



## Installation Instructions

### 90-Minute Fire-Rated Neutral Pressure Veneered Door Frame

UBC 7-2-1997 & UL-10C

**Door Requirements:**

Consult the door manufacturer to make sure that the doors are qualified for the type of hardware to be installed.

**Wall Requirements:**

Rated wood, steel framing or masonry wall.

Minimum thickness: 4.875 inches

Framing: 2" x 4" nominal dimension lumber or 2 ½" x 0.019" (25 gauge) minimum

Steel framing.

Rough opening size for 90-minute frames:

(3 ± 1)" wider than net opening width for door

(1 ½ ± ½)" higher than net opening height for door

**Note:**

1. Dimensions are based on those to webs of buck framing members.
2. For masonry, a 2" x 3" nominal dimension lumber buck frame shell is to be attached to masonry with 3/8" expansion masonry anchors, spaced 26" on centers maximum.

**Rough Opening Preparation:**     *See Drawings*

A 2" wide by 12" long by 0.036" (20 gauge) steel plate shall be supplied with the frame. This plate is for supplementary anchoring of strike plates, along the header or jamb leg of the frame. Plates shall be approximately centered at the strike elevation with approximately 1" lap over the web of the buck framing on the side of the wall that the strike is to be installed. Secure each plate to the buck framing with three suitable fasteners about 5" apart. Use 3/4" long, #8 pan head framing screws for steel buck framing. Use 1" long type 'S' or 'W' drywall screws for wood buck framing. Alternatively, 3 penny box nails may be used through predrilled holes in the steel plate for wood buck framing.

**90 Minute Frame Design Limitations:**

Minimum jamb depth: 4.875"

Minimum rabbet for door: 1-7/8"

Minimum stop height: 5/8"

Minimum stop soffit: 1"

Maximum sizes: (inches)

FOR SWINGING DOOR	NET OPENING		OVERALL	
	Width	Height	Width	Height
<b>Singles</b>	48	96	50	97
<b>Pairs</b>	96	96	98	97

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Hinges:	Size and spacing to be in accordance with Table 2-4.3.1 of NFPA 80 1999, mortise type only. Continuous and invisible type 90-min. rated hinges are also acceptable.
Strikes:	Per Templates for labeled latch sets, (including cylindrical, mortise or unit type), rim exit device, vertical rod fire exit devices, flush bolts and/or dead bolts.

## Maiman Company Supplied Parts:

1. Steel screw sleeves for strikes. Qty. 2 @ 6" – cut 2 from 1 after jamb is installed.
2. #10 x 2 ½" drywall screws for strike attachment – use for 4-7/8" and exit device strike. Qty. 4
3. #10 x 2 ½" drywall screw – 1 for EVERY hinge to wall attachment. Qty. 8
4. 2" x 12" x 20 Ga. steel plate for latch or flushbolt strike. Qty. 1
5. #8 x 2 ½" drywall screws for head to leg attachment. Qty. 4
6. #8 x 2 ½" drywall screws for 2 ¾" strike or flushbolt strike attachment. Qty. 2

## 90-Minute Frame Installation: See Drawings

Remove the frame from the carton and become familiar with the components by checking each component versus the shipping list. Obtain any hardware item not supplied with your purchase (but required by these instructions) at your local door/frame hardware or building materials dealer.

In the event your 90-minute frame was supplied without casing trim, you may install any wood, plastic or metal casing trim obtained from your local dealer.

In the event your 90-minute frame was supplied without the required screws, they may be obtained from your local hardware dealer.

To reduce soiling and staining of the frame finish and for ease of installation, it is recommended that all holes for fasteners through the frame and stop be predrilled before the fastener is inserted. Use 5/32" drill bits for #10 and 3/32" for #8 screws. Pilot holes from 65-70% of the fastener shank diameter are best.

If needed, up to ¾" may be sawed from the bottom of each jamb to fit the rough opening. Use caution to make sure that this does not require trimming the bottom of the door. Some doors may not be trimmed at the bottom.

Align the header section to the top of each jamb section. Drive two 2 ½" long, #8 screws through predrilled holes at each end of the header to the top of each jamb.

Orient, position, align and square the assembled frame within the rough opening in the wall. **See drawings.** Position shims at about 2" from the top and bottom to fill the opening between the hinge jamb and wall buck framing. Drive a 2 ½" long, #8 dry wall screw immediately above or below each set of shims behind the stop of the frame. Do not completely tighten these screws until you are sure the shims have been adjusted to have the head within the width of the rough opening and with the hinge jamb in plumb.

Insert shims under top and bottom hinges and install the door to the frame at these locations only. Close the door to check and adjust for alignment of the door from the frame stops and for 1/8" maximum clearance for wood doors or 3/16" maximum clearance for steel doors from the header and both jambs. In the case of door pairs, both doors should be similarly installed to adjust for 1/8" clearance for wood doors or 3/16" clearance for steel doors between the meeting edges and for 1/8" maximum offset along the meeting edges. When alignment is satisfactory, insert shims under the remaining hinge locations and install hinges. Place shims under each #8 frame attachment screw location, maximum 24" on center, between buck framing along both jamb and header section. Drive and tighten 2 ½" long, #8 dry wall screws under the stop through head and jambs into the buck framing, adjoining each set of shims. Recheck clearances and readjust if necessary.

If stops were supplied loose, they should be attached with 1 ½" long finishing nails or 1 ½" long trim head screws, 12" on center, through the predrilled holes at this time. Preposition the stops on the frame to allow for any required labeled gasketing with the doors in the closed position.

For flushbolt or latchset strikes, cut to length and insert steel screw sleeves through the 7/16" diameter predrilled holes in the frame to span the distance between the strike and buck framing or the 2" x 12" x 20 gauge steel plate previously installed to the buck framing. Install the strikes with #10 2 ½" long screws through the steel sleeves.

Please contact us with any questions (417) 862-0681

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Surface strikes used for rim exit devices and vertical rod fire exit devices are sometimes installed to the jamb leg or header. These strikes require that 7/16" diameter holes be predrilled through both the stop and frame. Steel screw sleeves and 2 1/2" long, #10 or 2 1/2" long #8 screws are used to install surface strikes to the jamb header.

Dead bolt strikes (mortise type) and closer surface brackets for closer arms do not require the 7/16" diameter holes or the steel screw sleeves. It is recommended that holes for the screws be predrilled. If mounted to the header, screws should extend through the stop and penetrate the frame by 1/2" minimum. If mounted to the face of the frame, a 16 gauge steel mounting plate may be cut up to 2" high by the width of the bracket or closer body and surface attached to the face of the frame with not less than two, #8, 3/4" long screws through predrilled holes in the plate. The closer or closer arm bracket may then be screw attached to the mounting plate, using self-tapping screws provided with the closer.

Check and adjust hardware to make sure door(s) are self-closing and self-latching.

Break or saw off any shims that extend beyond the frame or wall on each side of the assembly. Fill the area between sets of shims, 90-minute frame and buck framing on each side of the wall with any setting type calk to a minimum depth of 1" or fill the entire area with rock wool. **See Drawings.** For installation in masonry, extend the calking or rock wool over the buck framing to bridge the 90-minute frame to the masonry. **See Drawings.**

After the compound has hardened, install the casing trim on each side of the wall to the buck framing or to the 90-minute jamb. Use 1 1/2" long trim head screws or 1 1/2" long finishing nails, 24" on center, for installation of casing trim to wood or steel buck framing or the 90 minute frame. If desired, the screw and nail heads may be covered using a veneer color matched caulking or putty stick. If the frame has a natural wood veneer it may be stained and finished.

**CONGRATULATIONS!** You may now enjoy the safety and appearance of your new 90-minute fire-rated frame from The Maiman Company.

If you have any further questions or concerns, please contact us.

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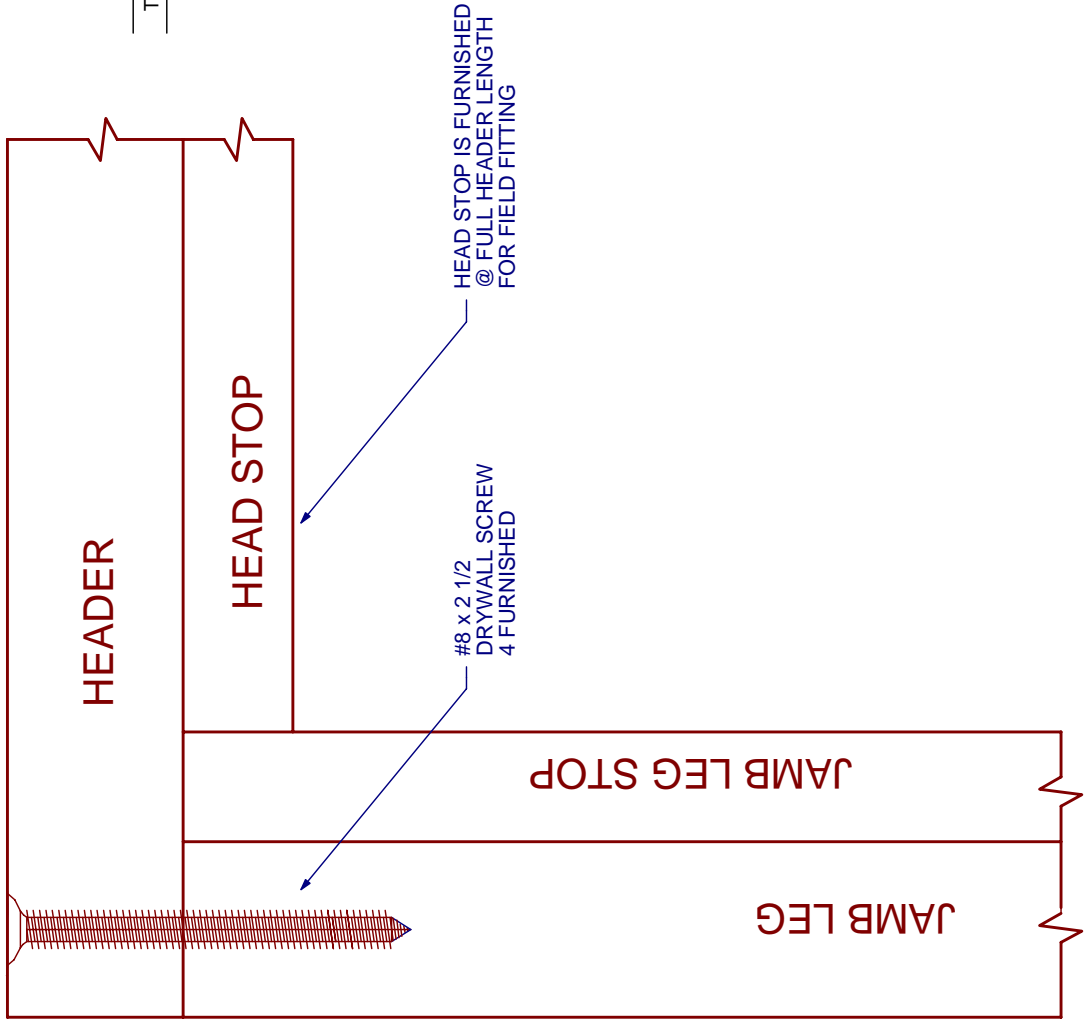
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These and other instructions are also available on our website at [www.maiman.com/downloads.asp](http://www.maiman.com/downloads.asp).

90 MINUTE  
HEAD AND JAMB LEG  
ASSEMBLY DETAIL



THE MAIMAN COMPANY  
Fine Architectural Doors

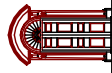


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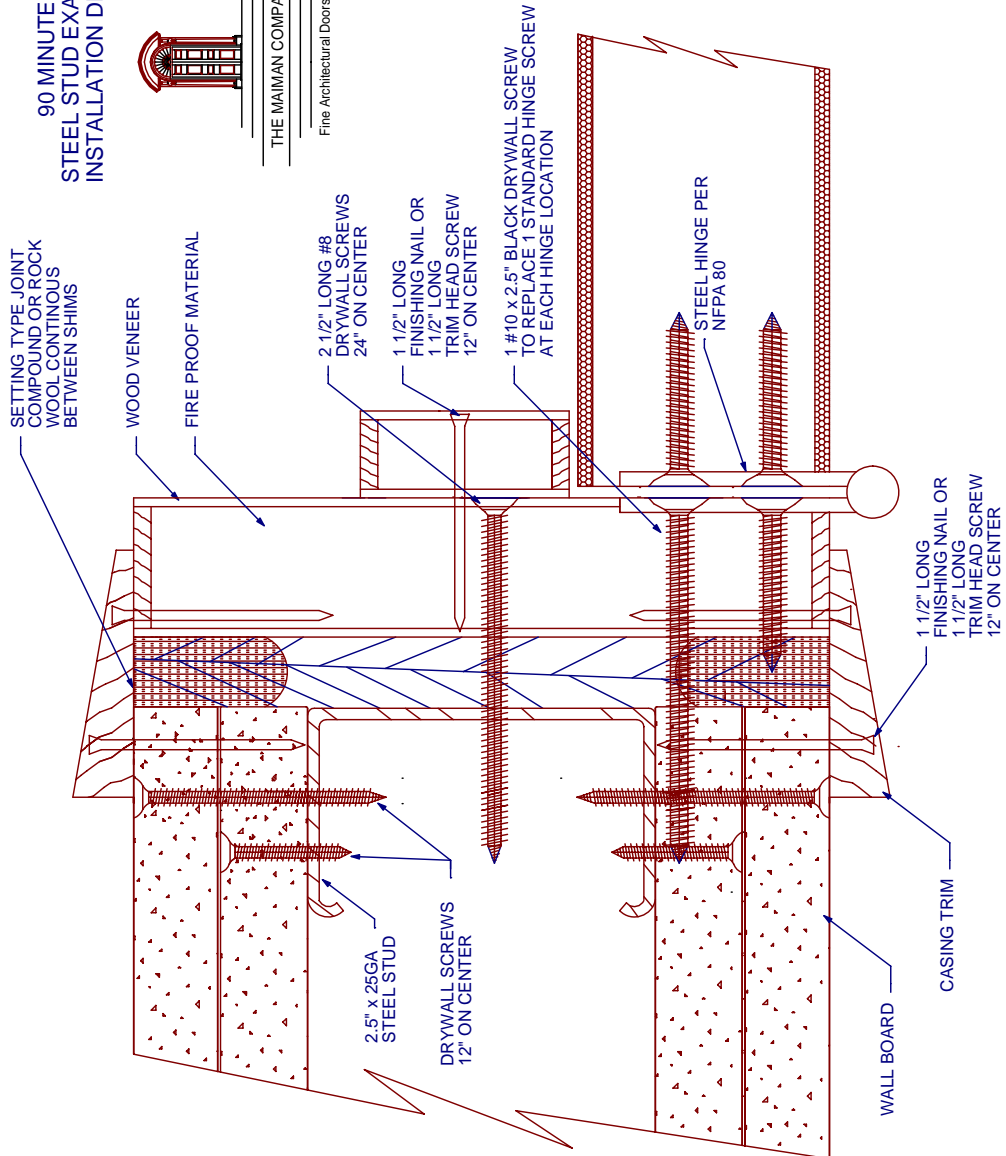
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90 MINUTE  
STEEL STUD EXAMPLE  
INSTALLATION DETAIL



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