SAFETY & CODE

ASSESSMENT FOR FIRE DOOR DECOMMISSIONING

2023 FHEA ANNUAL MEETING

NATIONAL FIRESTOPPING SOLUTIONS

About The Presentors

Dayna Campbell

Southeast Door Manager, National Firestopping Solutions

- Dayna's passion for fire safety ignited during her time as a firefighter/EMT

Griffin Carr

Northeast Door Manager, National Firestopping Solutions

- Prior to joining the door industry, Griffin was a Coast Guard firefighter and Maritime Law Enforcement Specialist, as well as an EMT

Agenda

- Inspection Criteria & Code
- Rated Barrier Types
- Common Deficiencies

NFPA 101 2012/2021 Edition

4.6.12.3

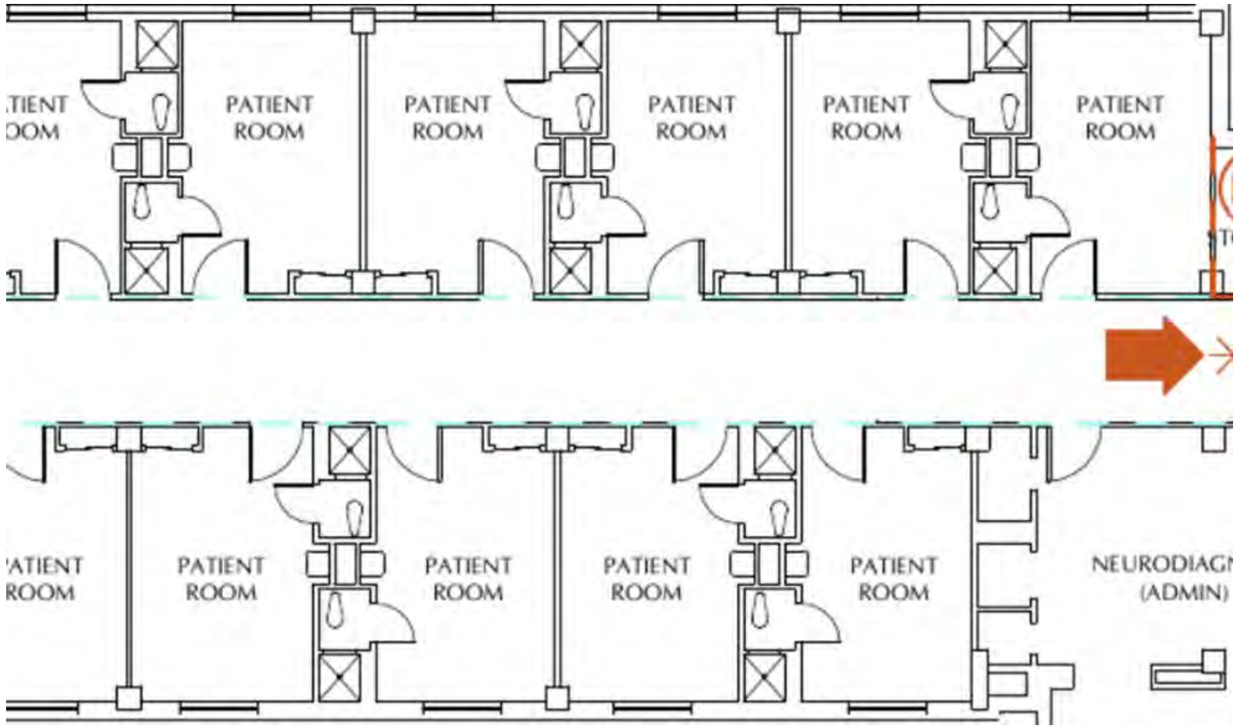
- Existing fire protection features that are obvious to the public, if not required by the code, shall be either maintained or removed. Therefore, if a rated door is installed in a barrier that has a lesser requirement, the fire door is to be maintained and inspected annually as a fire-rated door, and the accompanying barrier is maintained as appropriate for that barrier assembly.
- Needs AHJ Approval
- Life Safety Plans must reflect change
- Examples of this include a 90-minute fire-rated door that has been installed in a nonrated barrier such as a patient room or otherwise.
- Barriers that have been reassigned and no longer hold a rating relative to the door that was installed

4.6.12.4*

- 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 door frame shall not be required to comply with NFPA 80

*The Joint Commission provided clarification in 2017

Life Safety Plans



This snippet of a life safety plan is an example of a non-rated corridor where fire-rated doors and frames have been installed. With the current labeling and fire-rated hardware, they are held to NFPA inspection standards.

Decommissioning

Once acquiring AHJ approval NFPA 101 4.6.12.3, a decommissioning label may be placed over the existing fire-rated label. In the event, the barrier ratings change in the facility the decommissioning label may remove and the door may fall back under the inspection guidelines of NFPA 80 5.2.3.5.2

Rated barriers & assemblies

Smoke Partitions

- Designed to stop the passage of cold smoke
- It **does not** carry a fire rating
- Ceiling tiles or hard ceiling can be considered an ending point (wall does not have to go to deck)
- Most common use:
  - Corridor walls in sprinklered hospitals

Smoke Barrier

NFPA 80 Table A.4.2.2

HCPRO - Dwayne Wright - Director of CMS Survey and Certifications

- 1-Hour Barrier – Minimum 1/3-hour (20 min) assembly

- Smoke barrier doors. Non-rated doors (including smoke barrier doors and corridor doors to patient care rooms) aren't subject to the annual inspection and testing requirements, but they "**should be routinely inspected as part of the facility maintenance program program**".

Most common use:

Divides hospitals into smoke compartments not exceeding 22,500 sq ft and prisons into blocks not exceeding 200 occupants

Fire Barrier

- Can carry a **1, 2, or 3 hour** rating
- Designed to stop the spread of fire from one area to another
- Barrier starts at the floor and ends at the ceiling assembly/top of the deck (doesn't have to be continuous from story to story)
- Openings are protected

Fire Wall

- Can carry a **1, 2, or 3-hour** rating
- Designed to stop the spread of fire from one building to another
- Firewalls are constructed separately from other buildings running from the basement to above the roof line.
  - Extends continuously from the foundation to the roof assembly
- Openings are protected

Fire Barrier Ratings for Assemblies NFPA 80

- 3 Hour Barrier- minimum 3 hour assembly
- 2 Hour Barrier- minimum 1 ½ hour (90) minute) assembly
- 1 Hour Barrier – minimum ¾ hour (45 minutes) assembly

NFPA 80 2010; 11-Point / NFPA 80 2016; 13-Point Inspection Criteria

NFPA 80 2016 Edition 5.2.3.5.2 – As a minimum, the following items shall be verified.

(1) Labels are clearly visible and legible

(2) No open holes or breaks exist in surfaces of either the door or frame

(3) Glazing, vision light frames, and glazing beads are intact and securely fastened in place, if so equipped

(4) The door, frame, hinges, hardware, and noncombustible threshold are secured, aligned, and in working order with no visible signs of damage

(5) No parts are missing or broken

(6) Door Clearances do not exceed clearances listed in 4.8.4 and 6.3.1.7

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

(8) If a coordinator is installed, the inactive leaf closes before the active leaf

(9) Latching hardware operates and secures the door when it is in the closed position

(10) Auxiliary hardware items that interfere or prohibit operation are not installed on the door or frame

(11)No field modifications to the door assembly have been performed that void the label

(12) Meeting edge protection, gasketing and edge seals, where required, are inspected to verify their presence and integrity

(13)Signage affixed to a door meets the requirements listed in 4.1.4

Federal does not recognize the two points highlighted in red.

- **4.8.4.1*** Clearance under the bottom of a door shall be a maximum of 3/4 in. (19 mm).
- **6.3.1.7.2*** The clearances between the top and vertical edges of hollow metal doors and the frame, and the meeting stiles of doors swinging in pairs, shall be 1/8 in.
- **6.3.1.7.3** High-pressure decorative laminate (HPDL)-faced doors, 1/3-hour-rated flush wood doors, and stile and rail wood doors installed in hollow metal door frames shall not have clearances greater than 1/8 in.
- **4.1.4.1** The total area of all attached signs shall not exceed 5 percent of the area of the face of the fire door to which they are attached.

Record Keeping of Annual Inspections

5.2.2.4 A record of all inspections and testing shall be provided that includes, but is not limited to, the following information:

(1) Date of inspection
(2) Name of facility
(3) Address of facility
(4) Name of person(s) performing inspections and testing
(5) Company name and address of inspecting company
(6) Signature of inspector of record
(7) Individual record of each inspected and tested fire door assembly
(8) * Opening identifier and location of each inspected and tested fire door assembly
(9) * Type and description of each inspected and tested fire door assembly
(10)* Verification of visual inspection and functional operation
(11)Listing of deficiencies in accordance with 5.2.3, Section 5.3, and Section 5.4

Tips & Tricks for Inspections

- Start from pull side
- Check for damage/wear
- Perform full opening/closing cycle 3x
- Use gap gauge to measure clearance
- Check seals/gaskets, replace if damaged
- Verify labeling/certification
- Keep record and schedule regular inspections.

Fire Door Labels

4.2.1.1 At a minimum, the label for fire doors shall contain the following information:

(1) The words "fire door."
(2) The manufacturer's name or a code that can be traced back to the manufacturer.
(3) The marking of a third-party certification agency.
(4) The fire protection rating of the door.
(5) A unique serial number, if provided by the listing agency.
(6) The fire test standard designation to which the assembly was tested.
(7)* The temperature transmission rise at 30 minutes. If the temperature transmission rise of a fire door exceeds 650°F (361°C), the temperature rise shall be permitted to be omitted.

NFPA 252/ UL10B / UL 10C

Fire-rated doors are tested in accordance with the following standards:

- **UL 10B, Fire Tests of Door Assemblies (neutral or negative pressure)**
- **UL 10C, Positive Fire Pressure Tests of Door Assemblies**
- **NFPA 252, Standard Methods of Fire Tests of Door Assemblies**

NFPA 252/ UL10B / UL 10C (continued)

Fire Endurance

Fire-rated doors are subjected to endurance testing where the specimen is exposed to the **extreme heat** of up to 1925 degrees F for the maximum **180-minute rating**. If the door remains in the frame with no through openings and limits flames, it is certified with an endurance rating of either 20/45/60/90/180 minutes.

Hose Stream

After the fire endurance test, the test specimen is subjected to the hose stream test, where a fire hose delivers **water at 30 psi from 20 feet away**. Note that building codes throughout the US typically stipulate that 20-minute doors are exempt from the hose stream test.

Temperature Rise

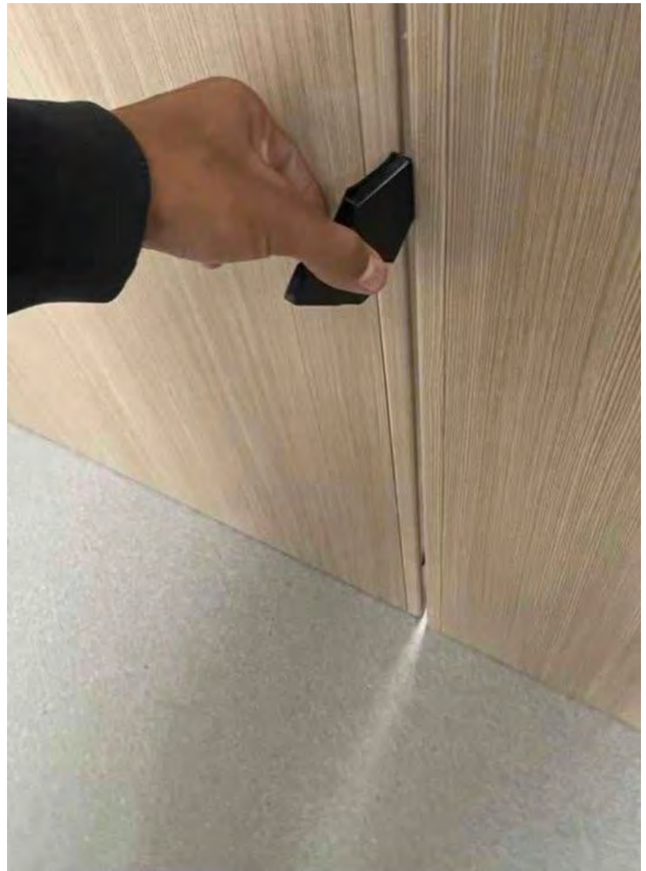
In certain applications, fire doors are also required to limit the transmission of heat from one side to the other to protect building occupants so they can safely exit the building. Known as temperature rise doors, these doors carry a temperature rise rating in addition to the hourly rating. Temperature rise ratings are either 250 degrees F, 450 degrees F or 650 degrees F, indicating the **maximum rise above ambient temperature on the non-fire side measured** during the first 30 minutes of a standard fire endurance test. A 250-degree F temperature rise rating is considered to be the most stringent and would meet the requirements of a specification requiring 450 degrees F or 650 degrees F.

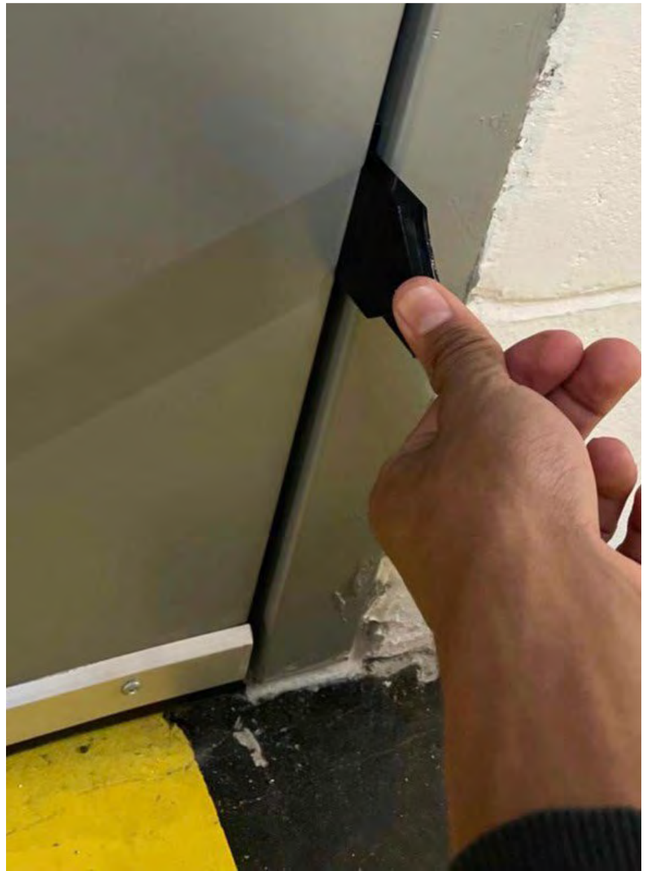
Most Common Deficiencies Found During Fire-Door Inspections

Obscured Labels

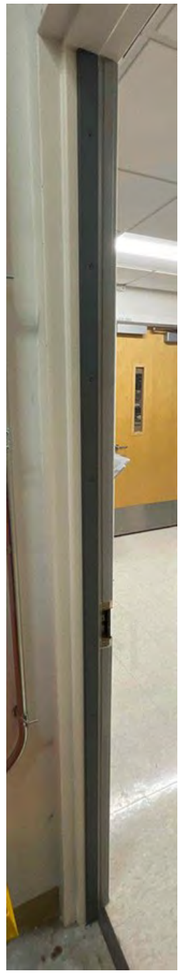
Clearance

NFPA 80 2010: The clearances between the top and vertical edges of the door and the frame, and the meeting edges of doors swinging in pairs, shall be 1/8 in. 1/16 in. (3.18 mm 1.59 mm) for steel doors and shall not exceed 1/8 in. (3.18 mm) for wood doors.





Repairs for excessive clearances



Door/Frame Label

5.2.3.5.2 As a minimum, the following items shall be verified:
(1) Labels are clearly visible and legible.

Panic Hardware vs Fire Exit Hardware

Panic Hardware

6.4.4.2 Fire exit hardware shall be installed only on fire doors bearing a label stating “Fire Door to Be Equipped with Fire Exit Hardware.”

Fire Exit hardware is required on fire-rated doors in a path of egress based on occupancy and life safety exit requirements. The devices will bare a Fire Exit label and cannot have mechanical dogging. Fire exit hardware also has fusible links that ensure the door stays latched during fires and can withstand the hose stream testing.

Fire Exit Hardware

6.4.4.2.3 The label shall differentiate between panic hardware, which is not acceptable for use on fire doors, and fire exit hardware

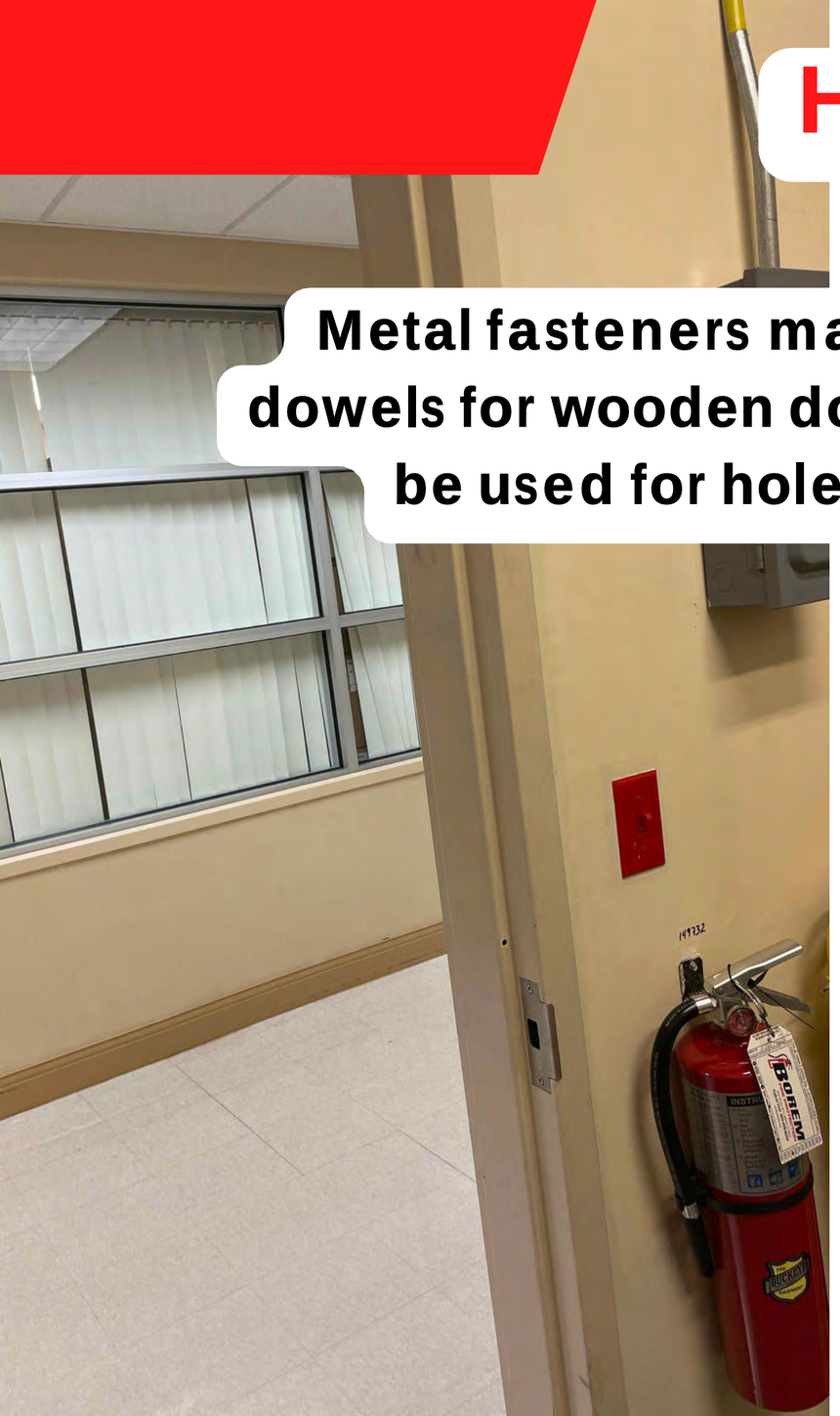
Panic hardware is exit door hardware that will work simply in times of emergency. Also colloquially called crash bars, panic hardware opens the door by applying force in the same direction of travel.

Signage

Only 5% of the door can be covered with signage, affixed to the door without mechanical methods such as screws, staples, etc. The general rule is roughly 1sheet of 8.5”x11” (printer) paper per standard-size door.

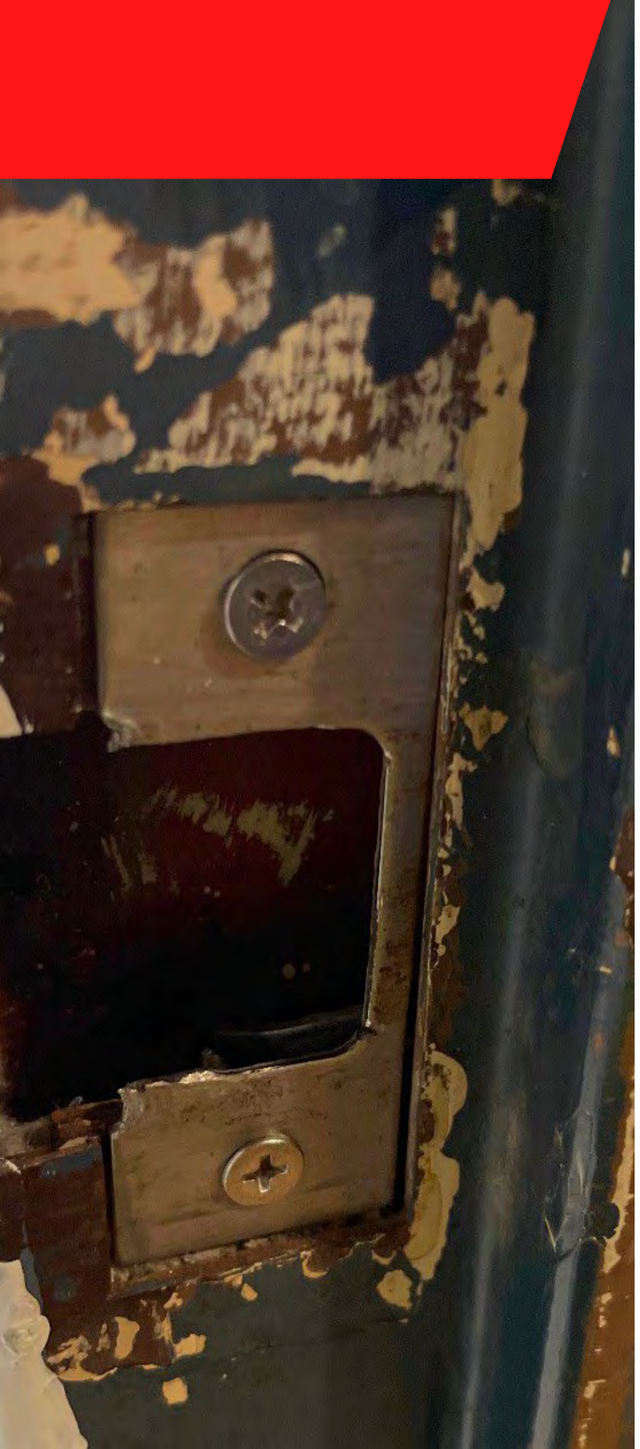
Holes in Door/Frame

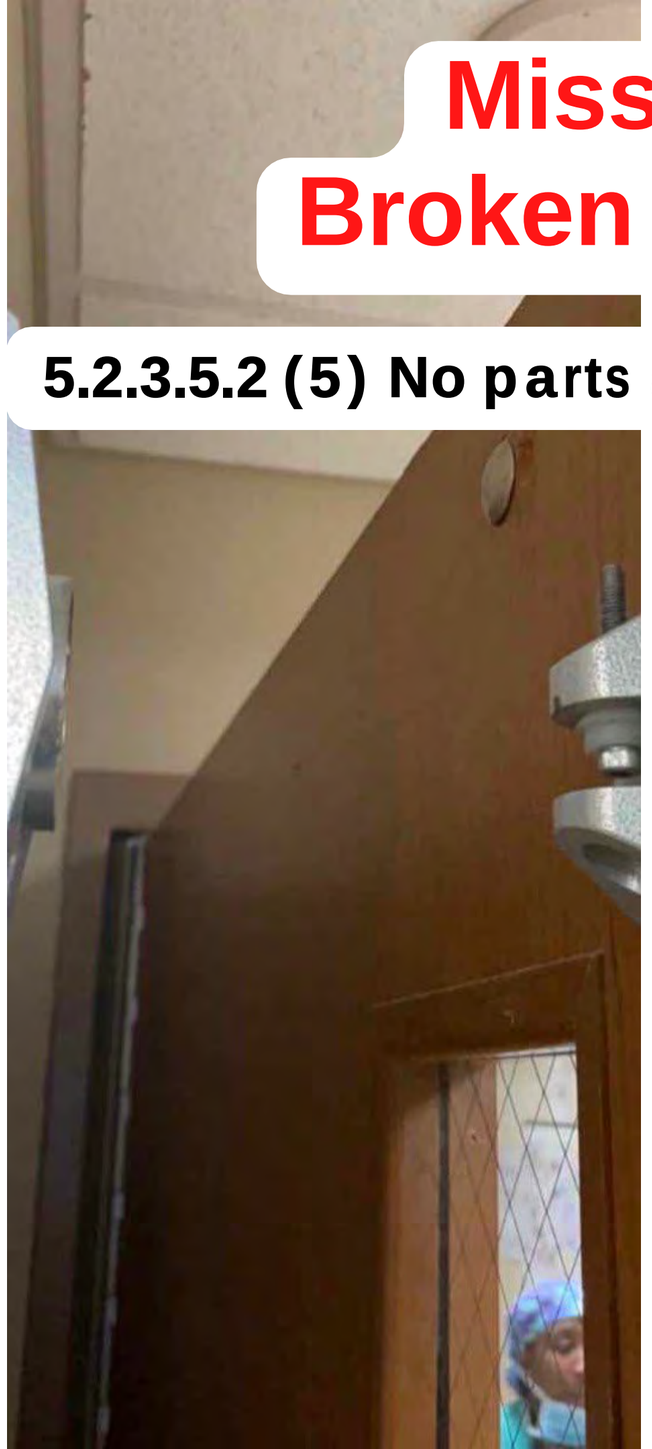
Metal fasteners may be used for metal doors/frame and wooden dowels for wooden doors. Thru bolts and approved caulking may also be used for holes up to ½” in diameter. No Loctite or Bondo!!

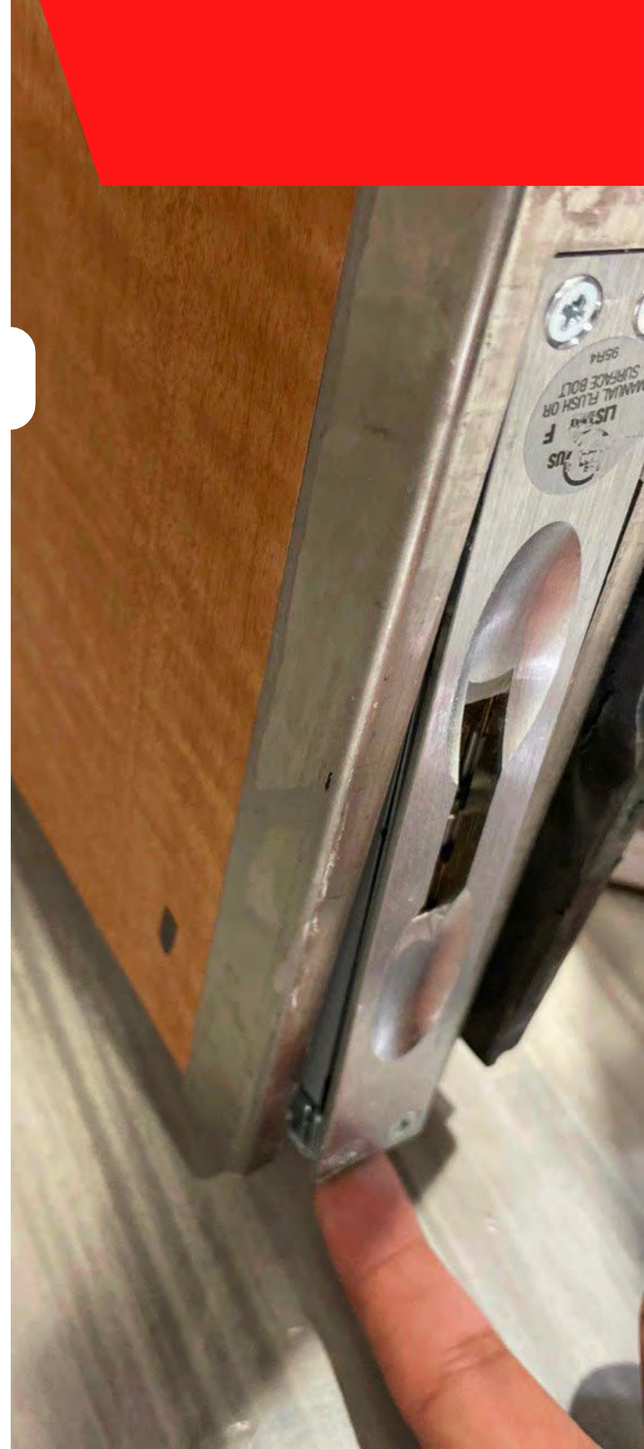


Missing or Broken Hardware

5.2.3.5.2 (5) No parts are missing or broken.



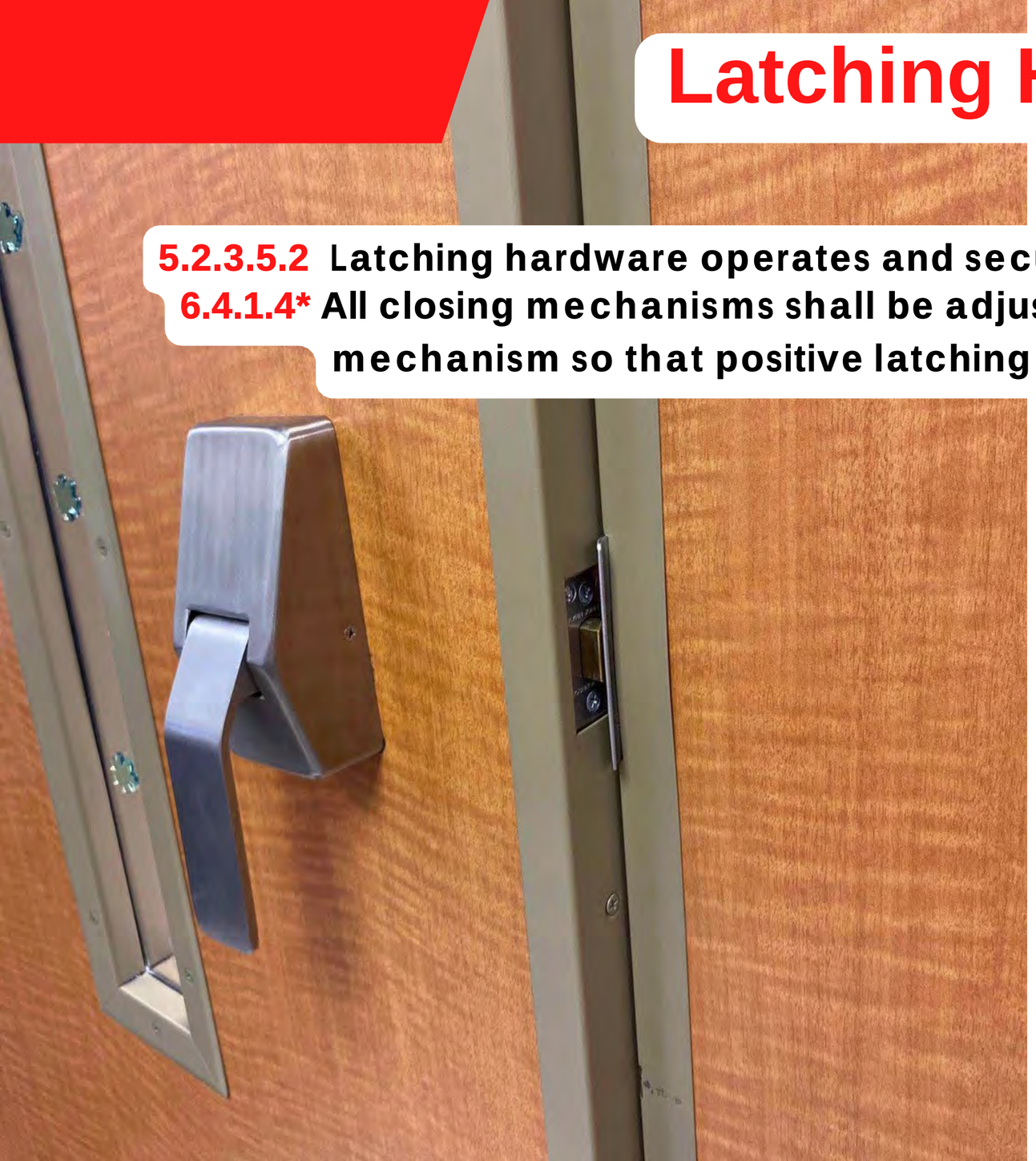




Latching Hardware

5.2.3.5.2 Latching hardware operates and secures the door when it is in the closed position.

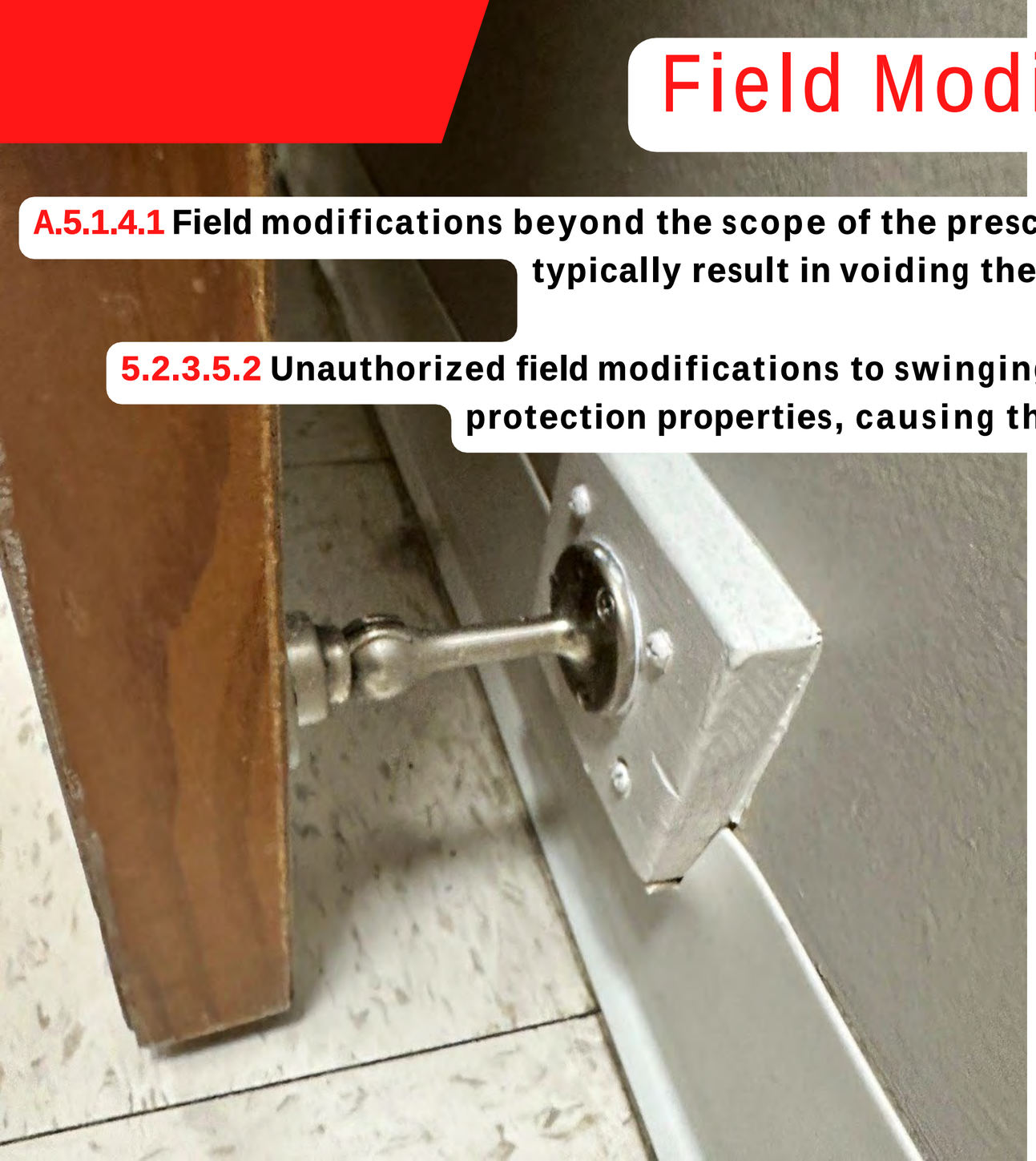
6.4.1.4* All closing mechanisms shall be adjusted to overcome the resistance of the latch mechanism so that positive latching is achieved on each door operation.



Field Modifications

A.5.1.4.1 Field modifications beyond the scope of the prescriptive allowances permitted by **4.1.3.2** through **4.1.3.2.5** typically result in voiding the fire rating of the assembly.

5.2.3.5.2 Unauthorized field modifications to swinging fire door assemblies might compromise their fire protection properties, causing them to fail prematurely in a fire.

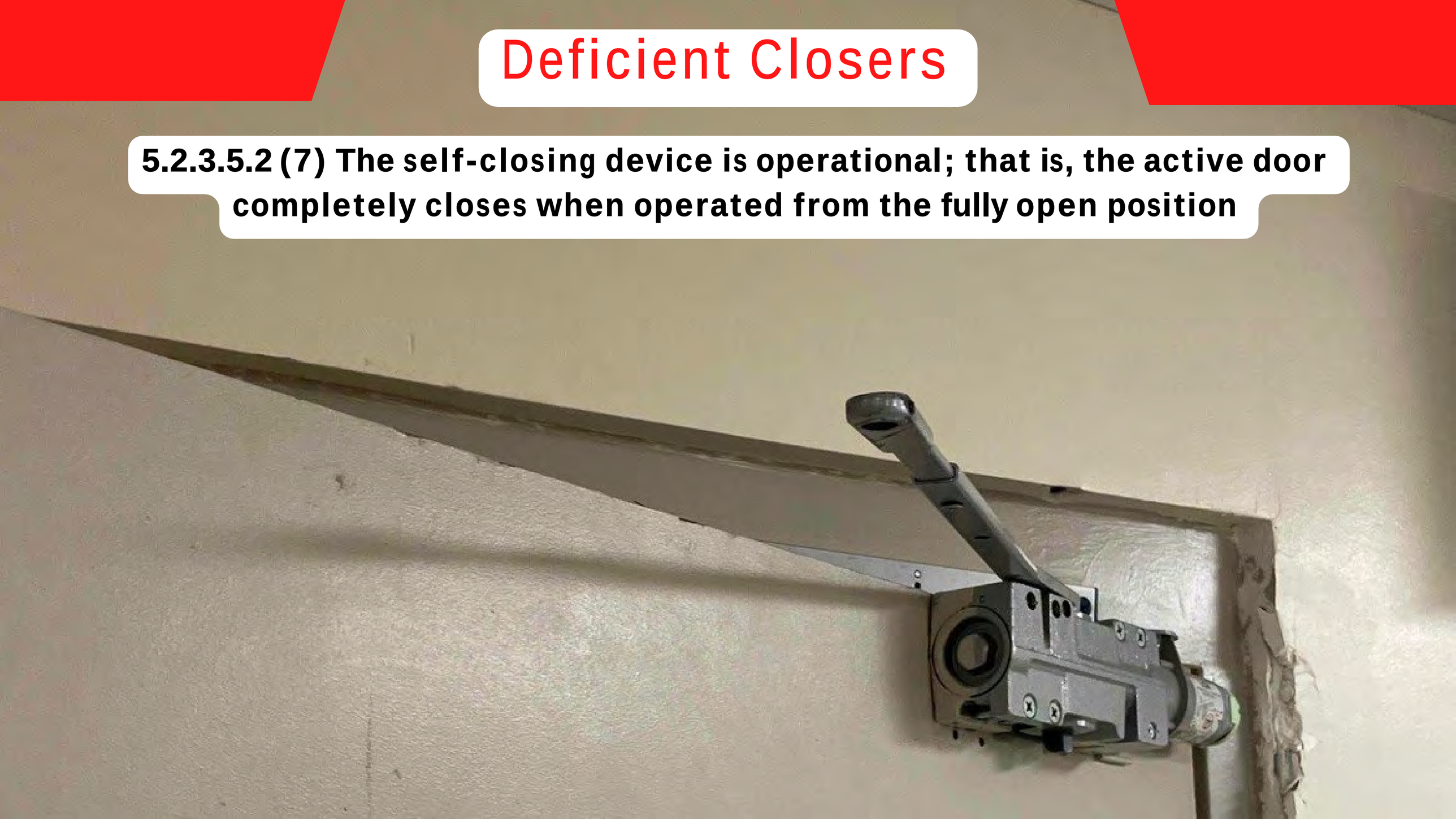


Deficient Glazing

5.2.3.5.2 (3) Glazing, vision light frames, and glazing beads are intact and securely fastened in place, if so equipped

Deficient Closers

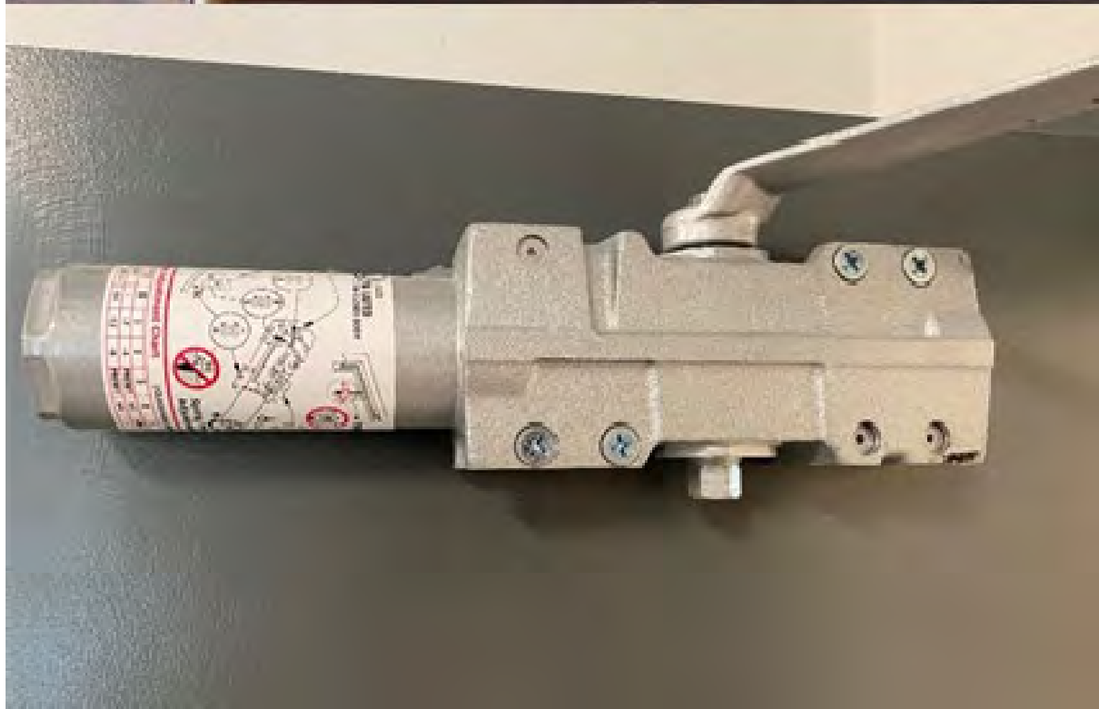
5.2.3.5.2 (7) The self-closing device is operational; that is, the active door completely closes when operated from the fully open position



Closers

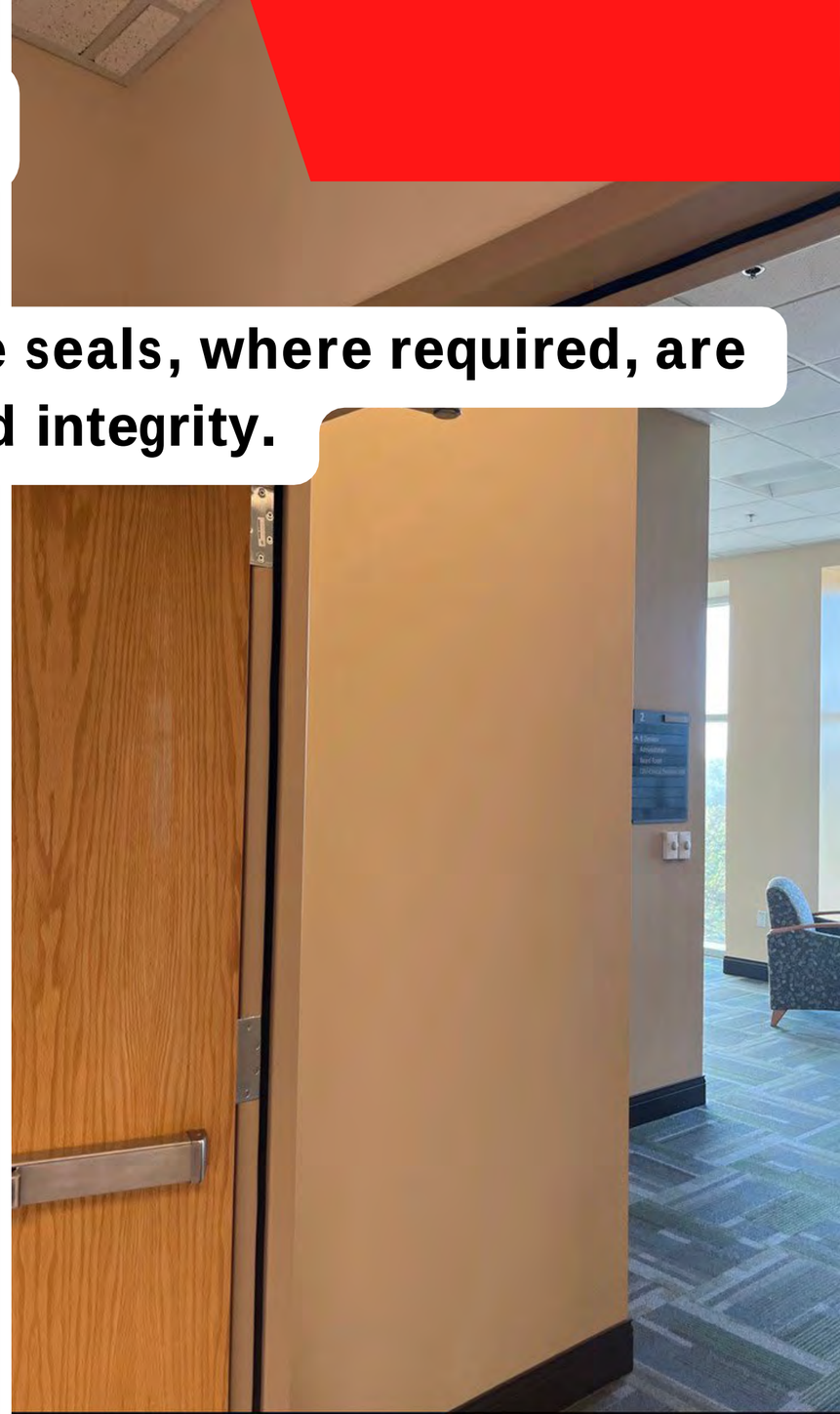
NFPA 80 2016; A.6.4.1.1

The standard requires most fire doors to have a closing device. But in some cases, such as inactive doors that are usually closed (e.g., mechanical equipment rooms), or communicating doors between hotel rooms occupied by a single party, the AHJ can omit the requirement for a closer, as long as it's reasonably assured that the inactive leaf will remain closed and latched.



Deficient Gasket

5.2.3.5.2 Meeting edge protection, gasketing and edge seals, where required, are inspected to verify their presence and integrity.



Gasketing

Either gasketing is incomplete or missing entirely. Reading the label of the door gives specific gasketing.

Let's Recap!

- The importance of yearly maintance of doors.
- Keep a record of all work.
- No need to over complicate doors.

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THANK YOU!

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