

NFPA 80 – RATED DOOR INSPECTIONS

Ensuring an effective Inspection Program!
A CHFT/HFT Prep Course



- Gain understanding of primary compliance documents that drive inspection frequencies and requirements.
- Review building pre-assessment prior to door inspection.
- Review main inspection requirements for rated doors.
- Apply inspection understanding through and example and sketching exercise.
- Assess understanding through a low stakes assessment.

TRAINING OBJECTIVES



- No Pre Assessment this session to give more time for content!
- Material Presentation.
- Exercise – Recommend obtaining/building personal workbook.
- Summary
- Post Assessment.

Assessments are designed to increase engagement while lowering testing anxiety by creating a low stakes results, i.e. no pass/fail grade.

TRAINING FORMAT



- Why do doors in rated walls often have lower ratings than the wall itself? Example 1 HR wall with a 45 minute door.

THE QUESTION ON EVERYONE'S MIND!



- NFPA 101 – 2012 Edition.
- NFPA 80 - 2010 & 2016 Edition
- NFPA 105 – 2010 & 2016 Edition

CODE REFERENCE BOOKS



1. Establish Inventory & Drawing Verification
2. Confirm Correct Installation
3. Review ALL modifications
4. Risk Assess by location, use, and abuse!

CORE ELEMENTS PRIOR TO INSPECTION



- ▶ Egress
- ▶ Hazardous Room
- ▶ Smoke proof enclosure or smoke control area
- ▶ Stairwell/Exits
- ▶ Smoke Compartment
- ▶ Fire Rated Separation
- ▶ Combination Fire/Smoke
- ▶ Partitions

INVENTORY & DRAWINGS



- ▶ Does Door Match Frame?
- ▶ Does Assembly match wall requirements?
- ▶ Testing and acceptance Record
- ▶ Are records on file from installation – Permanent – 5.2.2.1

CORRECT INSTALLATION



- ▶ Control Access
- ▶ Panic Hardware
- ▶ Magnetic Release
- ▶ Signage
- ▶ Kick Plates
- ▶ Astragals
- ▶ Vision Panels
- ▶ Etc...

APPURTENANCE/ACCESSORIES – 4.1.3



- ▶ Egress
- ▶ Hazardous Rooms
- ▶ Partitions
- ▶ Ventilation System Coordination – Smoke Doors Pressure?
- ▶ High Use (soiled Rooms, imaging, O.R., etc...)
- ▶ High Abuse (Imaging, Laundry, Environmental, Materials, etc...)

RISK ASSESSMENTS



- ▶ Where required by chapters 11 through 43, the following door assemblies shall be inspected and tested **not less than annually** in accordance with 7.2.1.15.2 through 7.2.1.15.8
 - 1) Door leaves equipped with panic hardware or fire exit hardware in accordance with 7.2.1.7
 - 2) Door assemblies in exit enclosures.
 - 3) Electronically controlled egress doors
 - 4) Door assemblies with special locking arrangements subject to 7.2.1.6

!!!!NOT JUST RATED DOORS!!!!!!

NFPA 101- 2012 7.2.1.15.1



- ▶ Delayed Egress
- ▶ Access Control
- ▶ Elevator Lobby exit
- ▶ Behavioral Health
- ▶ Any protective measure door in egress with no rating.

PARTIAL LIST OF TYPICAL DOORS



- ▶ Fire Rated Doors(Fire Barriers)
- ▶ Doors to Hazardous areas (Rated Enclosures)
- ▶ Shaft Access Doors(Rated Shaft Enclosures)
- ▶ Trash Chute inlet
- ▶ Trash Chute discharge
- ▶ Linen Chute inlet
- ▶ Linen Chute discharge
- ▶ Smoke Doors – non rated
- ▶ Smoke Doors – rated

LIFE SAFETY DOOR TYPES



- ▶ Corridor doors in Smoke Partitions not in path of egress.
- ▶ Outpatient Facilities!!!
 - Still Inventoried?
 - Still subject to survey inspection/violations
 - Must resist passage of smoke
 - 1" undercut permitted
 - Risk Assessment?



WHAT ABOUT DOORS NOT REQUIRED TO
BE INSPECTED PER NFPA 80? NFPA 101
(2012) 18.3.6.3.1(1) & 19.3.6.3.3



- ▶ Inspectors are determined to be competent to perform the scope of the inspection
- ▶ Doors requiring inspection are to be inventoried.
- ▶ Deficiencies are to be documented and corrective action is to be accomplished without delay and documented.- **ILSM?**

TJC- EC 02.03.05 EP 25- STATES LIST OF
NFPA REFERENCED FOR ACTIVITY.



NFPA 80 Standard for Fire Doors Versions

Use with Caution! NFPA 101
Chapter 2 listed.

RECOMMEND USE!!!

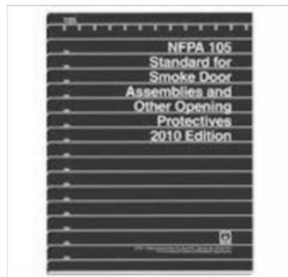


NFPA 105 Standard for Smoke Doors

NFPA 105 **2010** - 4.1.1 Fire door assemblies that are intended for use as smoke door assemblies shall also comply with NFPA 80, Standard for Fire Doors and Other Opening Protectives

NFPA 105 **2016** - 5.2.1 (1) Fire rated smoke door assemblies shall be inspected and tested in accordance with this standard and also in accordance with Chapter 5 of NFPA 80.

NFPA 105 **2016** - 5.2.1 (2) Door assemblies without fire ratings shall be inspected in accordance with the requirements of this standard.



- ▶ 4.4 – Fire Rated Smoke door assemblies shall bear and "S" label indicating a maximum air leakage (Annex Note- It is possible to have a non fire rated smoke rated door without the "S", however, the gasket material will denote its air leakage rating on the materials packaging.
- ▶ "No flaws in gasket material"
- ▶ Bottom Seals on doors in pressurized applications.

NFPA 105 NUANCES – SMOKE DOOR ASSEMBLY INSPECTIONS



NFPA 80 2016 – Standard for Fire Doors

Chapter 5 Care & Maintenance

- **5.2.4.1*** Fire door assemblies shall be inspected and tested not less than annually,
- **5.2.2.1** – Records of acceptance tests shall be retained for the life of the assembly.
- **5.2.2.2** Unless a longer period is required by section 5.4, shall be retained for a period of at least 3 years.(Inspections)
- The records shall be on a medium that will survive the retention period. Paper or electronic media shall be permitted.



NFPA 80 2016 – Standard for Fire Doors

Chapter 5 Care & Maintenance

5.2.2.4 – A record of all inspections and testing be provided that includes....

- Date
- Name of Facility
- Address
- Name of person performing inspections
- Company name & Address
- Signature!!!!
- **Individual Record for each door**
- **Opening Identifier and Location**
- **Type & description....**
- Verification of visual and functional operation
- Listing of deficiencies. (LSM!!!!!!)



NFPA 80 2016 – Standard for Fire Doors

Chapter 5 Care & Maintenance

5.2.4.1* Periodic inspections and testing shall be performed not less than annually.

5.4 Performance-Based Option.



NFPA 80 2016 – Standard for Fire Doors

5.2.4.2 As a minimum, the provisions of 5.2.3 shall be included in the periodic inspection and testing procedures.



NFPA 80 2016 – Standard for Fire Doors

5.2.3.5.2- As a minimum, the following items shall be provided

- Labels are clearly visible and legible
- No open holes or breaks exist in the surfaces of either the door or frame.
- Glazing, vision light frames, and glazing beads are intact and securely fastened in place, if so equipped.
- The door, frame, hinges, hardware, and noncombustible threshold are secured, aligned and in working order with no visible signs of damage.
- No parts are missing or broken.
- Door clearances do not exceed clearances listed in 4.8.4 and 6.3.1.7.
- The self closing device is operational: that is, the active door completely closes when operated from the full open position.



NFPA 80 2016 – Standard for Fire Doors

5.2.3.5.2 continued.....

- If coordinator is installed, the inactive leaf closes before the active leaf.
- Latching hardware operates and secures the door when it is in the closed position.
- Auxiliary hardware items that interfere or prohibit operation are not installed on the door or frame.
- No field modification to the door assembly have been performed that void the label.
- Meeting edge protection, gasketing, and edge seals where required, are inspected to verify their presence and integrity
- Signage affixed to a door meets the requirements listed in 4.1.4- adhesive, no screws/nails, not on glazing, 5% rule.



NFPA 80 2016 – Standard for Fire Doors

Chapter 5 Care & Maintenance

5.4 Performance-Based Option

5.4.1 As an alternate means of compliance with 5.2.4, subject to the AHJ, fire door assemblies shall be permitted to be inspected, tested, and maintained under a written performance-based program.

5.4.3 Technical justification for inspection, testing, and maintenance intervals shall be documented in writing

Initial AND Ongoing Risk Assessments!!!



RATED DOOR INSPECTIONS



CLEARANCES

- How to measure the clearances on a door:
 - With the door closed, measure from the pull side of the door
 - Measure the clearance between the door and frame
 - Top
 - Hinge side
 - Latch side
 - Between the doors (when installed in pairs)
 - Measure the clearance between the door and finished floor



CORRECT CLEARANCE TOP & SIDES

- ▶ The maximum gap allowed on a wood fire door > 1/3 HR is 1/8th of an inch
- ▶ The maximum gap allowed on a wood fire door 1/3 HR 1/8th of an inch +/- 1/16th
- ▶ -CODE REFERENCE- NFPA 80 v2016 6.3.1.7



CORRECT CLEARANCE TOP & SIDES

- ▶ Gap requirement on a metal door is 1/8" +/- 1/16"
- ▶ Thus, the maximum allowed gap on a metal fire door is 3/16"
- ▶ -CODE REFERENCE- NFPA 80 v2016 6.3.1.7



CORRECT CLEARANCE TOP & SIDES

- ▶ Minimum gap allowed on a metal fire door is no less than 1/16"
- ▶ -CODE REFERENCE- NFPA 80 v2016 6.3.1.7



CORRECT CLEARANCE BOTTOM

- ▶ The maximum allowed gap on the bottom of a fire door is 3/4"
- CODE REFERENCE- NFPA 80 v2016 4.8.4.1
- ▶ Maximum allowed gap of door that is more than 38" above floor level is 3/8"
- CODE REFERENCE – NFPA 80 v2016 4.8.4.3



RATING LABELS

- ▶ Door and Frame rating labels must be clearly visible and legible
- ▶ -CODE REFERENCE- NFPA 80 v2016 4.2.2 & 6.3.1.1



SILENCERS

- ▶ Silencers shall be installed per manufacturers published listing
- ▶ -CODE REFERENCE- NFPA 80 v2016 6.5.2



SIGNAGE

- Signage is limited to 5% of door surface area per side
- -CODE REFERENCE- NFPA 80 v2016 4.1.4.1



SIGNAGE

- Signs cannot be attached by any means of mechanical attachment
- -CODE REFERENCE- NFPA 80 v2016 4.1.4.1 & 4.1.4.2.2



HINGES

- Hinges must be installed correctly with the pin on top
- -CODE REFERENCE- NFPA 80 v2016 6.5.1 & 6.5.2



HINGES

- ▶ Hinges must be installed per manufacturers published listing
 - ▶ Manufacturers specify the use of 8 screws to secure a standard hinge
- ▶ -CODE REFERENCE- NFPA 80 v2016 6.4.3.2.1



GLAZING(GLASS)

- ▶ Only fire rated glazing material is allowed to be used in fire doors
 - ▶ Rating label for glazing will be etched into the surface of the glass
- ▶ -CODE REFERENCE- NFPA 80 v2016 4.4.1



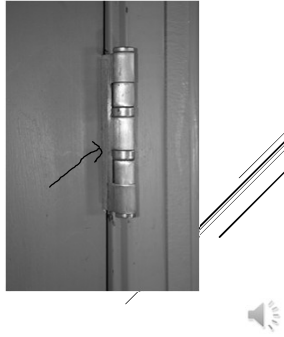
HOLES

- ▶ Holes are not allowed to be left in the door or frame
 - ▶ Must be filled with the same material as the door or frame
- ▶ -CODE REFERENCE- NFPA 80 v2016 5.5.7



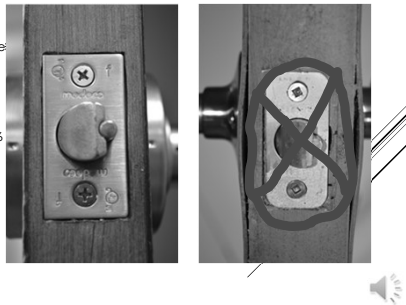
SHIMS

- ▶ When shimming to adjust gaps the use of STEEL shims is allowed
- ▶ -CODE REFERENCE NFPA 80 v2016 6.4.3.4



LOCKS & LATCHES

- ▶ Only rated(labeled) locks & Latches are allowed on a fire door
- ▶ When replacement hardware is required it must meet the requirements for fire protection
- ▶ -CODE REFERENCE- NFPA 80 v2016 6.4.4.1 & 5.1.3



LATCHES

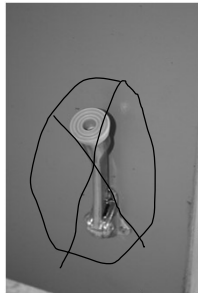
- ▶ Latching mechanisms need to be adjusted so that they achieve positive latching on each operation
- ▶ -CODE REFERENCE- NFPA 80 v2016 6.4.1.4

Remember to let door swing from full "natural" position.



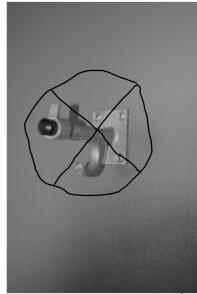
PLANT-ONS

- ▶ Doors must be kept closed or arranged for automatic closing
 - ▶ Kick down door stops and door wedges prevent a fire door from closing at the time of a fire
- ▶ -CODE REFERENCE- NFPA 80 v2016 5.1.2.3.3



PLANT-ONS

- ▶ Each component on a fire door shall be installed per its listing. This item is not rated for use on a fire door.
- ▶ Additionally, hanging coats and other items adds fuel load that will adversely affect the doors ability to survive a fire.
- ▶ -CODE REFERENCE- NFPA 80 v2016 6.5.1



- ▶ Pencil, Paper, Eraser
- ▶ Build a reference book for CHFT
- ▶ Use as reference for Competencies for HFT

SKETCHING OPENINGS AND PENETRATIONS.



- ▶ Establish Inventory, Installation, Modification, Drawings, and Risk Assessment Foundation ahead of inspection program.
- ▶ Establish properly formatted documentation.
- ▶ Understand Competency Requirement.
- ▶ Be Aware of "Non- Required" Inspection doors still "at risk".
- ▶ Complete Functional and Visual – Notate "ALL" the boxes
- ▶ Do not modify a rated door without a risk assessment!
- ▶ Interim Life Safety Measures May be required – know your policy!

SUMMARY