

Highlights of NFPA 80 – Standard for Fire Doors and Other Opening Protectives 2010

Note: Numbers in brackets () refer to applicable sections of the publication.

An asterisk following a number indicates the presence of explanatory material within the Annex of the publication.

Equivalency (1.4)

- The Standard does not prohibit the development of new products that meet the intent of the requirements – it is the responsibility of the manufacturer to provide enough information to allow the AHJ to make a determination.

Job-Site Hardware Preparation (4.1.3)

- Job-Site prep of surface applied hardware and function holes, maximum 1" diameter holes is permitted.
- Maximum 3/4" undercut for wood and composite doors allowed.
- Any preparations other than noted above must be done under label service.
- Plant-ons are allowed per the manufacturer's listing.

Signage (4.1.4)

- Signage shall not exceed 5% of the area of the face of the door.

Listed and Labeled Products (4.2)

- Listed items are required to bear a label
- Labels shall be applied in locations that are readily visible after installation
- Generic items such as hinges are not labeled but must comply with specifications

Classification and Types of Doors (4.3)

- Swinging fire doors are permitted to be supplied separately with individually labeled frames and hardware
- Fire doors used with fire exit hardware shall be specifically labeled as such. Label shall address necessary reinforcements and the assembly shall have been tested for egress panic load requirements
- AHJ shall be consulted for oversized doors

Glazing Material in Fire Doors (4.4)

- Only labeled fire resistance rated or fire protection rated glazing material and labeled lite kits may be used, when permitted by the door listing
- Allowable size of light depends on type of glazing and specific listings.
- Rule of thumb –
 - 1/2 and 1/3 hour rated – limited to maximum area tested (rule of thumb – 1296 square inches per door leaf)
 - 3/4 hour rated – 1296 square inches per door leaf
 - No dimension larger than 54", unless otherwise tested
 - 1 hour, 1-1/2 hour rated – limited to the maximum area tested (100 square inches in Temperature Rise Doors)
 - 3 hour rated – 100 square inches

Classification of Hardware for Fire Doors (4.6.3.2)

- Builders hardware shall not be required to be shipped from the factory with the fire doors

Sills (4.8.2)

- Noncombustible floors do not require special sills
- Combustible flooring is not permitted to extend through the door opening without the protection of non-combustible sills, 1/3 and 1/2 hour rated door openings are exempt
- Noncombustible sills shall be a minimum 4" wide, and shall extend from the face of the frame on the door side into the frame

Lintels (4.8.3)

- Lintels shall be brick, steel, reinforced concrete, or concrete/masonry arches
- The AHJ can allow other types of lintels

Undercuts (4.8.4)

- Maximum permitted undercut is 3/4"

Inspections (5.2*)

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

5.2.2 * Performance-Based Option.

5.2.2.1 As an alternate means of compliance with 5.2.1, subject to the AHJ, fire door assemblies shall be permitted to be inspected, tested, and maintained under a written performance-based program.

5.2.2.2 Goals established under a performance-based program shall provide assurance that the fire door assembly will perform its intended function when exposed to fire conditions.

5.2.2.3 Technical justification for inspection, testing, and maintenance intervals shall be documented.

5.2.2.4 The performance-based option shall include historical data acceptable to the AHJ.

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

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

- (1) No open holes or breaks exist in surfaces of either the door or frame.
- (2) Glazing, vision light frames, and glazing beads are intact and securely fastened in place, if so equipped.
- (3) The door, frame, hinges, hardware, and noncom threshold are secured, aligned, and in working order with no visible signs of damage.
- (4) No parts are missing or broken.
- (5) Door clearances at the door edge to the frame, on the pull side of the door, do not exceed clearances listed in 4.8.4 and 6.3.1.
- (6) The self-closing device is operational, that is, the active door completely closes when operated from the full open position.
- (7) If a coordinator is installed, the inactive leaf closes before active leaf.
- (8) Latching hardware operates and secures the door when it is in the closed position.
- (9) Auxiliary hardware items that interfere or prohibit operation are not installed on the door or frame.
- (10) No field modifications to the door assembly have been performed that void the label.
- (11) Gasketing and edge seals, where required, are inspected to verify their presence and integrity.

Swinging Fire Door Components (6.1.2)

- components of a fire door assembly include a door, a door frame, hinges, a lock or latch, and a closing device
- components may also include an astragal, an automatic louver, a coordinator, flush or surface bolts, casketing, a holder/release device, protection plates, and glazing units

Operation of Doors (6.1.4)

- All swinging fire rated doors shall be closed and latched at the time of fire

Clearances (6.3.1.7)

- Clearances between the door and the frame shall be 1/8" +/- 1/16" for steel doors
- Clearances between the door and the frame shall not exceed 1/8" for wood doors
- Clearances at the meeting edges of pairs of doors shall be 1/8" +/- 1/16" for steel doors
- Clearances at the meeting edges of pairs of doors shall not exceed 1/8" for wood doors

Multiple Opening Door Frames (6.3.5)

- Individual frame sizes per the manufacturer's listing, not to exceed 12'8" in overall width
- Multiple opening frames adjoin each other in a fire-resistive wall, they must be separated by a minimum 16" wall section

Assembly Components (6.4)

Closing Devices (6.4.1)

- A closing device shall be required on every fire door.
- All closing devices shall be adjusted to insure positive latching on each door operation.

Coordinating Device (6.4.1.2)

- Coordinators are required if a latch bolt or astragal can prevent the inactive door from closing and latching.

Hinges (6.4.3.1)

- hinges shall be made of steel, labeled continuous hinges are permitted in accordance with their listing
- Mortise hinges shall be attached to doors with steel screws, surface hinges shall be attached with steel through-bolts (if shims are used, they must be fabricated from steel).
- Doors up to 60 inches in height shall have 2 hinges, and an additional hinge for each additional 30 inches of height or fraction thereof. Distance between hinges may exceed 30".
- Non-spring hinges shall be ball-bearing type, spring hinges shall be labeled, pivots may be used if approved and listed.

Shimming (6.4.3.4)

- Shimming of hinges to attain permitted clearances requires the use of steel shims

Locks or Latches (6.4.4)

- Any lock, latch, or fire exit hardware shall meet both life safety and fire protection requirements.
- Fire exit hardware to be installed only on doors labeled "Fire Door to be Equipped with Fire Exit Hardware".
- All single doors and active leaves of pairs shall have an active latch bolt that cannot be held retracted—
 - Except doors not in a means of egress may have dead bolts in addition to the active latch bolts or as permitted by the AHJ.

Locks or Latches (6.4.4) Continued

- Locks with interconnected dead bolts which are retracted when the latch bolt is retracted are permitted.
- Automatic fail-safe devices which are activated by the fire protection system and become positively latched upon activation are permitted.
- Latch throw shall be as specified in the manufacturer's installation instructions.
- The inactive leaf on all pairs of doors, where not required for exit purposes shall have labeled self-latching, or automatic flush bolts. Manual bolts can be used on rooms not normally occupied by humans (e.g. transformer vaults and storage rooms) (6.4.4.5.1)
- Doors in the means of egress shall not have dead bolts, unless the deadbolt is retracted when the latch bolt is retracted.

Protection Plates (6.4.5)

- Protective Plates more than 16" high require specific door manufacturer's listing.
- Factory installed protection plates permitted per the door manufacturer's listing.
- Field installed protection plates shall be labeled and installed per their listing

Astragals (6.4.7)

- There is no specific requirement for an astragal on doors rated more than 1-1/2 hours. Check individual manufacturer's listing for astragal requirements.
- If an astragal is required, it must comply with the manufacturer's listing
- Doors in the means of egress, equipped with astragals, shall not inhibit the free use of either leaf.

Gasketing (6.4.8)

- Any gasketing used on fire doors shall be fire rated for its intended use.

Installation (6.5)

- All devices shall be installed in accordance with the manufacturers' instructions and shall be adjusted to function as described in the listing.

Temperature Rise (Annex D.7)

- Where fire doors are used in stairway enclosures, such doors shall be constructed so that the maximum transmitted temperature end point shall not exceed 450 degrees (F) above ambient temperature at the end of 30 minutes of the standard fire exposure test.