

# ***Inspecting Swinging Fire and Smoke & Draft Control Doors***

*Pending Changes in  
NFPA 80 and NFPA 105*



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



# Presented By:

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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.*

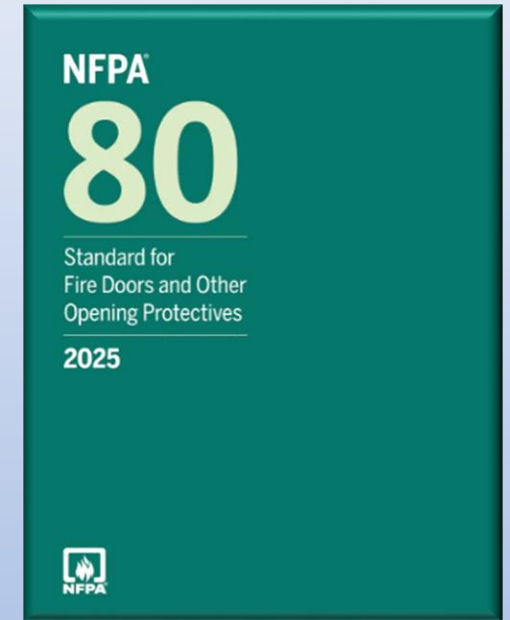
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# Today's Topics Include

- Introduction to NFPA 80
- Overview of changes in the 2025 edition of NFPA 80.
- Inspecting and maintaining older doors.



# Today's Topics Include

- Pending Changes
  - NFPA 80, 2028
  - NFPA 105, 2028

# Handouts

- A Guide to Using NFPA 80's Key Concepts & Quick Reference Index for Swinging Fire Doors
  - Based on NFPA 80, 2022 edition.

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The screenshot shows the NFPA website page for the NFPA 80 standard. The browser address bar shows the URL `nfpa.org/codes-and-standards/nfpa-80-standard-development/80`. The page features a search bar, a navigation menu with options like 'About NFPA', 'For Professionals', 'Education and Research', 'News and Articles', and 'Members', and a breadcrumb trail: 'HOME | LIST OF CODES & STANDARDS | STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES'.

The main content area displays the NFPA 80 standard cover on the left and a detailed description on the right. The description includes the title 'NFPA 80 Standard for Fire Doors and Other Opening Protectives', the status 'Status: Active', and a notification option 'Notify Me About Document Updates'. It also states 'Current Edition: 2025' and provides buttons for 'Purchase Options', 'Available in NFPA LINK®', and 'Ask a Technical Question'.

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Edition
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2022 <b>NFPA 80A</b> Recommended Practice for Protection of Buildings from Exterior Fire Exposures	2019 <b>NFPA 80</b> Standard for Fire Doors and Other Opening Protectives	2022 <b>NFPA 80</b> Standard for Fire Doors and Other Opening Protectives	2019 <b>NFPA 82</b> Standard on Incinerators and Waste and Linen Handling Systems and Equipment

KP

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# ***Fire Doors Have One Job!***

- Fire doors prevent fires from spreading.
- Swinging fire doors, in general, also provide:
  - Convenience
  - Security
  - Privacy
  - Protection from equipment (e.g., lead-lined shielding)
  - Environmental control (e.g., heating and cooling, sterile/soiled conditions, and sound control)



***Preventing a fire from spreading takes precedence over all other functions; they must be kept in a Constant State of Readiness!***

# A Constant State of Readiness

- All swinging fire doors must:
  - Swing easily and freely
  - Close completely
  - Positively latch

*NFPA 80's functional requirements are the same for each level of fire ratings.*



***Every swinging fire door must have positive latching hardware; there are no exceptions!***

# A Constant State of Readiness

## ➤ Self-Closing Door Operation

- Doors are intended to be kept closed.
- Closing devices on swinging fire doors resist opening by occupants.
- Doors become obstacles to occupants.
  - Occupants block-open, disable, or otherwise tamper with closing devices and latching hardware.



***Self-closing doors must close completely from any partially opened position. ALWAYS!***

# A Constant State of Readiness

## ➤ ***Automatic-Closing Operation***

- Electrically held open self-closing doors
- Must close complete and latch
  - Upon actuation of smoke detectors
  - Upon signal from fire alarm system
  - Upon loss of power



***Automatic-closing swinging fire doors become self-closing upon release of the hold-open device.***

# A Constant State of Readiness

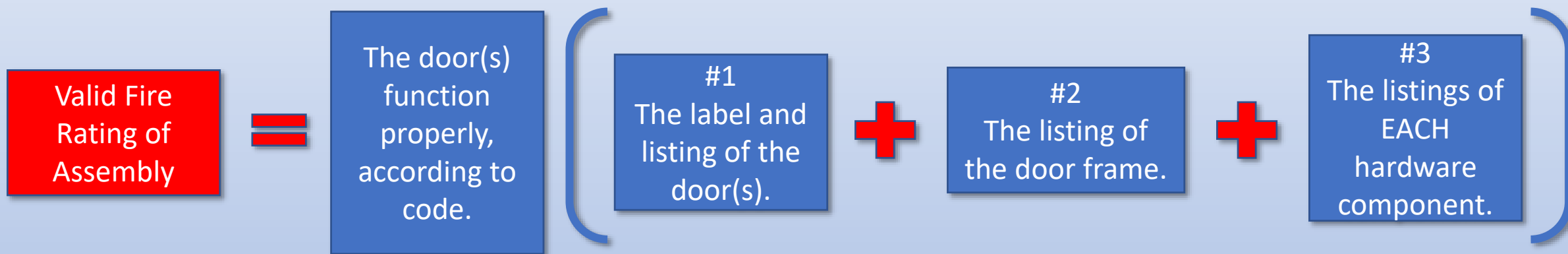
- The fire rating of an assembly is valid **ONLY** when:
  - All the required components are installed in accordance with their listings and installation instructions, and
  - The doors function as required by the codes.



***Listings refer to how the components were tested for use on fire door assemblies.***

# A Constant State of Readiness

The fire rating of an assembly starts with the door's rating and listing:



***ALWAYS in this order. Each component must be labeled or listed and be installed in accordance with it's listing and installation instructions.***

***The rating of an assembly is the rating of the door frame or door, whichever is less.***

# Introduction to NFPA 80

- NFPA 80, *Standard for Fire Doors and Other Opening Protectives*
  - It's a **standard**, not a code
  - It defines what fire doors are, not where they are used
- Building, fire, and life safety codes require fire doors to comply with NFPA 80
  - Codes mandate the placement and minimum fire protection ratings of all types of fire doors.

# Introduction to NFPA 80

- Consists of 21 chapters and 12 annex sections
- *Base chapters (apply to all door types)*
  - *Chapter 1: Administration*
  - *Chapter 2: Referenced Publications*
  - *Chapter 3: Definitions*
  - *Chapter 4: General Requirements*
  - *Chapter 5: Inspection, Testing, and Maintenance*

# Introduction to NFPA 80

- *Opening protectives chapters*
  - **Chapter 6: Swinging Doors with Builders Hardware**
  - *Chapter 7: Swinging Doors with Fire Door Hardware*
  - *Chapter 8: Horizontally Sliding Doors*
  - *Chapter 9: Special-Purpose Horizontally Sliding Accordion or Folding Doors*
  - *Chapter 10: Vertically Sliding Doors*
  - *Chapter 11: Rolling Steel Doors*

# Introduction to NFPA 80

- *Opening protectives chapters*
  - *Chapter 12: Fire Shutters*
  - *Chapter 13: Service Counter Fire Doors*
  - *Chapter 14: Hoistway Doors for Elevators and Dumbwaiters*
  - *Chapter 15: Chute Doors*
  - *Chapter 16: Access Doors*
  - *Chapter 17: Horizontal Fire Door Assemblies*
  - *Chapter 18: Fire Windows*
  - *Chapter 19: Glass Block Assemblies*
  - *Chapter 20: Installation, Testing, and Maintenance of Dampers*
  - *Chapter 21: Fabric Fire Safety Curtains*
  - *Chapter 22: Fire Protective Curtain Assemblies*

# Using NFPA 80 for Chapter 6 Doors

- Study these sections:
  - Chapter 4, *General Requirements*
  - Chapter 5, *Inspection, Testing, and Maintenance*
  - Chapter 6, *Swinging Doors with Builders Hardware*
  - *Annex A, Explanatory Material*



***Chapter 7, Swinging Doors with Fire Door Hardware are NOT USED in most buildings and occupancies!***

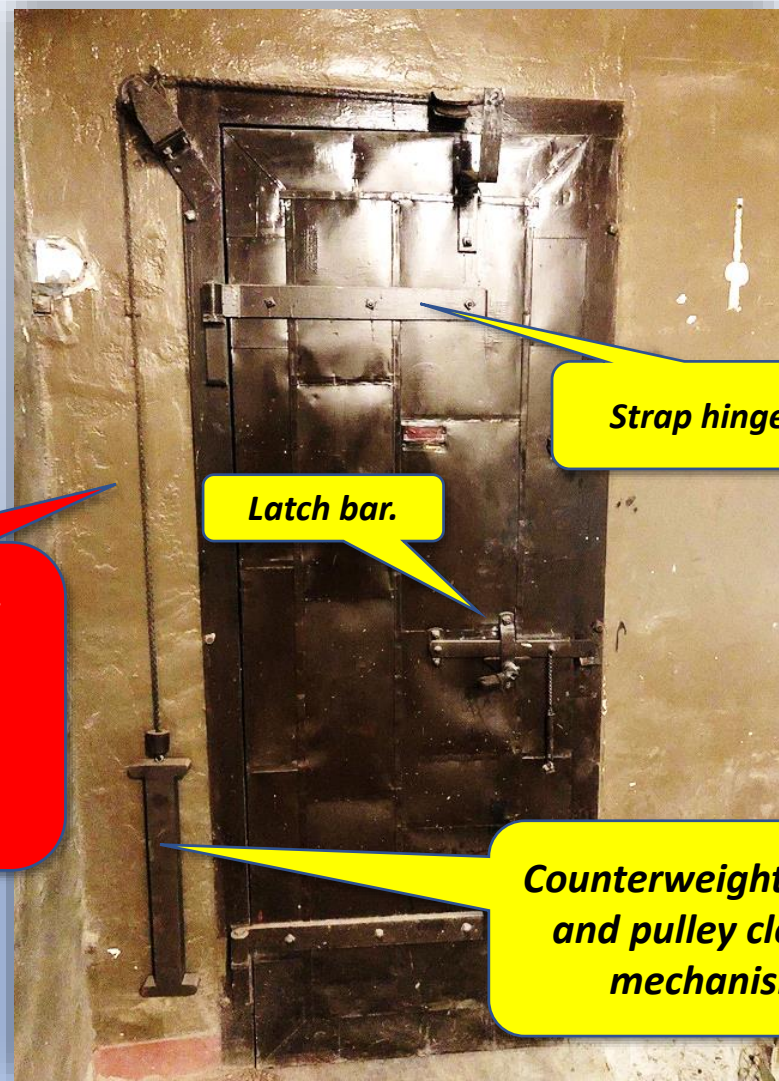


*Full mortise hinges and surface-mounted door closer (other side)*

*Fire exit hardware.*

*Swinging Door with Builders Hardware (Chapter 6)*

*Swinging Door with Fire Door Hardware (Chapter 7)*

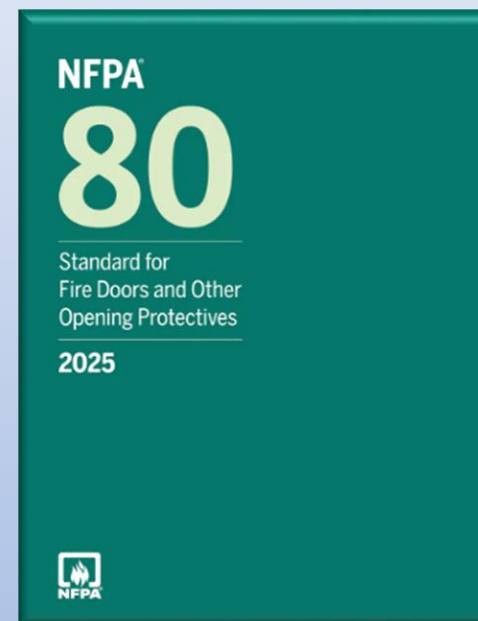


*Strap hinges.*

*Latch bar.*

*Counterweight, rope, and pulley closing mechanism*

# Changes NFPA 80 2025 edition



# Changes in NFPA 80

## ➤ Chapter 1 General

- New provision (*in 2022*) 1.1.5 acknowledges that some labeled fire door assemblies are installed in locations ***WHERE THE CODES DO NOT*** require opening protectives.

***"This standard does not cover requirements for labeled fire door assemblies installed in openings not required to be fire rated."***



***For example, labeled fire doors installed in non-fire-rated walls and partitions.***

# Changes in NFPA 80

## ➤ Chapter 1 General

- New (*in 2022*) provision 1.3 Application:

***"This standard regulates the periodic inspection, testing, and maintenance of all types of fire-rated opening protectives."***




***This has been true since the 2007 edition of NFPA 80.***

# Changes in NFPA 80

- Definitions in Chapter 3
  - ***Annual Frequency (3.3.5)***

***“Occurring once per year, with a minimum of 9 months and a maximum of 15 months between each occurrence.”***

 ***This applies to NFPA 80’s inspection cycles for fire door and fire window assemblies. Other NFPA standards have the same frequency.***

# Changes in NFPA 80

- **New Signage requirements in Chapter 4.**
  - Focuses on materials used for signage
  - Painted/stenciled signage is not limited!
  - Polymetric materials cannot exceed 0.008 in (0.2 mm) in thickness
  - Metal signage up to 20 gauge cannot exceed 200 in<sup>2</sup>



***Remember, these requirements apply to all types of doors specified in chapters 6 through 16.***

# Changes in NFPA 80

## ➤ Means of Attachment (for Signage Materials)

- #8 Screws and other steel fasteners—up to 0.17 inch/4.22 mm in diameter—that penetrate the door faces can be used to attach signage materials. (4.1.6.2.3)
- Fasteners cannot exceed 1/2-inch in length. (4.1.6.2.4)

# Changes in NFPA 80

- Job site preparation work moved from Chapter 4 to Chapter 5.
  - Formerly **Section 4.1.3 Appurtenances**
  - Now **Section 5.1.5.2 Job Site Preparation** (Its new title)
- No technical changes were made to these provisions.



***Anyone can perform this work for installation and ongoing maintenance. No special training or certification is needed.***

# Job Site Preparation

- Covers installation/maintenance work that anyone can do without special permission:
  - Drilling round holes for fasteners
  - Drilling round holes for surface-mounted hardware
  - Drilling round holes for mortise lock trim and cylinders
  - Prohibits certain types of work
    - Any work ***other than*** drilling round holes for fasteners

# Changes in NFPA 80

- New inspection and testing requirements for Swinging Doors with Fire Door Hardware (5.2.3.6)

# Changes in NFPA 80

- Chapters 6 through 16 (the door chapters) apply to NEW and EXISTING installations!

# Changes in NFPA 80

- NEW installations must be installed in accordance with the door chapter (e.g., 6 through 16) AND Chapter 4.
- Acceptance testing of NEW doors must be performed upon completion of installation in accordance with 5.2.3. (e.g., 6.1.1.1.2)



# Changes in NFPA 80

- EXISTING installations must be inspected and tested in accordance with 5.1.1.3 and 5.2.4.

# Changes in NFPA 80

➤ 5.1.1.3 (it's new)

*"Where inspection criteria for door assemblies are not listed in this chapter, door assemblies shall be inspected in accordance with all of the following:*

- 
- (1)\*The requirements of this standard that were in effect at the time of installation.*
  - (2) The manufacturers' published listings and installation instructions.*
  - (3) The requirements of the respective door chapter, Chapter 4, and Chapter 5, as applicable, where the manufacturers' published listings and installation instructions are not available."*
- 



***This is the second principle of NFPA 80's door safety inspections!***

# Changes in NFPA 80

- Maintenance of NEW and EXISTING installations must be maintained in accordance with Section 5.5.
- AND,
- NEW and EXISTING installations must be inspected and tested upon completion of maintenance work that affects the OPERATION and PERFORMANCE of the doors.



***Let's look at how this works in NFPA Link...***

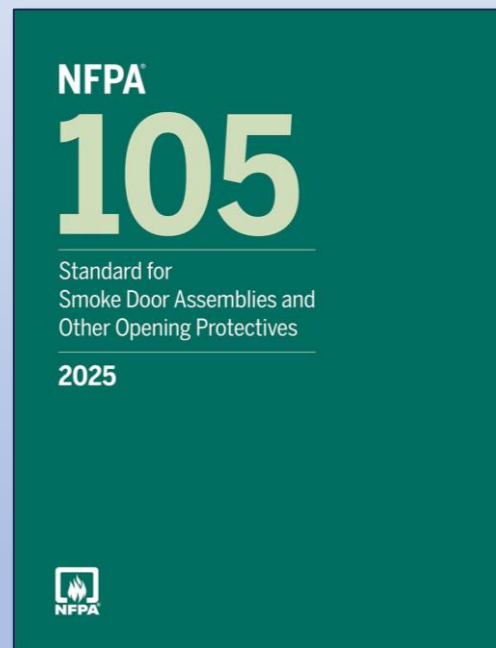
# **It's time to talk about the REALLY BIG CHANGE!**

Are you ready?

# ***The Biggest Change...***

- **Field Labeling**
  - Section 5.1.4 in the 2022 edition

# NFPA 105, Smoke Doors and Other Opening Protectives



*Pending Changes for the 2028 edition*

# NFPA 105's History...

- Published in 1985: ***Recommended Practice for the Installation of Smoke-Control Door Assemblies***
- The 2003 edition was published: ***Standard for the Installation of Smoke-Control Door Assemblies***
- The 2007 edition was renamed: ***Standard for Smoke Doors and Other Opening Protectives***

# NFPA 105's History...

- Testing under **UL 1784, Air Leakage Tests of Door Assemblies and Other Opening Protectives**
  - UL 1784's tests measure air flow around and under doors—it does not measure actual smoke.
  - Doors are tested under **POSITIVE PRESSURE**
  - No hourly ratings
- ✓ ***Building codes, past and present, rely on UL 1784.***

# NFPA 105's History...


- UL 1784's tests:
  - 4 iterations: 2 @ ambient temperature are untimed, and 2 @ elevated temperature (e.g., 400°F) are timed not to exceed 30 minutes.
  - The full height of the assembly is under positive pressure
- Doors bear S-marked labels

# NFPA 105's History...

- NFPA 105 doesn't explicitly REQUIRE gasketing
- BUT!
- All swinging doors need gasketing for ambient temperature
- Wood doors need intumescent gasketing for elevated temperature

CERTIFICATION AGENCY NAME & LOGO

SERIAL NO.



DO NOT REMOVE OR COVER THIS LABEL

**LISTED FIRE DOOR**  
1-1/2 HR. RATING  
250°F TEMP RISE AT 30 MINUTES  
MIN. LATCH THROW: 1/2"  
SINGLES 3/4" PAIRS  
MEETS NFPA 252/UL 10C POSITIVE PRESSURE REQUIREMENTS  
**S** CATEGORY A

LISTED GASKETING REQUIRED TO MEET SMOKE AND DRAFT CONTROL RATING. SEE INSTALLATION INSTRUCTIONS. CERTIFIED TO UL 1784 AND NFPA 105.

MANUFACTURER'S NAME & LOGO

CERTIFICATION AGENCY NAME & LOGO

SERIAL NO.



DO NOT REMOVE OR COVER THIS LABEL


**LISTED SMOKE & DRAFT CONTROL DOOR ASSEMBLY**  
**S**

LISTED GASKETING REQUIRED TO MEET SMOKE AND DRAFT CONTROL RATING. SEE INSTALLATION INSTRUCTIONS.

CERTIFIED TO UL 1784 AND NFPA 105.

MANUFACTURER'S NAME & LOGO

SERIAL NO.




DO NOT REMOVE OR COVER THIS LABEL

**LISTED FIRE DOOR**  
1-1/2 HR. RATING  
250°F TEMP RISE AT 30 MINUTES  
MIN. LATCH THROW: 1/2"  
SINGLES 3/4" PAIRS  
MEETS NFPA 252/UL 10C POSITIVE PRESSURE REQUIREMENTS  
**S** CATEGORY A

LISTED GASKETING REQUIRED TO MEET SMOKE AND DRAFT CONTROL RATING. SEE INSTALLATION INSTRUCTIONS. CERTIFIED TO UL 1784 AND NFPA 105.

SERIAL NO.



DO NOT REMOVE OR COVER THIS LABEL

**LISTED SMOKE & DRAFT CONTROL DOOR ASSEMBLY**  
**S**

LISTED GASKETING REQUIRED TO MEET SMOKE AND DRAFT CONTROL RATING. SEE INSTALLATION INSTRUCTIONS.

CERTIFIED TO UL 1784 AND NFPA 105.



# NFPA 105: Pending Changes...

- Renaming NFPA 105: ***Standard for Smoke & Draft Control Doors and Other Opening Protectives***
- Global changes throughout the standard:
  - Change the term "~~smoke door~~" to "*Smoke and Draft Control Door*"

***Questions?***

# Inspecting and Maintaining Older Doors

*Doors installed in (or before) 2005*

# Principles of Door Safety Inspections

- 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 door provide the appropriate level of protection for the openings in which they are installed.***

# Principles of Door Safety Inspections

- 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.*



***Fire doors must be maintained in a CONSTANT STATE OF READINESS to prevent the spread of fire.***

# Chapter 4: General Requirements

- Other topics covered in this chapter:
  - Components
    - Each component must be labeled or listed
    - Components can be products from different manufacturers
    - Components can be labeled by different certification and testing labs (e.g., FM, Intertek/Warnock Hersey, QAI Labs, and UL)
    - Unmarked components are permitted where they comply with NFPA 80's specifications
    - Components must be used according to their installation instructions and listings (how they were tested).
    - Components cannot be used on assemblies requiring higher ratings.

# Chapter 4:

## Labels on Door Frames

- Hollow metal door frames
  - Most labels do not list the hourly rating.
  - Frames in masonry construction can be rated up to 3 hours.
  - Frames in drywall partitions can be rated up to 1-1/2 hours.
  - Standard sidelight frames are rated up to 3/4-hour (fire protection-rated), regardless of wall construction.
  - Special sidelight frames are rated up to 1-1/2 hours (fire resistance-rated), provided they pass ASTM E119 or UL 263 fire tests.
  
- ***Door frame of other construction include the hourly ratings on their labels (e.g., 20 minutes, 45 minutes, and 90 minutes).***

# Chapter 4: General Requirements

- Requirements for labels on door frames, doors, and hardware components
- Labels on door frames and doors are not required to match!
- An assembly's rating is the rating of the door frame or door, whichever is less.

# Chapter 4: General Requirements

- There are no standard labels!

# Fire Door Labels



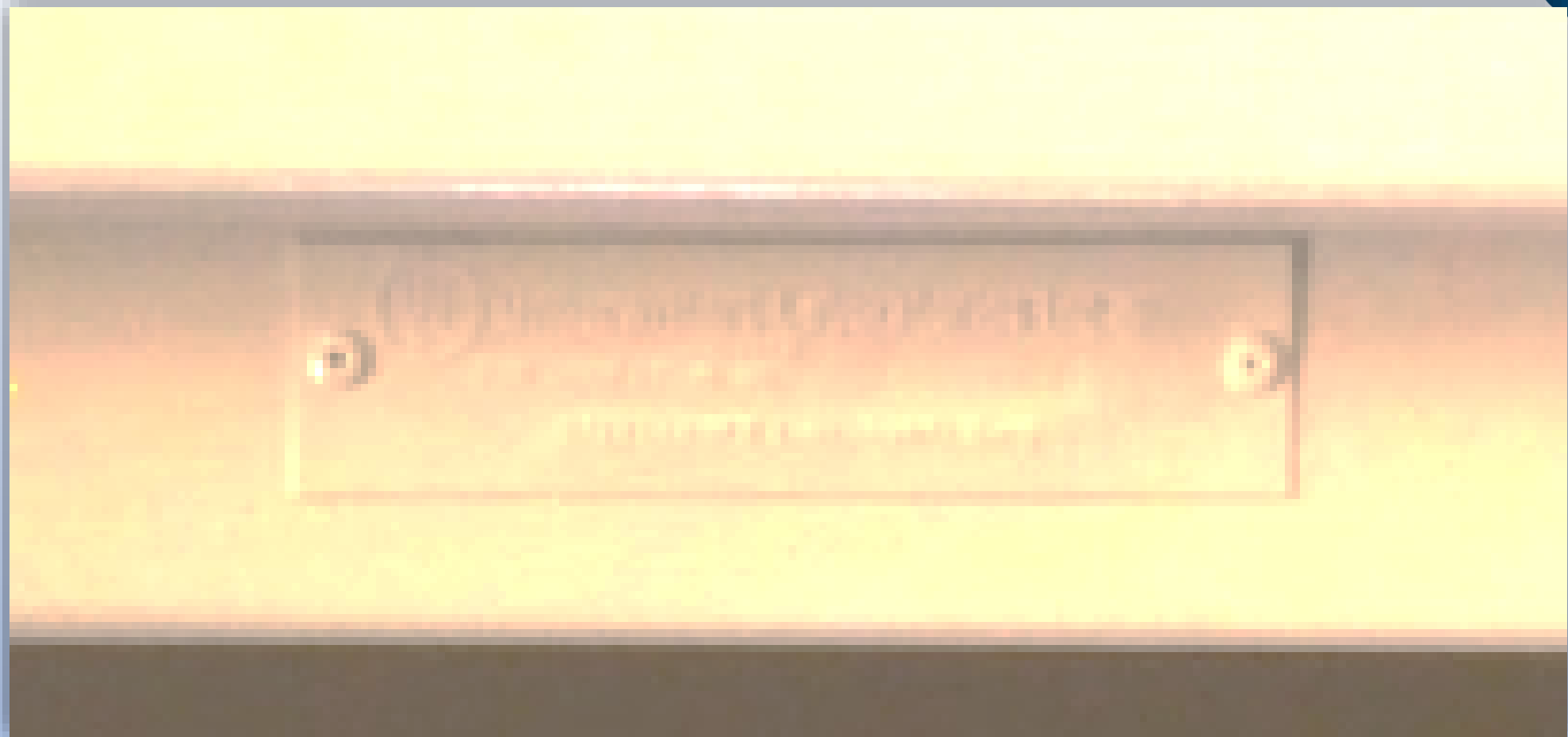


AMERICAN STEEL PROD. CORP.  
FARMINGDALE, N.Y.  
1-1/2 HOUR RATED FIRE DOOR  
BY ASTM E 152  
LATCH THROW 1/2 IN.  
SERIAL NO. 05494

FACTORY MUTUAL



APPROVED





AMERICAN STEEL PROD. CORP.  
FARMINGDALE, N.Y.

FIRE DOOR FRAME

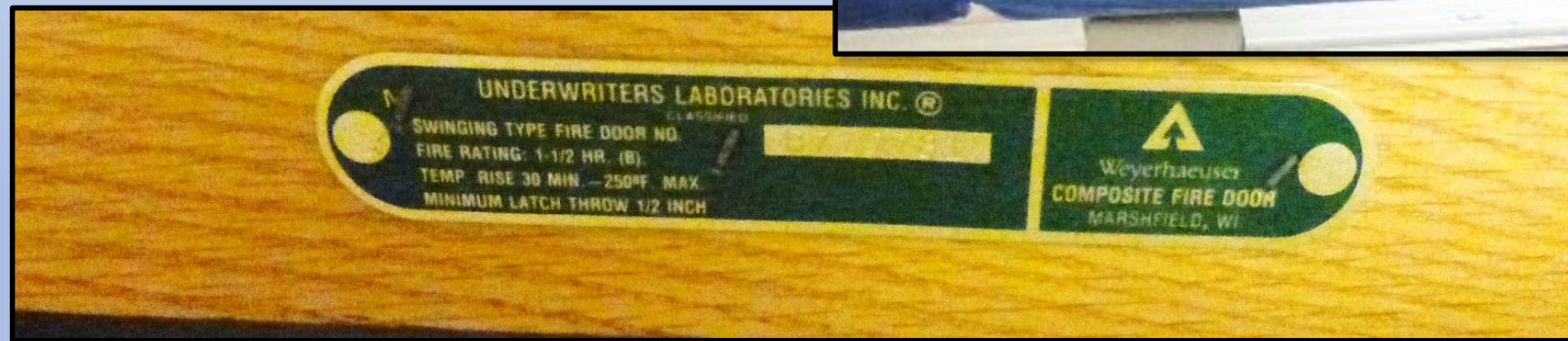
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FACTORY MUTUAL

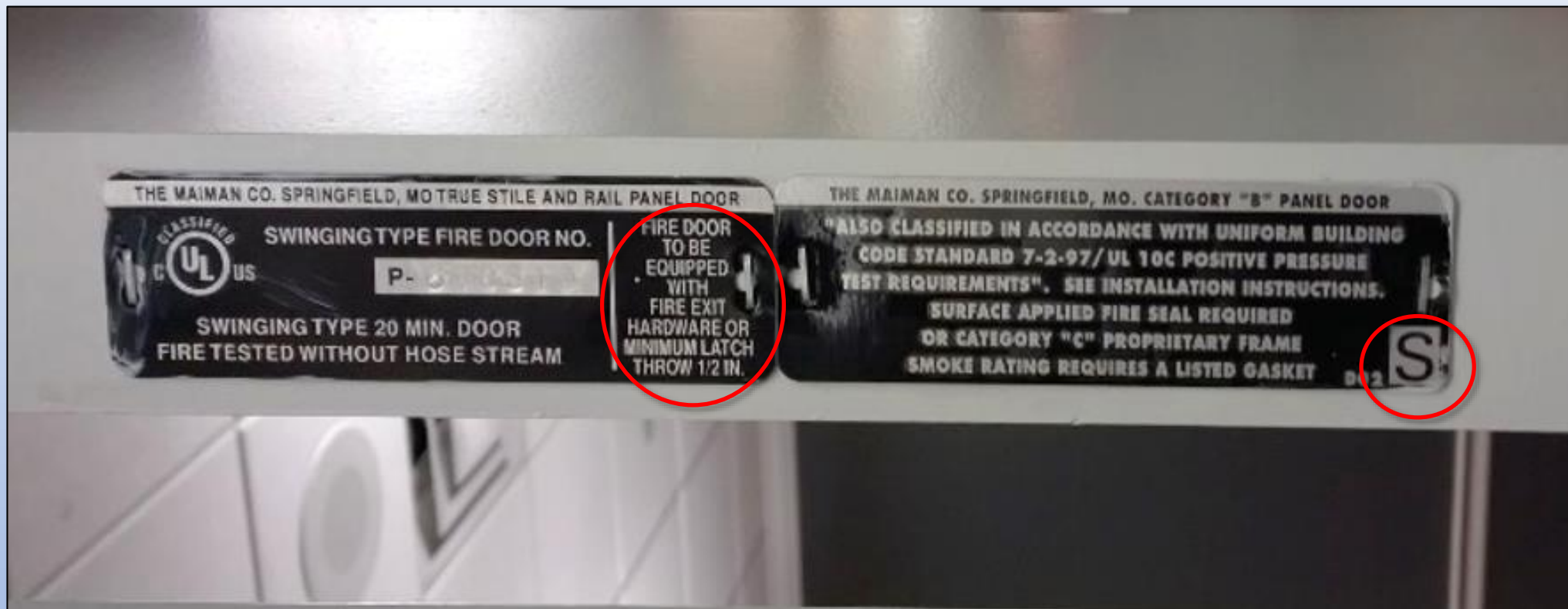


APPROVED

# No Standard Fire Door Label



# No Standard Fire Door Label



# What's Wrong With This Label?



Underwriters' Laboratories Inc  
INSPECTED  
FIRE DOOR FOR OPENING  
IN VERTICAL SHAFT  
No. A-489419



WELDWOOD  
COMPOSITE  
FIRE DOOR  
U.S. PLYWOOD CORP.  
ALGOMA, WI

# Summary

- Swinging fire and smoke & draft control doors are specially engineered component-based systems
  - They have one job: preventing a fire from spreading.
  - They require increased attention during installation and throughout their service lives.

***Fire and Smoke & Draft Control doors must be kept in a CONSTANT STATE OF READINESS!***

***Questions?***