Fire and Smoke Door Inspections
Qualified Training

02/03/17
Basis of Requirements

• NFPA 101 requires annual fire and smoke door inspections (Section 18/19.2.2.2.1)
• Sections 18/19.2.2.1 require compliance with Section 7.2.1 which includes 7.2.1.15.2
• Section 7.2.1.15.2 requires compliance with:
  • NFPA 80, Standard for Fire Doors and Other Opening Protectives – 2010 Edition
    • Section 5.2.1 addresses inspections, testing and maint.
  • NFPA 105, Standard for Smoke Door Assemblies and Other Opening Protectives – 2010 Edition (Section 5.2)
    • Section 5.2 addresses inspections, testing and maint.
Door Inspections

• Section 7.2.1.15.2 requires all fire and smoke doors to be inspected and tested, potentially including:
  • Fire rated labeled doors
  • Doors in exit enclosures - typically stairwells and exit passageways
  • Doors in smoke barriers
  • Doors in other fire resistance rated walls such as hazardous areas and fire pump enclosures
• K211 Means of Egress – General
Aisles, passageways, corridors, exit discharges, exit locations, and accesses are in accordance with Chapter 7, and the means of egress is continuously maintained free of all obstructions to full use in case of emergency, unless modified by 18/19.2.2 through 18/19.2.11.

• Inspection and testing requirements for fire-rated door assemblies in accordance with NFPA 80.
Inspection and testing requirements for smoke door assemblies in accordance with NFPA 105
  • Applies to new and existing installations
  • Inspected and tested not less than annually
  • Written record shall be signed and kept for inspection
  • Repairs shall be made “without delay”
Door Inspection Requirement

• This packet has been developed to provide guidance and training to ensure that individuals inspecting and testing door are prepared and qualified.

• Door assemblies shall be inspected by a QUALIFIED INDIVIDUAL annually
  • Reviews operation, door clearance, coordinator, latch and closer

• Record kept for AHJ inspection
Door Inspection

Fire-rated door assemblies

- A visual inspection includes the following:
  - Labels are present and legible
  - No holes or breaks of door or frame
  - No signs of damage to the door, frame, hinges, and hardware
  - No parts are missing or broken
  - Door clearances are appropriate
  - Self-closing device operating properly
  - If installed, the coordinator is working
  - Latching hardware operates
  - No auxiliary hardware installed that would interfere with operation
  - No field modifications that would void the label
  - Gasketing and edge seals, if required, are inspected
Door Inspection
NFPA 105

- Smoke door assemblies shall be inspected annually.
  - Doors shall be operated to confirm full closure.
  - Hardware and gaskets shall be inspected annually, and any parts found to be damaged or inoperative shall be replaced.
  - Tin clad and Kalamein doors shall be inspected regularly for dry rot.
- A written record shall be maintained and shall be made available to the authority having jurisdiction.
Fire-rated doors are an integral part of not just the building’s passive fire-protection system but the building’s overall fire protection. A properly operating fire door, just like a properly operating fire damper, is a key component in the compartmentalization of a building to limit the spread of fire and restrict the movement of smoke.
For the fire door to operate successfully, the entire fire assembly must operate, and the fire door is just one part of the overall fire assembly. The assembly is composed of the fire door, frame, fire exit hardware, door closers, hinges, locks, door bolts, and other door components that when combined provide varying degrees of fire protection that is contingent on the door fire rating (e.g. 45 minutes, 90 minutes). In addition to all of the components of a fire door assembly, there are multiple categories of fire doors: horizontal sliding; fire shutters; swinging; vertically sliding; chutes; and overhead rolling fire doors.
Understanding the function and parts of door assemblies
The Five Basic Requirements for a Fire Rated Opening

1. Labeled Fire Door Frame
2. Labeled Fire Door
3. Approved Closer
4. Approved Latching Device with Proper Latchbolt Length
5. Steel Ball Bearing Type Hinge
Door Label

• Fire rated permanent label attached and readable.
NFPA 80 Annex

• In the annex to NFPA 80, A.8.3.3.2.3, steel door frames that are well set in the wall may be judged compliant even when frame label is not legible. The door label, however, must be legible.
Door Parts

- Top Rail
- Casing
- Panels
- Mullion
- Lock Stile
- Lock Rail
- Bottom Rail
- Threshold (Saddle)
- Hinge Stile
- Stop
- Hinge
- Jamb
- Casing
Door Parts and Function

- Ideally the frame should be to the same standard as the door, purchased together as a door set.
- Door closer.
- Hinges should be tested as part of the door set.
- Vision panel should be fire-resisting glazing.
- Door handles and locks should be tested as part of a door set.
- Intumescent strip and cold smoke seal to resist the passage of smoke and fire.

Securing device - lock, emergency exit device or panic exit device.
Fire Door Hardware Labeling

• In order for a fire door and frame to provide protection against the spread of heat and fire, the hardware used must match the capabilities of the door and frame used. Check for UL listing and ensure hardware is tested for the rating it is matched to. NFPA 101 8.3.3.1
Fire Exit Hardware

When fire doors are labeled requiring Fire Exit Hardware, ensure labels on the hardware match the label on the door. NFPA 80, Chapter 6
Fire doors and door hardware are subject to failure due to their constant usage in high traffic areas, such as busy corridors. Constant usage can lead to misalignment of the door, which could potentially lead to failure of the door to close in the event of a fire, which NFPA claims to be the most common failure of fire doors during an actual fire.
Other common non-compliant issues are holes or openings in the fire door assembly, improper gaps, missing labels, failure of latching hardware to operate, missing screws, door coordinator operating improperly, non-working self-closing devices, missing gasketing, improper kick plate (protective plate) sizes, improper field modifications, and numerous other problems.
When should repair work begin?

If an inspection shows a deficiency on any fire protection device including fire doors, repair work should start without delay. You should also report any findings the same day to your direct supervisor or manager.
Below is a door inspection form that facilities may use. Complete one form for each door inspected. It is recommended that a facility identify all doors to be inspected on drawing/layout of the facility to track inspections.

Fire/ Smoke Door Inspection

<table>
<thead>
<tr>
<th>Facility</th>
<th>Tester Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Door Type:</td>
</tr>
<tr>
<td>Location</td>
<td>Fire</td>
</tr>
</tbody>
</table>

The 2012 edition of the LSC requires facilities to complete an annual fire and smoke door inspection. Section 18.2.2.1/19.2.2.1 requires compliance with section 7.2.1. Section 7.2.1.16.2 requires compliance with NFPA 80 Standard for Fire Doors and Other Opening Protective (2010 edition), NFPA 80.5.2.1 and NFPA 105 Standard for Smoke Door Assemblies and Other Opening Protective (2010 edition). Below please evaluate all required doors for items listed below and identify issues. All issues should be appropriately corrected immediately.

**Operation**
- [ ] Swings freely
- [ ] Closes properly
- [ ] Latches properly
- [ ] Other ____________

**Frame**
- [ ] Is secure
- [ ] No open holes/breaks
- [ ] Frame not rusted through
- [ ] Label missing or illegible
- [ ] Other ____________

**Door**
- [ ] Label missing or illegible
- [ ] Correct Clearance
- [ ] No open holes/breaks
- [ ] Glazing, vision light frames intact
- [ ] Not Damaged / delaminated door
- [ ] Door not rusted-through
- [ ] No non-compliant field modification
- [ ] No visible signs of damage
- [ ] Other ____________

**Hinges**
- [ ] Correct
- [ ] Securely installed
- [ ] Other ____________

**Flush Bolts**
- [ ] Correct
- [ ] Securely installed
- [ ] Other ____________

**Lockset / Hardware**
- [ ] All hardware installed
- [ ] Strike in good shape
- [ ] Securely installed
- [ ] Other ____________

**Fire Exit Hardware**
- [ ] All hardware installed
- [ ] Strike in good shape
- [ ] Securely installed
- [ ] Other ____________