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A Guide To Using NFPA 80's Key Concepts & NFPA 80 Quick Reference Index For Swinging Fire Doors

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Tips for Conducting NFPA 80's Door Safety Inspections,
and
Re-Labeling of Swinging Fire Doors

Based on
NFPA
80
2022

"Ensuring egress and fire doors are in a **CONSTANT STATE OF READINESS** to do their one job—Provide Safety."

Safe Doors Save Lives Foundation

A Guide To Using NFPA 80's Key Concepts & NFPA 80 Quick Reference Index For Swinging Fire Doors

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The Safe Doors Save Lives Foundation, Inc., is a 501(c)(3) non-profit educational company establishing best practices and delivering egress and fire door safety education, training, and certification. Our programs and services serve the needs of architects, building code officials, building owners and facility management personnel, contractors, egress and fire door inspectors, installers, manufacturers, and suppliers. As a non-member-based company, we serve everyone involved with egress and fire door safety!

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Thank you for your consideration.

About the Author

Keith E. Pardoe's career in the swinging door industry spans nearly 40 years. In the mid-1980s, he began working for door and hardware distributor companies. During this time, he earned his *Architectural Hardware Consultant* (AHC) certification in 1991 and his *Certified Door Consultant* (CDC) certification in 1994, professional certifications from the ***Door and Hardware Institute*** (DHI). In early 1996, Keith joined the staff of DHI, where he soon became the *Director of Education and Certification,* a position he held for most of his 18+ years at DHI. He received DHI's *Distinguished Honors* (the D in DAHC) award in 2004. He was instrumental in building and launching DHI's *Fire Door Assembly Inspector* (FDAI)—the first training program for NFPA 80's door safety inspections—in 2007.

In 2004, Keith was appointed to the NFPA technical committee on *Fire Doors and Windows (FDW-AAA)*—the committee responsible for NFPA 80, *Standard for Fire Doors and Other Opening Protectives,* and NFPA 105, *Standard for Smoke Doors and Other Opening Protectives.* In 2015, he was appointed Chair of the NFPA 80/105 technical committee, a position he currently holds.

In the summer of 2014, Keith retired from DHI to pursue his consulting and training business, ***Pardoe Consulting, LLC.*** He authored a handbook titled, *Inspecting and Maintaining Swinging Doors* in 2016, which was subsequently published by the *American Society for Healthcare Engineering* (ASHE). In 2017, he became a member of *ASHE's Faculty* team, and he founded ***Door Safety, LLC,*** and launched its *Door Safety Inspector* (DSI) and *Door Safety Consultant* (DSC) certification programs.

In 2023, he and his colleagues founded the ***Safe Doors Save Lives Foundation, Inc.,*** a 501(c)(3) non-profit company to continue Door Safety's work.

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**This supplemental index provides Door Safety Inspectors (DSIs) and other users a means of quickly researching NFPA 80's provisions and requirements for the types of fire door assemblies specified in Chapter 6, Swinging Doors with Builders Hardware of the 2022 edition. Insert a copy of this index into your NFPA 80.*

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Referenced Publication(s)

For application of the information presented herein, refer to the source publications when using this guide. Citations listed in this guide are based on the following publications:

International Code Council (ICC)

- *International Building Code* (IBC), 2021 edition
- *International Fire Code* (IFC), 2021 edition

National Fire Protection Association (NFPA)

- NFPA 1, *Fire Code,* 2021 edition
- NFPA 80, *Standard for Fire Doors and Other Opening Protectives,* 2022 edition
- NFPA 101, *Life Safety Code,* 2021 edition
- NFPA 105, *Standard for Smoke Doors and Other Opening Protectives,* 2022 edition

NFPA provides free access to its code and standard publications through its website at www.NFPA.org. Users need to have an NFPA website account, which is free—membership is not required.

TIP

To go directly to the landing pages for a specific NFPA code or standard add "/[document number]" to the URL address in your browser app. For example, entering www.NFPA.org/80 takes you directly to the NFPA 80 pages. Click on the FREE ACCESS button, and follow the on-screen instructions.

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Introduction

NFPA 80, *Standard for Fire Doors and Other Opening Protectives,* governs the installation, inspection, testing, and maintenance of fire doors. It contains general and technical details—sometimes minute—specific to each type of fire door. First-time users of NFPA 80 quickly become frustrated when they attempt to find information in it, due to their unfamiliarity with its organization. Frequently, they ask: *"Where does NFPA 80 say 'x'?"* This guide alleviates their frustration by supplementing NFPA 80 and providing insight into its use and applications.

Codes and standards are reference books, but unlike novels, these books don't tell stories. Instead, we bring the *stories* to these books through the questions and conditions we research. Knowing where to find the information we need in codes and standards when we need it is the secret to using them. Determining the correct (and complete) resolutions to our queries involves identifying all the references relevant to specific conditions, often including provisions and requirements in related codes and standards. Rarely does a single reference provide a one-size-fits-all answer to our questions.

Answers found in codes and standards are subjective to the conditions and circumstances we research. To find ***complete answers,*** we need to ask questions in the proper context. Consider the following scenario:

Q: *Can fire exit hardware be used on swinging fire doors?*

A: That's a general question, and the quick answer is *yes;* according to paragraph 6.4.4.1 in NFPA 80, fire exit hardware is allowed to be used on swinging fire doors. However, ***the complete answer*** is discovered only after continuing on to read the following paragraph 6.4.4.2 and its subparagraphs requiring fire doors to have a special label stating: *"Fire Door To Be Equipped With Fire Exit Hardware."* Still, other references apply to this question; paragraphs 4.3.3 and 4.3.4 also refer to the special label requirement. After reading all the relevant references, ***the complete answer*** is: *Yes, fire exit hardware can be used only on swinging fire doors bearing labels stating: "Fire Door To Be Equipped With Fire Exit Hardware."*

The initial answers to our queries frequently spawn a cascade of additional questions, narrowing its context and requiring more research until we reach the specific conditions or circumstances that started our quest. Returning to the question in the scenario above, it lacks context, which might not lead us to the completely correct answer. A better question might be: *"When is fire exit hardware required to be used on swinging fire doors?"* This question makes us consider the occupancy use group in which the door in question is located first, thereby making us start our research in the applicable building, fire, or life safety code before reading NFPA 80's requirements.

Veteran users of NFPA 80 know to look for related references in its other chapters and sections (and annexes), as well as in the applicable code(s), to find complete answers. Our custom quick reference index maps NFPA 80's provisions and requirements by linking related sections by topic, providing expert-level knowledge to all users. Take a few minutes to look up the answer to the question above using our custom index.

In addition to learning how to find information in codes and standards, knowing when and how to apply key concepts of a code or standard correctly is an essential skill. This guide lays out *NFPA 80's Key Concepts* supported by references and provides context for their application. For example, NFPA 80's first Key Concept is that fire doors must be kept in ***A STATE OF CONSTANT READINESS***. You won't find those precise words in NFPA 80, but it is nonetheless NFPA 80's undisputed overarching Key Concept. That Key Concept is the purpose behind NFPA 80's door safety inspections: fire doors must be ready to do their one job!

Study *NFPA 80's Principles of Door Safety Inspections* included in this guide. These principles help you apply NFPA 80's inspection and testing requirements to new, existing, and older existing fire doors correctly.

As you use this guide, we encourage you to mark up your copy of NFPA 80 with notes in the margins, cross-referencing related sections reminding you to read all the information. It's been said that an unmarked code book is an unused code book. Marking up your books makes them work for you. Insert this guide in the back of your copy of NFPA 80, and refer to it often.

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LEARN THESE TERMS

Acceptance Testing[1]—*Acceptance Testing* of fire doors confirms the doors comply with NFPA 80 and are installed and operate correctly. *Acceptance Testing* occurs upon completion of installation and maintenance work affecting the door's operation. *Acceptance Testing* records are retained for the life of the installation.

Field Modifications[2]—*Field Modifications* to fire doors are any work not explicitly allowed for installation or routine maintenance. Any work other than drilling round holes for fasteners is a *Field Modification.*

Field Labeling[3]—*Field Labeling* of fire doors refers to replacing the manufacturers' original labels on existing fire door frames and doors (and some hardware components) due to painted-over and missing labels. Generally, field-applied labels are not equivalent to the manufacturers' original labels. Field labeling services might be performed by a nationally recognized testing laboratory (NRTL) or by non-testing lab providers. The AHJ's approval of *Field Labels* should be confirmed before applying these labels. NFPA 80 does not require defaced and missing labels to be replaced, it allows replacement labels to be field applied, subject to the AHJ's approval.

Labeled[4]—Labeled refers to the manufacturers' applied labels to door frames, doors, and hardware components under factory conditions or in their authorized-licensed shops and under the surveillance of an NRTL. Manufacturers' labels provide visual evidence that the door frames, doors, and hardware components are identical to their counterparts that passed rigorous fire door testing.

Listed[5]—In the context of NFPA 80, *Listed* refers to door frames, doors, and hardware components that are tested for use as part of a fire door assembly by a NRTL.

Listings[6]—*Listings* (aka manufacturer's listings) refer to how door frames, doors, and hardware components were tested for use on fire door assemblies by NRTLs. *Listings* contain limitations (e.g., construction, size, preparations, and maximum hourly fire ratings) that are specific to each component. Typically, the *Listings* of the door leaves determine the assemblies' capabilities, limitations, and overall fire ratings. ***Note: NRTLs have many categories of listings for appliances, computers, and other equipment unrelated to fire doors—only components Listed for use on fire door assemblies can be used.***

Manufacturer's Inspection Service Procedure[7]—*Manufacturer's Inspection Service Procedure* refers to the oversight process of modifying specific fire-rated components (e.g., hollow metal door frames and doors, and wood fire doors) in authorized-license shops outside of the manufacturer's direct control. Modification work performed on door frames and doors is subject to the manufacturers' fabrication and technical requirements, and performed *Under Label Service,* audited by an NRTL.

Periodic Inspection and Testing[8]—*Periodic Inspection and Testing* refers to the ongoing process of inspecting and maintaining fire doors throughout their service lives. New and existing fire doors (of all generations) are subject to NFPA 80's *Periodic Inspection and Testing* requirements.

Qualified Person[9]—*Qualified Person* refers to individuals having the knowledge and experience to inspect and test fire doors correctly. A *Qualified Person* might have professional certification(s), but certification is only one method for meeting this standard.

Under Label Service[10]—*Under Label Service* refers to modification work made to fire-rated door frames and doors in authorized-licensed shops performing such work in accordance with the *Manufacturer's Inspection Service Procedure.* Separately, these shops subscribe to oversight through periodic and unannounced auditing by one or more NTRLs.

1 See *Section 5.2.3 Acceptance Testing,* paragraphs 5.5.10, A.5.5.10, 6.1.1.3.2 in NFPA 80.
2 See *Section, 5.1.5.1 Field Modifications,* definition 3.3.48 *Field Modifications,* and A.3.3.48 in NFPA 80.
3 See *Section, 5.1.4 Field Labelin*g and paragraph A.4.2.1 in NFPA 80.
4 See definition 3.2.3 *Labeled*, *Section 4.2 Listed and Labeled Products,* and paragraphs 4.2.4 and *Section 6.5.1 General* in NFPA 80.
5 See definition 3.2.4 *Listed* and paragraph A.3.2.4 in NFPA 80.
6 See *Section 6.5.1 General* in NFPA 80.
7 See paragraphs 4.4.3.1, A.4.4.3.1, and 5.1.5.2.1 in NFPA 80.
8 See *Section 5.2.4 Periodic Inspection and Testing,* paragraphs A.5.2.4, 5.1.1.2, and 5.1.1.3 in NFPA 80.
9 See definition 3.3.99 *Qualified Person,* and paragraphs 5.2.3.1 and A.5.2.3.1 in NFPA 80.
10 See paragraph 5.1.5.2.1 in NFPA 80.

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A CONSTANT STATE OF READINESS

Fire doors have one job: preventing a fire from spreading! Of course, swinging fire doors serve other functions (i.e., providing security, privacy, and convenience). However, fire doors exist because the building codes strategically mandate their placement to prevent fires from spreading by maintaining the integrity of the fire resistance ratings of the walls and barriers in which they are installed. Malfunctioning and non-compliant swinging fire doors compromise the fire resistance ratings of fire walls and barriers. Accordingly, fire doors must be kept in ***A CONSTANT STATE OF READINESS*** since we don't know when or where a fire might occur.

Swinging Doors with Builders Hardware, as specified in Chapter 6 of NFPA 80, are specially engineered component-based systems requiring the highest level of attention constantly. From selection and specification to detailing and ordering to manufacturing and fabrication to installation and maintenance, fire doors demand nothing less than the highest attention to the details from everyone involved. Appropriately, NFPA 80's inspection, testing, and maintenance requirements ensure fire doors are kept in ***A CONSTANT STATE OF READINESS,*** and able to do their one job.

Learning to interpret and apply NFPA 80's provisions and requirements for swinging fire doors entails knowing its key concepts and where to find application-specific information when needed. Former and current building, fire, and life safety codes in the United States of America and Canada rely on NFPA 80's requirements to ensure fire doors are installed, inspected, operationally tested, and maintained correctly throughout their service lives. While the information in this publication comes from the 2022 edition of NFPA 80, many of NFPA 80's key concepts and fundamental requirements have been in place for decades.

First-time users of earlier editions of NFPA 80 might not have known that it was necessary to navigate between the base and door chapters. NFPA 80's content was reorganized in the 2007 edition to comply with NFPA's *Manual of Style*. Since then, chapters 1 through 5 form NFPA 80'S base chapters; they contain information, provisions, and requirements that apply to some or all the door chapters—chapters 6 through 16. For example, most of the provisions and requirements of *Chapter 4, General Requirements,* apply to multiple types of doors (e.g., swinging doors with builders hardware, rolling steel doors, and horizontally sliding fire doors). Similarly, *Chapter 5, Inspection, Testing, and Maintenance* provisions requirements, also apply to all the door chapters. Frequently, users knew where to find the main requirements for the doors with which they were working, but they didn't know to look for related information in the other chapters.

Perhaps the most helpful improvement in the 2022 edition of NFPA 80 is the addition of directions at the beginning of each door chapter referring users to related provisions and requirements in the base chapters, thereby creating links and making the standard more user-friendly. These links point to requirements such as *Acceptance Testing* of newly installed fire doors and upon completion of maintenance work affecting the operation of the doors (for new and existing doors) and *Periodic Inspection and Testing* of existing fire doors.

Even though the 2022 edition includes reciprocal links between door and base chapters, NFPA 80 has always required fire doors to be correctly installed, inspected, and maintained, requiring users to apply related chapters' provisions and requirements. For instance, the 1986 edition was the first to include the now-familiar annex sections; before then, these sections were called appendixes. *Chapter 1, General,* contained the administration requirements, definitions (today's Chapter 3 content), and technical requirements for fire doors and windows (today's Chapter 4 content). *Chapter 15, Care and Maintenance* (today's Chapter 5 content), required hardware to be inspected frequently and repairs to be made immediately (see 15-2.1 and A-15-2.1, NFPA 80, 1986). *Section 1112, Care and Maintenance,* of the 1941 edition of NFPA 80 had essentially the same requirements as the 1986 edition, although the phrasing varied slightly. In that same edition, *Section 5106, Care and Maintenance*—for exterior fire doors—required the doors to *"...be tested frequently and maintained in perfect working order."* Irrespective of the phrasing, NFPA 80 has always required fire doors to be correctly installed and, inspected, tested, and maintained throughout their service lives; it's been a key concept for over eighty (80) years.

Building owners and property management personnel are responsible for carrying out NFPA 80's ongoing inspection, testing, and maintenance for their fire doors; they have borne this responsibility throughout the years, although sometimes unknowingly.

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A common misconception among laypeople concerning swinging fire doors is that the labels on the doors indicate the doors are code-compliant and that they only have to close and latch. The fallacy of this misconception is that laypeople are unaware of all the code provisions and requirements affecting swinging fire doors and the myriad array of components comprising swinging fire doors. Labels on any fire door indicate the doors or other labeled components (e.g., hinges, latches, and closing devices) are identical in materials, construction, and fabrication to their counterparts that passed fire door testing.[11] Fire ratings of swinging door assemblies are only valid when all the required components are present and installed correctly *and the doors function as required by the codes.*[12]

Unlike rolling steel and horizontally sliding fire doors, swinging fire doors are subjected to tampering frequently by the building's occupants. Self-closing swinging doors are designed to be kept closed, thus becoming obstacles to people moving through the buildings. Whether it's the constant resistance of the springs in closing devices felt by people as they open doors, or it's merely the act of having to open these doors every time that becomes the point of annoyance, some people are compelled to tamper with the doors to prevent the doors' code-mandated self-closing operation by blocking doors open or disabling closing devices. Similarly, some self-closing swinging fire doors have latching devices with locking functions requiring a key to open the doors from the entry side every time, making the use of keys a nuisance when users want to open the door; users defeat the locking function by taping latch bolts open or blocking the strike plates to prevent latching. They don't realize the potential consequences of tampering with swinging fire doors' self-closing and latching operations. In either instance, tampering with the code-mandated operational functions (e.g., self-closing and positive latching) prevents swinging fire doors from doing their one job.

Another misconception is that fire doors are installed correctly and are code-compliant before owners take possession of their new buildings. Some architects, contractors, and installers (and owners) reinforce this misconception when they say, *"...the AHJ didn't find anything wrong..."*—they argue that the fire doors must be compliant since the AHJs didn't cite any problems. While this opinion might seem logical initially, it places an undue amount of responsibility on AHJ's shoulders since few AHJs have the time and expertise to thoroughly inspect each fire door on every job.

NFPA 80's door safety inspections ensure fire doors are kept in ***A CONSTANT STATE OF READINESS.*** Since the 2007 edition of NFPA 80, fire doors (of all types) must be acceptance tested upon installation and thereafter *Periodically Inspected and Tested "...not less than annually."*[13] Even so, many AHJs do not enforce NFPA 80's requirement for *Acceptance Testing* of newly installed fire doors, which should occur before owners take possession of their new buildings. *Acceptance Testing* of new fire doors ensures the doors are installed and functioning correctly; deficiencies are corrected before owners take possession. Architects should require *Acceptance Testing* of fire doors to be completed by competently trained fire door inspectors upon the date of substantial completion so that any corrective actions are made before owners take possession. Likewise, AHJs should review the *Acceptance Testing* records before signing off on the Certificate of Occupancy. *Periodic Inspection and Testing* ensure fire doors are being maintained and working correctly and altered functions of swinging fire doors—due to user tampering—are discovered and corrected in a timely manner.

Existing Buildings

Inspecting swinging fire doors in existing buildings is at least equally important, if not more so, since the maintenance of many existing fire doors has been neglected for years. Fire codes also rely on NFPA 80's provisions and requirements, which is why NFPA 80's door safety inspections apply to new ***and existing installations*** since the 2007 edition.[14] AHJs should routinely request to see *Periodic Inspection and Testing* reports from building owners and property management personnel to ensure the fire doors are kept in ***A CONSTANT STATE OF READINESS.***

Summary

With the above in mind, taking the time to learn NFPA 80's door safety inspection requirements and how they apply to new, existing, and older existing fire doors is worthwhile. Study each of *NFPA 80's Key Concepts* and markup your copy of NFPA 80 accordingly. Everyone involved with swinging fire doors needs to expand their frame of reference to include older existing doors by following the second principle of performing NFPA 80's door safety inspections.

11 See paragraph 4.2.4 in NFPA 80.

12 See *Section 6.5.1 General, Section 6.5.2 Manufacturers' Instructions,* and paragraphs 5.1.2.1, A.5.1.2.1, 5.1.2.2, and *Section 6.1.4 Operations of Doors* in NFPA 80.

13 See *Section 5.2.3 Acceptance Testing* and *Section 5.2.4, Periodic Inspection and Testing,* and paragraphs 6.1.1.1.2, 6.1.1.2, and 6.1.1.3.2 in NFPA 80.

14 See paragraphs 5.1.1.2 and 6.1.1.2 in NFPA 80; paragraphs 12.4.1 and 12.4.2.2 in NFPA 1; and, sections 701.6 and 705.2 in *IFC.*

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NFPA 80'S KEY CONCEPTS

NFPA 80 is a standard governing installing, inspecting, testing, and maintaining of opening protectives, including fire doors, curtains, and dampers; it's been used since 1911, and its roots date back to 1897. Understandably, NFPA 80 can't capture details of every opening protective component, especially those comprising swinging doors with builders hardware used over the past century. The two overarching Key Concepts in NFPA 80 are that (1) the door assemblies and components are installed in accordance with their ***listings***—*how they were tested*—and (2) they are installed in accordance with their installation instructions. *(See Concept 4 below.)* It's important to know that listings and installation instructions of fire doors and their components supersede NFPA 80's technical requirements because they are specific to the components' capabilities and limitations. *(See Concept 7 below.)*

Knowing NFPA 80's key concepts, and where to find them, is essential for interpreting and applying its provisions and requirements to new and existing swinging fire doors. Following is a list of NFPA 80's key concepts (in no particular order):

1. Fire door and fire window assemblies must be kept in ***A CONSTANT STATE OF READINESS*** throughout the lives of their installations. *(See 5.1.2.1, A.5.1.2.1, Section 5.2.3, and Section 6.1.4. See also NFPA 80's Principles of Door Safety Inspections.)*
2. Fire door assemblies must be inspected and maintained in accordance with the standards under which they were installed. Older existing doors—doors twenty-five (25) years and older—should be allowed to remain in service, provided they are in working condition; there are no expiration dates on fire doors. *(See 5.1.1.3(1), A.5.1.1.3(1), 5.1.1.3(3), A.5.1.1.3(3), and A.1.4—This concept first appeared in the 1981 edition. See also NFPA 80's Principles of Door Safety Inspections.)*
3. NFPA 80 mandates that all fire doors and windows be periodically inspected and tested *"...not less than annually,"* but it doesn't require every fire door and window to be inspected at the same time; the inspections and testing can be spread out. Commensurate with other NFPA standards, *"...not less than annually"* means not less than nine (9) months and not more than fifteen (15) months between formal inspections. *(See 5.2.4.1, A.5.2.4.1, and definition 3.3.5 Annual Frequency.)*
4. Every component installed on swinging fire door assemblies must be listed and/or labeled and installed in accordance with its listing(s) and installation instructions. *(See Sections 6.5.1, 6.5.2, 4.2.6, 4.2.1, and A.4.2.1.)*
5. Acceptance testing of new swinging fire doors must be conducted upon completion of installation (i.e., before owners take possession) and upon completion of maintenance affecting the operation of the doors. *(See 5.2.1, A.5.2.1, 6.1.1.2, 5.5.5(2), 5.5.10, A.5.5.10, and 6.1.1.3.2.)*
6. Periodic inspection and testing of existing swinging fire doors is the responsibility of the management of the property (e.g., building owners and facility management personnel). *(See A.5.2 and K.6—This concept first appeared in the 1941 edition.)*
7. NFPA 80's provisions and requirements are general and subject to modification by the capabilities and limitations of specific products, their listings, and installation instructions. *(This concept is implied throughout NFPA 80 when you read statements such as* ***"...unless otherwise tested," "...as tested by the manufacturer,"*** *and* ***"...in accordance with its published listings and installation instructions"****—see 6.5.1 and 6.5.2.)*
8. Fire door assemblies, including individual components, shall be installed in accordance with how they were tested by their respective manufacturers and installation instructions. *(See 6.5.1 and 6.5.2.)*
9. The listings of the door leaves—*how they were tested*—determines the type, size, and placement of glass and glazing materials in the doors, and the hardware applications permitted to be installed on the doors. *(See 6.5.1, 4.4.1, A.4.4.1, 4.4.3, A.4.4.3, 4.4.3.1, A.4.4.3.1, 4.4.5, A.4.4.5, Table 4.4.5, 4.4.5.1, 6.4.4.8.4, 6.4.4.11, and A.6.4.4.11.)*
10. Door frames and doors are not required to have matching hourly fire ratings. *(See A.6.3.1.1—**This concept first appeared in the 1981 edition, but has been industry-practice for over a century. See also, 4.2.1.4.1 and 4.2.1.4.2.)***

(Continued)

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NFPA 80'S KEY CONCEPTS

11. The fire protection ratings of door assemblies are valid when all of the required components are installed in accordance with their listing(s) and installation instructions, and the doors function as required by the codes. *(See definition 3.3.51 Fire Door, paragraphs A.3.3.51, A.4.3.1, 4.3.2, 5.1.2.1, A.5.1.2.1, 5.1.2.2, and Sections 6.1.4, 6.4.1.4, A.6.4.1.4, 6.5.1, and 6.5.2.)*

12. Swinging door assemblies, as specified in NFPA 80, Chapter 6, are permitted to have components from different manufacturers, except where restricted by individual published listings. *(See 4.2.6.1, 4.2.6.2, 4.3.2, Section 5.2.3, A.5.2.3.1, 5.2.3.5.2, 6.5.1, and 6.5.2.)*

13. The fire protection rating of a door assembly is void when any of the required components are missing, malfunctioning, or broken. *(See 6.5.1 and A.3.3.51.)*

14. Swinging door assemblies can be comprised of components tested, labeled, and listed by different laboratories. *(See 4.2.6.2 and A.4.2.6.2—this concept first appeared in the 1990 edition, and it has been industry practice for more than eighty (80) years.)*

15. Generic products that are not labeled or otherwise marked are permitted, provided they comply with NFPA 80's specifications. *(See 4.2.5—This concept first appeared in the 1970 edition.)* ***Note: Labels on doors installed before the mid-1960s covered the hinges, latching hardware, and closing devices; many of these components do not have any markings or labels but are listed for use on fire door assemblies.***

16. New provisions and requirements in any edition of NFPA 80 are not applicable to existing doors that were installed—or new doors that were approved for installation—under earlier editions, unless the AHJ determines there is a distinct hazard to people or property. *(See 1.4.2, 1.4.3, and A.1.4.)*

17. Self-closing swinging fire doors must close completely from the fully open and any partially open position and latch positively. *(See 6.1.4.2.1, 6.4.1.4, A.6.4.1.4, 5.2.3.5.2 (7).)* ***Note: Visual inspection item 5.2.3.5.2(7) only verifies that the door's free movement is not impaired or prevented by interference of floor covering materials (i.e., hung up on carpet) or malfunctioning closing devices when doors are opened to the full extent of their travel.***

18. Swinging fire doors must be kept closed or arranged for automatic-closing. *(See paragraphs 5.1.2.2, A.5.2, and K.6, and Section 6.1.4.)*

19. Auxiliary devices that impair or impede the movement of swinging fire doors or that impair, inhibit, or alter the function(s) of hardware components void the fire ratings of the assemblies. *(See A.5.2.3.5.2 (11).)*

20. Because the paths of travel to and from fire door assemblies are required to be kept clear of obstructions, the fire protection ratings of door assemblies are permitted to be less than the fire-resistance rating of the walls in which they are installed. *(See Section 5.1.2.3 Prevention of Door Blockage, and paragraphs A.5.1 and K.4.)*

(Continued)

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NFPA 80'S KEY CONCEPTS

21. Installation work for new fire doors and maintenance work to keep existing fire doors in ***A CONSTANT STATE OF READINESS*** (e.g., replacing hardware components, glass and glazing materials, and door leaves) are not field modifications. *(See definition 3.3.48 Field Modifications, A.3.3.48, A.5.1.5.1, and Section 5.1.5.2.)*

22. Swinging fire doors must swing easily and freely, close completely, and positively latch regardless of their level of fire protection ratings. *(See 6.1.4.2.1, 6.1.4.3.1, 6.4.1.4, A.6.4.1.4, and 6.4.1.5.)*

23. Every swinging fire door, regardless of the level of fire protection rating, must have positive latching hardware. *(See 4.2.1.2, 4.3.3, 6.1.4.2.1, 6.4.1.4, A.6.4.1.4, 6.4.4.4, 6.4.4.4.3, 6.4.4.5, 6.4.4.6.1, A.6.4.4.6.1, 6.5.1 and 5.2.3.5.2(9)).* ***Note: Labels on fire doors installed before the mid-1960s might not include latch throw dimensions since many of the labels of that era covered hinges, latching hardware, and closing devices.***

24. NFPA 80 specifies the installation, inspection, operational testing, and maintenance provisions and requirements for fire doors, not their location in buildings or their required level of fire protection ratings. *(See 1.2.3, and A.1.2.3; the building, fire, and life safety codes mandate fire protection ratings for swinging doors and their placement in buildings and structures.)*

25. The hourly ratings of some labeled door hardware components (e.g., continuous aluminum hinges, bottom mounted gasketing components) limits their use to swinging fire doors with the same or lesser hourly ratings. *(See A.6.4.3. See also, Door Safety's Rule 3.)*

26. The listings and ratings of all the components must work together to create valid fire-rated swinging doors. ***Note: In all cases, the listings and ratings of door leaves take precedence over the listings and ratings of hardware components. Doors are the foundation of swinging fire door assemblies and must allow for the application of each of the hardware components. In other words, when the door's listing does not allow certain hardware applications or the ratings of hardware components are less than the door's rating, they cannot be used even though they are separately fire-rated.*** *(See Section 6.5.1, and pargraphs 4.4.1, A.4.4.1, 5.1.1.3(2), and 6.4.5.1.)*

27. Door assembly components not specified or described (e.g., electric latch retraction fire exit hardware) in NFPA 80 are subject to the AHJ's approval. *(See 1.5.3.)*

28. New door assembly components not specified or described in NFPA 80 are permitted to be used. *(See Section 1.5 Equivalency, and A.1.5.1.)*

29. The rating of the assembly is the rating of the door frame or door, whichever is less. (See A.6.3.1.1.) ***Note: Expanding on this concept, the rating of an assembly could be the rating of the lowest-rated component (e.g., 20-min rated door bottoms on 3/4-hr rated doors). Hence, installing non-rated components on a fire door assembly invalidates its rating entirely.***

30. Undamaged and unmarked wire glass in older existing swinging fire door assemblies is permitted to remain in use indefinitely. *(See 5.2.4.8, 5.1.1.3(1), A.5.1.1.3(1), Key Concept #2, and A.1.4. See also 8.3.3.6.11 in NFPA 101, 2021.)*

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TOP 10 RULES FOR MAINTAINING SWINGING DOORS

Refer to these rules frequently, whenever you need to work on swinging door assemblies, choose replacement components, and add new doors. Following these rules will help you maintain your swinging doors in compliance with the codes.

Rule 1 *Selecting door assembly components that are appropriate to the type, usage, and function of the door is essential for the service life of the assembly.*

Rule 2 *Only components that are labeled and/or listed for use on fire-rated door assemblies can be installed on fire doors, in accordance with their individual published listing and installation instructions.*

Rule 3 *Not all fire-rated door components can be used on all fire door assemblies.*

Rule 4 *All labeled and/or listed components can be installed on non-fire rated door assemblies.*

Rule 5 *The published listing of a door leaf, regardless of material, determines the capabilities, design, and applications of the door and the assembly's fire rating.*

Rule 6 *Before performing work, other than drilling holes for fasteners, verify the structural integrity of the component, fire-rating (when applicable), and warranty will not be compromised or invalidated.*

Rule 7 *Only work that is expressly permitted in NFPA 80, in accordance with the manufacturer's installation instructions and the individual published listing of the component(s) being modified, is permitted to be done during installation of fire-rated door assemblies.*

Rule 8 *Labels on fire-rated door frames, doors, and hardware components must be present and legible at all times; avoid painting over labels—do not remove labels for any reason.*

Rule 9 *Doors must open and close easily and freely, close safely and completely, and latch positively.**

Rule 10 *Swinging egress and fire doors must allow free egress under fire and other panic-inducing emergencies.*

* *All swinging fire doors require positive latching hardwares, regardless of their level of fire ratings; there are no exceptions. Positive latching hardware is not required for certain non-fire-rated swinging egress doors (e.g., doors in smoke barriers, and doors in smoke partitions) in certain occupancies (e.g., new and existing health care occupancies NFPA 101).*

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Door Safety™
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NFPA 80
Quick Reference Index
For
Swinging Fire Doors

Based on
NFPA
80
2022

Safe Doors Save Lives Foundation, Inc.
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Using This Index

This custom quick reference index helps users quickly find NFPA 80's provisions and requirements for installing, inspecting, testing, and maintaining *Chapter 6, Swinging Doors with Builders Hardware.* Many of the items are listed multiple times under related headings. Take the time to familiarize yourself with this index. Insert a copy of this index in the back of your NFPA 80.

Deciphering NFPA's Numbering System

All of today's NFPA's codes and standards follow the same manual of style, including its numbering system providing organization and structure. Once you learn how NFPA's numbering system works in one code or standard, you know how it works for all of them. (Codes and standards from other standard-developing organizations (e.g., ICC, BHMA, HMMA, SDI, UL, and WDMA) use similar numbering conventions.)

NFPA's number system is limited to six (6) numbered levels, with one additional level for lettered and numbered lists. Lettered and numbered lists can be added to Levels 3, 4, 5, and 6. For example, look up paragraph 5.2.3.5.2; it contains a numbered list of thirteen inspection points for *Swinging Doors with Builders Hardware.*

- Level 1 - Chapter Numbers
- Level 2 - Section Numbers—All sections are titled.
- Level 3 - Subsection Numbers—Sections having multiple requirements are divided into subsections. Subsections can be titled or untitled.
- Level 4 - Paragraph Numbers
- Levels 5 & 6 - Subparagraph Numbers—
- Plus - Lettered or numbered lists in parenthesis—(a), (b), (c), (1), (2), (3), etc.

> ***Tip:*** ***It might help to think of the numbers as addresses pointing to where the information lives in NFPA codes and standards.***

Follow The Asterisks (*)

Asterisks (*) immediately following numbered or lettered items indicate that *Annex A* contains explanatory comments regarding the marked topic. To find the related information in *Annex A,* users need to add the letter *A* in front of the numbered item. For example, to find the explanatory information for *Section 6.4.3* Builders Hardware,* look up paragraph ***A.6.4.3*** in *Annex A.* ***It should be noted that Annex A (and all the other annexes) do NOT contain mandatory requirements; they provide background information and, in some cases, recommendations to help users interpret and apply NFPA 80's provisions and mandatory requirements specified in Chapters 1 through 21.***

Using the citations below, take a few minutes to look them up in your copy of NFPA 80:

- 6 (Level 1)
- 6.4 (Level 2)
- 6.4.3* (Level 3) and A.6.4.3 (*Annex A* content)
- 6.4.3.1 (Level 4)
- 6.4.3.1.8 (Level 5)
- 6.4.3.1.8.1 (Level 6)

As you read NFPA 80, pay attention to the numbering structure of the sections. Related provisions and requirements are nested together. For instance, when you read 6.4.3.1.8.1 regarding pivots, you will see two more subparagraphs about pivots, 6.4.3.1.8.2 and 6.4.3.1.8.3. All three subparagraphs are under 6.4.3.1.8, which is under 6.4.3.1; all are under subsection 6.4.3, *Builders Hardware.*

For more information regarding NFPA's marking conventions in its codes and standards, read the section immediately preceding *Chapter 1 Administration,* in your copy of NFPA 80.

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NFPA 80'S PRINCIPLES OF DOOR SAFETY INSPECTIONS

In addition to knowing NFPA 80's key concepts and how to look for information in it, users need to bear the following principles in mind regarding conducting NFPA 80's Door Safety inspections:

1. ***Keep fire doors in a CONSTANT STATE OF READINESS.*** **Fire doors have one job: preventing a fire from spreading!** Swinging fire doors with builders hardware are specially engineered component-based systems used to maintain the fire resistance ratings of the walls and barriers in which they are installed. Together with fire resistance-rated wall, ceiling, and floor construction, fire doors provide passive fire-stopping protection by compartmentalizing buildings to contain a fire long enough for active fire protection systems (e.g., sprinklers and other fire suppression systems) to do their jobs.

   Mechanical and electro-mechanical components comprise swinging fire doors that are susceptible to the rigors of wear and tear over time. Understandably, swinging fire doors require occasional routine maintenance. Fire doors subjected to high-frequency use and abusive usages (i.e., impacts from material-moving equipment and carts) need substantial maintenance more frequently and tend to have shortened service lives. Failure to properly maintain fire doors in a timely manner allows seemingly minor problems to become non-compliant conditions, contributing to the doors' inability to do their one job. Adopting NFPA 80's door safety inspection requirements ensures fire doors are in ***A CONSTANT STATE OF READINESS.***

2. ***Inspect fire doors in accordance with the codes that were in effect at the time of installation.*** When applying NFPA 80's door safety inspections to older existing swinging fire doors—those twenty-five (25) years old and older—it's imperative that the original code requirements for these doors be used since the installation of these doors predates many code requirements for newer doors. Building owners are not required to automatically upgrade their swinging fire doors (or other construction) every time code changes happen.[1]

   While the fundamental requirements for swinging fire doors are the same for doors of any generation, modern doors are subject to additional requirements that did not exist in the codes when older doors were installed. For example, wire glass was the only type of glazing material used in fire door assemblies for nearly a century. Experience taught us that wire glass is not safety glass, leading to using newer and safer impact-resistant fire protection-rated glass and glazing materials in most applications. Still, wire glass is permitted today, but its application is restricted to small sections (e.g., 100 in^2) and locations not subject to human impact (e.g., transom lights and fire windows higher on the walls). Undamaged and unmarked existing wire glass in older doors, even large sections, are allowed to remain in place since the original codes permitted its use.[2]

   Similarly, the 2006 (and later) editions of the model building and life safety codes require glass and glazing materials in fire doors and windows to bear markings indicating the testing to which it was subjected and its hourly rating. These markings are not required on glass in older doors since their installation predates the institution of these markings.

   Another example concerning older existing fire doors is the type of fire door labels on swinging doors before the mid-1960s. Hardware components on swinging doors from that era were not required to bear any markings or labels since the labels on the doors covered the hinges, latching hardware, and closing devices.[3] Consequently, ill-trained fire door inspectors might be led to cite the lack of markings and labels on hardware components as non-compliant by misapplying today's requirements to older existing doors and recommend replacing the hardware components unnecessarily. (There are more examples of code requirements that don't apply to older existing doors.) This principle emphasizes the need to apply the original code requirements to older existing swinging fire doors.

1 See paragraphs 1.4.2, 5.1.1.3(1), and A.1.4 in NFPA 80.

2 See paragraph 5.2.4.8 in NFPA 80; paragraph 8.3.3.6.11 in NFPA 101; and paragraph 12.7.6.6.11 in NFPA 1.

3 The requirement for fire doors to have special labels stating, "*FIRE DOOR TO BE EQUIPPED WITH FIRE EXIT HARDWARE*" did not appear in NFPA 80 until the 1961 edition (See 408(b) in NFPA 80-1961). Labels on doors installed before the early 1960s do not have this special requirement; fire exit hardware on these doors is not a deficiency. Fire exit hardware has been used on swinging fire doors circa 1915.

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3. ***Assume fire-rated doors provide the appropriate level of fire protection ratings for the openings in which they are installed.*** Unless the occupancy usage has changed or renovation work has been done, the building's original design and construction provide the appropriate level of fire rating, including fire doors. In other words, fire door inspectors should not be charged with determining the fire protection ratings of the doors they inspect. At the same time, fire door inspectors must be aware that incidental changes might have occurred due to replacing components (e.g., doors, closing devices, etc.), resulting in noncompliance that must be corrected. For instance, a 3/4-hour fire-rated door in a stair tower serving more than four stories might indicate the original door panel was replaced with another door from another building area. Fire door inspectors need to recognize non-compliant applications and recommend the necessary corrective actions to restore the fire rating of the assemblies to meet code requirements.

   Note: Replacement components must meet the code requirements in effect at the time of replacement, which might entail additional corrective actions to restore the fire rating of the assemblies.[4]

4. ***Older existing doors were not tested with today's newer fire door components and applications.*** This principle is particularly important for accurately assessing the condition of older existing fire-rated wood doors. Today, it's common to see hardware applications on paired fire doors that do not have active bottom-mounted latching devices (e.g., flush bolts and vertical rod fire exit hardware devices). Instead of bottom-mounted latching devices, these doors are equipped with static latching devices referred to as *fire pins*—other names include *auxiliary latches* and *thermal pins.* Fire pins first appeared on swinging fire doors in the early 1990s. Doors installed before then were not tested for use with fire pins.

   This point is especially important regarding older existing wood fire doors. As recently as the late 1980s, salt-treated solid lumber stiles—the vertical edges—were used in fire-rated wood doors. Salt-treated lumber tends to be extremely brittle and subject to splitting, often causing irreparable structural damage, warranting the door's replacement. Due to the brittleness of their stiles, fire pins should not be used on these doors without written confirmation from the respective door manufacturer and the testing lab that tested and listed the door.[5]

5. ***Only AHJs and code officials determine what is acceptable under the codes.*** When formal interpretations of codes are required, best practice is to consult the appropriate AHJs and building code officials. Only they can determine when something is acceptable under the codes. Fire door inspectors cannot enforce code requirements; they only report their findings to the owners and facility managers. Once made aware of the conditions of their fire doors, it's up to the owners and facility managers to make the necessary repairs. Fire door inspectors are not agents of the AHJs.

4 See *Section 5.1.3 Replacement* in NFPA 80.
5 See paragraph 5.1.5.2.2.4 in NFPA 80.

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TIPS FOR CONDUCTING NFPA 80'S DOOR SAFETY INSPECTIONS

Gather Information

Before conducting fire door inspections, gather as much information as you can. For instance, most healthcare facilities have Life Safety Plans that detail wall and partition types and the locations of fire-rated doors. *Acceptance Testing records* and *Periodic Inspection and Testing* reports are tremendously valuable assets to have on hand. Construction documents (e.g., floor plans, door and frame shop drawings, detailed architectural hardware schedules, and catalog cuts) are handy tools for fire door inspections. Find out when the building was constructed, as well as the dates of additions and renovations—remember the second principle of NFPA 80's door safety inspections. Find out the applicable codes and standards and the appropriate building code official or AHJ. Remember, some of the inspection details vary (e.g., markings on fire protection-rated glass) depending on the age of the doors being inspected.

Divide and Conquer

Making a plan for processing all the fire doors in a building is an essential step. Some buildings and facilities have hundreds or a thousand (or more) of fire doors across their campuses, making these inspections daunting. The good news is that while NFPA 80 requires all fire doors to be periodically inspected and tested *"...not less than annually,"* ***ALL THE DOORS ARE NOT REQUIREDTO BE INSPECTED AT THE SAME TIME!*** Facilities can divide the work into segments and process the doors in smaller groups (e.g., 1/12th of the doors per month).

Dividing the work into smaller segments makes the inspection, testing, and maintenance processes more manageable. More importantly, dividing the work into smaller segments allows inspectors to tailor their inspections to the fire door applications in the buildings. Fire door applications in one area of the building are most likely repeated throughout other areas, allowing inspectors to learn what to look for specifically in those cases. For example, pairs of automatic-closing cross-corridor doors outfitted with less bottom rod fire exit hardware devices and fire pins are common, but the actual inspection points vary depending on the brands and models of hardware components used—inspectors must go through the learning curve to accurately assess applications like these more efficiently later.

The doors can be prioritized and divided into groups by their frequency of use. Inspect high-frequency-use doors first, then ordinary-frequency-use doors, and finally low-frequency-use doors. In the end, it doesn't matter how the doors are divided into groups so long as all the fire doors are inspected *"...not less than annually."*

Another benefit of dividing the work into segments is that rather than dealing with a massive single inspection report, owners and facility management personnel can begin making repairs while inspections are conducted in other areas.

Decide where to start on each floor. For example, start at Stair #1 on the uppermost floor, move across the floor, then down one floor, and start again at Stair #1, and move across that floor, and so on.

NFPA 80's door safety inspections are meant to ensure fire doors are kept in ***A CONSTANT STATE OF READINESS;*** they're not *"gotcha"* inspections. NFPA 80 doesn't prohibit corrective work from being made immediately before or during the inspections. Completing routine maintenance work before fire door inspections increases compliance. Nor does NFPA 80 prohibit inspectors from making repairs as they go. The goal is to record more compliance than non-compliance.

Consistency is King!

Consistency leads to accuracy, increasing efficiency. Everyone on your team must always assess the doors with the same scrutiny. Consistency is king! Provide your team with training. Choose a pattern for processing each fire door, and insist everyone follow the same pattern every time. Resist the temptation to start with obvious defects and deficiencies observed when approaching doors, or else you're likely to miss other defects.

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Know Your Limitations!

Whether you decide to conduct NFPA 80's door safety inspections in-house or hire third-party inspections depends on a few factors: 1) The human resources to perform these inspections, 2) Training for your team(s), 3) The number (and types) of fire doors in your building(s), and 4) Sufficient time to conduct the inspections. In many cases, it might be necessary to hire third-party inspection companies.

NFPA 80's door safety inspections are non-destructive, meaning it is unnecessary to dismantle the components during the inspections. Because these inspections are non-destructive, inspectors must be aware that they can not assess concealed defects and damage—this should be acknowledged in all reports.

Set realistic expectations regarding the time it takes to conduct NFPA 80's door safety inspections. On average, allow ten (10) to fifteen (15) minutes to inspect and test each door. Understand that doors in poor condition require more time to process. Likewise, paired doors require more time than single doors, and doors with electrified hardware applications take longer than doors with only mechanical hardware functions. Allow time for moving between doors and gaining access to them.

When you are working in occupied buildings and spaces, access to certain doors might not be readily available. For example, doors in and around operating suites in hospitals might not be available until late in the days or in the early morning hours. Doors protecting certain equipment (e.g., X-Ray, MRI, and CT scan equipment) might not be readily available for inspection and testing. Be prepared to adjust your schedule to accommodate the facility's schedule.

Respect Your Surroundings

Conducting NFPA 80's door safety inspections in occupied buildings and spaces can be disruptive to the buildings' occupants and daily operations. Take the time to introduce yourself to key staff and faculty in the areas you are surveying. Be courteous and patient at all times. Checking in and out daily with the facility management personnel keeps them appraised of your progress.

In healthcare facilities, particularly, respect the patients' privacy and go about your work quickly and quietly. The same is true when conducting inspections in other occupied buildings and spaces. When inspecting doors to rooms that might be occupied, knock before opening the doors.

Keep equipment (e.g., cart, tools, and accessories) neat and out of the way of the building's occupants. Be aware when moving into areas requiring personal protection equipment (PPE), and comply with all protocols.

When in Doubt, Find Out!

Resist the temptations to assume unfamiliar (e.g., construction labels), and unusual (e.g., large sections of fire protection-rated glazing materials) conditions witnessed during the inspection are compliant or non-compliant. Research during and after the initial walk-through inspection is often necessary to determine when unfamiliar and unusual conditions are compliant or non-compliant. ALWAYS take the time to find out and document your findings in the doors' *Acceptance Testing* records.

Before citing the absence of ambient temperature smoke seal gasketing on doors with labels having the S-mark, take the time to find out if the doors in question are in locations requiring *smoke leakage-rated* or *Smoke & Draft Control* doors. Most door manufacturers include the S-mark on their labels regardless of where the doors might be installed. In other words, the S-mark is an option on fire door labels that only becomes a requirement when the doors are located in openings requiring the doors to be *smoke leakage-rated* or *Smoke & Draft Control Doors.*

Know Your Role

Third-party inspectors conducting NFPA 80's door safety inspections cannot compel building owners and facility management personnel to comply with the findings of their inspection reports. The inspector's role, irrespective of whether they are in-house employees or hired third-party inspectors, is to accurately report the condition of the fire doors as of the date and time of the inspections. Nothing more. Decisions to take the corrective actions recommended in the inspection reports (and when) are the responsibility of the building owner or facility management personnel. Remember, only the appropriate building code official or other AHJ can compel code compliance.

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NFPA 80'S DOOR SAFETY INSPECTIONS FOR SWINGING FIRE DOORS WITH BUILDERS HARDWARE

The terms *Acceptance Testing* and *Periodic Inspection and Testing* confuse some NFPA 80's users, at least initially. Understanding how these processes work together to ensure fire doors are installed and maintained correctly is essential for everyone involved. For example, architectural specifications for new construction projects (e.g., new buildings, additions, and renovations) require all types of fire doors to be installed per NFPA 80. Building, fire, and life safety codes—past and present—mandate all types of fire doors to comply with NFPA 80. Building code officials and other Authorities Having Jurisdiction (AHJs) expect contractors to install fire doors in accordance with applicable codes and standards (i.e., IBC and NFPA 101). Owners and facility management personnel rely on architects, building code officials (and AHJs), and contractors throughout the construction phase to make sure fire protection systems like fire doors comply with the codes before taking possession of their new building(s). Absent citations from building code officials, owners (and everyone else) assume fire doors in their new buildings are code-compliant when that is rarely the case. Hence, the need for *Acceptance Testing*.

Acceptance Testing

Acceptance Testing takes place *upon completion of installation*[6] and *upon completion of maintenance*[7] affecting the door's operation. NFPA 80 has explicitly required *Acceptance Testing* to be conducted since the 2007 edition. However, a case can be made that NFPA 80 has always required fire doors to be installed and maintained correctly; it was silent regarding the timing, details, and documentation it now requires.

Many architects and building code officials seem unaware of NFPA 80's *Acceptance Testing* requirements since new buildings (and spaces) are turned over routinely to owners without the mandated *Acceptance Testing Records* for their fire doors. *Acceptance Testing Records* provide evidence to owners and facility management personnel that the fire doors complied with all applicable codes and standards before they took possession of the property. From an ongoing maintenance perspective, *Acceptance Testing Records* for each fire door provide a baseline for future inspections and maintenance.

It is unclear why more architects don't demand NFPA 80's *Acceptance Testing Records* of fire doors from contractors before closing out projects since complying with NFPA 80 is required in the project's specifications; it's not an option—it's part of NFPA 80's mandatory requirements for every building, structure, and space, and enforceable under the codes. At the very least, *Acceptance Testing* assures fire doors comply with the project's specifications, construction documents, and applicable codes; it proves they got what they paid for. In other words, NFPA 80's *Acceptance Testing* process identifies corrective work that needs to be completed (i.e., punch lists) before the contractor is off-site. For this reason alone, Owners should insist on receiving the *Acceptance Testing Records* as part of the project's closeout process.

Only individuals meeting NFPA 80's *Qualified Person*[8] requirements can conduct *Acceptance Testing,* a standard most building code officials and AHJs don't meet, irrespective of their oversight roles in the construction process. Few building code officials and AHJs can dedicate the time it takes to perform detailed point-by-point door safety inspections. Building code officials and other AHJs can rely on NFPA 80's *Qualified Person* standard and *Acceptance Testing Records* to prove the fire doors comply with the applicable codes and standards. *Door Safety Inspectors (DSIs)* and *Door Safety Consultants (DSCs)*—inspectors certified by the *Safe Doors Save Lives Foundation, Inc.* (SDSLF)—are trained to correctly assess the conditions of new, existing, and older existing fire doors.

6 See paragraphs 6.1.1.1.2 and 5.2.1, and *Section 5.2.3 Acceptance Testing* in NFPA 80.
7 See paragraphs 6.1.1.3.2 and 5.5.10, and *Section 5.2.3 Acceptance Testing* in NFPA 80.
8 See definition 3.3.99 *Qualified Person* in NFPA 80.

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Acceptance Testing Records form the basis for NFPA 80's *Periodic Inspection and Testing* process and augment door maintenance programs. Each fire door assembly has a unique identifier (aka door number) for tracking its installation and maintenance history throughout its service life. *Acceptance Testing* records are required to *"...be retained for the life of the assembly,"*[9] and are updated *"...upon completion of maintenance work that affects the operation and performance of the assembly..."*[10]

Periodic Inspection and Testing

Periodic Inspection and Testing ensures fire doors are kept in ***A CONSTANT STATE OF READINESS.*** At the very least, the *Periodic Inspection and Testing* process reminds owners and facility management personnel of their ongoing life-safety obligations to everyone in their buildings. Swinging fire doors are particularly susceptible to user modifications (e.g., tampering with closing devices, blocking doors open, and taping latch bolts open). For example, some people see self-closing doors as obstacles that need fixing due to the constant resistance of the closing devices felt whenever they open doors; self-closing fire doors are intended to be kept closed. Consequently, these user modifications impair or impede the doors' operation, compromising their fire-stopping properties.

Swinging fire doors subjected to high-frequency usage likely need maintenance more often than those with low-frequency use: *Periodic Inspection and Testing* catch deficiencies caused by wear and tear since the last formal door safety inspections.

NFPA 80's door safety inspections are non-destructive, meaning the inspectors do not dismantle the door and hardware components. Only deficiencies discovered during *Periodic Inspection and Testing* are recorded in the inspection reports.[11] In other words, recording all the compliant components on fire door assemblies is unnecessary—only malfunctioning, broken, missing, and other non-compliant components and conditions need to be remedied.

All generations of existing fire doors are subject to NFPA 80's *Periodic Inspection and Testing* process;[12] there are no exceptions. *Periodic Inspection and Testing* of fire doors is required to be conducted *"…not less than annually."* Commensurate with other NFPA publications, *"...not less than annually"* means not less than nine (9) months and not more than fifteen (15) months between formal inspections.[13]

Reviewing the *Acceptance Testing* records for existing doors before conducting *Periodic Inspection and Testing* facilitates the process by revealing details and conditions that might otherwise require research after the inspections or are mistakenly cited as deficiencies by ill-trained inspectors. For instance, NFPA 80 limits the maximum area of visible glass in 1/3-hour and 3/4-hour rated fire doors to 1,296 in.^{2}, *"...unless otherwise tested."*[14] For many years, 1,296 in^2 was the maximum area for fire protection-rated glass (e.g., wire glass). Some modern fire doors with fire protection-rated glazing materials other than wire glass can have over 3,000 in.^{2} of visible glass—it depends on their listing(s). When fire resistance-rated glazing materials are installed in fire doors, their size is limited to the maximum dimensions tested by the door manufacturer. *Acceptance Testing* records for doors such as these would include documentation of exceptions and special conditions. Without this information, ill-trained inspectors might erroneously cite large sections of glass and other special conditions as deficiencies.

Periodic Inspection and Testing records are required to be retained for a minimum of three (3) years unless longer retention periods are needed; they are held until the building code official or other appropriate AHJ reviews the inspection records.

9 See paragraph 5.2.2.1 in NFPA 80.
10 See paragraphs 6.1.1.3.2, 5.5.5 (2), 5.5.10, and A.5.5.10 in NFPA 80.
11 See paragraph 5.2.2.4 (11) in NFPA 80.
12 See paragraphs 5.1.1.2, 6.1.1.1.2, and 6.1.1.1.3 in NFPA 80.
13 See paragraphs 5.2.4.1 and A.5.2.4.1. See also definition 3.3.5 *Annual Frequency* in NFPA 80.
14 See paragraph 4.4.5.1 and *Table 4.4.5 Fire Door Rating* in NFPA 80. Visible glass 24 in. wide x 54 in. high, and 36 in. wide x 36 in. high equal 1,296 in.^{2}.

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Visual Inspection and Operational Testing

The actual inspection and operational testing process is the same for *Acceptance Testing* and *Periodic Inspection and Testing;* only the timing and records retention periods differ. The *Acceptance Testing* process occurs 1) upon completion of installation and 2) upon completion of maintenance work affecting the doors operation. The latter can occur anytime, irrespective of the next scheduled *Periodic Inspection and Testing* round.

NFPA 80's door safety inspection and testing provisions and requirements are excerpted and appear on the following page. Suffice it to say that the process is much more involved than checking thirteen (13) items and witnessing the doors closing. Each inspection point has sub-inspection points, making the actual inspection process subjective to the type of fire doors, hardware arrangements, and operational functions as required by the codes; more equipment, more work to do. For example, single doors with only mechanical hardware have fewer inspection points than paired doors with electrified hardware functions (e.g., delayed egress locking systems and automatic door operators). In many cases, NFPA 80's door safety inspections need to be coordinated with similar inspections required by NFPA 101, *Life Safety Code,* and NFPA 105, *Standard for Smoke Doors and Other Opening Protectives.* ***(Note: NFPA 80's Visual Inspection Points and Operational Testing requirements are excerpted for your convenience and appear on the next page.)***

Existing Doors vs. Older Existing Doors

Most existing and older existing doors do not have *Acceptance Testing* records; their installations predate NFPA 80's formal door safety inspection requirements. Unlike other code provisions and requirements, NFPA 80's door safety inspections explicitly apply to doors of every generation, amended by using the original codes and standards.[15] Accordingly, the first *Periodic Inspection and Testing* record documenting the door's compliance effectively becomes its *Acceptance Testing* record. From that point forward, the *Periodic Inspection and Testing* works as previously described.

To better understand the context of existing doors, regarding NFPA 80's *Periodic Inspection and Testing* requirements, we need to distinguish recently installed doors from those installed twenty-five (25) years or more ago—older existing doors. Existing doors, especially older ones, predate code and standard requirements that come about after their installation. In other words, unless there are mitigating circumstances, older existing doors are not subject to some of today's code and standard requirements.[16]

There are no expiration dates on fire-rated doors! None. Properly functioning and well-maintained swinging fire doors can remain in service indefinitely. Accordingly, one of *NFPA 80's Key Concepts* is that existing fire doors need to be inspected and maintained in accordance with the codes that were in effect at the time of installation.

Today, ill-trained fire door inspectors are unaware of how to inspect older existing doors, causing them to misapply modern code requirements. They erroneously cite conditions like the lack of markings on wire glass and its presence as deficiencies on fire doors, even though unmarked wire glass has been used in fire doors for nearly a century. ***(Note: Wire glass and its use in modern buildings and fire doors warrants a separate discussion, a topic for another day.)*** Likewise, these ill-trained inspectors cite the absence of smoke seal gasketing on fire doors with labels bearing the S-mark; they don't know that gasketing is only required on doors located in openings requiring *smoke-leakage-rated doors*[17] and *Smoke & Draft Control Doors.*[18]

15 See paragraph 1.4.2 it states, *"Unless otherwise noted,..."* and paragraph 5.1.1.2 is where it is *"...otherwise noted..."* in NFPA 80.
16 See paragraph 1.4.2 in NFPA 80.
17 See paragraph 8.2.2.4 in NFPA 101.
18 See *Section 716.2.2 Smoke and Draft Control* in *IBC.*

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The information below is excerpted from NFPA 80 (2022) for your convenience:

NFPA 80's Visual Inspection Points for Swinging Fire Doors with Builders Hardware

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

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

5.2.3.5.1 Fire door assemblies shall be visually inspected from both sides to assess the overall condition of door assembly.

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 full 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.

5.2.4.5* Hardware shall be examined, and inoperative hardware, parts, or other defective items shall be replaced without delay.

5.5.1* Repairs shall be made, and defects that could interfere with operation shall be repaired without delay.

5.5.4* Any breaks in the face covering of doors shall be repaired without delay.

NFPA 80's Operational Testing of Swinging Fire Doors with Builders Hardware

5.2.1* Upon completion of the installation, door, shutters, and window assemblies shall be inspected and tested in accordance with 5.2.4.

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, records shall be retained for a period of at least 3 years.

5.2.3 Acceptance Testing.

5.2.3.1* Acceptance testing of fire door and window assemblies shall be performed by a qualified person with knowledge and understanding of the operating components of the type of assembly being subject to testing.

5.2.3.2* Before testing, a visual inspection shall be performed to identify any damaged or missing parts that can create a hazard during testing or affect operation or resetting.

5.2.3.3 Acceptance testing shall include the closing of the door by all means of activation.

5.2.3.4 A record of these inspections and testing shall be made in accordance with 5.2.2.

5.2.3.8 Closing Devices.

5.2.3.8.1 All fire doors, fire shutters, and fire window assemblies shall be inspected and tested to check for proper operation and full closure.

5.2.3.8.2 Resetting of the automatic-closing device shall be done in accordance with the manufacturer's instructions.

5.2.4.4 Inspection shall include an operational test for automatic-closing doors and windows to verify that the assembly will close under fire conditions.

5.2.4.4.1 The assembly shall be reset after a successful test.

5.2.4.4.2 Resetting of the release mechanism shall be done in accordance with the manufacturer's instructions.

5.2.4.8 Undamaged and unmarked wired glass in existing labeled fire door assemblies shall be permitted to remain in accordance with the codes applicable at the time of construction.

5.5.10* Upon completion of maintenance work, fire door assemblies shall be inspected and tested in accordance with 5.2.3.

5.5.10.1 A record of these inspections and testing shall be made in accordance with 5.2.2.

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Re-Labeling of Swinging Fire Doors

Swinging fire doors with builders hardware, as specified in Chapter 6 of NFPA 80, are specially engineered fire-protective systems requiring the highest degree of attention at every stage, especially throughout their service lives. Fire doors have one job: preventing a fire from spreading! Field re-labeling[1] of swinging fire doors refers to replacing the manufacturers' original labels on door frames and doors with field-applied labels from service providers like the nationally recognized testing laboratories (NRTLs) (e.g., Factory Mutual/FM, Intertek/Warnock Hersey, QAI, and Underwriters Laboratories/UL)[2] and other non-testing lab field re-labeling service providers. Replacement of the manufacturers' original labels might be necessary when rendered illegible by being painted over or missing altogether.

Replacing the manufacturers' original labels on fire-rated door frames and doors deserves careful deliberation of the potential consequences of making rushed, uninformed decisions before proceeding. Labels are not commodities to be purchased in bulk and erroneously applied by any company offering them. Building code officials and other AHJs must have confidence in the companies conducting field re-labeling services of fire-rated doors. Likewise, building owners and facility management personnel seeking field re-labeling services must be able to trust the validity of field-applied labels. Otherwise, unknowingly, they risk creating a false sense of safety in their buildings and spaces.

Swinging fire doors with builders hardware are component-based systems wherein each component must be tested and listed for use as part of a fire door assembly; labels are the visible proof that the components can be part of fire door assemblies. In most cases, replacement labels (aka field-applied labels) from field re-labeling service providers are not equal to the manufacturers' original label—the exception being those from an NRTL applied on behalf of the manufacturer using the manufacturer's original labels. Manufacturers' labels are visual proof that the door frame or doors are identical to their counterparts that passed rigorous fire door testing under stringently controlled conditions.[3] These labels represent the manufacturers' ongoing commitment to producing door frames and doors identical to those successfully tested by an NRTL. Since few field labeling service providers represent the manufacturers, their replacement labels cannot be construed as carrying the same weight.

Often, the NRTLs providing re-labeling services have access to proprietary technical information (e.g., unpublished listings and engineering evaluations) from the manufacturers and active ongoing fire door testing activities. Non-testing lab field labeling service providers can't access that level of technical information. Instead, these field labeling service providers use other readily available technical information such as the manufacturers' published listings and technical/fabrication manuals, installation instructions, and industry standards, including NFPA 80, ANSI/SDI A250.8, *Specifications for Standard Steel Doors and Frames,* ANSI/HMMA 850, *Fire Rated Hollow Metal Doors and Frames,* and ANSI/WDMA IS-1A, *Interior Architectural Wood Flush Doors.*[4]

NRTLs conform their services to multiple international standards like ISO 17020, 17025, and 17265.[5] Most, but not all, non-testing lab field labeling providers subscribe to accreditation from the ANSI National Accreditation Board (ANAB);[6] their company's field re-labeling service accreditation conforms to ISO 17020. Even though most non-testing lab field labeling service providers subscribe to ANAB's accreditation program, each company's internal policies, procedures, and practices vary greatly. In other words, certain non-testing lab field re-labeling service providers are more knowledgeable, skilled, and competent than others.

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1 See *Section 5.1.4 Field Labeling* in NFPA 80.

2 Go to https://www.osha.gov/nationally-recognized-testing-laboratory-program/current-list-of-nrtls.

3 See paragraph 4.2.4 in NFPA 80.

4 Other technical resources include installation standards published by the Steel Door Institute (SDI) and the Hollow Metal Manufacturers Association (HMMA), SDI 122, *Installation and Troubleshooting Guide for Standard Steel Doors and Frames,* and HMMA 840, *Maintenance of Installed Hollow Metal Products,* respectively.

5 ISO/IEC 17020, *Conformity Assessment—Requirements for the operation of various bodies performing inspection,* ISO/IEC 17025, *Testing and Calibration Laboratories,* and ISO/IEC 17065, *Conformity Assessment—Requirements for bodies certifying products, processes and services.*

6 Go to https://search.anab.org/ and enter keyword *DOORS.*

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One reason for this varying range of skills and competencies among all field labeling service providers is that there is no standardized core body of knowledge that individuals performing this work need to master. ***NFPA 80 is not a substitute for fire door testing.*** None of the training and certification programs for conducting NFPA 80's door safety inspections adequately prepare people to re-label fire-rated door frames and doors. Indeed, these certification programs might be one component needed for field re-labeling training and certification, but they are insufficient absent additional training. There is no training and certification program for field re-labeling for fire-rated door frames and doors today. Accordingly, field re-labeling service providers must be thoroughly vetted before engaging them to apply their replacement labels on fire-rated doors and frames.

A few of the non-testing lab field labeling service providers are in the swinging door industry, having many decades of experience, as well as trained staff certified as *Architectural Hardware Consultants* (AHCs) and *Certified Door Consultants* (CDCs)—professionally certified individuals trained to design, specify, supply, install, and service fire-rated swinging doors; they mastered the myriad swinging door components (and their applications), as well as the code and standard requirements for fire-rated door assemblies. Most of these companies have authorized-licensed shops wherein they can modify certain fire-rated door frames and doors.[7] These companies are committed to ensuring fire doors are properly equipped and ready to do their one job. They routinely create detailed architectural hardware schedules and door and frame shop drawings for each project, fully detailing every door assembly (and component) in the building. Swinging door and hardware companies keep internal records, including engineering sheets and purchase orders, documenting all the details of the fire-rated door assemblies they provide. Records such as these are extremely valuable when labels on fire-rated door frames and doors are painted over or accidentally removed. They supply thousands of fire doors yearly, making them the natural choice when re-labeling swinging fire door frames and doors is needed.

A strong case can be made that certain companies in the swinging door industry know fire-rated doors better than the NRTLs and even the manufacturers since they design fire door assemblies from nearly infinite components. They see the broad range of components and applications daily.

It's All About the Labels

It's important to know that no standard labels for fire-rated swinging doors exist. As you might imagine, labels on fire-rated doors from the 1940s do not look like those on modern doors. Just as today's fire door labels most likely won't look like labels on fire-rated doors fifty (50) years from now, which is why NFPA 80's second Key Concept is essential: *"Fire doors must be inspected and maintained in accordance with the standards under which they were installed."*[8] There are no expiration dates on fire door labels! Labels on older existing fire doors might not look like today's labels, but ***they are still valid—they do not need to be replaced.***

Before the 2016 edition of NFPA 80, it did not have any requirements regarding the information printed on labels for fire-rated door frames and doors.[9] Labels on older door frames and doors might contain more or less information than specified in NFPA 80. In other words, replacing the manufacturers' original labels is unnecessary if it's only to comply with NFPA 80's current requirements since their installations predate this recent change.

While the original labels have no functional or operational value, they contain information identifying the manufacturer and testing laboratory. Door labels include the hourly ratings and typically list hardware requirements like minimum latch throw. Many door labels require fire exit hardware latching devices; they state: *Fire Door To Be Equipped With Fire Exit Hardware.* Most modern door labels include the S-mark,[10] indicating the doors can be used in openings required to be *smoke leakage-rated*[11] or *Smoke & Draft Control Doors.*[12] Older labels tend to have

7 See paragraph 5.1.5.2.1 in NFPA 80. These authorized-licensed shops only modify fire-rated door frames and doors from specific manufacturers by whom they are licensed, following the manufacturers' fabrication manuals, under the oversight of an NRTL. In these cases, the manufacturers' original labels are replaced by the labels of the authorized-licensed shops performing the modification work—these labels are equal to the manufacturers' original labels.

8 See paragraphs 5.1.1.3(1) and A.1.4 in NFPA 80.

9 See *Section 4.2 Listed and Labeled Products* in NFPA 80.

10 See *Section 4.4* Labeling,* and paragraph A.4.4 in NFPA 105.

11 See paragraph 8.2.2.4 in NFPA 101.

12 See *Section 716.2.2 Smoke and Draft Control* in *IBC.*

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stamped serial numbers, whereas newer labels might have bar codes or QR codes. Again, there is no standardized label for fire-rated door frames and doors.

Depending on the frame material, the original labels might not show the hourly fire rating on door frames—***they don't have to include hourly ratings.*** For example, hollow metal (aka steel) door frames might have labels stating, *Listed Fire Door Frame* or *Classified Fire Door Frame* (without hourly ratings) since hollow metal door frames are capable of hourly fire ratings of up to three (3) hours when installed in masonry walls and up to one-one-half (1-1/2) hours when installed in appropriately constructed metal/wood stud walls with gypsum board.[13] *(This has been industry practice for nearly a century and continues today.)* Labels on door frames of other materials (e.g., aluminum, FRP, and wood/composite materials) include hourly ratings since their ratings are more limited.

Labels on door frames and doors might be thin aluminum, brass, or tin plates attached by pins, rivets, and staples or made of Mylar® or Tyvek® materials attached by adhesives.[14] Many older labels on door frames have metal plates with raised (e.g., stamped) lettering designed for painting; they remain legible after painting. Irrespective of the materials, labels are intentionally made fragile to discourage tampering. Removing labels for any reason is a one-way trip; they cannot be reused.

Unlike door frames of other materials, many hollow metal door frames have embossed labels stamped into them. Embossed labels have been used on hollow metal door frames for nearly fifty (50) years; these embossments are valid labels. The markings of embossed labels are legible after painting but can be obscured by accumulated coats of paint. The simplest and least costly solution to recover these labels is to remove the extra layers of paint before repainting the frames; it's unnecessary to re-label these frames.

Laypeople might assume that the hourly ratings of door frames and doors in the same assembly are required to match, but that has never been the case. For instance, most stair tower doors are 1-1/2-hour (90-minute) rated and installed in hollow metal door frames capable of ratings up to three (3) hours. Since the ratings of the doors are less than those of the door frames, the assembly's rating is 1-1/2-hour (90-minute).[15] In other words, replacing the door frame manufacturers' original labels with field-applied labels is unnecessary if its only purpose is to make the hourly ratings of the doors match.

Know What's Behind The Labels

One of the most important considerations regarding field re-labeling fire-rated door frames and doors is the company standing behind the labels, specifically, its history, longevity, and ability to guarantee the validity of its field-applied labels. The validity of field-applied labels depends on several factors, including the company's commitment to training its inspectors to accurately and thoroughly assess fire-rated door frames and doors. Ideally, field re-labeling companies should be financially stable with sufficient resources (i.e., carry appropriate errors and omission and general liability insurance coverages) to defend their field-applied labels should the need arise.

Some NRTLs have tested and labeled fire-rated doors for a century (or more) and will likely continue for many more years. Similarly, some swinging door companies have been in business for several decades and will likely remain so indefinitely. Other non-testing lab field-labeling service providers are not as well-established, making their track records and futures uncertain. Building owners and facility management personnel should consider how field-applied labels might be affected when a field re-labeling service provider ceases its operations. Will its labels still be valid? If not, will its field-applied labels need replacing?

Regarding accreditation programs for field re-labeling service providers, the accreditation bodies do not guarantee or warranty the validity of field-applied labels from their subscribers. Accreditation bodies do not underwrite, subsidize, or otherwise financially support field re-labeling activities; accreditation programs provide minimum oversight through ongoing auditing processes. In other words, accreditation bodies do not stand behind field-applied labels for fire-rated door frames and doors. Should problems arise from improperly re-labeling fire doors, the field re-labeling service provider might be subjected to significant legal scrutiny and subsequent financial damages.

13 See paragraphs 4.2.1.4.1 and 4.2.1.4.2 in NFPA 80.
14 See paragraphs 4.2.1 and A.4.2.1 in NFPA 80.
15 See NFPA 80's Key Concept #10, and paragraphs 4.2.1.4.1, 4.2.1.4.2, and A.6.3.1.1 in NFPA 80.

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Fire Ratings of Swinging Door Assemblies

Labels on fire-rated door assembly components are applied at the factories as part of their fabrication. Because swinging fire doors are component-based systems, the ratings of the complete assemblies depend on all of the components being installed correctly. Fire ratings of swinging door assemblies are valid only when all the required components are installed in accordance with their listings and installation instructions[16] and the doors function correctly as required by the codes.[17] The components are expected to be correctly installed to create valid fire-rated swinging doors.

Some field re-labeling service providers isolate their inspections to single components, ignoring other obvious non-compliant conditions in the assemblies. For example, they might apply their replacement labels to door frames even when there are no doors in the frames. They might also apply replacement labels to doors without latching hardware. Their disregard for these (and other) non-compliant conditions misleads building owners and facility management personnel to believe the assemblies' fire ratings have been restored. Labels on fire door components have no functional or operational properties; they are informational. Each fire door component must be installed, adjusted, and function correctly, or the assembly's fire rating is void.

The Field Re-Labeling Process

The field re-labeling process begins by contacting one or more of the service providers to confirm the doors in question are eligible, determine the costs associated with re-labeling fire doors, and verify the availability of the field personnel to perform the work. Once all the costs are known, replacing a few doors might be more cost-effective and expedient than hiring a field re-labeling service provider.

Most field re-labeling service providers require a formal agreement before scheduling their projects. Before signing any contracts, take the time to verify with the appropriate building code official or other AHJ that field-applied labels from your selected service provider(s) are *approved*—NFPA 80 requires the AHJ's approval before re-labeling swinging fire doors occurs.[18] Do not rely solely on the assertions of the service providers that their field-applied labels are acceptable to the AHJs; trust but verify. Understand that NFPA 80 only contains provisions for re-labeling swinging fire doors; ***it doesn't require defaced and missing labels to be replaced***—that's the building code officials' and other AHJs' purview. Remember the fifth principle of *NFPA 80's Principles of Door Safety Inspections;* only AHJs *approve* when something like field-applied replacement labels on swinging fire doors are acceptable.

Be aware that field re-labeling service providers will likely not apply replacement labels to fire-rated doors before necessary repair work is completed to restore the assembly's fire rating. For example, applying replacement labels to door frames without doors makes little sense—without correctly functioning doors, there are no fire ratings in those portions of the fire walls or barriers. Likewise, applying replacement labels to doors makes no sense when latching hardware and closing devices are missing—fire doors are of no use when they don't close completely and latch positively, as the codes and NFPA 80 require.[19] Be wary of field re-labeling service providers that knowingly apply labels to non-compliant fire door frames and doors, expecting the repairs to be made later; they are not looking out for you.

When Field Re-Labeling Should Not Be Used

Replacement labels should not be applied to door frames or doors under the following conditions:

1. **The fire rating of hollow metal and wood doors needs to be upgraded.** Field re-labeling of hollow metal and wood doors should not be used when the ratings of the doors need to be increased. While many hollow metal (aka steel) doors are capable of the full range of fire ratings, some are not. In the case of fire-rated wood doors, their internal construction (e.g., core materials) limits their maximum fire ratings. For example, some mineral cores used in wood doors are only capable of 3/4-hour (45-minute) ratings and cannot pass the 1-hour (60-minute) and 1-1/2-hour (90-minute) fire door tests. Similarly, fire ratings of particleboard, agrifiber, and stave core wood fire doors might be limited to 1/3 hour (20 minutes), especially in older doors. Glass vision lights (aka windows) in doors limit the maximum fire ratings; the larger the lights, the lower the fire ratings.

16 See *Section 6.5.1 General* and *Section 6.5.2 Manufacturers' Instructions* in NFPA 80.

17 See paragraphs 5.1.2.1 and A.5.1.2.1, and *Section 6.1.4 Operation of Doors* in NFPA 80.

18 See paragraph 5.1.4.2 in NFPA 80.

19 See paragraphs A.5.2 and K.6 in NFPA 80.

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2. **Door frames and doors bearing *construction* labels.** *Construction-labeled* doors are a special-use case of fire-rated doors wherein the door frames and doors do not bear typical labels. Instead, these doors carry the manufacturers' labels (without NRTL markings) explicitly declaring the door frames and doors CANNOT BE LABELED due to special conditions required by the architect or owner. The labels clarify that the materials and construction of the door frames and doors are identical to their labeled counterparts, but they CANNOT BE LABELED because of the specified special conditions. The most common special conditions causing doors to be *construction-labeled* are door sizes (in heights or widths) larger than those tested by the manufacturer, untested hardware preparations (e.g., mortises for overhead concealed door stops), and glass lights larger than those tested by the manufacturer.

   Consequently, field re-labeling of *construction-labeled* doors CANNOT be used to CONVERT THESE DOORS TO LABELED FIRE DOORS. Most laypeople don't know that the architects sought the AHJ's approval to use *construction-labeled* doors before the doors were installed; the AHJ's approval should be documented in the building's construction history. And since *construction-labeled* doors are used in locations requiring the protection of fire doors, these doors must be treated the same as appropriately labeled fire doors. Even though *construction-labeled* doors do not have typical labels and hourly ratings, they must be treated as fire doors regarding NFPA 80's *Acceptance Testing, Periodic Inspection and Testing,* and maintenance.

3. **Door frames without doors.** Applying replacement labels to door frames without doors makes little sense since the door's absence completely compromises the walls' and barriers' fire resistance ratings, rendering the fire rating of the frames useless. Building owners and facility managers need to be vigilant and maintain all fire-rated construction correctly at all times. It might be necessary to take a door out of its frame temporarily for maintenance service, but it should be returned within no more than eight (8) hours, especially in occupied buildings. In some cases, it might be necessary to replace the permanent door with a temporary door while it's being serviced.

4. **Doors without latching hardware components (e.g., bored and mortise locks and latches, fire exit hardware devices, flush bolts, and fire pins).** Positive latching hardware is required for all swinging fire doors, irrespective of their fire ratings; there are no exceptions. Applying replacement labels on doors without the appropriate latching hardware is worthless since the assembly's fire rating is rendered void.

5. **Doors are equipped with panic hardware devices.** Panic hardware devices are not subjected to fire door testing and are explicitly prohibited from being used on fire-rated doors.[20] Unlike fire exit hardware devices, panic hardware devices are not required to remain positively latched during and after exposure to a fire. Applying replacement labels to doors equipped with panic hardware is misleading since the presence of panic hardware is non-compliant.

6. **Converting panic hardware to fire exit hardware.** While panic hardware and fire exit hardware devices might appear aesthetically the same, there are significant differences internally. Many panic hardware devices have manual dogging functions that allow their latch bolts to be held retracted (open), making the door operation push-and-pull. These doors cannot latch until the dogging function is manually released. Fire exit hardware devices do not have manual dogging functions. However, the manual dogging functions are not the only difference between panic hardware and fire exit hardware devices. In fact, all panic hardware devices can be ordered *less dogging* from the factories—that doesn't make them fire exit hardware devices.

   Some field re-labeling service providers offer replacement labels for fire exit hardware devices, which becomes necessary when the original labels have been removed due to improper cleaning. Care must be taken to determine whether the unmarked devices are panic hardware or fire exit hardware. Disabling or removing manual dogging functions on panic hardware devices ***DOES NOT CONVERT THEM TO FIRE EXIT HARDWARE.*** Panic hardware cannot be converted to fire exit hardware; they have not passed fire door testing, whereas fire exit hardware devices have. Replacing unmarked devices with new fire exit hardware devices might be the only solution if there is any uncertainty about which type of devices are installed on the doors.

20 See paragraph 6.4.4.2.3 in NFPA 80, and paragraphs 7.2.1.7.3 and A.7.2.1.7.3 in NFPA 101.

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7. **The visible area of glass in lights is larger than permitted by the door's listing(s).** Users commonly cut lights (aka windows) into fire doors or enlarge factory-made lights—these modifications are not permitted to be done in the field by users.[21] The maximum visible area of glass in fire doors varies by fire rating; the higher the rating, the smaller the glass size. User-modified doors often have oversized lights, compromising the doors' fire ratings. Applying replacement labels to user-modified doors should be avoided.
8. **The glass and glazing materials in the door frames (e.g., sidelights and transom-lights) and doors are not fire protection- or resistance-rated.** Only fire protection- and resistance-rated glass and glazing materials are permitted to be used in swinging fire doors.[22] Wire glass is one example of fire protection-rated glass used in swinging doors. Wire glass might be unmarked depending on its age—it can remain in use.[23] Fire resistance-rated glass and glazing materials will be marked. Laminated glass and most tempered glass glazing materials cannot be used in fire-rated doors. Applying replacement labels to door frames or doors with non-compliant glass and glazing materials does not restore the fire ratings of the assemblies.
9. **The door frames and doors are structurally damaged.** Structurally damaged door frames and doors are not eligible for field re-labeling and should be replaced.[24] Even though the doors might appear to work adequately under daily non-emergent conditions, structurally damaged door frames and doors are more likely to fail when subjected to a fire. Untried and untested field repairs cannot be relied on to restore the fire-stopping abilities of structurally damaged door frames and doors—they need to be replaced.
10. **Hardware components that are rated lower than the doors.** Certain hardware components have limited fire ratings, eliminating their use on higher-rated fire door assemblies. Applying replacement labels to door frames and doors with higher ratings is misleading since the lower-rated components reduce the overall rating of the assemblies, which might be less than the fire rating required for the assemblies. For example, some aluminum continuous geared hinges are limited for use on fire doors rated up 1-1/2 hours (90 minutes). Installing these hinges on doors requiring 3-hour (180-minute) ratings reduces the assembly's overall rating, irrespective of the hourly rating displayed on the door's label.

Do Your Homework

NFPA 80 does not require painted-over (and otherwise defaced) and missing labels to be replaced.[25] Instead, NFPA 80 defers to the appropriate building code official's and other AHJs' judgment. Before hiring a field re-labeling service provider, you need to determine if replacing labels swinging fire doors is necessary. Consult the appropriate building code official or AHJ first, as other remedies might be available.

When only a few doors need replacement labels, taking them off-site to an authorized-licensed shop specializing in products from the same manufacturer(s) might be the most practical and cost-effective choice. Similarly, replacing a few doors with new doors might also be a viable, albeit sometimes more costly, solution.

Confirm the field-applied labels from the field re-labeling service provider(s) you selected are *approved.*[26] Ask the provider(s) for references and background information.

Other questions you might want to ask include: What credentials do their inspectors hold? Is their company accredited? Does their company carry appropriate insurance coverages (e.g., general liability and errors and omissions coverages)? Does their company regularly supply swinging fire doors for new construction projects? How long have they been in business? Will they knowingly apply replacement labels to door frames and doors when other non-compliant conditions exist?

21 See paragraph 5.1.5.2.1 in NFPA 80.
22 See *Section 4.4 Glazing Material in Fire Doors* in NFPA 80.
23 See paragraph 5.2.4.8 in NFPA 80, and paragraph 8.3.3.6.11 in NFPA 101.
24 See paragraph 5.5.6 in NFPA 80.
25 See paragraph A.4.2.1 in NFPA 80.
26 Only the appropriate bulding code official or other AHJ can *approve* field-applied labels.

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NFPA 80'S PRINCIPLES OF DOOR SAFETY INSPECTIONS

Inspecting, testing, and maintaining fire doors correctly is everyone's job. Following these principles ensures fire doors are ready to do their one job:

1. *Keep fire doors in **A CONSTANT STATE OF READINESS.***
2. *Inspect fire doors in accordance with the codes that were in effect at the time of installation.*
3. *Assume fire-rated doors provide the appropriate level of protection for the openings in which they are installed.*
4. *Older existing doors were not tested with today's newer fire door components and applications.*
5. *Only AHJs and code officials determine what is acceptable under the codes.*

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Have you ever wondered where NFPA 80 says...? Or struggled to look up information in NFPA 80? Do you know the differences between NFPA 80's Acceptance Testing and Periodic Inspection and Testing processes? What are Acceptance Testing Records, and why are they required? What is Field Labeling of fire doors? Our guide and custom index teaches NFPA 80's users how to correctly find, interpret, and apply its provisions and requirements to new, existing, and older-existing swinging fire doors.

Our unique guide answers these and many more questions by providing insight into using *NFPA 80's Key Concepts, NFPA 80's Principles of Door Safety Inspections, Field Re-Labeling of Swinging Fire Doors,* and *Tips for Conducting NFPA 80's Door Safety Inspections.* Our custom NFPA 80 Quick Reference Index combines expert-level knowledge of NFPA 80's provisions and requirements with nearly forty (40) years of in-depth experience in *Swinging Fire Doors with Builders Hardware*—the most common type of fire doors.

Architects, consultants, building code officials (and other AHJs), building owners, contractors, egress and fire door inspectors, facility management personnel, installers, manufacturers, and suppliers—everyone involved with fire doors will find this guide essential to performing their work.

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