



## Fire Door Guidelines

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### **REQUIREMENTS:**

All door systems listed have been evaluated and tested to comply with either of the following standards CAN/ULC S104, UL 10(c), UBC 7-2 (1997) Part 1, NFPA 252 and ASTM E2074, "Standard Method of Fire Tests of Door Assemblies" (Positive Pressure) or CAN/ULC S104, UL 10(b), UBC 7-2 (1994), and NFPA 252, "Standard Method of Fire Tests of Door Assemblies" (Neutral Pressure), including hose stream. Refer to the listing page for the complete list of standards that the product is listed to.

### **FIRE DOOR DURATION RATINGS:**

3 HR

1-½ HR (90 MIN)

1 HR (60 MIN)

¾ HR (45 MIN)

½ HR (30 MIN)

1/3 HR (20 MIN)

## **DOOR SLAB CATEGORIES:**

Positive pressure fire doors are categorized as follows:

Category “A” Doors: A fire door slab that has been evaluated without the addition of a Category “G” edge-sealing system between the door and frame. These door slabs systems may have been evaluated with a concealed edge sealing system into the edge of the door by the licensed manufacturer or machining distributor.

Category “B” Doors: A fire door slab that may have been evaluated with the addition of a Category “G” edge-sealing system between the door and the frame. These door slab systems may have been evaluated with an edge-sealing system (Category G) field applied to the labeled frame or door. The application of the edge-sealing system does not require any machining of the frame or door. Please refer to “Category G Edge-Sealing” for individual manufacturer’s listings.

Door slab and frames used in neutral pressure applications may not require the use of Category “G” Edge Sealing between the perimeter of the door and the frame, Category “H” - Smoke and Draft Control Gasketing, or any combination thereof. Options include frame mounting, the Category “G”- edge, seal and/or category “H”- Smoke and Draft Control Gasketing, mortising the Category “G”- Edge Seal within the stile(s), or a combination of these methods.

Doors labeled for positive pressure applications must include installation instructions to be furnished by the door labeler. Unless otherwise noted in the door’s installation instructions, all categories “G”- Edge Seal and Category “H”- Smoking and Draft Control Gasketing used in the assembly area are to be installed per their respective manufacturers’ instructions.

## **CATEGORY “G”- EDGE SEALING SYSTEMS:**

Edge seals are gasket materials that have demonstrated their ability to assist the door in meeting the positive pressure fire test requirements. They expand and fill the gaps around the door edges to prevent the passage of hot smoke and gases. Edge seals are required for Category “B” Swinging Type Fire Doors under Positive Pressure requirements. Edge seals are surface applied to frames or doors. These seals may or may not affect the leakage (smoke) requirements for the smoke (“S”) rating. Edge sealing systems are either certified for general use on all products in the door type family or limited to individual door manufacturers as noted in the individual certifications. Edge seals that are also smoke seals are denoted as Category “G”- Edge Seal/ Category “H”- Smoke and Draft Control Gasketing in the individual certifications.

**ASTRAGALS:**

The meeting edge of door assemblies in both pairs (doors swinging in the same direction) and double egress (door swinging in opposite directions) can be provided with or without an astragal. Refer to the individual listings to see but a listed astragal may be added to any pair of doors as long as the astragal is rated at an equivalent or greater fire resistance.

**FRAMES:**

Door slabs systems are eligible for use in any Category "C" - Standard Frame. These doors may also be installed in frames listed for (three sided) 16-gauge welded steel frames needing ANSI A155.1/UL-63. As well as category "C" Proprietary frame as per manufacturers' listings. Category "C" Proprietary frames that are rated for neutral pressure can be paired with Category "A" or "B" door slabs, but the assembly will only be rated for neutral pressure.

**GLAZING:**

Glazing materials referenced in this category are certified as to fire resistance only. The glazing materials are intended to be installed in fire doors in accordance with ANSI/NFPA 80, "Fire doors and fire windows," and the installation instructions provided by the manufacturer of the door, glazing frame members or glazing materials. Doors marked "4 HR" are not intended to be provided with vision panels.

Doors marked "3 HR," "1-½ HR (or 90 MIN)" or "1 HR (or 60 MIN)" can be provided with certified glazing materials for the vision panel. The sum of the exposed glazing area should not exceed 100SQ in per door and the width and height should not exceed 12 and 33 in, respectively. Doors rated 3HR and provided with a vision panel are intended for the protection of openings as specified in the applicable sections of specific building codes.

Doors marked "¾ HR (or 45 MIN)," "30 MIN" or "20 MIN" can be provided with one or more certified glazing materials for the lights. The exposed area of each light should not exceed 1296 sq in with no dimension exceeding 54in (except as indicated in the individual certifications).

Doors marked "20-MINUTE-TYPE DOOR ASSEMBLY FIRE TESTED WITHOUT HOSE STREAM" can be provided with one or more certified glazing materials for the lights. The exposed area of each light should not exceed 1296 sq in with no dimension exceeding 54in (except as indicated in the individual certifications)

Certified ¼ in-thick wired glass, as well as other types of certified glazing materials are covered under their individual listings. The glazing materials should be installed in accordance with the manufacturer's instructions to provide the protection indicated.

A door prepared at the factory for a light includes the glazing frame members, but generally does not include the glazing material. The glazing material (glass) is usually provided by an entity other than the door manufacturer and is installed in the field at the time of the door installation.

## **CATEGORY "H" - SMOKE AND DRAFT CONTROL GASKETING:**

This category covers leakage-rated door assemblies, which consists of combinations of the following individual component products: door frame, hardware, gasketing, and other door accessories. The door assemblies covered under this category are certified for use with other certified component products. These assemblies and/or components have been tested in accordance with ANSI/UL 1784, "Air Leakage Tests of Door Assemblies."

Category "H" - Smoke and Draft Control Gasketing is a gasketing material that is surface applied to the frame and/or door to comply with the requirements of ANSI/UL 10C, "Positive Pressure Fire Tests of Door Assemblies," and ANSI/UL 1784, "Air Leakage Tests of Door Assemblies." Smoke and draft control gasketing will be either certified for general use on all products in a door type family or limited to individual door manufactures as noted in the individual certifications.

Leakage-rated door assemblies are intended for installation in accordance with ANSI/NFPA 105 (2007), "Installation of Smoke Door Assemblies and Other Opening Protectives," and the installation instructions with each leakage-labeled component product. The products are intended primarily for field installation in accordance with installation instructions, packaged with the leakage labeled components, but may be factory assembled. Information concerning the specific air-leakage rating, mounting locations, installation clearances, and the like is provided in the detailed installation instructions accompanying each leakage-labeled component product. All components (door, frame, gasketing, hardware, and accessories) must be listed to ANSI/UL 1784. The installed assemblies must achieve an air-leakage rate not exceeding 3.0 cfm per square foot of door opening at 0.10 inch of water for both ambient and 400-degree Fahrenheit temperature conditions. These assemblies are then eligible to bear the "S" (for Smoke and Draft controls assemblies).

## **CATEGORY "J" - GASKETS:**

Category "J" is gasket materials that are added to a door assembly for purposes other than Category G Edge Seals and Category H Smoke and Draft Control Gaskets. They are used for purposes such as weather stripping, sound control, etc. Category J Gasketing Materials have only been Investigated to positive pressure with respect that they do not contribute to flaming during the fire test. They have not been evaluated for any contribution for a door assembly to help meet the positive pressure requirements.

## **LOUVERS:**

Doors marked fire ratings of 1-½ HR or less can be provided with a certified Fire Door Louver by some manufactures as indicated in the individual certifications.

Authorities having Jurisdiction should be consulted before installation.

**DUTCH DOOR:**

Single-swing composite, hollow-metal and wood-core Dutch-type doors marked with fire ratings of 3 HR or less can be provided by some manufacturers as indicated in the individual certifications.

A horizontal astragal should be provided between the top and bottom door leaves.

**HARDWARE:**

Single-swing doors marked with a minimum latch-throw and the fire rating should be provided with certified single-point locks and latches with a minimum ½in throw (expect as indicated on the individual manufacturer's product) to provide the protection indicated.

Single-swing doors marked with a fire-exit hardware marking and the fire rating should be provided with certified mortise- or rim-type fire-exit hardware to provide the protection indicated.

Doors swinging in pairs (same direction) marked with a minimum latch-throw and the fire rating should be provided with certified single-point locks or latches with a minimum ¾in throw (expect as indicated on the individual manufacturer's product) and certified top and bottom flush bolts or surface bolts to provide the protection indicated.

Doors swinging in pairs (same direction) marked with a fire-exit hardware marking and the fire rating should be provided with a certified mortise-type fire-exit hardware device and/or a certified vertical-rod type fire-exit device to provide the protection indicated. For doors rated up to and including 1-½ HR, certified vertical-rod-type fire-exit hardware device may be used on both doors if the doors are so prepared by the door manufacturer.

Double egress doors (door swinging in pairs, opposite direction) marked with a fire rating should be provided with certified vertical-rod fire-exit hardware devices to provide the protection indicated.

Hollow-metal-type doors can be provided with certified two- or three-point locks or latches.

Fire Door Hardware Includes:

- Single-point Locks and Latches
- Electrically Controlled Single-point Locks and Latches
- Flush and Surface Bolts, Automatic Type
- Flush and Surface Bolts, Manual Type
- Flush and Surface Bolts, Self-latching Type
- Fire-exit Hardware
- Two- and Three-point Locks and Latches

**HINGES:**

Doors should be provided with hinges, pivots, or olive knuckles in accordance with the specifications in ANSI/NFPA 80. For other types of certified hinges see their individual listings.

**DOOR CLOSERS:**

Doors should be provided with door closers in accordance with ANSI/NFPA 80.

Fire Door Closers Include:

- Combination Fire Door Closers and Holders
- Fire Door Operators
- Fire Door Operators with Automatic Closers
- Swinging Fire Door Closers