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FIRE DOORS

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FIRE DOOR AND FRAME TESTING AND LABELING

Ceco Door Products invests considerable research and development efforts in the design and performance testing of fire barrier and smoke infiltration resistant products. Only independent, third party agencies which are internationally recognized by fire and safety authorities are utilized for testing.

TESTING AGENCIES:

Underwriters Laboratories, Inc. (UL)
Warnock Hersey, Int. (WH) (ITS, Intertek Testing Services)

In addition to providing the testing service, the above agencies and Factory Mutual Engineering Corp. (FM) furnish labeling and follow-up inspection services, and they also publish directories of products that meet established standards. In addition, UL & FM publish standards that define the testing of various product categories.

FIRE TESTING

In order for a manufacturer to apply a fire label to its products, the manufacturer must first submit the product to one of the testing agencies for a fire test. There are currently two basic methods of fire tests - one we call "neutral pressure" and one that is known as "positive pressure". These two methods have multiple document identifiers:

Neutral Pressure fire test method

UL-10B
ASTM E152 (Obsolete - withdrawn)
NFPA 252 (Lets user decide on pressure condition)
CSFM title 19

Positive Pressure fire test method

UBC 7-2
UL - 10C
NFPA 252 (Lets user decide on pressure condition)

Both methods test the assembly for the following:

1. Prevention of passage of fire and products of combustion for a designated time period.
2. Heat transmission criteria, after 30 minutes of fire exposure.
3. Structural performance - unit to remain intact throughout the fire exposure period.
4. Structural performance - unit to remain intact throughout the hose stream test.

TEST PROCEDURE

The two test methods are quite similar except for the pressure gradient within the furnace. The "positive" pressure test is said to better represent "real-life" conditions in this respect (typically, the upper 2/3 of a room is under positive pressure during fire conditions).

The door assembly which is to be tested is installed in a test panel that becomes the front of the test furnace. Attached to each door, on the outside of the test panel, are several thermocouples which measure the temperature on the unexposed face of the unit.

During a "neutral-pressure" test, pressure inside the furnace is slightly less than ambient resulting in a tendency for atmosphere outside the furnace to be drawn into the furnace. During a "positive-pressure" test, pressure inside the furnace near the top of the door is slightly more than ambient resulting in a tendency for products of combustion and superheated gases inside the furnace to exit the test chamber through the margins.

FIRE DOOR FRAME TESTING AND LABELING (continued)

TEMPERATURE RISE

Although the heat transmitted can be recorded throughout the test, the first 30 minutes determine temperature rise criteria for labeling. After 30 minutes, the temperature inside the furnace is about 1550° F. The temperature then begins to level off and after 3 hours reaches about 1925° F. The manufacturer can opt to end the test at 1-1/2 hours which would limit product to 1-1/2 rating maximum. Ceco typically goes for the full 3 hour test which allows the product to be labeled for any fire-rating specified.

HOSE STREAM TEST

As soon as the fire is extinguished, the test panel unit is moved away from the furnace and, when required, subjected to a hose stream test (in the U.S., the hose stream is not required for 1/3 hour rated assemblies). During the hose stream test, the door(s), which may be red hot on the furnace side, are immediately hit with a stream of water from a fire hose.

FIRE HOSE STREAM TEST		
Rating (Hours)	Nozzle Water Pressure	Duration
3	45 Psi	3 Sec. Per Sq. Ft. of Exposed Area
1-1/2 but less than 3	30 Psi	1.5 Sec. Per Sq. Ft. of Exposed Area
1 but less than to 1-1/2	30 Psi	0.9 Sec. Per Sq. Ft. of Exposed Area
Less than 1	30 Psi	0.6 Sec. Per Sq. Ft. of Exposed Area

The rapid change in temperature and force exerted by the hose stream test cause extreme stresses on the assembly.

SMOKE

The 20 minute (S) classification is for openings where smoke control is a primary consideration. The 20 minute fire door category does not have to undergo a hose stream test. Smoke control testing of door assemblies is performed in accordance with UL 1784. Assemblies tested in conformance with UL 1784 comply with NFPA 80 (...Installation of Fire Doors...) and NFPA 105 (...Smoke and Draft Control...). The UL 1784 test assembly includes some form of gasketing. Various listed gasketing are acceptable (however, only positive pressure listed gaskets are approved for positive pressure rated assemblies). Ceco's "Smoke-Tech" labeled door, kerfed frame and listed gasket assembly complies with this smoke protection category, i.e. UL10B, UBC 7-2 and UL 1784. Smoke-tech also meets fire protection criteria for up to 3 hour rating (UL 10B, UBC 7-2).

EVALUATION

Upon completion of the test(s), a final evaluation is made. If the test is rated successful by the agency, a "procedure" is issued and the manufacturer is allowed to attach appropriate label(s) to doors/frames - when the units are of the same type as those tested and as described in the procedure.

PROCEDURES

Ceco Door Products has authorized labeling procedures from the following agencies:

- UL
- WH (ITS)
- FM

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FIRE DOOR AND FRAME TESTING AND LABELING

LABELING

Generally speaking, fire labels for steel doors indicate: labeling agency, manufacturer, duration of fire test (rating), temperature rise, and latch or fire exit hardware category. Certification of the positive pressure fire test is indicated by a statement on the label or by a supplemental UBC 7-2 conformance label. Labels for steel door frames usually just indicate the label agency, manufacturer, and product, e.g., "UL, Manufacturer's I.D., Fire door frame". Normally, frames thus labeled can be used with all types of fire door ratings up to 3 hours. Exceptions: certain frames designed for specific applications have guidelines noted on label (e.g., slip-on-drywall frames designed for 1-1/2 hour rated DW partitions have "1-1/2 hour" specified on the label, certain panel assemblies have the panel type specified on the label, etc.)

INSPECTION

All labeled fire doors and frames are subject to factory or warehouse follow-up inspection programs. Under these programs, an inspector from the labeling agency frequently spot checks labeled doors and frames in various stages of manufacturing and in the warehouses to be certain material provided is in accordance with label service procedures. Strict control prevents manufacturer from furnishing anything which is not included in their procedures.

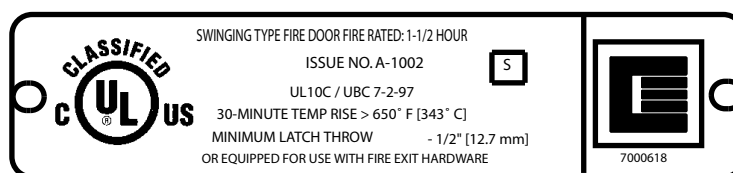
FIRE DOORS FOR THE INTERNATIONAL MARKET

Ceco Door Products has extensive experience and expertise in international fire door testing methods and code acceptance (including the positive pressure test). Existing programs are in place to satisfy the needs of the global market place - ask for details.

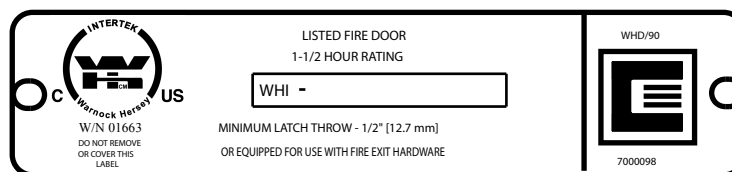
LABELS

There are various labeling methods authorized by the agencies involved - label examples appear below. In addition to the methods shown, certain frames have the labels embossed into the steel during manufacturing.

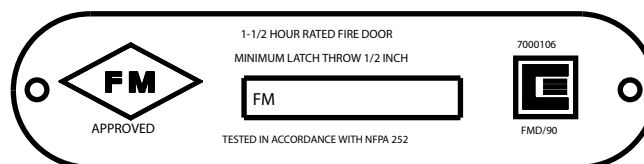
Underwriters Laboratory Inc.
Metal Label



Warnock Hersey
Metal Label



Factory Mutual
Metal Label



LABELED FIRE DOOR APPLICATION TABLE

LOCATION / FIRE HAZARD	CLASS*	RATING	MAXIMUM GLASS AREA	REGENT OMEGA	MEDAL LION	FUEGO	IMPERIAL VERSA-DOOR	LEGION ULTRA	THRU-LITE
Openings in walls separating buildings or dividing a building into fire area	A	3 HOUR	see chart page ---	NTR	NTR	250° maximum temp. rise	NTR	NTR	NTR
Openings in enclosures of vertical communication elevators, stairwells, and in 2 hour rated partitions providing horizontal fire separation	B	1-1/2 HOUR	see chart page ---	NTR	450° maximum temp. rise	250° maximum temp. rise	NTR	NTR	NTR
Corridor and room partitions	C	3/4 HOUR	see chart page ---	NTR	NTR	NTR	NTR	NTR	NTR
Exterior walls subject to severe fire exposure from outside	D	1-1/2 HOUR	NONE	NTR	450° maximum temp. rise	250° maximum temp. rise	NTR	NTR	NTR
Exterior walls subject to moderate fire exposure from outside	E	3/4 HOUR	see chart page ---	NTR	NTR	NTR	NTR	NTR	NTR
Openings where smoke control is a primary consideration: in partitions between a habitable room and a corridor when the wall is constructed to have a fire resistance of more than on hour- or across corridors where a smoke partition is required	20 MINUTE	1/3 HOUR OR 1/2 HOUR	see chart page ---	NTR	NTR or 450° maximum temp. rise	NTR	NTR	NTR	NTR
Openings requiring "Positive Pressure" test conformance	UBC 7-2	1/3 HOUR	see chart page ---	NTR	450° maximum temp. rise	250° maximum temp. rise	NA	NTR	NTR
Openings requiring Smoke control testing	UL 1784 NFPA 105	1/3 HOUR	see chart page ---	NTR	450° maximum temp. rise	250° maximum temp. rise	NA	NTR	NTR

NTR denotes: No temperature rise

NA denotes: Not Available

NEUTRAL PRESSURE / POSITIVE PRESSURE FIRE TEST

For door Series compliance with a specific fire test, see tables beginning on page 7-107

HOURLY* RATING / LETTER CLASSIFICATION

The letter-reference shown in the "CLASS" column above is in disuse. It was meant to classify the opening for which the fire door was considered suitable. The current trend, is to use the fire protection hourly rating not the letter class. Normally, a unit with a higher hourly rating can be used in lieu of one with a lesser rating. The maximum glass dimensions for both door and location still though hold and any conflict would prohibit labeling of the opening. Generally, doors have the hourly rating listed on the label, frames do not (slip-on DW frames, which have the hourly rating listed on the label, are an exception).

(continued)

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FIRE DOOR AND FRAME TESTING AND LABELING (continued)

OPENING SIZES AND GLASS AREAS

Fire Door opening sizes and exposed glass areas are typically limited by product, by test, by hardware, and/or by application. For your convenience, these parameters are charted for various Ceco product lines beginning on page 7-107.

GLAZING MATERIAL

Glass and glazing is normally by glazing contractor. However certain provisions must be provided for glazing during door construction. These provisions are specified for labeled products in agency procedures. For your convenience, we have tabulated size parameters for listed materials that are currently in our procedures (refer to page 7-103) Note: materials and allowable sizes change as new materials are developed and tested. If you need something not shown, contact our product Development group for latest data.

TEMPERATURE RISE

The "maximum Temperature Rise" entry in the door type columns indicates performance for that type of door construction. Generally speaking, a door with a lower heat transmission can be used in lieu of a door with a greater heat transmission, e.g., a door with 250° F maximum temperature rise will satisfy the performance requirements for 450° F or 650° F maximum temperature rise. The maximum glass dimensions for both door and location still hold though and any conflict would prohibit labeling of the opening. "NTR" denotes temperature rise in excess of 650° Unless a listed glazing material allows otherwise, any fire door, regardless of its construction, with a glass lite area in excess of 100 sq. in. is considered to have a temperature rise in excess of 650°

LABELED CONSTRUCTION ONLY

Doors which, because of some characteristic, do not meet labeling requirements, can be fabricated, when necessary, but cannot bear a physical label. When furnished, they can, upon request, be certified as being constructed in accordance with, insofar as possible, labeling requirements. Certification will indicate the specific reason(s) why the labels were not applied. The user assumes responsibility of the application.

LABELED FIRE DOOR HARDWARE REQUIREMENTS

All labeled fire doors must be fabricated and prepared for hardware according to the procedures of the labeling agencies and the recommendations of the National Fire Protection Association. Should local codes conflict with NFPA recommendations, we must still prepare our doors for hardware in accordance with our manufacturing procedure. There can be no deviation from this restriction. When local codes are vague or unknown, the NFPA hardware recommendations in Pamphlet #80 should be employed. The minimum hardware requirements on labeled doors, in accordance with NFPA Pamphlet #80-1996 are as follows:

HINGES

All 1-3/4" thick fire doors over 5'-0" and up to 7'-6" high must be provided with three 4-1/2" high x .134" thick, steel, ball bearing, hinges* All 1-3/4" thick fire doors exceeding 7'-6" high up to 9'-0" high require four such hinges. Unusually wide and / or heavy doors subject to high frequency use should have heavy weight hinges. Spring hinges can be used to satisfy both hinging and closing functions. When spring hinges are used instead of the above butt hinges, at least 2 spring hinges should be employed.

* or other qualified anti-friction bearings...

LOCKS AND LATCHES

Only "UL" listed locks and latches should be used. All single doors and active leaves of doors in pairs should be provided with an active latch bolt which cannot be held in a retracted position. Except when the fire door is used as a required means of egress, a supplementary deadbolt in addition to the active latch bolt, may be employed. Locks with interconnected deadbolts-latch bolts which retract deadbolt when latch is retracted-may be used on fire doors within a means of egress.

FIRE EXIT HARDWARE (FEH)

Only "UL" listed FEH shall be used. FEH meets both the life safety requirements and the fire protection requirements. Devices are not "UL" qualified, from a fire protection point of view, unless they bear a "UL" label stating "Listed as Fire Exit Hardware".

Doors scheduled for use with FEH are to bear the supplementary marking on the attached label stating: "Fire Door to be equipped with Fire Exit Hardware".

These fire doors may be supplied for a building in any one of the three following manners, in accordance with procedures:

1. Door is reinforced and prepared in the plant for FEH
2. Door is reinforced only for field drilling and tapping with an additional label applied which states "Reinforced for ... Type Exit Device"
3. Door is not reinforced for Fire Exit Hardware with an additional label applied which states: "Fire Exit Hardware Reinforcement not provided - Use sex-bolts to mount FEH"

TOP AND BOTTOM BOLTS

Where the inactive leaf of a pair of doors is not required for exit purposes, the inactive leaf may be provided with labeled self-latching or automatic top and bottom bolts (or labeled two-point latches). Manually operated, labeled top and bottom bolts, surface or flush, are permitted on the inactive leaf of a pair of doors when acceptable to local authority providing that the bolts do not pose a hazard to safety of life.

This provision limits the use of manually operated bolts to rooms not normally occupied by people (like storage rooms, transformers vaults, mechanical rooms, etc.) In this case a closer is not required on the inactive leaf. When automatic bolts are used, "dummy" trim on the inactive leaf is not permitted as it might detract from functional trim on the active leaf in an emergency.

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LABELED FIRE DOOR HARDWARE REQUIREMENTS (continued)

CLOSERS

A listed closing device shall be installed on every fire door. A closing device will insure that the door will be closed and latched at the time of fire. When there is an overlapping astragal, a coordinating device shall be employed so that the inactive leaf closes and latches before the active leaf closes. Exception: A closer may be omitted from the inactive leaf of a pair of doors for mechanical equipment rooms. There are two categories of door closing operation.

1. Self closing: Fire doors which normally remain in the closed position must be provided with a Labeled closer which causes the door to return to the closed, latched position, after opening. Anything that restricts or prevents the door from returning to the closed, latched position, in an approved manner, is prohibited.
2. Automatic closing: Fire doors which normally remain in the open position must be provided with a labeled closing mechanism, which when activated or released by an approved fire / smoke or temperature sensor, causes the door to return to the closed, latched position. Anything that restricts or prevents the door from returning to the closed, latched position, in an approved manner, is prohibited.

CAUTION:

The listing of closers does not automatically imply that door manufacturers can prepare for the device. Certain listed types are not applicable for use with all types of fire doors.

COORDINATING DEVICE

When there is an overlapping astragal, a projecting latch bolt (w/o open back strike), or other such obstacle, which prevents the inactive leaf of a pair of doors from closing and latching before the active leaf closes and latches, a coordinating device should be used. A coordinating device is not necessary when each leaf closes and latches independently of each other. For example:

1. Pairs of doors swinging in the same direction with 2 vertical rod type FEH and no astragal.
2. Pairs of doors swinging in opposite directions (double egress) with two vertical rod type FEH.
3. Pairs of doors with mortise type FEH or single point latch on active leaf, vertical rod type FEH and open back strike on inactive leaf, and no astragal.
4. Pairs of doors with two devices and a removable mullion.

ASTRAGAL

Unless otherwise noted, doors swinging in pairs must be provided with a steel astragal attached in place so as to overlap approximately 3/4 inch. Overlapping astragals are not allowed on pairs, swinging in the same direction with a vertical rod on each leaf - see charts beginning on page 7-107 for other exceptions.

Certain authorities require the use of pairs of doors without astragal in exit locations (class B or C locations) when both leaves are required for exit purposes each shall be provided with labeled fire exit hardware. These leaves may swing in opposite directions or the same direction.

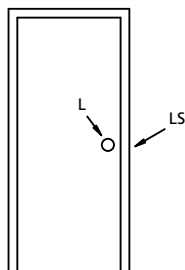
Where acceptable to the authority having jurisdiction, pairs of doors without an astragal may be provided with labeled fire exit hardware and open back strike installed on the inactive leaf, and either labeled fire exit hardware or labeled latch (capable of being opened by one obvious operation from egress side) on the active leaf.

OPEN BACK STRIKE

It is a strike applied to the inactive leaf of a pair of doors and cut away at the back to permit either leaf to open or close independently. Doors swinging in pairs in the same direction may be provided with a listed single point latch or mortise type FEH on the active leaf and a listed vertical rod type FEH or automatic flush bolt on the inactive leaf. No coordinator is necessary. No overlapping astragal is required. For weather protection at the lock edge, a weatherstrip may be used. Shop preparation for open back strike is required. Listed open back strikes are permitted on openings with a fire rating of up to and including 1-1/2 hour.

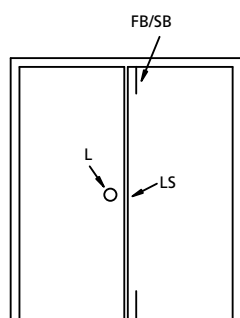
Distributor Tech Data

SIZE LIMITS - UL LABELED HONEYCOMB CORE FIRE DOOR SINGLE POINT LATCH



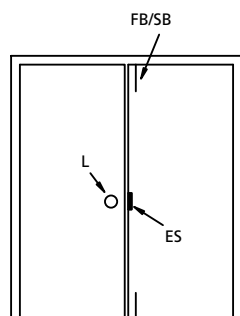
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18	4'-0"	9'-0"	4'-0"	9'-0"
	20	3'-4"	7'-2"	3'-4"	7'-2"
	22, 24	3'-0"	7'-0"	3'-0"	7'-0"
3	14, 16, 18	4'-0"	9'-0"	4'-0"	9'-0"

SINGLE SWING DOORS



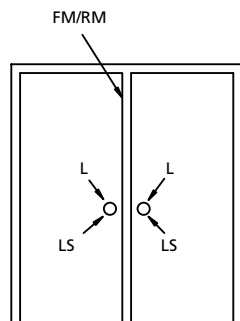
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
	20, 22 24	6'-0"	7'-0"	6'-0"	7'-0"	REQUIRED
3	16, 18	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
3	16, 18	6'-0"	7'-2"	6'-0"	7'-2"	REQUIRED

PAIR OF DOORS WITH ELECTRIC STRIKE



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	20	(2) 3'-4"	7'-2"	(2) 3'-4"	7'-2"
	22, 24	(2) 3'-0"	7'-0"	(2) 3'-0"	7'-0"
3	14, 16, 18	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"

PAIR OF DOORS WITH HOLLOW METAL MULLION

LEGEND:

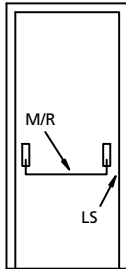
L = LATCH, SINGLE POINT
LS = LATCH STRIKE
FB/SB = FLUSH BOLT or SURFACE BOLT

ES = ELECTRIC STRIKE
FM/RM = FIXED OR REMOVABLE MULLION

CAUTION:

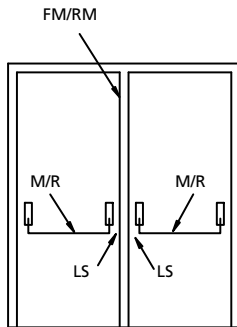
SOME LATCHING DEVICES MAY NOT BE APPROVED FOR USE ON DOORS UP TO MAXIMUM SIZES LISTED.

SIZE LIMITS - UL LABELED HONEYCOMB CORE FIRE DOOR FIRE EXIT HARDWARE



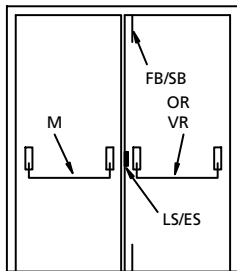
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18	4'-0"	9'-0"	4'-0"	9'-0"
	20	3'-4"	7'-2"	3'-4"	7'-2"
3	14, 16, 18	4'-0"	9'-0"	4'-0"	9'-0"

SINGLE SWING DOORS



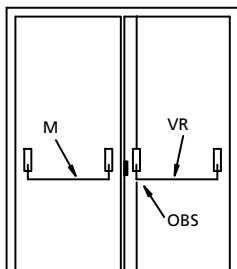
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	20	(2) 3'-4"	7'-2"	(2) 3'-4"	7'-2"
3	14, 16, 18	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"

PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



STRIKE TYPE	HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
LS OR ES	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
ES	3	16, 18	6'-0"	7'-2"	6'-0"	7'-2"	REQUIRED
LS	3	16, 18	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED

PAIR OF DOORS WITH 3 POINT LATCHING

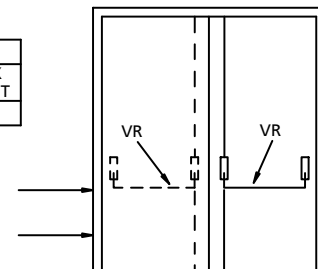


ASTRAGAL OPTIONAL

HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"

STD. SWING - NO ASTRAGAL PERMITTED

DBL. EGRESS - ASTRAGAL OPTIONAL



*PAIR OF DOORS WITH 3 OR 4 POINT LATCHING

LEGEND:

M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION
* OPTIONAL TOP ROD ONLY - HDWE MUST BE APPROVED FOR THE APPLICATION

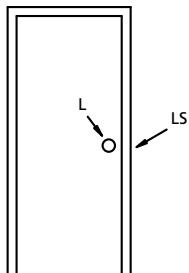
FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH
ES = ELECTRIC STRIKE
OBS = OPEN BACK STRIKE

CAUTION:

SOME LATCHING DEVICES MAY NOT BE APPROVED FOR USE ON DOORS UP TO MAXIMUM SIZES LISTED.

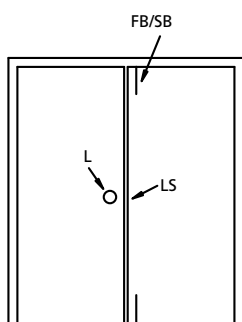
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SIZE LIMITS - WH LABELED HONEYCOMB CORE FIRE DOOR SINGLE POINT LATCH



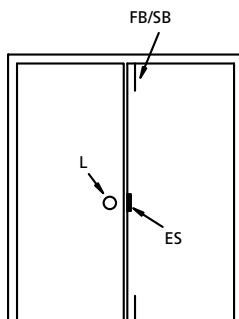
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18	4'-0"	9'-0"	4'-0"	9'-0"
	20	4'-0"	8'-0"	4'-0"	8'-0"
	22, 24	3'-0"	7'-0"	3'-0"	7'-0"
3	14, 16, 18	4'-0"	9'-0"	4'-0"	9'-0"
	20	4'-0"	8'-0"	4'-0"	8'-0"

SINGLE SWING DOORS



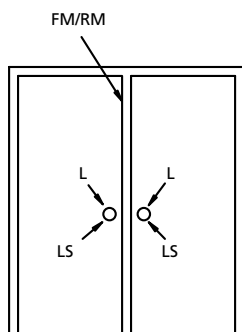
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
	20	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED
	22, 24	6'-0"	7'-0"	6'-0"	7'-0"	REQUIRED
3	16, 18, 20	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
	20	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL
3	16, 18, 20	6'-0"	7'-2"	6'-0"	7'-2"	REQUIRED

PAIR OF DOORS WITH ELECTRIC STRIKE



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
	22, 24	(2) 3'-0"	7'-0"	(2) 3'-0"	7'-0"
3	14, 16, 18	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"

PAIR OF DOORS WITH HOLLOW METAL MULLION

LEGEND:

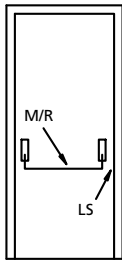
L = LATCH, SINGLE POINT
LS = LATCH STRIKE
FB/SB = FLUSH BOLT or SURFACE BOLT

ES = ELECTRIC STRIKE
FM/RM = FIXED OR REMOVABLE MULLION

CAUTION:

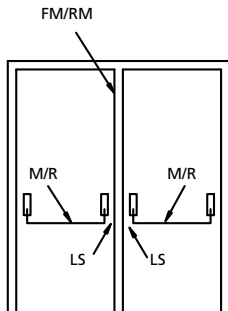
SOME LATCHING DEVICES MAY NOT BE APPROVED FOR USE ON DOORS UP TO MAXIMUM SIZES LISTED.

SIZE LIMITS - WH LABELED HONEYCOMB CORE FIRE DOOR FIRE EXIT HARDWARE



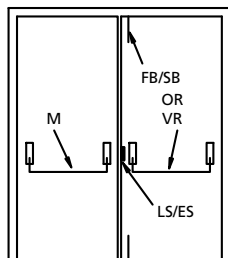
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2, 3	14, 16, 18	4'-0"	9'-0"	4'-0"	9'-0"
	20	4'-0"	8'-0"	4'-0"	8'-0"

SINGLE SWING DOORS



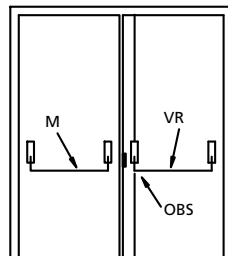
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2, 3	14, 16, 18	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"

PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



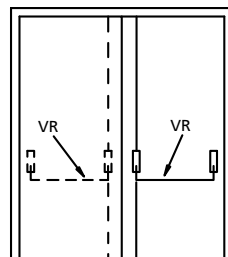
STRIKE TYPE	HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
LS OR ES	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
LS		20	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL
ES	3	16, 18, 20	6'-0"	7'-2"	6'-0"	7'-2"	REQUIRED
LS	3	16, 18, 20	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED

PAIR OF DOORS WITH 3 POINT LATCHING



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL

PAIR OF DOORS WITH OPEN BACK STRIKE



SWING TYPE	HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
STANDARD	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	NOT ALLOWED
DBL. EGRESS			8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
DBL. EGRESS	3	16, 18, 20	8'-0"	7'-2"	8'-0"	7'-2"	REQUIRED
STANDARD	1/3, 3/4, 1-1/2	20	8'-0"	8'-0"	8'-0"	8'-0"	NOT ALLOWED

*PAIR OF DOORS WITH 4 POINT LATCHING

LEGEND:

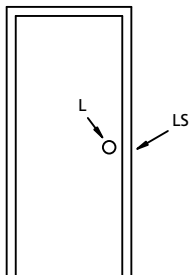
M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION
* OPTIONAL TOP ROD ONLY - HDWE MUST BE APPROVED FOR THE APPLICATION

FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH
ES = ELECTRIC STRIKE
OBS = OPEN BACK STRIKE

CAUTION:

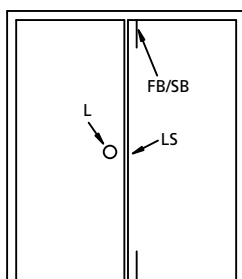
SOME LATCHING DEVICES MAY NOT BE APPROVED FOR USE ON DOORS UP TO MAXIMUM SIZES LISTED.

SIZE LIMITS - UL LABELED STEEL STIFFENED FIRE DOOR SINGLE POINT LATCH



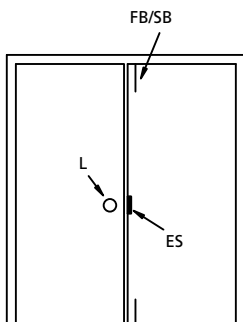
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"
	20	4'-0"	8'-0"	4'-0"	8'-0"
3	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"

SINGLE SWING DOORS



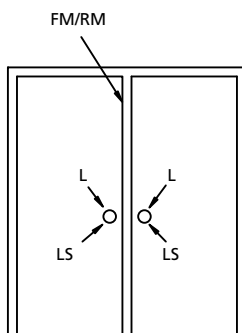
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
3	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
3	16, 18	6'-0"	7'-2"	6'-0"	7'-2"	REQUIRED

PAIR OF DOORS WITH ELECTRIC STRIKE



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"
	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
3	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"

PAIR OF DOORS WITH HOLLOW METAL MULLION

LEGEND:

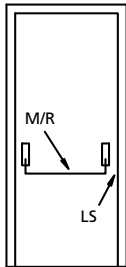
L = LATCH, SINGLE POINT
LS = LATCH STRIKE
ES = ELECTRIC STRIKE

FB/SB = FLUSH BOLT OR SURFACE BOLT
FM/RM = FIXED OR REMOVABLE MULLION

CAUTION:

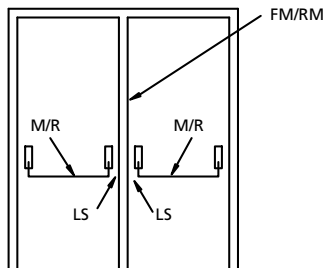
SOME LATCHING DEVICES MAY NOT BE APPROVED FOR USE ON DOORS UP TO MAXIMUM SIZES LISTED.

SIZE LIMITS - UL LABELED STEEL STIFFENED FIRE DOOR FIRE EXIT HARDWARE



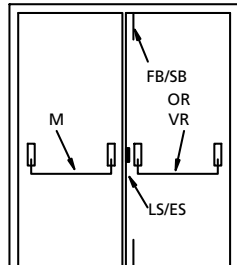
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"
	20	4'-0"	8'-0"	4'-0"	8'-0"
3	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"

SINGLE SWING DOORS



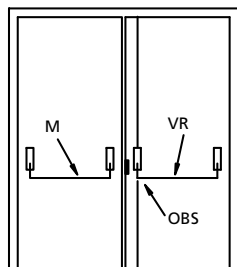
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"
	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
3	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"

PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



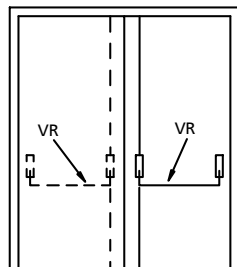
HOURLY RATING	STRIKE TYPE	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	LS	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
	LS	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	LS	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
	ES	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
3	LS	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	LS	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
	ES	16, 18	6'-0"	7'-2"	6'-0"	7'-2"	REQUIRED

PAIR OF DOORS WITH 3 POINT LATCHING



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL
1/3, 3/4, 1, 1-1/2	14	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED

PAIR OF DOORS WITH OPEN BACK STRIKE



SWING TYPE	HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
STANDARD	1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	NOT ALLOWED
DBL. EGRESS			8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
DBL. EGRESS			8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
DBL. EGRESS	3		8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED

* PAIR OF DOORS WITH 4 POINT LATCHING

LEGEND:

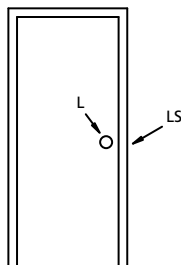
M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION
* OPTIONAL TOP ROD ONLY - HDWE MUST BE APPROVED FOR THE APPLICATION

FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH
OBS = OPEN BACK STRIKE
ES = ELECTRIC STRIKE

CAUTION:

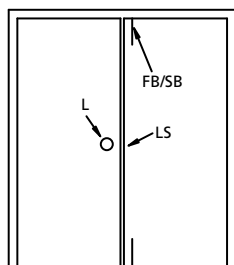
SOME LATCHING DEVICES MAY NOT BE APPROVED FOR USE ON DOORS UP TO MAXIMUM SIZES LISTED.

SIZE LIMITS - WH LABELED STEEL STIFFENED FIRE DOOR SINGLE POINT LATCH



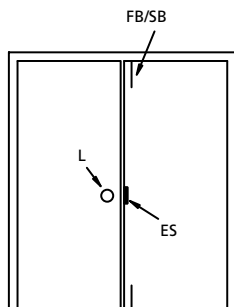
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"
	20	4'-0"	8'-0"	4'-0"	8'-0"
3	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"

SINGLE SWING DOORS



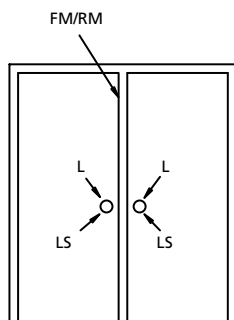
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
3	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL*
	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
3	16, 18	6'-0"	7'-2"	6'-0"	7'-2"	OPTIONAL*

PAIR OF DOORS WITH ELECTRIC STRIKE



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"
	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
3	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"

PAIR OF DOORS WITH HOLLOW METAL MULLION

*NFPA-80 AND MANY BUILDING CODES REQUIRE THE USE OF AN OVERLAPPING ASTRAGAL ON 3 HOUR RATED PAIRS. CHECK WITH AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION OF A 3 HOUR PAIR W/O AN ASTRAGAL.

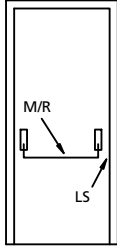
LEGEND:

L = LATCH, SINGLE POINT
LS = LATCH STRIKE
ES = ELECTRIC STRIKE

FB/SB = FLUSH BOLT OR SURFACE BOLT
FM/RM = FIXED OR REMOVABLE MULLION

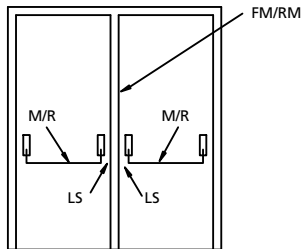
CAUTION:
SOME LATCHING DEVICES MAY NOT BE APPROVED FOR USE ON DOORS UP TO MAXIMUM SIZES LISTED.

SIZE LIMITS - WH LABELED STEEL STIFFENED FIRE DOOR FIRE EXIT HARDWARE



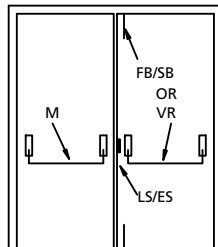
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"
	20	4'-0"	8'-0"	4'-0"	8'-0"
3	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"

SINGLE SWING DOORS



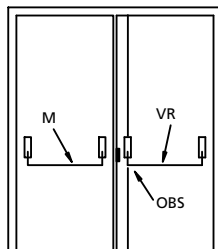
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"
	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
3	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"

PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



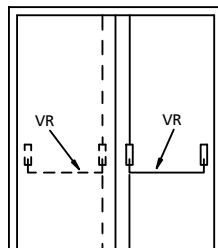
HOURLY RATING	STRIKE TYPE	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	LS	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
	LS	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	LS OR ES	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
3	LS	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
	LS	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL*
	LS	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	ES	16, 18	6'-0"	7'-2"	6'-0"	7'-2"	OPTIONAL*

PAIR OF DOORS WITH 3 POINT LATCHING



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL
1/3, 3/4, 1, 1-1/2	14	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED

PAIR OF DOORS WITH OPEN BACK STRIKE



SWING TYPE	HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
STANDARD	1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	NOT ALLOWED
DBL. EGRESS			8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
DBL. EGRESS			8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
STANDARD	3	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	NOT ALLOWED*
DBL. EGRESS			8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL*
DBL. EGRESS			8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED

****PAIR OF DOORS WITH 4 POINT LATCHING**

LEGEND:

M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION
** OPTIONAL TOP ROD ONLY - HDWE MUST BE APPROVED FOR THE APPLICATION

FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH
OBS = OPEN BACK STRIKE
ES = ELECTRIC STRIKE

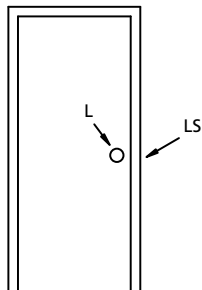
CAUTION:

SOME LATCHING DEVICES MAY NOT BE APPROVED FOR USE ON DOORS UP TO MAXIMUM SIZES LISTED.

*NFPA-80 AND MANY BUILDING CODES REQUIRE THE USE OF AN OVERLAPPING ASTRAGAL ON 3 HOUR RATED PAIRS. CHECK WITH AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION OF A 3 HOUR PAIR W/O AN ASTRAGAL.

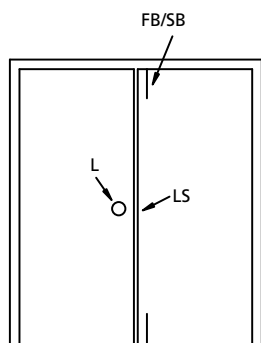
Distributor Tech Data

SIZE LIMITS - UL LABELED SOLID CORE FIRE DOOR SINGLE POINT LATCH



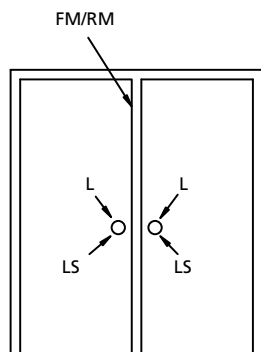
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2, 3	14, 20	4'-0"	8'-0"	4'-0"	8'-0"
	16, 18	4'-0"	9'-0"	4'-0"	9'-0"

SINGLE SWING DOORS



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4	14	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED
	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
	20	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED
1-1/2	14	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED
	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
	20	7'-4"	7'-2"	7'-4"	7'-2"	REQUIRED
3	14, 20	7'-4"	7'-2"	7'-4"	7'-2"	REQUIRED
	16, 18	7'-4"	9'-0"	7'-4"	9'-0"	REQUIRED

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2, 3	14, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
	16, 18	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"

PAIR OF DOORS WITH HOLLOW METAL MULLION

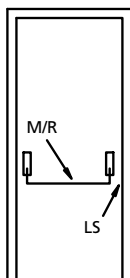
LEGEND:

L = LATCH, SINGLE POINT
LS = LATCH STRIKE

FB/SB = FLUSH BOLT or SURFACE BOLT
FM/RM = FIXED OR REMOVABLE MULLION

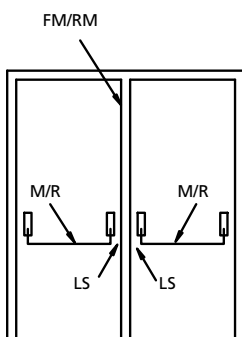
1/3 HOUR INCLUDES BOTH WITH & WITHOUT HOSESTREAM

SIZE LIMITS - UL LABELED SOLID CORE FIRE DOOR FIRE EXIT HARDWARE



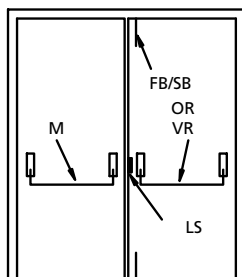
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2, 3	14, 20	4'-0"	8'-0"	4'-0"	8'-0"
	16, 18	4'-0"	9'-0"	4'-0"	9'-0"

SINGLE SWING DOORS



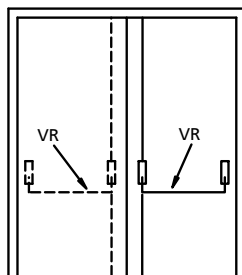
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2, 3	14, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
	16, 18	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"

PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	14, 20	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED
	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
3	14, 20	7'-4"	7'-2"	7'-4"	7'-2"	REQUIRED
	16, 18	7'-4"	9'-0"	7'-4"	9'-0"	REQUIRED

PAIR OF DOORS WITH 3 POINT LATCHING



SWING TYPE	HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
STANDARD	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	NOT ALLOWED
		14, 20	8'-0"	8'-0"	8'-0"	8'-0"	NOT ALLOWED
DBL. EGRESS	3	14, 16, 18	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL
DBL. EGRESS		14, 16, 18	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED

*PAIR OF DOORS WITH 4 POINT LATCHING

LEGEND:

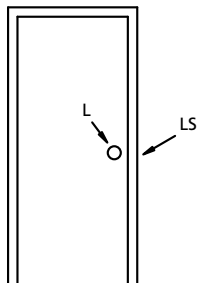
M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION
* OPTIONAL TOP ROD ONLY - HDWE MUST BE APPROVED FOR THE APPLICATION

FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH

1/3 HOUR INCLUDES BOTH WITH & WITHOUT HOSESTREAM

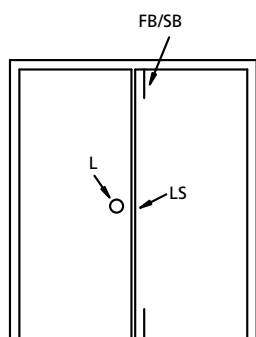
Distributor Tech Data

SIZE LIMITS - WH LABELED SOLID CORE FIRE DOOR SINGLE POINT LATCH



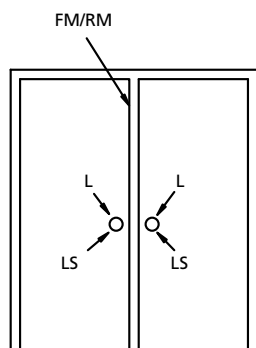
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2, 3	20	4'-0"	8'-0"	4'-0"	8'-0"
	16, 18	4'-0"	9'-0"	4'-0"	8'-0"

SINGLE SWING DOORS



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4	20	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED
	16, 18	8'-0"	9'-0"	8'-0"	8'-0"	REQUIRED
1-1/2	20	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED
	16, 18	8'-0"	9'-0"	8'-0"	8'-0"	REQUIRED
3	20	7'-4"	7'-2"	7'-4"	7'-2"	REQUIRED
	16, 18	7'-4"	9'-0"	7'-4"	8'-0"	REQUIRED

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2, 3	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
	16, 18	(2) 4'-0"	9'-0"	(2) 4'-0"	8'-0"

PAIR OF DOORS WITH HOLLOW METAL MULLION

LEGEND:

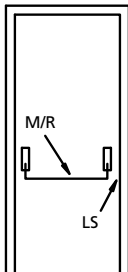
L = LATCH, SINGLE POINT
LS = LATCH STRIKE

FB/SB = FLUSH BOLT or SURFACE BOLT

FM/RM = FIXED OR REMOVABLE MULLION

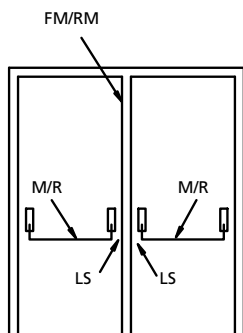
1/3 HOUR INCLUDES BOTH WITH & WITHOUT HOSESTREAM

SIZE LIMITS - WH LABELED SOLID CORE FIRE DOOR FIRE EXIT HARDWARE



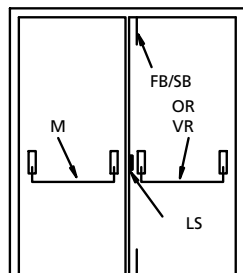
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2, 3	20	4'-0"	8'-0"	4'-0"	8'-0"
	16, 18	4'-0"	9'-0"	4'-0"	8'-0"

SINGLE SWING DOORS



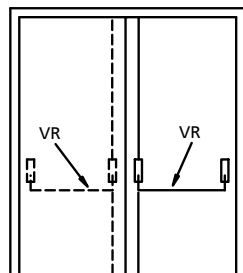
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2, 3	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
	16, 18	(2) 4'-0"	9'-0"	(2) 4'-0"	8'-0"

PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	20	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED
	16, 18	8'-0"	9'-0"	8'-0"	8'-0"	REQUIRED
3	20	7'-4"	7'-2"	7'-4"	7'-2"	REQUIRED
	16, 18	7'-4"	9'-0"	7'-4"	8'-0"	REQUIRED

PAIR OF DOORS WITH 3 POINT LATCHING



SWING TYPE	HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
STANDARD	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	8'-0"	NOT ALLOWED
		20	8'-0"	8'-0"	8'-0"	8'-0"	NOT ALLOWED
DBL. EGRESS	3	16, 18	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED
DBL. EGRESS		16, 18	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED

*PAIR OF DOORS WITH 4 POINT LATCHING

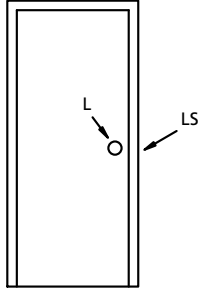
LEGEND:

M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION
* OPTIONAL TOP ROD ONLY - HDWE MUST BE APPROVED FOR THE APPLICATION

FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH

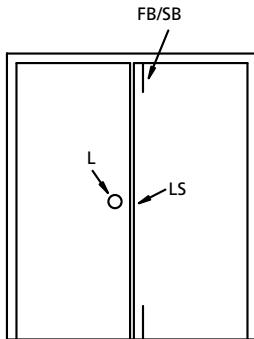
1/3 HOUR INCLUDES BOTH WITH & WITHOUT HOSESTREAM

SIZE LIMITS - UL LABELED POLYURETHANE CORE FIRE DOOR SINGLE POINT LATCH



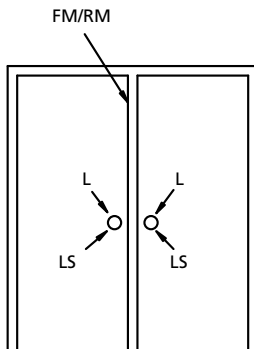
HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	4'-0"	8'-0"	4'-0"	7'-0"
	22, 24	3'-6"	7'-0"	3'-6"	7'-0"
3	14, 16, 18	4'-0"	8'-0"	4'-0"	7'-0"

SINGLE SWING DOORS



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18, 20	8'-0"	8'-0"	6'-0"	7'-0"	OPTIONAL
	22, 24	6'-0"	7'-0"	6'-0"	7'-0"	OPTIONAL
3	16, 18	8'-0"	8'-0"	6'-0"	7'-0"	REQUIRED

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"
	22, 24	(2) 3'-6"	7'-0"	(2) 3'-6"	7'-0"
3	14, 16, 18	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"

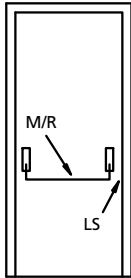
PAIR OF DOORS WITH HOLLOW METAL MULLION

LEGEND:

L = LATCH, SINGLE POINT
LS = LATCH STRIKE

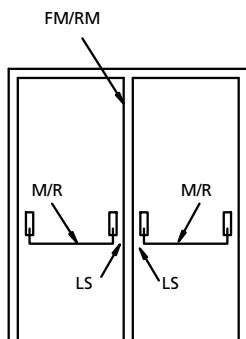
FB/SB = FLUSH BOLT or SURFACE BOLT
FM/RM = FIXED OR REMOVABLE MULLION

SIZE LIMITS - UL LABELED POLYURETHANE CORE FIRE DOOR FIRE EXIT HARDWARE



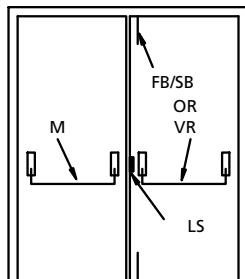
HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	4'-0"	8'-0"	4'-0"	7'-0"
	22, 24	3'-6"	7'-0"	3'-6"	7'-0"
3	14, 16, 18	4'-0"	8'-0"	4'-0"	7'-0"

SINGLE SWING DOORS



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"
	22, 24	(2) 3'-6"	7'-0"	(2) 3'-6"	7'-0"
3	14, 16, 18	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"

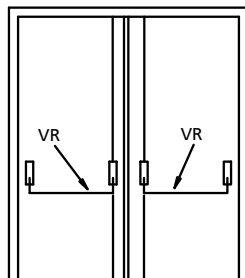
PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18	8'-0"	*9'-0"	6'-0"	7'-0"	OPTIONAL
	20	8'-0"	8'-0"	6'-0"	7'-0"	OPTIONAL
	22, 24	6'-0"	7'-0"	6'-0"	7'-0"	OPTIONAL
3	16, 18	8'-0"	8'-0"	6'-0"	7'-0"	REQUIRED

PAIR OF DOORS WITH 3 POINT LATCHING

*9'-0" W/VERTICAL RODS
8'-0" OTHERWISE



SWING TYPE	HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
DBL. EGRESS	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	6'-0"	7'-0"	OPTIONAL
DBL. EGRESS	3	16, 18	8'-0"	7'-2"	6'-0"	7'-0"	REQUIRED
STANDARD	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	6'-0"	7'-0"	NOT ALLOWED

** PAIR OF DOORS WITH 4 POINT LATCHING

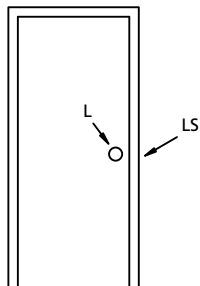
LEGEND:

M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION

FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH
** OPTIONAL TOP ROD ONLY - HDWE MUST BE APPROVED FOR THE APPLICATION

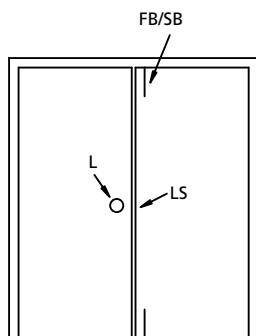
Distributor Tech Data

SIZE LIMITS - WH LABELED POLYURETHANE CORE FIRE DOOR SINGLE POINT LATCH



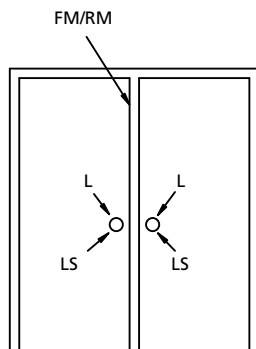
HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	4'-0"	8'-0"	4'-0"	7'-0"
	22, 24	3'-6"	7'-0"	3'-6"	7'-0"
3	14, 16, 18, 20	4'-0"	8'-0"	4'-0"	7'-0"

SINGLE SWING DOORS



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18, 20	8'-0"	8'-0"	6'-0"	7'-0"	OPTIONAL
	22, 24	6'-0"	7'-0"	6'-0"	7'-0"	OPTIONAL
3	16, 18, 20	8'-0"	8'-0"	6'-0"	7'-0"	REQUIRED

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"
	22, 24	(2) 3'-6"	7'-0"	(2) 3'-6"	7'-0"
3	14, 16, 18, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"

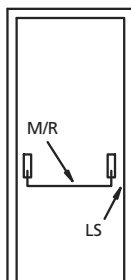
PAIR OF DOORS WITH HOLLOW METAL MULLION

LEGEND:

L = LATCH, SINGLE POINT
LS = LATCH STRIKE

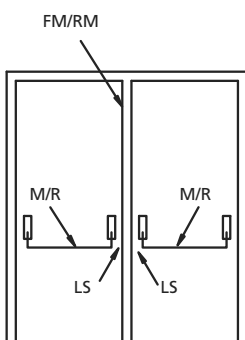
FB/SB = FLUSH BOLT or SURFACE BOLT
FM/RM = FIXED OR REMOVABLE MULLION

SIZE LIMITS - WH LABELED POLYURETHANE CORE FIRE DOOR FIRE EXIT HARDWARE



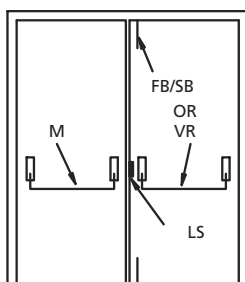
HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	4'-0"	8'-0"	4'-0"	7'-0"
	22, 24	3'-6"	7'-0"	3'-6"	7'-0"
3	14, 16, 18, 20	4'-0"	8'-0"	4'-0"	7'-0"

SINGLE SWING DOORS



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"
	22, 24	(2) 3'-6"	7'-0"	(2) 3'-6"	7'-0"
3	14, 16, 18, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"

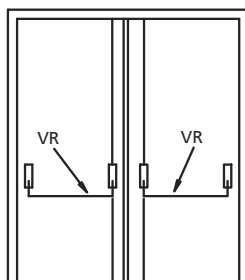
PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18	8'-0"	*9'-0"	6'-0"	7'-0"	OPTIONAL
	20	8'-0"	8'-0"	6'-0"	7'-0"	OPTIONAL
	22, 24	6'-0"	7'-0"	6'-0"	7'-0"	OPTIONAL
3	16, 18, 20	8'-0"	8'-0"	6'-0"	7'-0"	REQUIRED

PAIR OF DOORS WITH 3 POINT LATCHING

*9'-0" W/VERTICAL RODS
8'-0" OTHERWISE



SWING TYPE	HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
DBL. EGRESS	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	6'-0"	7'-0"	OPTIONAL
DBL. EGRESS	3	16, 18, 20	8'-0"	7'-2"	6'-0"	7'-0"	REQUIRED
STANDARD	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	6'-0"	7'-0"	NOT ALLOWED
STANDARD	1/3, 3/4, 1-1/2	20	8'-0"	8'-0"	6'-0"	7'-0"	NOT ALLOWED

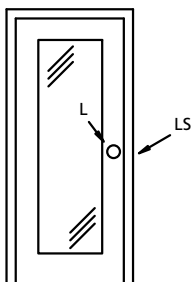
** PAIR OF DOORS WITH 4 POINT LATCHING

LEGEND:

M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION

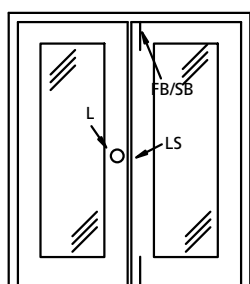
FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH
** OPTIONAL TOP ROD ONLY - HDWE MUST BE APPROVED FOR THE APPLICATION

SIZE LIMITS - UL LABELED STILE AND RAIL FIRE DOOR SINGLE POINT LATCH



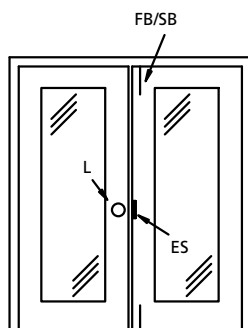
HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4	16	4'-0"	8'-0"	4'-0"	8'-0"

SINGLE SWING DOORS



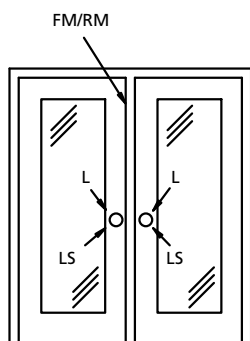
HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4	16	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4	16	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL

PAIR OF DOORS WITH ELECTRIC STRIKE



HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4	16	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"

PAIR OF DOORS WITH HOLLOW METAL MULLION

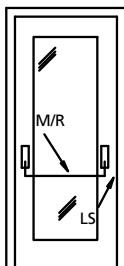
LEGEND:

L = LATCH, SINGLE POINT
LS = LATCH STRIKE
ES = ELECTRIC STRIKE

FB/SB = FLUSH BOLT OR SURFACE BOLT
FM/RM = FIXED OR REMOVABLE MULLION

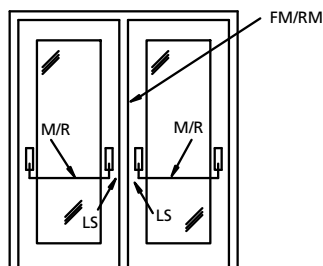
CAUTION:
SOME LATCHING DEVICES MAY NOT BE
APPROVED FOR USE ON DOORS UP TO
MAXIMUM SIZES LISTED.

SIZE LIMITS - UL LABELED STILE AND RAIL FIRE DOOR FIRE EXIT HARDWARE



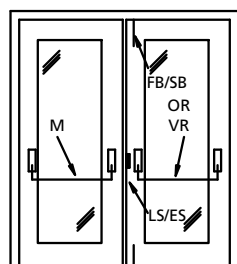
HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4	16	4'-0"	8'-0"	4'-0"	8'-0"

SINGLE SWING DOORS



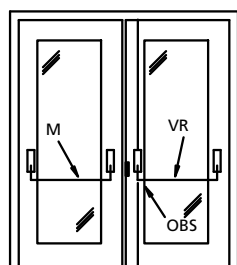
HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4	16	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"

PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



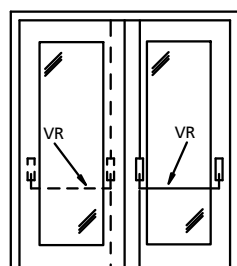
HOURLY RATING	STRIKE TYPE	FACE GAUGE	UL10b		UL10c & UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4	LS, ES	16	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL

PAIR OF DOORS WITH 3 POINT LATCHING



HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4	16	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL

PAIR OF DOORS WITH OPEN BACK STRIKE



SWING TYPE	HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
STANDARD	1/3, 3/4	16	8'-0"	8'-0"	8'-0"	8'-0"	NOT ALLOWED
DBL. EGRESS			8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL

*PAIR OF DOORS WITH 4 POINT LATCHING

LEGEND:

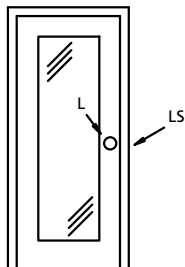
M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION
*OPTIONAL TOP ROD ONLY

FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH
OBS = OPEN BACK STRIKE
ES = ELECTRIC STRIKE

CAUTION:

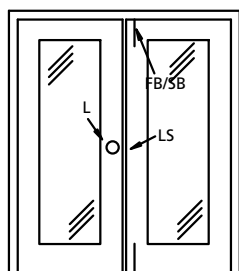
SOME LATCHING DEVICES MAY NOT
BE APPROVED FOR USE ON DOORS
UP TO MAXIMUM SIZES LISTED.

SIZE LIMITS - WH LABELED STILE AND RAIL FIRE DOOR SINGLE POINT LATCH



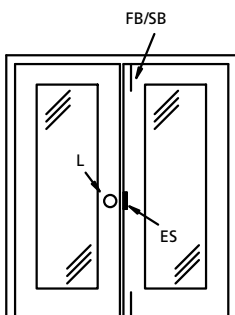
HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4	16	4'-0"	8'-0"	4'-0"	8'-0"

SINGLE SWING DOORS



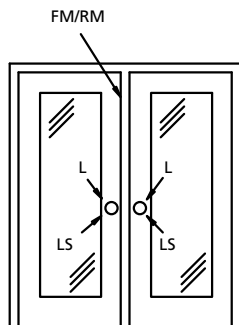
HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4	16	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4	16	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL

PAIR OF DOORS WITH ELECTRIC STRIKE



HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4	16	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"

PAIR OF DOORS WITH HOLLOW METAL MULLION

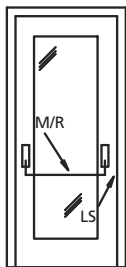
LEGEND:

L = LATCH, SINGLE POINT
LS = LATCH STRIKE
ES = ELECTRIC STRIKE

FB/SB = FLUSH BOLT OR SURFACE BOLT
FM/RM = FIXED OR REMOVABLE MULLION

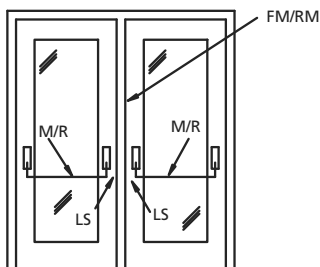
CAUTION:
SOME LATCHING DEVICES MAY NOT BE
APPROVED FOR USE ON DOORS UP TO
MAXIMUM SIZES LISTED.

SIZE LIMITS - WH LABELED STILE AND RAIL FIRE DOOR FIRE EXIT HARDWARE



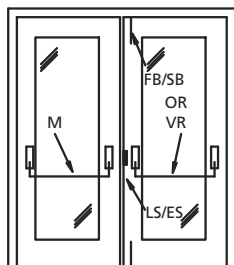
HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4	16	4'-0"	8'-0"	4'-0"	8'-0"

SINGLE SWING DOORS



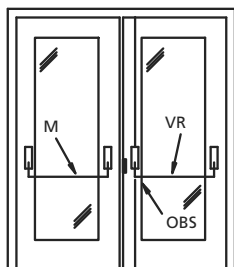
HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4	16	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"

PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



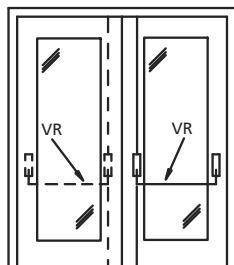
HOURLY RATING	STRIKE TYPE	FACE GAUGE	UL10b		UL10c & UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4	LS, ES	16	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL

PAIR OF DOORS WITH 3 POINT LATCHING



HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4	16	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL

PAIR OF DOORS WITH OPEN BACK STRIKE



SWING TYPE	HOURLY RATING	FACE GAUGE	UL10b		UL10c & UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
STANDARD	1/3, 3/4	16	8'-0"	8'-0"	8'-0"	8'-0"	NOT ALLOWED
DBL. EGRESS			8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL

*PAIR OF DOORS WITH 4 POINT LATCHING

LEGEND:

M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION
*OPTIONAL TOP ROD ONLY

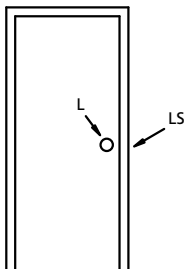
FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH
OBS = OPEN BACK STRIKE
ES = ELECTRIC STRIKE

CAUTION:

SOME LATCHING DEVICES MAY NOT BE APPROVED FOR USE ON DOORS UP TO MAXIMUM SIZES LISTED.

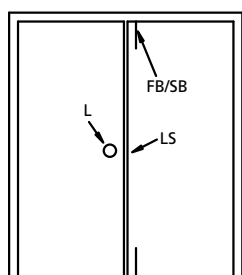
SIZE LIMITS - UL LABELED

450°F (232°C) STEEL STIFFENED FIRE DOOR SINGLE POINT LATCH



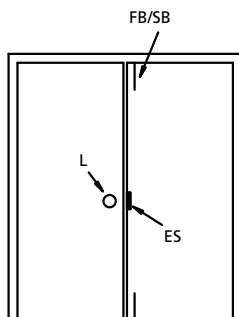
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"
	20	4'-0"	8'-0"	4'-0"	8'-0"
3	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"

SINGLE SWING DOORS



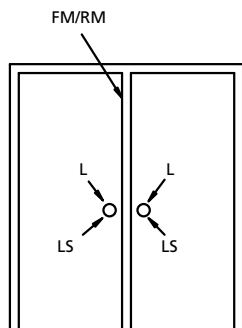
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
3	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
3	16, 18	6'-0"	7'-2"	6'-0"	7'-2"	REQUIRED

PAIR OF DOORS WITH ELECTRIC STRIKE



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"
	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
3	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"

PAIR OF DOORS WITH HOLLOW METAL MULLION

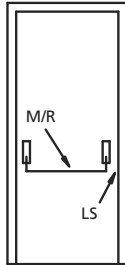
LEGEND:

L = LATCH, SINGLE POINT
LS = LATCH STRIKE
ES = ELECTRIC STRIKE

FB/SB = FLUSH BOLT OR SURFACE BOLT
FM/RM = FIXED OR REMOVABLE MULLION

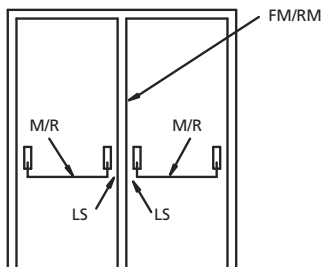
CAUTION:
SOME LATCHING DEVICES MAY NOT BE
APPROVED FOR USE ON DOORS UP TO
MAXIMUM SIZES LISTED.

SIZE LIMITS - UL LABELED 450°F (232°C) STEEL STIFFENED FIRE DOOR FIRE EXIT HARDWARE



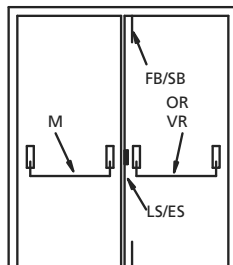
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"
	20	4'-0"	8'-0"	4'-0"	8'-0"
3	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"

SINGLE SWING DOORS



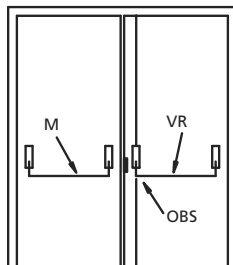
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"
	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
3	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"

PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



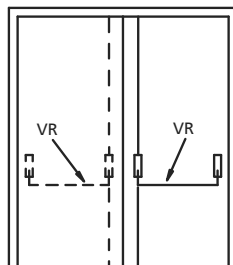
HOURLY RATING	STRIKE TYPE	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	LS	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
	LS	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	LS	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
	ES	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
3	LS	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	LS	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
	ES	16, 18	6'-0"	7'-2"	6'-0"	7'-2"	REQUIRED

PAIR OF DOORS WITH 3 POINT LATCHING



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL
1/3, 3/4, 1, 1-1/2	14	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED

PAIR OF DOORS WITH OPEN BACK STRIKE



SWING TYPE	HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
STANDARD	1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	NOT ALLOWED
DBL. EGRESS			8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
DBL. EGRESS			8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
DBL. EGRESS	3		8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED

* PAIR OF DOORS WITH 4 POINT LATCHING

LEGEND:

M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION
* OPTIONAL TOP ROD ONLY - HDWE MUST BE APPROVED FOR THE APPLICATION

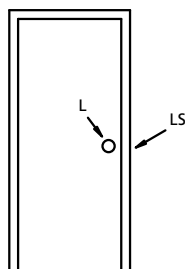
FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH
OBS = OPEN BACK STRIKE
ES = ELECTRIC STRIKE

CAUTION:

SOME LATCHING DEVICES MAY NOT BE APPROVED FOR USE ON DOORS UP TO MAXIMUM SIZES LISTED.

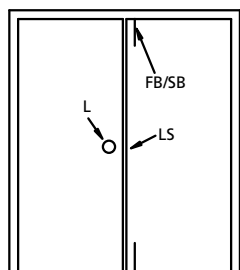
SIZE LIMITS - WH LABELED

450°F (232°C) STEEL STIFFENED FIRE DOOR SINGLE POINT LATCH



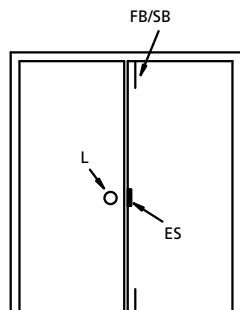
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"
	20	4'-0"	8'-0"	4'-0"	8'-0"
3	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"

SINGLE SWING DOORS



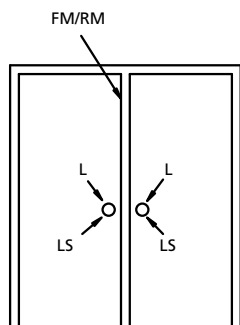
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
3	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL*
	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
3	16, 18	6'-0"	7'-2"	6'-0"	7'-2"	OPTIONAL*

PAIR OF DOORS WITH ELECTRIC STRIKE



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"
	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
3	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"

PAIR OF DOORS WITH HOLLOW METAL MULLION

*NFPA-80 AND MANY BUILDING CODES REQUIRE THE USE OF AN OVERLAPPING ASTRAGAL ON 3 HOUR RATED PAIRS. CHECK WITH AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION OF A 3 HOUR PAIR W/O AN ASTRAGAL.

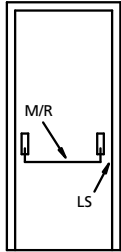
LEGEND:

L = LATCH, SINGLE POINT
LS = LATCH STRIKE
ES = ELECTRIC STRIKE

FB/SB = FLUSH BOLT OR SURFACE BOLT
FM/RM = FIXED OR REMOVABLE MULLION

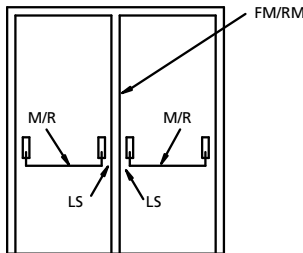
CAUTION:
SOME LATCHING DEVICES MAY NOT BE APPROVED FOR USE ON DOORS UP TO MAXIMUM SIZES LISTED.

SIZE LIMITS - WH LABELED 450°F (232°C) STEEL STIFFENED FIRE DOOR FIRE EXIT HARDWARE



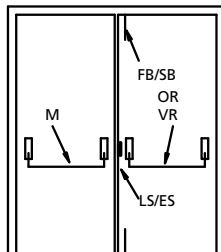
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"
	20	4'-0"	8'-0"	4'-0"	8'-0"
3	14	4'-0"	9'-0"	4'-0"	9'-0"
	16, 18	4'-0"	10'-0"	4'-0"	10'-0"

SINGLE SWING DOORS



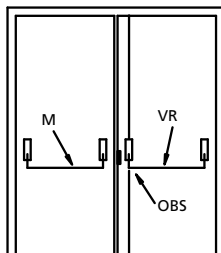
HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1, 1-1/2	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"
	20	(2) 4'-0"	8'-0"	(2) 4'-0"	8'-0"
3	14	(2) 4'-0"	9'-0"	(2) 4'-0"	9'-0"
	16, 18	(2) 4'-0"	10'-0"	(2) 4'-0"	10'-0"

PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



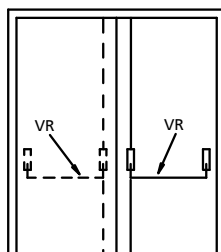
HOURLY RATING	STRIKE TYPE	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	LS	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
	LS	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	LS OR ES	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
3	LS	14	8'-0"	9'-0"	8'-0"	9'-0"	REQUIRED
	LS	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL*
	LS	16, 18	8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
	ES	16, 18	6'-0"	7'-2"	6'-0"	7'-2"	OPTIONAL*

PAIR OF DOORS WITH 3 POINT LATCHING



HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	8'-0"	8'-0"	8'-0"	OPTIONAL
1/3, 3/4, 1, 1-1/2	14	8'-0"	8'-0"	8'-0"	8'-0"	REQUIRED

PAIR OF DOORS WITH OPEN BACK STRIKE



SWING TYPE	HOURLY RATING	FACE GAUGE	UL10b		UBC 7-2		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
STANDARD	1/3, 3/4, 1, 1-1/2	16, 18	8'-0"	9'-0"	8'-0"	9'-0"	NOT ALLOWED
DBL. EGRESS			8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL
DBL. EGRESS			8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED
STANDARD	3		8'-0"	9'-0"	8'-0"	9'-0"	NOT ALLOWED*
DBL. EGRESS			8'-0"	9'-0"	8'-0"	9'-0"	OPTIONAL*
DBL. EGRESS			8'-0"	10'-0"	8'-0"	10'-0"	REQUIRED

** PAIR OF DOORS WITH 4 POINT LATCHING

LEGEND:

M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION

FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH
OBS = OPEN BACK STRIKE
ES = ELECTRIC STRIKE

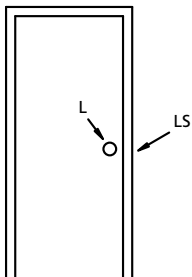
CAUTION:

SOME LATCHING DEVICES MAY NOT BE APPROVED FOR USE ON DOORS UP TO MAXIMUM SIZES LISTED.

*NFPA-80 AND MANY BUILDING CODES REQUIRE THE USE OF AN OVERLAPPING ASTRAGAL ON 3 HOUR RATED PAIRS. CHECK WITH AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION OF A 3 HOUR PAIR W/O AN ASTRAGAL.

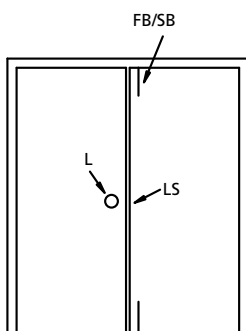
** OPTIONAL TOP ROD ONLY - HDWE MUST BE APPROVED FOR THE APPLICATION

SIZE LIMITS - UL LABELED POLYSTYRENE CORE FIRE DOOR SINGLE POINT LATCH



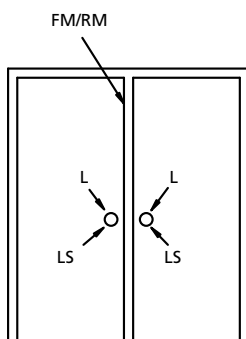
HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	4'-0"	8'-0"	4'-0"	7'-0"
	22, 24	3'-6"	7'-0"	3'-6"	7'-0"
3	14, 16, 18	4'-0"	8'-0"	4'-0"	7'-0"

SINGLE SWING DOORS



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18, 20	8'-0"	8'-0"	6'-0"	7'-0"	OPTIONAL
	22, 24	6'-0"	7'-0"	6'-0"	7'-0"	OPTIONAL
3	16, 18	8'-0"	8'-0"	6'-0"	7'-0"	REQUIRED

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"
	22, 24	(2) 3'-6"	7'-0"	(2) 3'-6"	7'-0"
3	14, 16, 18	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"

PAIR OF DOORS WITH HOLLOW METAL MULLION

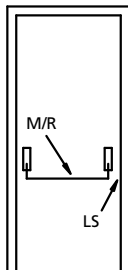
LEGEND:

L = LATCH, SINGLE POINT
LS = LATCH STRIKE

FB/SB = FLUSH BOLT or SURFACE BOLT

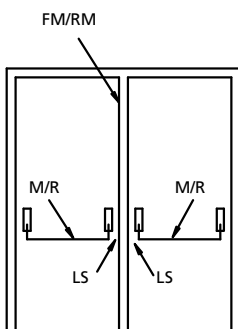
FM/RM = FIXED OR REMOVABLE MULLION

SIZE LIMITS - UL LABELED POLYSTYRENE CORE FIRE DOOR FIRE EXIT HARDWARE



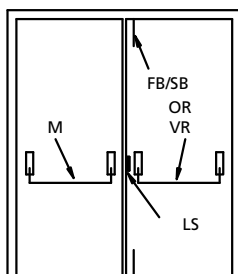
HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	4'-0"	8'-0"	4'-0"	7'-0"
	22, 24	3'-6"	7'-0"	3'-6"	7'-0"
3	14, 16, 18	4'-0"	8'-0"	4'-0"	7'-0"

SINGLE SWING DOORS



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"
	22, 24	(2) 3'-6"	7'-0"	(2) 3'-6"	7'-0"
3	14, 16, 18	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"

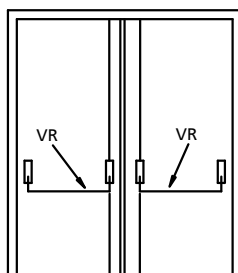
PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18	8'-0"	*9'-0"	6'-0"	7'-0"	OPTIONAL
	20	8'-0"	8'-0"	6'-0"	7'-0"	OPTIONAL
	22, 24	6'-0"	7'-0"	6'-0"	7'-0"	OPTIONAL
3	16, 18	8'-0"	8'-0"	6'-0"	7'-0"	REQUIRED

PAIR OF DOORS WITH 3 POINT LATCHING

*9'-0" W/VERTICAL RODS
8'-0" OTHERWISE



SWING TYPE	HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
DBL. EGRESS	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	6'-0"	7'-0"	OPTIONAL
DBL. EGRESS	3	16, 18	8'-0"	7'-2"	6'-0"	7'-0"	REQUIRED
STANDARD	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	6'-0"	7'-0"	NOT ALLOWED

**** PAIR OF DOORS WITH 4 POINT LATCHING**

LEGEND:

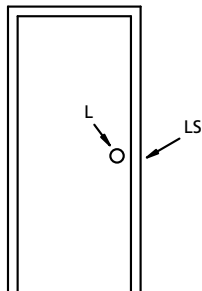
M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION

FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH

** OPTIONAL TOP ROD ONLY -
HDWE MUST BE APPROVED
FOR THE APPLICATION

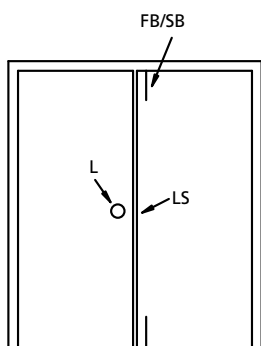
Distributor Tech Data

SIZE LIMITS - WH LABELED POLYSTYRENE CORE FIRE DOOR SINGLE POINT LATCH



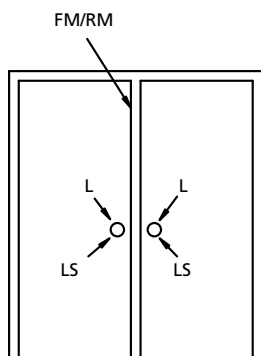
HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	4'-0"	8'-0"	4'-0"	7'-0"
	22, 24	3'-6"	7'-0"	3'-6"	7'-0"
3	14, 16, 18, 20	4'-0"	8'-0"	4'-0"	7'-0"

SINGLE SWING DOORS



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18, 20	8'-0"	8'-0"	6'-0"	7'-0"	OPTIONAL
	22, 24	6'-0"	7'-0"	6'-0"	7'-0"	OPTIONAL
3	16, 18, 20	8'-0"	8'-0"	6'-0"	7'-0"	REQUIRED

PAIR OF DOORS



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"
	22, 24	(2) 3'-6"	7'-0"	(2) 3'-6"	7'-0"
3	14, 16, 18, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"

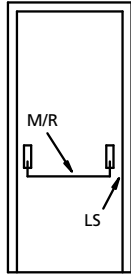
PAIR OF DOORS WITH HOLLOW METAL MULLION

LEGEND:

L = LATCH, SINGLE POINT
LS = LATCH STRIKE

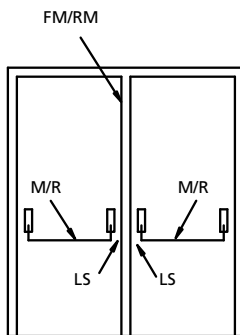
FB/SB = FLUSH BOLT or SURFACE BOLT
FM/RM = FIXED OR REMOVABLE MULLION

SIZE LIMITS - WH LABELED POLYSTYRENE CORE FIRE DOOR FIRE EXIT HARDWARE



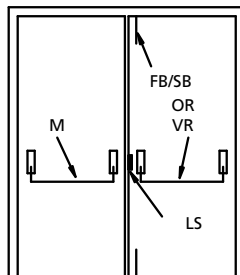
HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	4'-0"	8'-0"	4'-0"	7'-0"
	22, 24	3'-6"	7'-0"	3'-6"	7'-0"
3	14, 16, 18, 20	4'-0"	8'-0"	4'-0"	7'-0"

SINGLE SWING DOORS



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C	
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT
1/3, 3/4, 1-1/2	14, 16, 18, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"
	22, 24	(2) 3'-6"	7'-0"	(2) 3'-6"	7'-0"
3	14, 16, 18, 20	(2) 4'-0"	8'-0"	(2) 4'-0"	7'-0"

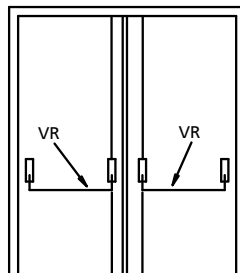
PAIR OF DOORS WITH HOLLOW METAL OR HARDWARE MULLION



HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C		ASTRAGAL INFO
		MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
1/3, 3/4, 1-1/2	16, 18	8'-0"	*9'-0"	6'-0"	7'-0"	OPTIONAL
	20	8'-0"	8'-0"	6'-0"	7'-0"	OPTIONAL
	22, 24	6'-0"	7'-0"	6'-0"	7'-0"	OPTIONAL
3	16, 18, 20	8'-0"	8'-0"	6'-0"	7'-0"	REQUIRED

PAIR OF DOORS WITH 3 POINT LATCHING

*9'-0" W/VERTICAL RODS
8'-0" OTHERWISE



SWING TYPE	HOURLY RATING	FACE GAUGE	POLYSTYRENE UL10C/UL10B & POLYURETHANE UL10B		POLYURETHANE UL10C		ASTRAGAL INFO
			MAX WIDTH	MAX HEIGHT	MAX WIDTH	MAX HEIGHT	
DBL. EGRESS	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	6'-0"	7'-0"	OPTIONAL
DBL. EGRESS	3	16, 18, 20	8'-0"	7'-2"	6'-0"	7'-0"	REQUIRED
STANDARD	1/3, 3/4, 1-1/2	16, 18	8'-0"	9'-0"	6'-0"	7'-0"	NOT ALLOWED
STANDARD	1/3, 3/4, 1-1/2	20	8'-0"	8'-0"	6'-0"	7'-0"	NOT ALLOWED

** PAIR OF DOORS WITH 4 POINT LATCHING

LEGEND:

M = MORTISE FEH
R = RIM FEH
LS = LATCH STRIKE
FM/RM = FIXED OR REMOVABLE MULLION

FB/SB = FLUSH OR SURFACE BOLT
VR = VERTICAL ROD FEH

** OPTIONAL TOP ROD ONLY -
HDWE MUST BE APPROVED
FOR THE APPLICATION

GLASS LIGHT LIMITATIONS FOR FIRE DOORS USING WIRE GLASS UL AND WH

Louvers are not permitted on doors with glass lights.

RATINGS	WIRE GLASS			
	MAX. EXPOSED GLASS AREA		MAX. EXPOSED GLASS DIM.	
	UL10B	UL10C	WIDTH	HEIGHT
3 HR.	---	---	---	---
2 HR.	---	---	---	---
1-1/2 HR.	100 IN ² /LEAF	100 IN ² /LEAF	33"	33"
1 HR.	100 IN ² /LEAF	100 IN ² /LEAF	33"	33"
3/4 HR.	1296 IN ² /LITE	1296 IN ² /LITE	54"	54"
20 MIN.	1296 IN ² /LITE	1296 IN ² /LITE	54"	54"
20 MIN. <small>NO HOSE STREAM</small>	2971 IN ² /LITE	2971 IN ² /LITE	35 3/4"	83 1/2"

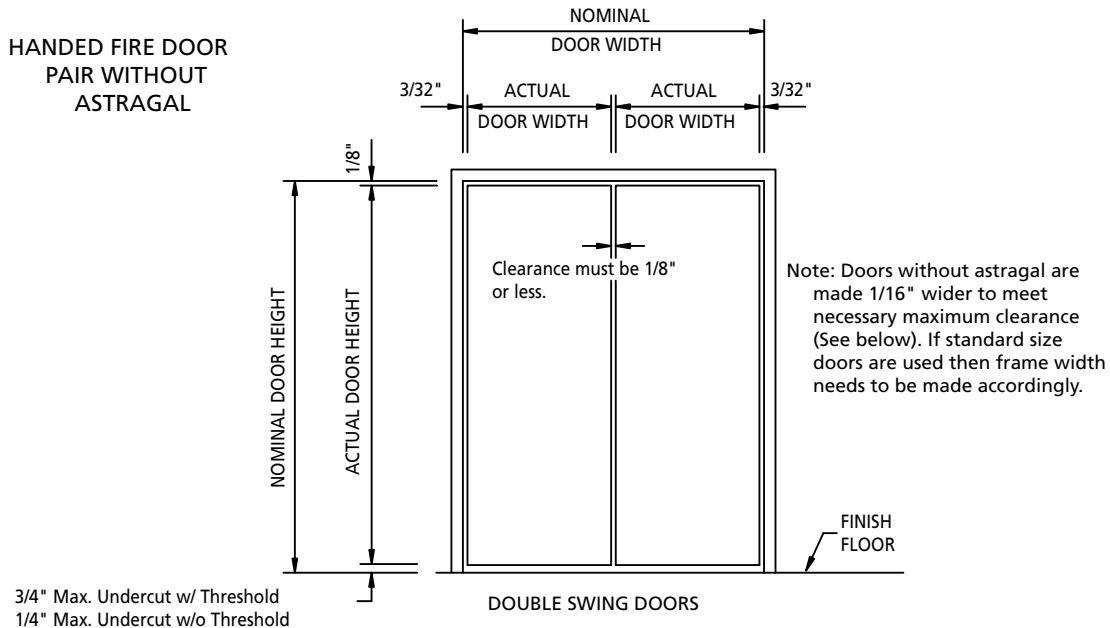
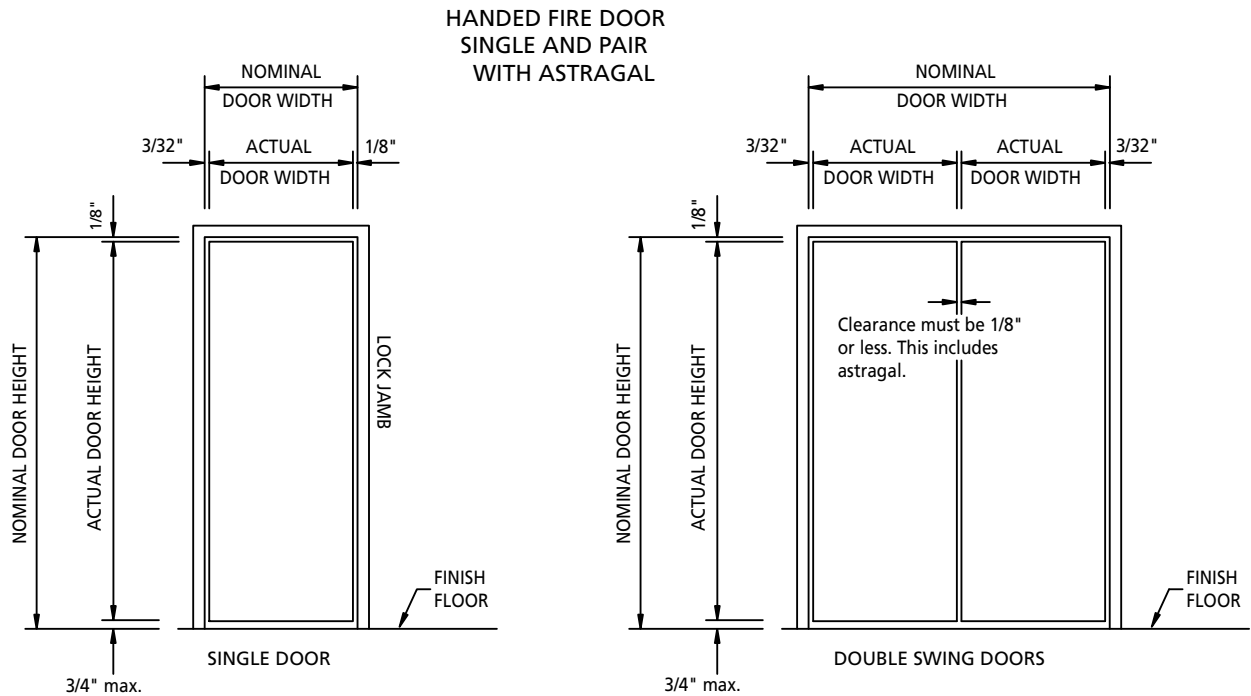
RATINGS	WIRE GLASS w/ " FIRE GLAZE FG3000" COMPOUND						
	MAX. EXPOSED GLASS AREA		MAX. EXPOSED GLASS DIM.				MULTIPLE LITES ALLOWED
	UL10B	UL10C	UL10B		UL10C		
1-1/2 HR.	552 IN ² /LITE	552 IN ² /LITE	12" W	46" H	12" W	46" H	YES
3/4 HR.	2856 IN ² /LITE	1008 IN ² /LITE	34" W	84" H	34" W	84" H	YES
20 MIN.	2856 IN ² /LITE	1008 IN ² /LITE	34" W	84" H	34" W	84" H	YES
<p>Only Air Louver's VL3000 Kit or Listed wire glass glazed with Pemko's "Fire Glaze FG3000" compound in a Pemko PLK glass kit may be used.</p> <p>The door must bear a supplemental marking indicating the specific glass, glass light kit, and glazing compound.</p> <p>Maximum door size is 40100.</p>							

Distributor Tech Data

GLASS LIGHT LIMITATIONS USING FIRELITE GLASS UL AND WH

RATINGS	"FIRELITE GLASS"			
	MAX. EXPOSED GLASS AREA		MAX. EXPOSED GLASS DIM.	
	UL10B	UL10C	WIDTH	HEIGHT
3 HR.	100 IN ² /LEAF	100 IN ² /LEAF	33"	33"
2 HR.	1296 IN ² /LITE	1296 IN ² /LITE	36"	45"
1-1/2 HR.	1296 IN ² /LITE	1296 IN ² /LITE	36"	45"
1 HR.	1296 IN ² /LITE	1296 IN ² /LITE	54"	54"
3/4 HR.	1296 IN ² /LITE	1296 IN ² /LITE	54"	54"
20 MIN.	1296 IN ² /LITE	1296 IN ² /LITE	54"	54"
20 MIN. NO HOSE STREAM	2971 IN ² /LITE	2971 IN ² /LITE	35 3/4"	83 1/2"
<p>Special Glazing Option: When a door is prepared for a glass over glass design, the lower glass kit may be glazed with a 3/8" thick sandwich panel.</p> <p>When "Firelite" glazing material is required, supplemental labels must be attached.</p> <p>Louvers are not permitted on doors with glass lights.</p>				

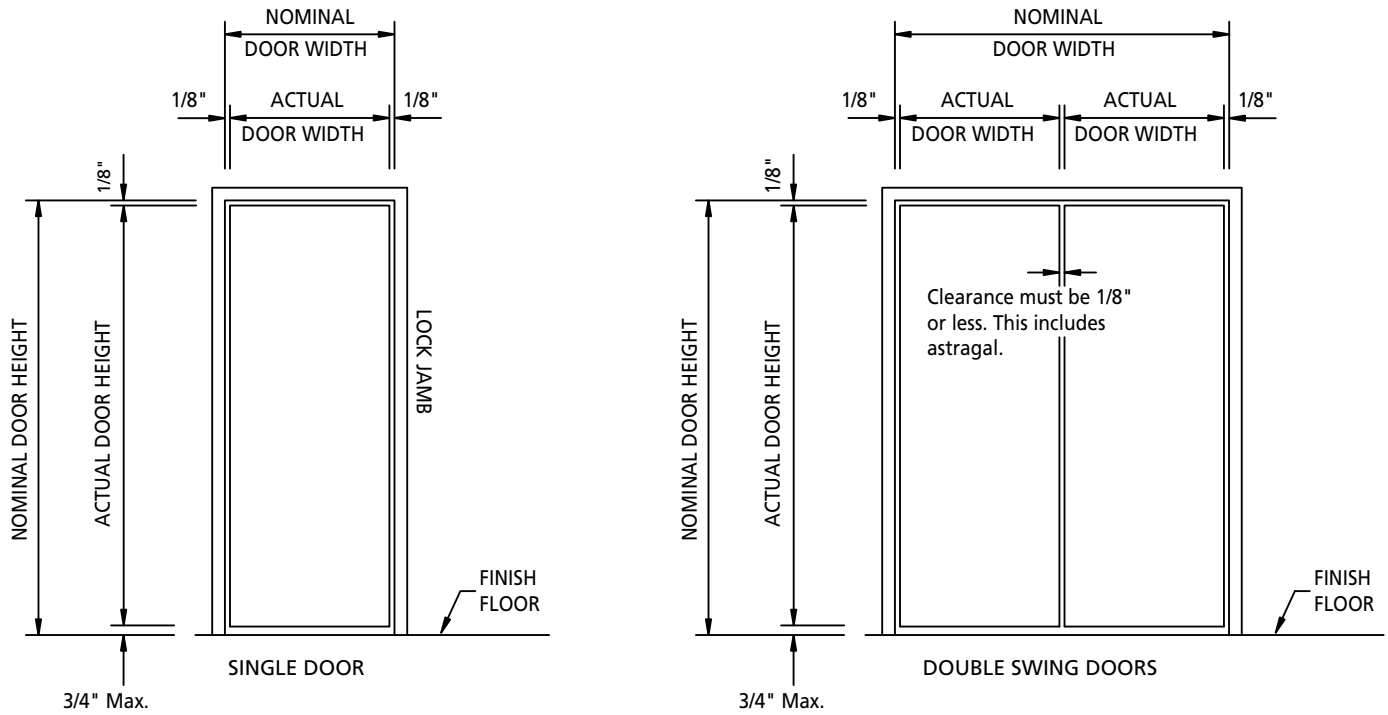
LABEL FIRE DOOR UL/WH/FM SIZES AND OPERATING CLEARANCES



Distributor Tech Data

LABELED FIRE DOOR UL/WH/FM SIZES AND OPERATING CLEARANCES

NON-HANDED FIRE DOOR SINGLE AND PAIR WITH ASTRAGAL



Example: 3070 nominal = 35-3/4" x 83-1/8" actual leaf size

Distributor Tech Data

HONEYCOMB CORE FIRE DOORS REGENT/OMEGA - UL/WH LABEL SINGLE SWING

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:

3 hour, 1 hour, 1-1/2 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:

See pages 7-107 thru 7-110
5. Face Sheets:

See pages 7-107 thru 7-110
6. Construction:

See pages 2-301 thru 2-303 except as noted herein
7. Clearances: 1/8" at top, 1/8" maximum at hinge and lock edge, 3/4" maximum at sill w/o threshold) see pages 7-132 and 7-133
8. End channels: (see pages 2-301 & 2-302)
 - a. Welded to both face sheets
 - b. end channels are inverted
 - c. special bottom channel for automatic door bottom available
9. Hinge Preparations: ANSI A156.7 template 7 ga. steel reinforcement
 - a. full mortise, 4-1/2" standard or heavy weight
 1. Regent - handed
 2. Omega - non-handed
 - b. full mortise, 5" standard or heavy weight
 1. Regent - handed
 - c. half surface, pivots, anchor hinge, pocket pivots, and continuous
10. Door edges:
 - a. Square hinge edge
 - b. lock edge...
 1. Regent: beveled 1/8" in 2"
 2. Omega: square
11. Closer reinforcement:
 - a. optional - see page 1-417 & 1-418
 - b. when reinforcement is not furnished, a paper label is applied stating "...USE SEX BOLTS TO MOUNT CLOSER".
12. Lock Preparation:
 - a. Listed, positive latching, 1/2" minimum throw - see section one
 1. Cylindrical type, 5" B.S. max.
 2. Mortise type, escutcheon or sectional trim
 3. Combination type
 4. Unit (preassembled) lock
 5. "Rigid" type lock
 6. "G" type lock
 7. "Integralock"
 8. 2 or 3-point latch
 - b. Supplemental deadlock preparation
 - c. Listed fire exit hardware
 1. Rim type
 2. Mortise type
 - d. Listed hospital latches
 - e. Interlock type "M" for elevator swinging door
13. Miscellaneous Hardware:
 - a. magnetic switch
 - b. surface / concealed stop and shock absorbers
 - c. surface / concealed closers
 - d. electric power transfer
 - e. Listed electric hardware (hinges and locks)
 - f. Listed viewer: 1" maximum hole dia. located a minimum of 12" from top or either edge (1-1/2 hr. rated, UL or WH door)
14. Designs:

See page 7-205
15. Glass lite trim kits:

See pages 1-703 thru 1-704
16. Louver:

See page 7-205
17. Embossed panels:

See page 7-205

HONEYCOMB CORE FIRE DOORS REGENT/OMEGA - UL/WH LABEL PAIRS, W/ASTRAGAL, NO OBS

1. FIRE TEST:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. hardware and gasketing should comply with test method and hourly rating
2. Hourly rating:
3 hour, 1-1/2 hour, 1 hr., 3/4 hour & 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum door opening sizes:
See pages 7-107 thru 7-110
5. Face sheets:
See pages 7-107 thru 7-110
6. Construction:
See page 2-301 thru 2-303
7. Clearances:
1/8" top, 1/8" maximum at hinge edge,
1/8" maximum between leaves, and
3/4" maximum at sill (w/o threshold)
See pages 7-132 & 7-133
8. End channels:
See page 2-301 & 2-302
9. Hinge Preparations:
See page 7-201
10. Door edges:
See page 7-201
11. Closer reinforcement:
See page 7-201
12. Lock preparation, active leaf, see section one
 - a. Listed, positive latching, 1/2" minimum throw, examples:
 1. Cylindrical type, 5" B.S. max.
 2. Mortise type, escutcheon or sectional trim
 3. Combination type
 4. Unite (preassembled) lock
 5. "Rigid" type lock
 6. "G" type lock
 7. "Integralock"
 8. 2 or 3-point latch
 - b. supplemental deadlock preparation
 - c. Listed fire exit hardware
 1. Rim type
 2. Mortise type
 - d. Listed electrical single point lock
13. Miscellaneous Hardware:
 - a. surface / concealed closers
 - b. surface / concealed stops and shock absorbers
 - c. Listed electric hardware (hinges and locks)
 - d. Listed viewer: 1" maximum hole dia. located a minimum of 12" from top or either edge (1-1/2 hr. rated, UL or WH door)
14. Designs:
See page 7-205
15. Glass lite trim kits:
See pages 1-703 & 1-704
16. Louver:
See page 7-205
17. Embossed panels:
See page 7-205
18. Astragal: Steel overlapping type...
See pages 1-601 & 1-602; Use with:
 - a. listed single point latch
 - b. listed mortise type FEH
 - c. overlap strip optional for 1-1/2 hr. or less rated, 18 or 16 ga. doors
19. Listed removable mullion use with...
 - a. Listed rim type FEH (two)
(no overlapping astragal necessary)
20. Lock preparation, Inactive leaf, see section one
 - a. with single point latch and astragal:
 1. Listed manual flush bolts
(top and bottom)
 2. Listed manual surface bolts
(top and bottom)
 3. Listed self latching flush bolts
(top and bottom)
 4. Listed auto-flush bolts
(top and bottom)
 - b. with rim device and removable mullion
 1. listed rim type FEH
 - c. Listed vertical rod FEH surface or concealed



Distributor Tech Data

HONEYCOMB CORE FIRE DOORS REGENT/OMEGA - UL/WH LABEL PAIRS, TWO VERTICAL RODS W/O ASTRAGAL

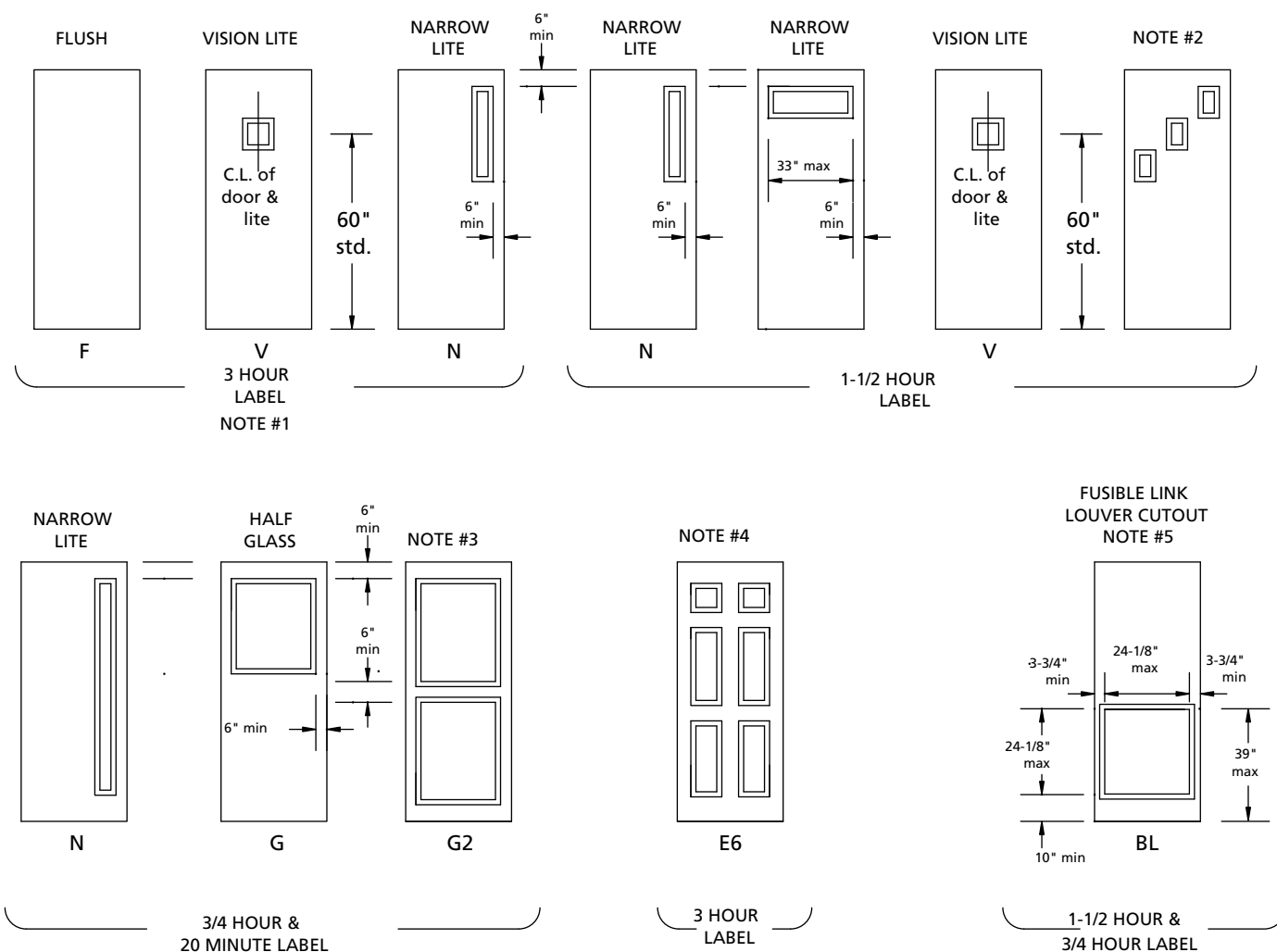
1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
 - 1-1/2 hour, 1 hour, 3/4 hour & 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:
 - See pages 7-107 thru 7-110
5. Face Sheets:
 - See pages 7-107 thru 7-110
6. Construction:
 - See pages 2-301 thru 2-303 except as noted herein
7. Clearances: See page 7-132 & 7-133
8. End channels:
 - a. Welded to both face sheets
 - b. end channels are inverted
 - c. special bottom channel for automatic door bottom available
9. Hinge Preparations:
 - See page 7-201
10. Door edges:
 - See page 7-201
11. Closer reinforcement:
 - See page 7-201
12. Listed fire exit hardware (one each leaf)
 - a. vertical rod type
 1. surface mounted
 2. concealed
 - a. door must be factory prepared for concealed vertical rod FEH
 3. top rod only optional
13. Designs:
 - See page 7-205
14. Glass lite trim kits:
 - See pages 1-703 thru 1-704
15. Louver:
 - None w/FEH
16. Embossed panels:
 - See page 7-205

**HONEYCOMB CORE FIRE DOORS
REGENT/OMEGA - UL/WH LABEL
PAIRS, W/O ASTRAGAL, W/ OBS**

1. Fire test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. hardware and gasketing should comply with test method and hourly rating
2. Hourly rating:
1-1/2 hour, 1 hr., 3/4 hour & 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum door opening sizes:
See pages 7-107 thru 7-110
5. Face sheets:
See pages 7-107 thru 7-110
6. Construction:
See page 2-301 thru 2-303
7. Clearances:
See pages 7-132 & 7-133
8. End channels:
 - a. welded to both face sheets
 - b. end channels are inverted
 - c. special bottom channel for automatic door bottom available
9. Hinge preparations:
See page 7-201
10. Door edges:
See page 7-201
Lock edge to suit open back strike
check open back strike template
11. Closer reinforcement:
See page 7-201
12. Lock Preparation (Active leaf):
 - a. Listed, single point latch 1/2" minimum throw
 - b. Listed mortise type FEH
13. Inactive leaf lock and strike preparation:
 - a. Listed open back strike (OBS)
 1. verify compatibility with single point latch or FEH
 2. depending on mfg, strike may or may not be handed - coordinate with hand of door and door lock edge
 3. Door is factory prepared for OBS
 - b. Listed fire exit hardware (FEH)
 1. Vertical rod type
 - a. Concealed
 1. factory prep req'd
 2. insure that OBS and concealed rod/operator don't interfere
 - b. surface mounted
14. Designs: refer to page 7-205
15. Glass lite trim kits:
See pages 1-703 thru 1-704
16. Louvers:
None w/FEH; See page 7-206
17. Overlapping astragal:
 - a. NONE
18. Lock edge weatherstrip: OPTIONAL
19. Coordinator: Not necessary

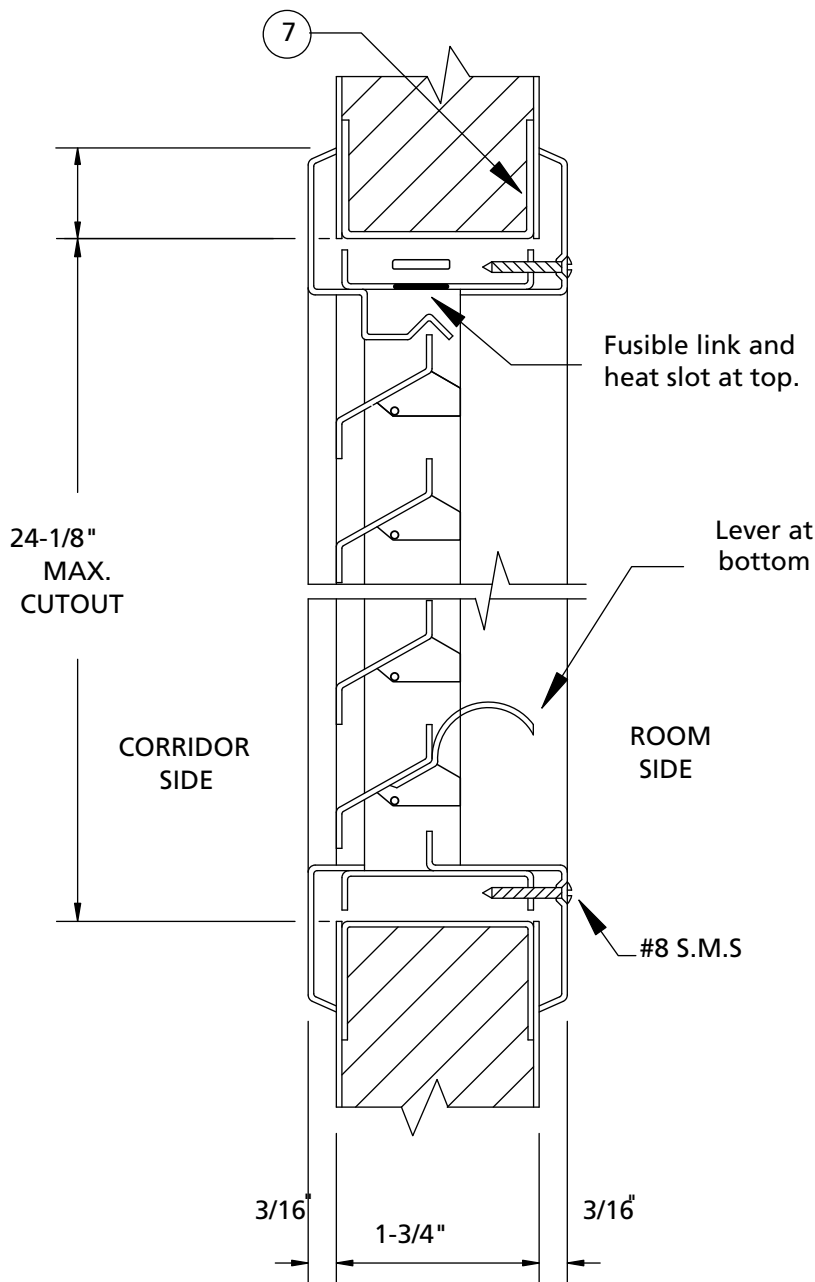
Distributor Tech Data

HONEYCOMB CORE FIRE DOOR DESIGNS



1. 3 hour fire doors restricted to 100 sq in max area and "Firelite" glazing, see page 7-131..
2. For 1-1/2 hour labeled doors, the total exposed glass area listed on pages 7-130 & 131 is allowed per door leaf. This area can be distributed among more than one individual lite kits.
3. For 3/4 hour and 20 minute doors, each lite cannot exceed the area listed on pages 7-130 & 131, although more than one lite may be permitted per door.
4. For embossed panel design guidelines, see page 2-202.
5. No more than of one louver is allowed per leaf. See page 7-206 for louver details and additional guidelines.
6. For steel glass trim kits, see pages 1-703 thru 1-704. Honeycomb core fire doors generally require a steel perimeter channel installed inside door around perimeter of cutout.

FUSIBLE LINK INVERTED SLAT FIRE DOOR LOUVER



MODEL FLDL OR
100AFL LISTED LOUVER

FIRE RATINGS: UL & WH 3/4 OR
1-1/2 HOUR.
FIRE TEST: UL10B or UL10C
576 SQ. IN. MAX. LOUVER AREA.
LOUVER SIZE:
MAXIMUM -- 24" WIDTH & 24" HEIGHT,
MINIMUM -- 12" WIDTH & 6" HEIGHT.
18 GAGE C.R. STEEL FRAME AND BLADES.
FINISH: ONE COAT PRIMER PAINT.

1. For 1-3/4" thick fire door -- see fire door section for applicable door model and louver location.
2. Louvers are restricted to one per door which includes installation in each leaf of a pair.
3. Not permitted on doors with fire exit hardware or glass lites.
4. Should not be installed in 20 minute, 3 hour, or temperature rise fire doors.
5. 16 gage steel channels, around perimeter of cutout, are welded to face sheets
6. Shop prep of door required. Louver may be installed in plant or field.
7. Free air flow: approximately 40% free air area when blades are open.
8. Screens are not available.

Distributor Tech Data

VERTICALLY STEEL STIFFENED FIRE DOORS MEDALLION (NTR) - UL/WH LABEL SINGLE SWING

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:

3 hour, 1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:

See pages 7-111 thru 7-112B
5. Face Sheets:

See pages 7-111 thru 7-112B
6. Construction:

See pages 7-201 except as noted herein
7. Clearances: 1/8" at top, 1/8" maximum at hinge and lock edge, 3/4" maximum at sill (w/o threshold) see page 5-132
8. End channels:

see page 5-303
9. Hinge Preparations: ANSI A156.7 template
7 ga. steel reinforcement
 - a. full mortise, 4-1/2" standard or heavy weight
 1. handed
 2. non-handed
 - b. full mortis, 5" standard or heavy weight
 1. handed
 - c. half surface, pivots, anchor hinge, pocket pivots, and continuous
10. Door edges:

See page 5-202
11. Closer reinforcement:
 - a. optional - see page 5-201
 - b. when reinforcement is not furnished, a paper label is applied stating "...USE SEX BOLTS TO MOUNT CLOSER".
12. Lock Preparation:
 - a. Listed, positive latching, 1/2" minimum throw - Examples:
 1. Cylindrical type, 5" B.S. max.
 2. Mortise type, escutcheon or sectional trim
 3. Combination type
 4. Unit (preassembled) lock
 5. "Rigid" type lock
 6. "G" type lock
 7. "Integralock"
 8. 2 or 3-point latch
 - b. Supplemental deadlock preparation
 - c. Listed fire exit hardware
 1. Rim type
 2. Mortise type
 - d. Listed hospital latches
 - e. Interlock type "M" for elevator swinging door
13. Miscellaneous Hardware:
 - a. 105A magnetic switch
 - b. surface / concealed stop and shock absorbers
 - c. surface / concealed closers
 - d. electric power transfer
 - e. Listed electric hardware (hinges and locks)
 - f. Listed viewer: 1" maximum hole dia. located a minimum of 12" from top or either edge (1-1/2 hr. rated, UL or WH door)
14. Designs:

See page 7-305
15. Glass lite trim kits:

See pages 5-301 or 1-703 thru 1-704
16. Louver:

See page 7-305

VERTICALLY STEEL STIFFENED FIRE DOORS MEDALLION (NTR)-UL/WH LABEL PAIRS, W/ASTRAGAL, NO OBS

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. hardware and gasketing should comply with test method and hourly rating
2. Hourly rating:
3 hour, 1-1/2 hour, 1 hr., 3/4 hr. & 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum door opening sizes:
See pages 7-111 thru 7-112B
5. Face sheets:
See pages 7-111 thru 7-112B
6. Construction:
See page 7-301
7. Clearances:
1/8" top, 1/8" maximum at hinge edge,
1/8" maximum between leaves, and
3/4" maximum at sill (w/o threshold)
See page 7-132
8. End channels:
See page 7-301
9. Hinge Preparations:
See page 7-301
10. Door edges:
See page 7-301
11. Closer reinforcement:
See page 7-301
12. Lock preparation, active leaf:
 - a. Listed, positive latching, see section one
 - b. Pairs 3 hour: 5/8" minimum throw
 - c. All others 1/2" minimum throw
 1. Cylindrical type, 5" B.S. max.
 2. Mortise type, escutcheon or sectional trim
 3. Combination type
 4. Unit (preassembled) lock
 5. "Rigid" type lock
 6. "G" type lock
 7. "Integralock"
 8. 2 or 3-point latch
 - b. supplemental deadlock preparation
 - c. Listed fire exit hardware
 1. Rim type
 2. Mortise type
 - d. Listed electrical single point lock
13. Miscellaneous Hardware:
 - a. surface / concealed closers
 - b. surface / concealed stops and shock absorbers
 - c. Listed electric hardware (hinges and locks)
 - d. Listed viewer: 1" maximum hole dia. located a minimum of 12" from top or either edge (1-1/2 hr. rated, UL or WH door)
14. Designs:
See page 7-305
15. Glass lite trim kits:
See pages 5-301 or 1-703 thru 1-704
16. Louver:
See page 7-305
17. Astragal: Steel overlapping type...
See pages 1-604 or 1-601 & 1-602; Use with:
 - a. listed single point latch
 - b. listed mortise type FEH
 - c. overlap strip optional for 1-1/2 hr. or less rated, 18 or 16 ga. doors
18. Listed removable mullion use with...
 - a. Listed rim type FEH (two)
(no overlapping astragal necessary)
19. Lock preparation, Inactive leaf
 - a. with single point latch and astragal:
 1. Listed manual flush bolts
(top and bottom)
 2. Listed manual surface bolts
(top and bottom)
 3. Listed self latching flush bolts
(top and bottom)
 4. Listed auto-flush bolts
(top and bottom)
 - b. with rim device and removable mullion
 1. listed rim type FEH
 - c. Listed vertical rod FEH surface or concealed

Distributor Tech Data

VERTICALLY STEEL STIFFENED FIRE DOORS MEDALLION (NTR) - UL/WH LABEL TWO VERTICAL RODS, W/O ASTRAGAL

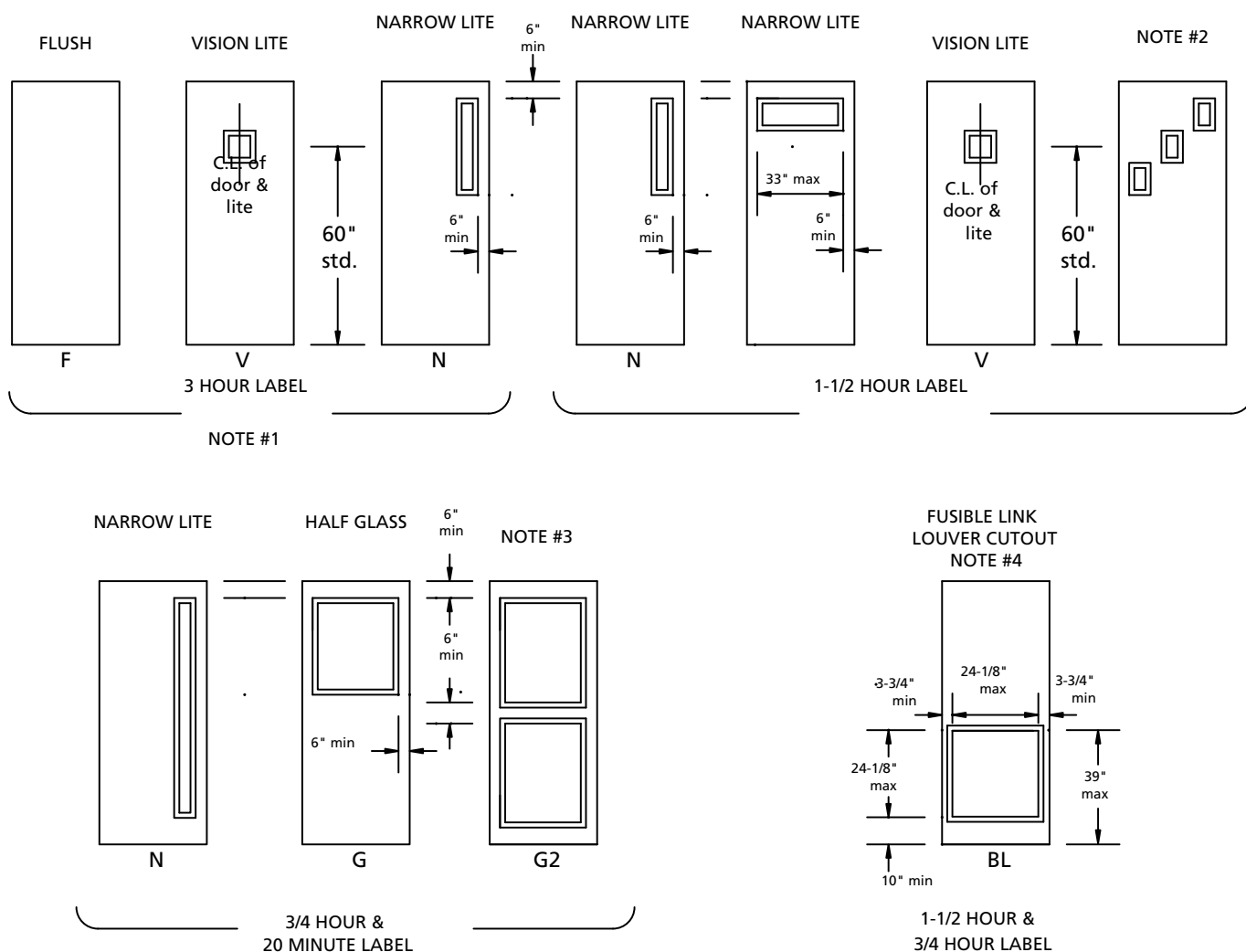
1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:
See pages 7-111 thru 7-112B
5. Face Sheets:
See pages 7-111 thru 7-112B
6. Construction:
See pages 7-301
7. Clearances:
see page 7-302
8. End channels:
see page 7-301
9. Hinge Preparations:
See page 7-301
10. Door edges:
See page 7-301
11. Closer reinforcement:
See page 7-301
12. Listed Fire Exit Hardware (one each leaf)
 - a. Vertical rod type
 1. surface mounted
 2. concealed
 - a. door must be factory prepared for concealed vertical rod FEH
13. Designs:
See page 7-305
14. Glass lite trim kits:
See pages 5-301 or 1-703 thru 1-704
15. Louver:
None w/FEH, see page 7-305

**VERTICALLY STEEL STIFFENED FIRE DOORS
MEDALLION (NTR)-UL/WH LABEL
PAIRS, W/O ASTRAGAL, W/OBS**

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. hardware and gasketing should comply with test method and hourly rating
2. Hourly rating:
1-1/2 hour, 1 hr., 3/4 hour & 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum door opening sizes:
See pages 7-111 thru 7-112B
5. Face sheets:
See pages 7-111 thru 7-112B
6. Construction:
See page 5-201 except as noted herein
7. Clearances:
See page 7-302
8. End channels:
See page 7-301
9. Hinge Preparations:
See page 7-301
10. Door edges:
See page 7-301
11. Closer reinforcement:
See page 7-301
12. Lock preparation, active leaf:
 - a. See page 7-301
 - b. Listed mortise type FEH
13. Inactive Leaf lock and strike preparation:
 - a. Listed open back strike (OBS)
 1. verify compatibility with single point latch or FEH
 2. depending on mfg, strike may or may not be handed - coordinate with hand of door and door lock edge
 3. door is factory prepared for OBS
 - b. Listed Fire Exit Hardware (FEH)
 1. vertical rod type
 - a. concealed
 1. factory prep req'd
 2. insure that OBS and concealed rod/operator don't interfere
 - b. surface mounted
14. Designs:
refer to page 7-305
15. Glass lite trim kits:
See pages 5-301 or 1-703 thru 1-704
16. Louver:
Non w/FEH See page 7-305
17. Overlapping astragal:
 - a. NONE
18. Lock edge weatherstrip: OPTIONAL
19. Coordinator: Not necessary

Distributor Tech Data

VERTICALLY STEEL STIFFENED NTR - FIRE DOOR DESIGNS



1. 3 hour fire doors restricted to 100 sq in max area and "Firelite" glazing, see page 7-131.
2. For 1-1/2 hour labeled doors, the total exposed glass area listed on pages 7-130 & 131 is allowed per door leaf. This area can be distributed among more than one individual lite kits.
3. For 3/4 hour and 20 minute doors, each lite cannot exceed the area listed on pages 7-130 & 131, although more than one lite may be permitted per door.
4. No more than of one louver is allowed per leaf. See page 7-206 for louver details and additional guidelines.
5. See page 5-301 for Medallion flush glazing trim kit. For optional applied steel glass trim kits, see pages 1-703 thru 1-704. Medallion fire doors require steel perimeter channel installed inside door around perimeter of glass cutout.

Distributor Tech Data

VERTICALLY STEEL STIFFENED FIRE DOORS MEDALLION (450° F, 232° C) - UL/WH LABEL SINGLE SWING

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:

1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: 450° F (232° C)
4. Maximum Door opening sizes:

See pages 7-116 thru 7-116C
5. Face Sheets:

See pages 7-116 thru 7-116C
6. Construction:
 - a. See pages 7-312
 - b. Insulation: Rock wool
7. Clearances: 1/8" at top, 1/8" maximum at hinge and lock edge, 3/4" maximum at sill (w/o threshold) see page 7-132
8. End channels:

see page 5-203
9. Hinge Preparations: ANSI A156.7 template
7 ga. steel reinforcement
 - a. full mortise, 4-1/2" standard or heavy weight - handed
 - b. full mortise, 5" standard or heavy weight handed
 - c. half surface, pivots, continuous anchor hinges, and pocket pivots available
10. Door edges:

See page 7-301
11. Closer reinforcement:
 - a. optional - see page 7-312
 - b. when reinforcement is not furnished, a paper label is applied stating "...USE SEX BOLTS TO MOUNT CLOSER".
12. Lock Preparation:
 - a. Listed, positive latching, 1/2" minimum throw - examples:
 1. Cylindrical type, 5" B.S. max.
 2. Mortise type, escutcheon or sectional trim
 3. Combination type
 4. Unit (preassembled) lock
 5. "Rigid" type lock
 6. "G" type lock
 7. "Integralock"
 8. 2 or 3-point latch
 - b. Supplemental deadlock preparation
 - c. Listed fire exit hardware
 1. Rim type
 2. Mortise type
 - d. Listed hospital latches
 - e. Interlock type "M" for elevator swinging door
13. Miscellaneous Hardware:
 - a. 105A magnetic switch
 - b. surface / concealed stop and shock absorbers
 - c. surface / concealed closers
 - d. electric power transfer
 - e. Listed electric hardware (hinges and locks)
 - f. Listed viewer: 1" maximum hole dia. located a minimum of 12" from top or either edge (1-1/2 hr. rated, UL or WH door)
14. Designs:

See page 7-311
15. Glass lite trim kits:

See pages 5-301 or 1-703 thru 1-704
16. Louver:

Not Applicable

VERTICALLY STEEL STIFFENED FIRE DOORS MEDALLION (450° F, 232° C)-UL/WH LABEL PAIRS, W/ASTRAGAL, NO OBS

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: 450° F (232° C)
4. Maximum Door opening sizes:
See pages 7-116 thru 7-116C
5. Face Sheets:
See pages 7-116 thru 7-116C
6. Construction:
 - a. See pages 7-312
7. Clearances: 1/8" at top, 1/8" maximum at hinge edge, 1/8" maximum between leaves, and 3/4" maximum at sill (w/o threshold) see page 7-132
8. End channels:
see page 5-203
9. Hinge Preparations: See page 7-307
10. Door edges:
See page 7-301
11. Closer reinforcement:
see page 7-312
12. Lock Preparation:
Active Leaf listed positive latching
See page 7-307
13. Miscellaneous Hardware:
 - a. surface / concealed closers
 - b. surface / concealed stop and shock absorbers
 - c. Listed electric hardware (hinges and locks)
 - d. Listed viewer: 1" maximum hole dia. located a minimum of 12" from top or either edge (1-1/2 hr. rated, UL or WH door)
14. Designs:
See page 7-311
15. Glass lite trim kits:
See pages 5-301 or 1-703 thru 1-704
16. Louver:
Not Applicable
17. Astragal: Steel overlapping type...
See page 1-604 or 1-601 & 1-602
 - a. listed single point latch
 - b. listed mortise type FEH
 - c. overlap strip optional for 1-1/2 hr. or less rated, 18 or 16 ga. doors.
18. Listed removable mullion use with...
 - a. Listed rim type FEH (two) (no overlapping astragal necessary)
19. Lock Preparation, Inactive Leaf:
 - a. with single point latch and astragal
 1. Listed manual flush bolts (Top & Bottom)
 2. Listed manual surface bolts (Top & Bottom)
 3. Listed self latching flush bolts (Top & Bottom)
 4. Listed auto flush bolts (Top & Bottom)
 - b. with rim device and removable mullion
 1. Listed rim type FEH
 - c. Listed vertical rod FEH surface or concealed



Distributor Tech Data

VERTICALLY STEEL STIFFENED FIRE DOORS MEDALLION (450° F, 232° C) - UL/WH LABEL TWO VERTICAL RODS, W/O ASTRAGAL

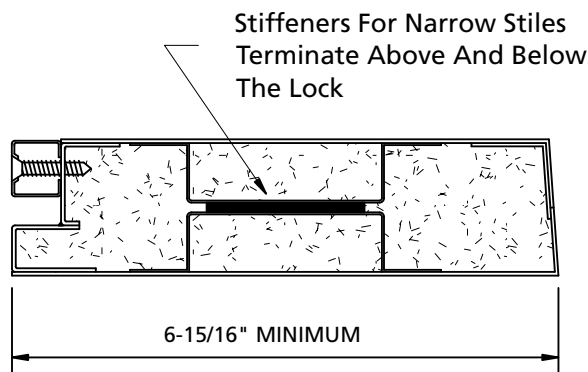
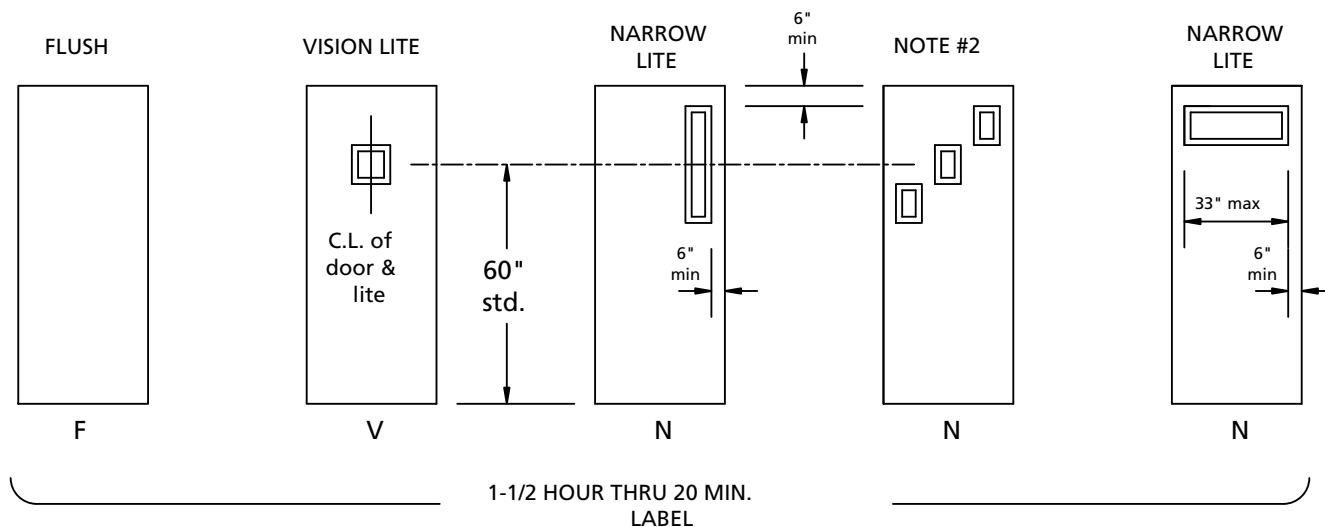
1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating available:
1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: 450° F (232° C)
4. Maximum Door opening sizes:
See pages 7-116 thru 7-116C
5. Face Sheets:
See pages 7-116 thru 7-116C
6. Construction:
See pages 7-312
7. Clearances:
see page 7-308
8. End channels:
see page 5-203
9. Hinge Preparations:
See page 7-307
10. Door edges:
See page 7-301
11. Closer reinforcement:
See page 7-312
12. Listed Fire Exit Hardware (one each leaf)
 - a. Vertical rod type
 1. Surface mounted
 2. Concealed
 - a. door must be factory prepared for concealed vertical rod FEH
13. Designs:
See page 7-311
14. Glass lite trim kits:
See pages 5-301 or 1-703 thru 1-704
16. Louver:
Not Applicable

**VERTICALLY STEEL STIFFENED FIRE DOORS
MEDALLION (450° F, 232° C)-UL/WH LABEL
PAIRS, W/O ASTRAGAL, W/OBS**

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: 450° F (232° C)
4. Maximum Door opening sizes:
See pages 7-116 thru 7-116C
5. Face Sheets:
See pages 7-116 thru 7-116C
6. Construction:
 - a. See pages 7-312 except as noted herein
7. Clearances:
see page 7-308
8. End channels:
see page 5-203
9. Hinge Preparations: See page 7-307
10. Door edges:
See page 7-301
check open back strike template
11. Closer reinforcement:
see page 7-312
12. Lock Preparation Active Leaf
 - a. See page 7-307
 - b. Listed mortise type FEH
13. Inactive leaf lock and strike preparation:
 - a. Listed open back strike (OBS)
 1. verify compatibility with single point latch or FEH
 2. Depending on mfg. strike may or may not be handed - coordinate with hand of door and door lock edge
 - b. Listed fire exit hardware (FEH)
 1. vertical rod type
 - a. concealed
 1. factory prep req'd
 2. Insure that OBS and concealed rod / operator don't interfere
 3. Door is factory prepared for OBS
 - b. surface mounted
14. Designs:
See page 7-311
15. Glass lite trim kits:
See pages 5-301 or 1-703 thru 1-704
16. Louver:
Not Applicable
17. Overlapping astragal
 - a. Not applicable
18. Lock edge weatherstrip: OPTIONAL
19. Coordinator: Not necessary

Distributor Tech Data

450° F, (232° C) TEMPERATURE RISE RATED FIRE DOOR DESIGNS



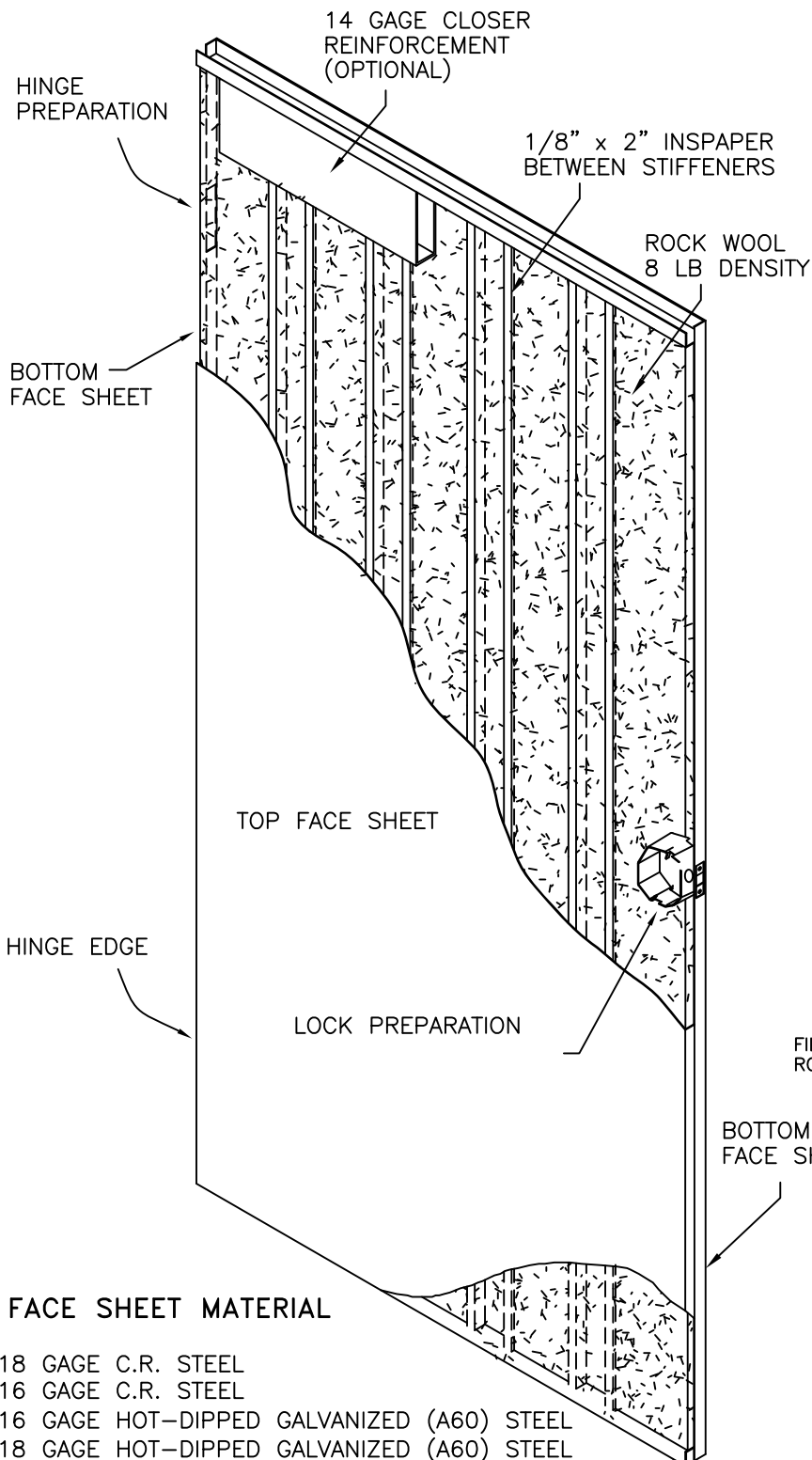
STANDARD FLUSH GLAZING TRIM

See page 5-301 for details
or see Note #4 for options.

1. Doors with a temperature rise rating - 100 sq. in. exposed glass maximum.
2. For 1-1/2 hour labeled doors, the total exposed glass area listed on pages 7-130 & 131 is allowed per door leaf. This area can be distributed among more than one individual lite kits.
3. For 3/4 hour and 20 minute doors, each lite cannot exceed the area listed on pages 7-130 & 131, although more than one lite may be permitted per door.
4. For applied steel glass trim kits, see pages 1-703 thru 1-704.
5. Minimum exposed glass width is 3".

Distributor Tech Data

450° F (232° C) TEMP. RISE RATED
FIRE DOOR CONSTRUCTION



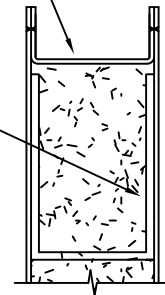
FACE SHEET MATERIAL

- 18 GAGE C.R. STEEL
- 16 GAGE C.R. STEEL
- 16 GAGE HOT-DIPPED GALVANIZED (A60) STEEL
- 18 GAGE HOT-DIPPED GALVANIZED (A60) STEEL

HINGE BACKSET IS 1/4" (VARIES PER CONDITION)

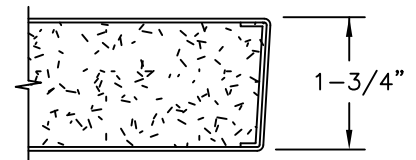
RECESSED 16 GAGE TOP CHANNEL IS WELDED TO BOTH FACES

CLOSER REINFORCEMENT (14Gx6"x20")



VERTICAL SECTION THRU TOP OF DOOR

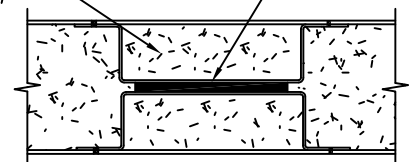
VERTICAL EDGES ARE CONTINUOUSLY WELDED WITH 18 GA. MINIMUM BACKUP ANGLE FULL HEIGHT OF DOOR AND DRESSED SMOOTH TO OBTAIN COMPLETELY SEAMLESS HINGE AND LOCK EDGES.



HORIZONTAL SECTION THRU LOCK EDGE

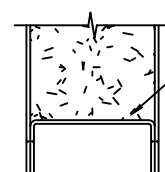
22 GAGE FORMED STEEL STIFFENERS POSITIONED NOT MORE THAN 6" APART AND SPOT WELDED TO BOTH FACE SHEETS AT 5" O.C. MAX.

FILL CAVITY WITH ROCK WOOL-8# DENSITY 1/8" x 2" INSPAPER



HORIZONTAL SECTION THRU VERTICAL STIFFENER

RECESSED 16 GAGE BOTTOM CHANNEL IS SPOT WELDED TO BOTH FACE SHEETS



VERTICAL SECTION THRU BOTTOM OF DOOR

Distributor Tech Data

STILE AND RAIL FIRE DOORS THRULITE - UL/WH LABEL SINGLE SWING

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:
See pages 7-115 thru 7-115C
5. Face Sheets:
16 ga. ONLY tubular construction
6. Construction:
See pages 6-301
7. Clearances: 1/8" at top, 1/8" maximum at hinge and lock edge, 3/4" maximum at sill (w/o threshold) see page 7-132
8. Top and bottom of door (see page 6-301)
 - a. standard flush top - tubular construction
 - b. recessed bottom channel
 - c. special bottom channel for automatic door bottom available.
9. Hinge Preparations:
 - a. ANSI A156.7 template 7 ga. steel reinforcement
 - b. full mortise, 4-1/2" or 5" standard or heavy weight
 - c. half surface, pivots, anchor hinge, pocket pivots, and continuous
10. Door edges: Seamless tubular construction
 - a. hinge and lock edge are beveled 1/8" in 2"
11. Closer reinforcement:
 - a. optional - see page 6-301
 - b. when reinforcement is not furnished, a paper label is applied stating "...USE SEX BOLTS TO MOUNT CLOSER".
12. Lock Preparation:
 - a. Listed, positive latching, 1/2" minimum throw - see section one
 1. Cylindrical type
 2. Mortise type, escutcheon or sectional trim
 3. Combination type
 4. Unit (preassembled) lock
 - b. Supplemental deadlock preparation
 - c. Listed fire exit hardware
 1. Rim type
 2. Mortise type
13. Miscellaneous Hardware:
 - a. magnetic switch
 - b. surface stop and shock absorbers
 - c. surface closers
14. Designs:
See page 7-405
15. Glass lite trim kits:
See pages 6-401 and 6-402

**STILE AND RAIL FIRE DOORS
THRULITE - UL/WH LABEL
PAIRS, W/ASTRAGAL, NO OBS**

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:
See pages 7-115 thru 7-115C
5. Face Sheets:
16 ga. ONLY tubular construction
6. Construction:
See pages 6-301
7. Clearances: 1/8" at top, 1/8" maximum at hinge edge, 1/8" maximum between leaves and 3/4" maximum at sill (w/o threshold) see page 7-132
8. Top and bottom of door
see page 6-301
9. Hinge Preparations: Handed
See section one
10. Door edges: Seamless tubular construction
See page 7-401
11. Closer reinforcement:
See page 7-401
12. Lock Preparation - Active leaf (see section one)
 - a. Listed, positive latching, 1/2" minimum throw - examples:
 1. Cylindrical type
 2. Mortise type, escutcheon or sectional trim
 3. Combination type
 4. Unit (preassembled) lock
 - b. Supplemental deadlock preparation
 - c. Listed fire exit hardware
 1. Rim type
 2. Mortise type
13. Miscellaneous Hardware:
 - a. surface stop and shock absorbers
 - b. surface closers
14. Designs:
See page 7-405
15. Glass lite trim kits:
See pages 6-401 and 6-402
18. Astragal: Steel overlapping type
See pages 1-601, 1-602, & 1-604
 - a. listed single point latch
 - b. listed mortise type FEH
 - c. overlap strip optional
19. Listed removable mullion use with
 - a. Listed rim type FEH (two) (no overlapping astragal necessary)
20. Lock preparation - inactive leaf (see section one)
 - a. with single point latch and astragal
 1. Listed manual flush bolts (top and bottom)
 2. Listed manual surface bolts (top and bottom)
 3. Listed self latching flush bolts (top and bottom)
 4. Listed auto-flush bolts (top and bottom)
 - b. with rim device and removable mullion
 1. Listed rim type FEH
 - c. Listed vertical rod FEH surface

Distributor Tech Data

STILE AND RAIL FIRE DOORS THRULITE - UL/WH LABEL PAIRS, TWO VERTICAL RODS, W/O ASTRAGAL

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:
See pages 7-115 thru 7-115C
5. Face Sheets:
16 ga. ONLY tubular construction
6. Construction:
See page 7-401
7. Clearances:
See page 7-401
8. Top and bottom of door
See page 7-401
9. Hinge Preparations:
See page 7-401
10. Door edges:
See page 7-401
11. Closer reinforcement:
See page 7-401
12. Listed Fire Exit Hardware (one each leaf)
 - a. Vertical rod type
 1. Surface mounted
 2. Top rod only optional
13. Designs:
See page 7-405
15. Glass lite trim kits:
See pages 6-401 and 6-402

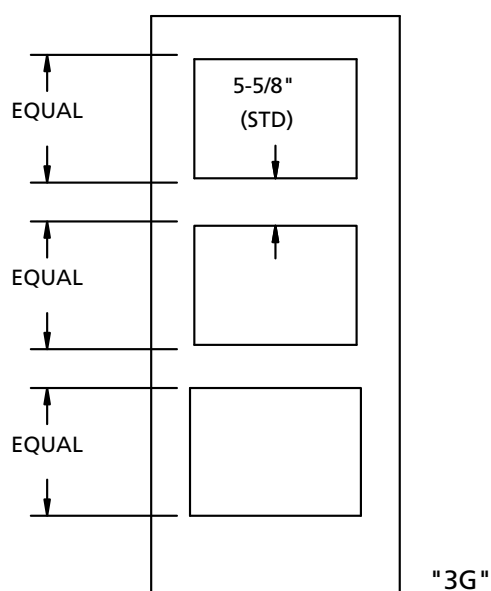
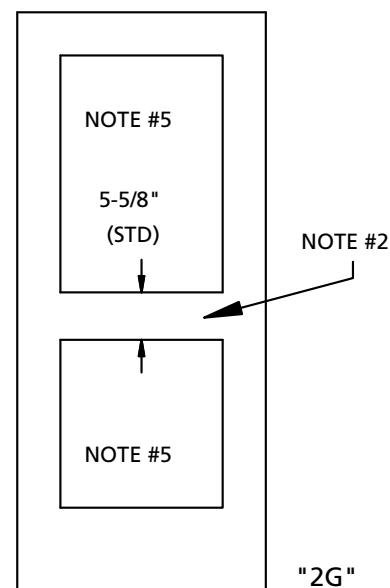
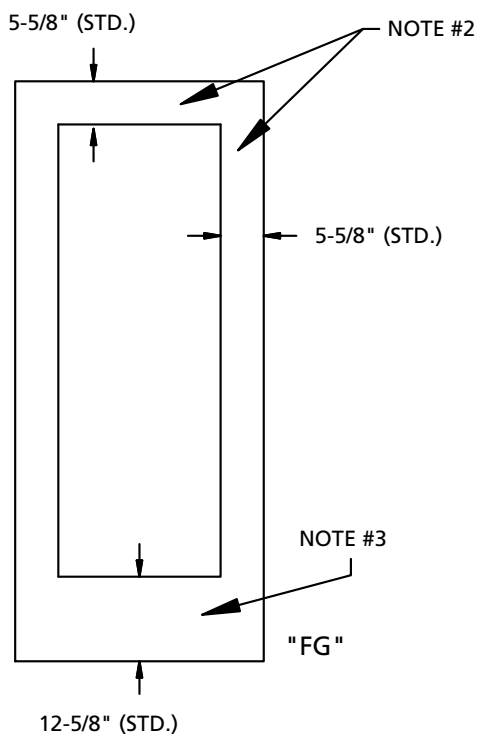
Distributor Tech Data

STILE AND RAIL FIRE DOORS THRULITE - UL/WH LABEL PAIRS, W/O ASTRAGAL, W/OBS

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:
See pages 7-115 thru 7-115C
5. Face Sheets:
16 ga. ONLY tubular construction
6. Construction:
See pages 6-301
7. Clearances:
See page 7-401
8. Top and bottom of door
See page 7-401
9. Hinge Preparations:
See page 7-401
10. Door edges:
See page 7-401
Lock edge to suit open back strike;
check open back strike template
11. Closer reinforcement:
See page 7-401
12. Lock Preparation - Active leaf
 - a. Listed, single point latch 1/2" minimum throw
 - b. Listed mortise type FEH
13. Inactive Leaf lock and strike preparation:
 - a. Listed open back strike (OBS)
 1. verify compatibility with single point latch or FEH
 2. depending on mfg, strike may or may not be handed - coordinate with hand of door and door lock edge
 3. door is factory prepared for OBS
 - b. Listed Fire Exit Hardware (FEH)
 1. vertical rod type - surface mounted
14. Designs:
See page 7-405
15. Glass lite trim kits:
See pages 6-401 and 6-402
16. Overlapping astragal:
 - a. NONE
17. Lock edge weatherstripping: OPTIONAL
18. Coordinator: Not necessary

Distributor Tech Data

STILE AND RAIL FIRE DOOR DESIGNS



NOTES

1. Glass openings: See page 7-130 & 7-131 for glazing guidelines.
2. 3-5/8" stiles and top rail optional. Caution: Verify that required listed hardware for narrow stiles and special prep are available.
3. 10-5/8", 14-5/8", & 16-5/8" bottom rail are optional.
4. Louvers not allowed
5. 3/8" panels are permitted in lieu of glazing (see page 6-201).

Distributor Tech Data

POLYURETHANE CORE FIRE DOORS IMPERIAL/VERSADOOR - UL/WH LABEL SINGLE SWING

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
3 hour, 1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:
See pages 7-114 thru 7-114C
5. Face Sheets:
See pages 7-114 thru 7-114C
6. Construction:
See pages 4-201 & 4-202 except as noted herein
7. Clearances: 1/8" at top, 1/8" maximum at hinge and lock edge, 3/4" maximum at sill (w/o threshold) see page 7-132 & 7-133
8. End channels:
See page 1-201
9. Hinge Preparations: ANSI A156.7 template 7 ga. steel reinforcement
 - a. full mortise, 4-1/2" standard or heavy weight
 1. Imperial - handed
 2. Versadoor - non-handed
 - b. full mortise, 5" standard or heavy weight
 1. Imperial - handed
 - c. half surface, pivots, anchor hinge, pocket pivots, and continuous
10. Door edges: Seamless tubular construction
 - a. square hinge edge
 - b. lock edge
 1. Imperial: beveled 1/8" in 2"
 2. Versadoor: square
11. Closer reinforcement:
 - a. optional - see page 1-417 & 1-418
 - b. when reinforcement is not furnished, a paper label is applied stating "...USE SEX BOLTS TO MOUNT CLOSER".
12. Lock Preparation:
 - a. Listed, positive latching, 1/2" minimum throw - see section one
 1. Cylindrical type, 5" B.S. max.
 2. Mortise type, escutcheon or sectional trim
 3. Combination type
 4. Unit (preassembled) lock
 5. "Rigid" type lock
 6. "G" type lock
 7. "Integralock"
 8. 2 or 3 point latch
 - b. Supplemental deadlock preparation
 - c. Listed fire exit hardware
 1. Rim type
 2. Mortise type
 - d. Listed hospital latches
 - e. Interlock type "M" for elevator swinging door
13. Miscellaneous Hardware:
 - a. magnetic switch
 - b. surface / concealed stop and shock absorbers
 - c. surface /concealed closers
 - d. electric power transfer
 - e. Listed electric hardware (hinges and locks)
 - f. Listed viewer: 1" maximum hole dia. located a minimum of 12" from top or either edge (1-1/2 hr. rated, UL or WH door)
14. Designs:
See page 7-504
15. Glass lite trim kits:
See pages 1-703 and 1-704
16. Louver:
See page 7-206

**POLYURETHANE CORE FIRE DOORS
IMPERIAL/VERSADOOR - UL/WH LABEL
PAIRS, W/ASTRAGAL**

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
 - 3 hour, 1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:
 - See pages 7-114 thru 7-114C
5. Face Sheets:
 - See pages 7-114 thru 7-114C
6. Construction:
 - See pages 7-501
7. Clearances:
 - 1/8" top, 1/8" maximum at hinge edge. 1/8" maximum between leaves, and 3/4" maximum at sill (w/o threshold)
 - See pages 7-132 & 7-133
8. End channels
 - See page 7-501
9. Hinge Preparations:
 - See page 7-501
10. Door edges:
 - See page 7-501
11. Closer reinforcement:
 - See page 7-501
12. Lock Preparation - Active leaf (see section one)
 - a. Listed, positive latching, 1/2" minium throw, examples:
 1. Cylindrical type, 5" B.S. max.
 2. Mortise type, escutcheon or sectional trim.
 3. Combination type
 4. Unit (preassembled) lock
 5. "Rigid" type lock
 6. "G" type lock
 7. "Integralock"
 8. 2 or 3-point latch
 - b. supplemental deadlock preparation
 - c. Listed Fire Exit Hardware
 1. Rim type
 2. Mortise type
 - d. Listed electrical single point lock
13. Miscellaneous Hardware:
 - a. Surface / concealed closers
 - c. Surface / concealed stops and shock absorbers
 - e. Listed electric hardware (hinges and locks)
 - f. Listed viewer: 1" maximum hole dia. located a minimum of 12" from top or either edge (1-1/2 hr. rated UL or WH door)
14. Designs:
 - See page 7-504
15. Glass lite trim kits:
 - See pages 1-703 and 1-704
16. Louver:
 - See page 7-206
17. Astragal: Steel overlapping type
 - See page 1-601 & 1-602
 - a. listed single point latch
 - b. listed mortise type FEH
 - c. overlap strip optional for 1-1/2 hr. or less rated, 18 or 16 ga. doors
18. Listed removable mullion use with
 - a. Listed rim type FEH (two) (no overlapping astragal necessary)
19. Lock Preparation, Inactive Leaf, see section one
 - a. with single point latch and astragal:
 1. Listed manual flush bolts (Top & bottom)
 2. Listed manual surface bolts (Top & bottom)
 3. Listed self latching flush bolts (Top & bottom)
 4. Listed auto-flush bolts (Top & bottom)
 - b. with rim device and removable mullion
 1. Listed rim type FEH
 - c. Listed vertical rod FEH surface or concealed

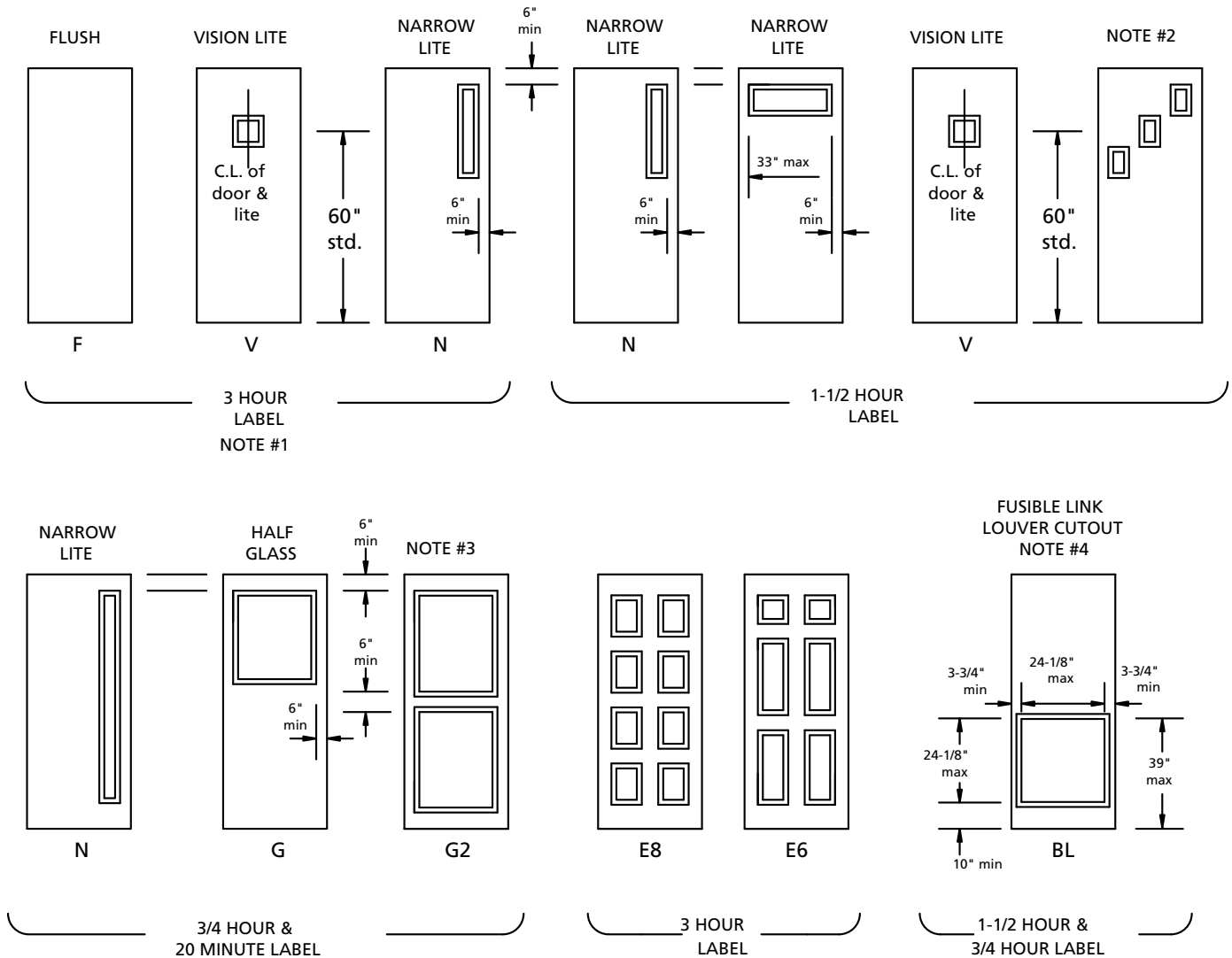


Distributor Tech Data

POLYURETHANE CORE FIRE DOORS IMPERIAL/VERSADOOR - UL/WH LABEL PAIRS, TWO VERTICAL RODS W/O ASTRAGAL

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:
See pages 7-114 thru 7-114C
5. Face Sheets:
See pages 7-114 thru 7-114C
6. Construction:
See page 7-501
7. Clearances:
see page 7-502
8. End channels:
See page 1-501
9. Hinge Preparations:
See page 7-501
10. Door edges:
See page 7-501
11. Closer reinforcement:
See page 7-501
12. Listed Fire Exit Hardware (one each leaf)
 - a. vertical rod type
 1. surface mounted
 2. Concealed
 - a. door must be factory prepared for concealed vertical rod FEH
 3. top rod only optional
13. Designs:
See page 7-504
14. Glass lite trim kits:
See pages 1-703 and 1-704
15. Louver:
None w/FEH
16. Madera finish (steel wood grain)

POLYURETHANE CORE FIRE DOOR DESIGNS



1. 3 hour fire doors restricted to 100 sq in max area and "Firelite" glazing, see page 7-131.
2. For 1-1/2 hour labeled doors, the total exposed glass area listed on pages 7-130 & 131 is allowed per door leaf. This area can be distributed among more than one individual lite kits.
3. For 3/4 hour and 20 minute doors, each lite cannot exceed the area listed on pages 7-130 & 131, although more than one lite may be permitted per door.
4. No more than of one louver is allowed per leaf. See page 7-206 for louver details and additional guidelines.
5. For steel glass trim kits, see pages 1-703 thru 1-704. Polyurethane core fire doors require steel perimeter channel installed inside door around perimeter of cutout.

Distributor Tech Data

SOLID CORE FIRE DOORS FUEGO (250° F, 121° C) UL/WH LABEL SINGLE SWING

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
3 hour, 1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: 250°
4. Maximum Door opening sizes:
See pages 7-113 thru 7-113C
5. Face Sheets:
See pages 7-113 thru 7-113C
6. Construction:
See page 7-509
7. Clearances:
1/8" at top, 1/8" maximum at hinge and lock edge, 3/4" maximum at sill (w/o threshold) See page 7-132
8. End channels:
See page 7-509
9. Hinge Preparations: ANSI A156.7 template
7 ga. steel reinforcement
 - a. full mortise, 4-1/2" standard or heavy weight
 - b. full mortise, 5" standard or heavy weight
 - c. half surface, continuous, pivots, anchor hinges, and pocket pivots
10. Door edges
See page 7-509
11. Closer reinforcement:
 - a. optional - see 7-509
 - b. when reinforcement is not furnished, a paper label is applied stating ...USE SEX BOLTS TO MOUNT CLOSER
12. Lock Preparation:
 - a. Listed positive latching, 1/2" minimum throw - see section one
 1. Cylindrical type, 5" B.S. max.
 2. Mortise type, escutcheon or sectional trim
 3. Combination type
 4. Unit (preassembled) lock
 5. "Rigid" type lock
 6. "G" type lock
 7. "Integralock"
 8. 2 or 3- point latch
 - b. Supplemental deadlock preparation
 - c. Listed fire exit hardware
 1. Rim type
 2. Mortise type
 - d. Listed hospital latches
 - e. Interlock type "M" for elevator swinging door
13. Miscellaneous Hardware:
 - a. magnetic switch
 - b. surface/concealed stop and shock absorbers
 - c. surface/concealed closers
 - d. electric power transfer
 - e. Listed electric hardware (hinges and locks)
 - f. Listed viewer: 1" maximum hole dia. located a minimum of 12" from top or either edge (1-1/2" hr rated UL or WH door)
14. Designs:
See page 7-508
15. Glass lite trim kits:
See pages 7-508 or 1-703 thru 1-704
16. Louver:
Not permitted

Distributor Tech Data

SOLID CORE FIRE DOORS

FUEGO (250° F, 121° C) - UL/WH LABEL

PAIRS, W/ASTRAGAL, NO OBS

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
 - 3 hour, 1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: 250°
4. Maximum Door opening sizes:
See pages 7-113 thru 7-113C
5. Face Sheets:
See pages 7-113 thru 7-113C
6. Construction:
See pages 7-509
7. Clearances:
 - 1/8" top, 1/8" maximum at hinge edge. 1/8" maximum between leaves, and 3/4" maximum at sill (w/o threshold)See pages 7-132
8. End channels
See page 7-505 & 7-509
9. Hinge Preparations:
See page 7-505 & 7-509
10. Door edges:
See page 7-505 & 7-509
11. Closer reinforcement:
See page 7-505 & 7-509
12. Lock Preparation - Active leaf (see section one)
 - a. Listed, positive latching, minium throw: 5/8" for 1-1/2 & 3 hr. rating, All others 1/2" min throw
Examples:
 1. Cylindrical type, 5" B.S. max.
 2. Mortise type, escutcheon or sectional trim.
 3. Combination type
 4. Unit (preassembled) lock
 5. "Rigid" type lock
 6. "G" type lock
 7. "Integralock"
 8. 2 or 3-point latch
 - b. supplemental deadlock preparation
 - c. Listed Fire Exit Hardware
 1. Rim type
 2. Mortise type
 - d. Listed electrical single point lock
13. Miscellaneous Hardware:
 - a. Surface / concealed closers
 - c. Surface / concealed stops and shock absorbers
 - e. Listed electric hardware (hinges and locks)
 - f. Listed viewer: 1" maximum hole dia. located a minimum of 12" from top or either edge (1-1/2 hr. rated UL or WH door)
14. Designs:
See page 7-508
15. Glass lite trim kits:
See pages 7-508 or 1-703 thru 1-704
16. Louver:
Not permitted
17. Astragal: Steel overlapping type
See page 1-601 ,1-602, and 1-604.
Use with:
 - a. listed single point latch
 - b. listed mortise type FEH
 - c. see page 7-113 yhtu 7-113C
18. Listed removable mullion use with
 - a. Listed rim type FEH (two) (no overlapping astragal necessary)
19. Lock Preparation, Inactive Leaf, see section one
 - a. with single point latch and astragal:
 1. Listed manual flush bolts (Top & bottom)
 2. Listed manual surface bolts (Top & bottom)
 3. Listed self latching flush bolts (Top & bottom)
 4. Listed auto-flush bolts (Top & bottom)
 - b. with rim device and removable mullion
 1. Listed rim type FEH
 - c. Listed vertical rod FEH surface or concealed

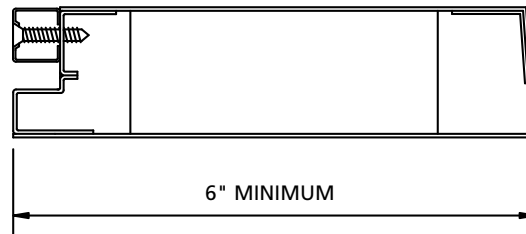
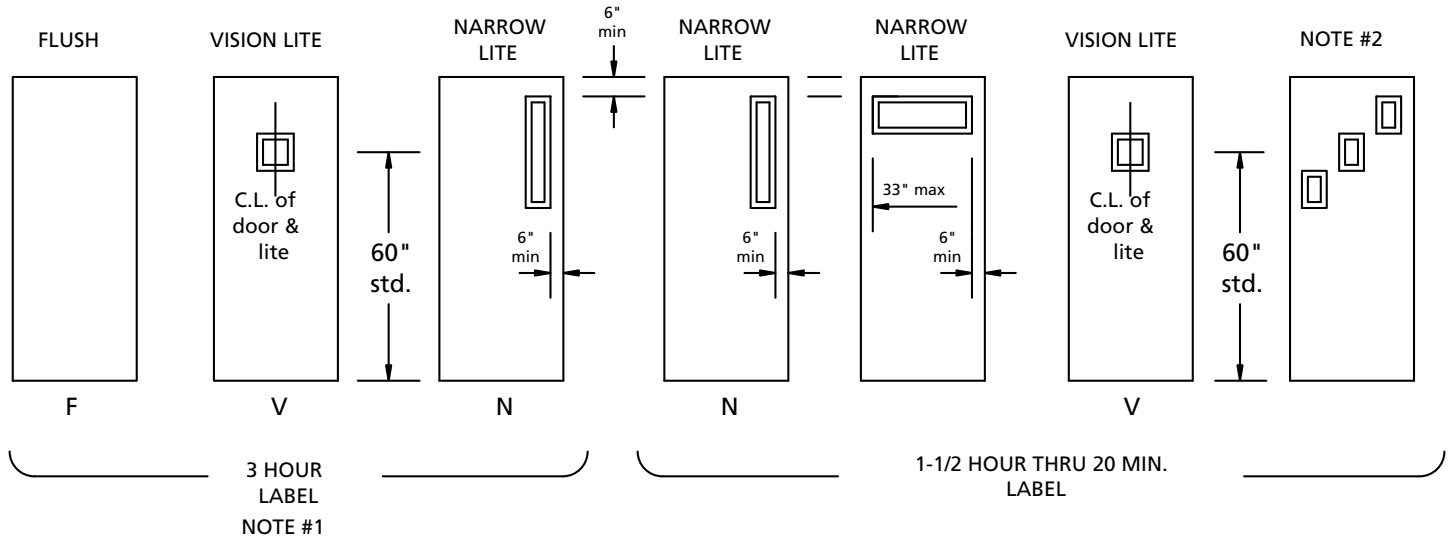


Distributor Tech Data

SOLID CORE FIRE DOORS FUEGO (250° F, 121° C) UL/WH LABEL PAIRS, TWO VERTICAL RODS W/O ASTRAGAL

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
 - 1-1/2 hour, 1 hour and 20 minute
3. Maximum Temperature rise rating: 250°
4. Maximum Door opening sizes:
 - See pages 7-113 thru 7-113C
5. Face Sheets:
 - See pages 7-113 thru 7-113C
6. Construction:
 - See page 7-509
7. Clearances:
 - See page 7-132
8. End channels:
 - See page 7-509 & 7-505
9. Hinge Preparations:
 - See pages 7-505 & 7-509
10. Door edges
 - See page 7-505 & 7-509
11. Closer reinforcement:
 - See page 7-505 & 7-509
12. Listed Fire Exit Hardware (one each leaf)
 - a. vertical rod type
 1. surface mounted
 2. concealed
 - a. door must be factory prepared for concealed vertical rod FEH
 3. top rod only optional
13. Designs:
 - See page 7-508
14. Glass lite trim kits:
 - See pages 7-508 or 1-703 thru 1-704
16. Louver:
 - Not permitted

FUEGO (250° F, 121° C) SOLID CORE FIRE DOOR DESIGNS

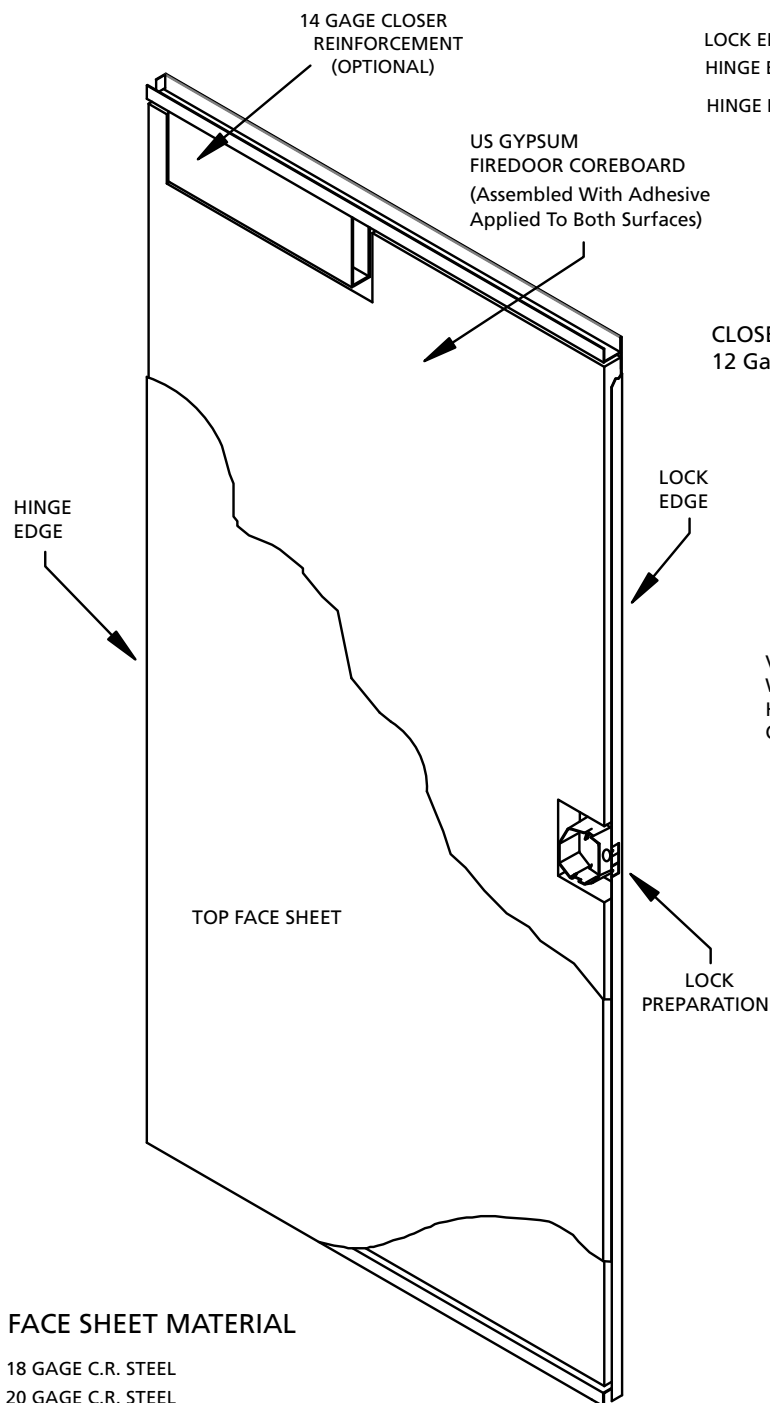


STANDARD FLUSH GLAZING TRIM
See page 5-301 for details
or see Note #4 for options.

1. Doors with a 3 hr. rating or a temperature rise rating - 100 sq. in. exposed glass maximum.
2. For 1-1/2 hour labeled doors, the total exposed glass area listed on pages 7-130 & 131 is allowed per door leaf. This area can be distributed among more than one individual lite kits.
3. For 3/4 hour and 20 minute doors, each lite cannot exceed the area listed on pages 7-130 & 131, although more than one lite may be permitted per door.
4. For applied steel glass trim kits, see pages 1-703 thru 1-704. 3 Hour rated Solid core Fuego fire doors require a steel perimeter channel installed inside door around perimeter of cutout.
5. Minimum exposed glass width is 3".

Distributor Tech Data

250° F (121° C) FUEGO SOLID CORE FIRE DOOR CONSTRUCTION



LOCK EDGE IS BEVELED 1/8" IN 2" (1:16)

HINGE EDGE IS SQUARE.

HINGE BACKSET IS 1/4" STD (3/16" & 5/16" OPTIONAL)

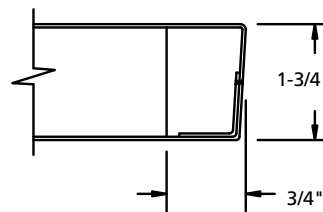
RECESSED 16 GAGE TOP CHANNEL IS WELDED TO BOTH FACE SHEETS.

CLOSER REINF.
12 Gax6"x20"

3/16"

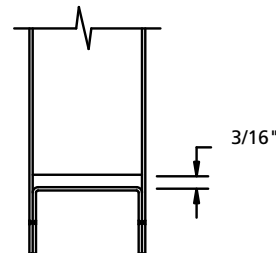
VERTICAL SECTION
THRU TOP OF DOOR

VERTICAL EDGES ARE CONTINUOUSLY WELDED WITH 18 GA. MINIMUM BACKUP ANGLE FULL HEIGHT OF DOOR AND DRESSED SMOOTH TO OBTAIN SEAMLESS HINGE AND LOCK EDGES.



HORIZONTAL SECTION
THRU LOCK EDGE

RECESSED 16 GAGE BOTTOM CHANNEL IS SPOT WELDED TO BOTH FACE SHEETS



VERTICAL SECTION
THRU BOTTOM OF DOOR

FACE SHEET MATERIAL

- 18 GAGE C.R. STEEL
- 20 GAGE C.R. STEEL
- 20 GAGE HOT-DIPPED GALVANIZED (A60) STEEL
- 18 GAGE HOT-DIPPED GALVANIZED (A60) STEEL
- 16 GAGE C.R. STEEL
- 16 GAGE HOT-DIPPED GALVANIZED (A60) STEEL

Distributor Tech Data

POLYSTYRENE CORE FIRE DOORS LEGION/ULTRA - UL/WH LABEL SINGLE SWING

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
3 hour, 1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:
See pages 7-117 thru 7-117C
5. Face Sheets:
See pages 7-117 thru 7-117C
6. Construction:
See page 3-301 & 3-302 except as noted herein
7. Clearances:
1/8" at top, 1/8" maximum at hinge and lock edge, 3/4" maximum at sill (w/o threshold) See page 7-132 & 7-133
8. End channels:
See page 1-201
9. Hinge Preparations: ANSI A156.7 template
7 ga. steel reinforcement
 - a. full mortise, 4-1/2" standard or heavy weight
 1. Legion - handed
 2. Ultra - non-handed
 - b. full mortise, 5" standard or heavy weight
 1. Legion - handed
 - c. half surface, pivots, anchor hinge, pocket pivots, and continuous
10. Door edges
 - a. square hinge edge
 - b. lock edge
 1. Legion: beveled 1/8" in 2"
 2. Ultra: square
11. Closer reinforcement:
 - a. optional - see page 1-417 & 1-418
 - b. when reinforcement is not furnished, a paper label is applied stating ...USE SEX BOLTS TO MOUNT CLOSER
12. Lock Preparation:
 - a. Listed positive latching, 1/2" minimum throw - see section one
 1. Cylindrical type, 5" B.S. max.
 2. Mortise type, escutcheon or sectional trim
 3. Combination type
 4. Unite (preassembled) lock
 5. "Rigid" type lock
 6. "G" type lock
 7. "Integralock"
 8. 2 or 3- point latch
 - b. Supplemental deadlock preparation
 - c. Listed fire exit hardware
 1. Rim type
 2. Mortise type
 - d. Listed hospital latches
 - e. Interlock type "M" for elevator swinging door
13. Miscellaneous Hardware:
 - a. magnetic switch
 - b. surface/concealed stop and shock absorbers
 - c. surface/concealed closers
 - d. electric power transfer
 - e. Listed electric hardware (hinges and locks)
 - f. Listed viewer: 1" maximum hole dia. located a minimum of 12" from top or either edge (1-1/2" hr rated UL or WH door)
14. Designs:
See page 7-514
15. Glass lite trim kits:
See pages 1-703 thru 1-704
16. Louver:
See page 7-206

POLYSTYRENE CORE FIRE DOORS LEGION/ULTRA - UL/WH LABEL PAIRS W/ASTRAGAL

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
3 hour, 1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:
See pages 7-117 thru 7-117C
5. Face Sheets:
See pages 7-117 thru 7-117C
6. Construction:
See page 7-511
7. Clearances:
1/8" at top, 1/8" maximum at hinge and lock edge, 3/4" maximum at sill (w/o threshold) See page 7-132 & 7-133
8. End channels:
See page 7-511
9. Hinge Preparations:
See page 7-511
10. Door edges
See page 7-511
11. Closer reinforcement:
See page 7-511
12. Lock Preparation: Active leaf, see section one
 - a. Listed positive latching, 1/2" minimum throw - Examples:
 1. Cylindrical type, 5" B.S. max.
 2. Mortise type, escutcheon or sectional trim
 3. Combination type
 4. Unit (preassembled) lock
 5. "Rigid" type lock
 6. "G" type lock
 7. "Integralock"
 8. 2 or 3- point latch
 - b. Supplemental deadlock preparation
 - c. Listed fire exit hardware
 1. Rim type
 2. Mortise type
 - d. Listed electrical single point lock
13. Miscellaneous Hardware:
 - a. surface/concealed closers
 - b. surface/concealed stops and shock absorbers
 - e. Listed electric hardware (hinges and locks)
 - f. Listed viewer: 1" maximum hole dia. located a minimum of 12" from top or either edge (1-1/2" hr rated UL or WH door)
14. Designs:
See page 7-514
15. Glass lite trim kits:
See pages 1-703 thru 1-704
16. Louver:
See page 7-206
17. Astragal Steel overlapping type
See page 1-601 & 1-602
Use with:
 - a. listed single point latch
 - b. listed mortise type FEH
 - c. overlap strip optional for 1-1/2 hr. or less rated, 18 or 16 ga. doors
18. Listed removable mullion use with
 - a. Listed rim type FEH (two) (no overlapping astragal necessary)
19. Lock preparation. Inactive leaf, see section one
 - a. with single point latch and astragal
 1. Listed manual flush bolts (Top and Bottom)
 2. Listed manual surface bolts (Top and Bottom)
 3. Listed self latching flush bolts (Top and Bottom)
 4. Listed auto-flush bolts (Top and Bottom)
 - b. with rim device and removable mullion
 1. Listed rim type FEH
 - c. Listed vertical rod FEH surface or concealed

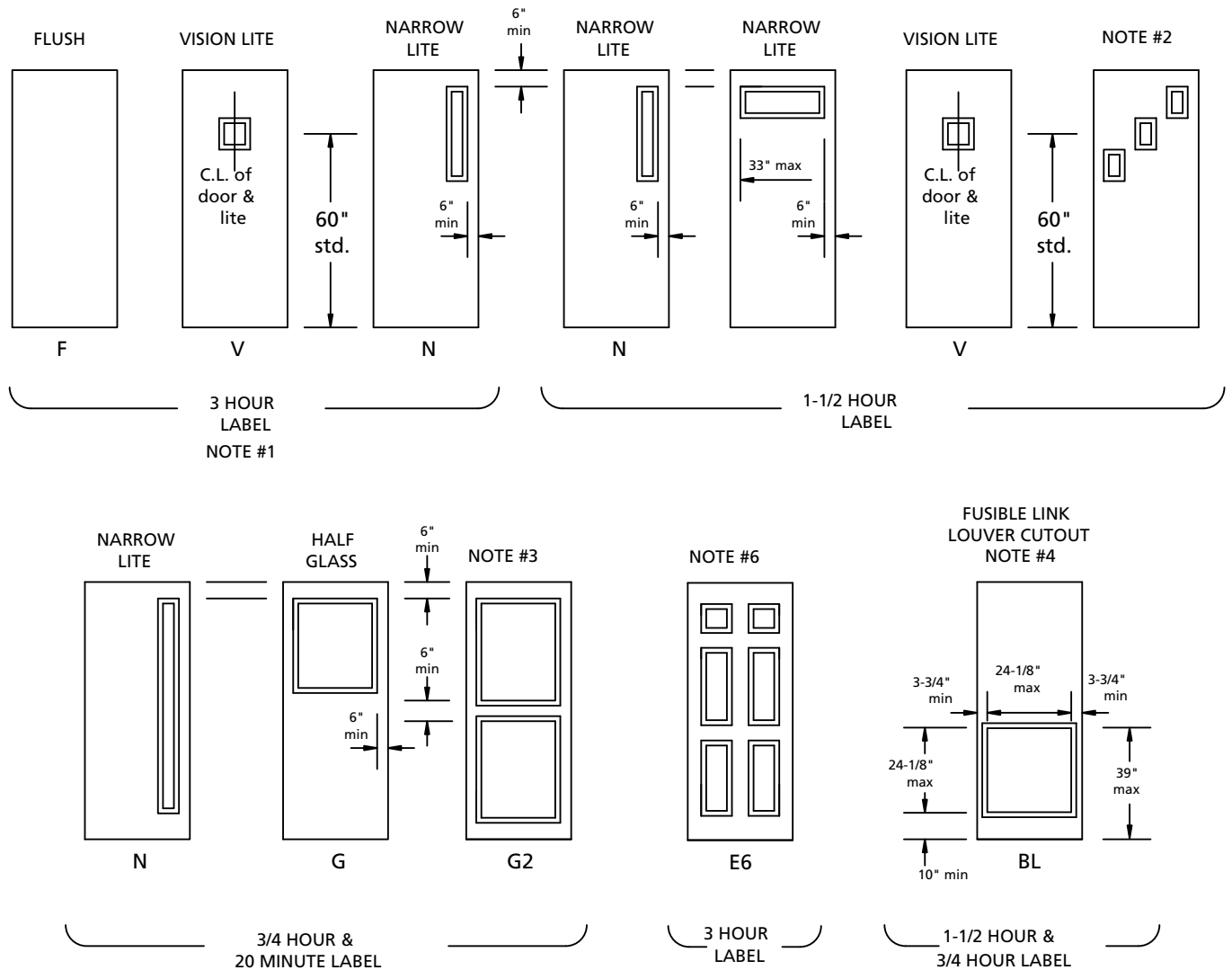


Distributor Tech Data

POLYSTYRENE CORE FIRE DOORS LEGION/ULTRA - UL/WH LABEL PAIRS, TWO VERTICAL RODS W/O ASTRAGAL

1. Fire Test:
 - a. UL 10B, UL 10C, UBC 7-2, NFPA 252
 - b. Hardware and gasketing should comply with test method and hourly rating
2. Hourly Rating:
1-1/2 hour, 1 hour, 3/4 hour, and 20 minute
3. Maximum Temperature rise rating: NTR
4. Maximum Door opening sizes:
See pages 7-117 thru 7-117C
5. Face Sheets:
See pages 7-117 thru 7-117C
6. Construction:
See page 7-511
7. Clearances:
See page 7-511
8. End channels:
See page 7-511
9. Hinge Preparations:
See page 7-511
10. Door edges
See page 7-511
11. Closer reinforcement:
See page 7-511
12. Listed Fire Exit Hardware (one each leaf)
 - a. vertical rod type
 1. surface mounted
 2. concealed
 - a. door must be factory prepared for concealed vertical rod FEH
 3. top rod only optional
13. Designs:
See page 7-514
14. Glass lite trim kits:
See pages 1-703 thru 1-704
15. Louver:
None w/FEH

POLYSTYRENE CORE FIRE DOOR DESIGNS



1. 3 hour fire doors restricted to 100 sq in max area and "Firelite" glazing, see page 7-131.
2. For 1-1/2 hour labeled doors, the total exposed glass area listed on pages 7-130 & 131 is allowed per door leaf. This area can be distributed among more than one individual lite kits.
3. For 3/4 hour and 20 minute doors, each lite cannot exceed the area listed on pages 7-130 & 131, although more than one lite may be permitted per door.
4. No more than of one louver is allowed per leaf. See page 7-206 for louver details and additional guidelines.
5. For steel glass trim kits, see pages 1-703 thru 1-704. Polystyrene core fire doors require steel perimeter channel installed inside door around perimeter of cutout.
6. For embossed panel design guidelines, see page 3-202.

Distributor Tech Data

INDEX - DUTCH FIRE DOORS AND FRAMES

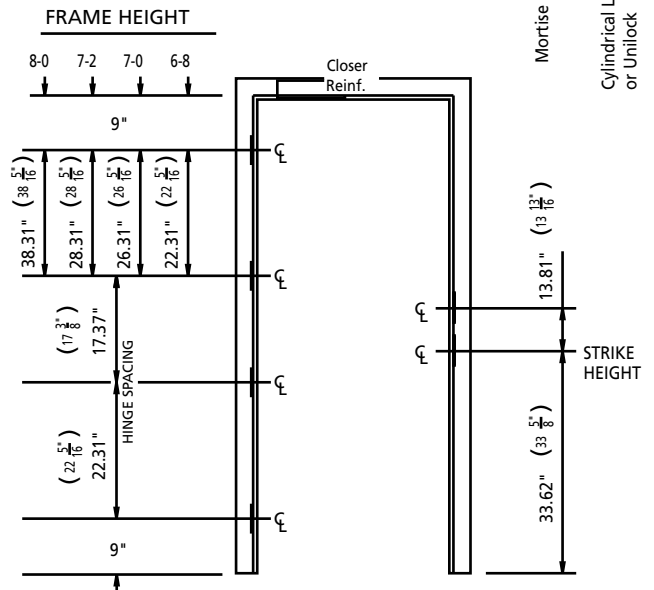
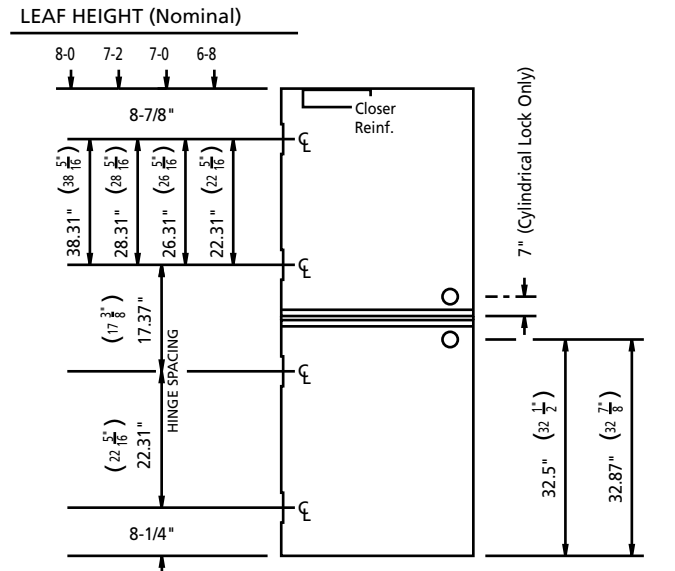
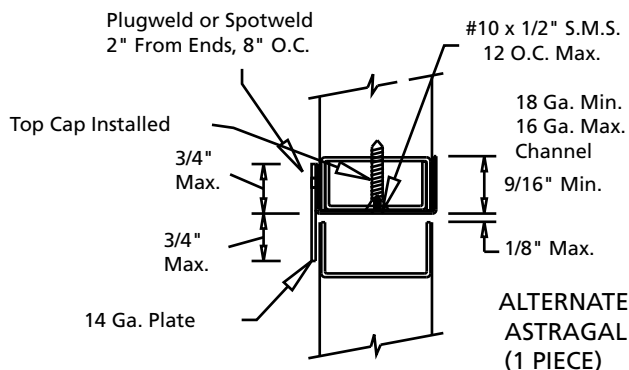
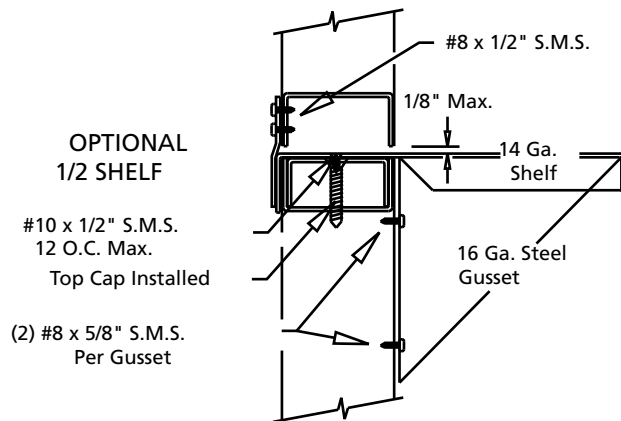
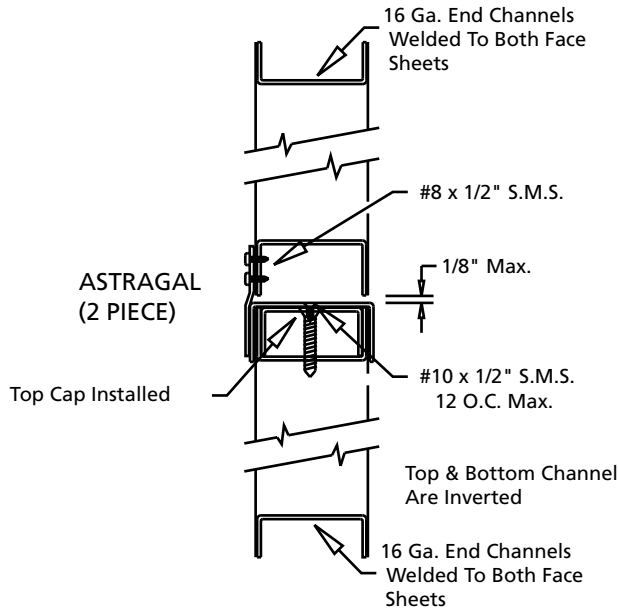
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Distributor Tech Data

REGENT/OMEGA AND MEDALLION DUTCH FIRE DOORS UL/WH LABEL SINGLE SWING

1. Hourly rating available: 20 min. thru 3 hr.
2. Maximum temperature rating: 450°
3. Maximum door opening sizes:
 - a. UL 10b (4'0" x 8'0")
 - b. UL 10c (4'0" x 7'2")
4. Frame material: 16 ga., 14 ga. and 12 ga.
 - a. Depths: Series SU and SQ - all labeled profiles
 - b. Corners: KD or welded
5. Door face sheets: 18 ga. and 16 ga. steel
6. Core:
 - a. Regent - Honeycomb core
 - b. Medallion - Vertically steel stiffened w/fiberglass insulation
7. Clearances: 1/8" at top, 1/8" maximum at lock and hinge edges, 3/4" maximum at bottom (when no sill is used), 1/8" maximum between upper and lower leaves (astragal included)
8. Hinge preparations:
 - a. Full mortise 4-1/2" x standard weight ANSI A156I7 template. 7 ga. steel reinforcements, handed
 - b. 4-1/2" heavy weight, 5" standard or heavy weight preparation available.
9. Door edges:
 - a. Honeycomb (see 7-201)
 - b. Steel stiffened (see 5-202)
10. Closer reinforcement:
 - a. Top leaf - optional 14 ga. channel. If not provided, paper label applied stating, "Closer reinforcement Not provided - Use Sex-Bolts (Through Bolts) to Mount Closer"
 - b. Frame - reinforcement optional (UL), optional (WH)
11. Glass lite trim kit:
 - a. "v" design
 - b. Refer to pages 1-703 thru 1-704 or 5-301
12. Lock preparation:
 - a. Top and bottom lock to be any listed single point latch (latching horizontally)
 - b. Top lock cylindrical, or self-latching flushbolt (latching vertically only)
13. Horizontal astragal: Required (see following page)
14. Louver: not allowed
15. Double swing: Not allowed

LABELED DUTCH DOOR AND FRAME ELEVATIONS



	FACE GAGE	HOURLY RATING	MAX. SIZE
UL10B	16, 18	3 HOUR	40 x 80
UL10C	16, 18	3 HOUR	40 x 72

Distributor Tech Data

DOUBLE EGRESS FIRE DOORS AND FRAMES INDEX

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Profile 1 (Head and Jambs)	7-655
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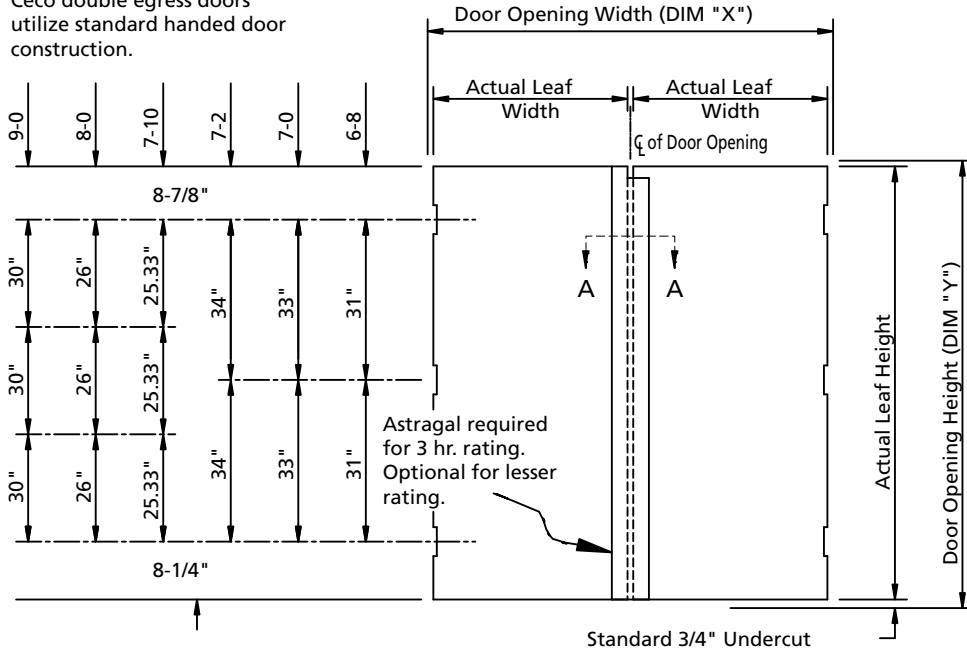
Distributor Tech Data

DOUBLE EGRESS FIRE DOORS AND FRAMES UL/WH LABEL

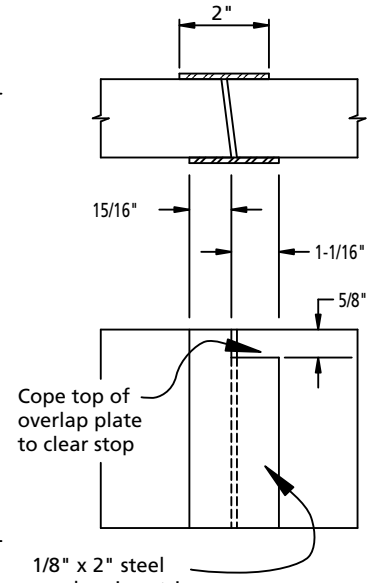
1. Hourly rating available: 20 min. thru 3 hr.
2. Maximum temperature rating: 250° (Fuego only)
3. Maximum door opening sizes:
 - a. Regent (see pages 7-108, 7-110)
 - b. Medallion (see pages 7-112, 7-112B) (7-116A, 7-116C for 450° TR)
 - c. Imperial (see pages 7-114A, 7-114C)
 - d. Fuego (see pages 7-113A, 7-113C)
 - e. Legion (see pages 7-117A, 7-117C)
 - f. Thru-lite (see pages 7-115A, 7-115C)
4. Door Face Sheets:
Refer to pages as shown above
5. Frame material:
16 ga., 14 ga. or 12 ga.
6. Construction:
Regent, Medallion, Medallion 450° TR, Imperial, Fuego, Legion, Thru-Lite
7. Clearances:
1/8" at top, 1/8" maximum at lock and hinge edge, 1/8" maximum between leaves, 3/4" maximum at sill.
8. Hinge preparations:
 - a. Full mortise 4-1/2" x standard weight ANSI A156.17 template. 7 ga. steel reinforcements, handed
 - b. 4-1/2" heavy weight and 5" standard or heavy weight preparation available.
9. End Channels: Inverted &
Welded to both face sheets
10. Closer Reinforcements:
 - a. Optional (UL & WH)
14 ga. steel channel
 - b. When reinforcement is not provided (UL only), paper label is applied to door stating, "Closer Reinforcement Not provided - Use Sex Bolts (Through Bolts) to Mount Closer"
11. Designs:
Standard glass opening and flush designs and trim kits.
12. Astragal:
3 hr. rating requires an overlapping 1/8" steel plate attached to one leaf. Optional for other ratings.
13. Louver: not permitted
14. Fire Exit Hardware:
 - a. UL listed vertical rod type (pair)
 1. Surface mounted - Doors may be reinforced; however, when omitted, each leaf must have supplemental label applied stating, "Fire Exit Hardware Reinforcement Not Provided - Use Sex Bolts (Through Bolts) To Mount Fire Exit Hardware"
 2. Concealed (pair) - Doors must be reinforced and prepared.

DOUBLE EGRESS FIRE DOORS

Ceco double egress doors utilize standard handed door construction.



Section A-A

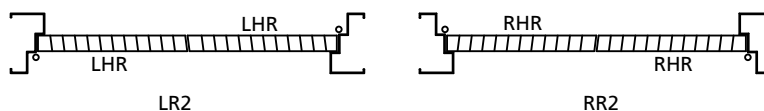


NOTE: THE USE OF ASTRAGAL CHANNEL IS PROHIBITED

STANDARD LEAF WIDTHS and corresponding DOOR OPENING WIDTHS		
Nominal Leaf Width	Actual Leaf Width	Door Opening Width-DIM "X"
20	(2) 23-25/32"	47-13/16"
24	(2) 27-25/32"	55-13/16"
26	(2) 29-25/32"	59-13/16"
28	(2) 31-25/32"	63-13/16"
30	(2) 35-25/32"	71-13/16"
34	(2) 39-25/32"	79-13/16"
36	(2) 41-25/32"	83-13/16"
38	(2) 43-25/32"	87-13/16"
40	(2) 47-25/32"	95-13/16"
DIM "X" = (2 x Actual Leaf Width) + 1/4"		

STANDARD LEAF HEIGHTS (3/4" undercut) and corresponding DOOR OPENING HEIGHTS		
Nominal Leaf Height	Actual Leaf Height	Door Opening Height-DIM "Y"
6-8	79-1/8"	80"
7-0	83-1/8"	84"
7-2	85-1/8"	86"
7-10	93-1/8"	94"
8-0	95-1/8"	96"
9-0	107-1/8"	108"
DIM "Y" = Actual Leaf Height + 7/8"		

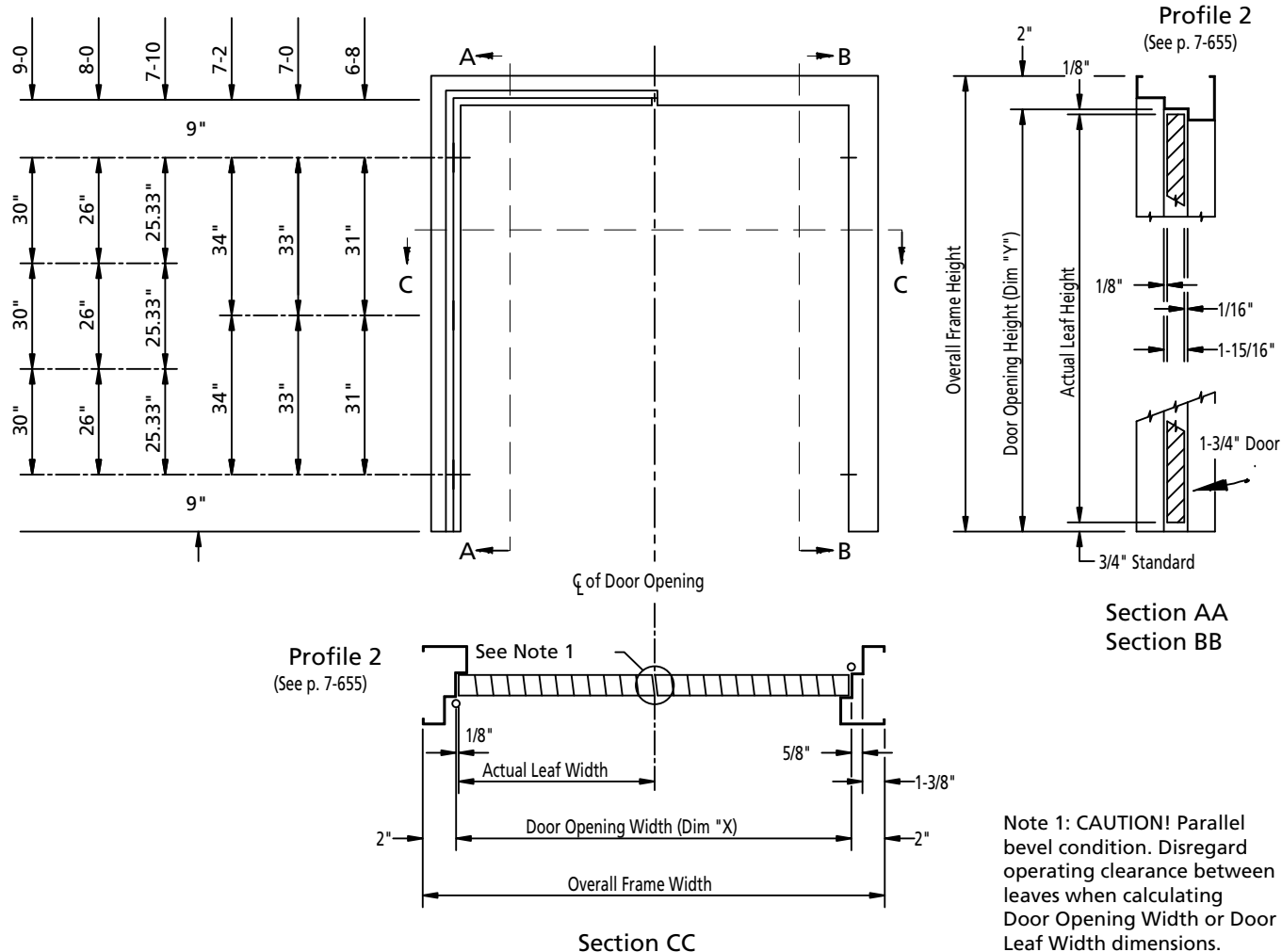
Ceco doors are recommended. However, if other doors are used, make sure that they have parallel bevel lock edges or that they can be made to function with parallel bevel lock edges. Also, make sure to coordinate the door leaf sizes and frame opening size in accordance with above.



HAND and SWING DIAGRAM

Distributor Tech Data

LABELED DOUBLE EGRESS FRAME SE2 PROFILE/TYPE 2 HEAD



DOOR OPENING WIDTH (Dim "X") = (2 x Actual Leaf Width) + 1/4".
OVERALL FRAME WIDTH = Door Opening Width + (2 x 2").

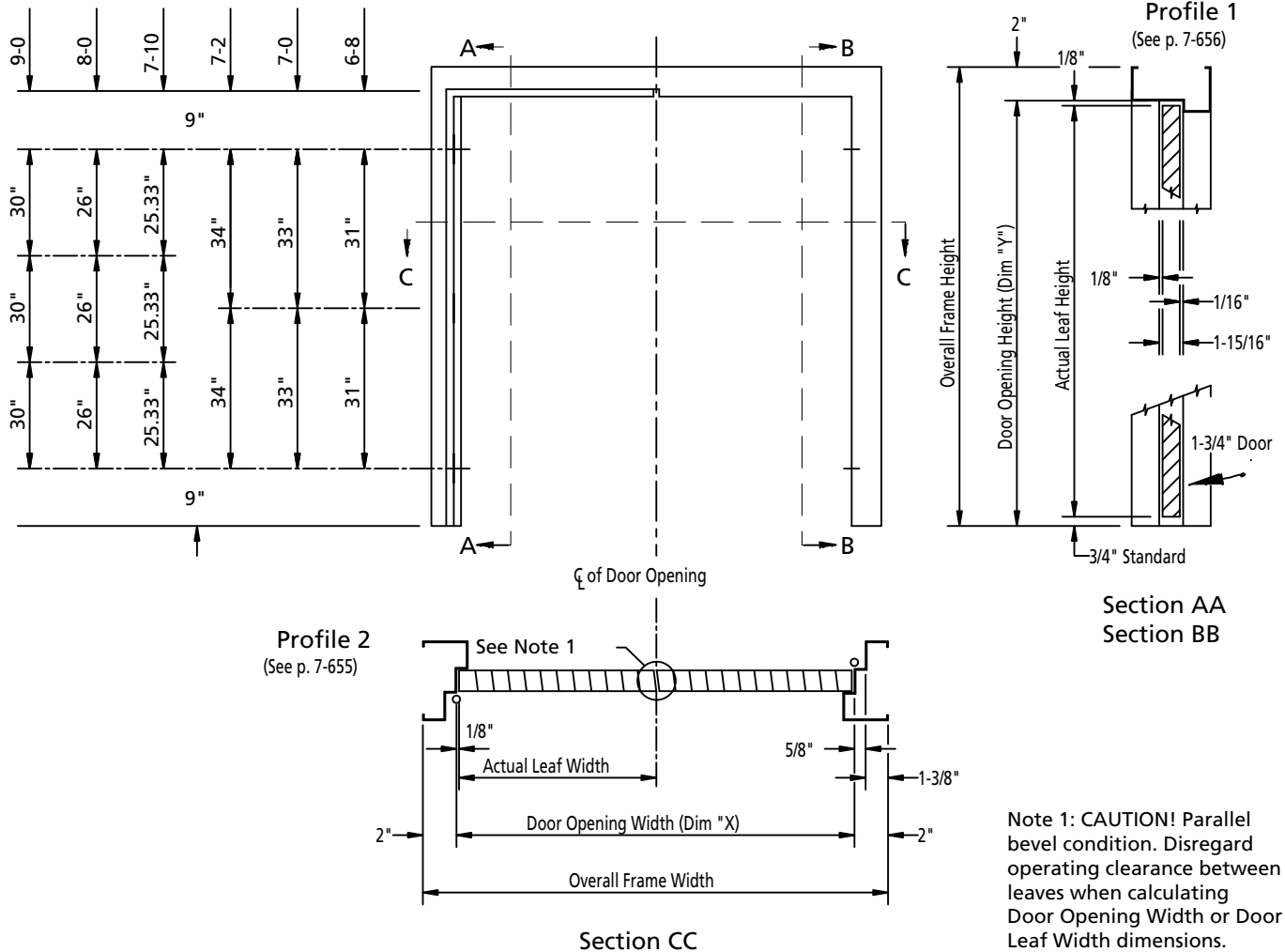
EXAMPLE for a PAIR of STANDARD 3-0 (nominal) WIDE CECO DOORS:
Door Opening Width = (2 x 35-25/32") + 1/4" = 71-13/16".
Overall Frame Width = 71-13/16" + 4" = 75-13/16".

DOOR OPENING HEIGHT (Dim "Y") = Actual Leaf Height + 1/8" + Sill Clearance.
OVERALL FRAME HEIGHT = Door Opening Height + 2".

EXAMPLE for STANDARD 6-8 (nominal) CECO LEAF HEIGHT:
Door Opening Height = 79-1/8" + 1/8" + 3/4" = 80"
Overall Frame Height = 80" + 2" = 82".

The above is based on standard 1-3/8" faces.
For optional face sizes, adjust calculations accordingly.

LABELED DOUBLE EGRESS FRAME SE1 PROFILE/TYPE 1 HEAD



DOOR OPENING WIDTH (Dim "X") = (2 x Actual Leaf Width) + 1/4".
OVERALL FRAME WIDTH = Door Opening Width + (2 x 2").

EXAMPLE for a PAIR of STANDARD 3-0 (nominal) WIDE CECO DOORS:
Door Opening Width = (2 x 35-25/32") + 1/4" = 71-13/16".
Overall Frame Width = 71-13/16" + 4" = 75-13/16".

DOOR OPENING HEIGHT (Dim "Y") = Actual Leaf Height + 1/8" + Sill Clearance.
OVERALL FRAME HEIGHT = Door Opening Height + 2".

EXAMPLE for STANDARD 6-8 (nominal) CECO LEAF HEIGHT:
Door Opening Height = 79-1/8" + 1/8" + 3/4" = 80"
Overall Frame Height = 80" + 2" = 82".

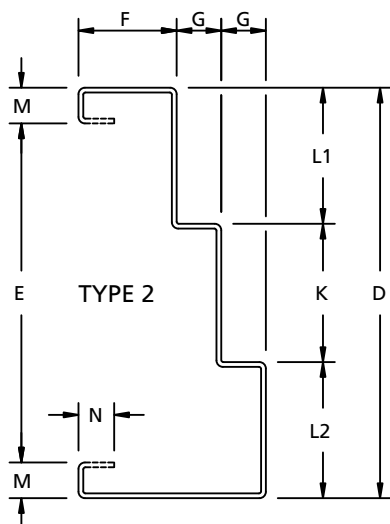
The above is based on the standard 1-3/8" face jambs.
For optional face sizes, adjust calculations accordingly.

Distributor Tech Data

LABELED

DOUBLE EGRESS FRAME

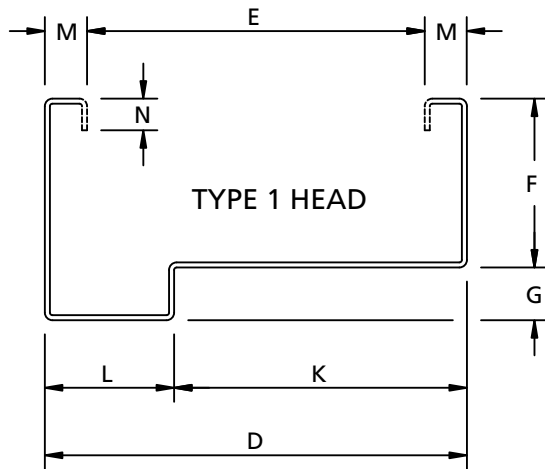
DE PROFILE TYPE 2 HEAD AND JAMBS



A.	GAGE	16 14 12
B.	MATERIAL	COLD ROLLED A60 GALVANIZED
C.	FINISH	PRIME PAINTED
D.	DEPTH	5" TO 14"
E.	THROAT	1" LESS THAN DEPTH
F.	FACE	1-3/8" IS STANDARD 2" IS OPTIONAL
G.	STOP HEIGHT	5/8"
H.	CORNER CONDITION	KD or SET UP and WELDED
I.	OPENING WIDTH: DOUBLE	8'-0" MAX.
J.	OPENING HEIGHT:	10'-0" MAX.
K.	DOOR RABBET	1-15/16"
L1.	DOOR SIDE SOFFIT:	$[(\text{DEPTH MINUS } 1-15/16") / 2]$
L2.	STOP SIDE SOFFIT	$[(\text{DEPTH MINUS } 1-15/16") / 2]$
M.	BACKBENDS	1/2"
N.	BACKBEND RETURN	OPTIONAL

FOR OTHER SIZES OR VARIATIONS, CONTACT CUSTOMER SERVICE.

+ LABELED DOUBLE EGRESS FRAME DE PROFILE TYPE 1 HEAD AND JAMBS



A.	GAGE	16 14 12
B.	MATERIAL	COLD ROLLED ASTM A60 GALVANIZED
C.	FINISH	PRIME PAINTED
D.	DEPTH	5" TO 14"
E.	THROAT	1" LESS THAN DEPTH
F.	FACE	2"
G.	STOP HEIGHT	5/8"
H.	CORNER CONDITION	KD or SET UP and WELDED
I.	OPENING WIDTH: DOUBLE	8'-0" MAX.
J.	OPENING HEIGHT:	10'-0" MAX.
K.	DOOR RABBET	VARIES TO MATCH JAMB
L.	SOFFITS:	VARIES TO MATCH JAMB
M.	BACKBENDS	1/2"
N.	BACKBEND RETURN	OPTIONAL

FOR OTHER SIZES OR VARIATIONS, CONTACT CUSTOMER SERVICE.

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Distributor Tech Data

LABELED DOOR FRAMES

GENERAL

- LABELING AGENCY: UNDERWRITERS LABORATORIES (UL)
WARNOCK HERSEY (WH)
- HOURLY RATING: 3 hr., 1-1/2 hr., 1 hr., 3/4 hr., 20 min., or 20 min. without hose stream
- DOOR THICKNESS: 1-3/4" OR 1-3/8"
- HINGE and STRIKE LOCATIONS: See Section 11
- WALL and FLOOR ANCHORS: See pages 7-735 & 7-742
- CLOSER REINFORCEMENT: See pages 7-731 & 7-732
(Closer is not necessary when spring hinges are used)

SPECIAL HARDWARE PREPARATIONS:

The following are acceptable:

Anchor hinges, Pivots, surface hinges, pocket pivots, concealed closers, concealed door stops, supplemental deadlock strike, (if latch strike for listed lock is also prepared for), electric power transfers. Magnetic switch, & listed fire exit hardware.

Memo: For labeling purposes, hardware and / or door size limitations can be less than frame maximums - the lesser of the two apply.

HOSPITAL SANITARY STOPS: See page 7-733

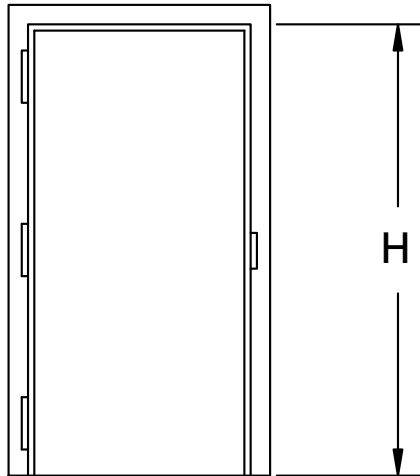
RATING GUIDELINES, THREE PIECE FRAMES:

- | | |
|----------------------------|-----------------------------|
| Corners: | Knocked Down (KD) or welded |
| Door opening sizes: | See page 7-702 |
| Steel Gages: | See page 7-702 |
| Anchors: | See page 7-702 |
| Installation instructions: | See page 7-743 thru 7-748 |

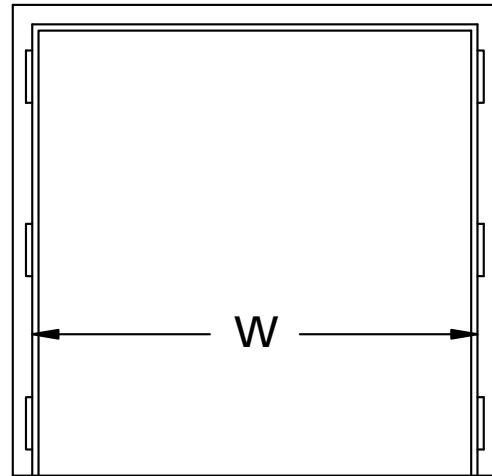
RATING GUIDELINES, HOLLOW METAL FRAME ASSEMBLIES: See page 7-708

† LABELED FRAME SIZES FOR 1-3/4" THICK FIRE DOORS

H = DOOR OPENING HEIGHT, W = DOOR OPENING WIDTH
e.g., 3070 = 3'-0" X 7'-0" (W = 3'-0" & H = 7'-0")



SINGLE SWING



DOUBLE SWING

UL or WH	UP TO 3 HR RATED 16,14 OR 12 GAGE STEEL ANCHORS LOOSE or WELDED 40100 MAX	‡
WH	UP TO 1-1/2 HR RATED 18 GAGE STEEL ANCHORS LOOSE or WELDED 4070 MAX	
WH	KERFED FRAMES UP TO 1-1/2 HR RATED 18 GAGE STEEL 3670 MAX	
UL or WH	KERFED FRAMES UP TO 3 HR RATED 16 GAGE STEEL 40100 MAX ANCHORS: LOOSE	‡

UL or WH	UP TO 3 HR RATED 16,14 OR 12 GAGE STEEL ANCHORS LOOSE or WELDED 80100 MAX	‡
WH	UP TO 1-1/2 HR RATED 18 GAGE STEEL ANCHORS LOOSE or WELDED 8070 MAX	
WH	KERFED FRAMES UP TO 1-1/2 HR RATED 18 GAGE STEEL 7070 MAX	
UL or WH	KERFED FRAMES UP TO 3 HR RATED 16 GAGE STEEL 80100 MAX ANCHORS: LOOSE	‡

NOTES

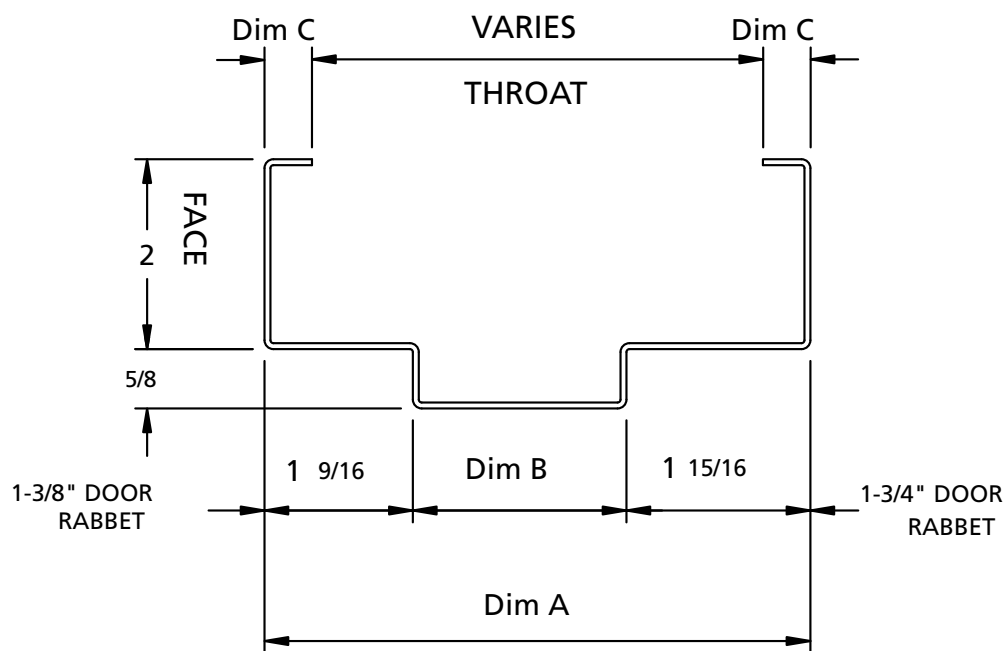
1. SEE FIRE DOOR SECTION FOR MAXIMUM CECO DOOR SIZES.
2. FRAMES FOR 1-3/8" FIRE DOORS ARE ALSO AVAILABLE;
CONTACT YOUR CECO REPRESENTATIVE FOR DETAILS.

‡3 HOUR RATING IS AVAILABLE WITH LOOSE OR WELDED METAL STUD ANCHORS
WHEN INSTALLED IN FOUR HOUR RATED DRYWALL PARTITION. MAX. SINGLE
4'-0" X 9'-0", MAX. PAIR 8'-0" X 9'-0".

Distributor Tech Data

SERIES SU DOUBLE RABBIT LABELED DOOR FRAMES PROFILES AND GAGES

Dimensions are in inches



CODE	Dim A (DEPTH)	Dim B	Dim C
434	4-3/4	1-1/4	1/2
534	5-3/4	2-1/4	7/16
634	6-3/4	3-1/4	1/2
734	7-3/4	4-1/4	1/2
834	8-3/4	5-1/4	1/2

GAGE: 16 or 14

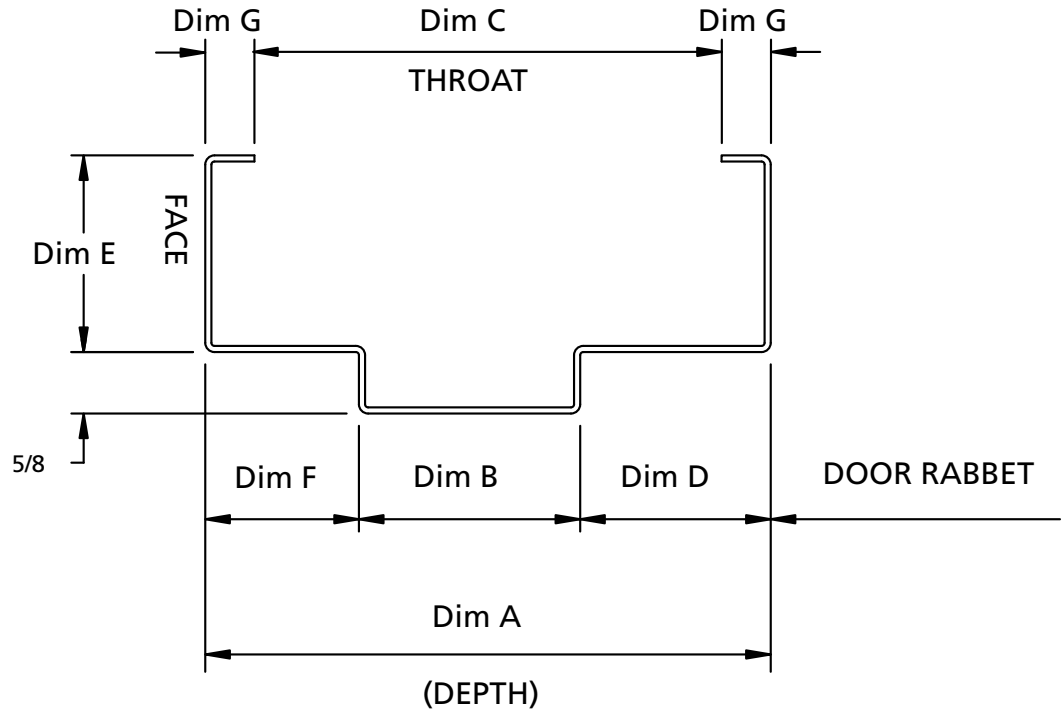
(See page 7-702 for guidelines)

MATERIAL: COLD ROLLED or GALVANIZED STEEL

FINISH: PRIME PAINT

SERIES SQ DOUBLE RABBET LABELED DOOR FRAMES PROFILE AND GAGES

Dimensions are
in inches



Dim A	4-1/8" MIN THRU 14" MAX
Dim B	5/8" MIN
Dim C	3" MIN THRU 13" MAX
Dim D	1-15/16" FOR 1-3/4" DOOR 1-9/16" FOR 1-3/8" DOOR
Dim E	1" MIN FOR MASONRY OR CONCRETE WALLS 1-1/4" MIN FOR STUD WALLS 4" MAX ALL
Dim F	NORMALLY EQUAL TO DOOR RABBET
Dim G	1/2" STANDARD 1/4" MIN THRU 1-1/2" MAX AVAILABLE

GAGE: 18 (WH Only), 16, 14 or 12

(See page 7-702 for guidelines)

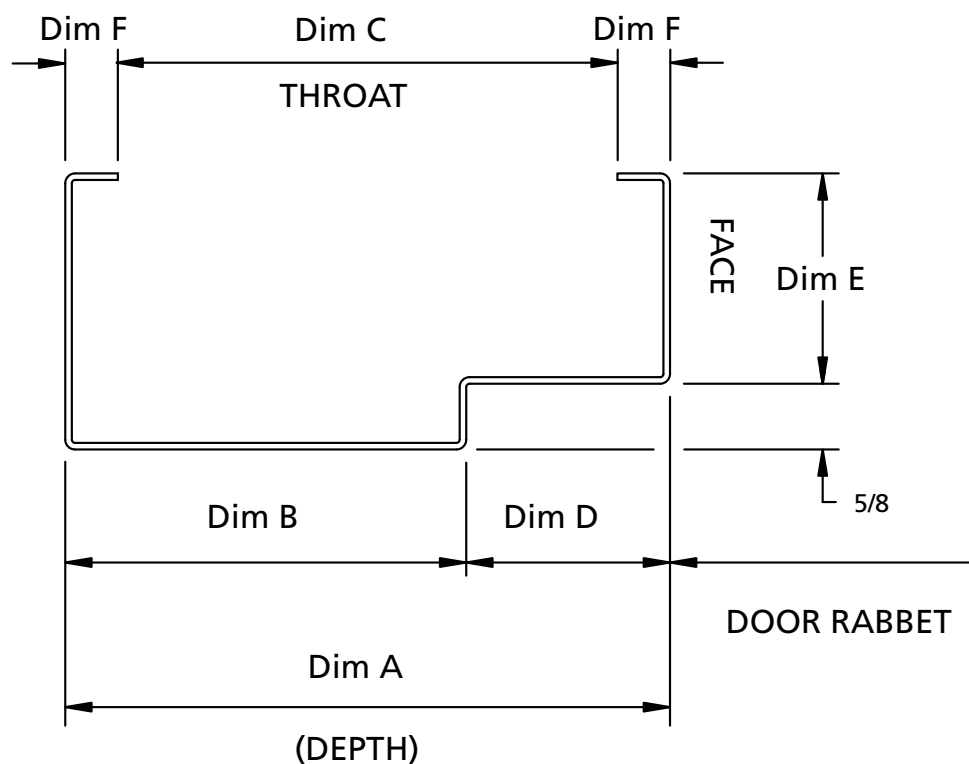
MATERIAL: COLD ROLLED or GALVANIZED STEEL

FINISH: PRIME PAINT

Distributor Tech Data

SERIES SR SINGLE RABBET LABELED DOOR FRAMES PROFILES AND GAGES

Dimensions are in
inches.



Dim A	2-1/2" MIN THRU 14" MAX
Dim B	VARIES
Dim C	2" MIN THRU 13" MAX
Dim D	1-15/16" FOR 1-3/4" DOOR 1-9/16" FOR 1-3/8" DOOR
Dim E	1" MIN FOR MASONRY OR CONCRETE WALLS 1-1/4" MIN FOR STUD WALLS 4" MAX ALL
Dim F	1/2" STANDARD 1/4" MIN THRU 1-1/2" MAX AVAILABLE

GAGE: 18(WH only), 16, 14 or 12

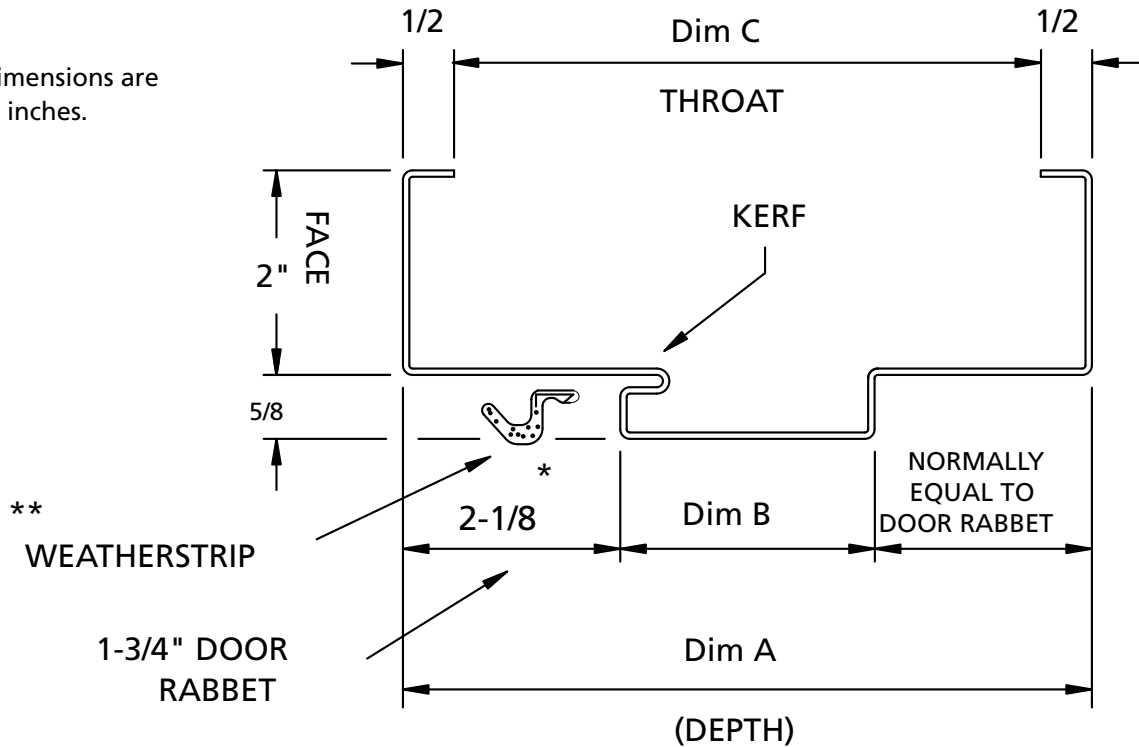
(See page 7-702 for guidelines)

MATERIAL: COLD ROLLED or GALVANIZED STEEL

FINISH: PRIME PAINT

SERIES SQW DOUBLE RABBET LABELED DOOR FRAME PROFILES AND GAGES

Dimensions are
in inches.



Dim A	5-1/2" MIN THRU 14" MAX
Dim B	1-1/4" MIN
Dim C	4-1/2" MIN THRU 13" MAX

GAGE: 18 (WH only) or 16 (See page 7-702 for guidelines)

MATERIAL: COLD ROLLED or GALVANIZED STEEL

WEATHERSTRIP: RATED, COMPRESSION TYPE, FOAM FILLED

FINISH: PRIME PAINT

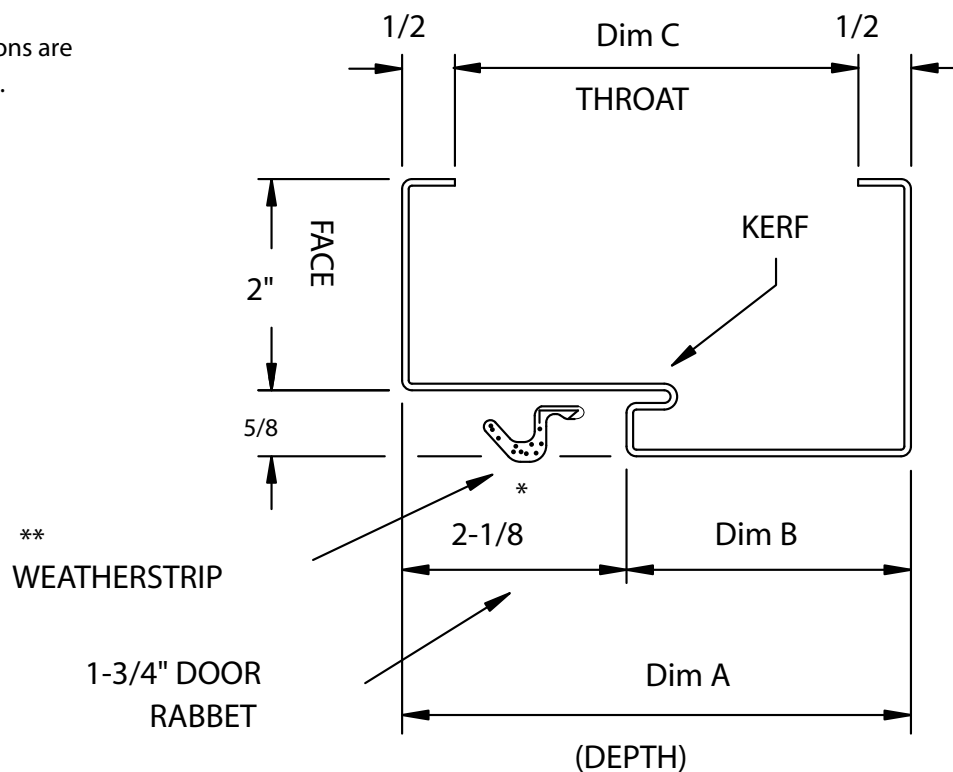
* MAY VARY DEPENDING ON FRAME

** WEATHERSTRIP IS SHIPPED WITH FRAME

Distributor Tech Data

SERIES SRW SINGLE RABBET LABELED DOOR FRAME PROFILES AND GAGES

Dimensions are
in inches.



Dim A	3-5/8" MIN THRU 14" MAX
Dim B	1-1/4" MIN
Dim C	2-5/8" MIN THRU 13" MAX

GAGE: 18(WH only) or 16 (See page 7-702 for guidelines)

MATERIAL: COLD ROLLED or GALVANIZED STEEL

WEATHERSTRIP: RATED, COMPRESSION TYPE, FOAM FILLED

FINISH: PRIME PAINT

* MAY VARY DEPENDING ON FRAME

** WEATHERSTRIP IS SHIPPED WITH FRAME

LABELED HOLLOW METAL SERIES SU & SQ FRAME ASSEMBLIES

The frame elevations shown on the following pages illustrate various configurations of door / transom / sidelite frames, borrowed lite frames, and multiple door opening frames which can be labeled for fire resistance or as smoke barriers.

Certain aspects of the program which these elevations represent are common to all types unless specifically noted otherwise on the elevation sheets.

LABELS: Typically, rating classification (e.g., 3 hour, 1-1/2 hour ...) does not appear on the frame label. Door, hardware, panel, glazing, and / or wall rating will classify opening, e.g., if a frame rated for use with doors which have a rating of up to 3 hours is used with a door having a 20 minute label - the opening would have a 20 minute rating.

HARDWARE REQUIREMENTS: Similar to 3-sided frames, see page 7-701

PROFILES: Series SU or SQA, see pages 7-703 thru 7-707

ANCHOR REQUIREMENTS: Typically, anchor quantity is a function of overall frame dimensions.

- Height: up to 9'0" can have loose anchors
over 9'0" and less than 10'0" must have attached anchors
10'0" and over must have attached masonry anchors
- Width: up to 8'0" can have loose anchors
over 8'0" must have attached anchors
- Except where otherwise specified on the following pages, anchors are normally required at jambs and sill only
- Maximum anchor spacing is 30" on center
- Existing opening anchors typically qualify as "masonry anchors" where such are indicated on the following pages

IMPOSTS AND MULLIONS: Sidelite floor anchor or removable mullion anchor is required.

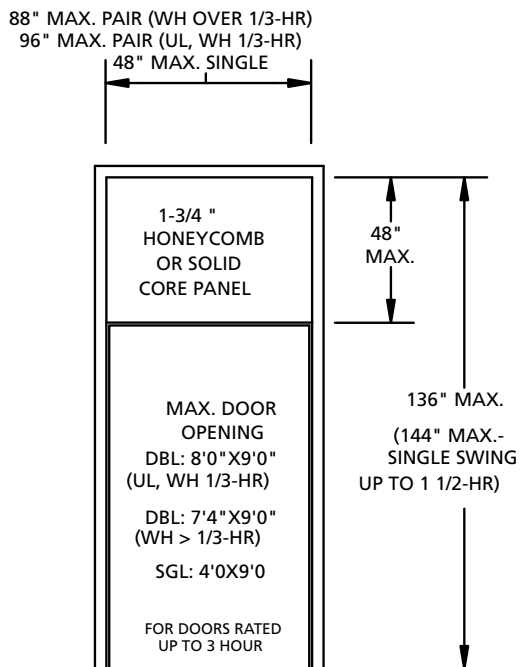
OVERSIZE FRAMES: Frame larger than 8'0" overall, in width and height are shipped in multiple units because of carrier limitations. Field assembly is by contractor.

GLAZING: Where glazing is indicated, frames are prepared to receive either 1/4" minimum thick labeled wire glass or classified glazing material. Glass and glazing are by contractor.

EXPOSED GLASS DIMENSIONS: 8" minimum. Maximum as stated on the following pages. The 8" minimum is a self-imposed limitation. For lesser dimensions, contact your Ceco representative.

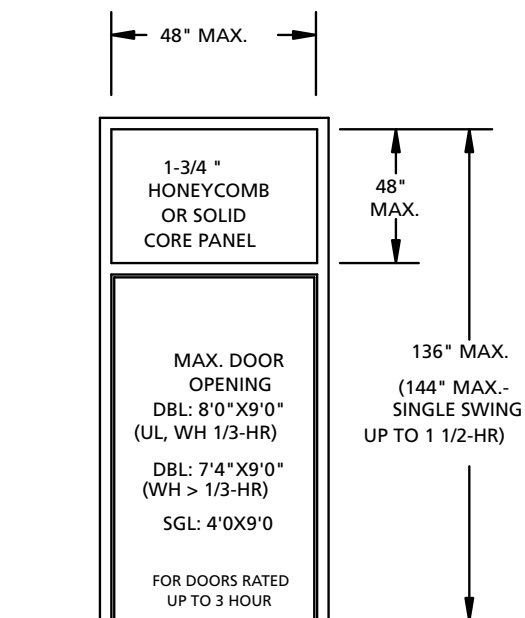
Distributor Tech Data

LABELED TRANSOM FRAMES HONEYCOMB CORE PANEL SOLID WH/UL LABEL



3 HOUR RATED WITH FIXED HORIZONTAL ASTRAGAL
PANEL: 1-3/4" thick, honeycomb or solid core, 20 gage min. face sheets. Panel is available as removable or fixed. Fixed type must be shop installed. Removable type must be shipped separate from frame for field installation.
FRAME FACE: 1-1/4" minimum; 4" maximum.

TRANSOM ASSEMBLY W/1-3/4"
HONEYCOMB OR SOLID CORE PANEL
WITHOUT TRANSOM BAR AND WITH
HORIZONTAL ASTRAGAL

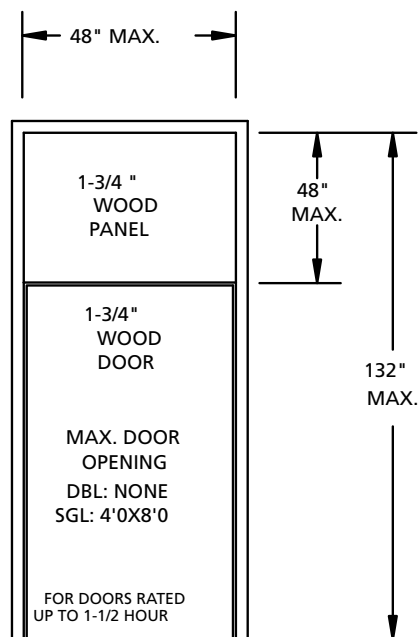


3 HOUR RATED WITH FIXED TRANSOM BAR
PANEL: 1-3/4" thick, honeycomb or solid core, 20 gage min. face sheets. Panel is available as removable or fixed. Fixed type must be shop installed. Removable type must be shipped separate from frame for field installation.
FRAME FACE: 1-1/4" minimum; 4" maximum.

TRANSOM ASSEMBLY W/1-3/4"
HONEYCOMB OR SOLID CORE PANEL
WITH TRANSOM BAR

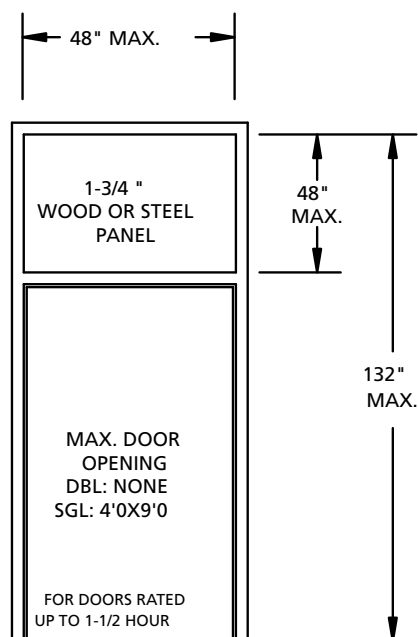
Distributor Tech Data

LABELED TRANSOM FRAMES WOOD PANEL WH/UL LABEL



1-1/2 HOUR RATED WITHOUT TRANSOM BAR
Panel and door are proprietary, UL/WH fire rated composite type and must be supplied as a unit (Algoma Wood doors only) in accordance with UL/WH procedure. Panel is field installed by contractor and is non-removable. FRAME FACE: 1-1/4" minimum; 4" maximum.

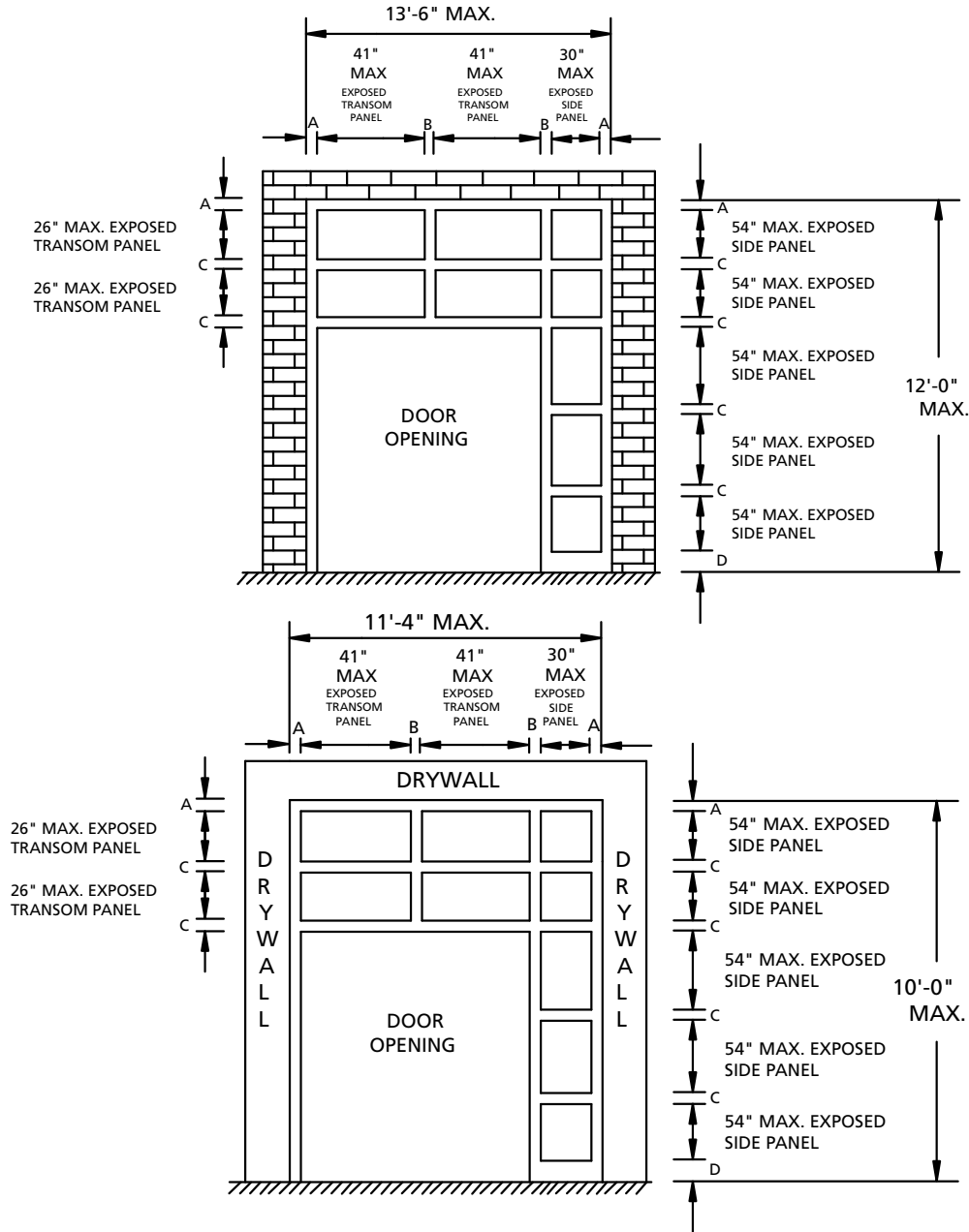
TRANSOM ASSEMBLY FOR
1-3/4" WOOD PANEL & DOOR
WITHOUT TRANSOM BAR



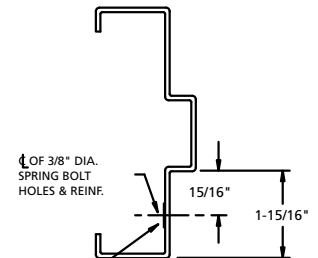
1-1/2 HOUR RATED WITH FIXED TRANSOM BAR
Wood Panel is proprietary, UL/WH fire rated composite type and is supplied as a unit in accordance with UL/WH procedure. Panel is field installed by contractor and is non-removable. Any labeled fire door can be used. FRAME FACE: 1-1/4" minimum; 4" maximum. TRANSOM BAR: Fixed only.

TRANSOM ASSEMBLY
FOR 1-3/4" WOOD OR STEEL
PANEL W/TRANSOM BAR

LABELED TRANSOM / SIDE PANEL FRAME WITH RECESSED INSULATED, 1-3/4" WOOD OR HOLLOW METAL PANEL



1. MAX. RATING = 1-1/2 HR
2. MAX. PANEL AREA :
1066 SQ. INCHES PER TRANSOM PANEL.
1296 SQ. INCHES PER SIDE PANEL.
3. CORNER CONSTRUCTION :
WELDED ONLY
4. ANCHORS :
ALL TYPES APPROVED (LOOSE OR WELDED).
FRAMES EXCEEDING 8'-0" X 9'-0" MUST BE WELDED IN PLACE.
5. THROAT OPENING :
3-1/2" MIN & 9" MAX.
6. DOOR STOP HEIGHT =
5/8" MIN.
7. DOOR OPENING =
4'-0" X 10'-0" SINGLE MAX
8'-0" X 10'-0" PAIRS MAX
8. PANEL TYPE = 3/8"
APPROVED METAL CLAD
FIBER BOARD OR 1 3/4"
WOOD (SIDE PANEL ONLY)
OR HOLLOW METAL.
9. SEE DETAIL "A" FOR
SPECIFICS ON SPRING BOLTS.



REIN. PLATES ARE 1" X 3" X 12 GA. STEEL (MIN.) SECURED BY (3) SPOT WELDS OR (3) TACK WELDS (MIN.) PER PIECE.

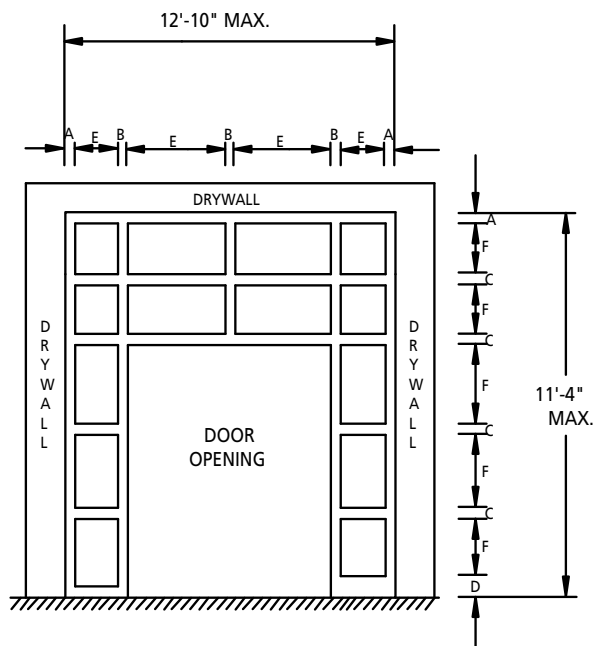
ALTERNATE:
CONTINUOUS 12 GA. X 1" STEEL
PLATE SPOT OR TACK WELDED 3" O.C.

FACE	DIM. A	FACE	DIM. B	FACE	DIM. C	FACE	DIM. D
MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
1-1/4"	4"	1-1/4"	4-1/2"	1-1/4"	8"	1-1/4"	16"

Distributor Tech Data

LABELED TRANSOM / SIDELITE DOOR FRAME FOR GLASS

DRYWALL
INSTALLATION
ONLY

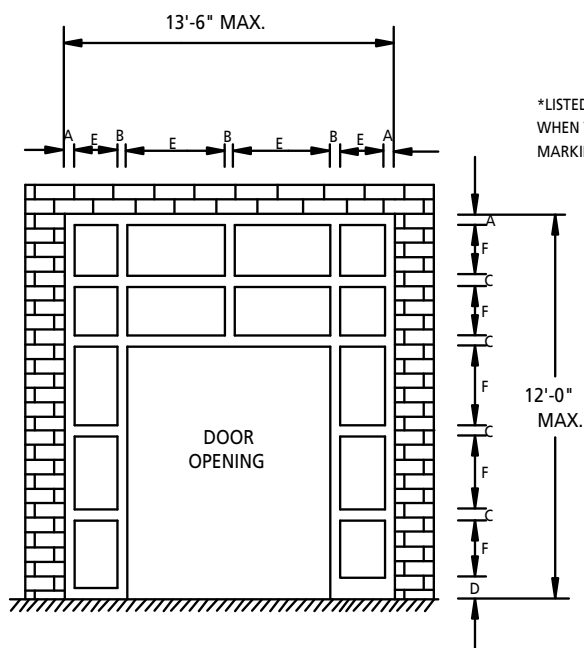


1. MAX. RATING = 3/4 HOUR
2. MAX. GLASS AREA = PER CHART BELOW
3. CORNER CONSTRUCTION = WELDED ONLY
4. ANCHORS = ALL TYPES APPROVED (LOOSE OR WELDED). FRAMES EXCEEDING 8'-0" X 9'-0" MUST BE WELDED IN PLACE.
5. THROAT OPENING = 3-1/2" MIN.
6. DOOR OPENING = 4'-0" X 10'-0" SINGLE MAX.
8'-0" X 10'-0" PAIRS MAX.
7. STOP HEIGHT = PER CHART BELOW

STOP HEIGHT	MAXIMUM EXPOSED GLAZED AREA in. ²	DIM. "E" MAX.	DIM. "F" MAX.	FRAME FACES							
				DIM. "A"		DIM. "B"		DIM. "C"		DIM. "D"	
				MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
5/8"	500	54"	54"	1-1/4"	4"	1-1/4"	4-1/2"	1-1/4"	8"	1-1/4"	16"
	1,296	48"	54"	2"	2"	2"	2"	2"	2"	2"	12"
	*4,704	*106"	*106"								
3/4"	1,296	54"	54"	1-1/4"	4"	1-1/4"	4-1/2"	1-1/4"	8"	1-1/4"	16"

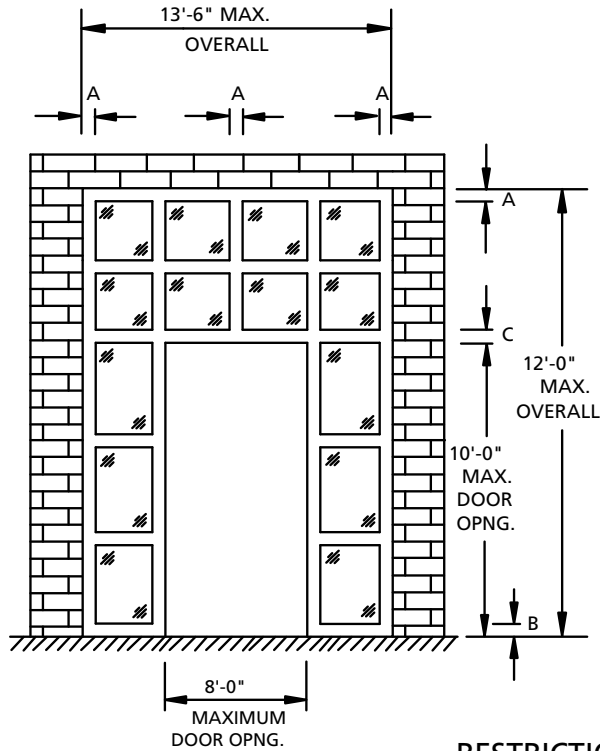
*LISTED 1/4" WIRE GLASS WITH FIREGLAZE FG3000 GLAZING MUST BE USED!
WHEN THIS OPTION IS USED, IT WILL BE NECESSARY FOR THE FRAME TO BEAR A SUPPLEMENTAL
MARKING INDICATING LISTED GLASS AND SPECIFIC GLAZING COMPOUND THAT MUST BE USED!

MASONRY
INSTALLATION
ONLY

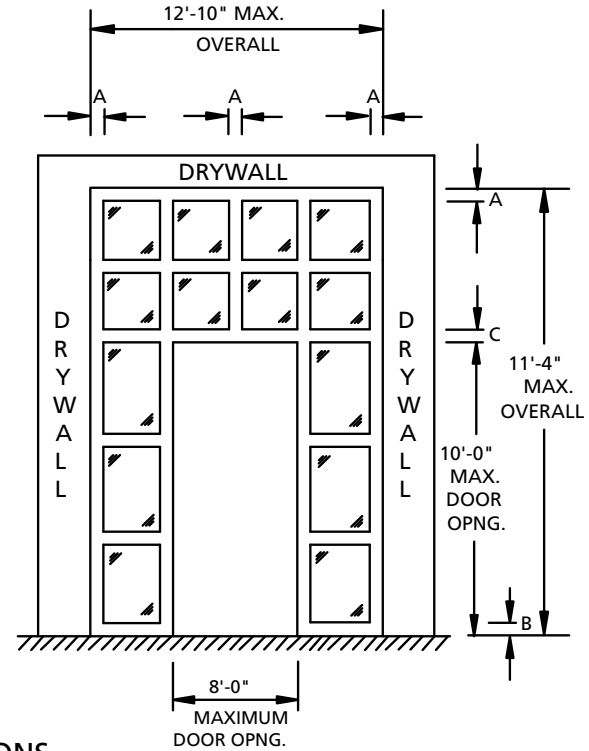


LABELED TRANSOM / SIDELITE & TRANSOM OR SIDELITE DOOR FRAMES

MASONRY INSTALLATION



DRYWALL INSTALLATION



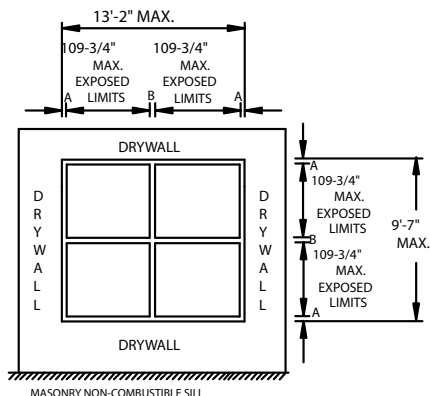
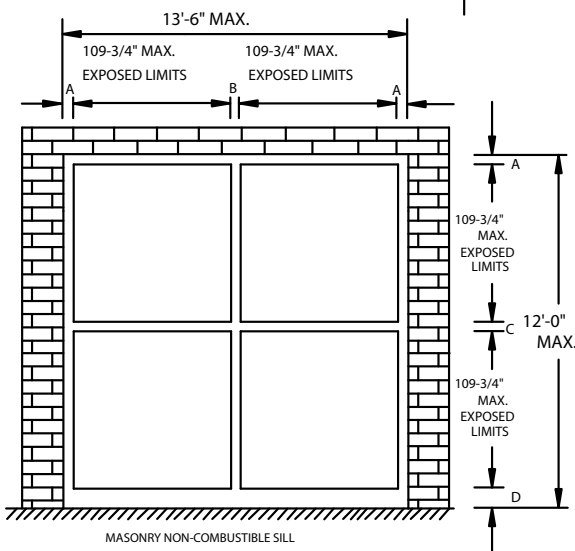
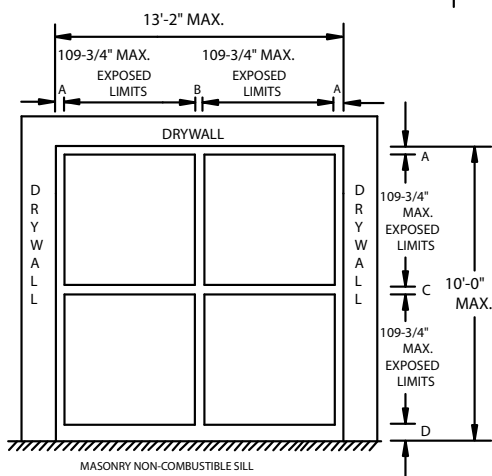
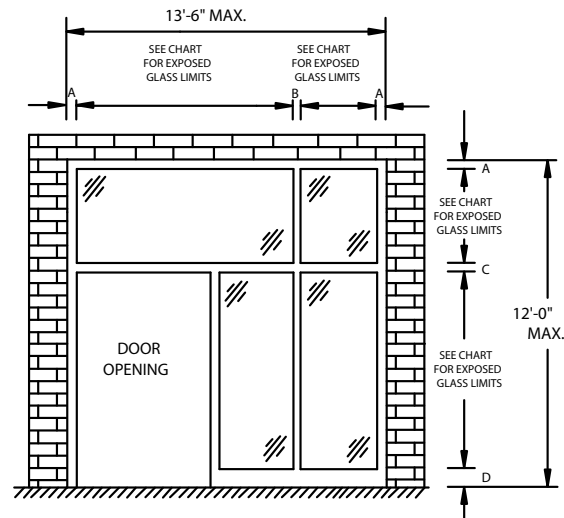
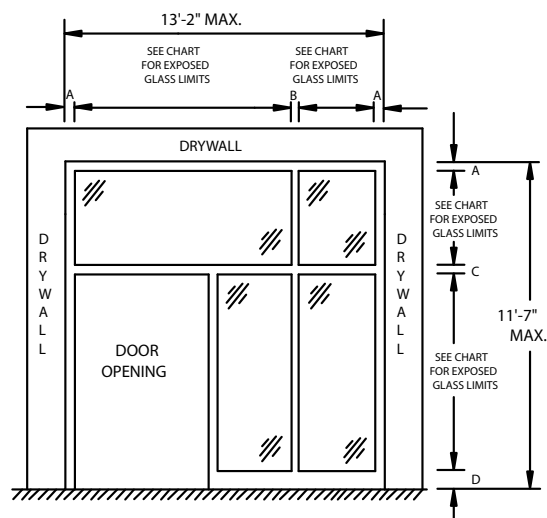
RESTRICTIONS

- 16, 14 OR 12 GA. STEEL FRAMES ONLY
- WELDED CORNER CONSTRUCTION ONLY
- MINIMUM THROAT DEPTH = 4-7/8"
- GLAZING MATERIAL MUST BE FIRELITE[®]
- ONLY LABELED SEALANT OR 100% SILICONE SEALANT MAY BE USED AS GLAZING COMPOUND FOR INSTALLING FIRELITE[®]
- ANCHORS - ALL TYPES APPROVED
 - (LOOSE OR WELDED) FOR MASONRY
 - (WELDED ONLY) FOR DRYWALL
 - ALL FRAMES EXCEEDING 8'-0" X 9'-0" ANCHORS MUST BE WELDED IN PLACE.
- GLAZING STOP FASTENERS -
 - MAX. SPACING = 4" FROM ENDS & 12" O.C.
 - MIN. OF 2 SCREWS PER STOP REQUIRED AT QUARTER POINTS NOT TO EXCEED 12" O.C.
- LIGHTS EXCEEDING THE RATING OR SIZE LIMITATIONS IN NFPA 80 MUST BE APPROVED BY AUTHORITY HAVING JURISDICTION.

FRAME DESCRIPTION	STOP HEIGHT	MAX. FIRELITE AREA PER LIGHT	MAX. WIDTH EXPOSED FIRELITE	MAX. HEIGHT EXPOSED FIRELITE	FIRE RATING	DIM. "A"	DIM. "B"	DIM. "C"
SINGLE LIGHT SIDELIGHT (NO MULLIONS) OR MULTIPLE LIGHT SIDELIGHT & TRANSOM (WITH MULLIONS)	5/8"	3325 SQ. IN.	95"	95"	20 MIN. OR 3/4 HR.	1" MIN.	1" MIN.	1" MIN.
	5/8"	2721 SQ. IN.	77"	77"	1 HR.	TO	TO	TO
	5/8"	2627 SQ. IN.	46.5"	56.5"	1 1/2 HR.	2" MAX.	16" MAX.	8" MAX.

Distributor Tech Data

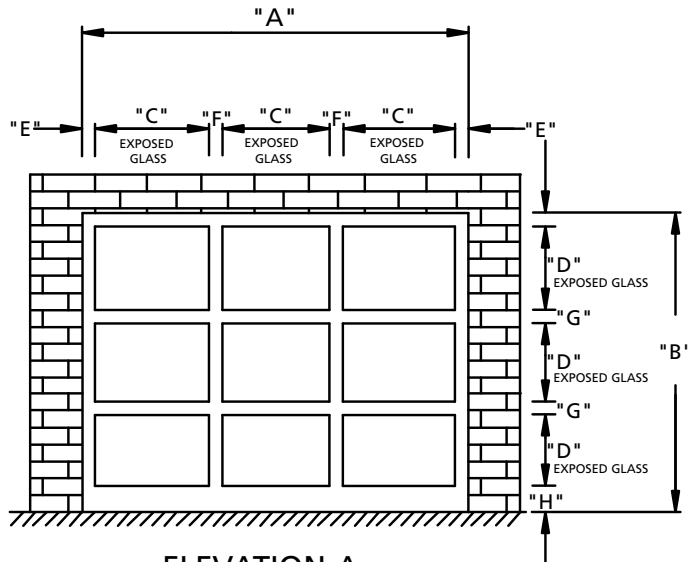
20 MINUTE RATED SIDELITE, TRANSOM OR WINDOW FRAME, FIRE TESTED WITHOUT HOSESTREAM



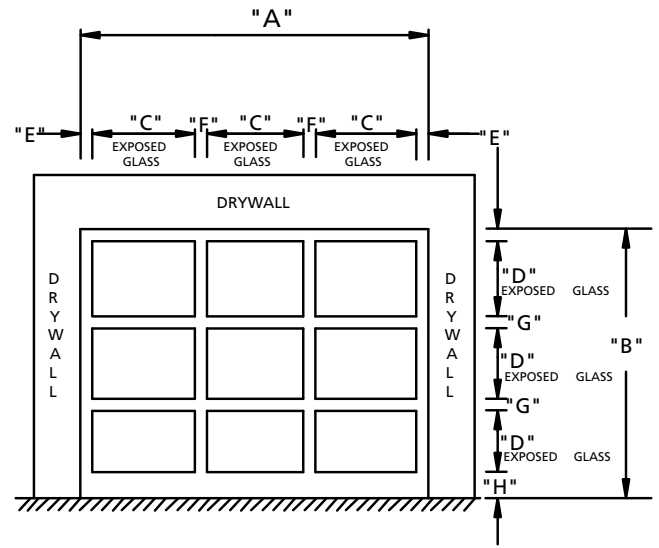
1. MAX. RATING = 20 MINUTE (FIRE TESTED WITHOUT HOSE STREAM)
2. MAX. GLASS AREA = SEE CHART BELOW
3. CORNER CONSTRUCTION = WELDED ONLY
4. ANCHORS = ALL TYPES APPROVED (LOOSE OR WELDED)
5. THROAT OPENING = 3-1/2" MIN.
6. GLASS STOP HEIGHT = 5/8" MIN.
7. DOOR OPENING = 4'-0" X 10'-0" SINGLE
8'-0" X 10'-0" PAIRS

TRANSOM LIGHT, SIDELIGHT & WINDOW FRAME GLASS LIMITATIONS			FACE DIM. A		FACE DIM. B		FACE DIM. C		FACE DIM. D	
WIDTH OF EXPOSED GLASS	HEIGHT OF EXPOSED GLASS	MAX. EXPOSED GLASS AREA PER LIGHT	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
109-3/4" MAX.	109-3/4" MAX.	5268 SQ. IN. PER LIGHT	1-1/4"	4"	1-1/4"	4-1/2"	1-1/4"	8"	1-1/4"	16"

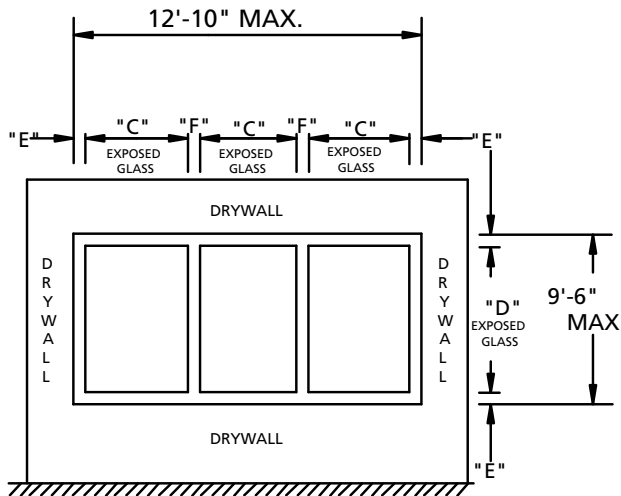
LABELED BORROWED LITES (FIRE WINDOW FRAMES)



ELEVATION-A



ELEVATION-B



ELEVATION-C

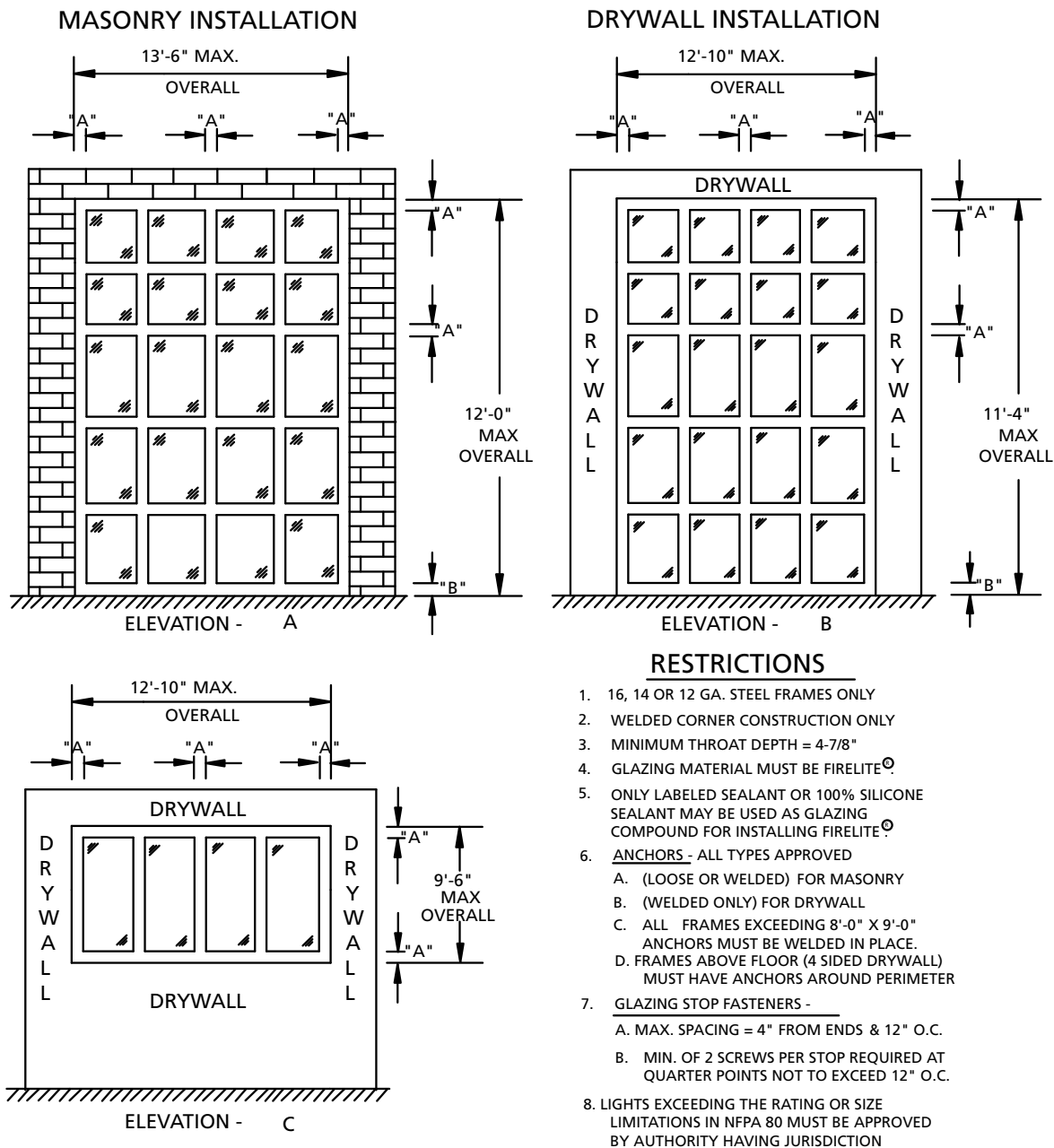
1. MAX. RATING = 3/4 HOUR
2. MAX. GLASS AREA (PER LIGHT) = PER CHART BELOW
3. CORNER CONSTRUCTION = WELDED
4. ANCHORS = ALL TYPES APPROVED (LOOSE OR WELDED). FRAMES EXCEEDING 8'-0" X 9'-0" MUST BE WELDED IN PLACE. FRAMES ABOVE THE FLOOR & COMPLETE PERIMETER IS DRYWALL MUST HAVE ANCHORS AROUND ENTIRE PERIMETER OF FRAME.
5. THROAT OPENING = 3-1/2" MIN.
6. STOP HEIGHT = PER CHART BELOW

OVERALL FRAME SIZE				STOP HEIGHT	MAXIMUM EXPOSED GLAZED AREA in. ²	DIM. "C" MAX.	DIM. "D" MAX.	FRAME FACES							
DRYWALL		MASONRY						DIM. "E"		DIM. "F"		DIM. "G"		DIM. "H"	
DIM. "A"	DIM. "B"	DIM. "A"	DIM. "B"					MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
11'4"	10'0"	13'6"	12'0"	5/8"	500	54"	54"	1 ¹ / ₄ "	4"	1 ¹ / ₄ "	4 ¹ / ₂ "	1 ¹ / ₄ "	8"	1 ¹ / ₄ "	16"
12'10"	11'4"	13'6"	12'0"		1,296	48"	54"	2"	2"	2"	2"	2"	2"	2"	12"
					*4,704	*106"	*106"								
12'10"	11'4"	13'6"	12'0"	3/4"	1,296	54"	54"	1 ¹ / ₄ "	4"	1 ¹ / ₄ "	4 ¹ / ₂ "	1 ¹ / ₄ "	8"	1 ¹ / ₄ "	16"

* LISTED 1/4" WIRE GLASS WITH FIREGLAZE FG3000 GLAZING COMPOUND MUST BE USED!
WHEN THIS OPTION IS USED, IT WILL BE NECESSARY FOR THE FRAME TO BEAR A SUPPLEMENTAL MARKING
INDICATING LISTED GLASS AND SPECIFIC GLAZING COMPOUND THAT MUST BE USED!

LABELED BORROWED LITES (FIRE WINDOW FRAMES)

UL LABEL



RESTRICTIONS

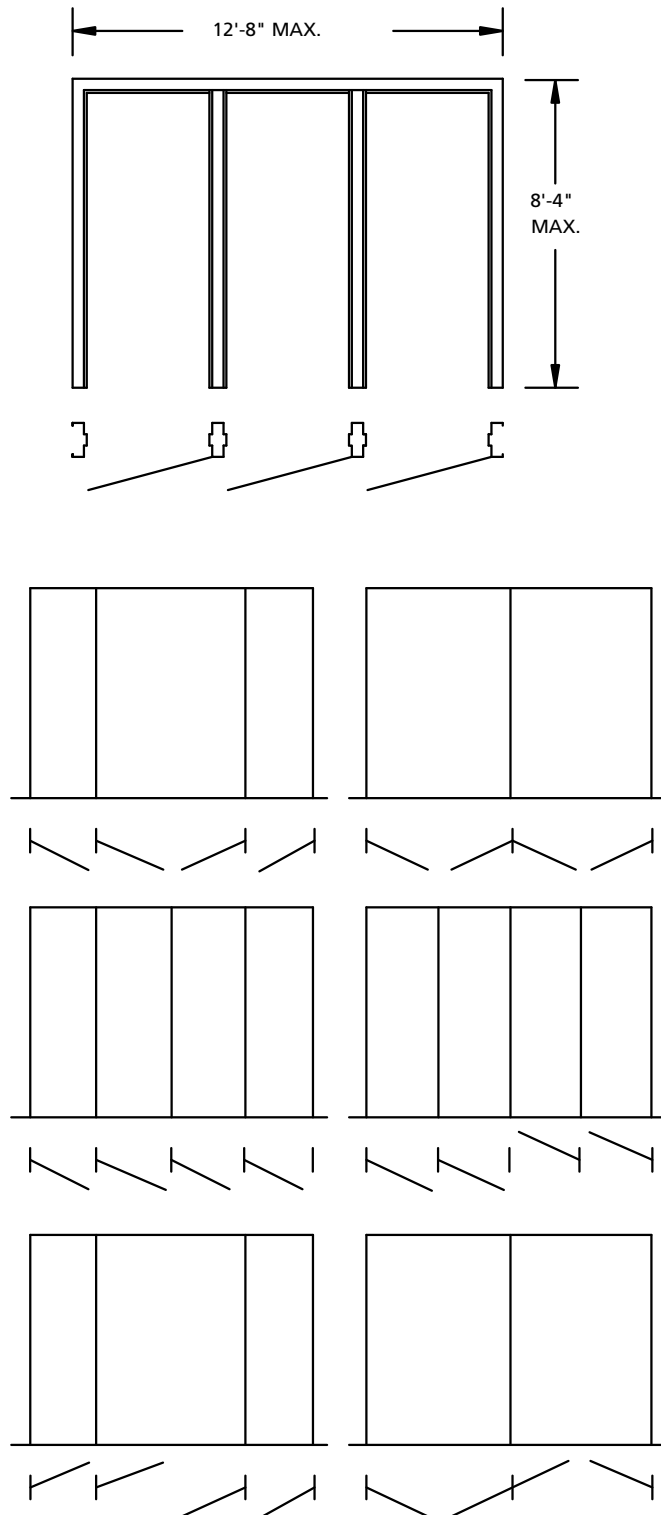
- 16, 14 OR 12 GA. STEEL FRAMES ONLY
- WELDED CORNER CONSTRUCTION ONLY
- MINIMUM THROAT DEPTH = 4-7/8"
- GLAZING MATERIAL MUST BE FIRELITE®
- ONLY LABELED SEALANT OR 100% SILICONE SEALANT MAY BE USED AS GLAZING COMPOUND FOR INSTALLING FIRELITE®
- ANCHORS** - ALL TYPES APPROVED
 - (LOOSE OR WELDED) FOR MASONRY
 - (WELDED ONLY) FOR DRYWALL
 - ALL FRAMES EXCEEDING 8'-0" X 9'-0" ANCHORS MUST BE WELDED IN PLACE.
 - FRAMES ABOVE FLOOR (4 SIDED DRYWALL) MUST HAVE ANCHORS AROUND PERIMETER
- GLAZING STOP FASTENERS** -
 - MAX. SPACING = 4" FROM ENDS & 12" O.C.
 - MIN. OF 2 SCREWS PER STOP REQUIRED AT QUARTER POINTS NOT TO EXCEED 12" O.C.
- LIGHTS EXCEEDING THE RATING OR SIZE LIMITATIONS IN NFPA 80 MUST BE APPROVED BY AUTHORITY HAVING JURISDICTION

FRAME DESCRIPTION	STOP HEIGHT	MAX. FIRELITE AREA PER LIGHT	MAX. WIDTH EXPOSED FIRELITE	MAX. HEIGHT EXPOSED FIRELITE	FIRE RATING	DIM. "A"	DIM. "B"
SINGLE LIGHT (NO MULLIONS) OR MULTIPLE LIGHTS (WITH MULLIONS)	5/8"	3325 SQ. IN.	95"	95"	20 MIN. & 3/4 HR.	1" MIN. TO 2" MAX.	1" MIN. TO 16" MAX.
	5/8"	2721 SQ. IN.	77"	77"	1 HR.		
	5/8"	2627 SQ. IN.	46.5"	56.5"	1 1/2 HR.		

Distributor Tech Data

LABELED MULTIPLE OPENING DOOR FRAMES

UL or WH LABEL



1-1/2 HOUR OR LESS FIRE RATING

16, 14 OR 12 GAGE STEEL

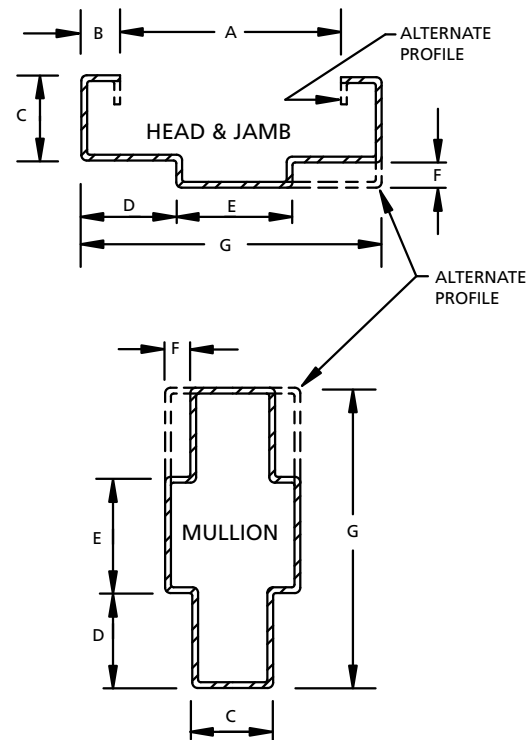
WELDED CONSTRUCTION ONLY

4080 MAX. SINGLE DOOR OPENING

8080 MAX. DOUBLE DOOR OPENING

FIXED OR REMOVEABLE MULLIONS

LOOSE OR ATTACHED ANCHORS PERMITTED

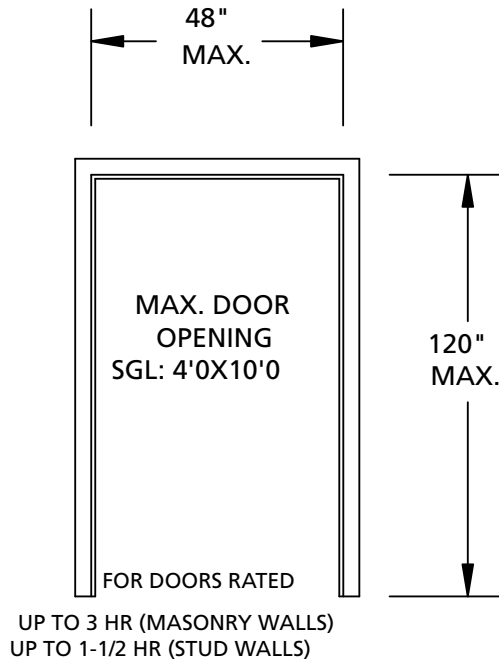


	DIMENSIONS	
	MINIMUM	MAXIMUM
A	4"	13"
B	1/4"	1-1/2"
C	2"	4"
D	1-15/16"	—
E	1"	—
F	5/8"	—
G	4-1/2"	15-1/2"

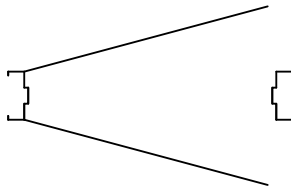
Distributor Tech Data

LABELED COMMUNICATING DOOR FRAMES

UL OR WH LABEL



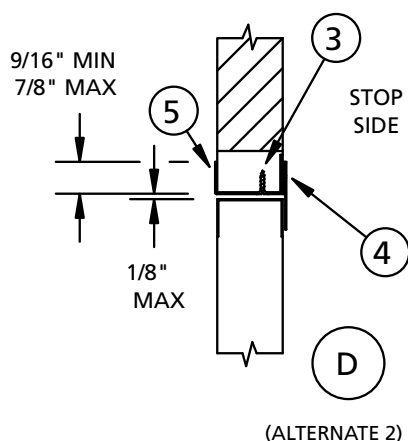
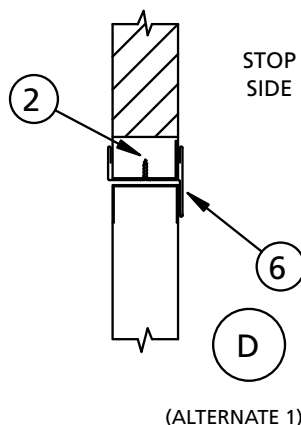
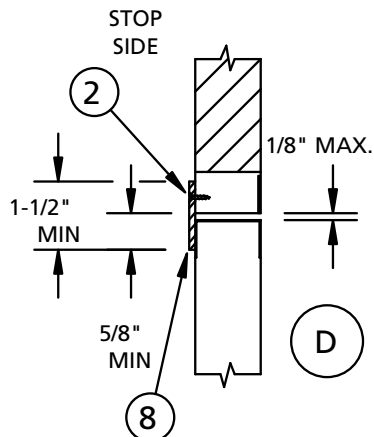
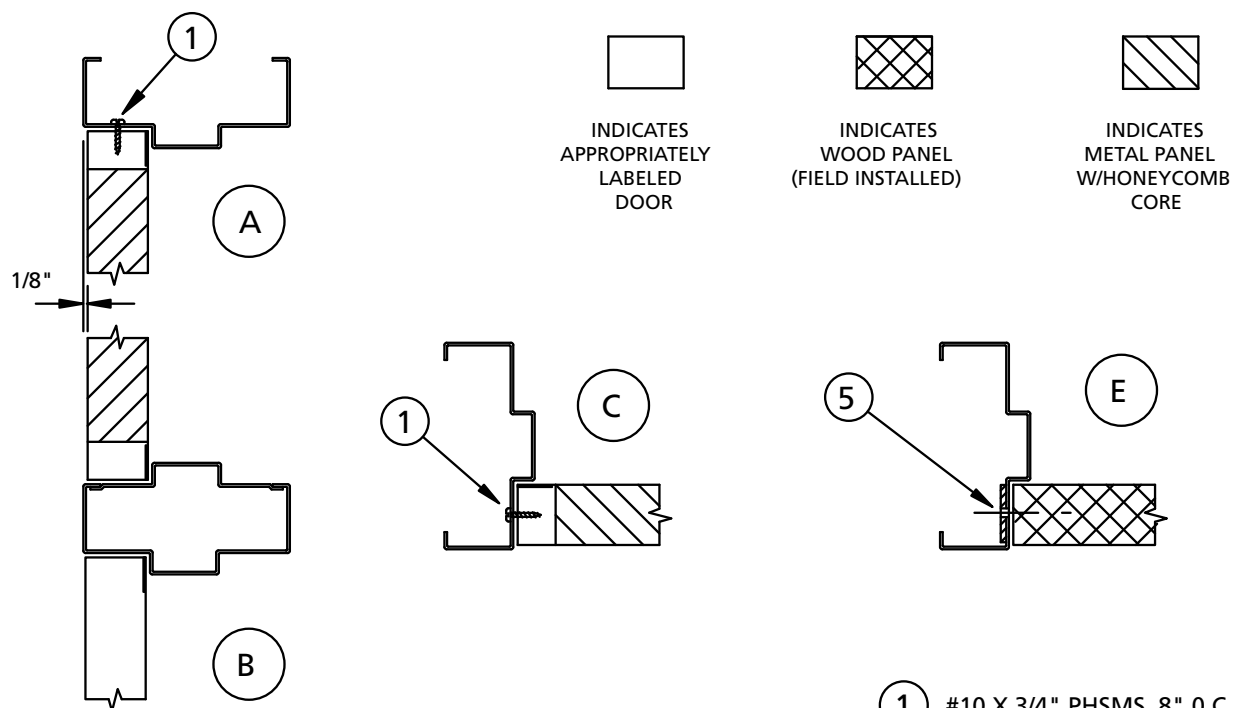
3 HOUR RATED (MASONRY) 1-1/2 RATED (STUD WALL)
CONSTRUCTION: K.D. or welded
MATERIAL: 16, 14 or 12 gage
THROAT: 3" minimum; 13" maximum
FACE: 1" minimum (masonry walls); 4" maximum
1-1/4" minimum (stud walls); 4" maximum



COMMUNICATING FRAMES
SINGLE SWING, IN/OUT
(MASONRY OR STUD WALLS)

Distributor Tech Data

LABELED TRANSOM FRAME 1-3/4" PANEL INSTALLATION DETAILS



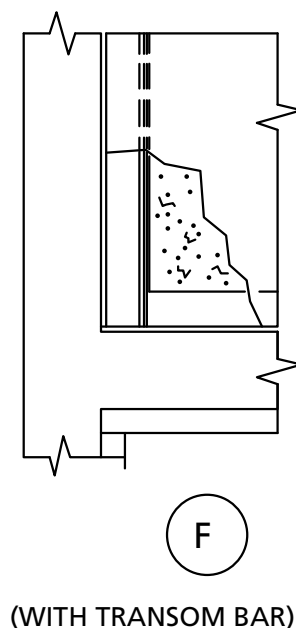
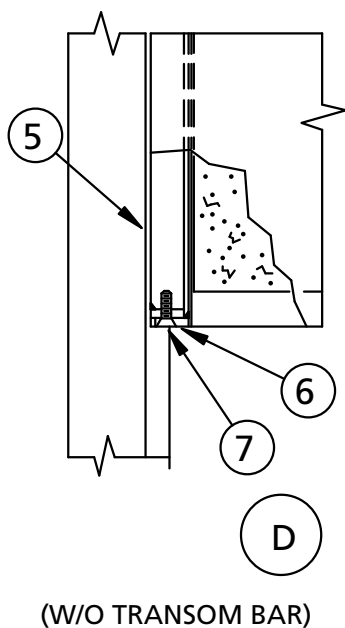
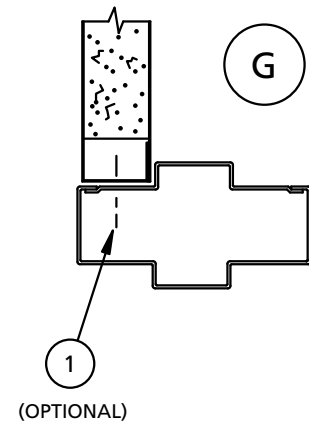
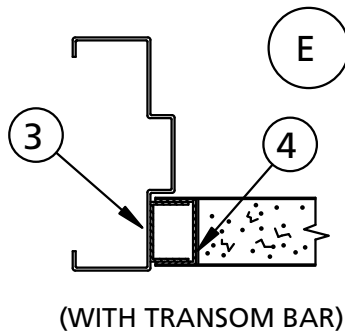
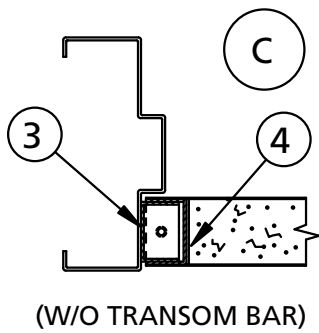
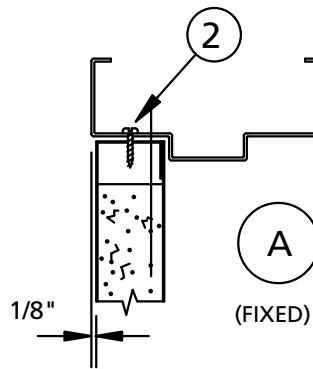
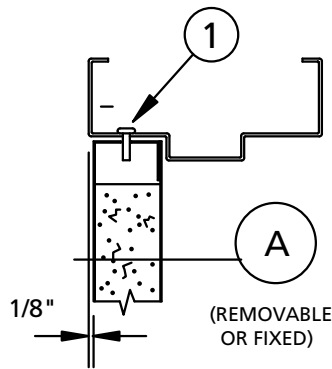
- 1 #10 X 3/4" PHSMS. 8" O.C.
- 2 #8 X 1/2" FHSMS, 8" O.C.
- 3 #10 X 1/2" FHSMS, 12" O.C.
- 4 WELD 8" O.C.
- 5 3/8" DIA. HOLE & REINF. FOR PANEL SPRING CLIP, QUANTITY AND LOCATION PER UL PROCEDURE.
- 6 18 GAGE STEEL
- 7 18 GAGE STEEL, MINIMUM
16 GAGE STEEL, MAXIMUM
- 8 12 GAGE STEEL

NOTE
1-3/4" METAL PANEL IS SHOWN WITH MECHANICAL INTERLOCK HEMMED EDGE RUNNING HORIZONTALLY; METAL PANEL IS ALSO AVAILABLE WITH END CHANNELS RUNNING HORIZONTALLY (HEMMED EDGE RUNS VERTICALLY).

ANY APPROPRIATELY LABELED DOOR CAN BE USED.

LABELED TRANSOM

FRAME SOLID CORE PANEL INSTALLATION



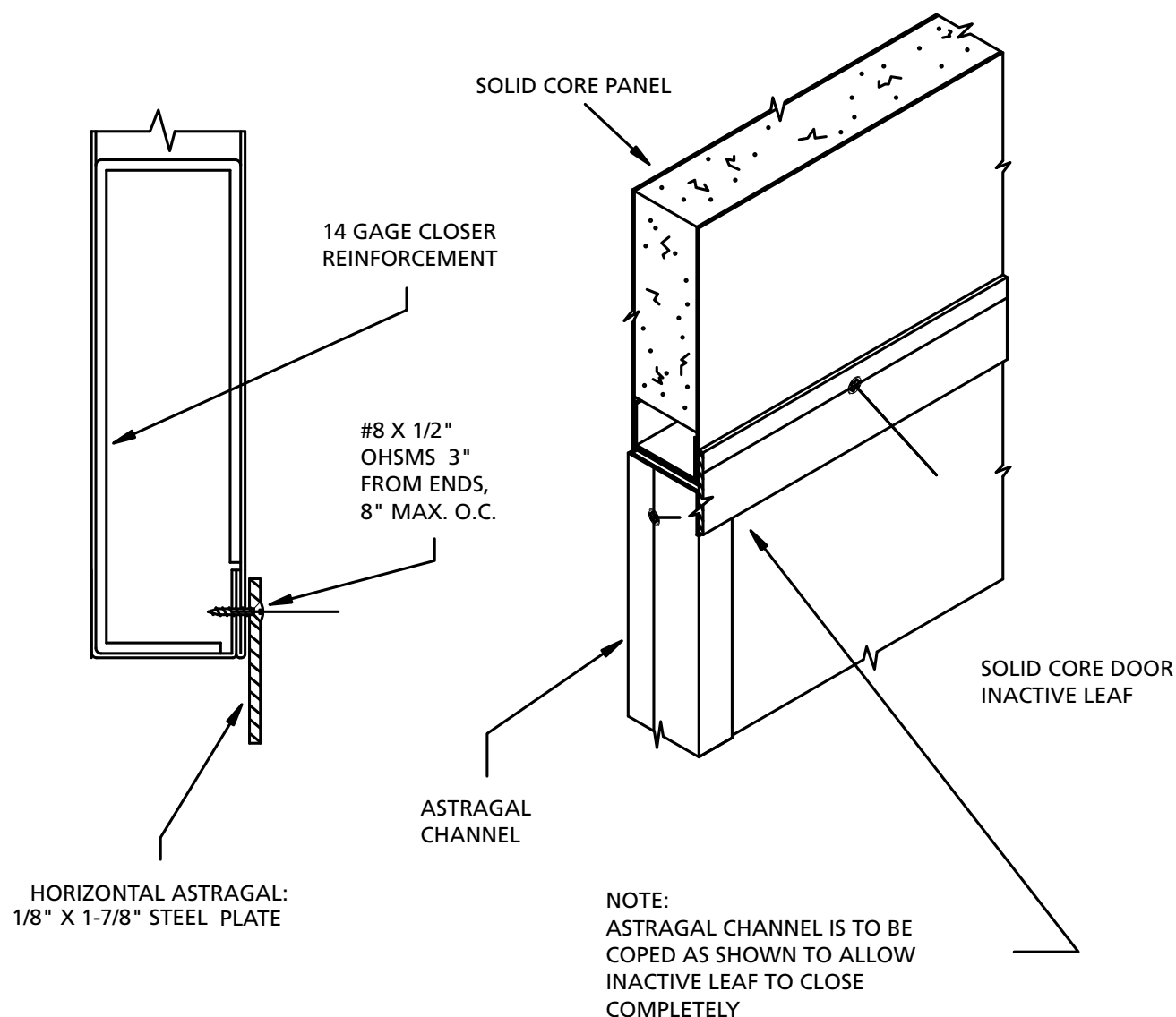
- 1 3/8" RIVET WELDED TO HEAD (OPTIONAL: TRANSOM BAR)
- 2 #12 SMS THRU CLEAR HOLE IN HEAD
- 3 16 GAGE CHANNEL ATTACHED TO EACH JAMB
- 4 16 GAGE CHANNEL ATTACHED TO VERTICAL CHANNEL EDGES
- 5 1/4" STEEL PLATE WELDED TO JAMB CHANNELS
- 6 1/4" STEEL PLATE WELDED TO PANEL CHANNELS
- 7 1/4-20 x 1" FHMS PANEL RETAINER (USED WHEN NO TRANSOM BAR IS PRESENT)

Distributor Tech Data

LABELED TRANSOM FRAME SOLID CORE PANEL INSTALLATION

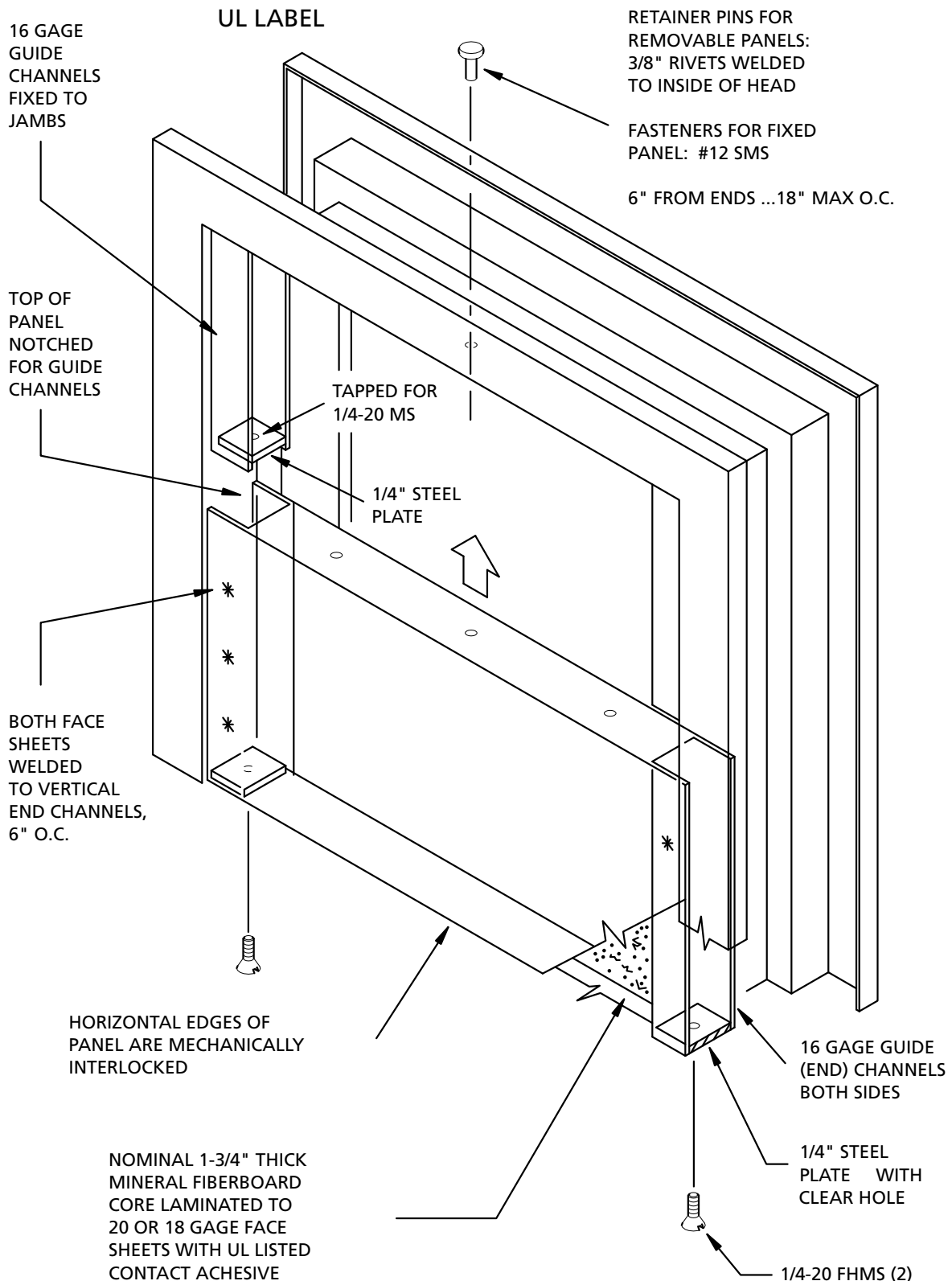
SECTION THRU DOOR
AT CLOSER LOCATION

DETAIL OF TYPICAL
DOOR AND SC/PANEL
APPLICATION

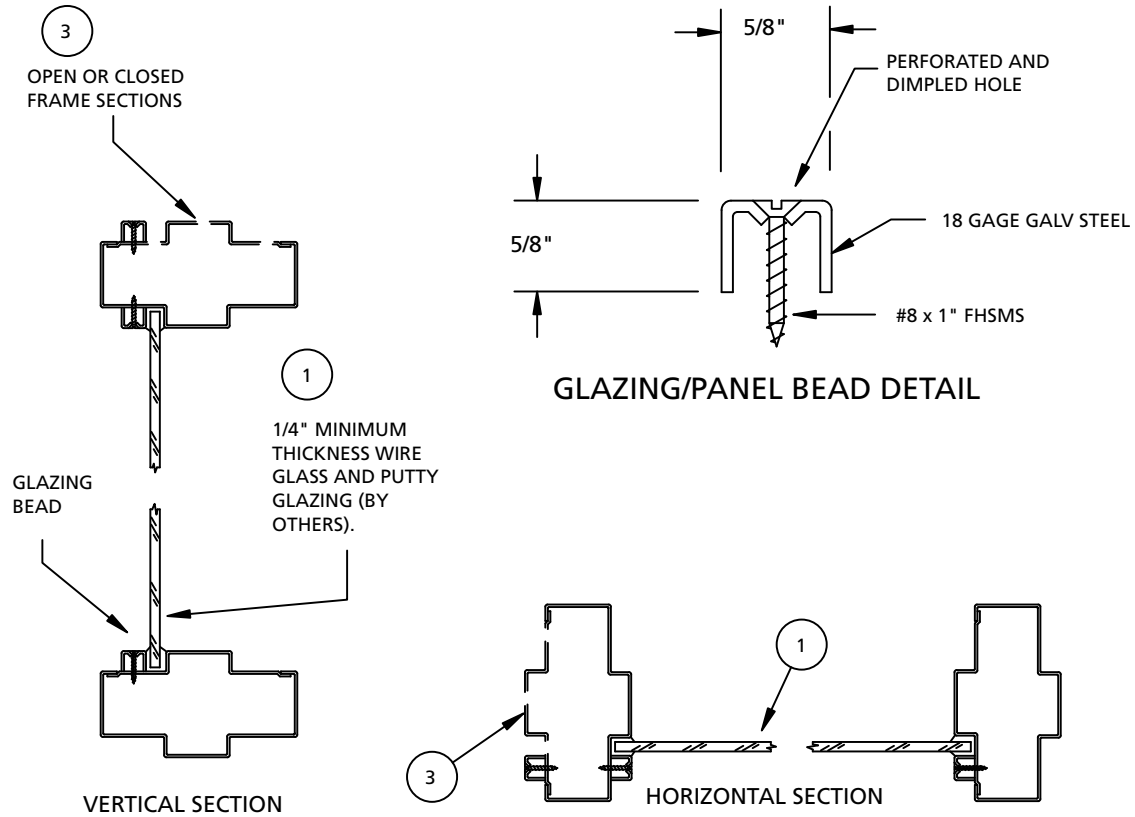


LABELED TRANSOM

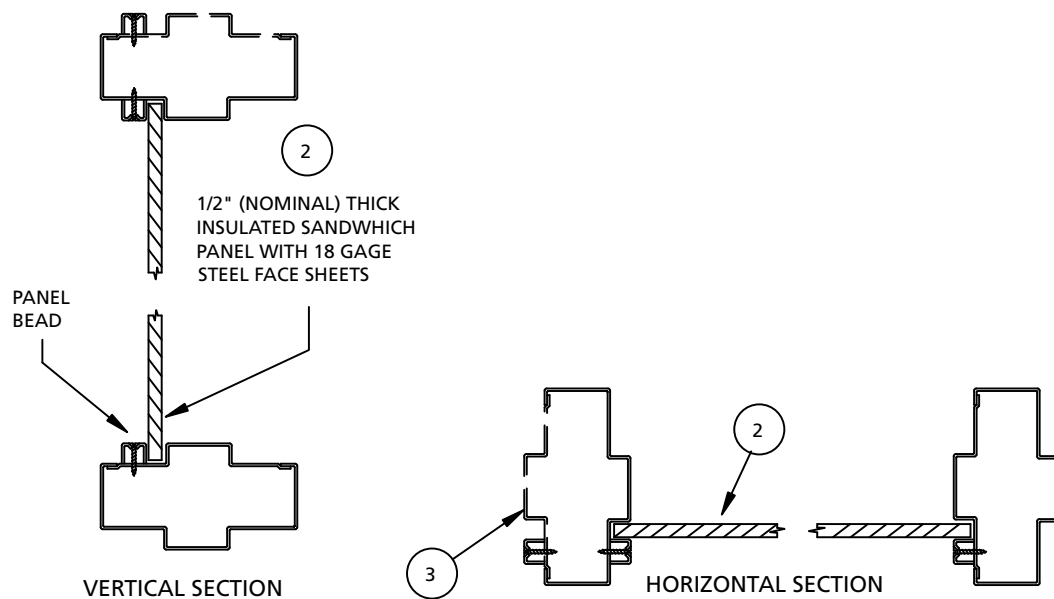
FRAME SOLID CORE PANEL INSTALLATION



GLAZING PROVISIONS AND RECESSED PANEL INSTALLATION DETAILS

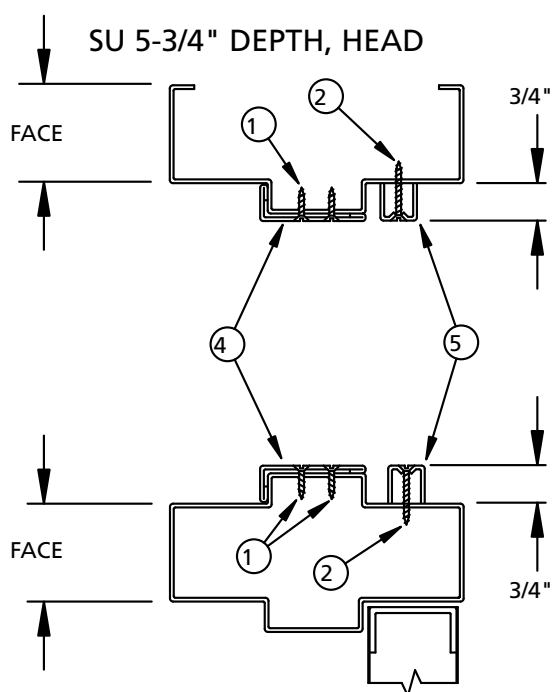


GLAZING BEAD PROVISIONS FOR LABELED FRAMES

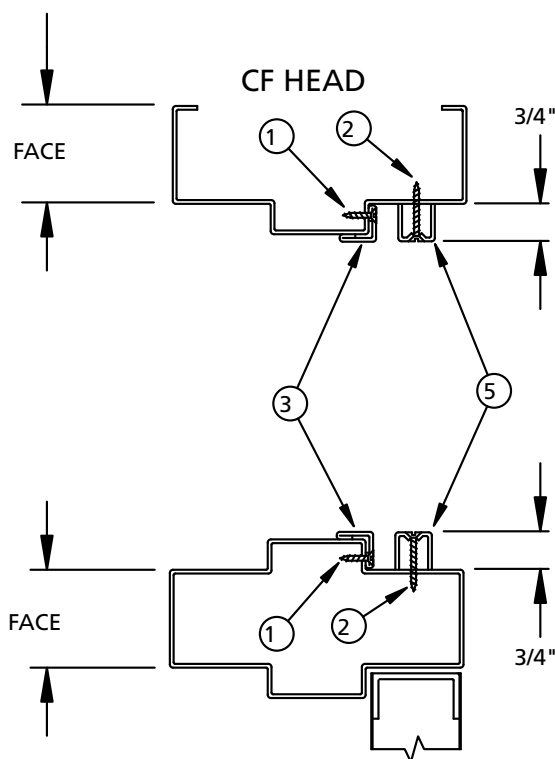


1/2" INSULATED STEEL PANEL INSTALLATION

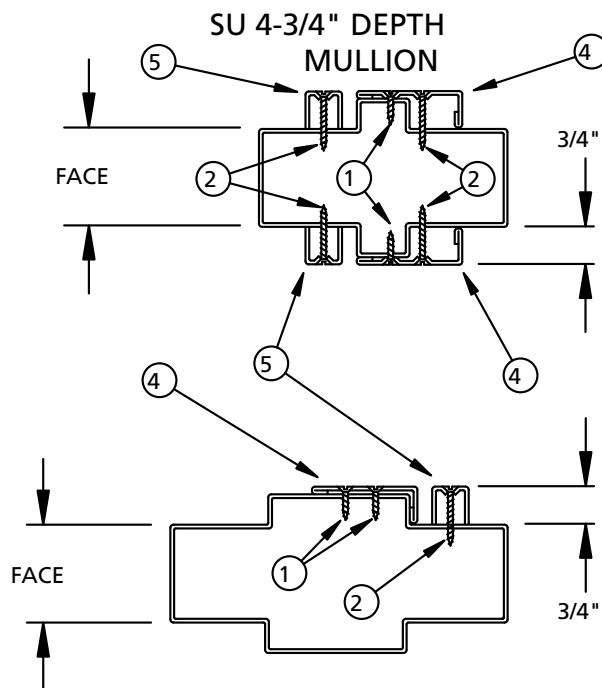
3/4" HIGH STOP BUILD UP



SU 5-3/4" DEPTH
TRANSOM BAR



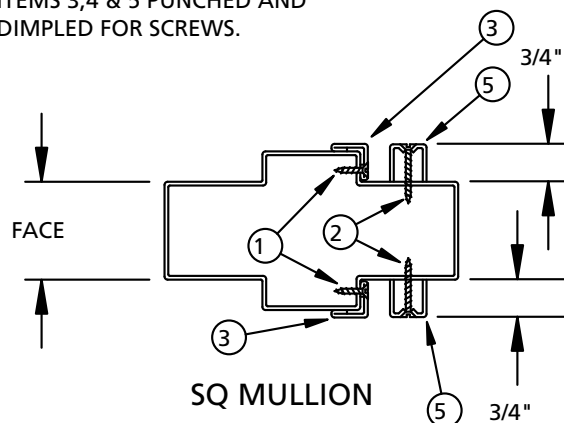
SQ TRANSOM BAR



SU 6-3/4", 7-3/4", 8-3/4"
TRANSOM BAR OR MULLION

- ① #10 x 1/2" FHSMS
- ② #10 x 1-1/4" FHSMS
- FASTENER SPACING:
3" FROM ENDS, 8" O.C., MAX
- ③ FORMED 18 GA. STEEL: 3/4" X 3/4"
- ④ FORMED 18 GA. STEEL: 2-3/8" x 3/4"
- ⑤ FORMED 18 GA. STEEL: 1" x 3/4" LEGS

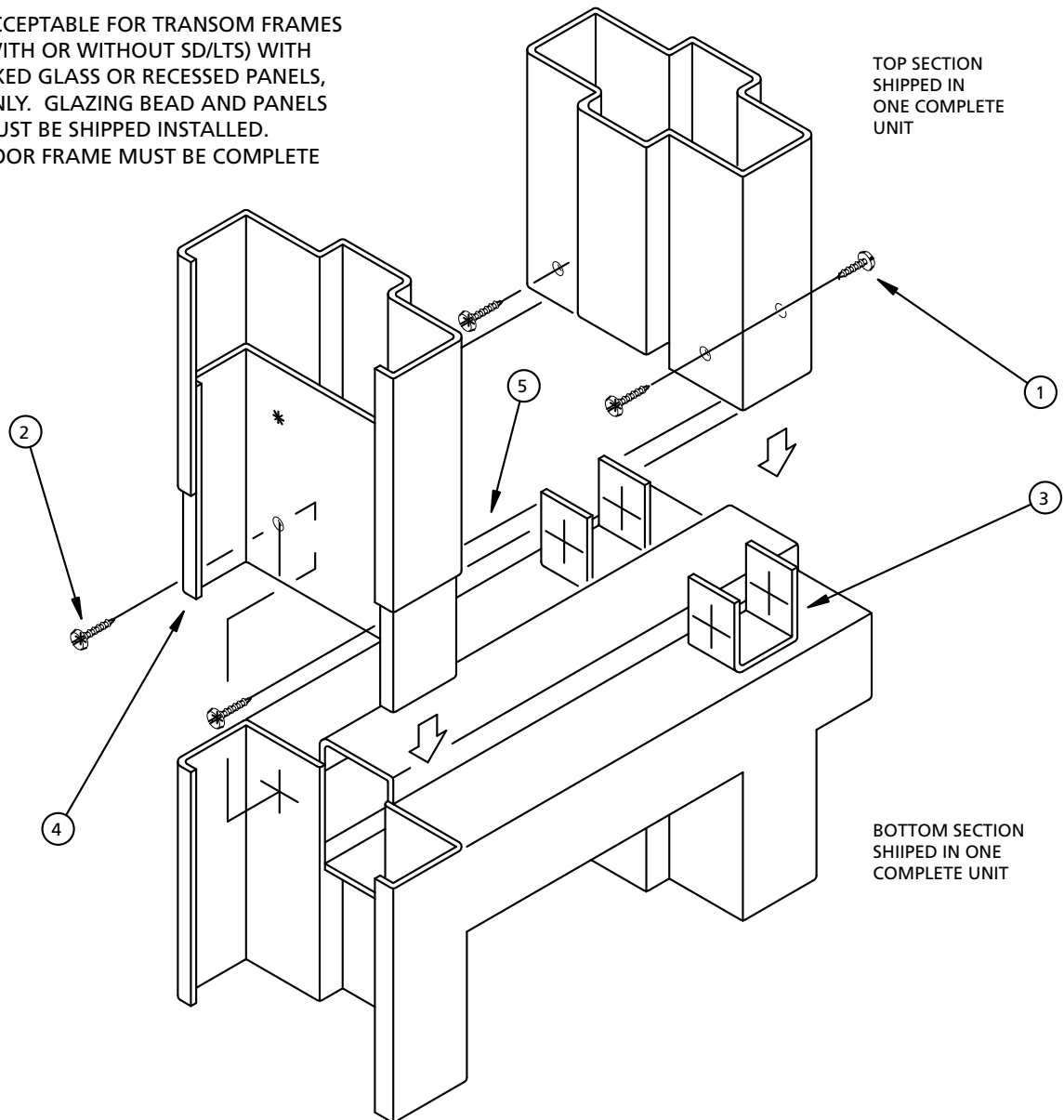
ITEMS 3, 4 & 5 PUNCHED AND
DIMPLED FOR SCREWS.



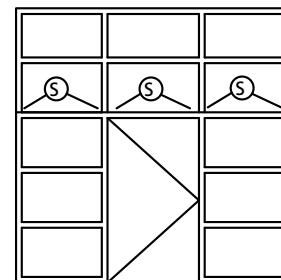
SQ MULLION

FIELD SPlicing FOR OVERSIZE FIRE DOOR FRAMES

ACCEPTABLE FOR TRANSOM FRAMES
(WITH OR WITHOUT SD/LTS) WITH
FIXED GLASS OR RECESSED PANELS,
ONLY. GLAZING BEAD AND PANELS
MUST BE SHIPPED INSTALLED.
DOOR FRAME MUST BE COMPLETE



- ① (4) #10 PHSMS AT MULLIONS
(FHSMS & CTSK HOLES OPTIONAL)
- ② (2) #10 PHSMS AT JAMBS
- ③ (2) 1/8" STEEL CHANNELS
- ④ 14 GAGE STEEL CHANNEL
SPLICE
- ⑤ TEMPORARY SPREADER



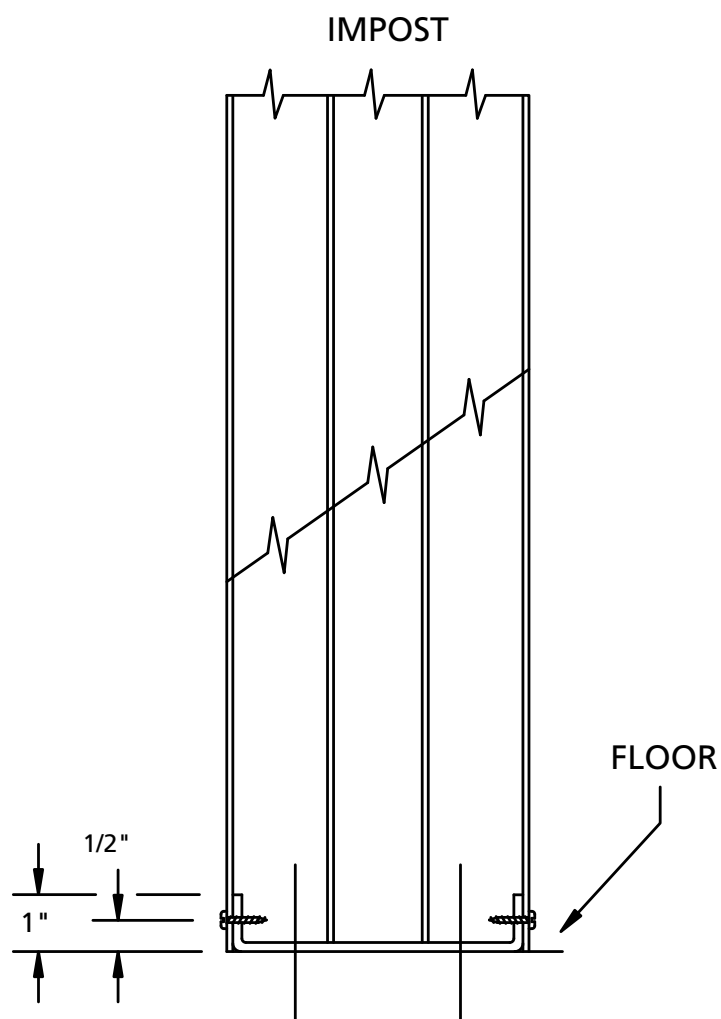
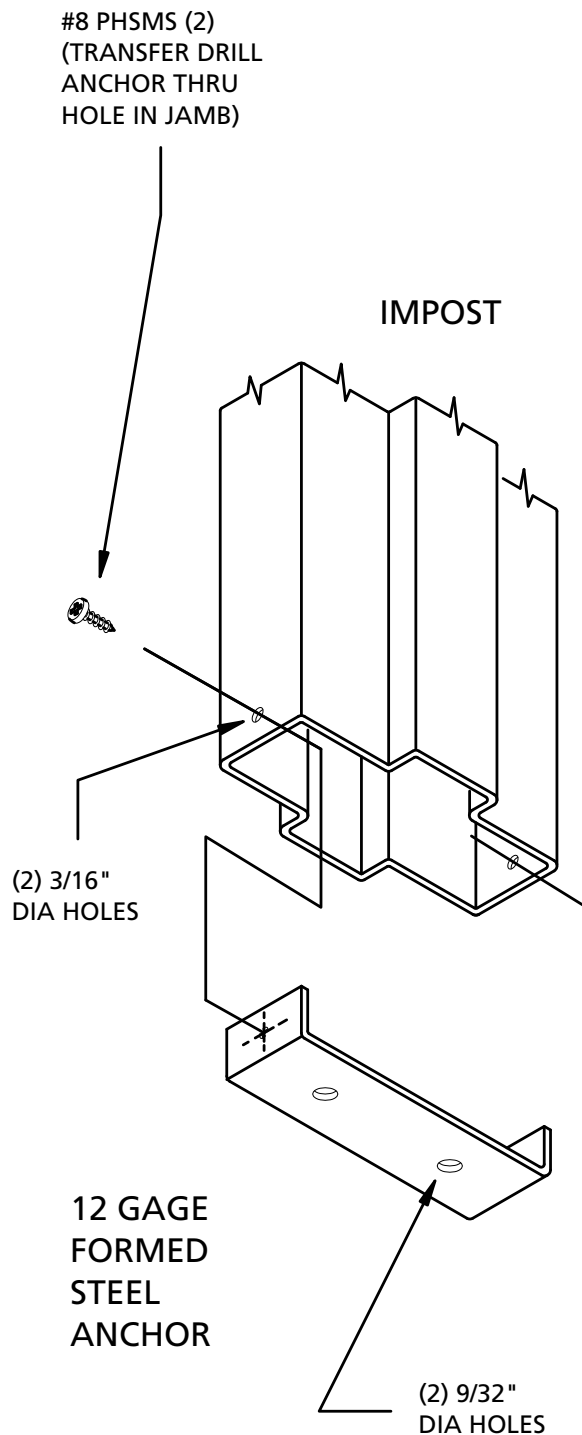
ELEVATION

⑤ FIELD SPLICE

Distributor Tech Data

SIDELITE FLOOR ANCHOR

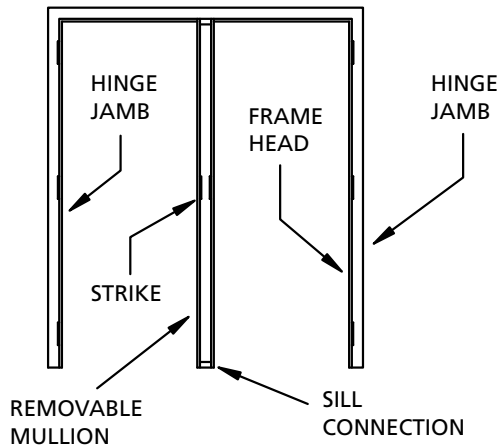
Anchor is attached to floor at two places. Closed frame section (impost/mullion) is slipped over anchor and fastened



Distributor Tech Data

REMOVABLE MULLION FOR LABELED FRAMES

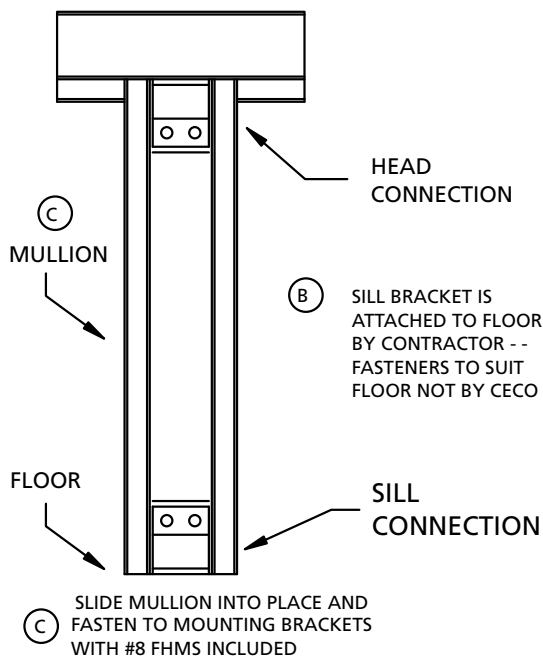
MAXIMUM DOOR SIZE: 4-0 X 8-0



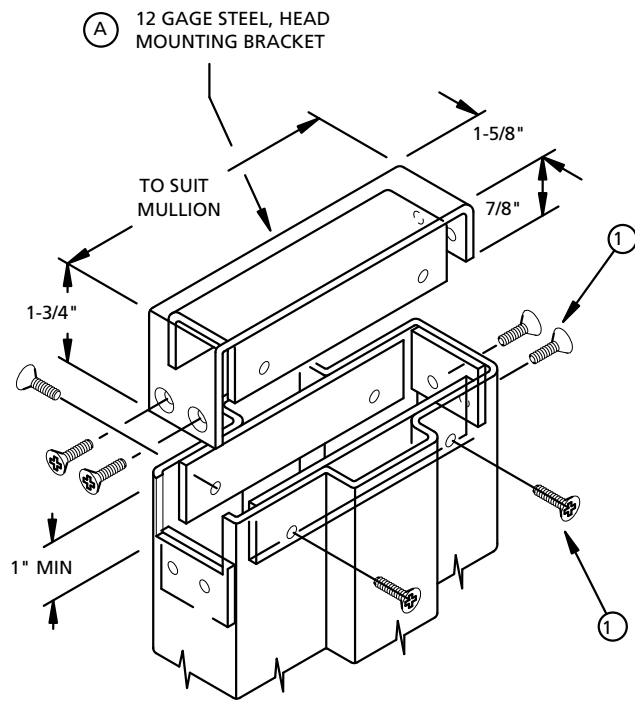
FRAME AND MULLION ASSEMBLY

- ① #8 X 1/2" FHMS, TYPICAL
- ② 12 GAGE STEEL REINFORCEMENT WELDED TO MULLION, TYPICAL

(A) MULLION MOUNTING BRACKET IS ATTACHED TO FRAME HEAD AT RABBETS BY MEANS OF (2) 3/8" PLUG WELDS OR (4) #8 M.S.



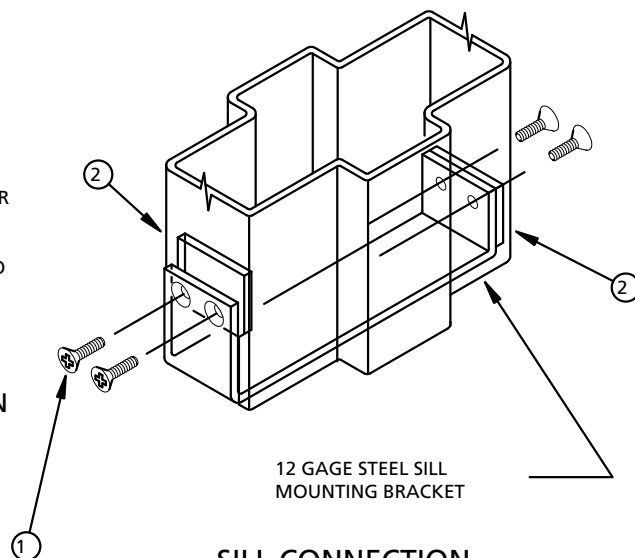
MULLION MOUNTING



HEAD CONNECTION

INSIDE

OUTSIDE



SILL CONNECTION

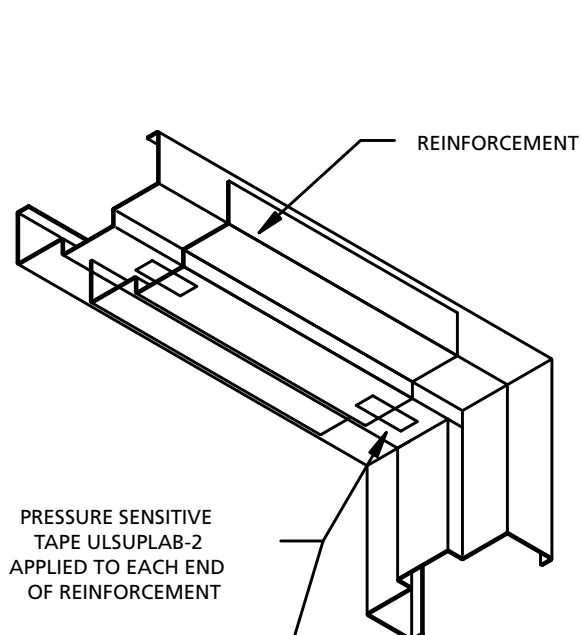
SLEEVE TYPE CLOSER REINFORCEMENT

CLOSER PROVISIONS

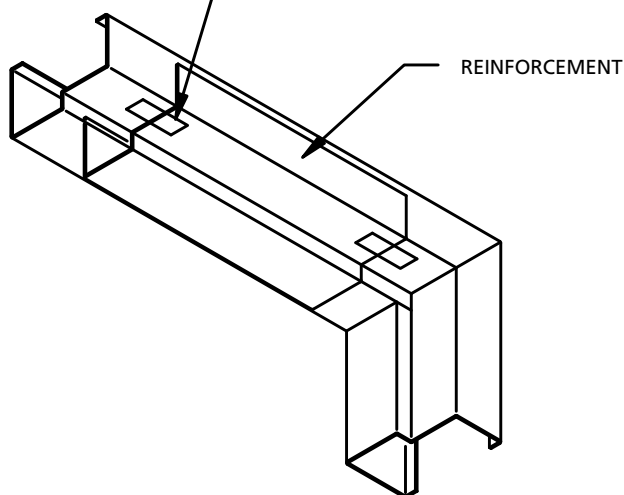
WH LABEL - REINFORCEMENT OPTIONAL

UL LABEL - PROVISIONS FOR CLOSING DEVICE IS REQUIRED IN EVERY UL FRAME

- A. REINFORCEMENT WELDED OR TAPED IN PLACE.
 - 1. DRILLING AND TAPPING IN SHOP OR FIELD.
- B. THREADED INSERTS APPLIED PER HARDWARE SCHEDULE AND TEMPLATE W/O REINFORCEMENT
 - 1. LABEL IDENTIFYING CLOSER NECESSARY.
- C. WHEN SPRING HINGES ARE USED, CLOSER REINFORCEMENT CAN BE OMITTED.
 - 1. SUPPLEMENTAL LABEL DESCRIBING CONDITION MUST BE AFFIXED DIRECTLY BELOW UL FRAME LABEL



DOUBLE RABBET



SINGLE RABBET

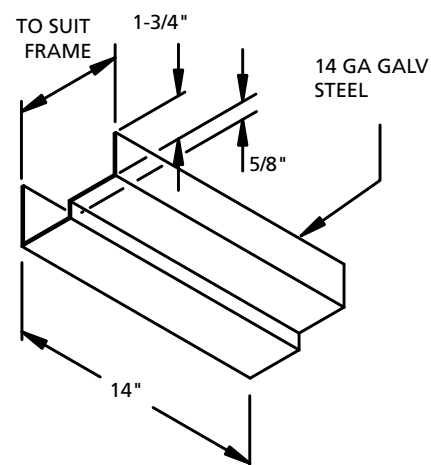
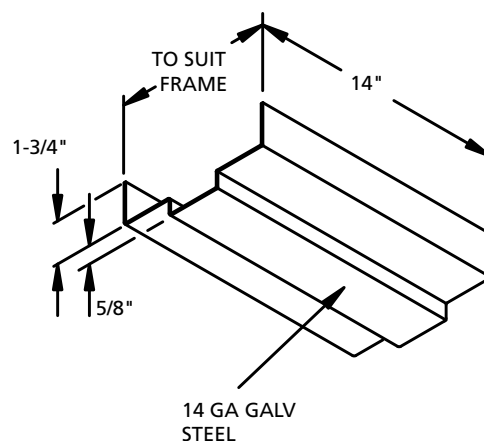
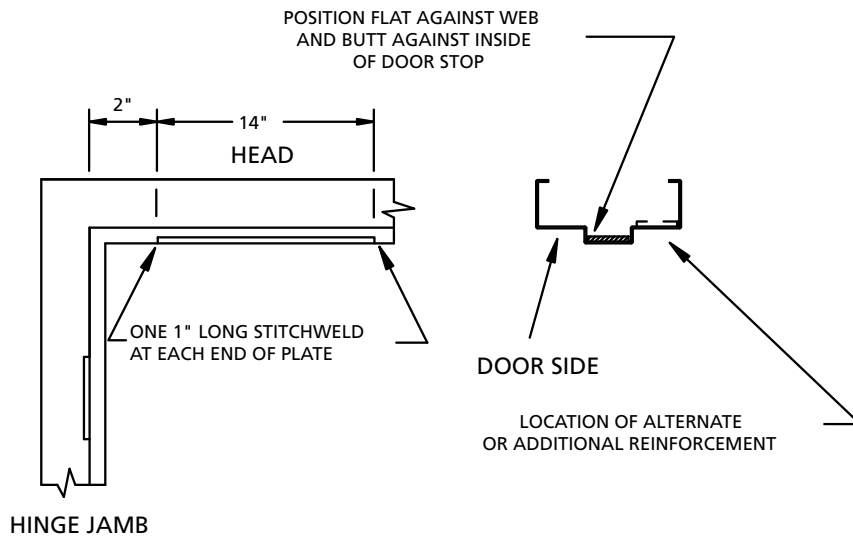
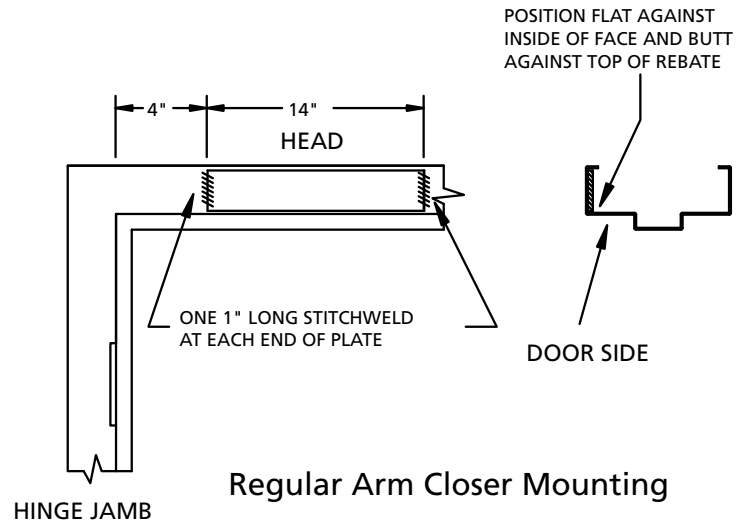


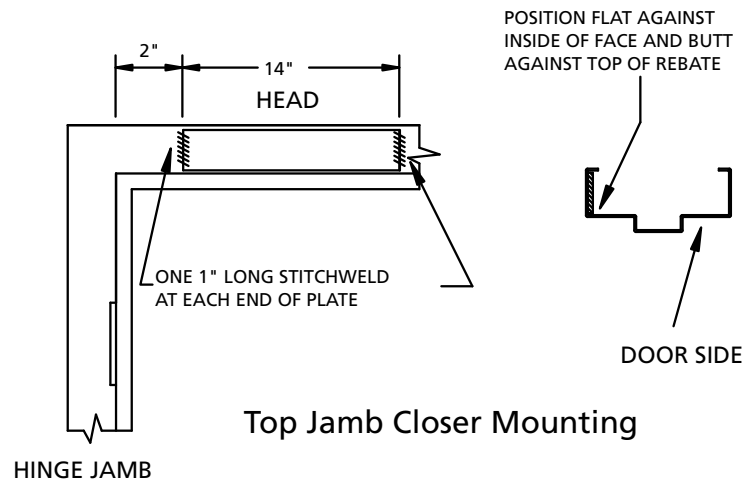
PLATE TYPE (WELDED) CLOSER REINFORCEMENT

CLOSER REINFORCEMENTS

UL or WH LABEL - REINFORCEMENT OPTIONAL

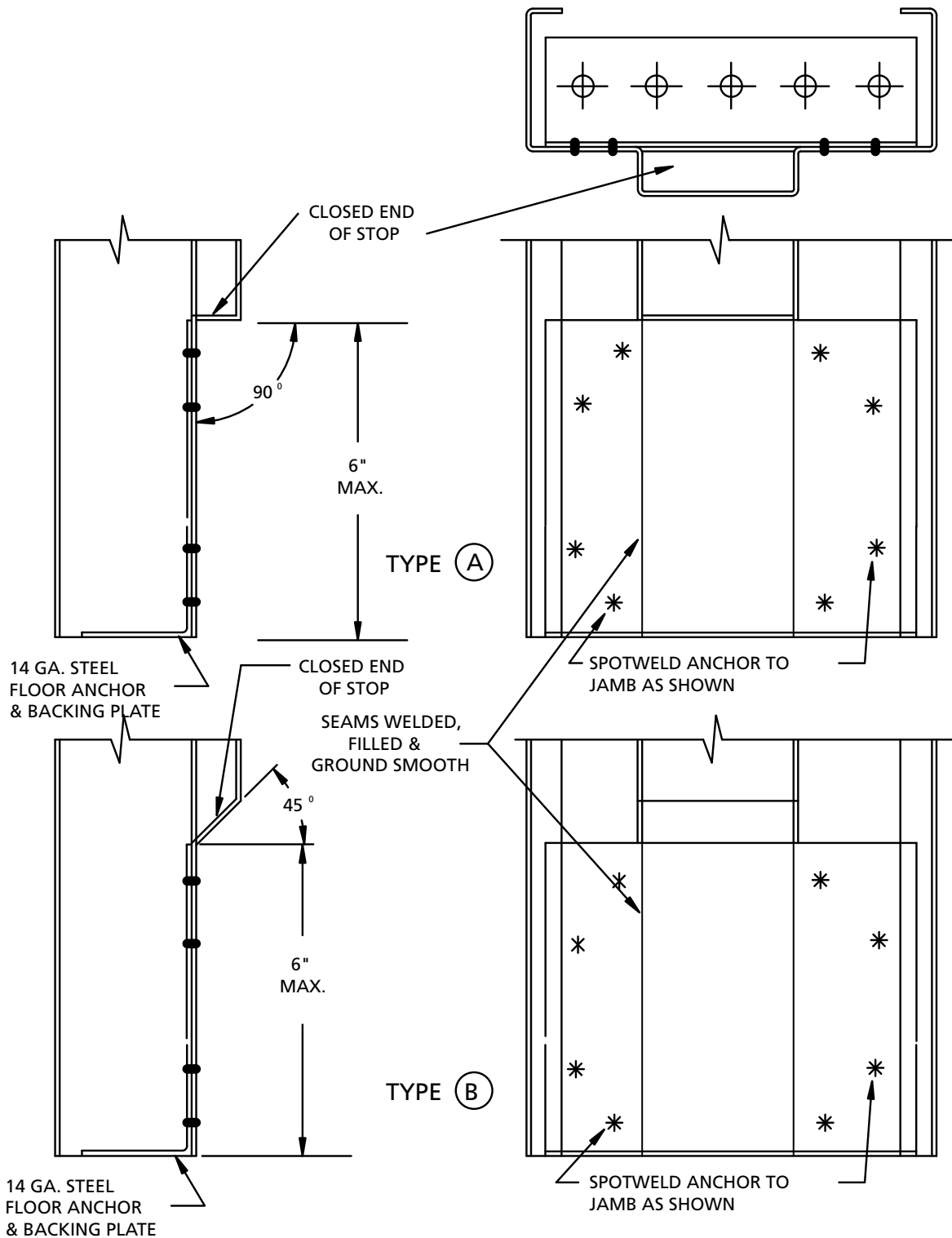


REINFORCEMENT PLATE
14 GAGE MIN. STEEL x 1-3/4" X 14"



HOSPITAL SANITARY STOP

UL OR WH LABEL

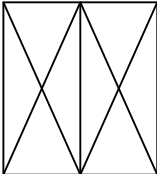
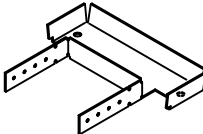
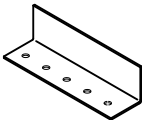

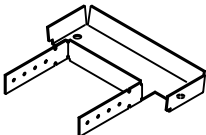


Distributor Tech Data

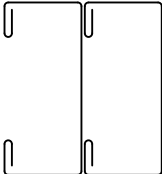
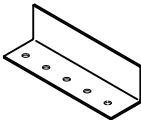
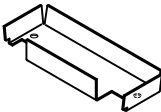

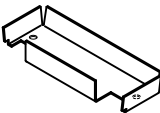
ANCHOR REQUIREMENTS FOR STUD WALLS

MAXIMUM HEIGHT: 10'-0"

WOOD STUD

WOOD STUD	JAMB ANCHORS			FLOOR ANCHORS	MUTES
	68	6	WS _ _ _ 	(2) SFA & (4) SCREWS 	(3) RM 
	70	6			
	72	6			
	710	8	OR (2) WS _ _ _ 		
	80	8			
	90	8			
	100	10			

METAL STUD

STUD	JAMB ANCHORS			FLOOR ANCHORS	MUTES
	68	6	MS _ _ _	(2) SFA & (4) SCREWS 	(3) RM
	70	6			
	72	6			
	710	8		OR	
	80	8			
	90	8			
	100	10			
					

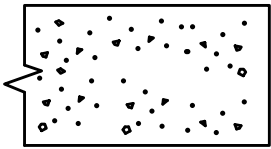
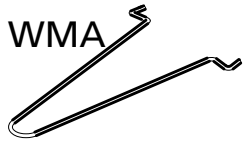
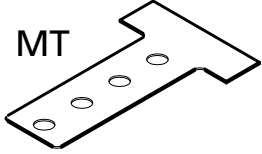
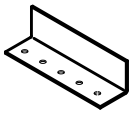

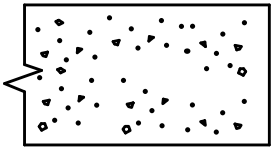
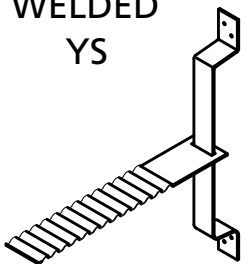
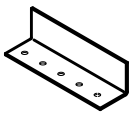

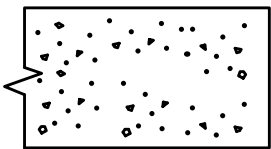

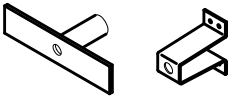

THE ABOVE GUIDELINES APPLY TO ALL CECO DOOR FRAMES
FOR STUD WALLS, UNLESS OTHERWISE NOTED

Distributor Tech Data

ANCHOR REQUIREMENTS FOR MASONRY WALLS

MAXIMUM SIZE: 8'-0" WIDE x 10'-0" HIGH

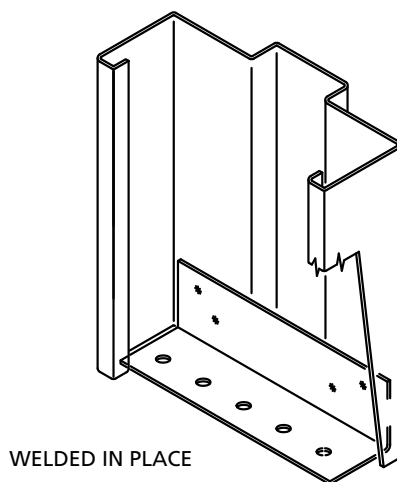
MASONRY

	JAMB ANCHORS			FLOOR ANCHORS	MUTES
NEW 	68	6	WMA  MT 	(2) SFA & (4) SCREWS 	(3) RM 
	70	6			
	72	6			
	710	8			
	80	8			
	90	8			
	100	10			
NEW 	68	6	WELDED YS 	(2) SFA & (4) SCREWS 	(3) RM 
	70	6			
	72	6			
	710	8			
	80	8			
	90	8			
	100	10			
EXISTING 	68	8	EOSF6/8  EO --- 	NONE	(3) RM 
	70	8			
	72	8			
	710	10			
	80	10			
	90	10			
	100	12			

THE ABOVE GUIDELINES APPLY TO ALL CECO DOOR FRAMES
FOR MASONRY WALLS, UNLESS OTHERWISE NOTED.

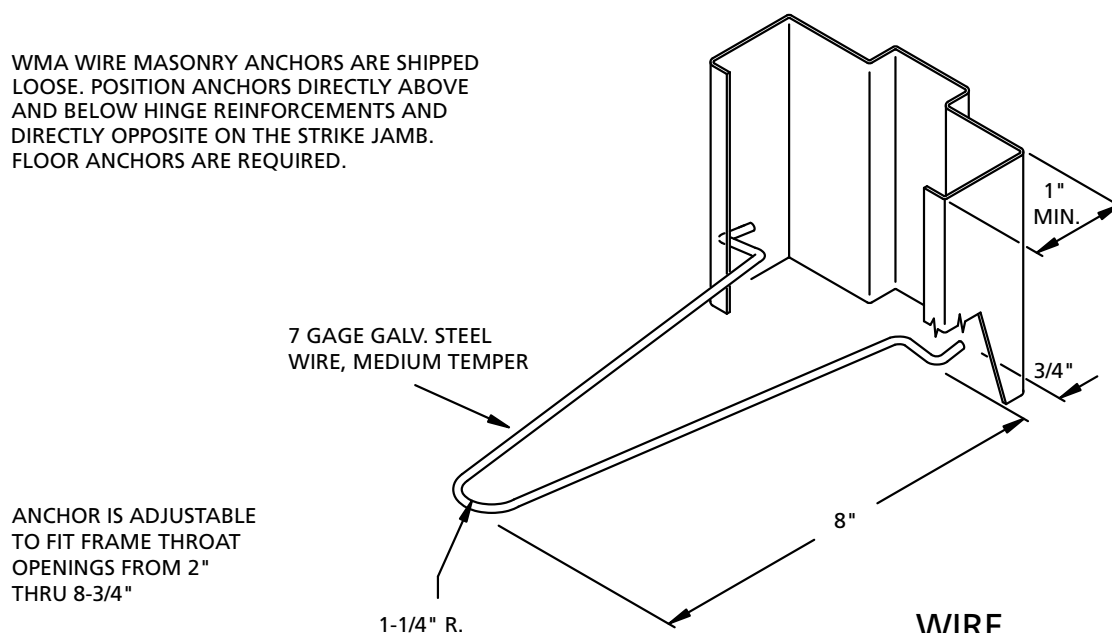
Distributor Tech Data

FLOOR ANCHOR AND WIRE MASONRY ANCHOR



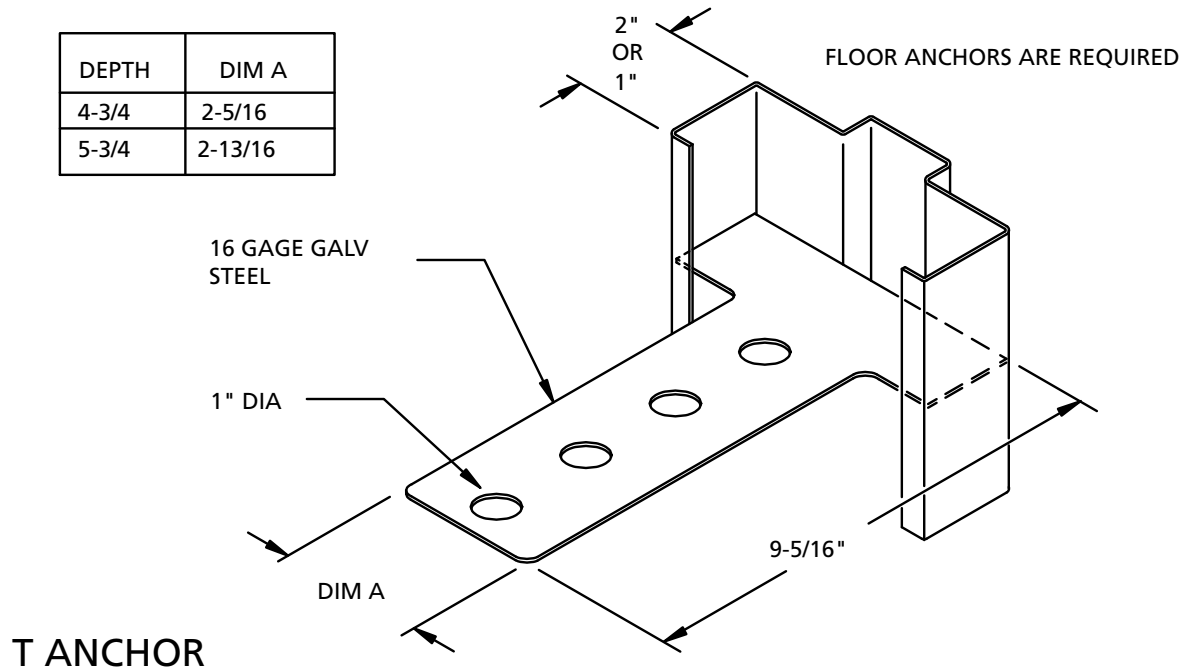
FLOOR ANCHOR

WMA WIRE MASONRY ANCHORS ARE SHIPPED LOOSE. POSITION ANCHORS DIRECTLY ABOVE AND BELOW HINGE REINFORCEMENTS AND DIRECTLY OPPOSITE ON THE STRIKE JAMB. FLOOR ANCHORS ARE REQUIRED.

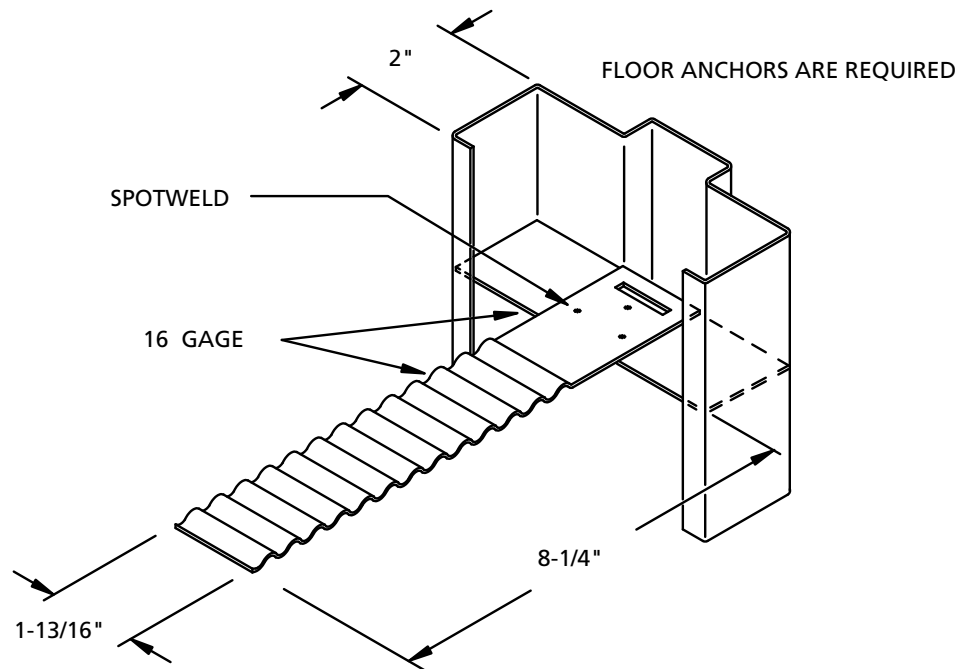


MASONRY T ANCHORS FIELD INSTALLED

DEPTH	DIM A
4-3/4"	2-5/16"
5-3/4"	2-13/16"

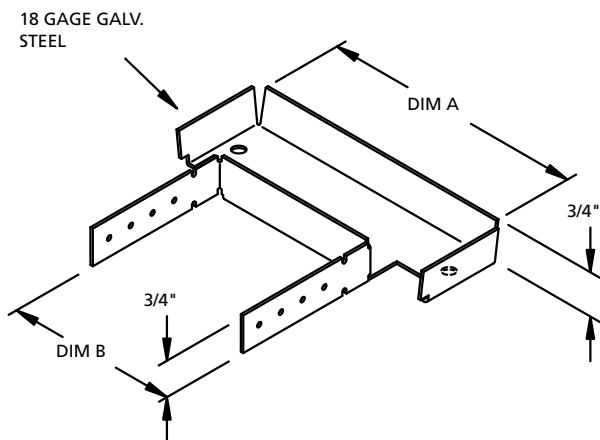


DEPTH
6-3/4"
7-3/4"
8-3/4"

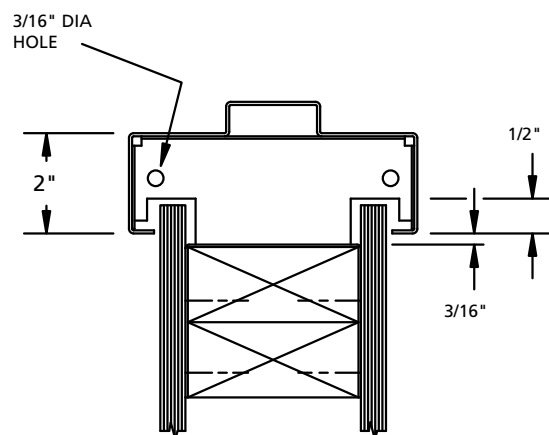


Distributor Tech Data

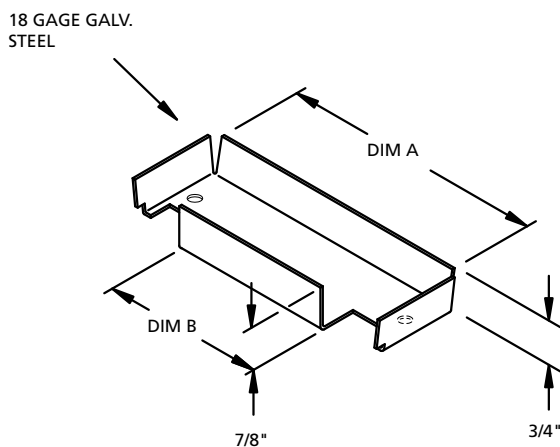
STUD ANCHORS FIELD INSTALLED



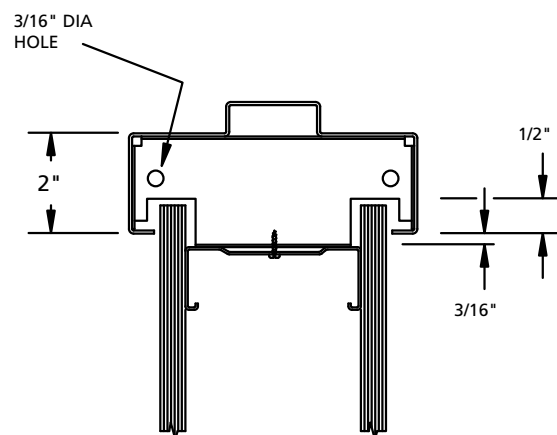
FRAME DEPTH	DIM A	DIM B
4-3/4	4-11/16	2-1/2
5-3/4	5-11/16	3-1/2
6-3/4	6-11/16	4-1/2
7-3/4	7-11/16	5-1/2
8-3/4	8-11/16	6-1/2



WOOD STUD ANCHORS



FRAME DEPTH	DIM A	DIM B
4-3/4	4-11/16	2-1/4
5-3/4	5-11/16	3-1/4
6-3/4	6-11/16	4-1/4
7-3/4	7-11/16	5-1/4
8-3/4	8-11/16	6-1/4

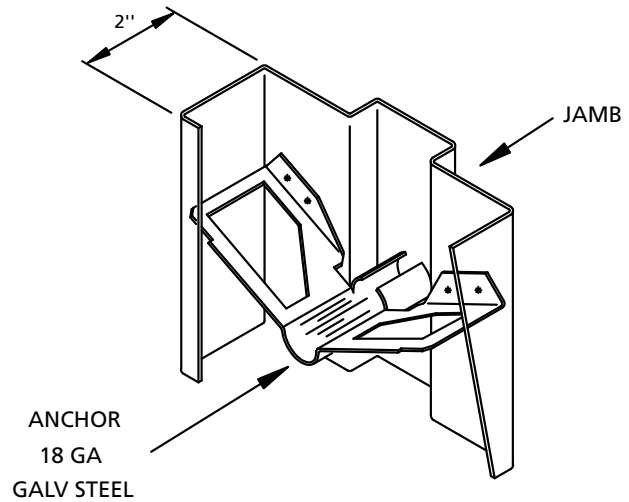


METAL STUD ANCHOR

EXISTING MASONRY OPENING ANCHOR FIELD INSTALLED

EXISTING OPENING (EO) ANCHORS ARE SHIPPED UNATTACHED FOR FIELD INSTALLATION. JAMB PUNCHING (3/8" DIA. HOLE) AND FH DYNABOLT ARE INCLUDED. FLOOR ANCHORS ARE NOT NORMALLY INCLUDED; AN EXISTING OPENING ANCHOR IS USED AT SILL INSTEAD. EO ANCHORS MAY ALSO BE SHOP INSTALLED AND WELDED IN PLACE (OPTIONAL).

FRAME DEPTH
4-1/2 THRU 6-3/4 AND 6-7/8 THRU 9-3/4"



STANDARD LOCATION OF DIMPLED HOLES IN JAMB STOPS

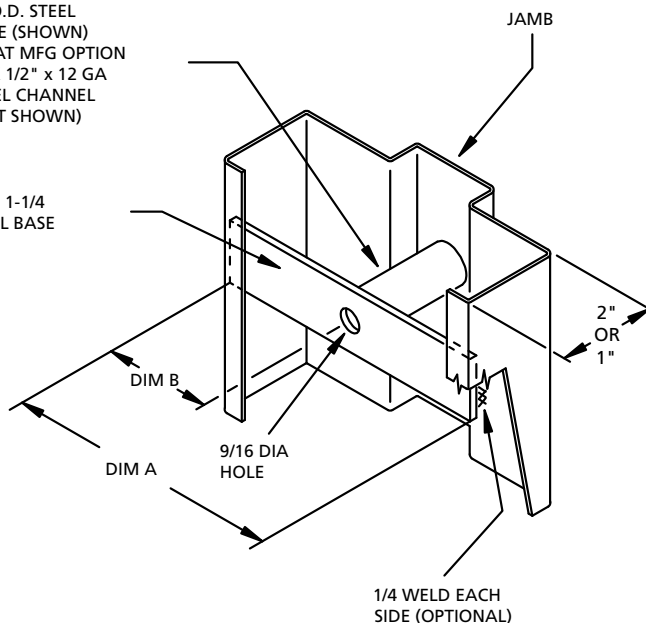
JAMB HEIGHT	DIMPLED HOLE SPACING	FASTENER QUANTITY
6-8, 7-0, 7-2	4" - 3 EQUAL SPACES - 4"	4
7-10	12" - 4 EQUAL SPACES - 4"	5
8-0, 9-0	4" - 4 EQUAL SPACES - 4"	5

FOR SPECIAL SIZES, ANCHORS ARE LOCATED AT A MAXIMUM OF 12" FROM ENDS AND 26" ON CENTER

RECOMMENDED HOLE IN MASONRY FOR DYNABOLT IS 3/8" DIA. BY 1-3/8" DEEP.
RECOMMENDED CLEARANCE NECESSARY FOR INSTALLATION AT BOTH JAMBS AND HEAD: 1/4"

1" O.D. STEEL
TUBE (SHOWN)
OR AT MFG OPTION
1" X 1/2" x 12 GA
STEEL CHANNEL
(NOT SHOWN)

1/8 x 1-1/4
STEEL BASE



PIPE AND PLATE EO ANCHOR
IS USED FOR STANDARD FRAMES
WITH 1" FACES OR FOR OTHER
SPECIAL PROFILE CONDITIONS

SUPPLIED BY SPECIAL ORDER ONLY

ANCHORS ON THIS PAGE ARE
CLASSIFIED AS MASONRY TYPE
FOR LABELING PURPOSES

Distributor Tech Data

WELDED FLOOR ANCHOR AND MASONRY JAMB ANCHOR

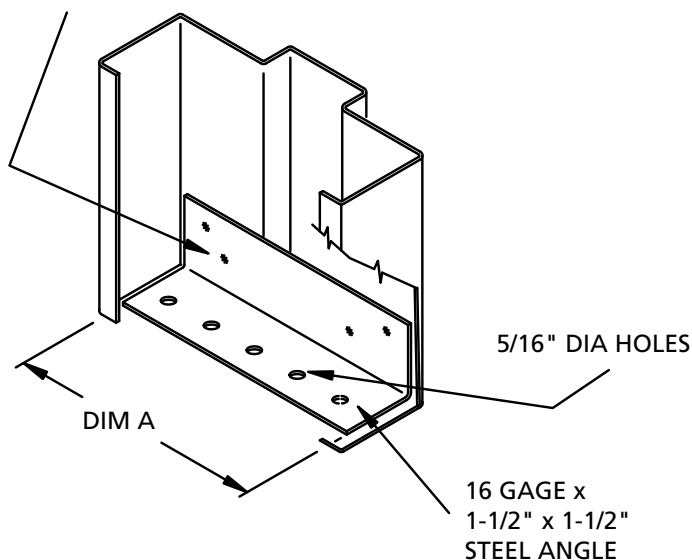
YOKE & STRAP ANCHORS FOR LABELED FRAMES ARE SHOP ATTACHED. ANCHORS ARE NORMALLY POSITIONED ON THE SAME CENTER LINE AS HINGE PREPARATIONS AND DIRECTLY OPPOSITE ON STRIKE JAMBS (BUT NOT TO EXCEED 30"). FLOOR ANCHORS ARE REQUIRED AND FURNISHED STANDARD.

16 GAGE GALV STEEL
STRAP APPROX 10"
LONG

1-25/32"

SPOTWELDED FOUR
PLACES TO FRAME

SPOTWELDED FOUR
PLACES TO FRAME



FRAME DEPTH	DIM A
3-1/4 TO 4-1/8	3"
4-1/4 TO 5-1/8	4"
5-1/4 TO 6-1/8	5"
6-1/4 TO 7-1/8	6"
7-1/4 TO 8-1/8	7"
8-1/4 TO 9-1/8	8"

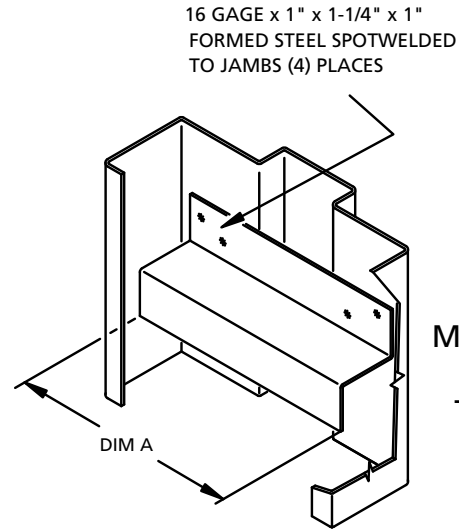
For depths NOT listed: Anchor length is provided 3/4" less than jamb depth (with end holes only).

STUD ANCHORS WELDED APPLICATION

STUD ANCHORS SHOWN ON THIS PAGE ARE SHOP ATTACHED AT NO MORE THAN 30" ON CENTERS. ANCHORS ARE POSITIONED IN CENTER OF THROAT UNLESS OTHERWISE SPECIFIED.

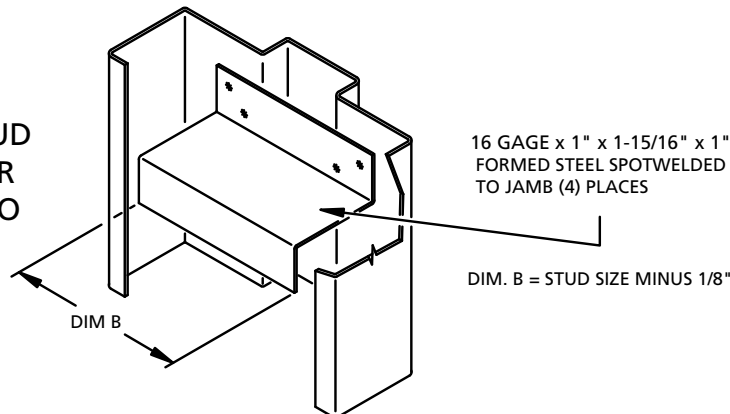
For depths NOT listed: Anchor length is provided 3/4" less than jamb depth.

FRAME DEPTH	DIM A
3-1/4 TO 4-1/8	3"
4-1/4 TO 5-1/8	4"
5-1/4 TO 6-1/8	5"
6-1/4 TO 7-1/8	6"
7-1/4 TO 8-1/8	7"
8-1/4 TO 9-1/8	8"



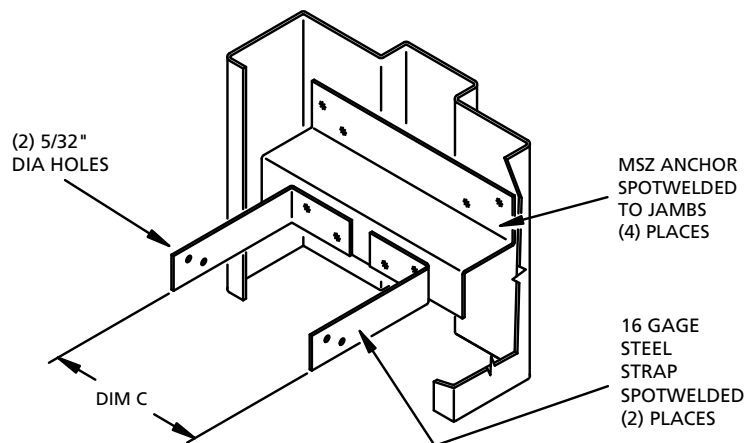
METAL STUD ANCHOR TYPE ONE

METAL STUD ANCHOR TYPE TWO



STUD SIZE	DIM C
2 x 4	3-1/2"
2 x 6	5-1/2"

WOOD STUD ANCHOR



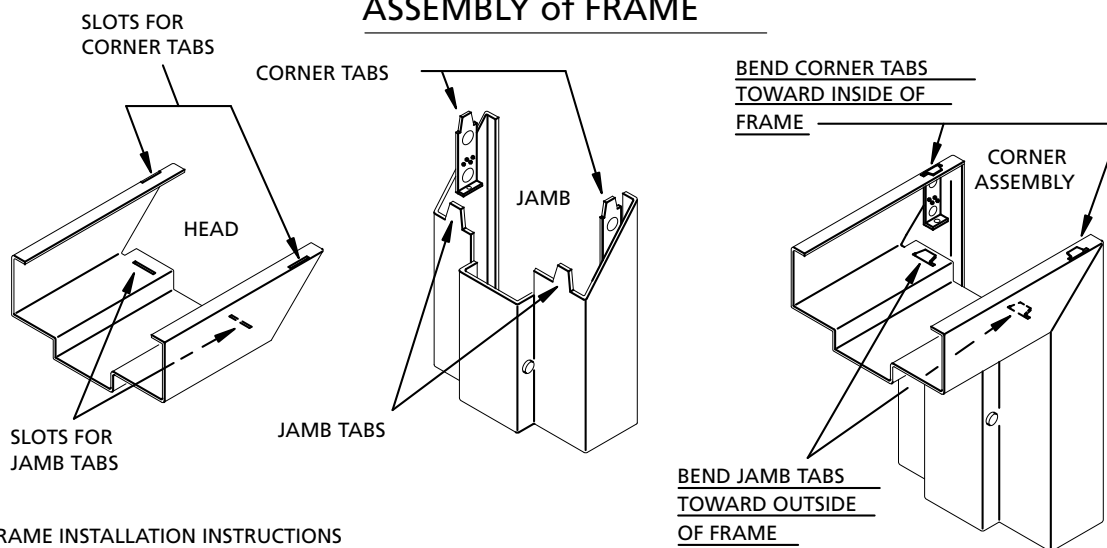
Distributor Tech Data

FRAME INSTALLATION FOR STUD WALL CONDITIONS

LABELED "FIRE RATED" SERIES "SU" & "SQ" FRAMES FOR WOOD OR METAL STUD WALL CONDITIONS

JOB SITE STORAGE: Store frames off the ground on wood runners or skids. Do not store directly on the ground. Cover frames with tarpaulin or plastic but do insure that adequate ventilation is provided to eliminate moisture condensation.

ASSEMBLY of FRAME



FRAME INSTALLATION INSTRUCTIONS

Installation instructions for "snap-in" type anchors.

Location & Spacing of Anchors:

An anchor must be used for each 30 inches of jamb height or fraction thereof. On the hinge jamb, each anchor must be located immediately above or below each hinge reinforcement. On the strike jamb, anchors must be located approximately opposite the anchors on the hinge jamb.

1) Wood Stud Anchor

Insert in frame and twist to lock in place at locations as indicated above. The anchor tail piece is bent around the wood stud and fastened in place with nails.

2) Adjustable Stud Anchor

Interlock (2) pieces of anchor together and adjust to fit correct depth of frame. Insert in frame and twist to lock in place at locations as indicated above. The anchor tail piece is bent around the stud and fastened in place with nails (can be used w/screws for metal stud).

3) Metal Stud Anchor

Insert in frame and twist to lock in place at locations as indicated above. When used with channel type studs, the stud is attached to the vertical leg of the anchor with sheet metal screws. When used with truss type studs, the stud is tied tightly to the anchor with wire through the prepunched holes in the anchor.

4) Existing Opening Anchor

Frame will be punched and dimpled at the factory for this type of anchor. Insert tube/plate or butterfly anchors in frame, twist and lock in place at dimpled hole locations. The bolt is inserted in a hole in the frame, passes through the anchor, and is attached to the wall. The tube resists the pressure exerted by tightening the bolts and thus prevents the frame from collapsing.

5) Floor Anchors

a) If the door frame is set before the wall framing, a standard fixed floor anchor can be used.

b) If the wall framing is up first, an extra wood stud anchor will be furnished to fasten to studs at floor.

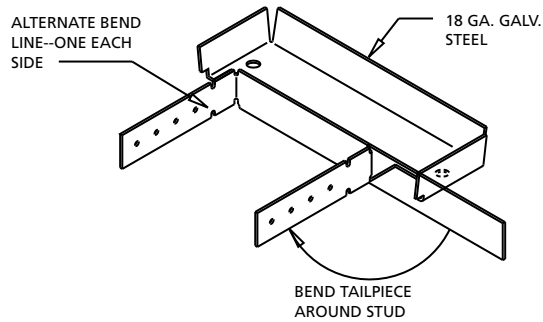
c) Fixed floor anchor. Fasten anchor to bottom of each jamb with (2) #8 x 5/8" PHSMS to holes provided in backbend of jambs at the bottom. The holes in anchor provide one inch of vertical adjustment. Fasten to floor through (2) 3/16" dia. holes.

(Fasteners for anchoring to floor are not included.)

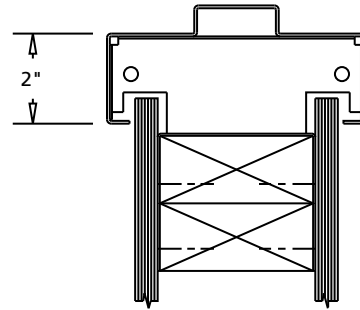
d) Keyed in floor anchor. Fasten (2) anchors to bottom of each jamb by inserting the key of the anchor into the hole provided in backbend of jambs at the bottom and twisting the anchor to horizontal. Fasten to floor through (2) 3/16" dia. holes.

(Fasteners for anchoring to floor are not included.)

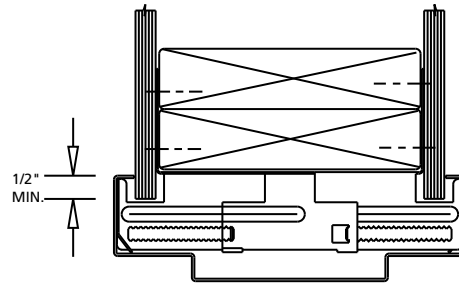
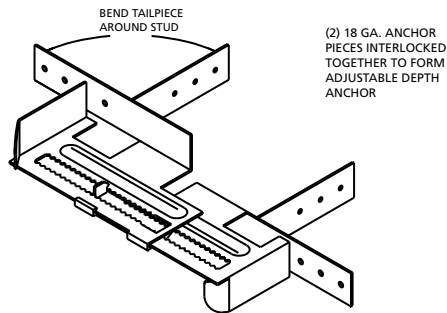
INSTALLATION INSTRUCTIONS STUD ANCHORS



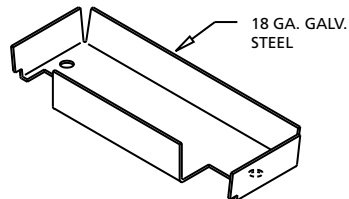
WOOD STUD ANCHOR



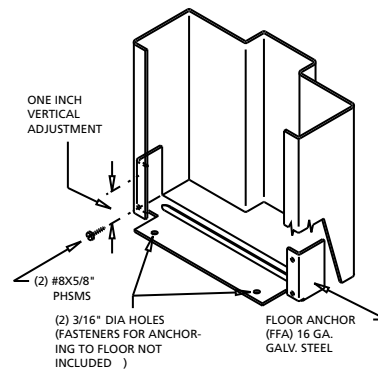
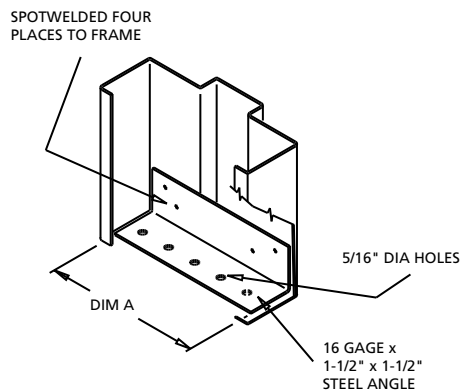
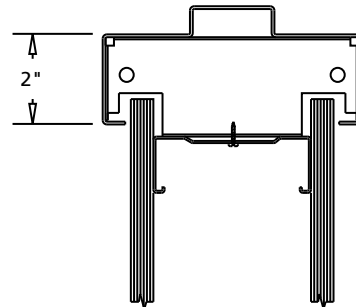
TO INSTALL STUD ANCHORS
INSERT INTO FRAME AND
TWIST TO LOCK IN PLACE



ADJUSTABLE STUD ANCHOR



METAL STUD ANCHOR



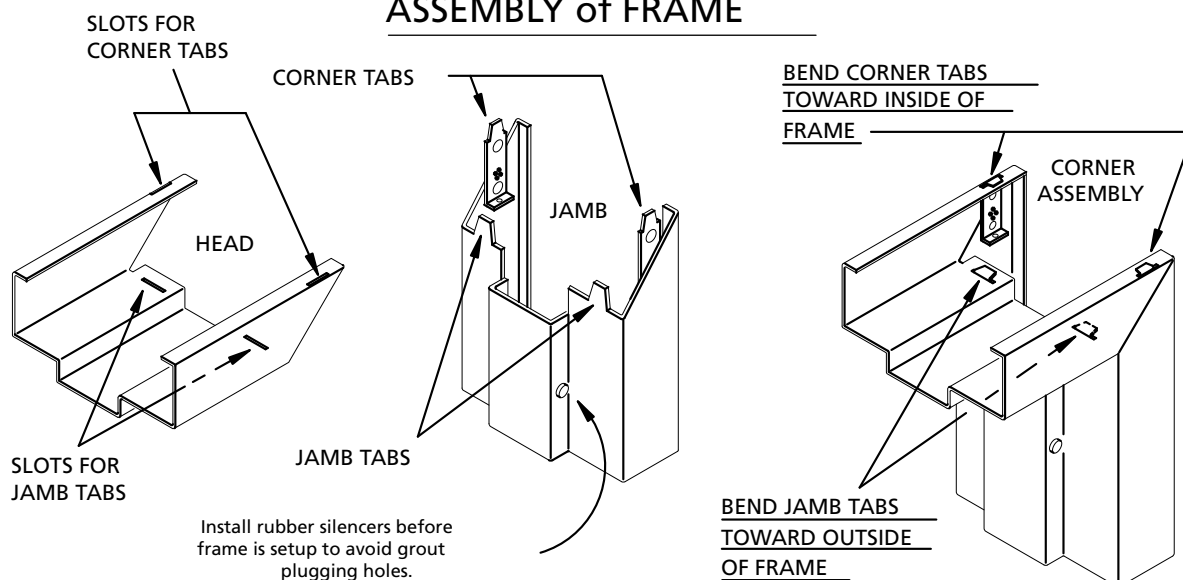
FLOOR ANCHORS

FRAME INSTALLATION FOR MASONRY WALL CONDITIONS

LABELED "FIRE RATED" SERIES "SU" & "SQ" FRAMES FOR NEW AND EXISTING MASONRY CONDITIONS

JOBSITE STORAGE: Store frames off the ground on wood runners or skids. Do not store directly on the ground. Cover frames with tarpaulin or plastic but do insure that adequate ventilation is provided to eliminate moisture condensation. When frames are to be fully grouted and when plaster or mortar contain "anti-freeze" agents, the inside of the frames should be coated with a bituminous, water-resistant paint by the installation contractor. (Grouting of frames is optional and not a labeling requirement.)

ASSEMBLY of FRAME



FRAME INSTALLATION INSTRUCTIONS

Installation instructions for "snap-in" type anchors.

Location & Spacing of Anchors:

An anchor must be used for each 30 inches of jamb height or fraction thereof. On the hinge jamb, each anchor must be located immediately above or below each hinge reinforcement. On the strike jamb, anchors must be located approximately opposite the anchors on the hinge jamb.

1) Masonry "T" Anchor

Insert in frame in masonry joints at locations as indicated above. Set in place as masonry wall is built up. Jamb may be grouted to secure anchorage if specifications require.

2) Adjustable Masonry "T" Anchor

Bend each end of anchor at marked locations to fit correct depth of frame. Insert in frame in masonry joints at locations as indicated above. Set in place as masonry wall is built up. Jamb may be grouted to secure anchorage if specifications require.

3) Wire Masonry Anchor

Install anchor by squeezing together and inserting between backbends of frame. Position the anchors in mortar joints at locations similar to masonry "T" anchors. Jamb may be grouted to secure anchorage if specifications require.

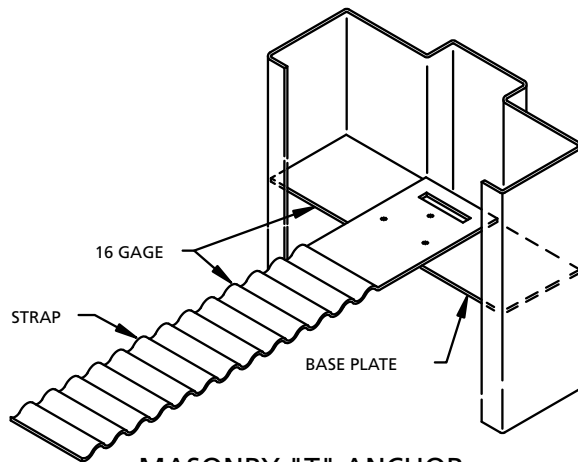
4) Existing Opening Anchor

Frame will be punched and dimpled at the factory for this type of anchor. Insert tube/plate or butterfly anchors in frame, twist and lock in place at dimpled hole locations. The bolt is inserted in a hole in the frame, passes through the anchor, and is attached to the wall. The tube resists the pressure exerted by tightening the bolts and thus prevents the frame from collapsing.

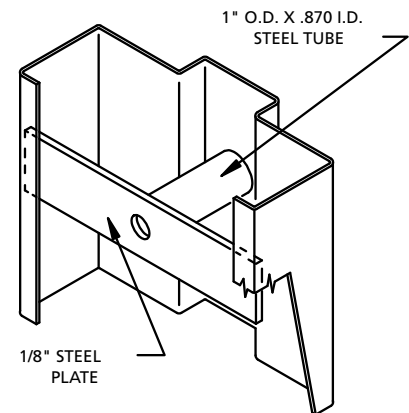
5) Floor Anchor

Fixed floor anchor. Fasten anchor to bottom of each jamb with (2) #8 x 5/8" PHSMS to holes provided in backbend of jamb at the bottom. The holes in anchor provide one inch of vertical adjustment. Fasten to floor through (2) 3/16" dia. holes. (Fasteners for anchoring to floor are not included.)

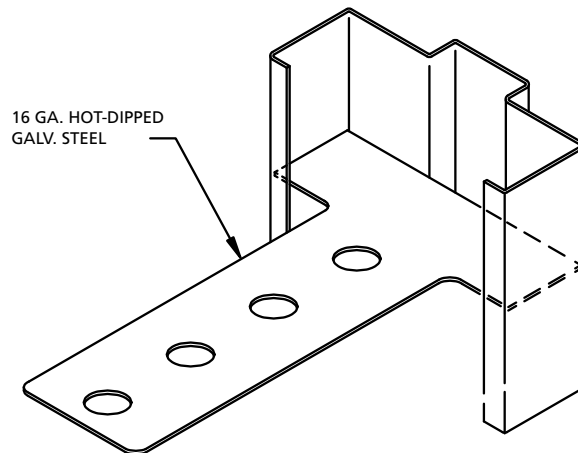
INSTALLATION INSTRUCTIONS MASONRY ANCHORS



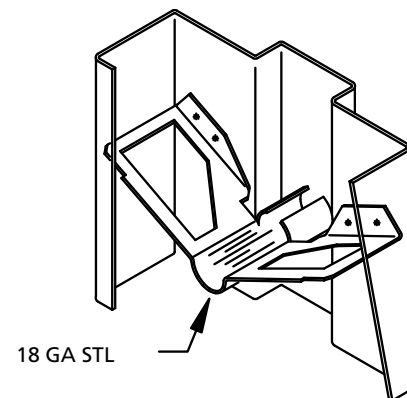
MASONRY "T" ANCHOR



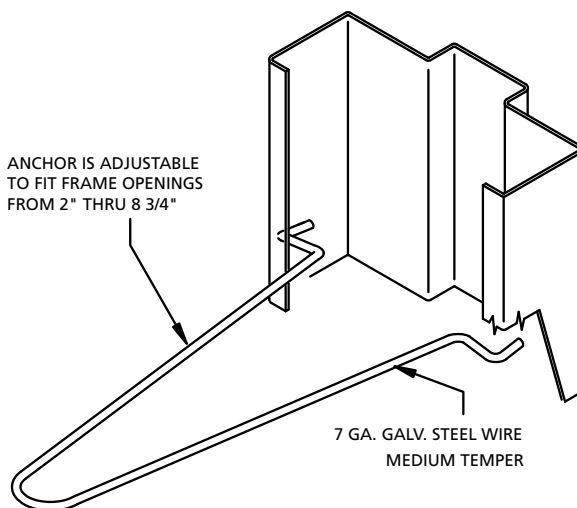
EXISTING OPENING ANCHOR



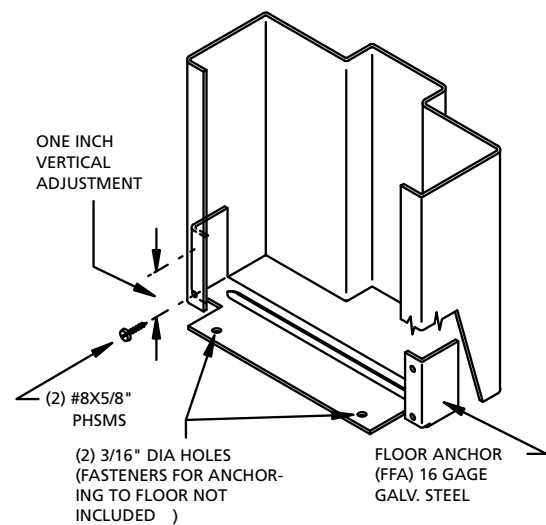
MASONRY "T" ANCHOR



EXISTING OPENING ANCHOR



WIRE MASONRY ANCHOR



FIXED FLOOR ANCHOR



Distributor Tech Data

INDEX - LABELED BEFORE DRYWALL FRAMES

GENERAL DATA	7-801
CONSTRUCTION GUIDELINES	7-802
INSTALLATION INSTRUCTIONS	7-803,7-804
(Before Wall Framing)	
INSTALLATION INSTRUCTIONS	7-805,7-806
(After Wall Framing)	



Distributor Tech Data

LABELED

"BEFORE DRYWALL" FRAMES

GENERAL INFORMATION

LABELING AGENCY: UNDERWRITERS LABORATORY (UL)
WARNOCK HERSEY (WH)
FACTORY MUTUAL (FM)

HOURLY RATING: 3 HR, 1-1/2 HR, 3/4 HR, 20 MIN.

DOOR THICKNESS: 1-3/4" OR 1-3/8"

HINGE AND STRIKE LOCATIONS: See section 11

HINGE AND STRIKE PREPARATIONS: See section 7-900 and section 11

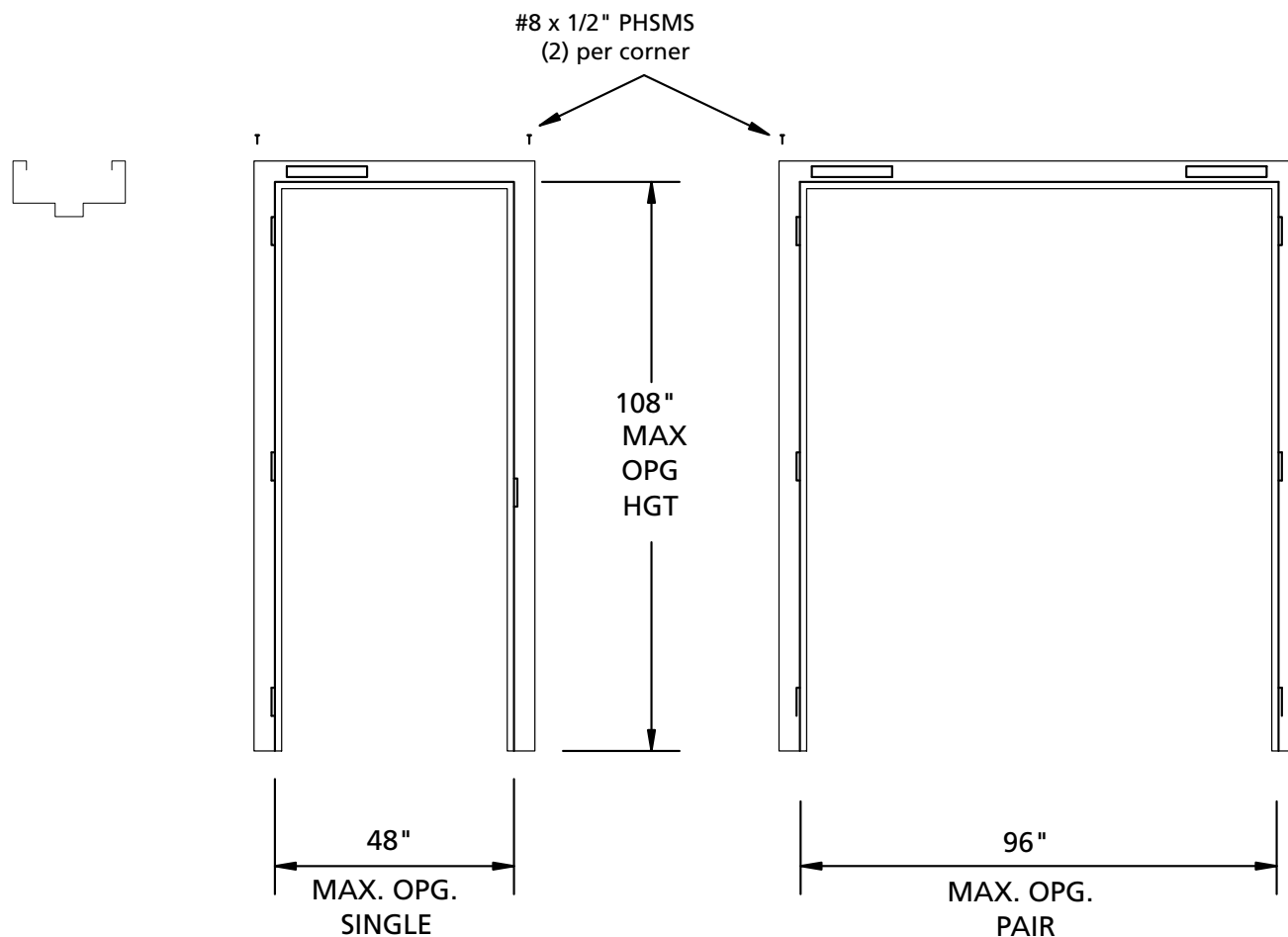
WALL AND FLOOR ANCHORS: WOOD STUD OR METAL STUD (loose or attached)
(30" o.c. max.)
FLOOR ANCHORS OR JAMB ANCHORS REQUIRED AT SILL
(loose or attached)

SIZES: WELDED - See page 7-702
KNOCKED-DOWN - See page 7-802

* Unlike fire doors, the hourly rating is not usually shown on frame labels.

Distributor Tech Data

LABELED "BEFORE DRYWALL" FRAMES CONSTRUCTION GUIDELINES



PROFILES: Series BU and BQ (See pages 7-905 and 7-904)

FRAME MATERIAL: 16, 14 or 12 gage CR or Galv.

CLOSER REINFORCEMENT: Sleeve or plate (optional)
See section 11

WELDED CORNERS: Series SU and SQ guidelines apply when corners are welded. See pages 7-701 and 7-702

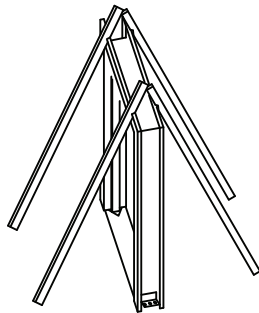
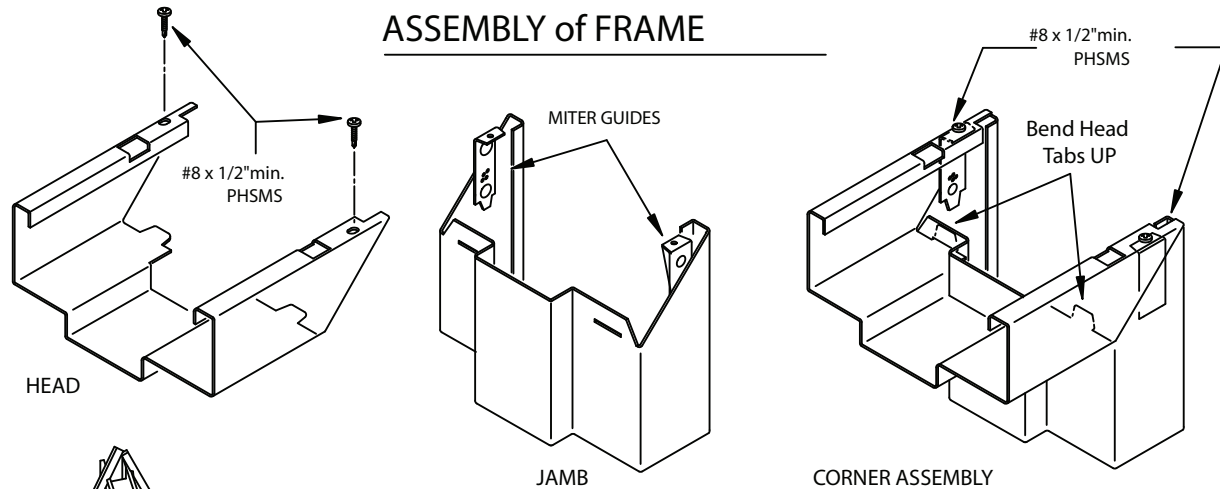
LABELED "BEFORE DRYWALL" FRAME INSTALLATION INSTRUCTIONS

FRAME INSTALLATION

LABELED "FIRE RATED" SERIES BU or BQ (BEFORE THE DRYWALL) FRAME (KD FRAMES ASSEMBLED AND ERECTED BEFORE WALL FRAMING)

JOBSITE STORAGE: Store frames off the ground on wood runners or skids. Do not store directly on the ground. Cover frames with tarpaulin or plastic but do insure that adequate ventilation is provided to eliminate moisture condensation.

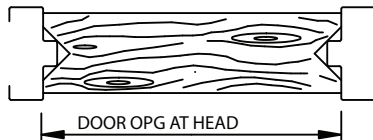
ASSEMBLY of FRAME



BRACING THE FRAME

SQUARING THE FRAME

The installer should use wood spreaders (as described below), a carpenter's level (the longer the better), and a carpenter's square (the bigger the better). Set the frame in the desired location. Level head and plumb jambs. Shim under jambs if necessary.



SPREADER

Typical wood spreader must be square and made from lumber at least 1" thick. Length of spreader equals door opening width at the head. Cut clearance notches for frame stops as shown. Spreader must be nearly as wide as frame depth for proper installation.

INSTALLATION INSTRUCTIONS

STEP 1

Assemble KD components (head and jambs) by slipping ends of head over miter guides attached to the top of jambs. Draw corner joint closed. Fasten head to jamb (through miter guides) with #8 x 1/2" min. PHSMS (4) places total. BEND HEAD TABS UP AS SHOWN.

STEP 2

If not already welded in place, install floor and jamb anchors as shown on Ill. 7-804. An anchor must be used for each 30 inches of jamb height or fraction thereof. On the hinge jamb, each anchor must be located immediately above or below each hinge reinforcement. On the strike jamb, anchors must be located approximately opposite the anchors on the hinge jamb.

STEP 3

Erect and brace frame as shown. Plumb and square jambs, level head, and shim jambs as necessary. Set temporary wood spreaders at bottom and at mid-point to maintain a constant door opening width from head to sill.

STEP 4

Attach jambs to floor through floor anchors.

STEP 5

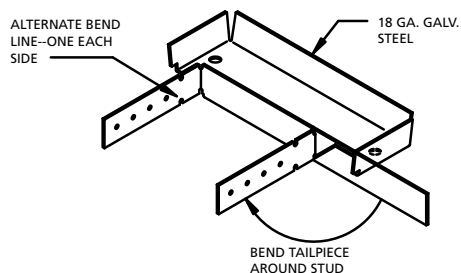
Construct wall rough-opening by assembling wall framing members around door frame.

STEP 6

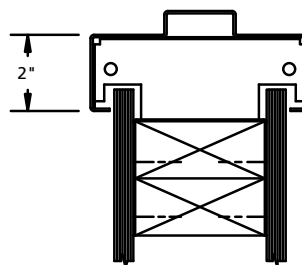
Bend anchor tabs around wood stud and nail tabs to stud --or-- fasten metal stud to anchor flange with sheet metal screws from backside. Check plumb and square of frame after attaching jamb anchors to studs. Install mutes in holes provided in strike jambs.

Distributor Tech Data

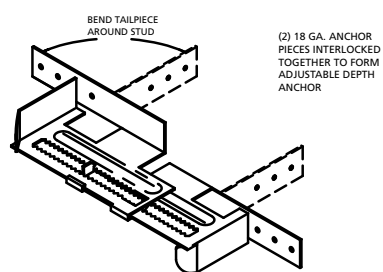
BEFORE WALL FRAMING JAMB AND FLOOR ANCHORS (refer to order writing manual for specific codes)



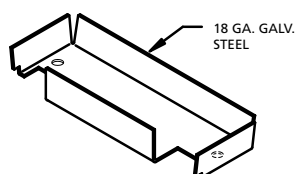
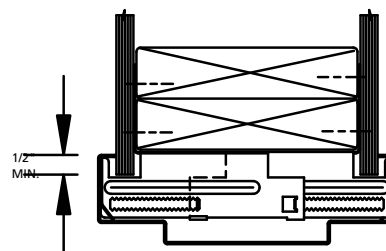
WOOD STUD ANCHOR



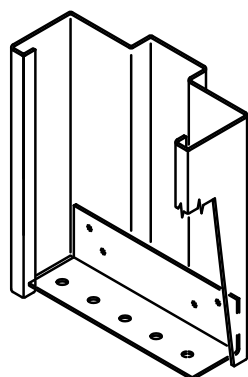
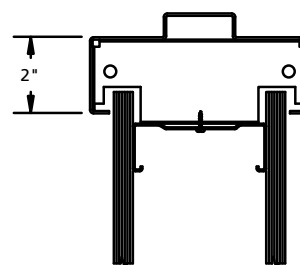
TO INSTALL STUD ANCHORS
INSERT INTO FRAME AND
TWIST TO LOCK IN PLACE



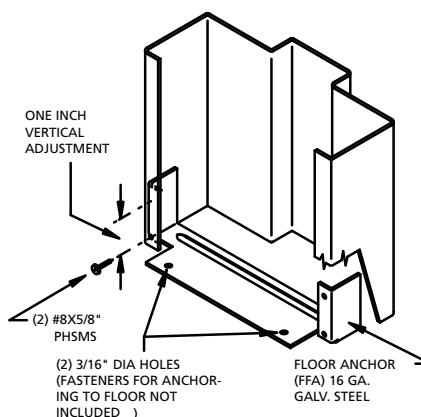
ADJUSTABLE STUD ANCHOR



METAL STUD ANCHOR



WELDED-IN FLOOR ANCHOR



FIXED FLOOR ANCHOR

Distributor Tech Data

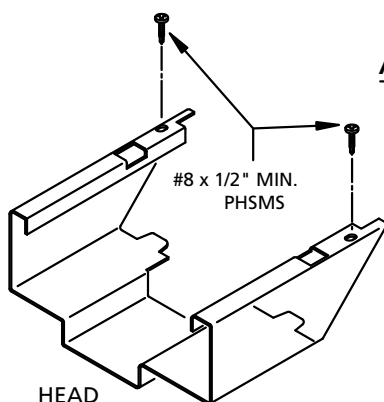
LABELED "BEFORE DRYWALL" FRAME INSTALLATION INSTRUCTIONS

FRAME INSTALLATION

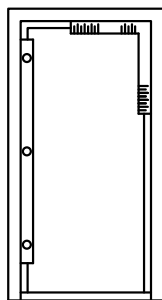
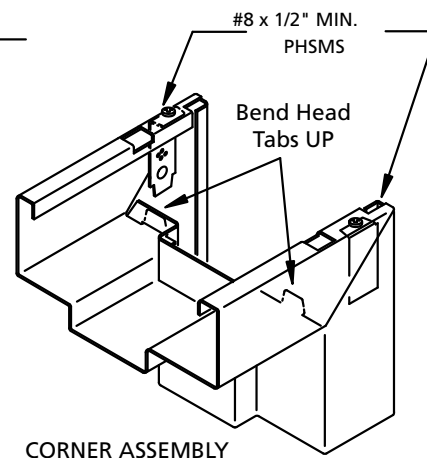
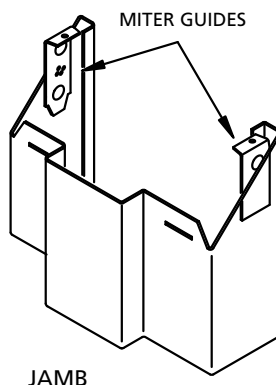
LABELED "FIRE RATED" SERIES BU or BQ (BEFORE THE DRYWALL) FRAME (KD FRAMES ASSEMBLED AND ERECTED AFTER WALL FRAMING)

ROUGH OPENING: ADD 3/16" TO OVERALL FRAME HEIGHT & 3/8" TO OVERALL FRAME WIDTH

JOB SITE STORAGE: Store frames off the ground on wood runners or skids. Do not store directly on the ground. Cover frames with tarpaulin or plastic but do insure that adequate ventilation is provided to eliminate moisture condensation.



ASSEMBLY OF FRAME



SQUARING THE FRAME

The installer should use wood spreaders (as described below), a carpenter's level (the longer the better), and a carpenter's square (the bigger the better). Set the frame in the desired location. Level head and plumb jambs. Shim under jambs if necessary.



SPREADER

Typical wood spreader must be square and made from lumber at least 1" thick. Length of spreader equals door opening width at the head. Cut clearance notches for frame stops as shown. Spreader must be nearly as wide as frame depth for proper installation.

INSTALLATION INSTRUCTIONS

STEP 1

Construct and size rough opening in wall framework as indicated above.

STEP 2

If not already welded in place, install jamb anchors as shown on Ill. 7-806. An anchor must be used for each 30 inches of jamb height or fraction thereof. An additional jamb anchor must be used at the sill.

STEP 3

Assemble KD components (head and jambs) by slipping ends of head over miter guides attached to the top of jambs. Draw corner joint closed. Fasten head to jamb (through miter guides) with #8 x 1/2" PHSMS (4) places total. BEND HEAD TABS UP AS SHOWN.

STEP 4

Erect and center door frame in rough opening. Plumb and square jambs and level head. Shim jambs as necessary. Set temporary wood spreaders at sill and at mid-point to maintain constant door opening from head to sill.

STEP 5

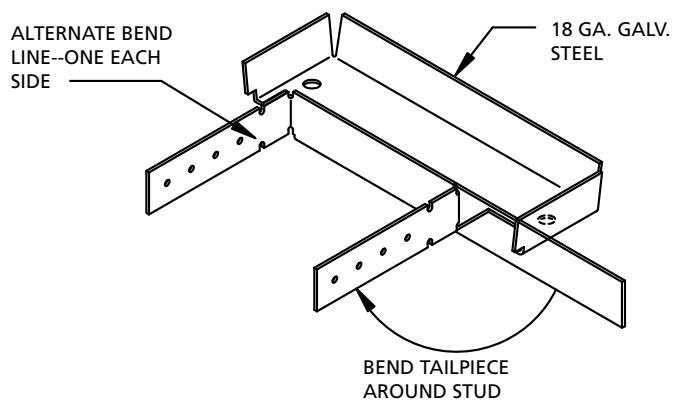
Bend anchor tabs around wood stud and nail tabs to stud --or-- fasten metal stud to anchor flange with sheet metal screws from backside. Check plumb and square of frame after attaching jamb anchors to studs. Install mutes in holes provided in strike jambs.

Distributor Tech Data

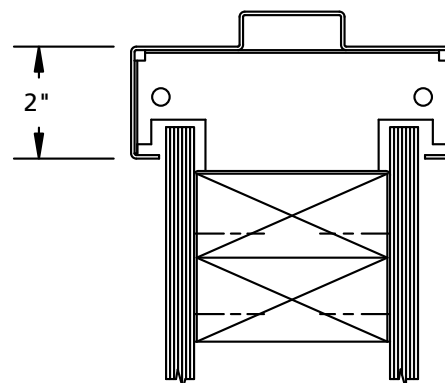
AFTER WALL FRAMING

JAMB ANCHORS

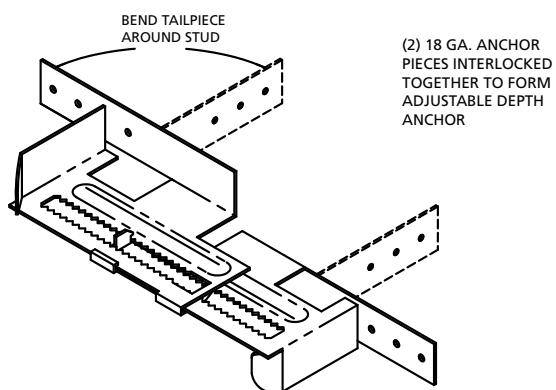
(refer to order writing manual for specific codes)



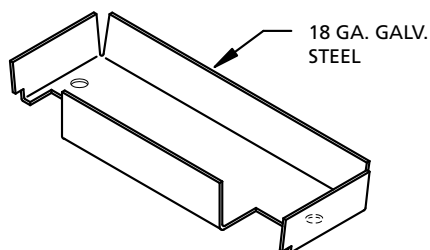
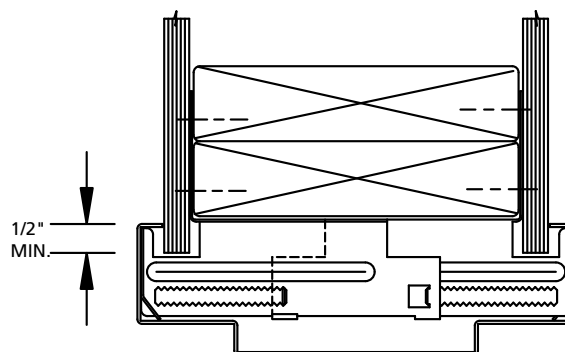
WOOD STUD ANCHOR



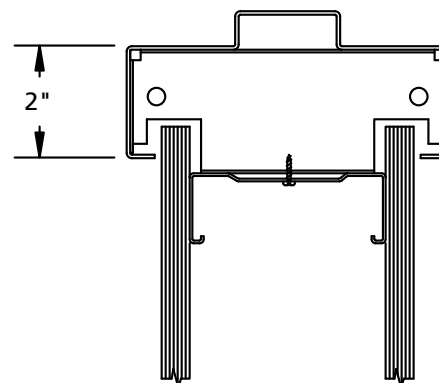
TO INSTALL STUD ANCHORS
INSERT INTO FRAME AND
TWIST TO LOCK IN PLACE



ADJUSTABLE STUD ANCHOR



METAL STUD ANCHOR





Distributor Tech Data

LABELED SLIP-ON DRYWALL FRAMES INDEX

GENERAL INFORMATION

Labeled Slip-On Drywall Frames Guidelines	7-902
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PROFILE GUIDELINES

Series DQ Slip-On Drywall Frames	7-904
Series DU Slip-On Drywall Frames.	7-905

CONSTRUCTION DETAILS

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Jamb Anchor Data	7-907
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SLIP-ON DRYWALL FRAMES LABEL RATING GUIDELINES

GENERAL

LABELING AGENCY: Underwriters Laboratory (UL)
Warnock Hersey (WH)
Factory Mutual (FM)

HOURLY RATING: 1-1/2 Hr., 3/4 Hr., 20 Min.

DOOR THICKNESS: 1-3/4" or 1-3/8"

HINGE AND STRIKE PREPARATIONS AND LOCATIONS: See Section 11

WALL AND FLOOR ANCHORS: See Pages 7-907 through 7-911

CLOSER REINFORCEMENT: See Pages 7-912 and 7-913

SPECIAL HARDWARE PREPARATIONS: Electric Strike
Fire Exit Hardware
Supplemental Deadlock Strike

HOSPITAL STOPS: See Section 13

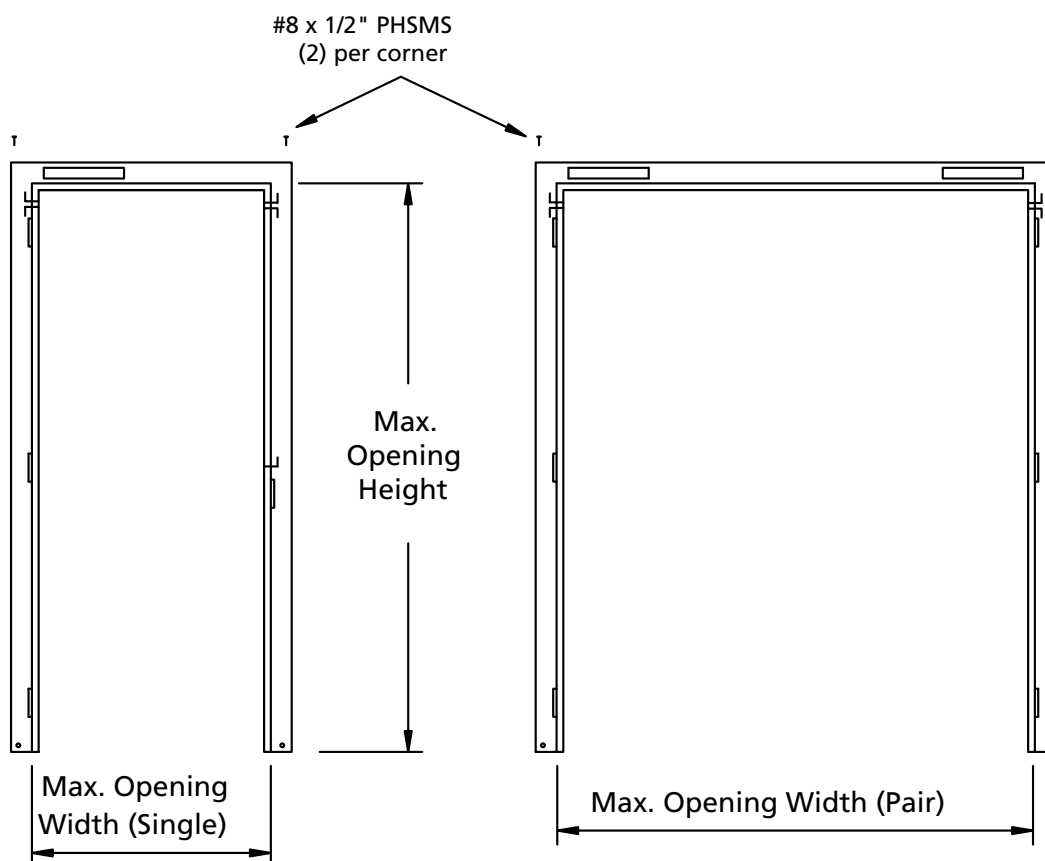
CORNERS: Knocked-down only. See Page 7-906

Hardware Requirements 7-106, 7-106A

* Unlike fire doors, the hourly rating is not usually shown on frame labels.

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LABELED SLIP-ON DRYWALL FRAMES, STEEL GAGE AND DOOR OPENING SIZES



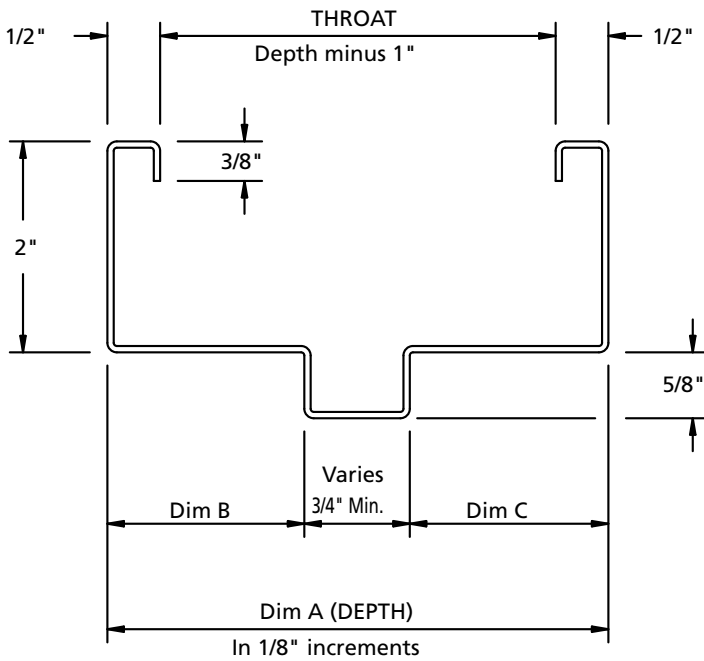
SINGLE or DOUBLE RABBET	AGENCY	GAGES	THROAT OPENING (INCHES)		FRAME RATINGS					
					20 MINUTE		3/4 HOUR		1-1/2 HOUR	
					MAXIMUM 1-3/4 "-THICK DOOR OPENING SIZES					
			MIN.	MAX.	SINGLE	PAIR	SINGLE	PAIR	SINGLE	PAIR
	WH & FM	18	3-3/4	13	4070	8070	4070	8070	4070	8070
		16 14	3-3/4	13	4090	8090	4090	8090	4090	8090
	UL	18	2	13	4070	8070	4070	8070	4070	8070
16 14		2	13	4090	8090	4090	8090	4090	8090	

NOTES:

1. See fire door section for maximum Ceco fire door sizes.
2. Frames for 1-3/8" fire doors are also available: contact your Ceco representative for details.
3. Door opening sizes are in feet and inches: e.g., 4070 = 4'-0" x 7'-0".

LABELED DRYWALL FRAME

PROFILES FOR 1-3/4" AND 1-3/8" DOORS



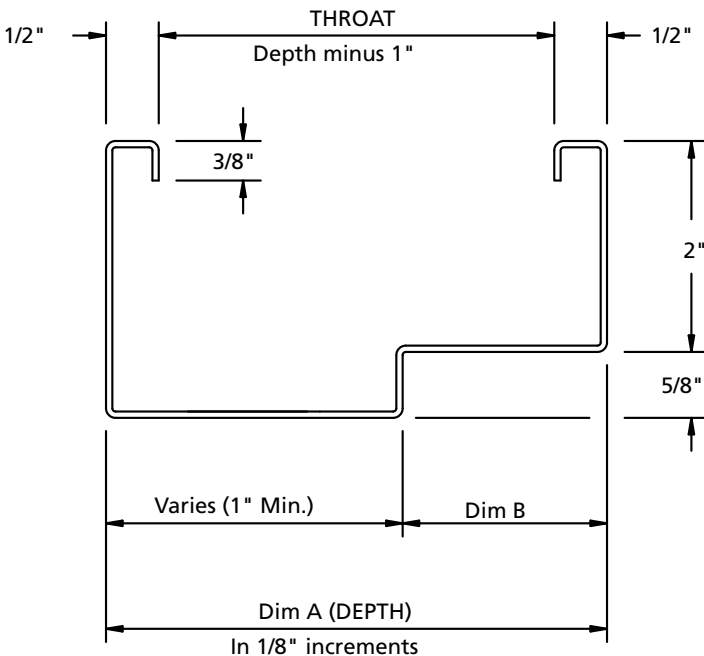
DOUBLE RABBET PROFILE GUIDELINES

Sizes and Dimensions

SERIES	Dim A	Dim B	Dim C
DQ	14" Max, 4-5/8" Min	1-15/16"	1-15/16"
* DQ8	14" Max, 3-7/8" Min	1-9/16"	1-9/16"

* For 1-3/8" door

1. THROAT DIMENSION ALWAYS EQUALS WALL THICKNESS
2. Series DQ frames are for 1-3/4" thick doors and Series DR frames are for either 1-3/4" or 1-3/8" thick doors.
3. Drywall frames normally have two 1-15/16" rabbets except when depth would result in a stop dimension being less than the 3/4" dimension limitation (manufacturing limit).
4. Label procedure limits depth to 3", however, sum of the profiles dimensions sometimes exceeds 3", e.g., (2) x 1-15/16" + 1" = 4-7/8".
5. 4" Heads are available.



SINGLE RABBET PROFILE GUIDELINES

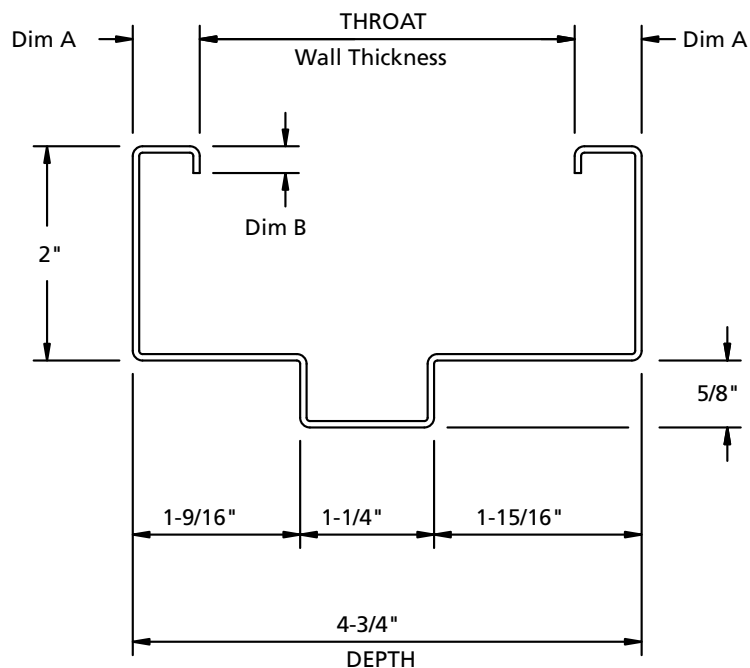
Sizes and Dimensions

SERIES	Dim A	Dim B
DR	14" Max, 3" Min	1-15/16"
* DR8	14" Max, 3" Min	1-9/16"

* For 1-3/8" door

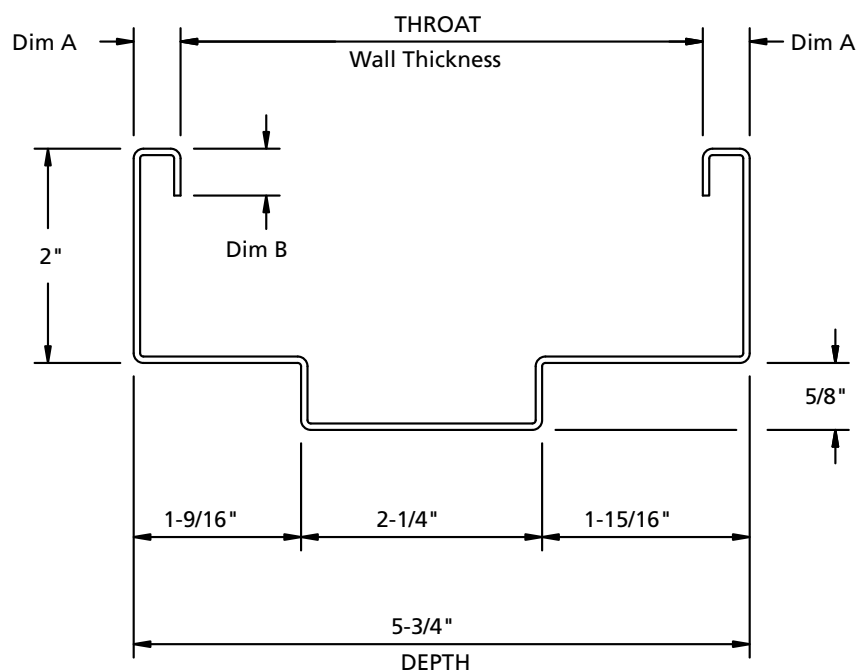
Distributor Tech Data

LABELED SERIES DU PROFILES FOR 1-3/4" DOORS



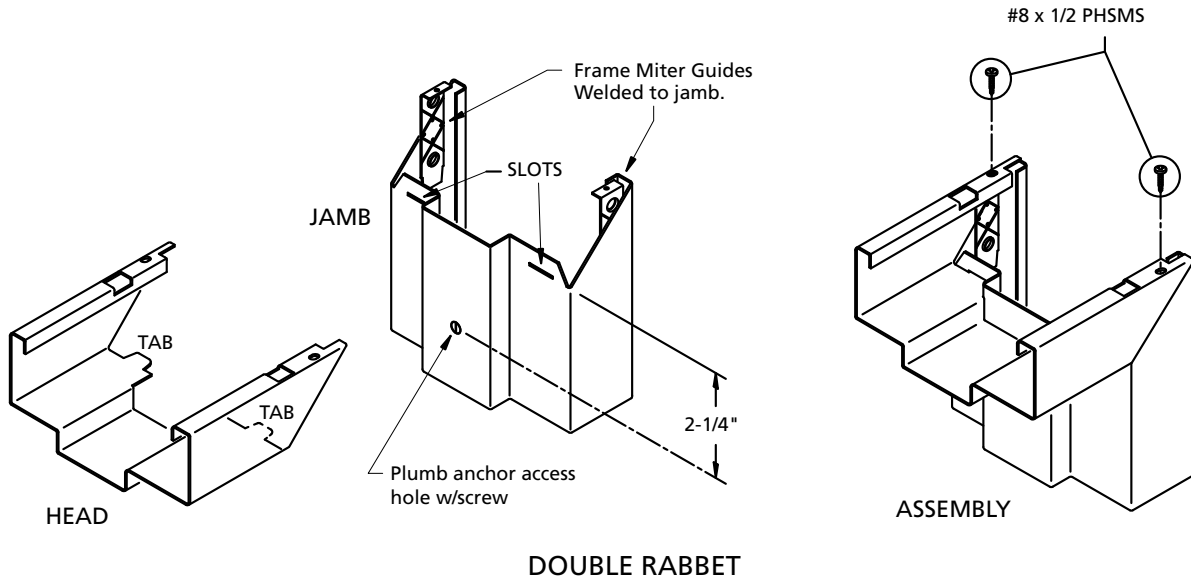
PROFILE GUIDELINES			
Sizes and Dimensions			
Profile Size	THROAT	Dim A	Dim B
434/312	3-1/2"	5/8"	1/4"

Dim A = Size of backbend.
Dim B = Size of backbend returns.



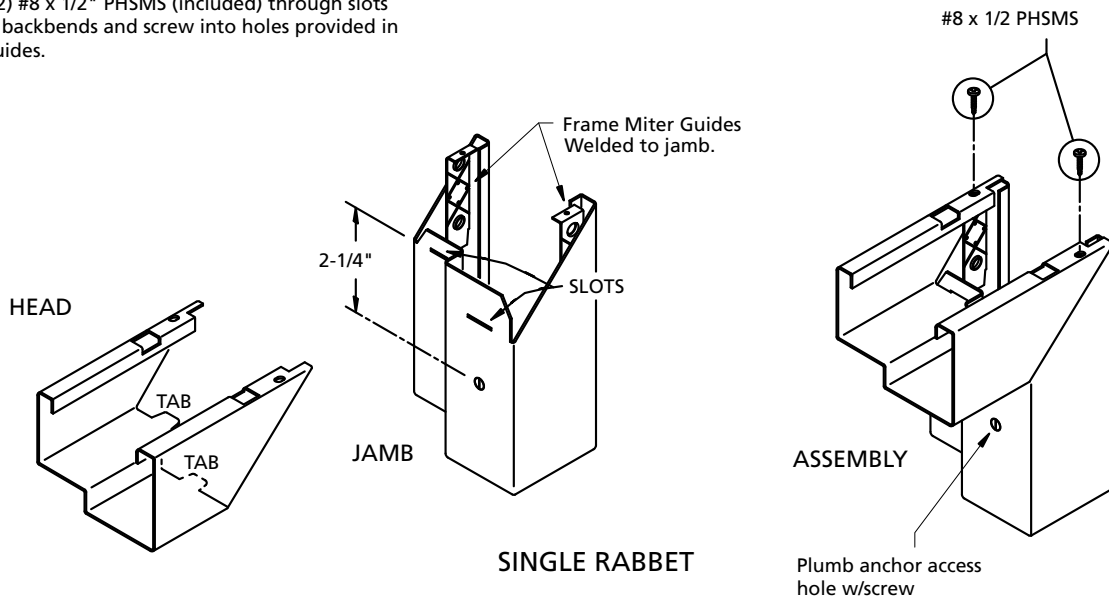
PROFILE GUIDELINES			
Sizes and Dimensions			
Profile Size	THROAT	Dim A	Dim B
534/458	4-5/8"	9/16"	5/16"
534/478	4-7/8"	7/16"	7/16"

LABELED DRYWALL FRAME KD CORNER AND ASSEMBLY



ASSEMBLY PROCEDURE:

1. Align head-tabs with jamb slots. Slide components together while engaging tabs in slots. Tabs and slots are mated when miter seam is closed tight.
2. Insert (2) #8 x 1/2" PHSMS (included) through slots in head backbends and screw into holes provided in jamb guides.



Slip-on Drywall Frames are designed for installation **AFTER** the partition framework is erected, **AFTER** the wallboard is applied, and **AFTER** the surface is finished. To realize this design intent, these frames are always furnished knocked-down.

Distributor Tech Data

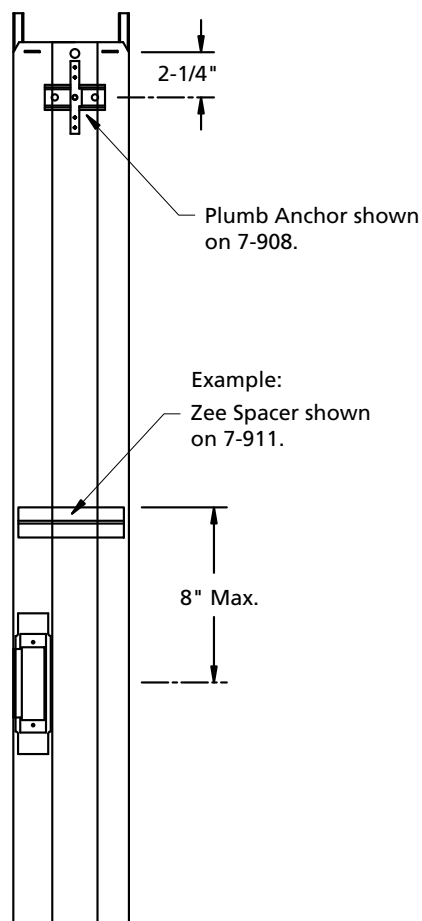
LABELED SLIP-ON DRYWALL FRAME JAMB ANCHOR LOCATIONS

Top Plumb Anchor is required for all slip-on drywall frames with UL, WH, or FM label.

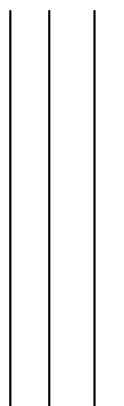
Intermediate Plumb Anchor, Z Spacer, or Dust Box in strike prep must be used on all strike jambs.

The standard Sill Anchor for UL or WH labeled slip-on drywall frames is a dimpled (CTSK) hole for a bugle-head, type "S" drywall screw (the screw is provided by contractor at a length to securely engage stud). Welded Strap-type Sill Anchor is optional for FM, UL or WH labeled slip-on drywall frames.

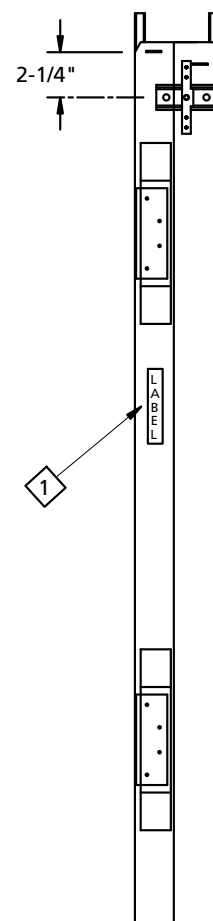
DOUBLE RABBET



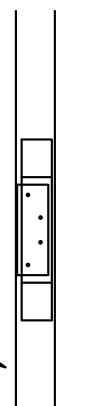
STRIKE JAMB



SINGLE RABBET



HINGE JAMB



For Sill Anchor Details see pages 7-909 and 7-910.



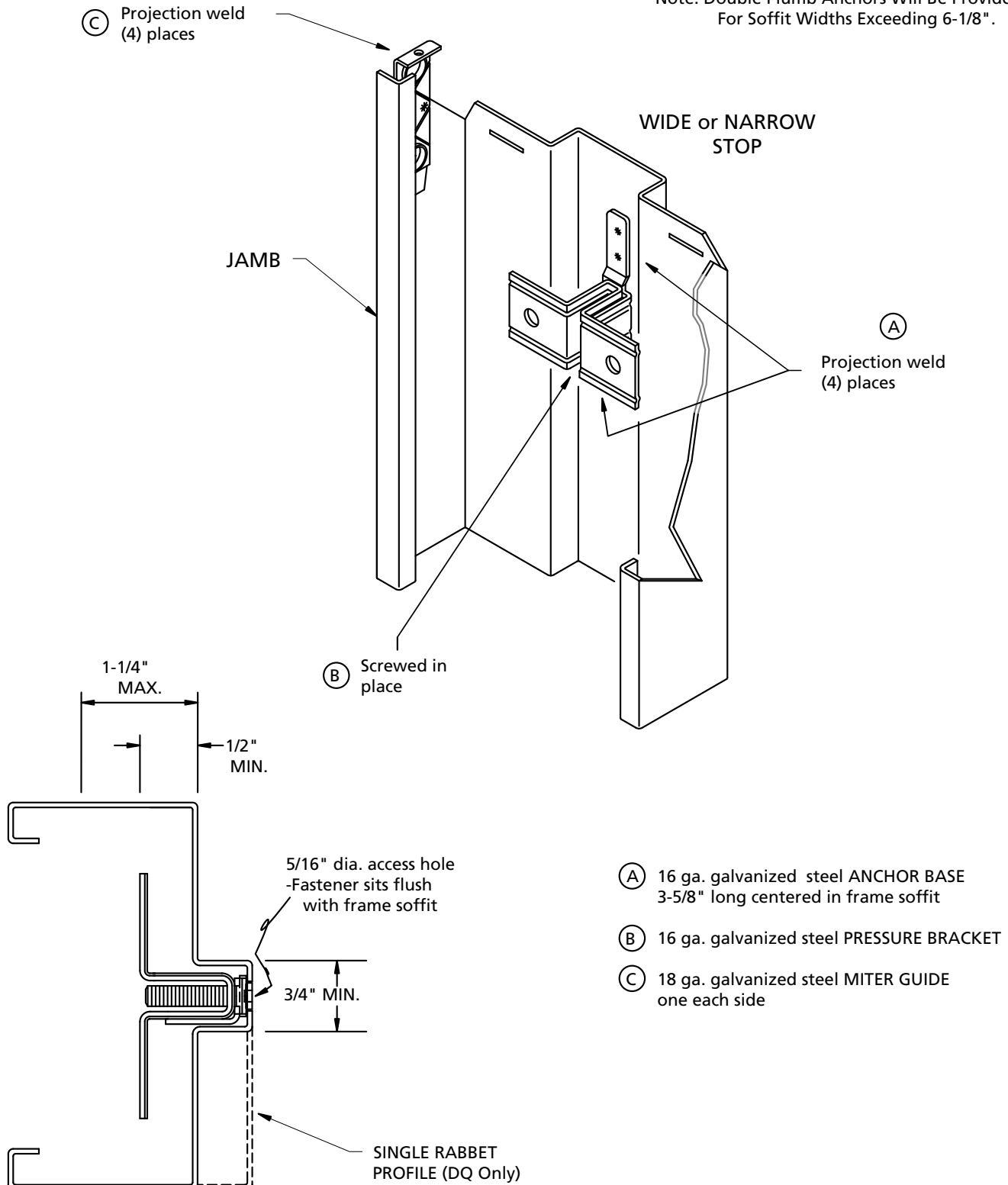
LABEL ATTACHMENT

1. UL / WH standard method: Label impression is die-stamped into the steel of the frame.
2. UL / WH optional method: A metal label is fastened to the hinge jamb as shown.
3. FM standard method: A metal label is fastened to the hinge jamb as shown.
4. A pressure sensitive paper label is applied to the backside of head and both jambs which identifies components as "KNOCKED-DOWN FRAME PARTS FOR (UL) LISTED FIRE DOOR FRAME".

Distributor Tech Data

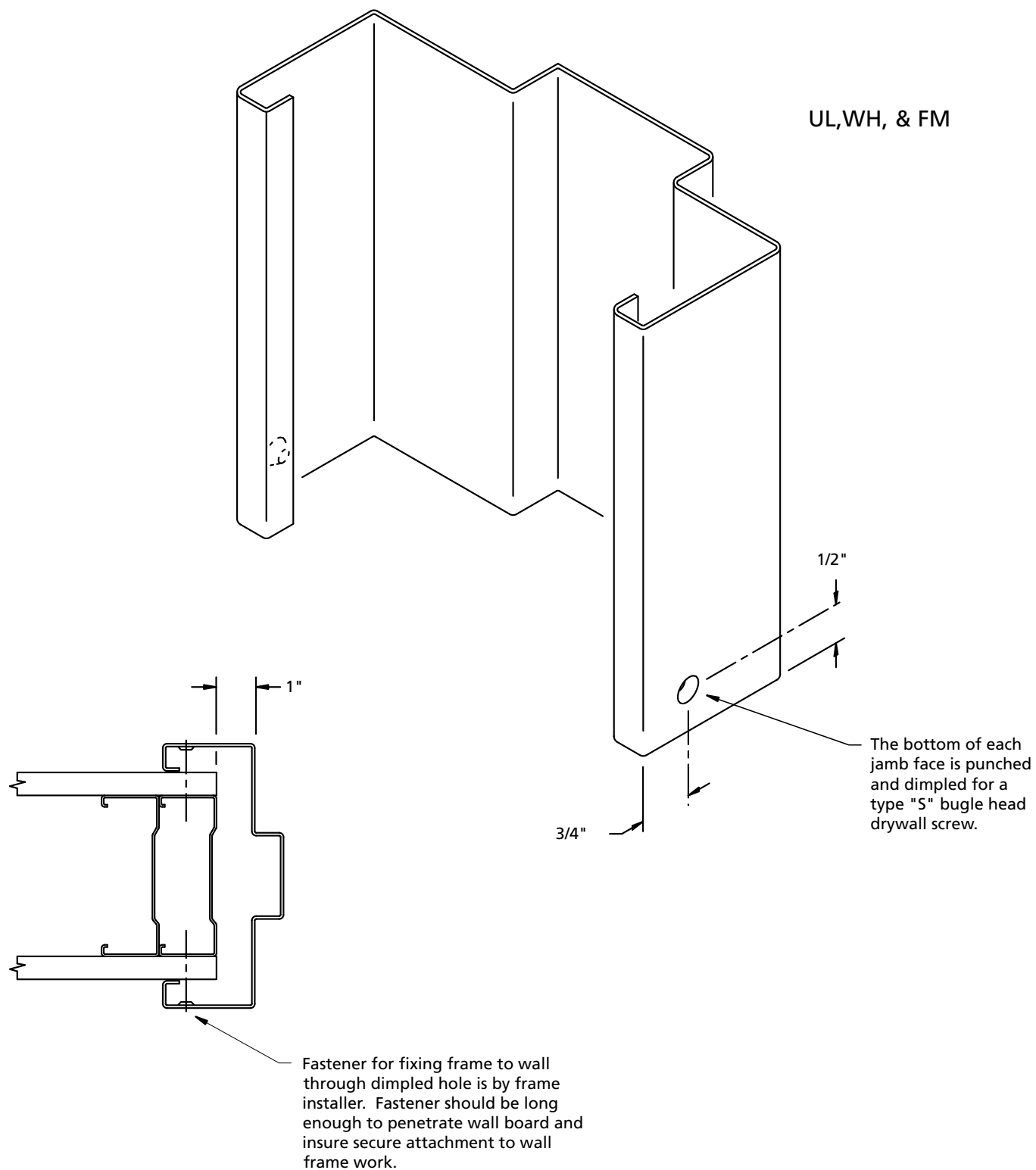
LABELED SLIP-ON DRYWALL FRAME JAMB PLUMB ANCHOR

Note: Double Plumb Anchors Will Be Provided For Soffit Widths Exceeding 6-1/8".

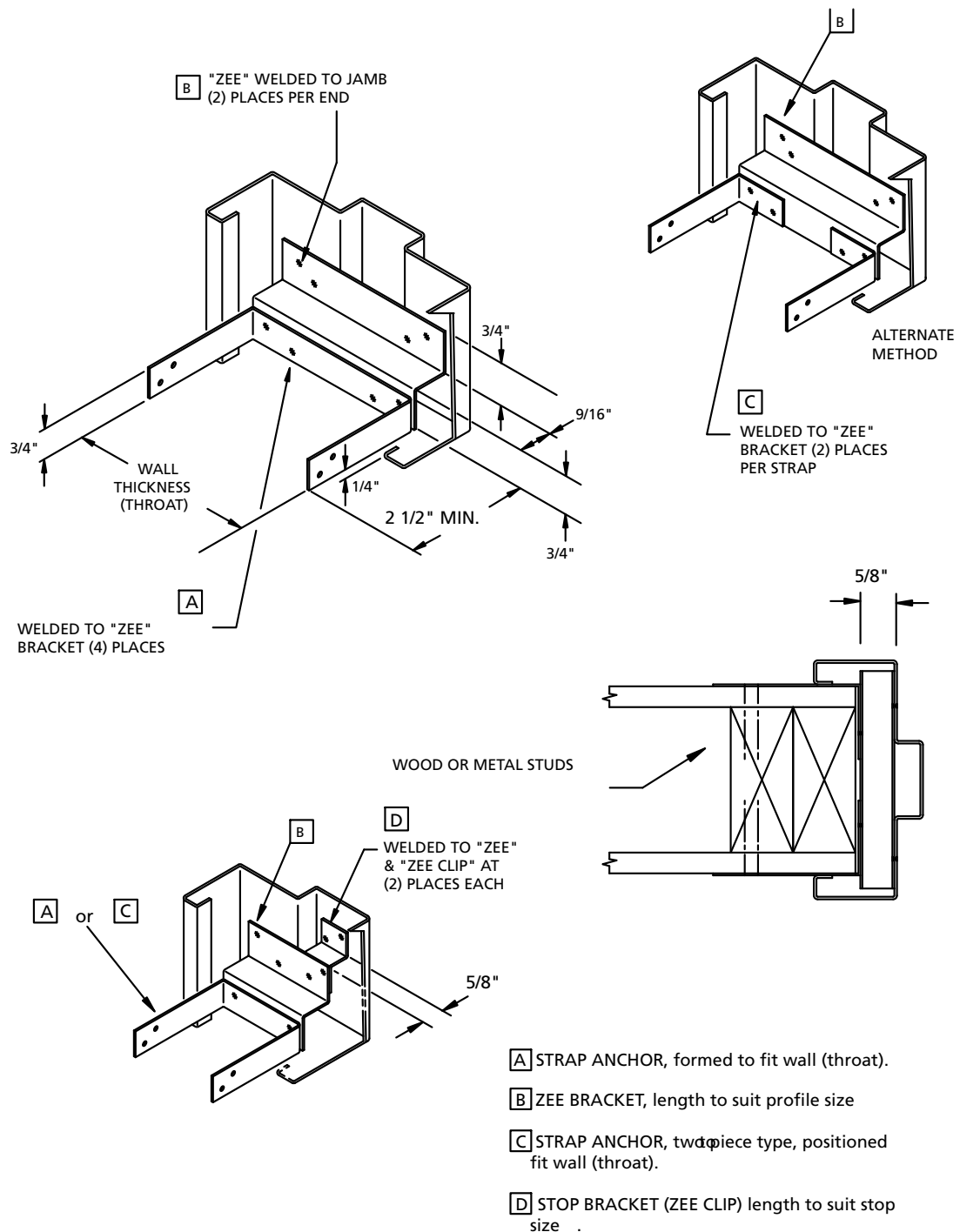


Distributor Tech Data

LABELED SLIP-ON DRYWALL FRAME DIMPLED HOLE SILL ANCHOR



LABELED SLIP-ON DRYWALL FRAMES STRAP-TYPE SILL ANCHORS



STRAP TYPE SILL ANCHORS are available as an option for FM, UL and WH labeled slip-on drywall frames.

STRAP TYPE SILL ANCHORS may be one piece type **A** or two piece type **C**, see Fig. 1 & 2.

One piece ZEE BRACKET **B** is required for all applications shown above.

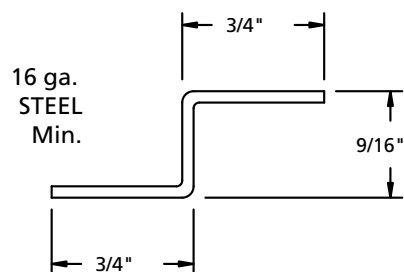
For labeled single rabbet profiles, STOP BRACKET **D** is welded in place, see Fig. 3.

Fasteners for fixing strap anchor to wall are to be furnished by frame installer, see Fig. 4.

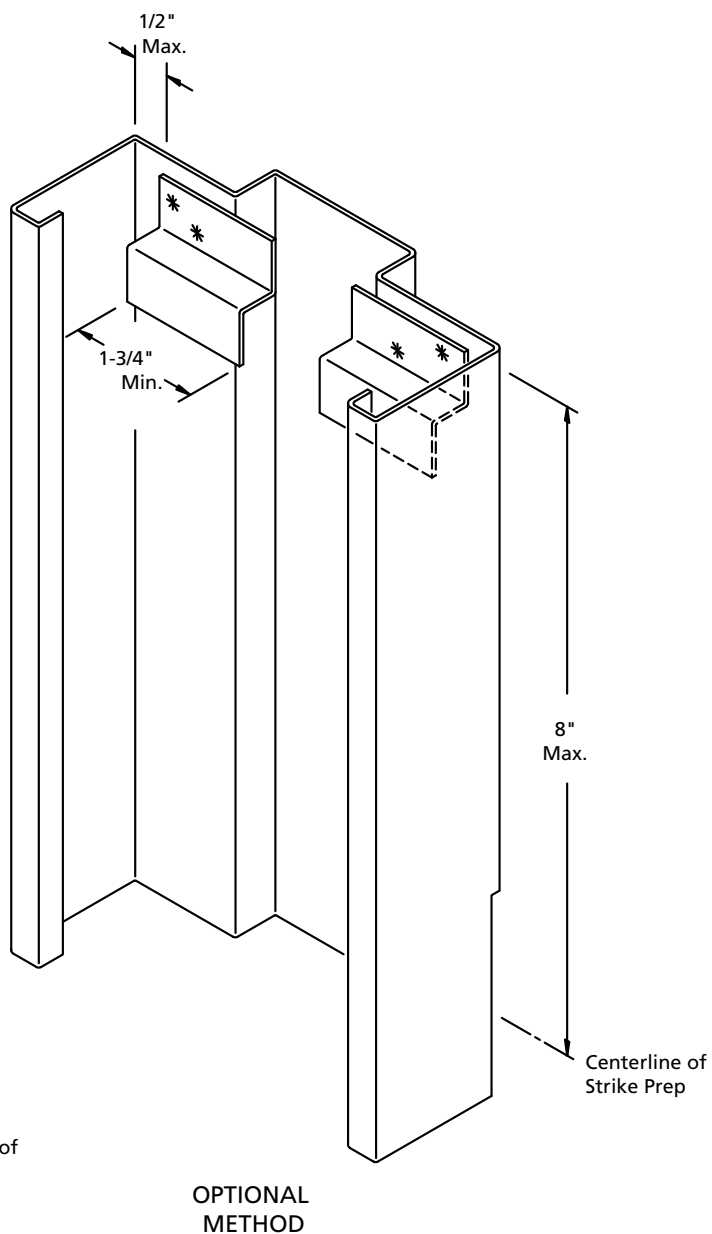
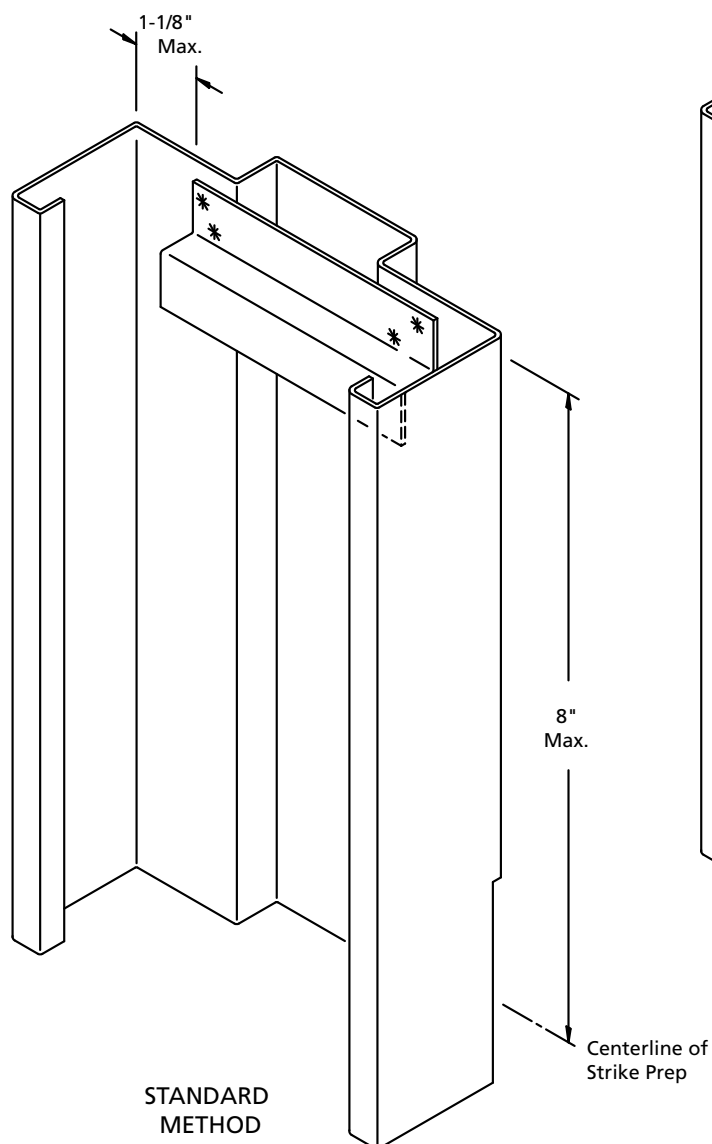
Fasteners should be of sufficient length to penetrate wall board and insure secure attachment to wall frame work. Strap anchor is normally concealed by wall base-board.

Distributor Tech Data

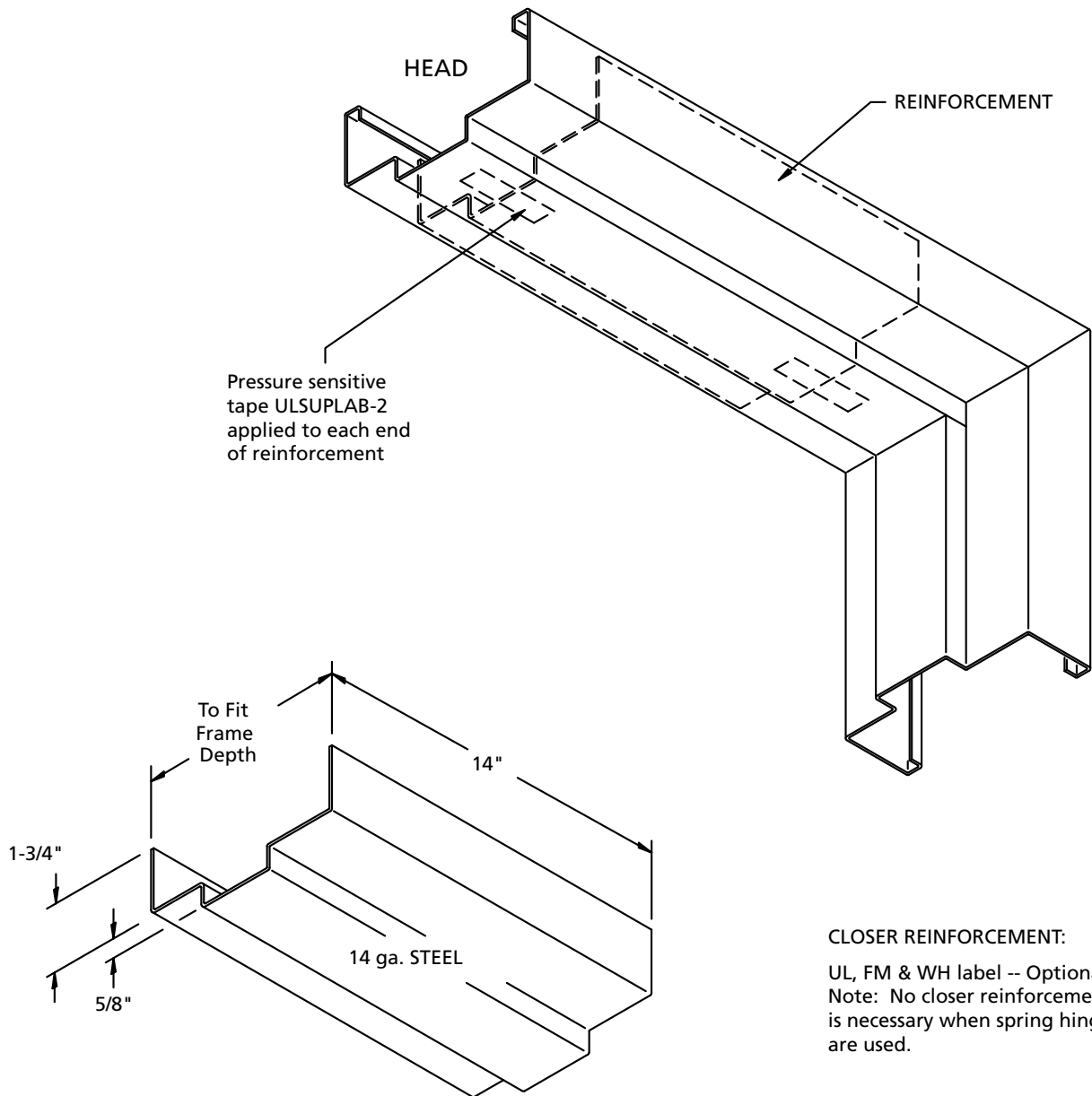
STRIKE JAMB ZEE SPACER FOR LABELED SLIP-ON DRYWALL FRAMES



Application Shown On Page 7-907



CLOSER REINFORCEMENT SLEEVE FOR LABELED SLIP-ON DRYWALL FRAMES



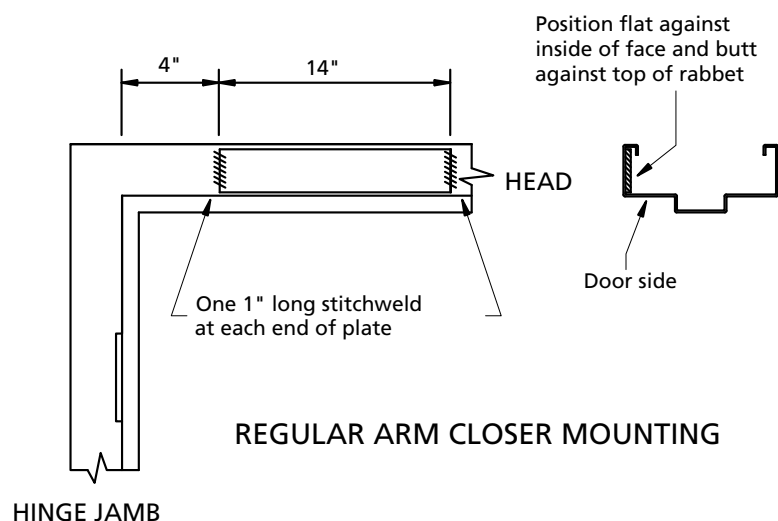
CLOSER REINFORCEMENT:
UL, FM & WH label -- Optional
Note: No closer reinforcement
is necessary when spring hinges
are used.

REINFORCEMENT	FRAME DEPTH
CR434	4-3/4"
CR534	5-3/4"

Full length closer reinforcement is also available (UL & WH)

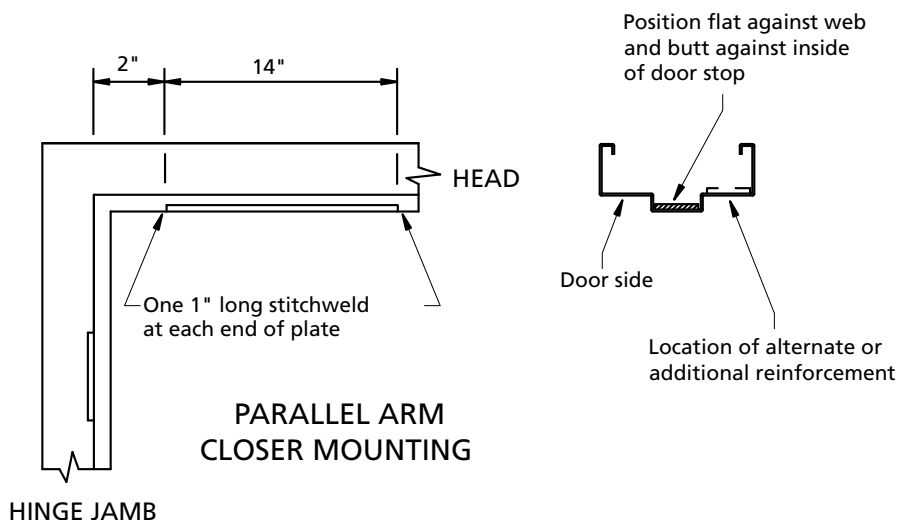
Distributor Tech Data

CLOSER REINFORCEMENT PLATE - TYPE FOR LABELED SLIP-ON DRYWALL FRAMES

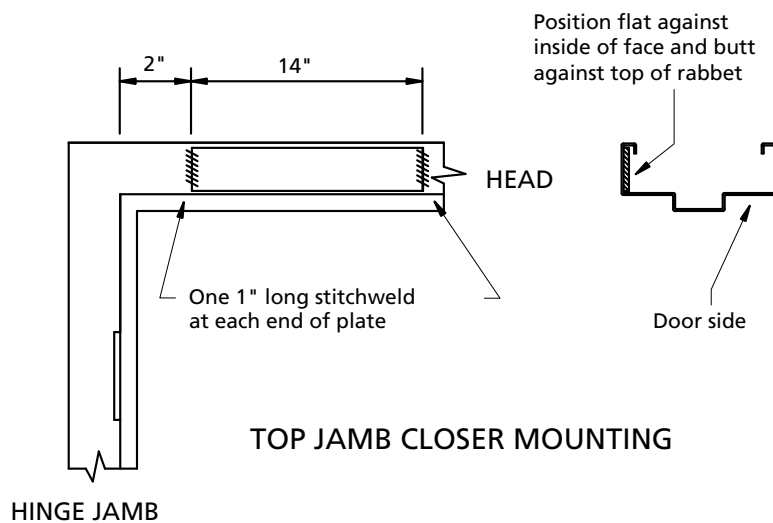


CLOSER REINFORCEMENT:

UL, FM & WH label -- Optional
Note: No closer reinforcement is necessary when spring hinges are used.



All Reinforcement Plates are
14 ga. min. steel x 1-3/4" x 14"

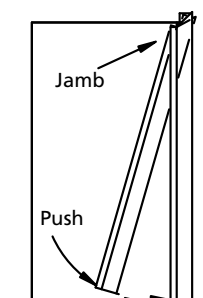


LABELED SLIP-ON DRYWALL FRAME INSTALLATION INSTRUCTIONS

ROUGH OPENING: ADD 1" TO DOOR OPENING HEIGHT & 2" TO DOOR OPENING WIDTH

JOBSITE STORAGE: Store frames off the ground on wood runners or skids. Do not store directly on the ground. Cover frames with tarpaulin or plastic but do insure that adequate ventilation is provided to eliminate moisture condensation.

STEP 1



PROCEDURE:

STEP 1

- Begin installation by pushing the top of one jamb over the wall.
- Hold the top in place then push the bottom in towards and over the wall.

STEP 2

- Position frame head over the wall.
- Align head tabs with jamb slots then slide head towards jamb and engage tabs in slots.

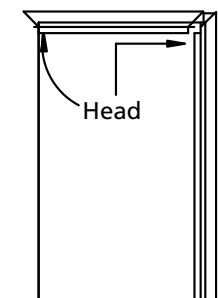
STEP 3

- Push the top of the remaining jamb over wall and mate jamb slots and head tabs.
- Push the bottom of this jamb in towards and over the wall.
- Level the head.

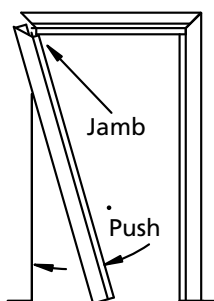
STEP 4

- Insert screw driver (Phil #2 blade) into top plumb anchor screws. Alternately adjust top plumb anchors until they bear firmly against studs.
- Insert (4) #8 x 1/2" MIN. (Phil) PHSMS through holes in head backbends and fasten to jamb miter guides.
- Plumb hinge jamb and fasten at sill. *
- Place a temporary wood spreader between jambs at sill. Adjust strike jamb to fit firmly against spreader and fasten at bottom of this jamb. *
- Adjust intermediate plumb anchors (if present) until they too bear firmly against studs
- Install mutes in holes provided in door stops.
- Insert plastic plug buttons in plumb anchor screw access holes

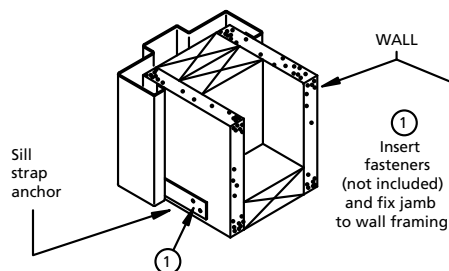
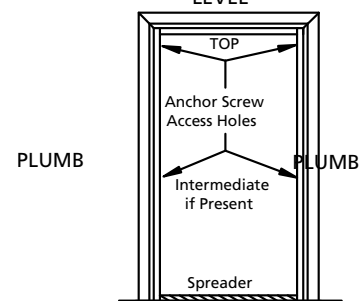
STEP 2



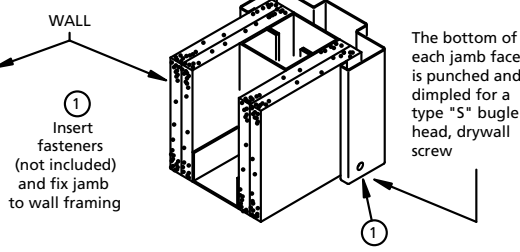
STEP 3



STEP 4

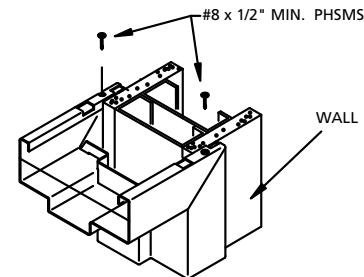


OPTIONAL SILL ANCHOR



STANDARD SILL ANCHOR

* Some installers prefer to hang door and fit frame to door prior to anchoring at sill.



FASTENERS AT HEAD
(All labeled frames)