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# Swinging Doors in Health Care Facilities

**Requirements and Limitations  
of the Model Codes**



**Lori Greene**

DAHC/CDC, FDAI, CCPR

Allegion – Manager, Codes & Resources

[iDigHardware.com](http://iDigHardware.com)

# Categories for Today's Session

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Fire Doors

Smoke Doors

Electrified Hardware

# Which code(s) or standard(s) must be followed?

- NFPA 101-2012 adopted/enforced by CMS and Joint Commission
- Other codes like NFPA 70 and NFPA 72
- Referenced standards like NFPA 80 and the accessibility standards
- Adopted building codes and fire codes, possibly with state or local modifications





# Fire Door Inspection

- Annual inspections enforced by CMS and accrediting organizations
- Deficiencies must be corrected “without delay” – typically within 60 days
- NFPA 80 now requires inspections after installation and after maintenance work, as well as annually



## Fire door inspection checklist


**Are your fire doors compliant?**

Most state fire codes currently require fire door assemblies to be maintained in accordance with a standard published by the National Fire Protection Association (NFPA). NFPA 80 is the Standard for Fire Doors and Other Opening Protectives, and is referenced by the model building codes and fire codes.

Beginning with the 2007 edition and continuing through all subsequent editions to date, NFPA 80 has required fire door assembly inspections as part of Chapter 5 – Care and Maintenance.



**International Fire Code (IFC)**  
705.2 – Inspection and maintenance: Opening protectives in fire-resistance-rated assemblies shall be inspected and maintained in accordance with NFPA 80. Opening protectives in smoke barriers shall be inspected and maintained in accordance with NFPA 80 and NFPA 105.

**NFPA 101 – Life Safety Code**  
8.3.3.3: Required fire door assemblies shall be installed, inspected, tested, and maintained in accordance with NFPA 80.




The purpose of a fire door is to compartmentalize a building and deter the spread of smoke and flames. The fire door shown in these photos protected a nature center and management offices from a fire that began in the maintenance shop.

Photos courtesy of Fire Protection Specialist Christopher Taylor, NVIS Office of Fire Prevention and Control.

Fire door assemblies are of no value unless they are properly maintained and are closed and latched in the event of a fire.

The International Fire Code and NFPA 101 – Life Safety Code require fire door assemblies to be inspected and maintained in accordance with NFPA 80 – Standard for Fire Doors and Other Opening Protectives.

- NFPA 80's Chapter 5 – Care and Maintenance, requires fire door assemblies to be inspected and tested after installation (5.2.1), upon completion of maintenance work (5.5.9), and also annually (5.2.4.1). Chapter 5 of NFPA 80 applies to new and existing installations (5.1.1.2).
- Fire door assembly inspections and maintenance are generally the responsibility of the building owner (A.5.2) and must be performed by a qualified person who has knowledge and understanding of the type of assemblies tested (5.2.3.1).
- Records of all inspections and testing must be signed by the fire door assembly inspector and retained for review by the Authority Having Jurisdiction (AHJ) (5.2.2).
- For large facilities with numerous fire door assemblies, NFPA 80 includes a performance-based option which may be permitted by the AHJ (5.4).
- During a fire door assembly inspection, assemblies are visually inspected from both sides (5.2.3.5), and the door must be closed by all means of activation (5.2.3.3). Necessary repairs must be corrected without delay (5.5.1).

The following requirements are verified during the inspection and testing of a swinging fire door assembly (5.2.3.5).

1. Labels are present and legible.
2. No holes or breaks in door or frame.
3. Glazing and glass kit / glass beads are intact and securely fastened.
4. Door, frame, and hardware are in proper working order.
5. No missing or broken parts.
6. Door clearances are within allowable limits.\*
7. Door closer/spring hinges are operational and door is self-closing.
8. Coordinator ensures that door leaves close in proper sequence (pairs only).
9. Door is self-latching in the closed position.
10. Opening is not equipped with auxiliary hardware items which interfere with operation.
11. No field modifications have been performed that void the label.
12. Gasketing and edge seals, where required, are present, continuous, and of the proper type for a fire door.
13. Informational signage is compliant with NFPA 80 with regard to limits on area and means of attachment to the fire door.

Note: Reference numbers in ( ) refer to the applicable sections in Chapter 5 of NFPA 80 - 2019.

Refer to the adopted codes and standards for detailed requirements.

\* Where the 2019 or 2015 edition of NFPA 80 has been adopted, the maximum clearance at the head, jamb, and meeting stile is 3/4-inch for hollow metal doors, 1/4-inch for 20-minute rated doors (including wood doors) in hollow metal frames, and 1/2-inch for other wood doors. Maximum clearance at the bottom of a fire door is 1/2-inch.

“Fire-protection-rated doors provide critical protection to protect exit enclosures and compartmentalize buildings and stop the spread of fire, smoke, and toxic gases. The proper installation and maintenance of these doors is a critical part of the building's fire protection system.”

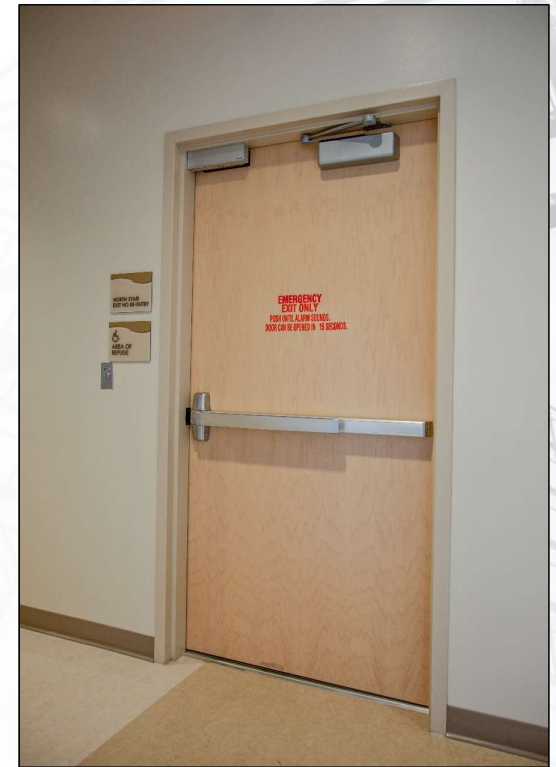
- Chip Carson, NFPA Journal – 02/08

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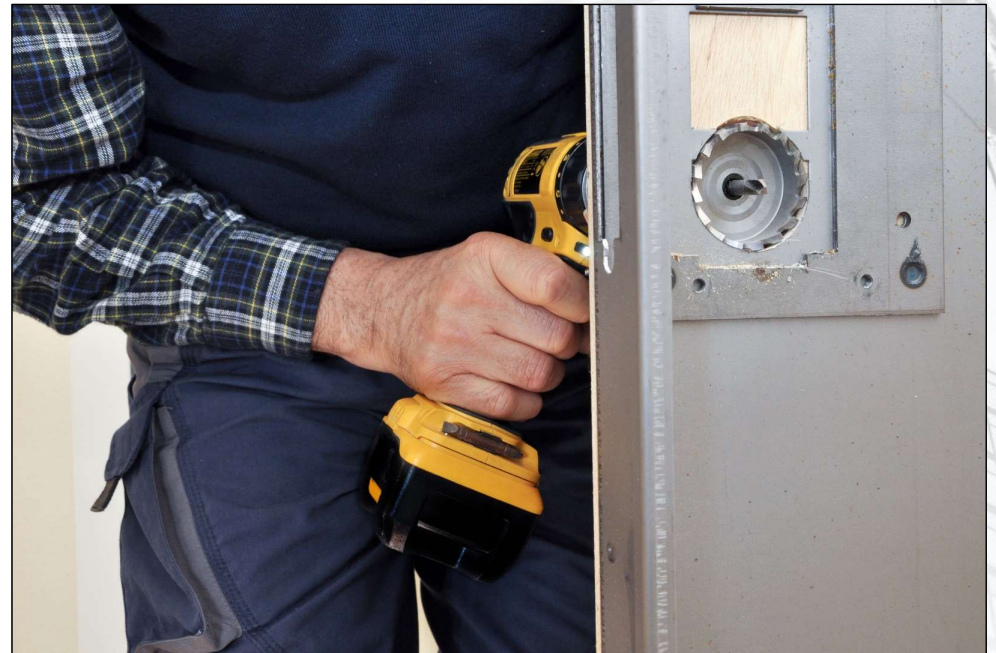
# Are all components of a fire door assembly required to be listed and/or labeled?

- Yes, unless there is an exception in NFPA 80
- Ex: Protection plates
- Listing/labeling requirements DO apply to mag-locks, deadbolts
- Fire exit hardware vs. panic hardware



# Can existing fire door assemblies be modified in the field for new hardware?

- Job site preparations
  - Recent editions of NFPA 80 do not limit size of round holes if allowed by the manufacturer's listings.
- Field modifications
  - Permission must be requested in advance from listing labs, via the door or frame manufacturer.



# How can excessive clearance on fire doors be addressed?

- Gasketing and door bottoms available
  - Must be listed for use on fire doors with excess clearance
  - Check limitations on door material, rating, and amount of clearance





# Can existing bottom rods and latches be removed, and an auxiliary fire pin installed?

- Is the LBR retrofit allowed by the manufacturer's listings?
- Openings installed before the late 90's may be especially problematic.
- Is the door required to be fire rated?

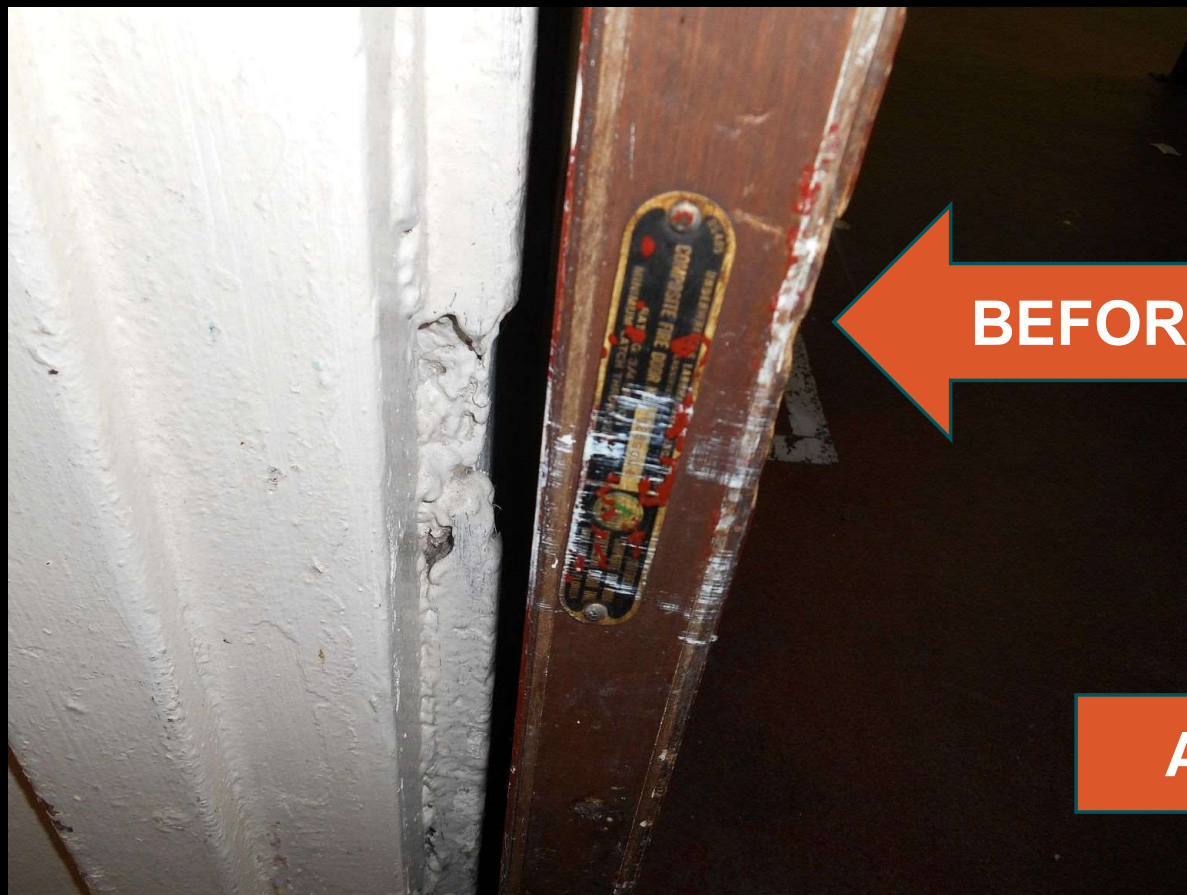




# Can a labeled fire door or frame be installed where the rating is not required?

- Labeled door moved from another location
- Building modified so rated opening protective is no longer required
- Maintain per NFPA 80?





BEFORE

AFTER



# Extraneous Labels on Fire Door Assemblies

NFPA 101: *Existing life safety features obvious to the public, if not required by the Code, shall be either maintained or removed.*

Annex A: *Where a door that is not required to be fire protection-rated is equipped with a fire protection listing label, it is not the intent of 4.6.12.3 to require such door to be self- or automatic-closing due merely to the presence of the label.*





# Can a labeled fire door or frame be installed where the rating is not required?

NFPA 101-2021: *Where a door or door frame that is not required to be fire protection-rated is equipped with a fire protection listing label, the door and the door frame shall not be required to meet NFPA 80.*



# Smoke Doors

- **Type 1** – Doors required to provide an effective barrier to limit the transfer of smoke
- **Type 2** – Doors in smoke partitions
- **Type 3** – Doors in smoke barriers
- **Type 4** – Fire door assemblies in corridors and smoke barriers
- **Type 5** – Doors in exit enclosures and exit passageways

SWINGING TYPE FIRE DOOR NO.  
20 MINUTE DOOR TESTED  
WITHOUT HOSE STREAM

ISSUE NO. A-1018



CONFORMS TO UL10B, UL10C, & NFPA 252  
MIN. LATCH THROW 1/2" SINGLE 5/8" PAIR  
FOR (S) RATING: CLASSIFIED GASKETING REQUIRED

STEELCRAFT  
CINCINNATI, OH  
P/N 31456



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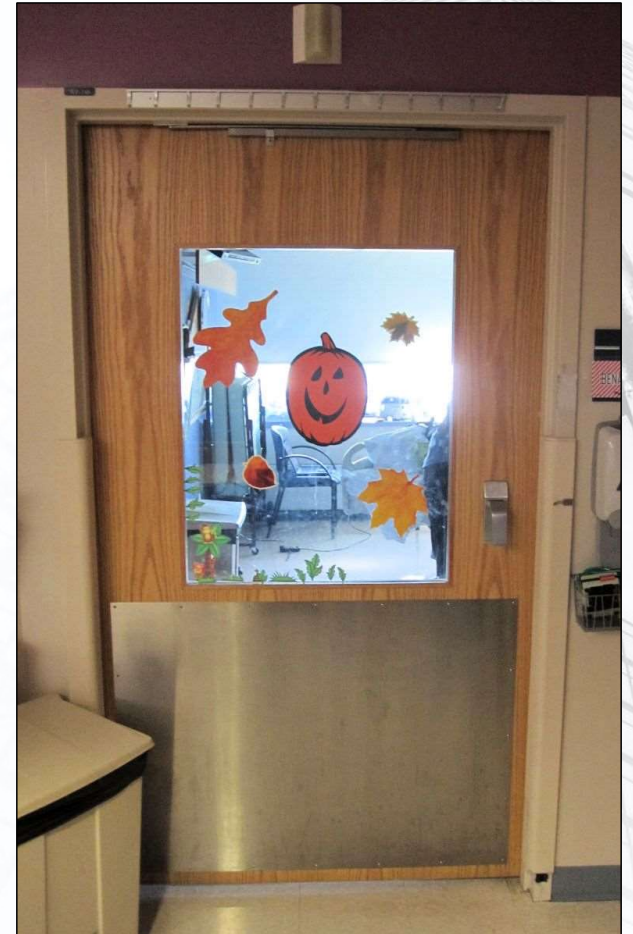




# Corridor Doors (ex. Patient Rooms)

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- Positive latching hardware is required (no roller latches) – including the inactive leaf on pairs of doors.
- Closer is not required for non-rated doors.
- Gasketing is not required by code.
- Suite entrance doors may be considered corridor doors.



# Doors in Smoke Barriers

- For **double-egress pairs in smoke barriers in health care facilities** – the IBC does not require doors to be fire rated or to have positive-latching hardware.
- NFPA 101 has similar language but does not specifically call out double-egress pairs.



# Gasketing

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- Some fire doors and smoke doors must be tested in accordance w/UL1784 for air infiltration.
- Maximum air leakage rate of the door assembly shall be  $3.0 \text{ ft}^3/\text{min}/\text{ft}^2$  of door opening.
- Gasketing typically required to limit air infiltration to this maximum.
- Gasketing must be listed for use on fire doors.
- A bottom seal is not required for fire doors in most locations.





# NFPA 101 on Gasketing

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- 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

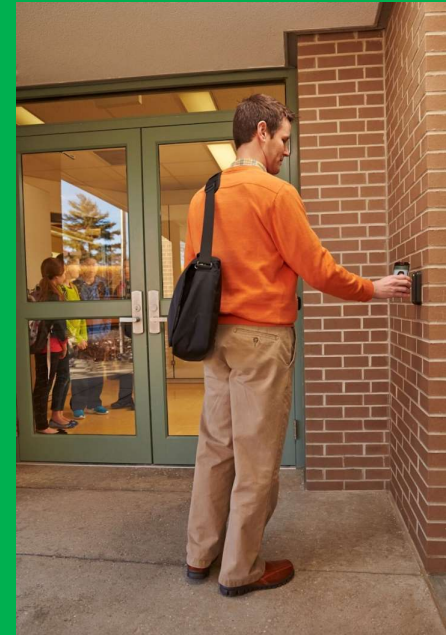


# Electrified Hardware

## Special Locking Arrangements



## Normal Locking Arrangements



# Special Locking Arrangements

- Delayed Egress
- Sensor Release (Electromagnetic Locks)
- Door Hardware Release (Electromagnetic Locks)
- Stairwell Reentry
- Elevator Lobby Egress
- Controlled Egress in Health Care

## Special Locking Arrangements

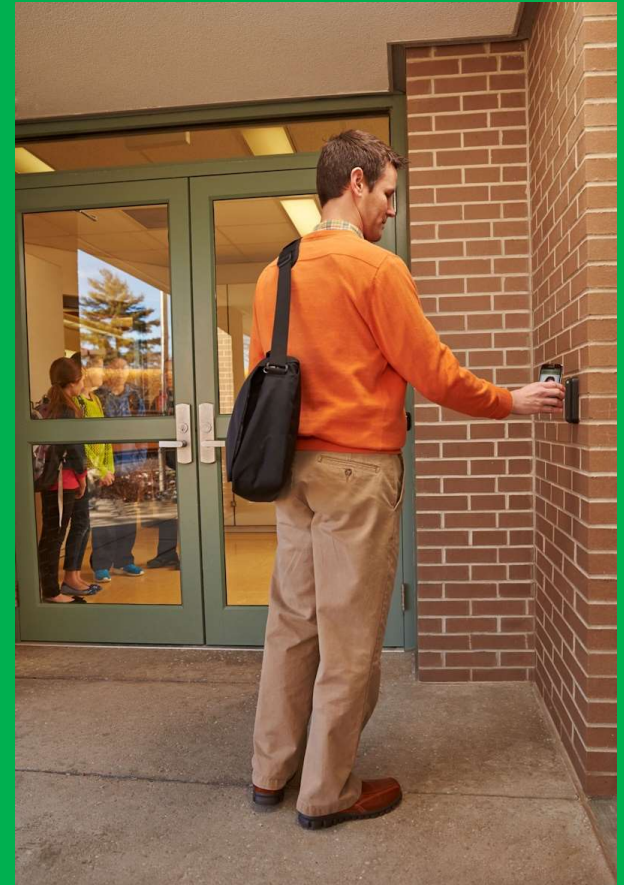


# Normal Locking Arrangements

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- Unlatch with one releasing motion for egress (some exceptions)
- No key, tool, special knowledge or effort for egress
- No tight grasping, pinching, or twisting of the wrist
- Releasing hardware between 34-48 inches AFF (some exceptions)

## Normal Locking Arrangements





# Delayed Egress vs. Controlled Egress

## Delayed Egress

- Releases to allow egress 15 seconds after an attempt to exit is made
- Audible alarm and signage
- Used to deter theft and elopement

## Controlled Egress

- Releases to allow egress when evacuation is needed
- No audible alarm or signage required
- Used in health care units where patients require containment for their safety or security



# Controlled Egress Locks in Health Care

- Allowed in health care units where patients require containment for security or safety
- NFPA 101 & IBC
- Fail safe locks - emergency release for evacuation
- Staff intervention
- UL 294 listing required



# Hardware used in controlled egress systems

- Controlled egress panic hardware
- Electromagnetic lock
- Electromechanical lock
- FAIL SAFE



# Electromagnetic Locks



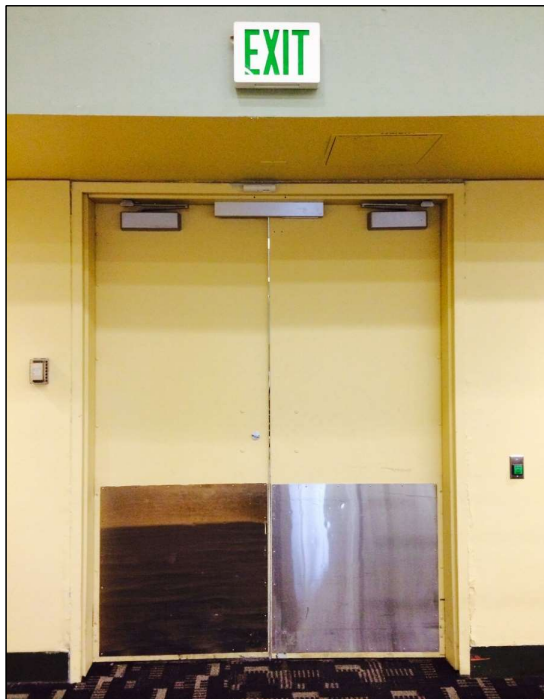
SENSOR RELEASE

DOOR HARDWARE RELEASE





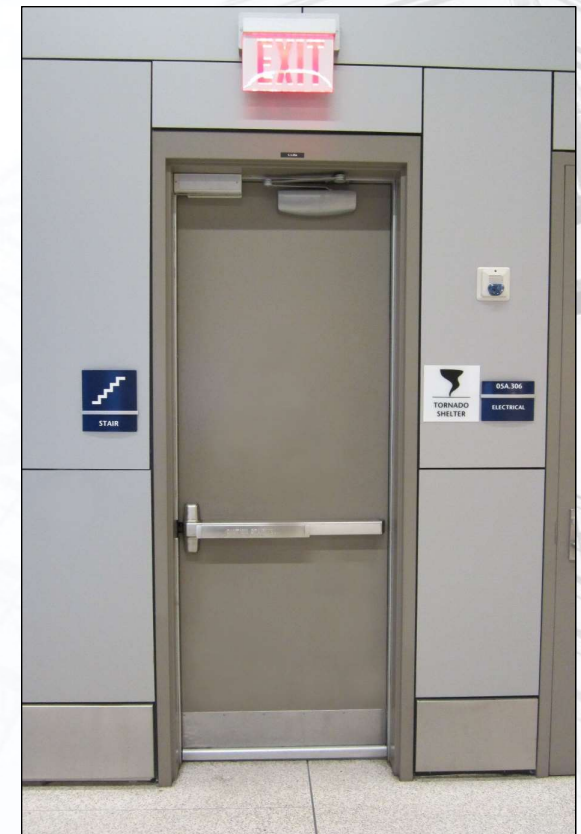
# Sensor Release



- Door is unlocked for egress by:
  - Sensor on egress side - when a building occupant approaches
  - Auxiliary push button beside the door - independent of the access control system
  - Power failure
  - Activation of fire alarm or sprinkler system (if present)
- The 2024 IBC will no longer allow this application on doors with panic hardware.

# Door Hardware Release

- Door is unlocked for egress by:
  - Switch in door-mounted hardware
  - Power failure
- Note that the model codes do not require the auxiliary push button nor fire alarm release for this application.
- The 2024 IBC will allow only this type of release for mag-locks on doors with panic hardware.



# Only the names have changed...

## Sensor Release

- NFPA 101 Section: Sensor-Release of Electrical Locking Systems (prior to the 2018 edition: Access-Controlled Egress Door Assemblies)
- IBC Section: Sensor Release of Electromagnetically Locked Egress Doors (prior to the 2015 edition: Access-Controlled Egress Doors)

## Door Hardware Release

- NFPA 101 Section: Door Hardware Release of Electrically Locked Egress Door Assemblies (prior to the 2018 edition: Electrically Controlled Egress Door Assemblies)
- IBC Section: Door Hardware Release of Electrically Locked Egress Doors (prior to the 2018 edition: Electromagnetically Locked Egress Doors)

# Stairwell Reentry

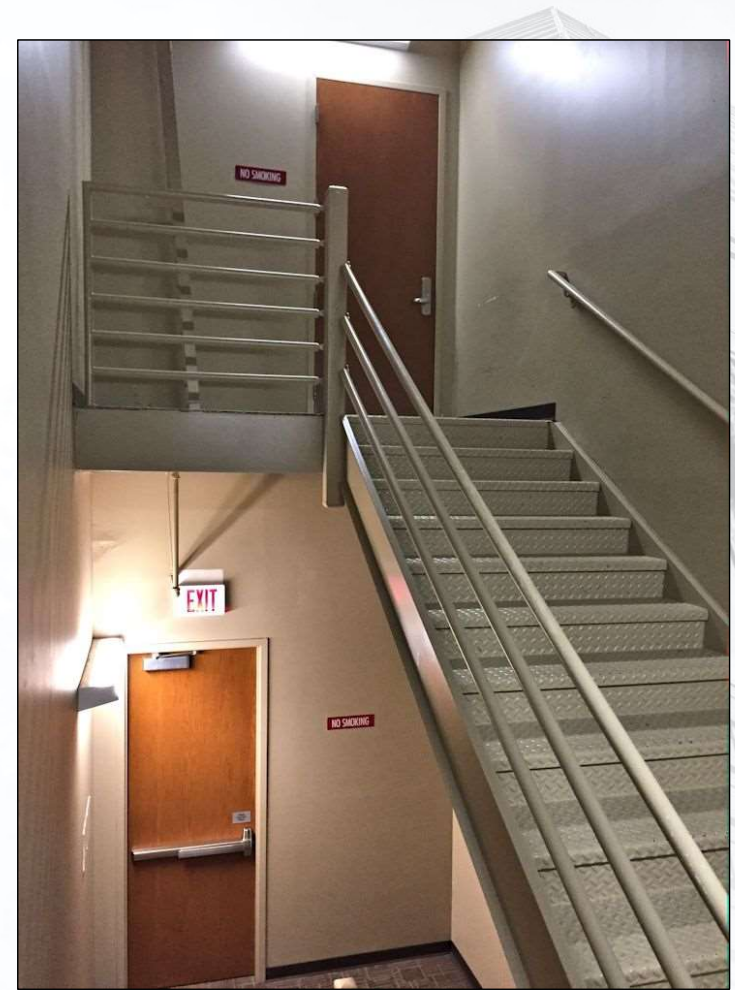
- Allows building occupants to leave the stairwell and reenter the building through locked stairwell doors if the stair becomes compromised during a fire.
- After leaving the stairwell, building occupants can find another exit or wait for assistance.





# Stairwell Reentry

- Stair side lever must unlock without unlatching – positive latch required for fire doors.
- Options:
  - Fail safe electromechanical locks
  - Fail safe trim for fire exit hardware
  - Electromagnetic locks + passage sets (and required release devices for mag-locks)
- Fail safe electric strikes are not listed for use on fire door assemblies and are not positive latching.
- Note: The stair discharge door is not required by the model codes to allow reentry.



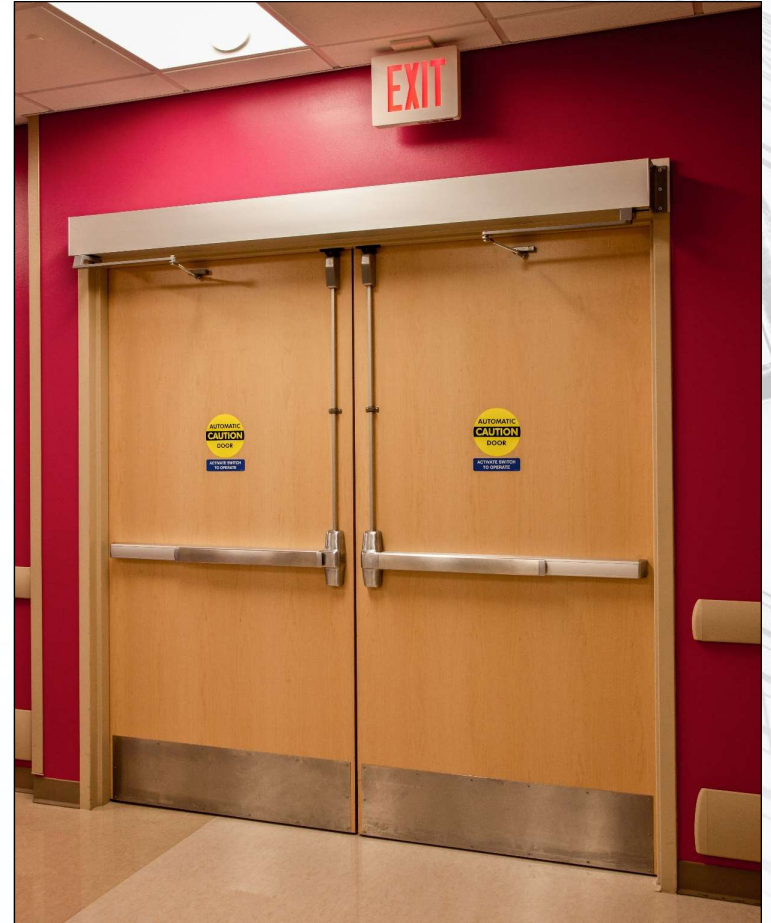
# Interlocks / Control Vestibules

- Interlocks are not addressed in the model codes except for prison sallyports.
- Each interlock must be submitted to the AHJ for approval unless interlocks are addressed in the state or local codes.



# Automatic Operators

- Low-energy operators in compliance with A156.19 must be initiated by a knowing act.



# This is not a knowing act.

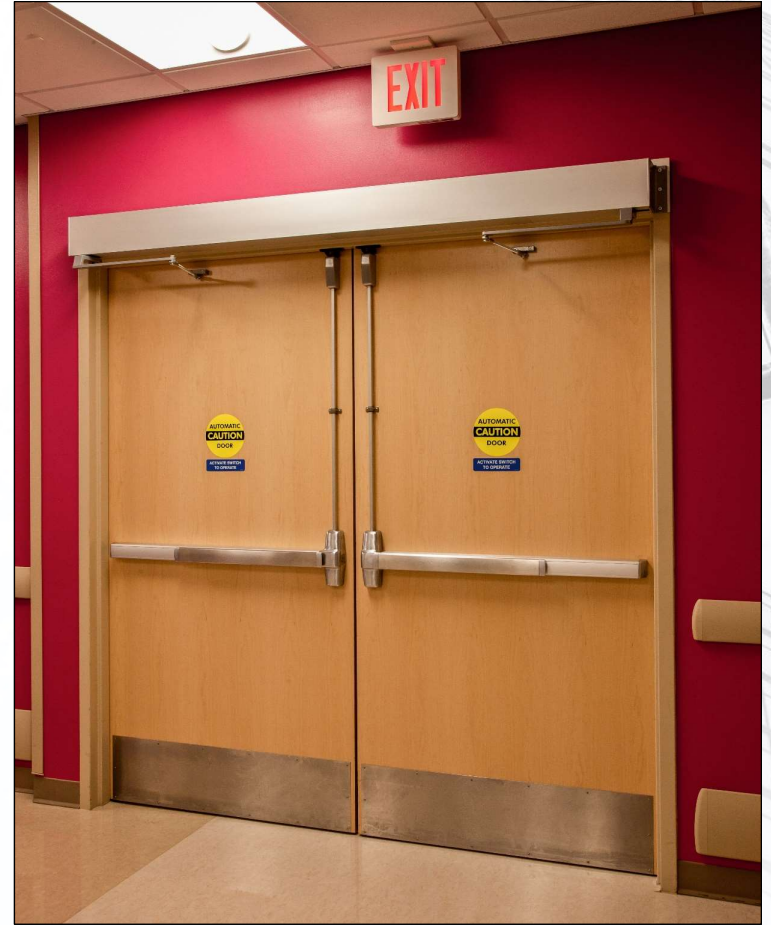
*A156.19: Any conscious action with the expected result of opening a door. This includes but is not limited to: wall or jamb-mounted contact or non-contact switches such as push plates; the action of manual opening (pushing or pulling) a door; and controlled access devices such as keypads, card readers, wireless transmitters and keyswitches.*





# Automatic Operators

- Low-energy operators in compliance with A156.19 must be initiated by a knowing act.
- If an automatic operator is initiated by a sensor detecting someone approaching, the opening must comply with A156.10.



# Touchless Actuators

- Wave switches are considered a knowing act as long as the detection range is 12 inches or less.





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**QQ: Pairs of Corridor  
Doors in Health Care  
Facilities**

Today's Quick Question: On



**FAQs About Roof Doors**

The code requirements  
related to doors serving roofs  
have long been a source of



**Decoded: Access  
Control Update**

My next Decoded column  
addresses important code