

Lunch and Learn Q&A - Swinging Doors in Health Care Facilities, Requirements and Limitations of the Model Codes, September 29, 2022

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1) How do continuous hinges affect the covering of UL labels on doors?

When a continuous hinge is installed on a new door opening, the labels can be applied to the lock edge of the door or the top of the door and the underside of the frame head. When a continuous hinge is added to an existing door opening, the recommendation from several AHJs is that the presence of the labels should be documented with photographs before installing the hinges and covering the labels. The photos should include a wider shot to show the location of the door opening, and the documentation should be kept for future reference.

2) What do they mean by "function hole for mortise lock"? Still meaning round?

Function holes are the holes for cylinders, thumbturns, spindles, etc. NFPA 80 allows round holes to be drilled for this purpose as a job site preparation. There is more information about fire door alterations here: <https://idighardware.com/2017/10/decoded-alterations-to-fire-door-assemblies/>

3) So, if you need to add a door sweep to a fire door that previously didn't have one in order to meet the clearance requirements then do you have to get door manufacturer approval before installing, since you're modifying the original door?

If the fire door has more clearance than what is allowed by NFPA 80, and you're adding a sweep that is listed for use on doors with excess clearance, NFPA 80 would not consider the installation of this product a field modification that requires prior approval as long as the installation just requires round fastener holes. NFPA 80 states:

4.8.4.3 Products evaluated for fire doors with a bottom clearance in excess of 3/4 in. (19 mm) and listed for use at or under the bottom of the fire door shall be permitted where installed in accordance with their listings.*

A.4.8.4.3 Where clearance under the bottom of a fire door exceeds 3/4 in. (19 mm), door sweeps, door bottoms, or other devices specifically listed for use on fire doors and addressing the excess clearance could be a viable option. Utilization of such devices cannot prohibit the full engagement of the bottom latch bolt.

4) Would there ever be a scenario where LBR on a rated opening would NOT require fire pin?

If both the door manufacturer AND the hardware manufacturer have successfully tested their LBR devices without the auxiliary fire pin, the pin would not be required in order to comply with the manufacturer's listings. I recently ran into that question with regard to Von Duprin 99 devices, and Von Duprin required the pin even though the door manufacturer did not. More info:

<https://idighardware.com/2022/07/wwwyd-auxiliary-fire-pin-for-lbr-devices/>

5) Can those cross-corridor fire doors, identified as smoke barrier doors by the life safety plan, be decommissioned?

It depends on whether a fire rating was required when the doors were installed. If the fire rating was not required then - and is not required by current codes - the labels could be removed, but I would recommend being absolutely sure before removing any labels since they can't be reattached. Consult the AHJ for assistance.

6) Will NFPA 101-2021 suffice if we don't have the 2012 edition? Will NFPA 101 -2021 cover 2012 even though not adopted yet?

Not necessarily, because there may be requirements in the 2021 edition that were not present in the 2012 edition. I would recommend referring to the adopted code(s).

7) Nice closer mount on slide 16. I've never seen a wall mount closer.

That type of door is designed to sit in a pocket when it is opened to 90 degrees, and the closer is hidden behind the door when it's open. The closer shown on the slide is an LCN 4000T:

<https://www.lcnclosers.com/en/products/surface-mounted/4000t-series-closers.html>

8) Are Allegion specifiers trained to know when/where gasketing is required? Can we rely on their expertise?

Yes, our specwriters are trained on the code requirements, but there are some regional differences in how an AHJ may interpret the codes as well as local modifications made to the model codes. Feel free to question the specwriter if you have any doubts, and I will work with them to determine what is required.

9) Is it a violation to have a smoke gasket on a door where one is not required?

I can't think of any reason why a smoke gasket could not be used on a door where it is not required by code. There are other reasons to install gasketing.

10) What do you mean by "new door"?

An existing door would typically be one that was installed before the adoption of the code in question. A new door is a door that is not existing. This article talks about "new" and "existing" in relation to NFPA 101, maybe it will help to clarify this question: <https://idighardware.com/2018/11/qq-whats-new-and-whats-existing/>.

11) Explain one releasing motion.

Most doors in a means of egress are required to unlatch with one releasing motion. There are a few exceptions, like entrance doors to residential dwelling units and sleeping units – NFPA 101 also allows two releasing motions to unlatch existing classroom doors if all of the other requirements are met. There is a BHMA standard addressing single motion egress, and there is more information about the standard in this blog post: <https://idighardware.com/2020/12/bhma-a156-41-standard-for-door-hardware-single-motion-to-egress/>

12) Is there a common format to check doors in annually basis, including all requirements from NFPA 101, 80 & 105?

There is a list of criteria in the referenced standards, including all of the information required for the documentation of the inspection. Most facilities seem to use software to maintain a database of these inspections.

13) Are door 'categories', Category A or Category B, included on the label of listed fire doors? If not, how can you identify them in the field?

Yes, if a door is classified as Category A or B, it would be stated on the fire door label, but keep in mind that these designations have not always been part of the fire door testing procedures and are not required for all fire door types. So not all fire door labels will show Category A or B.

14) If you put a closer on a smoke door, can it be a hold open closer?

It depends on whether the “smoke door” is required to be self-closing or automatic-closing. For example, a cross-corridor door in a health care smoke barrier is required to be self-closing or automatic-closing, so in that application the hold open would have to be the automatic-closing type that releases upon fire alarm.

However, patient room corridor doors that have to provide an effective barrier to limit the transfer of smoke are not required to be self-closing or automatic-closing. A closer with a mechanical hold-open would be acceptable for this application but be careful to use a hold open that will release when the door is pushed or pulled.

NFPA 101 states:

18.3.6.3.10 Doors shall not be held open by devices other than those that release when the door is pushed or pulled.

A.18.3.6.3.10 Doors should not be blocked open by furniture, door stops, chocks, tie-backs, drop-down or plunger-type devices, or other devices that necessitate manual unlatching or releasing action to close. Examples of hold-open devices that release when the door is pushed or pulled are friction catches or magnetic catches.

15) I believe you mentioned hospital suites that require latching. How can I tell in a cross-corridor pair is in a suite perimeter wall? If it is, where are these covered in the code?

These doors can be tough to identify, but they would typically be located in corridor walls without a fire resistance rating, and not in smoke barriers. This article has more information about corridor doors: <https://idighardware.com/2021/03/decoded-patient-room-doors-in-health-care-occupancies/>

16) You mentioned smoke barrier doors have to have positive latching. I noted that many patient room doors have a roller latch. Is this acceptable?

Although NFPA 101 allows roller latches in some cases, CMS and the accrediting organizations like the Joint Commission do not allow roller latches on corridor doors such as those leading to patient rooms. These are the roller latches prohibited by CMS:



There is more information about CMS's position on roller latches here: <https://idighardware.com/2016/08/wwyd-roller-latches-in-health-care-corridors/>

17) If you have an exit device on a smoke door, does it need to be a fire rated exit device?

If the smoke door is not required to be a fire door, I don't know of a requirement in the codes and standards for listed fire exit hardware. However, if it's a smoke door that requires positive latching, mechanically dogging would have to be omitted.

18) Are door position switches acceptable on fire doors if they are surface-mounted?

A door position switch would have to be listed for use on a swinging fire door assembly (typically to UL 10C), and for a job site preparation, the prep would be limited to round holes. A door position switch that is not a listed/labeled component is not acceptable for installation on a fire door assembly.

There is a recent post on labeled components for fire door assemblies here: <https://idighardware.com/2022/08/update-labels-on-fire-door-assembly-components/>

19) If a fire rated panic device is installed on a non-rated door/opening, does this need to be removed and replaced with a non-rated device?

According to NFPA staff, it is acceptable to install fire exit hardware on a door that is not required to be fire rated. There is more information on this topic here: <https://idighardware.com/2017/04/qc-can-fire-exit-hardware-be-installed-on-a-non-fire-rated-door/>.

20) When it comes to special locking arrangements, what type of lock is the most reliable over time?

That really depends on the application. Electromagnetic locks have no moving parts so they might be considered more reliable, but if there is a power failure, they are not locked/secure.

21) When you test latching on rated doors, what is the minimum distance the door should be opened to meet requirements?

This (the degree of opening) can actually vary by code, so AHJs may have different ways of checking the latching. Even within NFPA 80 it's not completely consistent.

For example, one of the inspection criteria in NFPA 80 states:

5.2.3.5.2 (7) The self-closing device is operational; that is, the active door completely closes when operated from the full open position.

This paragraph from NFPA 80 does not include a degree of opening:

All closing mechanisms shall be adjusted to overcome the resistance of the latch mechanism so that positive latching is achieved on each door operation.

And for doors with spring hinges, NFPA 80 states that the open position for testing closing/latching is 30 degrees:

6.4.1.5 Spring hinges shall be adjusted to achieve positive latching when the door is allowed to close freely from an open position of no more than 30 degrees.

22) Is it required to have all doors inspected yearly, or just the fire, and smoke doors in the corridors?

NFPA 80 currently requires all fire doors to be inspected annually, as well as after installation and after maintenance work. NFPA 105 also requires smoke doors to be inspected, but most "smoke doors" are not required by code to comply with NFPA 105. For example, doors that are required to provide an effective barrier to resist the passage of smoke – such as corridor doors leading to patient rooms – are not required to comply with NFPA 80 or NFPA 105 and are not required by code to be inspected annually. There may be local requirements that differ from the model codes. There are also requirements in NFPA 101 for the inspection of certain egress doors.

23) Is there a fire or smoke-rated door requirement on constant latching flush bolts that requires the deadlatch feature on the bolt?

I don't know of a requirement for this.

24) I do contract work for CMS. CMS is using only NFPA 101, 2012 Edition and any other codes that are prior to 2012. I am responsible for all hospital waivers. With regard to NFPA 80, the 2010 Edition is used. One of our clients is mandating that we stick with the NFPA 80-2010 1/8" clearance for laminate wood 20-minute doors - do you see a reason for this?

Technically, because the 2010 edition of NFPA 80 is the edition referenced by the adopted code (NFPA 101-2012), 1/8-inch is the maximum allowable clearance for wood doors, including 20-minute doors. To go with the newer requirement of 1/8-inch +/- 1/16-inch would require a waiver. I don't see a reason not to allow the waiver because the door construction didn't change from the 2010 edition to the later editions. If a door with a slightly larger amount of clearance is considered safe by the later editions, and the door construction has not changed, why not allow the extra 1/16-inch?

25) Can you review the 4 locations that are required by NFPA 101 to have gasketing?

These are the four locations where NFPA 101 requires gasketing because of smoke/air leakage limitations:

- New fire door assemblies serving an area of refuge
- New door assemblies in the vestibule of a smokeproof enclosure
- New door assemblies in horizontal exits
- Elevator lobby doors in occupant evacuation elevator shaft systems

There is more information about the gasketing requirements of NFPA 101 in this post:

<https://idighardware.com/2021/08/qq-gasketing-requirements-of-nfpa-101-2/>

26) How do you tell if a door is a smoke door? Seems to me that all doors could be considered "smoke" doors.

Yes, this is a tough one because as I mentioned in the session, there are many different types of doors that are called smoke doors. If a door has an "S" on the label and has gasketing that is listed to UL 1784 for air transmission, it is typically a smoke and draft control door. But there are many other doors that are called smoke doors, that do not require the "S label". For example, for a door in a smoke partition, which many people would call a smoke door, you would have to confirm that the assembly meets all of the requirements for a door in a smoke partition. There is no marking on the door that will confirm that.

This article helps to explain the various types of smoke doors and what is required by the IBC for each:

<https://idighardware.com/2021/07/decoded-smoke-door-requirements-of-the-ibc/>

27) Loss of power must release a mag lock. I put 8 hours of standby for the few doors that require mag locks. So, it meets the code, but some AHJs extend this code to building code. Who is right?

The interpretation that I have commonly seen related to electromagnetic locks released by a sensor is that if the mag-lock and the fire alarm are on the same back-up power, it is acceptable. I would not specify separate battery backup that is only for the lock, if it's a lock that is required by code to release upon power failure and fire alarm/sprinkler activation.

This post addresses the NFPA 72 requirement that led to this interpretation:

<https://idighardware.com/2020/06/qg-battery-back-up/>

28) Does the type of access control door with a credential reader for entry and a fail secure electrified lock with REX (no maglock) fall under special locking arrangements?

If the fail secure electromechanical lock allows free egress, then it is not a special locking arrangement. But I don't know the purpose of the REX in your example. If it is releasing a lock, then it would likely be a special locking arrangement. If the REX is a component of the security system and does not affect egress, and turning the lever on the lock allows free egress, it is a normal locking arrangement.

Here is a recent article on normal locking arrangements: <https://idighardware.com/2022/08/decoded-access-control-update/>

29) Intumescent is not mandatory under any model code, am I correct?

The model codes and referenced standards do not state that intumescent material is required, but in some cases, an assembly will not pass a fire test without the intumescent material that is either included as part of the product or applied separately. In that case, the intumescent would be required as part of the listing of the door or frame.

30) When did fire doors first require labels?

I checked the 1941 edition of NFPA 80, and I didn't see clear requirements related to labels there. In the 1968 edition, it looks like this paragraph was added (based on the vertical line next to the paragraph):

402. Only listed or labeled doors shall be used. Fire door assemblies consist of several individually listed or labeled components which are essential to satisfactory performance of the complete assembly. Some labels cover one or more components in addition to the door. For specific information see 405.

More detailed requirements for labels were added in the 1970 edition of NFPA 80:

26. Testing Laboratories, Listed and Labeled Products

a. Testing organizations, which at the time of publication of this Standard, maintain periodic in-plant follow-up programs including the inspection of samples selected from current production and stock establishing that the product meets the requirements set forth in the appropriate nationally recognized test standards are Underwriters' Laboratories Inc., Underwriters' Laboratories of Canada and Factory Mutual Research Corporation.

b. Information on listed devices referred to in this Standard may be found in one or more of the following publications:

(1) *The Building Materials List* and *The Fire Protection List* by Underwriters' Laboratories, Inc.

(2) *List of Equipment and Materials, Volumes I and II* by Underwriters' Laboratories of Canada.

(3) *Factory Mutual Approval Guide* by Factory Mutual Research Corporation.

c. Listed items are identified by a label or listing mark in accordance with the policy of the testing agencies named in 26a. Information on the individual listings is contained in the publications referred to in 26b.

d. The label or listing mark of the nationally recognized testing laboratory is evidence that such device or material has been produced under an in-plant follow-up program as described in 26a.

e. For the purposes of this Standard, the term "labeled" shall be understood to mean listed and labeled, or identified in accordance with 26c and 26d and the official definitions of those terms on the front cover hereof.

f. Labels may be metal, paper, stamped or diecast as designated by the testing laboratories.

g. Specifications of items of a generic nature, such as hinges, that are not labeled should comply with the specifications contained herein.