



Jeld-Wen	Single	Profiled or Flush	Hardboard	Wood Particleboard	1.69"	36"	80"
Jeld-Wen	Single	Profiled or Flush		Wood	1.75"	36"	96"
Jeld-Wen	Double	Profiled or Flush		Wood	1.75"	72"	96"
Jeld-Wen	Single	Profiled or Flush	1/16" Fiberglass	Celotex 18 pcf	1.75"	36"	80"
Jeld-Wen	Single	Profiled or Flush		"Environ" 27 pcf	1.75"	36"	80"
Masonite	Single	Profiled or Flush	Hardboard	Wood Particleboard	1.75"	36"	96"
Masonite	Double	Profiled or Flush	Hardboard	Wood Particleboard	1.75"	72"	84"

Positive Pressure:  
(UBC 7-2 (1997), UL 10c (2001) Category "B")

Manufacturer	Swing Type	Panel Type	Skin	Core	Thickness	Maximum Size	
						Width	Height
Jeld-Wen	Single	Profiled or Flush		Wood	1.75"	36"	96"
Jeld-Wen	Double	Profiled or Flush		Wood	1.75"	72"	96"
Jeld-Wen	Single	Profiled or Flush	1/16" Fiberglass	Celotex 18 pcf	1.75"	36"	80"
Masonite	Single	Profiled or Flush	Hardboard	Wood Particleboard	1.75"	36"	96"
Masonite	Double	Profiled or Flush	Hardboard	Wood Particleboard	1.75"	72"	84"

**20-Minute Steel-Faced/Foam Core/Wood Edged Door Slabs:**

Neutral Pressure:  
(UBC 7-2 (1994), UL 10b (2008), NFPA 252 (2008), ASTM E2074 (2004) & CAN/ULC S104)

Manufacturer	Swing Type	Panel Type	Skin	Core	Thickness	Maximum Size	
						Width	Height
Jeld-Wen	Single	Flush	Steel	Foam	1.75"	36"	80"
Jeld-Wen	Double	Profiled or Flush	24 ga Steel	1.0 pcf Expanded Polystyrene Foam	1.75"	36"	80"
Masonite	Single	Profiled or Flush	Steel	Polyurethane	1.75"	36"	84"

Positive Pressure:  
(UBC 7-2 (1997), UL 10c (2001) Category "B")

Manufacturer	Swing Type	Panel Type	Skin	Core	Thickness	Maximum Size	
						Width	Height
Jeld-Wen	Single	Flush	Steel	Foam	1.75"	36"	80"
Jeld-Wen	Double	Profiled or Flush	24 ga Steel	1.0 pcf Expanded Polystyrene Foam	1.75"	36"	80"
Masonite	Single	Profiled or Flush	Steel	Polyurethane	1.75"	36"	84"

**45-Minute Hollow Metal with EPS Foam Insulation Fire Door Slabs:**

Neutral Pressure:  
(UBC 7-2 (1994), UL 10b (2008), NFPA 252 (2008), ASTM E2074 (2004) & CAN/ULC S104)

Manufacturer	Swing Type	Panel Type	Skin	Core	Thickness	Maximum Slab Size	
						Width	Height
Artek	Double	Flush	18 Gauge Steel	Expanded Polystyrene (EPS)	1.75"	48"	96"

**90-Minute Hollow Metal with EPS Foam Insulation Fire Door Slabs:**

Neutral Pressure:  
(UBC 7-2 (1994), UL 10b (2008), NFPA 252 (2008), ASTM E2074 (2004) & CAN/ULC S104)

Manufacturer	Swing Type	Panel Type	Skin	Core	Thickness	Maximum Slab Size	
						Width	Height
Artek	Double	Flush	18 Gauge Steel	Expanded Polystyrene (EPS)	1.75"	48"	96"

## Approved Door Frame Details for Machining:

Steel or Wood Frames that meet ANSI A155.1/UL 63/ULC S105 or as per the following:

### Neutral Pressure Wood Frames:

(UBC 7-2 (1994), UL 10b (2008), NFPA 252 (2008), ASTM E2074 (2004) & CAN/ULC S104)

#### Maximum Sizes:

##### 20 Minute:

Single Swing	See Table Above
Pair	See Table Above
Minimum Jamb Depth	3-3/4"

##### 45/90 Minute:

Single Swing	See Table Above
Pair	See Table Above
Minimum Jamb Depth	3-1/2"

#### Frame Cross Section Dimensions:

##### Wood Frame:

Minimum Stop Depth	1/2"	
Minimum Rabbet	1-13/16"	(Non-Kerfed Frames)
	1-15/16"	(Kerfed Frames)
Minimum Soffit	1-13/16"	
Minimum Face Width	11/16"	(Door Side)
	1-3/16"	(Soffit Side)
Maximum Kerf for Weather-stripping	1/8" x 1/2"	

**Note:** Kerf is optional all labeled frames

##### Expandable Artek Steel Frame:

Rebate Width:	96"
Rebate Height:	96"
Metal Gauge:	18 gauge Satin Coat Galvanized Steel
Face Length:	2"
Back Bends:	1/2"
Stop Height:	5/8"

#### Material:

##### 20 minute Wood Frames:

Solid Wood (Grade 1 or better) with a minimum specific gravity of 0.36 at 12% moisture content (Sugar Pine)

##### 45/90 minute Artek Steel Frames:

Hinge Reinforcements:	10 gauge, 9-1/4" x 1-1/4"
Closer Reinforcement:	16 gauge, 12" x 1-1/2"
Corner Connection Tabs:	20 gauge, spot welded to the jambs
Slides:	16 gauge stamped interlocking sliders, welded to frame with four spot welds, four sliders per jamb for headers, 4-1/2" from ends and 30" on centers.
Anchoring:	Screws are installed in the prepared holes in the face of the frame (four per jamb and for the header)

### Positive Pressure Wood Frames:

(UBC 7-2 (1997), UL 10c (2001) Category "B")

#### Maximum Sizes:

Single Swing	4'0" wide by 9'0" high
Pair	8'0" wide by 9'0" high
Minimum Jamb Depth	3-3/4"

#### Frame Cross Section Dimensions:

Minimum Stop Depth	1/2"	
Minimum Rabbet	1-13/16"	(Non-Kerfed Frames)
	1-15/16"	(Kerfed Frames)
Minimum Soffit	1-13/16"	
Minimum Face Width	11/16"	(Door Side)
	1-3/16"	(Soffit Side)
Maximum Kerf for Weather-stripping	1/8" x 1/2"	

**Note:** Kerf is optional all labeled frames

**Material:**

Frames up to 3'6" wide by 8'0" high:

Solid Wood (Grade 1 or better) with a minimum specific gravity of 0.36 at 12% moisture content (Sugar Pine)

Frames larger than 4'6" wide by 8'0" high:

Solid Wood (Grade 1 or better) with a minimum specific gravity of 0.47 at 12% moisture content (Sugar Pine)

**Door & Frame Components:**

*Refer to Appendix A of F409-1 – Evaluation Report for allowable components and modifications for each listed door slab.*

**Latch Sets** (Listed and labeled for rated opening)

- Cylindrical Latches
  - Maximum 2-1/8" diameter bore
  - Maximum 2-3/4" backset
  - Minimum 1/2" Throw
- Mortised Latch

**Deadbolts** (Listed and labeled for rated opening)

- Maximum 2-1/8" diameter bore
- Maximum 2-3/4" backset
- Located a minimum of 3-1/2" center-line to center-line above the latch set
  - Interconnected Deadbolts are allowed

**Hinges** (Listed and labeled for rated opening)

- Hinges as per NFPA 80, Table 6.4.3.1

**Fire Exit Devices** (Listed and labeled for rated opening)

- Surface Mounted Vertical Rod Fire Touch Bar Exit Device
- Rim Type Fire Exit Devices
- Through-bolts are required unless optional reinforcements are noted on the marking top of the door

**Weather-Stripping** (Listed and labeled for rated opening)

- Category "B" doors are eligible to bear the "S" (for smoke and draft assemblies) if a listed Category "H" smoke and draft control gasket has been applied to the assembly. Please refer to the individual gasket manufacturer's listings.
- Gaskets must be listed for use with either wood or steel frames or both and for the type of door being installed.
- In Canada, weather-stripping is required

**Surface Mounted Closers** (Listed and labeled for rated opening)

- Through-bolts are required unless optional reinforcements are noted in marking on the top of the door

**Surface Mounted Protection Plates**

- Plates of brass, bronze, steel, aluminum, polycarbonate or decorative laminate may be installed to the bottom face on one or both sides of a door.
- Top of plate shall be located a maximum height of 16" above the door bottom
- The plate shall be applied with sheet metal screws, spaced maximum of 6" o.c. around the perimeter of the plate

**Louvers**

- Not permitted

**Metal Edges/Astragals** (Listed and labeled for rated opening)

- Metal edges and Z-Astragal set is required for meeting edges of pairs

**Viewers** [Flush Panel Doors only] (Listed and labeled for rated opening)

- Maximum size of 1" diameter
- Multiple viewers located a minimum of 12" on center
- Viewers located a minimum 5-1/2" away from edges of doors.

**Glass Lights** (Listed and labeled for rated opening)

- Glazing material shall be listed and labeled for rated opening, light kit and door type
- Glazing installed in accordance with NFPA 80, and the listed light kit frame installation instructions
- 20 min wood doors
  - Maximum 1296 sq. in. area (see details in Slab Preparation Section)
- 45 Min Steel Doors
  - Square/Rectangular Lites
    - Maximum 1296 sq. in. area (see details in Slab Preparation Section)

- Round Lites
  - Maximum 15 in Diameter
  - Maximum area of 707 sq. in.

- 90 Min Steel Doors
  - Maximum 100 sq. in. area
  - Rectangular or Square only

**Plant-Ons** (Wood & Composite Slabs only)

- Solid wood plant-on moldings may be applied to one or both sides of a door
- Maximum 1-3/4" with and not to exceed 20% face area of door
- Adhesive and/or mechanical fasteners with a maximum penetration of 3/4"
- Moulding may not be applied closer than 3-1/2" to edge of door, edge of light or edge of hardware cutout

**Door Bottoms Seals** (Wood & Composite Slabs only)

- Surface Mounted, semi-mortised, or full-mortised bottom seals may be used when door construction includes 3" or larger bottom rail of lumber or LSL.
- Cutout dimensions are restricted to 15/16" wide and 1-15/16" deep x full width of the door.

**Door Bottoms**

- Surface mounted or Snap-In in dual durometer vinyl with bulb and fins or with all fins

**Electric Raceway**

- Not permitted

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**Installation Instructions:**

Installation instructions shall be provided to the installer by the licensed machiner. The instructions may be attached to the door with stapled or with adhesive-backed label (refer also to "labeling")

The instructions shall contain at least the following information:

- Trimming for height may be done on the bottom rail only (per NFPA 80, maximum trim of 3/4"/19.0mm allowed on-site).
- Trimming for height is not allowed for Steel Doors.
- Surface mounted hardware must be attached with throughbolts unless interior blocking is provided.
- A maximum 1/8" (3.2mm) clearance between the frame and the door is allowed.
- A maximum 1/8" (3.2mm) clearance between the top leaf and the bottom leaf of dutch door, or transom and door, or between leaves of pairs, is allowed

**Note:** *Refer to QAI evaluation report F409-1 and the applicable test reports for test assembly configurations used for fire endurance testing.*

*Final acceptance of the product in the intended application is to be determined by the authority having jurisdiction (AHJ).*

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