Fire-Rated Doors and Hardware
A Guide to Field Inspection
Foundation’s Mission

To promote secure and safe openings that enhance life safety
Awareness

To be a source of information through awareness campaign that targets:

- Code Officials
- Fire Officials
- AHJs
- Architects and Building Owners
- School Officials/Administrators (K-12, college campuses)
- Not Familiar with Code Requirements
- Belief that frequency of use ensures proper operation
Fire-Door AHJ Training Program

• “This is an important step in helping local officials understand what to look for when they are approving the installation and on-going maintenance of fire-rated doors.”

-- Bert Polk, retired South Carolina State Fire Marshal.
Annual Inspection of Fire Door Assemblies…

• Who Is Going To Do These Inspections and When?
  – Paragraph 5-2.3, Functional Testing
    • Individuals who are KNOWLEDGEABLE about the openings being inspected
  – Paragraph 5-2.1, ‘…not less than annually, and a written record of the inspection shall be kept for inspection by the AHJ.’
Class Objective

• Learn about the requirements pertaining to the 2007 edition of NFPA 80 Standard for Fire Doors and Other Opening Protectives. This includes: operation, features, basic criteria and maintenance of fire-rated doors.
Agenda

• NFPA 80 Chapters 1, 2, 3, 4 & 6 – Background information
• Overview of Fire-Rated Door Hardware
• Fire Door Testing and Certification Video
• Fire-Rated Doors and Labels
• Fire-Rated Glass and Glazing
• Annual Inspection Requirements of NFPA 80 Chapter 5 – Care and Maintenance
Tragic Fires

- **Station Night Club -- 2003**
  - Warwick, RI - 100 died

- **MGM Grand -- 1980**
  - Las Vegas – 85 killed, 700 injured

- **Cook County - 2003**
  - Chicago – 6 killed
Scores injured in W. Warwick club fire

The Station, Warwick, RI
February 20, 2003, 100 people died
MGM Grand – Nov. 11th, 1980
Cook County Building – October, 2003

- Inability to contain smoke
Codes vs. Standards

• Codes are Intended to be Adopted as Legal Documents
  – *Enforceable* as Laws

• Standards are Intended to be Used to Meet the Requirements of Codes
  – *Unenforceable* until REFERENCED by a CODE.
Other Codes and Standards

- Many states and local jurisdictions have their own standards
NFPA 80 – 2007 Edition

• Most Common Denominator

• Establishes Basic Requirements for New Fire-Rated Door Assemblies

• Establishes Care and Maintenance Requirements
Fire Door Inspection - Background

- Fire Doors are governed by the building code and NFPA throughout design, specification, installation and occupancy permitting.
Fire Door Inspection - Background

• Once a Certificate of Occupancy has been issued, the building code is closed. The International Fire Code or Life Safety Code is now in effect for the operation and maintenance of the facility.

• Formerly, the IFC did not contain language for post-occupancy inspection of fire-rated doors
– Fire walls, fire barriers and fire partitions. Required fire walls, fire barriers and fire partitions shall be maintained to prevent the passage of fire. All openings protected with approved doors and fire dampers shall be maintained in accordance with NFPA 80.
Fire Door Inspection -- IBC

• The International Building Code is used until the certificate of occupancy is issued.

• 715.4 Fire door and shutter assemblies. Fire door assemblies and shutters shall be installed in accordance with the provisions of this section and NFPA 80.
Fire Door Inspection – NFPA 101

- 7.2.1.15.2 – Fire-rated door assemblies shall be inspected and tested in accordance with NFPA 80, Standard for Fire Doors and Other Opening Protectives.
Chapter 4

General Requirements
NFPA 80 – Chapter 4

• What Modifications Can Be Done in the Field?
  – Function Holes for Mortise Locks/Latches
  – Holes for Labeled Door Viewers
  – Round Holes for Surface Applied Hardware (up to 1” in Diameter)
    • Throughbolts
  – Wood/Composite Doors Trimmed Maximum 3/4” Undercutting
[4.1.3.2, 4.1.3.3 and 4.1.3.4]
NFPA 80 – Chapter 4

• **Signage**
  – Up to 5% of Door Face
  – Attached with Adhesives not Screws/Nails
  – Installed on Door Skin, NOT on Glass
  – Cannot Impair or Interfere with Operation
    [4.1.4]
NFPA 80 – Chapter 4

• Clearances Under Doors
  – Swinging Doors with Builders Hardware
    • Maximum Clearance of 3/4” Under Door Bottom

[4.8.4.1]
Field Modifications

• Doors
  – No Vision Panel Cut Outs
  – No Louver Cut Outs
  – No Mortise Lock Pockets
  – No Face or Edge Bores for Bored Locks
  – No Mortise Hinge Preparations

• Frames
  – No Mortise Hinge Preparations
  – No Cut Outs
Hardware for Fire-Rated Door Assemblies

Swinging Doors with Builders Hardware
Understanding Hardware

• Important to understand the role hardware applications play in fire and life safety.
Three Main Operational Requirements

• Swinging Fire-Doors with Builders Hardware Must:
  – Swing Freely
  – Be self or automatic closing or power operated
  – Positively latch when in the closed position.
Electrified Locks and Latches

- **Fail Safe Locks**
  - Unlocks upon loss of power
  - Maintains Latch

- **Fail Secure Locks**
  - Locks upon loss of power
  - Maintains Latch
Electric Strikes

- **Fail Safe Electric Strikes**
  - Unlocks upon loss of power
  - Gate is released
  - NOT permitted on fire-rated openings

- **Fail Secure Electric Strikes**
  - Locks upon loss of power
  - Gate is secured
  - Permitted on fire-rated openings
Fire Exit Hardware vs. Exit Hardware

- Aesthetically the Same
- Internally Different
- Physical Label
Fire Exit Hardware vs. Exit Hardware

No **Mechanical Dogging**
- Hex Key
- Keyed Cylinder
Fire Pin

Auxiliary fire pin mounts 6 to 12 inches above sill. Required to insure that door passes fire test since door is not secured to sill. [6.4.4.3.3]
Self-Closing Devices

Surface Mounted
Self-Closing Devices

Hotel / Motel Unit Openings
One Closing Speed
UL Listed
One Speed
Self-Closing Devices.
Two Per Leaf – Minimum
One Ball Bearing Hinge

3’0” x 7’0” maximum door size
Automatic-Closing Devices

• Magnetic Door Releases
  – Doors Held Open Electronically
  – Released Upon Signal from Fire Alarm System
  – Relies on Mechanical Door Closer for Closing Energy
Labels

• Once Removed, Cannot be Re-Applied

• Can Only be Re-Applied Under Manufacturer’s Procedures in a Licensed Shop

• Field Inspection of Testing Agency
Questions?
Annual Inspection Requirements – NFPA 80

Swinging Doors with Builders Hardware
NFPA 80 2007 – Standard for Fire Doors

Chapter 5 Care & Maintenance

5.2.1* Fire door assemblies shall be inspected and tested not less than annually, and a written record of the inspection shall be signed and kept for inspection by the AHJ.
NFPA 80 2007 – Standard for Fire Doors

Chapter 5 Care & Maintenance

5.2.3.1 Functional testing of fire door and window assemblies shall be performed by individuals with knowledge and understanding of the operating components of the type of door being subject to testing.
Chapter 5 Care & Maintenance

5.1.1.2 The requirements of this chapter shall apply to new and existing installations.
Annual Inspection of Fire Door Assemblies

• How Are Inspections Going to be Performed?

  – Paragraph 5-2.1, “…not less than annually, and a written record of the inspection shall be kept for inspection by the AHJ.”
Annual Inspection of Fire Door Assemblies

• What Do Inspectors Need to Know?
  – Immense product application and installation knowledge
    • Hollow metal doors and frames
    • Wood fire doors
    • Builders Hardware Application
  – Thorough understanding of NFPA 80 requirements
  – AHC’s and CDC’s or approx. 5 years of industry experience
Annual Inspection of Fire Door Assemblies

• Inspector’s Responsibilities
  – Status of door openings on date of inspection
  – Recommend necessary corrections
  – Providing written inspection reports
Annual Inspection of Fire Door Assemblies

• Inspectors Are Not Responsible For:
  – Making sure openings are repaired
  – Determining the correct fire-rating of door openings
  – Alert AHJ of problems
Chapter 5 Care & Maintenance

5.2.2 Performance-Based Option

5.2.2.1 As an alternate means of compliance with 5.2.1, subject to the AHJ, fire door assemblies shall be permitted to be inspected, tested, and maintained under a written performance-based program.
5.2.2.2 Goals established under a performance-based program shall provide assurance that the fire door assembly will perform its intended function when exposed to fire conditions.

5.2.2.3 Technical justification for inspection, testing, and maintenance intervals shall be documented.
5.2.2 Performance-Based Option.

5.2.2.4 The performance-based option shall include historical data acceptable to the AHJ.
MGM Grand Hotel Fire Door Inspection

Example. Without Performance-Based Option

- January 1st -- 2 inspectors start inspecting doors.
- Each inspector works 40 hours a week for a full year.
- December 31st, all doors have been inspected.
- January 1st – Start all over again.
Equation to determine acceptable level of performance:

\[ FDFR(t) = \frac{NF}{(NC \times t)} \]

- \( FDFR \) represents the Fire Door Failure Rate over a particular period of time \((t)\)
- \( NF \) represents documented failures
- \( NC \) represents total number of inspected fire doors
Example.

- \[ .020 = \frac{5}{(50 \times 5)} \]
- Over a 5-year period, 250 fire doors inspected (50 x 5), 5 determined to be failures, the building has a failure rate of 2% per year. Acceptable level performance rating of 98%.
Identifying Fire Door Assemblies

- Maintenance personnel—access to the ‘as built’ floor plans.
- AHJ’s office archived copies of floor plans
- No plans available—should physically check each door opening looking for labels.
Locating Fire Doors in Buildings

- Interior doors opening into and out of stairwells and corridors.
- Door openings placed at building separations.
- Look for labels on hinge side of door
Performing the Inspections

- Presumption of Correct Application
- Original Building, Fire and Life Safety Code Requirements
- Practical Application of Inspection Criteria
Original Building, Fire and Life Safety Requirements

• Inspectors should be cognizant of the building, fire and life safety codes that were applicable at the time of installation.
• Should not apply the capabilities, limitations and requirements for modern products to assemblies installed years ago.
• NFPA 80 standard is applicable to all existing fire door assemblies, regardless of when they were installed.
Cataloging Fire Doors

- Door Number (Code or Symbol)
- Location of Assembly in Building
- Type of Door Assembly
- Fire-Protection Rating
- Comments/Remarks
# Fire Door Assembly Index Form

## FIRE DOOR ASSEMBLY INDEX 2008

<table>
<thead>
<tr>
<th>Door Number</th>
<th>Door Type*</th>
<th>Fire-Rating</th>
<th>Door Location</th>
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<tbody>
<tr>
<td>Remarks:</td>
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**DOOR TYPE KEY**

1 - Access Door  4 - Swinging  6 - Other  8 - Other  
2 - Hinged/Swinging  5 - Vertical/Swinging  7 - Other  
3 - Rolling Steel

("White" copy is ORIGINAL  "Pink" copy is DUPLICATE COPY  "Yellow" copy is INSPECTOR’S COPY)
Fire Door Assembly Index Guide

General Information:
Use this form to list details of each fire door assembly in the building. Use the "remarks" line to make notes regarding special conditions (e.g., construction labels, certificate of construction) of fire door assemblies to facilitate the inspection process. Documentation of extraordinary fire door assemblies should be attached to the fire copies of the completed forms.

Door Number:
Each door assembly must be assigned a unique number or code, which will be used to track its performance through subsequent inspection and maintenance records.

Door Type:
Use the door type codes at the bottom of the form to identify the type of fire door assembly.

Fire-Rating:
Fire-ratings of the assemblies should be listed in minutes (e.g., 20, 30, 45, 60, 90, and 180 minutes) or in hours (e.g., 1/3, 1/2, 3/4, 1, 1-1/2, and 3 hours). Letter designations (e.g., A, B, C, D, and E) should be accompanied by the fire-protection rating expressed in minutes or hours.

Location:
Describe the location of the door assemblies within the building.

Remarks:
Note special conditions or applications of fire door assemblies.
Fire-Rated Swinging Door Inspection Survey Form

<table>
<thead>
<tr>
<th>Door Number</th>
<th>Compliant</th>
<th>Non-Compliance Code(s)</th>
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</thead>
<tbody>
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COMMENTS:

* Escapes/Doors/Alarms are to be noted below

("White" copy is ORIGINAL  •  "Pink" copy is DUPLICATE COPY  •  "Yellow" copy is INSPECTOR'S COPY)
Fire-Rated Swinging Door Inspection Survey Form

Please use the following codes to identify problems on the door openings listed on other side of page.

<table>
<thead>
<tr>
<th>FRAME</th>
<th>F1 Loose Frame</th>
<th>F2 Damaged Frame</th>
<th>F3 Rail Through on Frame</th>
<th>F4 Missing Label</th>
<th>F5 Frame is Out of Alignment</th>
<th>F6 Incorrect Glass in Sidelight or Transom</th>
<th>F7 Broken Glass in Sidelight or Transom</th>
<th>F8 Missing Glazing Bead at Light</th>
<th>F9 Missing Glazing Bead Screw(s)</th>
<th>F10 Improper Field Modification</th>
<th>F11 Incorrect Hardware</th>
<th>F12 Missing Hinge(s) in Frame</th>
<th>F13 Other</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DOOR</th>
<th>D1 Missing Door(s)</th>
<th>D2 Missing Label</th>
<th>D3 Damaged Door(s) (e.g., Dented, Bent)</th>
<th>D4 Rail Through on Doors</th>
<th>D5 Determination of Door Skin or Face</th>
<th>D6 Incorrect Glass in Light</th>
<th>D7 Broken Glass in Light</th>
<th>D8 Light ½ hole Too Large</th>
<th>D9 Loose Light Kit</th>
<th>D10 Missing Light Kit Screw(s)</th>
<th>D11 Improper Field Modification</th>
<th>D12 Incorrect Hardware</th>
<th>D13 Other</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DOOR (cont.)</th>
<th>D11 Unused Fastener Hole(s) in Frame</th>
<th>D12 Improper Ream in Door Frame</th>
<th>D13 Replace Door</th>
<th>D14 Other</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>OPERATIONAL TEST</th>
<th>T1 Door Does NOT Swing Properly</th>
<th>T2 Door Does NOT Close Completely</th>
<th>T3 Door Does NOT Stay Open Properly</th>
<th>T4 Electric Door Release Does NOT Allow Door to Close</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DOOR BOLTS</th>
<th>B1 Missing Top/Bottom Bolt(s)</th>
<th>B2 Missing Bottom/Flush Bolt(s)</th>
<th>B3 Missing Strike (Top)</th>
<th>B4 Missing Strike (Bottom)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>FIRE EXIT HARDWARE</th>
<th>E1 Missing Fire Exit Device</th>
<th>E2 Missing Latch Bolt Assembly</th>
<th>E3 Missing Strike Bolt</th>
<th>E4 Missing Strike (Bottom)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DOOR CLOSERS</th>
<th>C1 Missing Door Closer(s)</th>
<th>C2 Leaking Door Closer(s)</th>
<th>C3 Missing Strike</th>
<th>C4 Broken Strike Plate</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>MISCELLANEOUS</th>
<th>M1 Missing Threshold Saddle</th>
<th>M2 Incorrect Clearance of Door to Frame</th>
<th>M3 Incorrect Clearance of Frame to Frame</th>
<th>M4 Incorrect Clearance of Door to Door</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>LOCKS</th>
<th>L1 Missing Lock (or latch)</th>
<th>L2 Broken Lock or Latch</th>
<th>L3 Non-DDR Rated Latch Bolt</th>
<th>L4 Broken Strike Plate</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Hinges/Pivots</th>
<th>H1 Missing Hinge(s)</th>
<th>H2 Incorrect Hinge(s)</th>
<th>H3 Loose Hinge(s)</th>
<th>H4 Missing Screws(s)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Other</th>
<th>O1 Missing Tension Bar</th>
<th>O2 Overhead Hold-open (Surface or Corroded)</th>
<th>O3 Other</th>
</tr>
</thead>
</table>

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# Inspection Checklist Form

**INSPECTION CHECKLIST 2008**

<table>
<thead>
<tr>
<th>Door Number</th>
<th>Fire-Rating</th>
<th>Door Location</th>
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<tbody>
<tr>
<td></td>
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</table>

**FRAME**
- Loose Frame
- Damaged Frame
- Rail-through Frame
- Missing Label
- Frame is Out of Alignment
- Incorrect Gap in Sidewall or Transom (misaligned)
- Broken (Stuck in Sidewall or Transom)
- Missing Glazing Panel at Light (without a door)
- Missing Glazing Panel at Light (with a door)
- Improper Field Modification (Explain)
- Inscribed Hardware Preparation (Explain)
- Unused Fastener Hole(s) in Frame
- Other

**DOOR (cont.)**
- Loose Light Kit
- Missing Light Fixtures
- Improper Field Modification (Explain Modification)
- Inscribed Hardware Preparation (Explain)
- Unused Fastener Hole(s) in Frame
- Other

**OPERATIONAL TEST**
- Door Does NOT Swing Properly
- Door Does NOT Close Completely
- Door Does NOT Secure Latch
- Leaking Door Assembly, Door Frame Allows Air
- Other

**DOOR BOLTS**
- Missing Top Flash Bolt
- Missing Bottom Flash Bolt
- Missing Strike (Bottom Bolt)
- Bottom Bolt does NOT Secure Latch
- Missing Strike (Top Bolt)
- Missing Strike (Bottom Bolt)
- Bottom Bolt does NOT Secure Latch
- Other

**HINGES/PVOTS**
- Missing Hinge(s)
- Incorrect Hinge(s)
- Loose Hinge(s)
- Missing Screws(s)
- Replace Hinge(s)
- Other

**LOCKS**
- Missing Lock
- Incorrect Latch Bolt Throw
- Non-cylindrical Latch Bolt
- Latch Bolt Nearly Missing
- Loose Latch Panel or Keypad
- Latch Bolt Does NOT Engage Strike Plate
- Meeting Inside or Meeting Panel
- Meeting Panel or Meeting Strike
- Meeting Panel with Strike Panel
- Other

**FIRE EXIT HARDWARE**
- Missing Fire Exit Device
- Missing Latch Bolt Assembly (Top)
- Meeting Latch Bolt Assembly (Bottom)
- Meeting Strike
- Meeting Vertical Rod (Top)
- Meeting Vertical Rod (Bottom)
- Latch Bolt (Top)
- Latch Bolt (Bottom)
- Latch Bolt Nearly Missing
- Lever or Knob
- Other

**MISCELLANEOUS**
- Missing Threshold/Saddle
- Incorrect Clearance (Top of Door to Frame)
- Incorrect Clearance (Bottom Edge to Frame)
- Tightened Cleat (Lock Edge to Frame)
- Improper Clearance (Door Sweep to Frame)
- Incorrect Clearance (Between Doors)
- Missing Atrium(s)
- Missing Cylindrical Locking/Smoke Seal
- Kick-down Door Holder
- Door Wedge
- Door Stop with Hold Open (Manual)
- Protective Panel(s) Too Large
- Protective Panel(s) Missing Screws
- Signage Too Large
- Signage, Screwed/Attached to Door

(“Red” copy is ORIGINAL, “Pink” copy is DUPLICATE COPY, “Yellow” copy is INSPECTOR’S COPY)
Three Main Operational Requirements

• Swinging Fire-Doors with Builders Hardware Must:
  – Swing Freely
  – Be self or automatic closing or power operated
  – Positively latch when in the closed position.
NFPA 80 2007 – Standard for Fire Doors

5.2.4.2 As a minimum, the following items shall be verified:

(1) No open holes or breaks exist in surfaces.
(2) Glazing, vision light frames, and glazing beads are intact.
(3) The door, frame, hinges, hardware, and noncombustible threshold are secured, aligned, and in working order.
(4) No parts are missing or broken.
(5) Door clearances do not exceed the clearances listed.
NFPA 80 2007 – Standard for Fire Doors

• 5.2.4.2 As a minimum, the following items shall be verified:

  (6) The self-closing device is operational
  (7) If a coordinator is installed, the inactive leaf closes before active leaf.
  (8) Latching hardware operates and secures the door when it is in the closed position.
• 5.2.4.2 As a minimum, the following items shall be verified:
  (9) Auxiliary hardware items that interfere or prohibit operation are not installed.
  (10) No field modifications to the door have been performed.
  (11) Gasketing and edge seals are inspected.
Real-Life Examples of Code Violations

NFPA 80
Standard for
Fire Doors and Other
Opening Protectives
2007 Edition
5.2.4.2 As a minimum, the following items shall be verified:
(1) No open holes or breaks exist in surfaces
5.2.4.2 As a minimum, the following items shall be verified:

(2) Glazing, vision light frames, and glazing beads are intact
NFPA 80 2007 – Standard for Fire Doors

- Inspect that glazing beads are present; fastened to frame. Verify that fasteners are tightened.
- Inspect glazing materials/panels. Observe any broken or damaged material.
- Labeled fire resistant, installed in labeled or tested frames.
5.2.4.2 As a minimum, the following items shall be verified:

(3) The door, frame, hinges, hardware, and noncombustible threshold are secured, aligned, and in working order
NFPA 80 2007 – Standard for Fire Doors

(3) The door, frame, hinges, hardware, and noncombustible threshold are secured, aligned, and in working order.
5.2.4.2 As a minimum, the following items shall be verified:

(4) No parts are missing or broken.
NFPA 80 2007–Standard for Fire Doors - Chapter 5 - Care & Maintenance

(4) No parts are missing or broken.
5.2.4.2 As a minimum, the following items shall be verified:
(5) Door clearances do not exceed the clearances listed.
NFPA 80 2007 – Standard for Fire Doors

Door clearances at the door edge to the frame, on the pull side of the door, do not exceed clearances listed in 4.8.4.1 and 6.3.1.7

- **Hollow metal door** - 1/8” (+/- 1/16”), door to frame and at meeting stiles of pairs – 6.3.1.7

- **Wood door** - 1/8” maximum, door to frame and at meeting stiles of pairs – 6.3.1.7

- 3/4” between bottom of door and floor or threshold – 4.8.4.1
Pair of Doors 1/8” Clearance
5.2.4.2 As a **minimum**, the following items shall be verified:

(6) The self-closing device is operational.
5.2.4.2 As a minimum, the following items shall be verified:
(7) If a coordinator is installed, the inactive leaf closes before active leaf.
Coordinators

Soffit Mounted

Gravity Type
5.2.4.2 As a minimum, the following items shall be verified:
(8) Latching hardware operates and secures the door when it is in the closed position.
5.2.4.2 As a minimum, the Following items shall be verified:

(9) Auxiliary hardware items that interfere or prohibit operation are not installed.
NFPA 80 2007 – Standard for Fire Doors

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NFPA 80 2007 – Standard for Fire Doors

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(9) Auxiliary hardware items that interfere or prohibit operation are not installed.
“This Door Does Not Work! Do Not Use It”
5.2.4.2 As a minimum, the following items shall be verified:

(10) No field modifications to the door have been performed.
5.2.4.2 As a minimum, the following items shall be verified:

(10) No field modifications to the door have been performed.
5.2.4.2 As a minimum, the following items shall be verified:

(11) Gasketing and edge seals are inspected.
Bonus Coverage

Heat Release Mechanism
Bonus Coverage
Bonus Coverage
Bonus Coverage
NFPA 80 – Annual Fire Door Inspection
Foundation Published Guides

- AHJ Guide & Owner’s Guide
- Reference Guide for Inspecting Swinging Fire Doors with Builders Hardware
Summary

• Not possible to list all of the applications of doors, frames and builders hardware products for swinging fire door assemblies.

• Covered the most commonly used products and give you, the AHJ, GUIDELINES on how to accurately evaluate the operating condition of swinging fire door assemblies.
Summary

• Many swinging fire door assemblies can be:
  – Complicated.
  – Contain sophisticated hardware products.
  – These assemblies require an immense level of expertise to coordinate their functions with their fire-protection properties.
Summary

• New fire-rated products are:
  – Continually being developed.
  – Requires inspectors to stay current on their knowledge and understanding of these product’s applications, capabilities and limitations.
For More Information
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