



NATIONAL FIRE PROTECTION ASSOCIATION

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

AGENDA

NFPA Technical Committee on Fire Doors and Windows (FDW-AAA) NFPA 80 and 105 Pre-First Draft Meeting

April 25, 2019, 8:00 AM – 5:00 PM (EDT)

NFPA Headquarters
1 Batterymarch Park, Quincy, MA

1. **Call to order.** Call meeting to order by Chair Keith Pardoe at 8:00 AM (EDT) on April 25, 2019 at NFPA Headquarters in Quincy, MA and via teleconference.
2. **Introduction of committee members and guests.** For current committee roster see page 2.
3. **Approval of meeting minutes.** See page 7.
4. **Chair remarks.** Keith Pardoe.
5. **Staff liaison presentation.** Jen Sisco.
6. **Discussion Topics.** See page 11.
 - a. **NFPA 80: Field Labeling Requirements.**
 - b. **Fire doors openings not required to be fire-rated.**
 - c. **Fire and smoke damper installation and ITM requirements.**
 - d. **Fire Protection Research Foundation project update.**
 - e. **Building, fire, and life safety codes which reference NFPA 80 and NFPA 105.**
 - f. **Review of NFPA 80, Chapter 4, "General Requirements."**
 - g. **Inspection requirements in NFPA 80 and NFPA 105**
 - h. **Requirements for New and Existing Installations.**
 - i. **Signage requirements and limitations in NFPA 80.**
 - j. **Qualifications for installer personnel.**
 - k. **Agenda items from TC members.**
7. **Other business.**
8. **Next meeting.**
9. **Adjournment.**

Address List No Phone

04/08/2019
Kristin Bigda
FDW-AAA

Fire Doors and Windows

Keith E. Pardoe	SE 4/15/2004	Chad E. Beebe	U 10/20/2010
Chair Pardoe Consulting LLC 15191 Montanus Drive, Unit 135 Culpeper, VA 22701	FDW-AAA	Principal ASHE - AHA PO Box 5756 Lacey, WA 98509-5756	FDW-AAA
Bruce G. Campbell	SE 4/3/2003	William Conner	SE 4/3/2003
Principal JENSEN HUGHES 112 Rancho Bueno Drive Georgetown, TX 78628-9523 Alternate: David V. Tomecek	FDW-AAA	Principal Bill Conner Associates LLC 637 North Marion Street Oak Park, IL 60302 American Society of Theater Consultants	FDW-AAA
Richard L. Cravy	M 10/18/2011	David Dawdy	IM 07/29/2013
Principal Ruskin Company 3900 Dr. Greaves Road Grandview, MO 64030 Alternate: Kent Maune	FDW-AAA	Principal Cornell Iron Works, Inc. 24 Elmwood Avenue Mountaintop, PA 18707-2100 International Door Association Alternate: Garry Stewart	FDW-AAA
Cheryl L. Domnitch	M 04/05/2016	Luc Durand	E 10/23/2013
Principal Won Door Corporation 2791 Sierra Vista Lane Meadow Vista, CA 95722	FDW-AAA	Principal Saskatoon Fire Department Prevention and Investigation Division 125 Idylwyld Drive South Saskatoon, SK S7M 1L4 Canada Alternate: Daisy R. Harington	FDW-AAA
Marty Gissel	M 08/03/2016	Jerrold S. Gorrell	IM 4/3/2003
Principal Greenheck Fan 400 Ross Avenue Schofield, WI 54476	FDW-AAA	Principal Theatre Safety Programs 15514 East Bumblebee Lane Fountain Hills, AZ 85268 US Institute for Theatre Technology, Inc. Alternate: Daniel J. Culhane	FDW-AAA
Jeffrey E. Gould	I 7/1/1993	Steven C. Hahn	M 1/1/1992
Principal FM Global 1151 Boston-Providence Turnpike PO Box 9102 Norwood, MA 02062-9102 Alternate: Michael F. Daly	FDW-AAA	Principal Lawrence Roll-Up Doors, Inc. 2420-C1 Sand Creek Road, #181 Brentwood, CA 94513 Door & Access Systems Manufacturers Assn. International Alternate: Joel Bonnell	FDW-AAA
Harold D. Hicks, Jr.	SE 1/1/1994		
Principal Atlantic Code Consultants 4530 William Penn Highway, #4350 Murrysville, PA 15668-2002	FDW-AAA		

Address List No Phone

04/08/2019
Kristin Bigda
FDW-AAA

Fire Doors and Windows

Thomas R. Janicak Principal Ceco Door Products 801 Mark Lane Hampshire, IL 60140 Steel Door Institute Alternate: Kurt A. Roeper	M 1/1/1986 FDW-AAA	William E. Koffel Principal Koffel Associates, Inc. 8815 Centre Park Drive, Suite 200 Columbia, MD 21045-2107 Glazing Industry Code Committee Alternate: Thomas Zaremba	M 1/1/1990 FDW-AAA
Keith Lippincott Principal University of Maryland Service Building 812, Suite 0103 4716 Pontiac Street College Park, MD 20742 Alternate: William F. Guffey	E 10/23/2013 FDW-AAA	Vernon J. Patton Principal First Energy Corporation 5501 North State Route 2 Oak Harbor, OH 43449	U 4/3/2003 FDW-AAA
James S. Peterkin Principal TLC Engineering Senior Fire Protection Engineer 1601 Market Street, 19th Floor Philadelphia, PA 19103 NFPA Health Care Section	U 08/03/2016 FDW-AAA	Michael Puls Principal Intertek 8431 Murphy Drive Middleton, WI 53562 Intertek Testing Services Alternate: Justin Scott Hendricks	RT 8/9/2011 FDW-AAA
Steven P. Reynolds Principal The Peelle Company Ltd. 195 Sandalwood Parkway West Brampton, ON L7A 1J6 Canada National Elevator Industry Inc. Alternate: Kevin L. Brinkman	M 3/21/2006 FDW-AAA	Ronald Rispoli Principal Enterger Corporation 2414 West 5th Street Russellville, AR 72801-5541	U 1/1/1985 FDW-AAA
Thomas M. Rubright Principal William S. Trimble Company, Inc. 2200 Atchley Street Knoxville, TN 37920 Door and Hardware Institute	M 1/14/2005 FDW-AAA	Michael L. Savage, Sr. Principal Marion County Building Safety 2710 E. Silver Springs Boulevard Ocala, FL 34470	E 04/28/2008 FDW-AAA
Steve Schreiber Principal Masonite One Premdor Drive Dickson, TN 37055-2774 Window & Door Manufacturers Association Alternate: Steven Orlowski	M 03/05/2012 FDW-AAA	Duane R. Smith Principal National Energy Management Institute Inc. 2818 East 200 North Rushville, IN 46173	M 12/06/2017 FDW-AAA

Address List No Phone

04/08/2019
Kristin Bigda
FDW-AAA

Fire Doors and Windows

Building Code

Robert W. Stubblefield	SE 04/08/2015	Michael Tierney	M 1/12/2000
Principal Framatome 2600 W 7th St, Ste 1703 Fort Worth, TX 76107	FDW-AAA	Principal Kellen Company 17 Faulkner Drive Niantic, CT 06357 Builders Hardware Manufacturers Association Alternate: John Woestman	FDW-AAA
Garrett S. Tom	U 3/1/2011	Yunyong Pock Utiskul	SE 8/9/2011
Principal International Fire Door Inspector Association 52 Laxalt Drive Carson City, NV 89706 Alternate: Thomas Resciniti Demont	FDW-AAA	Principal Exponent, Inc. 17000 Science Drive, Suite 200 Bowie, MD 20715-4427	FDW-AAA
Joshua Vann	U 08/17/2018	Luke C. Woods	RT 07/29/2013
Principal MB Healthcare 24 Linda Drive Jackson, NJ 08527	FDW-AAA	Principal UL LLC 146 Nathaniel Drive Whitinsville, MA 01588-1070 Alternate: Alfredo M. Ramirez	FDW-AAA
Anthony W. Yuen	E 1/12/2000	John Hamilton	SE 04/08/2015
Principal Berkeley Fire Department Fire Marshal 2100 MLK Jr. Way, 2nd floor Berkeley, CA 94704	FDW-AAA	Voting Alternate National Energy Management Institute International Certification Board Testing Adjusting & Balancing Bureau 7282 Newbury Court Woodbury, MN 55125-2816	FDW-AAA
Joel Bonnell	M 08/03/2016	Kevin L. Brinkman	M 08/17/2015
Alternate Raynor Garage Doors 1101 East River Road Dixon, IL 61021 Door & Access Systems Manufacturers Assn. International Principal: Steven C. Hahn	FDW-AAA	Alternate National Elevator Industry, Inc. 925 West Center Street Eureka, IL 61530-9505 National Elevator Industry Inc. Principal: Steven P. Reynolds	FDW-AAA
Daniel J. Culhane	IM 03/07/2013	Michael F. Daly	I 8/9/2011
Alternate Wenger Corporation 4145 Garfield Avenue South Minneapolis, MN 55409 US Institute for Theatre Technology, Inc. Principal: Jerrold S. Gorrell	FDW-AAA	Alternate FM Global 1151 Boston-Providence Turnpike Norwood, MA 02062 Principal: Jeffrey E. Gould	FDW-AAA

Address List No Phone

04/08/2019
Kristin Bigda
FDW-AAA

Fire Doors and Windows

Thomas Resciniti Demont	U 08/17/2017	William F. Guffey	E 03/05/2012
Alternate Technical Services Inc. 1009 Saddleclub Drive McMurray, PA 15317 International Fire Door Inspector Association (IFDIA) Principal: Garrett S. Tom	FDW-AAA	Alternate University of Maryland Office of the Fire Marshal 3115 Chesapeake Building College Park, MD 20742 Principal: Keith Lippincott	FDW-AAA
Daisy R. Harington	E 11/30/2016	Justin Scott Hendricks	RT 08/17/2017
Alternate City Of Saskatoon Building Standards 222 3rd Avenue North Saskatoon, SK S7K 0J5 Canada Principal: Luc Durand	FDW-AAA	Alternate Intertek 8431 Murphy Drive Middleton, WI 53562 Intertek Testing Services Principal: Michael Puls	FDW-AAA
Kent Maune	M 04/05/2016	Steven Orlowski	M 04/11/2018
Alternate Ruskin Manufacturing 3900 Dr. Greaves Road Grandview, MO 64030 Principal: Richard L. Cravy	FDW-AAA	Alternate Windows & Door Manufactures Association (WDMA) 2025 M Street NW, Suite 800 Washington, DC 20005-2800 Principal: Steve Schreiber	FDW-AAA
Alfredo M. Ramirez	RT 08/17/2015	Kurt A. Roeper	M 9/30/2004
Alternate UL LLC 333 Pfingsten Road Northbrook, IL 60062-2096 Principal: Luke C. Woods	FDW-AAA	Alternate ASSA ABLOY 110 Sargent Drive New Haven, CT 06511 Steel Door Institute Principal: Thomas R. Janicak	FDW-AAA
Garry Stewart	IM 3/15/2007	David V. Tomecek	SE 7/26/2007
Alternate The Doorman Service Company, Inc. PO Box 1603 Kent, WA 98035 International Door Association Principal: David Dawdy	FDW-AAA	Alternate JENSEN HUGHES 8461 Turnpike Drive, Suite 206 Westminster, CO 80031-4379 JENSEN HUGHES Principal: Bruce G. Campbell	FDW-AAA
John Woestman	M 7/23/2008	Thomas Zaremba	M 08/17/2017
Alternate Kellen Company 808 North York Street, Box 989 Monroe, IA 50170-0989 Builders Hardware Manufacturers Association Principal: Michael Tierney	FDW-AAA	Alternate Roetzel and Andress 1 Seagate Suite 1700 Toledo, OH 43604 Glazing Industry Code Committee Principal: William E. Koffel	FDW-AAA

Address List No Phone

Fire Doors and Windows

04/08/2019

Kristin Bigda

FDW-AAA

Joseph N. Saino	SE 1/1/1973	Kristin Bigda	6/29/2007
Member Emeritus	FDW-AAA	Staff Liaison	FDW-AAA
6560 Kirby Forest Cove		National Fire Protection Association	
Memphis, TN 38119		One Batterymarch Park	
		Quincy, MA 02169-7471	



MINUTES

NFPA Technical Committee on Fire Doors and Windows Second Draft Meeting

Wednesday, September 27 and Thursday, September 28, 2017
National Fire Protection Association
Quincy, MA

- 1. Call meeting to order.** The meeting was called to order by Chair, Keith Pardoe, at 8 am EDT on Wednesday, September 27, 2017.
- 2. Self-introduction of members and guests. The following committee members were in attendance:**

NAME	COMPANY
Keith Pardoe, Chair	Pardoe Consulting LLC
Chad Beebe, Principal	ASHE - AHA
William Conner, Principal	Bill Conner Associates LLC Rep.: American Society of Theater Consultants
David Dawdy, Principal	Cornell Iron Works, Inc. Rep.: International Door Association
Cheryl Domnitch, Principal	Won Door Corporation
Marty Gissel, Principal	Greenheck Fan
Jerold Gorrell, Principal	Theatre Safety Programs Rep.: US Institute for Theatre Technology, Inc.
Jeffrey Gould, Principal	FM Global
Anne Guglielmo, Principal	Liberty Mutual Insurance
Steven Hahn, Principal	Lawrence Roll-Up Doors, Inc. Rep.: Door & Access Systems Manufacturers Assn. International
William Koffel, Principal	Koffel Associates, Inc. Rep.: Glazing Industry Code Committee
Keith Lippincott, Principal	University of Maryland
James Peterkin, Principal	TLC Engineering Rep.: NFPA Health Care Section

Michael Puls, Principal	Intertek Rep.: Intertek Testing Services
Steven Reynolds, Principal	The Peelle Company Ltd. Rep.: National Elevator Industry Inc.
Thomas Rubright, Principal	William S. Trimble Company, Inc. Rep.: Door and Hardware Institute
Michael Tierney, Principal	Kellen Company Rep.: Builders Hardware Manufacturers Association
Yunyong Pock Utiskul, Principal	Exponent, Inc.
Luke Woods, Principal	UL LLC
Anthony Yuen, Principal	Berkeley Fire Department
John Hamilton, Voting Alternate	National Energy Management Institute
Daniel Culhane, Alt. to J. Gorrell	Wenger Corporation Rep.: US Institute for Theatre Technology, Inc.
Thomas Demont, Alt. to G. Tom	Technical Services Inc. Rep.: International Fire Door Inspector Association
Daisy Harington, Alt. to L. Durand	City of Saskatoon Building Standards
Daniel Hibbs, Alt. to S. Schreiber	Eggers Industries Rep.: Window & Door Manufacturers Association
Kent Maune, Alt. to R. Cravy	Ruskin Manufacturing
Alfredo Ramirez, Alt. to L. Woods	UL LLC
Kurt Roeper, Alt. to T. Janicak	ASSA ABLOY Rep.: Steel Door Institute
Rodney Weaver, Alt. to T. Rubright	Door and Hardware Institute
John Woestman, Alt. to M. Tierney	Kellen Company Rep.: Builders Hardware Manufacturers Association
Kristin Bigda, Staff Liaison	National Fire Protection Association

The following committee members were not in attendance (not listed where the alternate was in attendance):

NAME	COMPANY
Bruce Campbell, Principal	JENSEN HUGHES
Harold Hicks, Principal	Atlantic Code Consultants
Vernon Patton, Principal	First Energy Corporation
Ronald Rispoli, Principal	Entergy Corporation
Michael Savage, Sr., Principal	City of Rio Rancho
Robert Stubblefield, Principal	AREVA NP Inc.

The following guests were in attendance:

NAME	COMPANY
Jeffrey Batick	Allegio
Bob Cullum, AHC	Dugmore & Duncan
Larry Felker	Belimo Americas
Patrick Geisel	Belimo Europes
Curtis Gonzales	SmokeGuard
Lane Montz	Glazing Industry Code Committee
Sreeni Ranganathan	Fire Protection Research Foundation

3. **Approval of Minutes.** The September 7 – September 8, 2016 First Draft Meeting minutes were approved with no modifications.
4. **Chair’s Report and Agenda Review.** The Chair reviewed the agenda for the meeting and discussed committee member participation guidelines.
5. **The Process – NFPA Staff Second Draft Presentation.** NFPA Staff used the PowerPoint presentation included in the agenda to discuss the Second Draft phase of the codes and standards development process. The next phase of the revision process is the Technical Session Preparation and the NITMAM closing date is February 21, 2018.
6. **Fire Protection Research Foundation Project Update.** The Chair, along with Fire Protection Research Foundation staff and guest, Sreeni Ranganathan, provided an updated on the door gap research project.
7. **Report of Damper Task Group.** The task group reviewed items on the agenda related to their scope of fire and smoke dampers and made recommendations on the items. The task group also reported on its work completed since the First Draft meeting.
8. **Report of NFPA 105 Task Group(s).** Members of the task group reported back on work from their individual chapters and reviews of Committee Inputs from the First Draft meeting. It was decided by the Committee that no changes would be pursued at this stage and the issues of NFPA 105 non-swinging smoke doors would be looked at again during the next revision cycle. In addition, and as a result of the task group discussion, it was brought up that inspection, testing and maintenance provisions for special purpose sliding doors in NFPA 80 should be developed.
9. **Committee Input Review.** All Committee Inputs were reviewed and Second Revisions were created as necessary.
10. **NFPA 80 Second Draft preparation.** All public comments were addressed. Additional Second Revisions were developed as needed. See Second Draft Report for results of proposed changes.
11. **NFPA 105 Second Draft preparation.** All public comments were addressed. Additional Second Revisions were developed as needed. See Second Draft Report for results of proposed changes.
12. **Other Business.** Items included under other business on the agenda were discussed. In addition, the Committee discussed developing a proposal for Phase #2 of the door gap research project. The Chair will work with NFPA staff and other TC members from the project panel to develop and submit a proposal prior to the 12/31/2017 submittal date.
13. **New Business.** No additional new business was addressed.
14. **Schedule Next meeting.** The next full meeting of the Committee will be the First Draft meeting for the development of the 2022 editions of NFPA 80 and NFPA 105. This meeting will be held sometime in the fall of 2019.

15. Adjournment. The meeting was adjourned by Chair Pardoe at 4:45 pm EDT on Thursday, September 28, 2017.

Meeting Minutes Prepared By:

A handwritten signature in black ink, appearing to read "Kristin Bigda". The signature is fluid and cursive, with the first name "Kristin" and last name "Bigda" clearly distinguishable.

Kristin Bigda, NFPA Staff Liaison

Agenda Item #6: Discussion Topics

6a. NFPA 80: Field labeling requirements.

End-User requests for replacing labels that have been painted over (or rendered illegible otherwise) on swinging fire-rated door frames and doors seem to be at an all-time high. Since 2007, the demand for replacing labels on existing swinging fire-rated door frames and doors has increased, especially in facilities (e.g., health care facilities) subject to NFPA 80's door inspections. As enforcement of NFPA 80's door inspection requirements increases, so does the end-users' need for replacing painted-over, damaged, and missing labels.

Requests for field labeling of other swinging door assembly components such as fire exit hardware devices, wire glass, and protection plates are becoming commonplace. Likewise, end-user requests for field labeling of oversized door frames and doors (e.g., construction-labeled or provided with certificates-of-construction)—components of equivalent construction, approved and installed in lieu of labeled components—are being made.

Consequently, end users need to know how to replace painted-over, damaged, and missing labels in a manner that maintains compliance with applicable codes; more importantly, in a manner that ensures the door frames and doors provide the requisite level of fire protection. At one time, the nationally recognized testing laboratories such as FM Global, Intertek/Warnock Hersey, and UL were the only field labeling service providers. The increased demand for replacing labels on swinging door frames and doors has led to the expansion of field labeling services by other testing labs (i.e., those labs that do not maintain the manufacturers' component listings) and non-testing-lab companies. Some of these new field labeling providers offer this service as an extension of their door inspection and maintenance services.

In April of 2004, NFPA issued a Formal Interpretation (FI 99-1, see attached)—based on this committee's opinion—regarding the circumstances of verifying the ratings of fire doors (and by extension, door frames, and other components) when labels are illegible or removed. In its opinion, this committee concluded that it was acceptable to use *"...other means..."* to verify fire ratings, provided those other means were *"...acceptable to the AHJ..."* The other means cited in the opinion included, but were not limited to, *"...an inspection or certification service that provides acceptable documentation."* This opinion is memorialized in Annex A of NFPA 80—see paragraph A.4.2.1 in the 2019 edition.

NFPA 80's Field Labeling provisions and requirements in the 2016 and 2019 editions seem to contradict the committee's opinion in FI 99-1 and A.4.2.1 and are not consistent with current industry practice.

Action

The Chair will entertain a motion to assign a task group to review NFPA 80's field labeling provisions and requirements in Section 5.1.4, including: (1) circumstances under which field labeling services are necessary (e.g., for new and existing installations); (2) how field labeling services are conducted; (3) which standards are used in the field to evaluate door frames and doors (e.g., the entire assembly or individual components); (4) how components from obsolete manufacturers are evaluated; (5) the liabilities and consequences of field labeling (e.g., for owners, manufacturers, and field labeling providers); (6) the qualifications a company, and its personnel, must have to perform field labeling

services (i.e., accreditation, personnel certification, or both); and, (7) the enforceability of NFPA 80's field labeling requirements.

The task group's charge is to provide a report during the First Draft meeting, which might lead to a Committee Proposal (CP) or Committee Input (CI).

Note: The scope of this task group may be expanded to include other concerns and considerations related to field labeling.

6b. Fire doors in openings not required to fire-rated. See EC News.

Earlier this month, The Joint Commission (TJC) Department of Engineering issued its opinion regarding how healthcare facilities can address the installation of labeled fire door assemblies that are used in locations that do not require fire-rated opening protectives. (See attached excerpt from the April 2019 edition of EC News.)

According to TJC, one reason for the installation of fire doors in locations that do not require labeled opening protectives is that *"...the contractor may have obtained 'a great deal' on fire doors and determined it would be less expensive to install..."* It's more likely, however, that at the time of construction these fire doors were required and that, over time, renovation in the buildings (e.g., installation of sprinkler systems in older construction) resulted in eliminating the need for certain doors to be fire rated in the affected building areas; the doors remain in service for other purposes.

During the last revision cycle, we considered the application of "decommissioning labels" for doors that were no longer required to be fire rated. We concluded that the act of decommissioning fire doors is best left to the discretion of the appropriate authority having jurisdiction. And, we created a committee proposal to address this situation that became paragraph 4.2.4 that states, *"Where a swinging fire door assembly is installed in a location not requiring a rated opening protective, the label shall be permitted to be removed and the provisions of Chapter 5 shall not apply."*

Paragraph 4.2.4 *permits* the removal of labels from fire doors that are used in locations that do not require labeled opening protectives, but it does not *require* the labels to be removed.

How does TJC Department of Engineering opinion on this subject affect NFPA 80 labeling provisions and requirements? Bearing in mind that TJC's opinion applies to healthcare facilities and that NFPA 80's provisions and requirements apply to many other types of buildings and structures, how should NFPA 80 address this situation?

The 2021 edition of NFPA 101 has two first revisions pertaining to installation of fire doors in openings not required to be fire protection rated. FR-6644 adds a section 4.6.12.4 which indicates "where a door or door frame is not required to be fire protection rated and is equipped with a fire protection listing label, the door and the door frame shall not be required to comply with NFPA 80." FR-6649 revises the annex note to section 4.6.12.3 to add that it is not the intent of the code to require such doors to be "subject to the annual fire door inspection and testing requirements of Chapter 8."

Action

The Chair will entertain a motion to assign a task group to review how the use of labeled fire doors that are installed in locations that do not require labeled opening protectives should be addressed in NFPA 80.

The task group's charge is to provide a report during the First Draft meeting, which might lead to a Committee Proposal (CP) or Committee Input (CI).

6c. Fire and smoke damper installation and ITM requirements. See Kent Maune email.

NFPA 80 and NFPA 105 contain provisions and requirements for the installation, inspection, testing, and maintenance for fire dampers and smoke dampers respectively. While there are differences between how the two types of dampers are used, some of the inspection, testing, and maintenance conditions are the same. For this reason, and for consistency between the two standards, should the language in those parts of the standards be identical? (See attached email regarding fire and smoke dampers.)

- Other unfinished business from last cycle regarding fire dampers and smoke dampers?

Action

The Chair will entertain a motion to assign a task group to review the inspection, testing, and maintenance provisions for fire dampers and smoke dampers; NFPA 80 and NFPA 105, respectively.

The task group's charge is to provide a report during the First Draft meeting, which might lead to a Committee Proposal (CP) or Committee Input (CI).

6d. Update on phase two of the Fire Protection Research Foundation's Influence of Gap Sizes around Swinging Doors with Builders Hardware on Fire and Smoke Development

Phase 1 of this project consisted of an exhaustive literature review and computer modeling (based on computational fluid dynamics) of NFPA 252's positive pressure fire door test. Due to limitations of the software used and its inability to simulate how the stresses created by fire testing affect the materials and performance of fire door assemblies, the Phase 1 final report recommends the study continue with full-scale fire door testing.

The FPRF is preparing to launch Phase 2 of its research project to study the effects door gaps around (and under) swinging doors with builders hardware (aka, NFPA 80 Chapter 6-type doors) might have on the performance of the door assemblies themselves, as well as their effect on fire and smoke development. The American Society for Healthcare Engineering (ASHE) pledged financial support sufficient to cover several iterations of full-scale fire door tests.

Some members of the FDW-AAA technical committee served on the technical advisory panel for Phase 1 of the project and have been invited to continue in that role for Phase 2.

- The results of Phase 2 testing might be that:
 - Testing *confirms* that NFPA 80's door gap dimension limitations are appropriate and that no changes are necessary.

- Testing *indicates* that NFPA 80's door gap dimension limitations can be increased (e.g., under doors), in part (e.g., doors installed in hollow metal frames), or for all applications.
- Testing *indicates* that NFPA 80's door gap dimensions limitations need to be reduced (e.g., under doors) to match the conditions permitted in the fire door test standards—specifically, NFPA 252, UL 10B, and UL 10C.
- Testing *indicates* that NFPA 80's door gap dimensions do not cause fire door assemblies to fail the fire tests, but larger gap dimensions (e.g., under doors) contribute to fire and smoke development. In other words, larger door gaps reduce the abilities of swinging fire doors with builders hardware to effectively prevent fire and smoke from spreading, even though the door assemblies pass the fire tests.

Note: Other outcomes might become apparent as Phase 2 progresses.

- Sreenivasan Ranganathan, Research Project Manager, and Casey Grant, Executive Director of Fire Protection Research Foundation, will provide additional information.

Note: No action by the Technical Committee is needed at this time.

6e. Building, fire, and life safety codes which reference NFPA 80 and NFPA 105

Throughout the years, model building, fire, and life safety codes reference NFPA 80 for the installation of fire doors. Similarly, later editions of these same model codes reference NFPA 105 for the installation of smoke door assemblies; the first edition of NFPA 105 was issued in 1985.

Both the International Building Code (IBC) and NFPA 5000, Building Construction and Safety Code require new fire doors to be installed in compliance with NFPA 80, but they do not expressly require new doors to be inspected and tested upon installation. For example, NFPA 5000 (2018), *Section 8.7.3 Fire Doors*, requires fire door assemblies to be installed in accordance with NFPA 80, but it does not require the doors to be inspected and tested. (Note: Paragraph 8.3.3.3.1 of NFPA 101 Life Safety Code (LSC) 2018 states, *"Fire door assemblies shall be installed, inspected, tested, and maintained in accordance with NFPA 80."* Usually, NFPA 101 and NFPA 5000 contain identical provisions and requirements, but that is not the case in this instance.)

Conversely, paragraph 12.4.1 of NFPA 1, Fire Code (2018) states, *"The installation and maintenance of assemblies in walls, floors, and ceilings against the spread of fire and smoke within, into, or out of buildings shall comply with Section 12.4 and NFPA 80."* Paragraph 12.4.6.2 states, *"The requirements of Section 12.4 shall apply to new and existing installations."*

NFPA 1, *Section 12.4.6 Care and Maintenance of Fire Doors and Other Opening Protectives*, incorporates by extraction, the provisions and requirements of NFPA 80, *Chapter 5 Inspection, Testing, and Maintenance*.

Currently, none of the door assembly chapters in NFPA 80 explicitly require newly installed doors to be inspected and tested as specified in Chapter 5. Users of NFPA 80 might not know that newly installed fire doors, shutters, and windows are required to be inspected and tested as specified in Chapter 5. In other words, users of NFPA 80 might not look beyond the requirements of the opening protective(s) with which they are working; they might not turn to Chapter 5 at all.

NFPA 80 Chapter 5's provisions and requirements for the installation, testing, and maintenance of fire doors applies to new and existing installations. Paragraph 5.1.1.2 states, *"The requirements of this chapter shall apply to new and existing installations."* And, paragraph 5.2.1 states, *"Upon completion of the installation, door, shutters, and window assemblies shall be inspected and tested in accordance with 5.2.4."*

Since newly installed doors, shutters, and windows are required to be inspected upon installation under Chapter 5, should the door chapters in NFPA 80 and NFPA 105 include references to the requirements of their respective Chapter 5?

- Should the General section of each of the door chapters (e.g., Section X.1.1 General) be expanded to include references to chapters 4 and 5 (e.g., X.1.1.2 Doors shall be installed in accordance with Chapter 4, and, X.1.1.3 Upon installation doors shall be inspected and tested in accordance with Section 5.2.x).
 - Should the door chapters also reference Chapter 5 when maintenance work is necessary (e.g., x.1.1.4 Maintenance of doors shall be performed in accordance with Section 5.5 Maintenance)?
- How would such changes affect building, fire, and life safety codes that reference NFPA 80 and NFPA 105?
- Which other NFPA standards reference NFPA 80 and NFPA 105?

Action

The Chair will entertain a motion to assign a task group to review:

- How the building, fire, and life safety codes reference NFPA 80 and NFPA 105.
- Which other NFPA codes and standards reference NFPA 80 and NFPA 105.
- How including references to chapters 4 and 5 in each door chapter (e.g., by expanding X.1.1 General) might clarify the conditions and requirements for newly installed doors.
- How such changes might affect building, fire, and life safety codes (and standards) that reference NFPA 80 and NFPA 105.

The task group's charge is to provide a report during the First Draft meeting, which might lead to a Committee Proposal (CP) or Committee Input (CI).

6f. Review of NFPA 80, Chapter 4, "General Requirements."

Chapter 4, "General Requirements," of NFPA 80 contains provisions and requirements for several types of opening protectives and supporting construction. Some of these provisions and requirements address the type of work that is permitted to be performed in the field (by anyone) as part of the installation process; and, by extension, as part of the maintenance process. For example, *Section 4.1.3 Appurtenances* has evolved to describe the work that is or is not permitted to be performed in the field. (Note: In NFPA 80's context, the word *appurtenances* refers to accessory items that might be incorporated into or applied to certain types of fire doors.) Where the work is not permitted to be performed in the field, it is required to be *"...performed in accordance with the manufacturer's inspection service procedure and under label service."*

The work covered in section 4.1.3.2 (including its subparagraphs) only applies to swinging doors with builders hardware

- How can Chapter 4's provisions and requirements be improved?
- Should Chapter 4 include an Application section, similar to that of Chapter 5, that clarifies the work permitted to be performed in the field as part of installation and maintenance?
- *Section 4.1.2 Fusible Links* applies to several types of doors but does not explicitly reference the doors to which it applies.
- Does the term *appurtenances* accurately describe the provisions and requirements covered in section 4.1.3.2? If not, should the title of the section be changed to reflect the type of work that is permitted or prohibited during installation and maintenance?
- *Section 4.8.4 Clearance* applies to Chapter 6 doors primarily. (See Table 1-11.4 *Clearances Under the Bottoms of Doors*—NFPA 80-99.) Should clearance dimensions under other types of doors (e.g., Chapters 11, 13, 14, 15, and 16) be included in this section?
- Alternatively, since clearance dimensions under doors are not uniform, how should NFPA 80 address them for each opening protective (e.g., specify clearance dimensions under doors in each of the door chapters)?

Action

The Chair will entertain a motion to assign a task group to review the Chapter 4's requirements to determine how they might be improved.

The task group's charge is to provide a report during the First Draft meeting, which might lead to a Committee Proposal (CP) or Committee Input (CI).

6g. Inspection Requirements in NFPA 80 and NFPA 105

Section 5.2.3 Acceptance Testing requires the persons performing door inspections and testing to meet the qualified-person standard (as defined in 3.3.98). Certain types of opening protectives (e.g., rolling steel doors, special-purpose horizontally sliding accordion and folding doors, and others) can be large and potentially dangerous for untrained persons to manipulate during inspections and testing. How should NFPA 80 address the inspections and testing of large opening protectives? Under what conditions would it be appropriate for NFPA 80 to restrict installation, inspection, testing, and maintenance to factory-trained personnel, specific to the type of opening protective? Should NFPA 80 include annex comments regarding potential hazards of inspecting and testing large opening protectives?

Additionally, several of the inspection items *under Section 5.2.3.5 Swinging Doors with Builders Hardware and Fire Door Hardware* are unenforceable for Swinging Doors with Fire Door Hardware (aka, Chapter 7-type doors). More importantly, the list of inspection items under 5.2.3.5 are insufficient to fully assess the operating condition of swinging doors with fire door hardware. For example, Chapter 7 doors can be lap-mounted to the surface of walls and do not require any type of door frame. When a frame is required, the frame consists of structural steel tubing sections, not the traditional hollow metal/press steel door frames that are used with Chapter 6 doors. Chapter 7 doors are tested under UL 10A, *Standard for Tin-Clad Fire Doors*—which is not listed in Chapter 7—and the hardware is tested under UL 14C, *Swinging Hardware for Standard Tin-Clad Fire Doors Mounted Singly and in Pairs*.

Due to the differences of the two types of opening protectives, should a separate list of inspection items for swinging doors with fire door hardware be added to Chapter 5?

Action

The Chair will entertain a motion to assign a task group to review 1) the Chapter 5's inspection items as they apply to Chapter 7 Swinging Doors with Fire Door Hardware; and 2) Chapter 7's fire door testing and hardware requirements.

The task group's charge is to provide a report during the First Draft meeting, which might lead to a Committee Proposal (CP) or Committee Input (CI).

6h. Requirements for new and existing installations. (see 1.3.2, A.1.3, and 5.1.1.2)

As NFPA 80's and NFPA 105's door inspection requirements become more widely enforced, users of these standards need guidance as to how to apply these requirements to existing, especially older-existing, installations, as well as new installations. While certain requirements (e.g., door gap clearance dimensions) are relatively uniform across all generations of fire doors, other requirements (e.g., the use of wire glass) has evolved. Today, traditional wire glass in fire doors is significantly restricted in favor of newer fire protection-rated and fire resistance-rated glazing materials that also meet requirements for impact resistance. Similarly, prior to the adoption of the 1992 edition of NFPA 80, wire glass installed in sidelight and transom-light door frames and in door leaves was not required to be marked. Under today's requirements for new doors, wire glass—where it is permitted to be used—is also required to be marked.

The overarching principle of NFPA 80's and NFPA 105's door inspection requirements is that the doors *"...should be maintained in accordance with the standards under which they were installed."* (See paragraph A.1.3.) AHJs, owners, facility personnel, installers, and door inspectors need to be aware of this principle so that they are able to make informed decisions regarding the ongoing inspection, testing, and maintenance of existing fire doors.

- All inspection items under Chapter 5 are subjective to the requirements that were in effect at the time of installation.
 - Older existing doors are not subject to some of NFPA 80's current requirements (e.g., glass and glazing, information printed on labels, etc.).
- In which chapter(s) would it be appropriate to add provisions and requirements for existing opening protectives?
- Would creating a new Annex section be sufficient for addressing the concerns for existing opening protectives?

Action

The Chair will entertain a motion to assign a task group to consider how conditions for existing (including older existing) installations might be included in NFPA 80 and NFPA 105.

The task group's charge is to provide a report during the First Draft meeting, which might lead to a Committee Proposal (CP) or Committee Input (CI).

6i. Signage Provisions and Limitations in NFPA 80.

The provisions and requirements of Section 4.1.4. Signage are ambiguous. For example, is a piece of copier paper that is scotch-taped to a door considered signage? What materials and applications are considered to be signage? The size of signage is limited to the maximum size as per the door

manufacturer's listing or 5% as specified in 4.1.4.1. The reality is that the listing of most (if not all) fire doors do not include signage of any type, therefore the maximum size of signage is limited to 5%. What is the technical justification for the 5% limitation? Do we have technical data that supports the 5% limitation? Similarly, the means of attachment is subject to the door manufacturer's listing or the conditions of 4.1.4.2; again, most (if not all) door listings do not cover the means of attachment of signage. What is the technical justification for these requirements?

Section 4.1.4 is silent on the application of signage to faces of door frames, which might be construed to mean that signage on door frames is unrestricted since it is not otherwise prohibited.

Several types of materials (e.g., metal, plastic, plastic-laminate, vinyl, and paper) are used to provide signage on doors frequently. Section 1.4.1 Signage limits the total aggregate area of signage that can be applied to doors; 5% of the surface area of the doors. In the case of swinging doors, the average door size is 3 feet wide by 7 feet high, which results in approximately 150 sq. in. of signage on each side of the door. In the case of a swinging door with fire door hardware (Chapter 7), a single door that is 6 feet wide and 12 feet high can have over 500 sq. in. of signage. What industry standard, other than NFPA 80, is the basis for the 5% size limitation? The signage applications in certain occupancies (e.g., health care occupancies) are greater than in other occupancies.

- Are decals (e.g., power-operated door symbols) considered signage?
 - Can they be applied to fire protection-rated glass?
- Are field-inspected glazing labels (aka, stickers)—from testing labs—permitted to be applied to wire glass?
- Formal Interpretation 90-2, July 9, 1991, addresses the application of luminescent signage to fire doors, but NFPA 80 does not contain provisions or requirements for that type of signage.
 - Given that the model building codes require certain fire doors to have “*door hardware markings*” (see NFPA 101-2018, *Section 7.2.2.5.5.7 Door Hardware Marking*) that consist of luminescent tape applied directly to the face of the doors (see NFPA 101-2018, A.7.2.2.5.5.7 (B)(1)), how should NFPA 80 address that condition?
 - NFPA 101, *Section 7.2.2.5.5.8 Emergency Exit Symbol* requires certain fire doors to have an emergency exit symbol (compliant with NFPA 170) that is a minimum of 4 inches in height and located not more than 18 inches above the finished floor. The tops of the symbols will be located one inch (nominally) higher above the bottom of the door than the 16-inch maximum allowed by NFPA 80. How should NFPA 80 address this condition?
 - NFPA 101, *Section 7.2.2.5.5.6 Doors Serving Exit Enclosures*, requires certain fire rated doors to be marked with luminescent stripes that outline the door frame and doors.
 - Is the surface area of the door covered by the luminescent signage and marking stripe(s) subject to the overall size limitation (e.g., 5 percent of the surface area of the door)? If so, how should NFPA 80 reconcile the application of such markings when other types of signage are applied to the same side of the door?

Table 4.2 Symbols for General Use

Symbol	Characteristics	Application	Example
Emergency Exit 	Square field Background green Door opening white Image in green	The identification and location of an emergency exit	The location of exit for use in a fire emergency
Emergency Exit Use of Arrows — Rectangular Field 	Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red	The identification and location of a route to an emergency exit	Progress to the right
	Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red	The identification and location of a route to an emergency exit	Progress up and to the right
	Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red	The identification and location of a route to an emergency exit	Progress down and to the right
	Painted version: Background color white	The identification and location of a route to an emergency exit	Progress forward

- NFPA 101, Sections 18/19.2.2.2.7 permits certain doors to be disguised by murals that are either painted or covered with wallpaper (see A.18/19.2.2.2.7). The annex comment states, in part, “...Such murals should not obscure required vision panels or affect the required fire resistance rating of fire-rated doors.” Should NFPA 80 address this application? If so, where should it be covered (e.g., under Signage or in a separate section)? What happens of the removable wall coverings (e.g., Fathead-type) are applied to fire doors?

Action

The Chair will entertain a motion to assign a task group to review the Chapter 4’s signage requirements to determine how they might be improved.

The task group’s charge is to provide a report during the First Draft meeting, which might lead to a Committee Proposal (CP) or Committee Input (CI).

6j. Qualifications for installer personnel.

NFPA contains requirements for the persons performing safety inspections of opening protectives (see *Section 5.2.3 Acceptance Testing*), but, with the exception of *Chapter 20 Fabric Fire Safety Curtains* (see *Section 20.1.4*), it does not specify requirements for the persons installing opening protectives. Should Chapter 4 include some form of qualifications for installer personnel? If so, how would NFPA 80 reference qualifications for installers?

- *Section 5.2.3 Acceptance Testing* requires the persons performing door inspections and testing to meet the *qualified-person* standard (as defined in 3.3.98).
- Are there industry standards that could be used to establish guidelines for installer personnel, albeit indirectly? For example, ANSI/SDI 250.11, *Recommended Erection Instructions for Steel Frames* and/or SDI 122, *Installation Troubleshooting Guide for Standard Steel Doors and Frames* might help to

establish minimum installation requirements. Similarly, standards from the Hollow Metal Manufacturers Association (HMMA) such as ANSI/NAAMM HMMA 841-13 (R2019) *Tolerances and Clearances For Commercial Hollow Metal Doors and Frames*, ANSI/NAAMM HMMA 840-17 *Guide Specification for Receipt, Storage and Installation of Hollow Metal Doors and Frames* might be appropriate.

Action

The Chair will entertain a motion to assign a task group to explore the concept of establishing installer qualifications general to all types of opening protectives for Chapter 4, as well as qualifications specific to particular opening protectives (e.g., Chapter 6), including the addition of industry standards, to NFPA 80.

The task group's charge is to provide a report during the First Draft meeting, which might lead to a Committee Proposal (CP) or Committee Input (CI).

6k. Agenda items from TC members.

- SDI—Tom Janicak and Kurt Roeper (see attached)
- Daisy Harington (see attached)
- Steve Hahn (see attached)
- Jim Peterkin (see attached)

Following are my comments on NFPA 80 – 2019:

- Page 80-12, 3.3.89 Mullion definition: suggest including “multiple door opening” in addition to double door opening as locations where mullions are used.

3.3.89 Mullion. A fixed or removable vertical member set in a double or multiple door opening that allows all leaves to be active. It can also be used to separate a door and sidelight or a separate , framed, glazed area.

- Page 80-12, 3.3.112 Side Panel Frame definition: suggest including “fire” so it says; A “fire” door frame prepared for the installation...

3.3.122 Side Panel Frame. A fire door frame prepared for the installation of a fixed solid metal or wood panel alongside the door opening.

- Page 80-14, Chapter 4, 4.1.3.2.3: I’m not clear on what that means and would like to see it reworded or expounded on. I’m sure when it was added the person (or persons) involved knew exactly what it means but I don’t follow what that really allows.

This exception was for items such as large viewers or electrified hardware.

- Page 80-14, Chapter 4, 4.1.3.2.4: I wasn’t clear on what this one meant either until I had Justin Hendricks explain it so I’d like to see additional info added for further clarification.

I suppose this can be cleared up by adding a statement that the work needs to be performed by an individual who is certified by the listing agency. Also fire pins should mbe removed from the section and added to Section 4.1.3.2.1.

- Page 80-16, Chapter 4, 4.4.5.1: since larger ceramic type glass has been tested, than what is addressed here, I’m not following what the intent of this is so would like to have clarification added as to the intent. Is it based on wired type glass, certain type doors, actual testing by the HM door manufacturer, etc.?

4.4.5.1 Delete this paragraph in its entirety or highlight the fact that this pertains to ¼” wired glass only.

- Page 80-18, Chapter 5, 5.1.4.3: info required to be on field installed labels indicates these words must be on the label “field inspected” or “field labeled” and as you know UL requires us to send labels for all Field Inspections and we don’t have those words on our labels. We would have to develop new labels with those words on them. I understand the reason but that’ll require a lot of new labels for us to design and inventory. Is there any way UL could apply a sticker with those words to our labels (or have a supplemental label) used for Field Inspections?

It appears that UL’s policy is that if it is a product they have under label service they consider the labeling in the field to be equivalent to the factory and a standard label can be applied. If it is considered a field evaluation then a special label that indicates “Field Evaluated” is used.
I confirmed this with Matt Schumann.

- Page 80-19, Chapter 5, 5.1.4.4: wording is confusing as it states a non-fire rated door assembly cannot be modified in the field to achieve a fire rating unless the field modification is completed under label service. If a modification is completed under label service, then the product would not have been modified in the field so what is stated sounds contradictory to me. Suggest removing the second use of "field" before the second use of modification, and if I've misinterpreted the intent then someone else probably has also.

I believe that label this scenario an inspection performed in the field by a representative is being considered as under label service.

- Page 80-19, Chapter 5, 5.1.4.5: indicates doors which have had a field modification according to 5.1.4.4 shall be labeled. Again, I'm thinking the word "field" should be removed as 5.1.4.4 states a non-fire rated door assembly can't be field modified to achieve a fire rating.

It can be labeled if under the auspices of the labeling agency. The inspection agency should be present at the jobsite to witness the modification being performed.

- Page 80-19, Chapter 5, 5.1.4.6: then this states when an opening with a non-fire rated door requires a fire door, the door assembly shall be replaced. 5.1.4.4 above indicated a door could be modified under label service so if the non-fire rated door is taken to a labeled shop (which has fire procedures to label the manufacturer's door) and modified that would not be allowed according to this statement as a new door must be provided. I may be misunderstanding all three of these...but they sure are confusing the way they're worded.

This applies to a door that would not qualify as a fire door even if modified in the field.

- Page 80-21, Chapter 5, 5.5.7: filling of fastener holes left in a fire door or frame when hardware has been removed or changed (or plant-ons have been removed), Option# 2 indicates to fill the screw or bolt holes with the same material as the door or frame. It doesn't indicate how to fill the screw or bolt holes so we've always interpreted that to mean fill by welding steel of the same (or heavier) gage as the door or frame....but welding to me would be a modification of the door or frame so I've been unsure on the intent here. Not sure I want this one clarified as the open ended non-specific way to fill has given some leeway. What do you think?

I've seen cases where to fastener head has been ground off leaving the remainder embedded in the door as a solution. Of course, the use of a weld is another option.

- Page 80-22, Chapter 6, 6.3.3.5: suggest clarifying that fire protection rated glazing can only be used in fire protection rated frames with lights here since the previous two paragraphs explained $\frac{3}{4}$ or less hour frames with glass vs. ASTM E119 more than $\frac{3}{4}$ hour rated frames with glass. In other words, fire protection rated glazing shouldn't be used in ASTM E119 assemblies and I think that needs to be clarified here.

Section 6.3.3.4 specifically requires the use of fire resistance rated glazing in E119 rated assemblies. The statement simply indicates that all glazing be labeled.

- Page 80-22, Chapter 6, 6.3.5.2: when multiple opening frames are being installed adjoining each other, this indicates there must be 16" min. wall between the two separate assemblies. If there's a min. wall required between two separate frames with glass that are adjoining each other, then I'd suggest adding that to NFPA 80 because we get that question on a regular basis.

Add a similar statement as 17.4.1.1

- Page 80-34, Chapter 17, 17.2.2.2: see my comments above for page 80-16, Chapter 4, 4.4.5.1 as this limits glass size unless otherwise tested as the door info indicated.

17.2.2.2 Delete this paragraph in its entirety or highlight the fact that this pertains to ¼" wired glass only

- Page 80-51, Annex A, suggest adding new style low profile push bars for exit hardware shown on this page. Does the issue we got into recently with Dutch doors need to be addressed on this page or somewhere else in NFPA 80?

Agreed.

- Page 80-82, Annex F, the strike location on the frame in the lower right hand corner is shown fixed at 40-5/16" giving the impression that's the only strike location for fire rated steel doors and steel frames. Suggest showing a max. height or range.

Paragraph F.1 already acknowledges other locations.

- 6.4.4.1 Requires that only labeled locks and latches be used on "Swinging Doors with Builders Hardware." It has come to our attention that UL is currently allowing the use of non-labeled builder's type hardware on UL labeled swinging doors. Currently there is not a provision in NFPA 80 to permit this. If these are to be considered "Special Purpose Doors," the label on the door should indicate this fact and standard fire door labels should not be used. This assembly design should be included in the listing agencies directory.
- Figure A.6.3.1.2 needs additional clarification. A note is needed that states the outer layers of drywall do not need to penetrate into the throat of the frame to maintain the fire rating of the wall. The outer layer should be shown with solid and not dotted lines.

Keith Pardoe

From: Harington, Daisy <Daisy.Harington@Saskatoon.ca>
Sent: Monday, March 18, 2019 4:46 PM
To: Bigda, Kristin; Keith Pardoe
Subject: RE: NFPA 80/105 TC ON FIRE DOORS AND WINDOWS - PRE-FIRST DRAFT MEETING (response to questions)

Hi Kristin and Keith,

Please see below in response to the questions posed to the technical committee. I will not be in attendance at the meeting but I will be participating using the web/teleconference option.

Technical Committee Pre-First Draft Meeting Questions:

1. Is there language that is inconsistent with current industry practices and products?
[None identified](#)
2. Are there provisions and requirements that no longer apply to today's products?
[None identified](#)
3. Should NFPA 80 and NFPA 105 have separate requirements for older existing installations and new installations? For example, marking of glazing materials. Where would be the best location to place requirements for existing installations, under the respective door-chapters or in Chapter 5?
[No – chapter 5 should apply to all doors. Maintenance on doors is required especially as they age; would be up to the AHJ to determine the level of compliance that existing doors are required to maintain.](#)
4. Are there provisions and requirements in Chapter 4 that only pertain to one type of door/opening protective? If so, should those provisions and requirements be relocated to the appropriate chapter for the door/opening protective?
[None identified](#)
5. Are there provisions and requirements in Chapters 6 through 21 that should be relocated to Chapter 4? For example, 6.1.3 states, “All swinging doors shall be closed and latched at the time of fire”; ensuring all types of fire doors are closed “...at the time of fire” is the primary objective of NFPA 80. Does it make sense to include a similar requirement in Chapter 4?
[None identified](#)
6. As users of these standards, are there any provisions and requirements that make you “scratch your head” when you try to apply them in the field? If so, which provisions and requirements are unclear? Can we improve the language to make them user-friendly?

NFPA 80

- [4.4.5 sets requirements for maximum area of glazing in fire rated doors. This information is only applicable if IBC or NBC requirements don't apply \(NBC is more restrictive than the NFPA 80 chart for glazing in exit doors or firewalls\). Recommend a statement be added to 4.4.5 to state “unless otherwise prohibited by applicable codes”](#)
- [8.2.1.2 sets requirements for types of supporting construction for horizontally sliding doors – this article limits construction to only brick, concrete, or masonry. Recommend a statement](#)

be added to 8.2.1. (similar to 4.8.1.6 and 11.2.1) stating “door assemblies shall be used on walls of other construction only if listed for such insulation and shall be constructed to support the size and weight of the door assembly and its intended use.”

- 15.2.5 & 15.3.5 set requirements for chute intake doors. 15.2.5 & 15.3.5 are contradictory with NBC 2015 Sentence 3.6.3.3.4) which states:
“Intake openings for a linen chute or a refuse chute shall have an area not more than 60% of the cross-sectional area of the chute”. Not sure what the IBC states for requirements. Recommend evaluating the opening area or adding a statement allowing the AHJ to permit an alternative.

NFPA 105

- 6.3.2.3 sets requirements for supporting construction for swinging doors – Recommend alignment with NFPA 80. Change Article to state “Wall openings to be constructed to readily accept the door frames and shall be constructed to support the size and weight of the door assembly and its intended use.”
7. Are you aware of provisions and requirements in NFPA 80 and NFPA 105 that are no longer accurate or incorrect? For example, 4.1.4.3 prohibits the application of signs to fire-protection rated glass—A.4.1.4.3 cites the application of decals (e.g., delayed egress locking) on fire-protection glass as an example. Is 4.1.4.3 based on supposition or fact?
None identified
8. Are there types of doors/opening protectives not covered in NFPA 80 and NFPA 105 that should be included?
None identified

Please let me know if more details are required.

Thanks,

Daisy R. Harington, P.Eng. | tel 306.657.8746

Senior Building Code Engineer
Building Standards Division
City of Saskatoon | 222 3rd Avenue North | Saskatoon, SK S7K 0J5
daisy.harington@saskatoon.ca
www.saskatoon.ca

For general commercial permit inquiries including permit application status please contact:

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Keith Pardoe

From: Steve Hahn <shahn@lawrencedoors.com>
Sent: Tuesday, March 19, 2019 7:48 PM
To: Keith Pardoe
Subject: FW: NFPA 80/105 TC ON FIRE DOORS AND WINDOWS - PRE-FIRST DRAFT MEETING NOTICE - APRIL 25, 2019 - NFPA HEADQUARTERS, QUINCY, MA

Importance: High

Hi Keith,

Do you have any more current information on what topics will be discussed? I'm trying to decide if attending in person is justified.

I had mentioned the following to Kristin – not sure if she shared with you...

I do think that maybe we should add a catch-all requirement that all other types of fire doors and opening protectives that are not specifically addressed by NFPA 80 (and parallel in 105) must also be properly maintained, and inspected and tested at least annually. I know there are a lot of telescoping fire doors out there – and probably other products – that we probably can't find enough information to write a chapter about, but should not be excluded from I,T&M through omission.



4525 Littlejohn Street
Baldwin Park, CA 91706

www.lawrencedoors.com

Steve Hahn

925-634-1508 direct
925-634-1578 fax

shahn@lawrencedoors.com

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From: Carey, Kelly [mailto:KCarey@nfpa.org]
Sent: Wednesday, February 20, 2019 2:44 PM
To: Carey, Kelly
Cc: Bigda, Kristin; Sisco, Jennifer
Subject: NFPA 80/105 TC ON FIRE DOORS AND WINDOWS - PRE-FIRST DRAFT MEETING NOTICE - APRIL 25, 2019 - NFPA HEADQUARTERS, QUINCY, MA
Importance: High

TECHNICAL COMMITTEE ON FIRE DOORS AND WINDOWS

Please disregard the previous two emails sent today regarding the Pre-First Draft Meeting. The is the clean and accurate email you should refer to for the this meeting. I apologize for this inconvenience.

Attached please find the NFPA 80/105 Pre-First Meeting Notice for a meeting to be held at NFPA Headquarters on April 25, 2019. The notice has been posted to both the NFPA document information pages at www.nfpa.org/80next and www.nfpa.org/105next. Please note your planned attendance at the RSVP link located next to the notice under First Draft Committee Information heading.

Please see the correspondence noted below from the Chair, Keith Pardoe.

Our pre-first draft meeting gives us an opportunity to review and discuss NFPA 80 and NFPA 105 without the constraints of processing public inputs, and it provides us with time to develop potential changes that we can consider for during our first draft meeting. In preparation for this meeting, please consider the following questions regarding your primary area of experience and expertise in using NFPA 80 and NFPA 105:

1. Is there language that is inconsistent with current industry practices and products?
2. Are there provisions and requirements that no longer apply to today's products?
3. Should NFPA 80 and NFPA 105 have separate requirements for older existing installations and new installations? For example, marking of glazing materials. Where would be the best location to place requirements for existing installations, under the respective door-chapters or in Chapter 5?
4. Are there provisions and requirements in Chapter 4 that only pertain to one type of door/opening protective? If so, should those provisions and requirements be relocated to the appropriate chapter for the door/opening protective?
5. Are there provisions and requirements in Chapters 6 through 21 that should be relocated to Chapter 4? For example, 6.1.3 states, "All swinging doors shall be closed and latched at the time of fire"; ensuring all types of fire doors are closed "...at the time of fire" is the primary objective of NFPA 80. Does it make sense to include a similar requirement in Chapter 4?
6. As users of these standards, are there any provisions and requirements that make you "scratch your head" when you try to apply them in the field? If so, which provisions and requirements are unclear? Can we improve the language to make them user-friendly?
7. Are you aware of provisions and requirements in NFPA 80 and NFPA 105 that are no longer accurate or incorrect? For example, 4.1.4.3 prohibits the application of signs to fire-protection rated glass—A.4.1.4.3 cites the application of decals (e.g., delayed egress locking) on fire-protection glass as an example. Is 4.1.4.3 based on supposition or fact?
8. Are there types of doors/opening protectives not covered in NFPA 80 and NFPA 105 that should be included?

The purpose of this pre-first draft meeting is to identify areas of concern and topics for our consideration at the first-draft meeting. Most likely, we will need to create task groups to start this work. It might turn out that some of this work cannot be completed before the first draft meeting. In those cases, we can consider creating committee input (CI) as placeholders until the final work can be considered at our second draft meeting.

Please forward your responses to these questions to Kristin Bigda or Keith Pardoe by April 15th. We look forward to working with you towards the development of the 2021 edition of NFPA 80 and NFPA 105.

Thank you.

Keith Pardoe, Technical Committee Chair

Regards,

Kelly Carey

Project Administrator | **NFPA**

1 Batterymarch Park

Quincy, MA 02169-7471

+1 617-984-7043

kcarey@nfpa.org

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Keith Pardoe

From: Peterkin, Jim <jim.peterkin@tlc-eng.com>
Sent: Wednesday, February 27, 2019 9:38 AM
To: Keith Pardoe
Subject: NFPA 80 Next edition

Keith,

Should the code provide more information regarding Fire Rated Floor Doors other than what is already provided (not much)?

16.2.3 Floor Fire Door Assemblies. Floor fire door assemblies shall be tested in accordance with the procedures described in NFPA 288.

James S. Peterkin, PE, LEED AP
Principal / Senior Fire Protection Engineer

TLC Engineering for Architecture

Cell: 215.360.4144
website: www.tlc-engineers.com

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- 2 From TJC Department of Engineering—Are You Using Fire Doors Where Not Required?** If you obscure the fire-rating label on an unnecessary fire door, you don't need to conduct an annual inspection and The Joint Commission won't cite you.
- 3 Extinguishing Fire Sprinkler System Problems:** Fire suppression sprinklers rank among the top 10–cited life safety issues, so it's especially important to keep them operating in peak condition. One common problem is cables touching or even clamped to sprinkler pipes.
- 6 What's Your Solution?** See how one health system answers this question:
How does your organization handle above-the-ceiling work permits?
- 10 Reducing Risks:** Effective environment of care risk assessments are the key to minimizing safety and security hazards in health care facilities.
- 15 Preventing Patient Suicide:** The Joint Commission's forthcoming book explains how to create ligature-resistant and other safe spaces in behavioral health care facilities, psychiatric hospitals, and other specific settings.
- 18 Clarifying Food and Drink Safety for Clinicians:** OSHA regulations govern where food and beverages can be consumed in clinical work areas. Joint Commission standards don't specifically address this.
- 20 Top 10–Cited Standards in Hospitals for Full Year 2018:** All but one are in the "Environment of Care" and "Life Safety" chapters.

Are You Using Fire Doors Where Not Required?

IF YOU OBSCURE THE LABELING ON AN UNNECESSARY FIRE DOOR, THE JOINT COMMISSION WON'T CITE YOU AND YOU WON'T NEED TO INSPECT THE DOOR

The Department of Engineering in The Joint Commission's Standards Interpretation Group (SIG) receives many questions about fire doors. These questions are addressed under Element of Performance (EP) 9 of "Life Safety" (LS) Standard **LS.02.01.10**: Building and fire protection features are designed and maintained to minimize the effects of fire, smoke, and heat. (See the box at right.)

In response to a Centers for Medicare & Medicaid Services (CMS) requirement,* in January 2018 The Joint Commission began requiring hospitals, critical access hospitals, and ambulatory sites to perform annual inspections of fire-rated door assemblies.

When The Joint Commission's life safety surveyors conduct a building tour, they ask to see life safety drawings that indicate the location and rating of all firewalls. Surveyors then inspect the corresponding fire door assemblies to make sure that they have at least the correct rating and that their labels are legible.

It is not uncommon, however, for fire doors to be used where they are not required. Perhaps during new construction or remodeling, the contractor may have obtained "a great deal" on fire doors and determined it would be less expensive to install, for example, surplus 90-minute fire-rated doors in some of the unrated walls. What would be the harm, after all?

But the problem is that these doors create confusion among some hospital maintenance staff members. Do all fire-rated doors—even those in unrated walls—require an annual inspection? This is a question that the Joint Commission engineering team is frequently asked. And the answer is no.

However, if you are using a fire-rated door where it's not needed, we want you to obscure the rating label on that door. You don't need to paint over the label or try to scrape it off because you then would deface the door. At some point in the future—during a remodeling project perhaps—your facility might want to relocate that door to a barrier wall where it is needed. Fortunately, vendors actually make stickers specifically for covering fire-rating labels, which leave the original labels intact.

So, if you cover the label on an unnecessary fire door, The Joint Commission will not cite your facility for not inspecting that door.

If you have further questions, please contact SIG Engineering at (630) 792-5900. 

LS.02.01.10, EP 9:

The fire protection ratings for opening protectives in fire barriers, fire-rated smoke barriers, and fire-rated smoke partitions are as follows:

- ▶ Three hours in three-hour barriers and partitions
- ▶ Ninety minutes in two-hour barriers and partitions
- ▶ Forty-five minutes in one-hour barriers and partitions
- ▶ Twenty minutes in thirty-minute barriers and partitions

Note 1: Labels on fire door assemblies must be maintained in legible condition.

Note 2: For hospitals that use Joint Commission accreditation for deemed status purposes: The hospital meets the applicable provisions of the Life Safety Code Tentative Interim Amendment (TIA) 12-1.

* Centers for Medicare & Medicaid Services. [Fire and Smoke Door Annual Testing Requirements in Health Care Occupancies](#). Jul 7, 2017. Accessed Mar 4, 2019.

Extinguishing Fire Sprinkler System Problems

FIRE SUPPRESSION SPRINKLERS RANK AMONG THE JOINT COMMISSION'S TOP 10-CITED LS ISSUES, SO IT'S ESPECIALLY IMPORTANT TO KEEP THEM OPERATING IN PEAK CONDITION



Fires at health care facilities, particularly hospitals and nursing homes, can be especially devastating because the patients inside often can't just get up and leave.

Health care facilities experience an estimated 5,750 structure fires per year in the United States, leading to an average of 2 deaths (of patients, staff, or visitors) and 157 injuries annually. But those numbers have declined considerably since the National Fire Protection Association (NFPA) *Life Safety Code*®* first mandated full automatic sprinkler systems in all new health care facilities in 1991. Existing health care facilities have also picked up the pace, so that automatic sprinkler systems were present in 4 out of 5 reported hospital fires between 2006 and 2010. In 2016, the Centers for Medicare & Medicaid Services (CMS) published a final rule to update health care facilities' fire protection guidelines, including the requirement that health care facilities in buildings taller than 75 feet install automatic sprinkler systems within 12 years after the rule's effective date.

Unfortunately, sprinklers are among the top 10 life safety (LS) issues for which facilities are cited for noncompliance, says James Kendig, MS, CHSP, CHCM, CHEM, LHRM, field director of surveyor management and development for The Joint Commission's Division of Accreditation and Certification Operations.

"Sprinkler problems can be anywhere, from new construction to buildings that were built 30 years ago," he says. "Routinely, this is on surveys in every type of health care facility."

The Joint Commission addresses sprinkler systems under standard **EC.02.03.05**: The hospital maintains fire safety equipment and fire safety building features. Most of the deficiencies are scored under the LS chapter elements of performance (EPs).

Sprinklers need their space

The No. 1 problem encountered with sprinklers in health care facilities is cables resting on or touching the sprinkler system in the interstitial space between the ceiling and the roof deck above, Kendig notes. The Joint Commission and CMS have zero tolerance for this situation because any additional loading of the sprinkler piping system can cause the supporting system to fail, resulting in flooding along with water not going where it is needed to fight a fire. Extra weight

* The *Life Safety Code*® is a registered trademark of the National Fire Protection Association, Quincy, MA.



Cables should not be fastened to sprinkler pipes.

Photo: Courtesy of James Kendig

from other cables resting on the sprinkler system could also cause the system to fail when pressure is suddenly released through the sprinklers during activation.

Overburdened sprinkler pipes are common because workers may use them as a fast, easy means of support when they're adding other cables and conduit in the often limited space above the ceiling.

"Now that we have Wi-Fi and other things operating off low voltage, so many of these things are being put in the ceiling," says Herman A. McKenzie, MBA, CHSP, acting

director of engineering for The Joint Commission's Standards Interpretation Group. "Years ago they didn't reserve enough space for all the other things we're adding above the ceiling now. And some organizations aren't careful enough when they're suspending cables, and over time [the cables] drag or droop and touch the sprinkler pipes. The facilities folks are pretty well-versed [about the fact] that sprinkler pipes have to be free and clear, but people with telecommunications or information technology backgrounds or security vendors may not be as well-versed."

McKenzie says he has seen some health care facilities successfully address this issue by requiring an above-ceiling permit; this is a good practice that is not mandated by The Joint Commission. (For an example, see "What's Your Solution?" on [page 6](#).)

At such organizations, any contractor who will be doing work above the ceiling is required to know the proper way to run conduit without touching or using sprinkler pipes for support, and the work is checked afterward by an appropriate facilities worker. Some hospitals even offer a reward, such as a free lunch ticket, to any employee who sees someone working above the ceiling without an above-ceiling permit on the ladder, McKenzie adds.

Tackling blocking issues

Another common sprinkler problem involves the sprinkler heads themselves, which can accumulate dirt or other foreign material that can act as an insulator and delay activation from the heat of a fire. For the same reason, sprinkler heads cannot be painted.

Missing escutcheon (trim) plates around the sprinklers can also delay sprinkler activation. The escutcheon plate



Sprinkler heads need to be maintained; accumulated dust or debris can act as an insulator and delay activation from the heat of a fire.

Photo: Courtesy of James Kendig

seals the gap between the sprinkler head and the ceiling around it. If the plate isn't there, heat from a fire could escape into the interstitial space, lowering the temperature in the room. That could delay sprinkler activation until the fire has been burning a longer amount of time to increase the room temperature enough to activate the sprinkler.

In addition, a sprinkler typically has deflectors at the bottom to help spread water over a fire. Anything that is closer than 18 inches to the deflector will interrupt the pattern of the spread of water and will possibly interrupt fire suppression, too. Shelving around the perimeter of a room and stack shelving, however, is safe as long as it's not directly underneath a sprinkler head.

An ounce of prevention

Maintaining automatic sprinkler systems requires regular documented testing and inspections to get a jump on potential problems. EPs 6–12 of Standard EC.02.03.05 mandate the following schedule for equipment, including fire pumps used for buildings over three stories to help lift water to the higher floors:

- **Diesel engine-driven fire pumps**—test weekly.
- **Water-storage tank temperature alarms**—test monthly during cold weather only.
- **Electric motor-driven fire pumps**—test monthly.
- **Fire department water-supply connections**—test quarterly.
- **Water-storage tank high- and low-water level alarms**—test every six months.
- **Main drains at system low point or at all system risers**—test annually.
- **Standpipe systems**—conduct hydrostatic and water-flow tests every five years.
- **Standpipe occupant hoses**—test five years after installation and then every three years.

Keeping an automatic fire sprinkler system in good working order can go a long way toward suppressing and containing fires before they have a chance to spread and cause extensive damage—or worse, injure patients, staff, or visitors. 

References

1. National Fire Protection Association. [Structure Fires in Health Care Facilities](#). October 2017. Accessed Jan 31, 2019.
2. NFPA Journal. [Some of the Biggest Proposed Changes to the 2012 Edition of the Life Safety Code Focus on Health Care Occupancies](#). Jan/Feb 2011. Accessed Feb 11, 2019.
3. Fire Engineering. [Fire Safety: Firefighting in Hospitals](#). Oct 7, 2014. Accessed Feb 11, 2019.
4. Centers for Medicare & Medicaid Services. [CMS Publishes Final Rule on Fire Safety Requirements for Certain Health Care Facilities](#). May 3, 2016. Accessed Jan 31, 2019.

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What's Your Solution?

Readers Are Invited to Share Their Solutions to Common Compliance Challenges

*In February, we asked our readers the following question: **How does your organization handle above-the-ceiling work permits?** As our article "[Extinguishing Fire Sprinkler System Problems](#)" explains, above-ceiling permits can help prevent such citable life safety problems as cables touching sprinkler pipes or even being clamped to the pipes. Implementing a policy requiring above-ceiling permits is a best practice that can help hospitals comply with **EC.02.03.05: The hospital maintains fire safety equipment and fire safety building features.***

*This month we have a solution, courtesy of EC News Customer Advisory Board member **Edmund Lydon, MS, CHFM, FASHE**, senior director of support services for several facilities that are part of Boston-based **Beth Israel Lahey Health**.*

Beginning in January 2008, the former Lahey Health implemented a "Ceiling Entry and Permit Policy." Contractors were notified of the new policy via a letter signed by facility managers and an email with the letter attached. Here is a [template](#) that can be used for a similar letter from your own health care organization:

A health care organization can provide the contractor with life safety (LS) drawings on which to indicate where any penetration is made and any cable pulled. This way, the facility can field-verify upon project completion that the appropriate fire stop was used for penetrations and that nothing was hung or draped on the approved automatic sprinkler system, suggests James Kendig, MS, CHSP, CHCM, CHEM, LHRM, field director of surveyor management and development for The Joint Commission's Division of Accreditation and Certification Operations. The health care organization can insist that contractors complete this process before receiving payment for above-ceiling work.

Template 1: Letter to Contractor

Dear Contractor:

“Effective [date] [name of hospital/health system] implemented a “Ceiling Entry and Permit Policy.” This policy must be adhered to by all persons working above ceilings in any and all buildings associated with [name of hospital/health system].

Please review the attached copy of the policy; our expectation is that your staff is to perform within these guidelines at all times. Please pay special attention to our standard, which states “*all fire stopping must be accomplished by a person certified in the use of [acceptable] fire-stopping material that is being utilized [as a best practice], and under no circumstances are wires or pipes of any type to be attached, laid on, or supported by sprinkler pipes.*”

At no time will any vendor or employee connect to, drape on, or support wires from sprinkler pipes. Prior to beginning work, it is expected that all workers will inspect the area above the ceiling in which they are working in order to identify existing violations in regard to sprinkler pipes and penetrations. All deficiencies are to be reported immediately to the Manager of Plant Operations or Construction Project Manager so that he/she will not be held responsible for violations of the *Life Safety Code*.

Many governing agencies tour our buildings. Therefore, we must insist on your cooperation in this matter. Workers above ceilings, at all times, must show a permit on their ladder. If there is no permit or the contractor is found in violation of not fire stopping appropriately or sprinkler pipe infractions, the worker will be asked to stop work and leave the property. A company representative will be asked to meet with the Director of Support Services before being allowed back on the premises to complete the work.

Sincerely,

[Name of hospital/health system]

[Facility manager(s)]

Lydon also shared Lahey's "Ceiling Entry and Permit Policy," an excerpt of which follows:

Template 2: Ceiling Entry and Permit Policy

I. Purpose:

- The purpose is to maintain integrity of smoke and fire barrier walls and sprinkler pipe systems.

II. Policy:

- Prior to any building services work (e.g., piping, ductwork, cabling, etc.) being performed above ceiling, the Plant Operations/Project Management Department shall review the scope of work and determine the most efficient way to complete the project while minimizing the time in patient-related areas.
- The contractor and/or [hospital/health system] staff shall advise the Plant Operations/Project Manager of any pre-existing deficiencies in the work area.
- Ceiling Entry Permits will only be issued to contractors/employees that present [acceptable] fire-stopping certification.
- Any contractor or employee working above a drop ceiling or hard ceiling or working in an elevated area must display a valid [hospital/health system]-issued "Ceiling Entry Permit" on his/her ladder at all times. Any person without this permit will be asked to cease working until a permit has been issued. A [hospital/health system] Project Manager shall review the work that the contractor had performed up to this point and verify whether it has or has not met standards outlined in this policy. If the work has NOT met the standards, the contractor MUST redo work up to [hospital/health system] standards.
- At no time shall wires, cables, or pipes of any type be attached, laid-on, or supported by sprinkler pipes.
- Under no circumstances are wires or pipes allowed to rest on or be supported from sprinkler piping. Any conduit that new wire has been pulled through must have the proper support within the conduit to prevent wire sag from pulling down the fire stop.
- All abandoned building services encountered during the performance of the work shall be removed from the project area, as directed in the scope of work or by the Project Manager.
- The contractor and/or [hospital/health system] staff shall advise the Plant Operations/Project Manager of any pre-existing deficiencies in the work area.
- Where surface-mounted cabling is necessary, approval by the appropriate department is required in advance.
- Contractor and employees shall follow the [hospital/health system] Infection Control Policy prior to starting any work above ceilings.
- All areas affected by the work shall be restored to the condition that existed prior to the start of work; ceiling tiles shall be reinstalled, damaged ceiling tiles shall be replaced, and all dust and debris shall be cleaned.
- All technicians will maintain a professional appearance and conduct themselves in a positive, professional manner at all times.
- Plant Operations/Project Manager will inspect for proper fire stopping and sprinkler pipe violations based on policy and complete the Ceiling Entry Permit before payment will be released.

III. Procedure:

- Ceiling Entry Permit can be requested at the [specific office or department].
- All penetrations through fire and smoke walls/barriers must be run through a UL-approved system authorized by the [hospital/health system] and labeled on the wall. If an existing sleeve is full or inaccessible, a new hole must be cored and sleeved with a [hospital/health system]-approved system. Creating a hole in a smoke or fire wall/barrier with a hammer or similar tool is unacceptable and will not be tolerated.
- Smoke and fire walls/barriers will be patched using the appropriate fire-stopping material for the assembly being repaired.

IV. Documentation:

- A Ceiling Entry Permit must be completed prior to performing any work.

V. Orientation/Training:

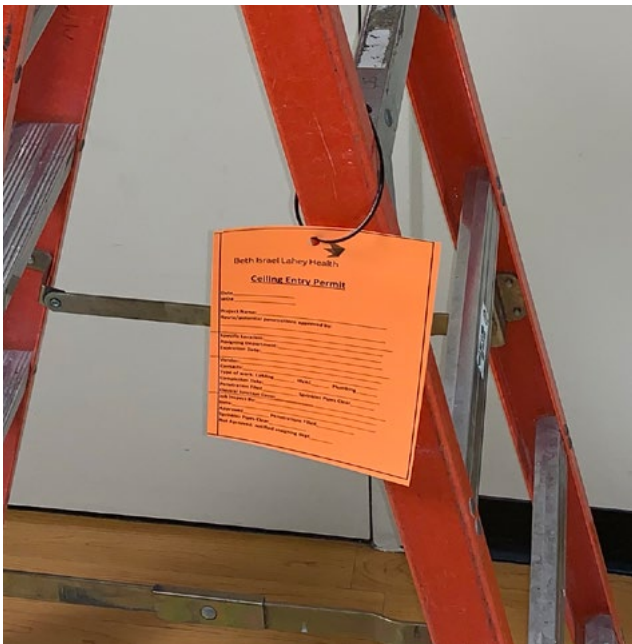
- All contractors and staff entering above ceiling must be trained on this policy and the use of fire-stop products.

VI. Monitoring:

- [Hospital/health system] Project Manager/Facility Manager(s) assigned to project must inspect smoke and barrier partitions and sprinkler system work after completion and before release of any payment.

Finally, Lydon provided a sample Ceiling Entry Permit, which is orange and secured by zip tie to a ladder. 

Template 3: Ceiling Entry Permit



At the former Lahey Health (now part of Beth Israel Lahey Health), an orange Ceiling Entry Permit is secured to a ladder with a zip tie.

Photo: Courtesy of Edmund Lydon, Beth Israel Lahey Health

Ceiling Entry Permit

Date: _____

WO#: _____

Project name: _____

Route/Potential Penetrations Approved By: _____

Specific Location: _____

Assigning Department: _____

Expiration Date: _____

Vendor: _____

Contact: _____

☐ Fire-stopping certification presented

Type of work:

☐ Cabling

☐ HVAC

☐ Plumbing

Completion date:

☐ Penetrations filled

☐ Sprinkler pipes clear

Job Inspected By: _____

Date: _____

☐ Approved

☐ Penetrations filled

☐ Sprinkler pipes clear

☐ Not approved: Notified assigning department

NEXT ↓

Reducing Risks

EFFECTIVE EC RISK ASSESSMENTS ARE THE KEY TO MINIMIZING SAFETY AND SECURITY HAZARDS IN HEALTH CARE FACILITIES



From injurious falls to workplace violence, many hazards in health care settings can be reduced through effective environment of care (EC) risk assessments.

The Joint Commission defines an EC risk assessment as a “proactive examination of functions and processes in the physical environment used to assess actual and potential risks; the results from the assessment are then prioritized to identify improvement opportunities.”

A risk assessment’s functions include determining prospective risks to safety; identifying any actions needed to improve safety; enhancing the safety of all occupants within the physical environment; improving efficiency within a facility; pinpointing areas where extra training and education can help reduce risk; and proving to leadership why new staff, space, equipment, or other resources are needed.

“A risk assessment is an essential process used to identify known and unknown risks and to mitigate and abate risks to patients, visitors, and staff,” says James Kendig, MS, CHSP, CHCM, CHEM, LHRM, field director of surveyor management and development for The Joint Commission’s Division of Accreditation and Certification Operations.

Risk assessments essentially “help define what the true issues are that need attention,” adds Joseph Bellino, MS, CHPA, CHEM, an engineer in The Joint Commission’s Standards Interpretation Group. “And they identify future concerns that may not yet be apparent but that facts and data can give shape to.”

The Joint Commission requires risk assessments for the following areas or departments within the environment of care:

- **Safety**—Risks related to worker safety, environmental elements like noise, and prospective accidents such as slips, trips, and falls
- **Security**—Risks associated with violence, theft, abduction, or other intentional acts (for example, infant or pediatric abductions)
- **Fire safety**—Risks corresponding with a facility’s fire response (such as how a fire response team would respond to a fire alarm in the magnetic resonance imaging [MRI] area)
- **Hazmat**—Risks that come with handling and disposing of dangerous materials (addressing where to place emergency shower and eyewash stations, for example)
- **Medical equipment**—Risks from the improper inspection, testing, and maintenance of new medical devices (for example, when evaluating alternative equipment management strategies)

- **Utilities**—Risks affecting water, medical gas, electrical, and heating, ventilation, and air conditioning (HVAC) systems (such as when developing a water management plan to combat *Legionella*)
- **Preconstruction**—Risks to existing spaces, staff, and patients caused by renovation or new construction projects
- **High-risk locations and populations**—Risks affecting the emergency department, pharmacy, radiology, laboratory, behavioral health units, and other vulnerable areas
- **Emergency management**—Risks when building and testing plans related to mitigation, preparedness, response, and recovery (for example, ensuring that an organization's comprehensive hazard vulnerability analysis [HVA] reconciles with the community's HVA)

"Additionally, organizations are to assess for risk whenever there is a process that's vulnerable or a high-risk procedure that could result in a poor outcome—for example, environmental ligature points, infection prevention and control, vesicant infusions, etcetera," says Kendig. "While failing to complete a risk assessment may not result in a requirement for improvement [RFI], conducting a risk assessment cannot be used to supersede requirements listed in the accreditation [manual] or what is required by law and regulation."

For instance, Kendig notes that health care facilities cannot use a risk assessment to replace the requirement for checking fire department connections or other inspection and testing activities that are required by law or regulation.

Determining what, who, and when

To recognize areas in need of risk assessments, health care organizations are required by The Joint Commission to use internal and external sources. These sources can include feedback from staff, patients, or visitors; root cause analysis results; internal performance improvement data; environmental monitoring activities; data from national, state, local, sister, parent, or other organizations; and Joint Commission *Sentinel Event Alerts*.

The risk assessment process often involves at least two people from across departments or disciplines and is commonly managed by a head or leader from the department where a deficiency or problem has been identified.

As Bellino explains, "Say that emergency department nurses have been complaining about feeling unsafe or vulnerable to patient violence. In this case, the head nurse from the ED as well as frontline employees, security, and facility administration decide to conduct a risk assessment to determine what is causing the staff feeling of being unsafe. By assessing the environment, reviewing reports and incidents, interviewing the staff, etcetera, they can determine or identify what factors are creating the unsafe feeling."

The risk assessment would identify opportunities for improvement, and measures can then be implemented to improve workplace safety and staff members' confidence that they are safe.

Kendig notes that EC standards do not require safety and security risk assessments to be done at any particular frequency. However, “reassessment is to be done when significant changes to the EC occur,” he says. “Also, it is a good practice to schedule assessments for high-risk issues on a regular frequency in order to incorporate new tools or knowledge that may have become available.”

Because accredited organizations are required to perform annual evaluations of safety and security management plans, annual risk assessments are helpful tools for identifying goals and objectives and recognizing changes that have occurred in the environment.

Following best practices

There are many different ways to conduct a risk assessment. Sometimes the process can take place entirely within a meeting room with a handful of affected staff members who gather to talk about the problem and strategize solutions. At other times, a risk assessment may involve conducting an environmental tour of affected areas and marking a checklist based on observations.

In addition, risk assessments can combine both formats and include additional steps such as a survey of staff to determine perceived risk areas and concerns.

“The Joint Commission is not prescriptive in how risk assessments are to be performed,” Kendig says. “We allow organizations to develop assessment methods that best suit their circumstances and preferences. Organizations may use assessment tools that they consider appropriate to achieve an outcome that mitigates or eliminates the risk.”

For instance, the introductory section of the “Leadership” (LD) chapter of the *Comprehensive Accreditation Manual for Hospitals* or its electronic edition counterpart provides an example of a proactive risk assessment model that an organization may use. Kendig says, however, that “this specific approach is not mandated, as there are other risk assessment tools available that may better meet the needs of the organization. These tools include root cause analysis, failure mode and effect analysis, the plan/do/check/act process, or combinations and variations of each of these.”

Bellino and Kendig recommend adopting the following sequential steps in a risk assessment, if possible:

1. **Identify the issue.** Gather staff feedback and data to determine the exact problem. For instance, if staff have recently complained about the poor placement of an emergency shower or eyewash station, collect information related to the concern.
2. **Develop arguments in support of and/or against the issue (if applicable).** “At one hospital I visited recently, staff wanted to arm security personnel with handguns,” Bellino notes. “But the administration and board of directors said no.” The staff members made their argument, but the board and leadership made a counterargument that prevailed because leadership was not ready to commit to having firearms on site.

Related Environment of Care Standards and EPs

Standard EC.02.01.01

The hospital manages safety and security risks.

Element of Performance (EP) 1: The hospital implements its process to identify safety and security risks associated with the environment of care that could affect patients, staff, and other people coming to the hospital's facilities.

Note: Risks are identified from internal sources such as ongoing monitoring of the environment, results of root cause analyses, results of proactive risk assessments of high-risk processes, and from credible external sources such as Sentinel Event Alerts.

Standard EC.02.05.01

The hospital manages risks associated with its utility systems.

EP 2: Building systems are designed to meet the National Fire Protection Association's Categories 1–4 requirements. (For full text, refer to NFPA 99-2012: Chapter 4 for descriptions of the four categories related to gas, vacuum, electrical, and electrical equipment.)

EP 14: The hospital minimizes pathogenic biological agents in cooling towers, domestic hot- and cold-water systems, and other aerosolizing water systems.

EP 20: Operating rooms are considered wet procedure locations, unless otherwise determined by a risk assessment authorized by the facility governing body. Operating rooms defined as wet locations are protected by either isolated power or ground-fault circuit interrupters. A written record of the risk assessment is maintained and available for inspection. (For full text, refer to NFPA 99-2012: 6.3.2.2.8.4; 6.3.2.2.8.7; 6.4.4.2)

Standard EC.02.06.01

The hospital establishes and maintains a safe, functional environment.

Note: The environment is constructed, arranged, and maintained to foster patient safety, provide facilities for diagnosis and treatment, and provide for special services appropriate to the needs of the community.

EP 1: Interior spaces meet the needs of the patient population and are safe and suitable to the care, treatment, and services provided.

Standard EC.02.06.05

The hospital manages its environment during demolition, renovation, or new construction to reduce risk to those in the organization.

EP 2: When planning for demolition, construction, renovation, or general maintenance, the hospital conducts a preconstruction risk assessment for air quality requirements, infection control, utility requirements, noise, vibration, and other hazards that affect care, treatment, and services.

Note: See LS.01.02.01 for information on fire safety procedures to implement during construction or renovation.

Relevant Non-EC Standards and EPs

Non-EC Joint Commission standards that mandate and/or reference a risk assessment include the following:

- **EM.02.01.01, EP 16**
- **EM.04.01.01, EP 1**
- **LS.01.02.01, EP 1**
- **NPSG.07.03.01, EP 1**
- **NPSG.07.04.01, EP 4**
- **NPSG.07.05.01, EP 4**
- **NPSG.15.01.01, EP 1**

3. **Objectively evaluate both arguments.** “Remove emotion from the issue, and look at it through the lens of objective data instead of subjective opinion or sentiment,” Bellino advises. “Remember that you can’t make a rational, defensible judgment based on feelings.” In the aforementioned example, many staff members felt unsafe without armed security guards. But by presenting facts and analytics and by committing to provide extra safety training, the organization was able to demonstrate that it could improve EC safety without arming security staff.
4. **Reach a conclusion.** “Identify opportunities for improvement based on the information you gather and agree upon,” recommends Bellino.

5. **Document the process.** “Log everything, from the data you collect to the meetings you hold and the conclusions you reach,” Bellino suggests. “Summarize all of it in an executive summary that you can present to leadership and that recommends action steps.”
6. **Implement changes.** If leadership approves of actionable measures, work to have an organizational policy generated and enforced; then notify and train staff as appropriate. “It’s vital to act on what you learn from your risk assessment,” cautions Bellino. “Otherwise, you’re ignoring a known problem, which makes your organization liable.”
7. **Monitor and reassess the conclusion to ensure that it is the right conclusion.** “Follow up and evaluate later to see if what you’ve recommended or implemented was effective over time,” Bellino suggests.

An ounce of prevention...

Conducting regular risk assessments makes good business sense, of course, because they can reduce a health care organization’s legal liabilities. But conducting risk assessments also makes good moral sense.

“It’s the right thing to do,” says Bellino. “Performing risk assessments demonstrates to your staff that you care about what’s going on in your facility. We have a duty to maintain the safety of everyone within our buildings. Failure to do so can lead to mortalities, accidents, injuries, penalties, and bad publicity. Risk assessments are absolutely worth the time and effort involved.” 

Reference

1. Joint Commission. *Environment of Care Risk Assessment*. 3rd ed. Oakbrook Terrace, IL: Joint Commission Resources; 2018:219.



To learn more about risk assessment, order the Doody’s 4-star-rated Joint Commission Resources book ***Environment of Care® Risk Assessment***, 3rd edition, from our [webstore](#).

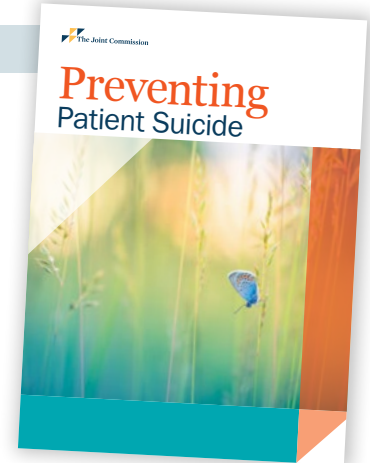


NEXT ↓

Preventing Patient Suicide

HOW TO CREATE SAFE SPACES IN HEALTH CARE FACILITIES

The following content is excerpted from The Joint Commission's forthcoming book Preventing Patient Suicide, which can be ordered from the Joint Commission Resources [webstore](#). These recommendations are intended for behavioral health care facilities, psychiatric hospitals, hospitals with inpatient psychiatric units, and emergency departments that may encounter patients whose suicide risk may or may not be related to the reason for their care.



Hanging is by far the most common means of suicide in health care settings. So, it is critical to provide ligature-resistant spaces to care for suicidal individuals. That is, the spaces should be free of protrusions or hardware that can accept a ligature and support the weight of a human. (The [table](#) on page 17 presents specific environment of care [EC] risk-reduction recommendations by The Joint Commission's panel on suicide prevention in health care facilities.)

Special breakaway hardware should be installed and tested where applicable, exposed pipes should be boxed in, ceilings should be constructed so as to prevent patient access, and cords, cables, belts, and shoelaces should be removed, to name a few examples.

Bathroom zones deserve special note. An area can be made ligature-resistant by either mechanical or behavioral solutions. Examples of mechanical solutions include removing the bathroom door, placing an alarm on the door to prevent inappropriate use, and using a special door designed to prevent using the top to support a ligature (for example, an angled upper edge or breakaway magnetic hinges).

The most common behavioral solution is denying access to the bathroom unless a staff member is present; this still requires that the profile of the door be ligature-resistant in the closed arrangement. Note that some states do not allow modifications or removal of doors due to privacy concerns, including the state of Virginia's Office of Human Rights, the Agency for Health Care Administration in Florida, and the Massachusetts Department of Mental Health.

There are several other mechanical devices available to decrease the risk of the top of a door being used to fix a ligature, including laser beams, pressure-sensing plates, and monitoring cameras. However, all of these have limitations, including false alarms that could distract staff and increase the risk that a patient will attempt suicide. Moreover, insufficient data are available on the real-world effectiveness of these devices. Rather, the organization should use an environmental risk assessment to address the ligature risk of doors.

Asphyxiation

Asphyxiation may result from neck compression, such as hanging, but it may also occur due to suffocation. Staff members need to be aware of items that might restrict a patient's oxygen supply. For example, beds in behavioral health care units will not have fitted sheets because of risks posed by elasticized corners.

Plastic garbage bags or liners will be replaced with paper bags that can be wax-lined to better hold liquids. Individuals served will be supplied with clothing that snaps together and/or uses Velcro instead of ties.

Unfortunately, actions such as removing bedding and clothing in hospitals may stigmatize individuals by reinforcing the notion in an individual's mind that he or she is a danger to himself or herself. Organizations will need to weigh the patient's level of risk to determine whether such actions need to be taken.

Sharp objects

Safe spaces should be clear of all medical sharps and any material that can be broken into shards or sharpened. This includes glass vases, metal cans, metal eating utensils, other glassware, pins, picture frames with glass fronts, stick furniture, and the like.

In settings where medical supplies are required, such supplies should be kept locked up, preferably in locked carts that can be rolled out of the area when not needed.

Medications and chemicals

Another of the most common methods of inpatient suicide is the ingestion of dangerous chemicals or medication overdose. Therefore, special attention needs to be paid by staff both to the proper storage of medications and to removing any unnecessary chemicals from the environment in which the patient is housed, including securing cleaning agents such as household and office chemicals and hand sanitizers.

Regarding medication, staff members need to ensure the storage of medications in locked and secured carts and cabinets. Keys and/or lock combinations for storage areas must be under the control of authorized staff. Ensuring medication compliance will prevent patients from stockpiling medications for later overdose.

Seclusion

An important component of any inpatient suicide attempt is the time and freedom of action required to make the attempt. So, in designing safe spaces for suicidal individuals, it is important to limit the individual's ability to be alone out of sight of staff.

This may mean installing ligature-resistant doors on patient bathrooms, as well as ensuring that room closets are too small to accommodate a person and contain no ligature points (defined as anything that could be used to attach or secure a ligature for the purpose of strangulation or hanging). However, the biggest component in combating patient seclusion is staff vigilance and patient monitoring.

Potential Ligatures and Ligature Points by Setting

Potential Ligatures and Ligature Point Risks	Recommendations
Patient room doors (inpatient psychiatric unit)	Be sure to use ligature-resistant hardware: hinges, handles, locking mechanisms. Use doors that reduce risk of ligature using the top of the door.
Corridor doors (inpatient psychiatric unit)	Note corridor doors on environmental assessment along with risk mitigation strategies such as staff monitoring. For inpatient psychiatric units, all doors and door hardware in the corridor must be ligature-resistant.
Patient bathroom transition zone (inpatient psychiatric unit)	Remove all hooks, including behind doors, and box in plumbing and hardware. Ensure proper patient monitoring.
Patient room and bathroom ceilings (inpatient psychiatric unit)	Ceilings in these areas must be solid.
Corridor ceilings (inpatient psychiatric unit)	Drop ceilings are allowed in corridors and common areas where staff are regularly present as allowable by the facility's safety risk assessment. These areas do not need to be in constant view of staff but should be a part of the standard safety rounds conducted by staff (for example, 15-minute patient safety checks, shift-to-shift environmental rounds, and so on). Drop ceilings in areas that are not fully visible to staff (for example, a right-angle curve of a corridor) should be noted on the risk assessment and have some additional steps taken to make it more difficult for a patient to attempt to access the space above the drop ceiling (such as gluing or clipping tiles), which would allow staff to hear or see the patient's suicide attempt and prevent the attempt from occurring.
Medical beds (inpatient psychiatric unit)	Note medical beds with ligature points on environmental assessments and list mitigation strategies, including increased patient monitoring. A medical bed with ligature points can be used as long as it is for the medical purposes of the patient. This justification should be demonstrated or in the patient's medical record.
Patient rooms and bathrooms (acute care)	When a room houses a patient at high risk for suicide, any objects that pose a risk for self-harm that can be removed from that room without adversely affecting the ability to deliver health care should be removed.
Patient beds (acute care)	Medical needs are likely to make a truly ligature-resistant environment impossible. Increase monitoring and assess the patient and the environment frequently. Stress keeping the area as free of risks as possible, compatible with treatment needs.
Curtain rods and cords	Use breakaway rods and use solid cords.

It is important to note that it is not always possible or desirable to remove all possible ligature materials or anchors from the environment of care. In emergency departments or medical/surgical units, medical equipment may be required to properly care for the patient's medical needs. Staff can do their best to limit the presence of such things, make sure equipment is modified to be less dangerous, and ensure that medical supplies are kept in locked carts, but there is no substitute for a well-trained and vigilant staff.

Laying out emergency departments so at-risk individuals can be kept within sight of nursing stations will help with the monitoring of those at moderate risk. Large organizations with more resources should consider adding an off-hours psychiatric emergency department by setting aside some emergency department space that is precleared of hazards and is staffed by professionals who are trained to care for and monitor psychiatric patients, including those who need one-on-one monitoring to prevent them from harming themselves or others. 

NEXT ↓

Clarifying Food and Drink Safety for Clinicians

OSHA REGULATIONS GOVERN WHERE FOOD AND BEVERAGES CAN BE CONSUMED IN CLINICAL WORK AREAS

This article was previously published in the March 2019 issue of Joint Commission Perspectives®

The safety of food and drink consumption is governed by the US Occupational Safety and Health Administration (OSHA) [Bloodborne Pathogens](#) and [Sanitation](#) standards. In response to questions from the field, The Joint Commission is clarifying how these regulations do and do not apply to spaces where clinicians and staff may consume or store food and drink.

Clarification 1: Joint Commission standards do not specifically address where staff can have food or drink in work areas.

Joint Commission standards do not specifically address where staff can have food or drink in work areas, including nursing and physician stations. Instead, Joint Commission Standard LD.04.01.01 from the “Leadership” (LD) chapter requires that health care organizations follow licensure requirements, laws, and regulations, including OSHA’s Bloodborne Pathogens regulation.

Specifically, OSHA regulations prohibit the consumption of food and drink in areas where work involving exposure or potential exposure to blood or other potentially infectious or toxic material exists or where the potential for contamination of work surfaces exists.^{1,2} OSHA regulations also prohibit consuming or storing food in areas where blood or other potentially infectious or toxic materials are located or stored, including³:

- Refrigerators
- Shelves
- Cabinets
- Counters

Clarification 2: Health care organizations may determine safe spaces for food and beverages that comply with the employer’s evaluation or exposure control plans.

Health care organizations retain the ability to define and establish safe eating areas for staff members. OSHA does require that health care organizations evaluate the workplace to determine locations where potential contamination may occur and prohibit employees from eating or drinking in those areas.

An employer’s evaluation will determine which areas represent the greatest risks for contamination from food and beverages. Based on this assessment, an organization may determine that a particular nurses’ station, physicians’ station, or other location is separated from work areas subject to contamination and that, therefore, it is reasonable to anticipate that occupational exposure through the contamination of food and beverages or their containers is not likely.⁴

Importantly, some areas will be strictly off-limits to food and drink containers. For example, staff should not be eating in areas where specimens are collected, processed, or stored.

Keep in mind that while OSHA regulations apply to all health care facilities, states and local health departments may have additional requirements that health care organizations must comply with.

Questions can be directed to The Joint Commission's [Patrick Ross](#), MPH, federal relations specialist, or [Sylvia Garcia-Houchins](#), MBA, RN, CIC, director of infection prevention and control. 

References

1. US Occupational Safety and Health Administration. [Standard Interpretations: Eating and Drinking in Area Where Potentially Infectious Materials Exist](#). April 21, 1992. Accessed Feb 18, 2019.
2. US Occupational Safety and Health Administration. [Standard Interpretations: Consuming Food and/or Beverages in the Same Work Area Where Known Hazardous Chemicals Are Used](#). Dec 3, 2009. Accessed Feb 25, 2019.
3. US Occupational Safety and Health Administration. [Standard Interpretations: Requirements for Covered Beverages at Nurses' Stations](#). May 17, 2006. Accessed Feb 25, 2019.
4. US Occupational Safety and Health Administration. [Bloodborne Pathogens](#). 29 CFR 1910.1030(d)(2)(ix-x). Accessed Feb 25, 2019.

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Top 10–Cited Standards in Hospitals for Full Year 2018

Rank	Joint Commission Standard	% Noncompliant
1	 LS.02.01.35: The hospital provides and maintains systems for extinguishing fires.	89%
2	 EC.02.05.01: The hospital manages risks associated with its utility systems.	79%
3	 EC.02.06.01: The hospital establishes a safe, functional environment.	74%
4	 LS.02.01.30: The hospital provides and maintains building features to protect individuals from the hazards of fire and smoke.	73%
5	 LS.02.01.10: Building and fire protection features are designed and maintained to minimize the effects of fire, smoke, and heat.	71%
6	 IC.02.02.01: The hospital reduces the risk of infections associated with medical equipment, devices, and supplies.	71%
7	 LS.02.01.20: The hospital maintains the integrity of the means of egress.	67%
8	 EC.02.05.05: The hospital inspects, tests, and maintains utility systems.	65%
9	 EC.02.02.01: The hospital manages risks related to hazardous materials and waste.	62%
10	 EC.02.05.09: The hospital inspects, tests, and maintains medical gas and vacuum systems.	62%

All but one of The Joint Commission's top-cited standards for hospitals are from the "Life Safety" and "Environment of Care" chapters in the *Comprehensive Accreditation Manual for Hospitals* and its E-dition®. 

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Executive Editor: Carolyn Schierhorn, MA

Senior Project Manager: Lisa King

Associate Director, Production: Johanna Harris

Executive Director, Global Publishing:

Catherine Chopp Hinckley, MA, PhD

Contributing Writers: Erik J. Martin,
Elizabeth Brewster

Technical Support and Review:

Department of Engineering

Herman McKenzie, MBA, CHSP,

Acting Director of Engineering

Division of Accreditation and Certification Operations

James Kendig, MS, CHSP, CHCM, CHEM,
Field Director, Surveyor Management and
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Environment of Care® News (ISSN 1097-9913)
is published monthly by Joint Commission
Resources, 1515 West 22nd Street, Suite 1300W,
Oak Brook, IL 60523.

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Keith Pardoe

From: Bigda, Kristin <kbigda@NFPA.org>
Sent: Monday, September 24, 2018 12:32 PM
To: Kent S Maune
Cc: William Koffel; Keith Pardoe
Subject: RE: NFPA80 & 105

Hi Kent – Thanks for bringing this to my attention. I believe this is something that will have to wait until next cycle, unless there is any level of emergency nature that is created by them being different. I might suggest to Keith that we establish a damper task group once again, open to TC members and guests interested in participating, that can look at all of Chapter 19 and Chapter 7 prior to the NFPA 80/105 First Draft meeting next fall. A task group would be able to review the requirements in detail and provide recommendations to the full Committee.

From: Kent S Maune [mailto:kmaune@ruskin.com]
Sent: Friday, September 14, 2018 11:43 AM
To: Bigda, Kristin <kbigda@NFPA.org>
Cc: William Koffel <wkoffel@Koffel.com>
Subject: NFPA80 & 105

I been reviewing the NFPA80 and 105 2019 standards so I could update my O & M for my damper. Some of the common language between 80 and 105 have some small differences. I am not sure if this is something that can be fixed or we will have to wait until the next cycle. See below

Thank you

NFPA80

N 19.7 Field Modifications.

N 19.7.1 Any field modification made to the damper shall be **in accordance with** the damper manufacturer's installation instructions and listing.

N 19.7.2 Where the field modification includes adding the capability for remote inspection, the position indicator devices and monitoring equipment shall be tested for functionality.

NFPA105

N 7.8 Field Modifications.

N 7.8.1 Any field modification made to the damper **per** the damper manufacturer's installation instructions and listing.

N 7.8.2 Where the field modification includes adding the capability for remote inspection, the position indicator devices and monitoring equipment shall be tested for functionality.

NFPA80

19.6 Maintenance.

19.6.1 Reports of changes in airflow or noise from the duct system shall be investigated to verify that **they are** not related to damper operation.

19.6.2* All exposed moving parts of the damper shall be **dry** lubricated as required by the manufacturer.

19.6.3 If the damper is not operable, repairs shall begin **without delay**.

19.6.4 Following any repairs, the damper shall be tested for operation in accordance with Section 19.5.

Δ 19.6.5 All maintenance shall be documented in accordance with 19.5.3.1 and 19.5.3.2.

19.6.6 Maintenance of a combination fire/smoke damper shall also meet the maintenance requirements contained in Chapter 6 of NFPA 105.

NFPA105

7.7 Maintenance.

7.7.1 **Any** reports of **abrupt** changes in airflow or noise from the duct system shall be investigated to verify **it is** not related to damper operation.

Δ 7.7.2* All exposed moving parts of the damper shall be lubricated as required by the manufacturer.

7.7.3 If the damper is not operable, repairs shall begin **as soon as possible**.

7.7.4 Following any repairs, the damper shall be tested for **proper** operation in accordance with Section 7.6.

7.7.5 Smoke damper actuation shall be initiated at a time interval recommended by the actuator manufacturer.

7.7.6 All maintenance shall be documented and recorded **shall be retained** in accordance with 7.6.4.

7.7.6 of 105 should be the same as 19.6.5 of 80.

NFPA80

19.5.3 Documentation.

19.5.3.1 All inspections and testing shall be documented, indicating the location of the damper, date of inspection, name of inspector, and deficiencies discovered. The documentation shall have a space to indicate when and how the deficiencies were corrected.

19.5.3.2 All documentation shall be maintained for at least three test cycles and made available for review by the AHJ.

Should we split 19.5.3.1 like NFPA105?

NFPA105

7.6.4 Documentation.

7.6.4.1 All inspections and testing shall be documented indicating the location of the damper, date of inspection, name of inspector, and deficiencies discovered.

7.6.4.2 The documentation shall have space to indicate when and how the deficiencies were corrected.

7.6.4.3

least three test cycles and made available for review by the AHJ.

NFPA80

19.5.1.1 Each damper shall be **tested and inspected** 1 year after acceptance testing.

NFPA105

7.6.2.1 Each damper shall be **inspected and tested** 1 year after the **completion of** acceptance testing.

Kent Maune
Life Safety Product Manager
Direct Line: 816.965.4210
Cell Phone: 816.520.4957





National Association of
STATE FIRE MARSHALS

NFPA 80

Fire Doors and Other Opening Protectives

2013 Edition

Reference: General

F.I. 90-1

Question: If a glazing material is fabricated as a wall and the wall assembly is successfully tested per NFPA 251, *Standard Methods of Fire Tests of Building Construction and Materials*, for some given fire resistance rating, is it regulated by NFPA 80, *Standard for Fire Doors and Windows*?

Answer: No.

Issue Edition: 1990

Reference: General

Issue Date: April 2, 1991

Effective Date: April 22, 1991

NFPA 80

Fire Doors and Other Opening Protectives

2013 Edition

Reference: Entire Document
F.I. 90-2

Background: Paragraph 16-2.10.2 of NFPA 101-1988, *Life Safety Code*, requires: “An approved luminescent or self-luminous exit sign shall be placed on each door to an exit stair from an interior corridor.”

The details of such exit sign’s size, construction, and illumination are contained in Section 5-10 of NFPA 101.

Question 1: May an exit sign as described in the background above be affixed to rated fire doors without violating any limit?

Answer: Yes.

Question 2: May an exit sign as described in the background above be affixed to rated fire doors without violating any limitations of NFPA 80?

Answer: Yes, provided it is surface-applied on the lower 16 inches of the door.

Issue Edition: 1990
Reference: Entire Document
Issue Date: July 9, 1991
Effective Date: July 29, 1991

NFPA 80

Fire Doors and Other Opening Protectives

2013 Edition

Reference: 1.6.1

F.I. No.: 99-1 (NFPA 80)

Background: Issue was raised during a Quality Assessment of the Fire Protection Program at Perry the Nuclear Operating Plant.

Question No. 1: Is it the intent of paragraph 1.6.1 that labels on fire doors not be removed, painted or defaced while the door is in service?

Answer: Yes

Question No. 2: If the label on an existing fire door has been removed or is no longer legible, is it acceptable to verify the rating of the fire door through other means acceptable to the authority have jurisdiction such as an inspection or certification service that provides acceptable documentation?

Answer: Yes

Issue Edition: 1999

Reference: 1.6.1

Issue Date: April 20, 2004

Effective Date: May 10, 2004

NFPA 80

Fire Doors and Other Opening Protectives

2013 Edition

Reference: 1-7 and General
F.I. 90-3

Background: NFPA 252, *Standard Methods of Fire Tests of Door Assemblies*, qualifies door assemblies for use as fire doors designed to protect door openings in fire resistive walls when required by the authority having jurisdiction. Part of the conditions of acceptance requires that the door assembly shall withstand both the fire endurance test and the hose stream test without developing any openings through the assembly except for dislodging of small portions of glass light during the hose stream test. This exception is based on the installation of wired glass in the glass light. New glazing materials (other than wired glass) have been developed that remain entirely in place without developing any openings through the assembly during both the fire endurance test and the hose stream test. However, those new glazing materials fall under the definition for glazing material in Section 1-4 of NFPA 80, *Standard for Fire Doors and Windows*, and are thus regulated by Section 1-7 of that Standard.

Question: If a fire doors assembly containing glazing material is successfully tested per NFPA 252, *Standard Methods of Fire Test of Door Assemblies*, and the glazing material is not dislodged so as to develop openings through the assembly as described in that standard, thus qualifying the glazing material as part of the door and not as a glass light permitted to have small portions of glass dislodged during the hose stream test, is it intended to limit the size and area of the glazing material in accordance with 1-7.3 of NFPA 80, *Standard for Fire Doors and Windows*?

Answer: No.

Issue Edition: 1990
Reference: 1-7 and General
Issue Date: July 9, 1991
Effective Date: July 29, 1991

NFPA 80

Fire Doors and Other Opening Protectives

2013 Edition

Reference: 1-7.5, 13-2.3

F.I. 90-4

Question: Given the requirements for permanent marking of individual glazing units found in 1-7.5 and 13-2.3, would acid etched or sand blasted labels applied under a third party factory follow-up program meet the committee's intent for permanent marking?

Answer: Yes.

Issue Edition: 1990

Reference: 1-7.4, 13-2.3

Issue Date: November 6, 1991

Effective Date: November 26, 1991

NFPA 80

Fire Doors and Other Opening Protectives

2013 Edition

Reference: 2-4.7.1

F.I. 80-4

Question: Is it the intent of 2-4.7.1 to allow for the use of three-hour fire protection rated door assemblies without an astragal?

Answer: No, it is the intent that pairs of doors with a fire protection rating of more than one and a half hours have an overlapping astragal.

Issue Edition: 1983

Reference: 2-7

Date: April 1985