFPA 90A and not necessarily the definitions in Chapter 3 of the First Draft Report for NFPA 5000. If NFPA 90A is revised during the Public Comment period it is the intent that these terms would be revised to be consistent with the defined terms being extracted from NFPA 90A.

It should be noted that although Koffel Associates is a consultant to AMCA International, the Public Comment is not identified as being submitted on behalf of AMCA International since the Public Comment was the result of the BLD-AAC Task Group.

Related Item

- FR 8003

Submitter Information Verification

Submitter Full Name: William Koffel

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Committee:

BLD-FIR



Public Comment No. 42-NFPA 5000-2022 [Section No. 8.10.5.3.1]

8.10.5.3.1

Air-conditioning, heating, and ventilating ductwork and related equipment, including fire dampers, smoke dampers, combination fire- and - smoke dampers, and ceiling radiation dampers radiation dampers , shall be installed in accordance with NFPA 90A or NFPA 90B as specified in Chapter 50, where applicable.

Statement of Problem and Substantiation for Public Comment

BLD-AAC appointed a task group to review damper terminology throughout NFPA 5000 based upon FR 8003 which modified the definitions for various dampers and made the change to extract the definitions from NFPA 90A. The purpose of this Public Comment, submitted on behalf of the Task Group, is to revise the language to be consistent with the defined terms in Chapter 3. It should be noted that the terms proposed are based upon the First Draft Report of NFPA 90A and not necessarily the definitions in Chapter 3 of the First Draft Report for NFPA 5000. If NFPA 90A is revised during the Public Comment period it is the intent that these terms would be revised to be consistent with the defined terms being extracted from NFPA 90A.

It should be noted that although Koffel Associates is a consultant to AMCA International, the Public Comment is not identified as being submitted on behalf of AMCA International since the Public Comment was the result of the BLD-AAC Task Group.

Related Item

- FR 8003

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Submitter Full Name: William Koffel

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Committee: BLD-FIR



Public Comment No. 43-NFPA 5000-2022 [Section No. 8.11.6.2.2]

8.11.6.2.2

Where a smoke barrier is also constructed as a fire barrier, a combination fire/_ smoke damper designed and tested in accordance with the requirements of UL 555 and UL 555S shall be installed.

Statement of Problem and Substantiation for Public Comment

BLD-AAC appointed a task group to review damper terminology throughout NFPA 5000 based upon FR 8003 which modified the definitions for various dampers and made the change to extract the definitions from NFPA 90A. The purpose of this Public Comment, submitted on behalf of the Task Group, is to revise the language to be consistent with the defined terms in Chapter 3. It should be noted that the terms proposed are based upon the First Draft Report of NFPA 90A and not necessarily the definitions in Chapter 3 of the First Draft Report for NFPA 5000. If NFPA 90A is revised during the Public Comment period it is the intent that these terms would be revised to be consistent with the defined terms being extracted from NFPA 90A.

It should be noted that although Koffel Associates is a consultant to AMCA International, the Public Comment is not identified as being submitted on behalf of AMCA International since the Public Comment was the result of the BLD-AAC Task Group.

Related Item

- FR 8006

Submitter Information Verification

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Committee: BLD-FIR



Committee Input No. 8006-NFPA 5000-2021 [Global Input]

Review damper terminology in NFPA 5000 for consistency with defined terms as modified by FR-8003 and actions taken by NFPA 90A committee at their first draft meeting.

Submitter Information Verification

Committee: BLD-FIR

Submittal Date: Fri Jul 09 14:04:15 EDT 2021

Committee Statement

Committee Statement: A task group was formed by the FIR committee to review damper terminology in NFPA 5000. FR-8003 made modifications to damper definitions and added extract tags to NFPA 90A. There are public inputs in NFPA 90A regarding damper definitions and terminology. The task group will review all damper references in NFPA 5000 against the modification to the definitions and actions taken by the NFPA 90A committee to ensure consistency with the defined terms. The task group will produce a recommendation for modifications to damper terminology in all sections of NFPA 5000 and will provide the report to all affected committees at second draft. The FIR committee is recommending that the correlating committee request all affected TCs to review the task group recommendations, as necessary.

Response Message: CI-8006-NFPA 5000-2021



Committee Input No. 8005-NFPA 5000-2021 [Section No. 8.15.4]

[Correlate requirements with NFPA 101, based on NFPA 101 CI-6511 and PI-316]

8.15.4* Alcohol-Based Hand-Rub Dispensers.

Where permitted by Chapters 15 through 31 and 33 through 34, 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 8.15.4(1) per room and located in that room shall not be included in the aggregated quantity.
- (7) 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.
- (8) Dispensers shall not be installed in the following locations:
 - (9) Above an ignition source for a horizontal distance of 1 in. (25 mm) to each side of the ignition source
 - (10) To the side of an ignition source within a 1 in. (25 mm) horizontal distance from the ignition source
 - (11) Beneath an ignition source within a 1 in. (25 mm) vertical distance from the ignition source
- (12) Dispensers installed directly over carpeted floors shall be permitted only in sprinklered areas of the building.
- (13) The alcohol-based hand-rub solution shall not exceed 95 percent alcohol content by volume.
- (14) Operation of the dispenser shall comply with the following criteria:
 - (15) The dispenser shall not release its contents except when the dispenser is activated, either manually or automatically by touch-free activation.
 - (16) Any activation of the dispenser shall only occur when an object is placed within 4 in. (100 mm) of the sensing device.
 - (17) An object placed within the activation zone and left in place shall not cause more than one activation.
 - (18) The dispenser shall not dispense more solution than the amount required for hand hygiene consistent with label instructions.
 - (19) The dispenser shall be designed, constructed, and operated in a manner that ensures accidental or malicious activation of the dispensing device is minimized.
 - (20) The dispenser shall be tested in accordance with the manufacturer's care and use instructions each time a new refill is installed.

Supplemental Information

<u>File Name</u>	<u>Description Approved</u>
PI-316.pdf	

Submitter Information Verification

Committee: BLD-FIR

Submittal Date: Fri Jul 09 13:57:41 EDT 2021

Committee Statement

Committee Statement: This CI is to correlate with CI-6511 in NFPA 101 to modify the alcohol based hand rub provisions based on 101-PI-316 (attached for reference).

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 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.

Response Message: CI-8005-NFPA 5000-2021