



Technical Glass Products Architectural Specification Manual

FIREFRAMES® DESIGNER SERIES

The Fireframes® Designer Series frame system, incorporating precise roll-forming technology, provides a sleek, modern alternative to traditional hollow metal frames. Using narrow profiles, the Fireframes Designer Series frame system exceeds traditional fire-rated frame systems in aesthetics and performance. Available with fire ratings from 20 to 90 minutes, this modular system can incorporate fire doors and a wide range of fire-rated glazing materials with glass sizes surpassing traditional systems.

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System Exploded View

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	PROFILE, WALL JAMB "L"	6	FIRE-RATED GLASS	11	PROFILE, DOOR JAMB "T"
2	BEAD STUD	7	PROFILE, DOOR JAMB "L"	12	PIVOT ASSEMBLY
3	PROFILE, DOOR JAMB "Z"	8	8-32x1" FHMS BEAD LOCK SCREW	13	GLAZING TAPE
4	PROFILE, INTERMEDIATE "T"	9	GLAZING BEAD, STEEL GALVANIZED		
5	SETTING BLOCK	10	GASKET, NEOPRENE DOOR STOP		

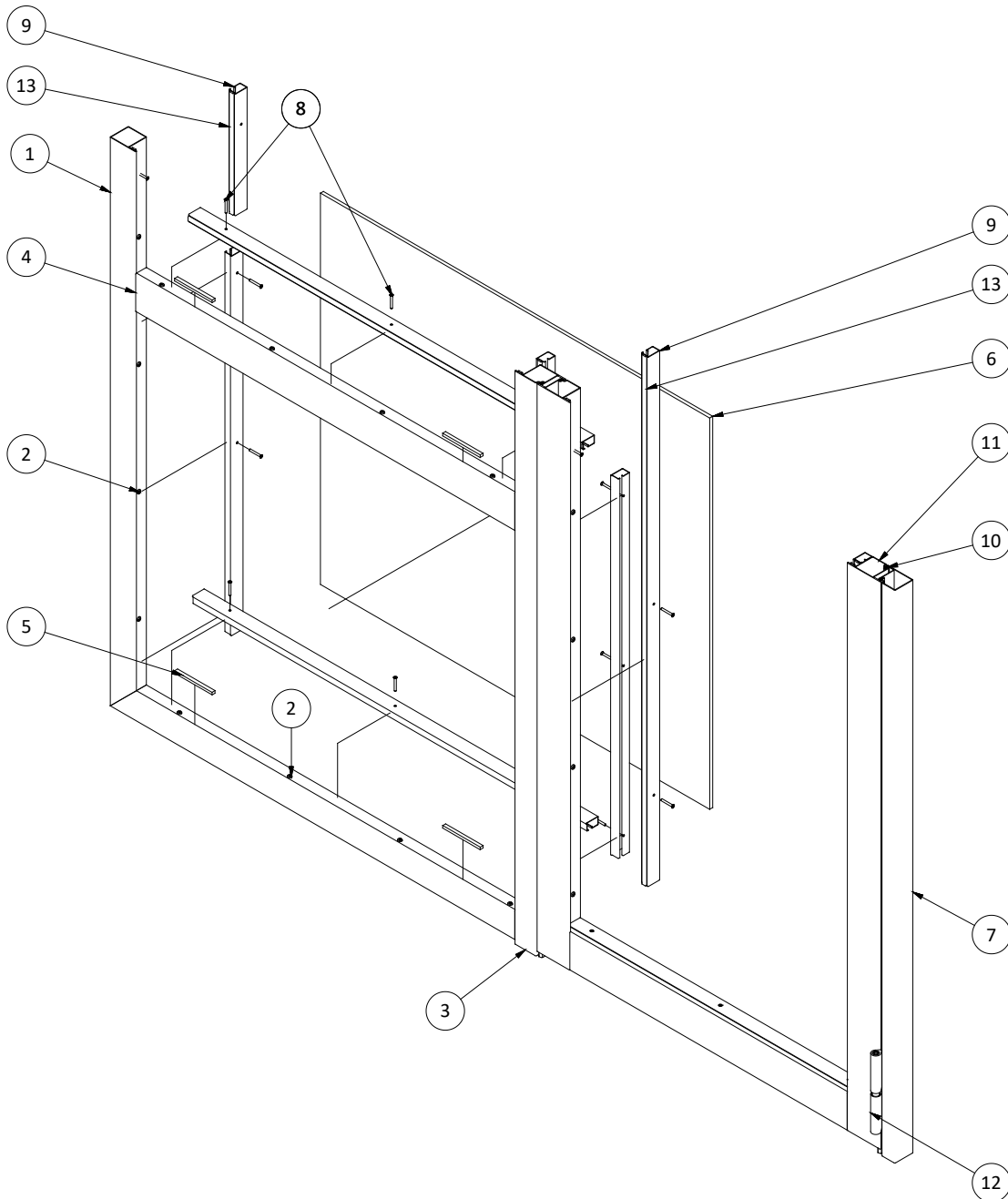


Figure 1 - System Exploded View

Material Key Chart

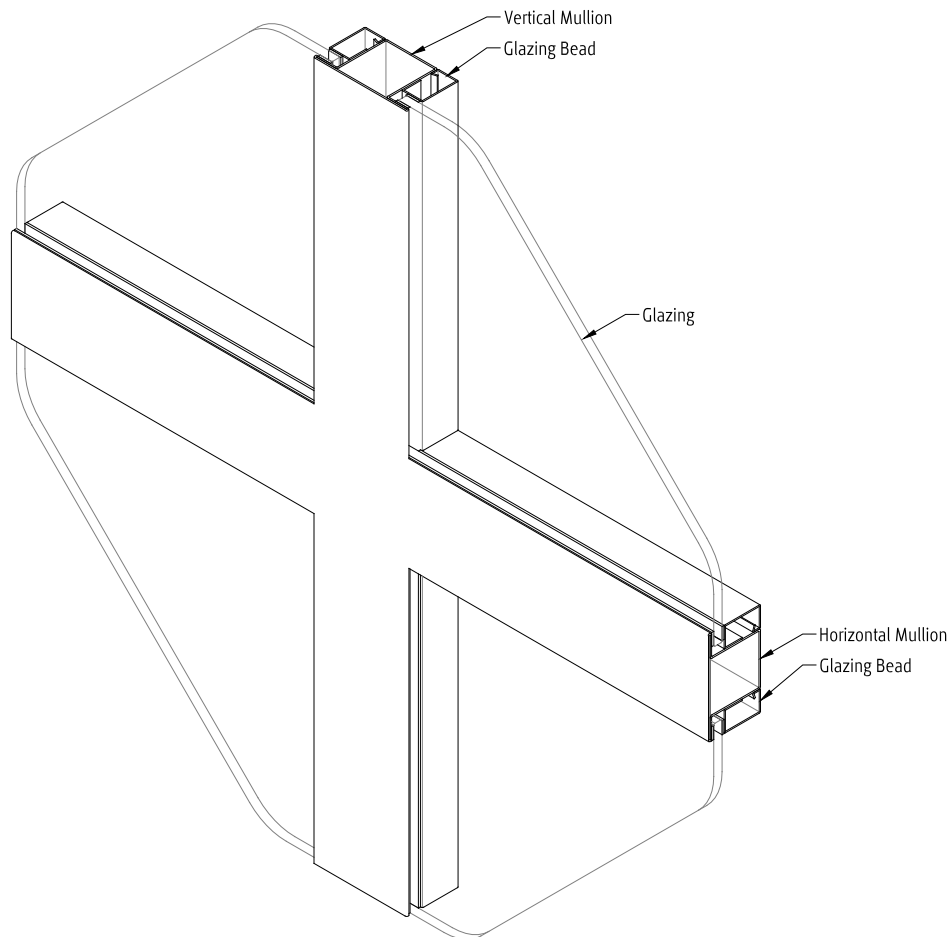
Material	Required Material NOT PROVIDED With Fireframes Designer Series
FINISH SEALANT	Sealant installed into the interior and exterior perimeter cavity. Select color for sealant to match frame or as directed by project architect.
CAP SEAL	REQUIRED on all exterior applications, use a continuous silicone sealant. Select color to match frame.
ANCHOR FASTENER	As wall constructions vary widely in design, TGP does not provide perimeter fasteners (anchors). All frames are factory drilled to receive #12 flat head perimeter screws at approximately 24" on center.
FIRESAFING	Intumescent sealant or firmly packed mineral wool must be installed in a continuous fashion between frame assembly and wall construction, being interrupted only by the perimeter anchor shims. Sealant manufacturers such as Tremco, Pemko and many others supply intumescent sealants.
FLASHING	Exterior sill flashing, if required, may be stainless steel, galvanized steel, or aluminum.
HEEL BEAD	REQUIRED on all exterior applications: apply a continuous bead of silicone sealant at all horizontal to vertical intersections in the glazing pocket, and a heel bead along the sill and 4" vertically up each jamb. Sealant must be installed between the glass edge and frame profile.
GLAZING TAPE	Single or double sided adhesive, closed cell PVC glazing tape of any common brand available from your local glazing supply house. Kerafix® 2000 glazing tape (white – calcium magnesium silicate) is used, and supplied by TGP, only on 90 minute applications exceeding 1,393 sq. inches except when using Pyrostop glazing materials. Refer to Glazing Specifications for glazing tape sizes, and Glazing Installation Instructions.
SHIMS	Perimeter shims at anchor locations are to be of hardwood (oak) or non-combustible (steel) materials. Plastic shims may not be used. TGP recommends a 3/8" (9.5 mm) caulk joint between frame and all wall conditions.
WALL CONDITION	Rated wall construction by other trades.
Material	Fasteners Provided With Fireframes Designer Series
BEAD LOCK SCREW	8-32 X 1" Flat Head Screws. The glazing beads and frame are factory fabricated to receive lock screws. The screws are supplied with screw heads painted to match frames. Bead lock screws are not used on non-rated applications.
BEAD STUD	Glazing beads snap onto factory installed, steel bead studs at approximately 12" on center.
Material	Components Provided With Fireframes Designer Series
SETTING BLOCKS	6 mm calcium silicate, or hardwood, setting blocks shipped loose for field installation. Refer to Glazing Installation Instructions.
FIRE-RATED GLAZING MATERIAL	Refer to the Fire-Rated Glazing Options and Specifications, and Glazing Installation Instructions.
FIRE-RATED GLAZING TAPE	Fire-rated glazing tape for 90 minute Fireframes Designer Series assemblies only. Refer to Glazing Specifications section for glazing tape sizes, and Glazing Installation Instructions.
MECHANICAL JOINT CONNECTOR	In the event of a mechanically joined frame, this clip inserts into the receiving end of the frame to be joined and fastens with provided screws. (Not used with exterior applications).
GLAZING BEAD	Snap-on glazing bead to hold glass in system.
WEATHER SEAL	Silicone gasket used on Fireframes Designer Series door meeting stiles.
DOOR GASKET	Silicone* door stop gasket used on Fireframes Designer Series doors.

Figure 2 - Material Key Chart

Note: * On door pairs where glass height is over 88-3/4" (2254 mm) when the neoprene gasket is used, an intumescent strip is applied across the tip of door leaf head rail and down the meeting stile rail.

General Information

This document is meant as a general description of typical installations. As such, it is the responsibility of the installer to ensure the window and doors are installed per the conditions that exist on any given project in accordance with these instructions and project drawings. TGP project drawings may detail modifications to the surrounding conditions required for a given project, (if architectural details or sketches were provided to TGP) and should be used in conjunction with these instructions. In the event of any conflict between these instructions and TGP project drawings, the TGP project drawings shall govern. TGP does not accept any warranty and / or liability for installations not in compliance with this document or other non-conforming use of the TGP products and / or system. Contact TGP with questions concerning these details as they apply to the particulars of a given project.



General Information

FEATURES

- Fabricated in the U.S.A.
- Narrow steel profiles
- Easy installation similar to typical storefront systems
- Frames supplied welded or “K-D” (knock-down) ready for installation
- Surface powder coated at the factory to match the desired color scheme
- Stainless steel is available for 20 and 45 minute systems
- Can be used with Fireglass® 20, Pilkington Pyrostop®, or FireLite® and WireLite® family of glass products
- Passes positive pressure test standards **UL 10C**.
- Variety of hardware available

Note: This product is not intended for use in locations requiring a barrier to radiant heat. This product does not meet test standards **ASTM E-119** or **UL 263**. If your jurisdiction requires “barrier to heat” framing, please contact Technical Glass Products regarding **Fireframes® Heat Barrier Series**.

LISTINGS

- Classified and labeled by Underwriters Laboratories, Inc.® (UL) and Underwriters Laboratories of Canada (ULC).
- Test report number for labeled 20/45/60/90 minute fire-rated frame assemblies is **UL File No. R-19207**.
- Frame tested in accordance with **UL 9, ASTM E283, ASTM E330, ASTM E331, AAMA 501.1, CAN4 S-106, and NFPA 257**.
- Door tested in accordance with **UL 10B, UL 10C, CAN 4 S-104, and NFPA 252**.
- Approved for use in New York City, **MEA# 426-04-M**.
- Approved for use in Los Angeles, **LARR 25798**.
- UL: Meets temperature rise 250°F at 30 minutes.
- ULC: Meets temperature rise 250°C at 60 minutes.

General Information

SIZING GUIDELINES

GLASS SIZES

Product	Application	Rating Minutes	Max. Exposed Area		Max. Exposed Width		Max. Exposed Height	
			Square Inches	Square Meters	Inches	Millimeter	Inches	Millimeter
Fireglass®20	Doors (Note 2)	20	3,024	1.95	36	914	89	2,261
	Doors - Dbl. Egress	20	3,204	2.07	36	914	89	2,261
FireLite®	Doors	20	3,204	2.07	36	914	89	2,261
FireLite NT	Doors - Dbl. Egress	20	3,204	2.07	36	914	89	2,261
FireLite Plus	Transom/Sidelites	20	3,325	2.15	95	2,413	95	2,413
FireLite IGU	Doors	45	3,204	2.07	36	914	89	2,261
	Doors - Dbl. Egress	45	3,204	2.07	36	914	89	2,261
	Transom/Sidelites/Windows	45	3,325	2.15	95	2,413	95	2,413
	Doors	60	3,204	2.07	36	914	89	2,261
	Doors - Dbl. Egress	60	2,034	1.31	36	914	56-1/2	1,435
	Transom/Sidelites/Windows	60	3,325	2.15	95	2,413	95	2,413
	Doors	90	2,034	1.31	36	914	56-1/2	1,435
	Doors - Dbl. Egress - Top Lite	90	1,161	0.75	30-1/16	764	38-5/8	981
	Doors - Dbl. Egress - Bottom Lite	90	1,041	0.67	30-1/16	764	34-5/8	879
	Transom/Sidelites/Windows	90	2,627	1.69	56-1/2	1,435	56-1/2	1,435
WireLite®	Doors	45	1,296	0.84	54	1,372	54	1,372
	Doors - Dbl. Egress	45	2,034	1.31	36	914	56-1/2	1,435
	Transom/Sidelites/Windows	45	1,296	0.84	54	1,372	54	1,372
(Glazed with Pemko FG3000)	Transom	45	3,456	2.23	96	2,438	36	914
(Glazed with Pemko FG3000)	Sidelites/Windows	45	4,608	2.97	100	2,540	100	2,540
Pilkington Pyrostop® 45-200 (19 mm)	Doors	45	3,184	2.05	35-7/8	912	88-3/4	2,254
	Doors - Dbl. Egress	45	2,034	1.31	36	914	56-1/2	1,435
	Transom/Sidelites/Windows	45	4,500	2.90	95-1/4	2,419	95-1/4	2,419
Pilkington Pyrostop 60-101 (23 mm)	Doors	60	3,184	2.05	35-7/8	912	88-3/4	2,254
	Doors - Dbl. Egress	60	2,034	1.31	36	914	56-1/2	1,435
	Transom	60	5,616	3.62	96	2,438	96	2,438
	Sidelites/Windows	60	5,616	3.62	104-1/16	2,643	104-1/16	2,643
Pilkington Pyrostop 60-201 (27 mm)	Doors	60	4,222	2.72	41-7/8	1063	100-13/16	2,560
	Doors - Dbl. Egress	60	4,222	2.72	41-7/8	1063	100-13/16	2,560
	Transom	60	5,616	3.62	96	2,438	96	2,438
	Sidelites/Windows	60	5,616	3.62	104-1/16	2,643	104-1/16	2,643
Pilkington Pyrostop 90-102 (37 mm)	Doors - Single	90	4,222	2.72	41-7/8	1063	100-13/16	2,560
	Doors - Pairs/Dbl. Egress	90	3,213	2.07	36	914	89-1/4	2,267
	Transom	90	3,724	2.40	96	2,438	96	2,438
	Sidelites/Windows	90	4,162	2.69	104-1/16	2,643	104-1/16	2,643
Pilkington Pyrostop 120-202 (40 mm)	Doors - Single	90	4,222	2.72	41-7/8	1063	100-13/16	2,560
	Doors - Pairs/Dbl. Egress	90	3,213	2.07	36	914	89-1/4	2,267
	Transom	90	3,724	2.40	111	2,819	111	2,819
	Sidelites/Windows	90	4,162	2.69	111	2,819	111	2,819

- Note:**
- Individual lite sizes cannot exceed "Maximum Exposed Area" shown above.
 - The International Building Code (IBC) states that 20 minute fire-rated products that fail to pass a hose stream test may not be used outside of doors.
 - Pilkington Pyrostop 90-102 (37mm) and 120-202 (40mm) have been added specifically where meeting temperature rise requirements is necessary. When midrail is used, product will not meet temperature rise requirements or receive temperature rise label.

General Information

ASSEMBLY AND DOOR SIZES

DOORS: Singles and AA/AF	Max. Rating (Minutes)	Max. Width (Inches)	Max. Width (Millimeters)	Max. Height (Inches)	Max. Height (Millimeters)	Max. Area (Sq. Feet)	Max. Area (Sq. Meters)
Glazed with FireLite/WireLite Products							
Max single door leaf size:	20 - 90	43	1,092	95-7/8	2,435	-	-
Max door opening, single:	20- 90	42-3/16	1,072	96	2,438	-	-
Max door opening, active/fixed:	20 - 90	84	2,134	96	2,438	-	-
Max door opening, active/active:	20 - 90	85-3/8	2,168	96	2,438	-	-
Max DLO glass ^{NT} :	90	36	914	56-1/2	1,435	-	-
Max DLO glass:	20 - 90	36	914	88-3/4	2,254	-	-
Glazed with Pilkington Pyrostop: Temperature Rise Rated -- 250°F for 30 min. or 250°C for 60 min. (Canada only)							
Max single door leaf size:	60 / 90	48-3/16	1,224	107-7/8	2,740	-	-
Max door opening, single:	60 / 90	48-1/8	1,222	108	2,743	-	-
Max door opening, active/fixed:	60	96	2,438	108	2,743	-	-
Max door opening, active-active:	60	96-1/4	2,444	108	2,743	-	-
Max DLO glass:	60	41-7/8	1,064	100-13/16	2,561	-	-
DOORS: DOUBLE EGRESS							
Max door leaf size:	20 / 45	43	1,092	95-7/8	2,435	-	-
Max DLO glass:	20 / 45	36	914	89-1/4	2,267	-	-
Max door leaf size ^{NT} :	60	43	1,092	95-7/8	2,438	-	-
Top glass opening ^{NT} :	60	36	914	56-1/2	1,435	-	-
Bottom glass opening ^{NT} :	60	36	914	56-1/2	1,435	-	-
Max door leaf size:	60	48-1/8	1,222	108	2,743	-	-
Max DLO glass:	60	41-7/8	1,063	100-13/16	2,560	-	-
Max door leaf size:	90	36-3/8	924	83-5/8	2,124	-	-
Top glass opening ^{NT} :	90	30-1/16	764	38-5/8	981	-	-
Bottom glass opening ^{NT} :	90	30-1/16	764	34-5/8	879	-	-
Max DLO glass:	90	36	914	89-1/4	2,267	-	-
FRAME ASSEMBLY							
Fire Windows	45	162	4,115	162	4,115	152	14.12
Fire Windows	90	120	3,048	120	3,048	100	9.29
Special Purpose Fire Door And Frame Assembly	90	162	4,115	162	4,115	152	14.12
Special Purpose Oversized Fire Door And Frame Assembly	90	Oversized doors are not certified as to temperature transmission. Authorities Having Jurisdiction (AHJ) should be consulted as to whether the assembly is acceptable for a specific location.					

Note:

1. Fireframes Series door frames for Door By Others (DBO), a UL Classified swinging type fire door, may be provided up to the *smaller* maximum size allowed for the desired rating of either the door leaf or door frame manufacturer.
2. Temperature rise doors **cannot** have mid rails; tall bottom rails and/or wide stile profiles **cannot** exceed a width of 10 inches.
3. Non-temperature rise assembly and door sizes are indicated by NT.
4. The daylight opening is abbreviated by DLO.

General Information

AMERICANS WITH DISABILITY ACT STANDARDS ON FIRE PROTECTION DOORS

If fire doors were required to meet A.D.A. (Americans with Disability Act) Standards, many would not open or close with adequate force to prevent passage of flames and smoke. Recognizing this special fire safety need, NFPA 101 (National Fire Protection Association) allows operational features for fire doors (opening forces, closing speeds, etc.) that are different than for non-fire-rated doors. These fire “protective” steel doors carry ratings from 20-90 minutes for fire protection. Heat transfer through the door is not an issue, so they are constructed without interior insulation.

CONVENTIONAL WOOD OR HOLLOW METAL DOORS IN FIREFRAMES DESIGNER SERIES FRAMES

Conventional fire-rated wood or hollow metal doors can also be installed into TGP’s narrow profiled Fireframes Designer Series frame, but will require coordination with respect to preparation of door hardware. Prior to producing your shop drawings, TGP will need to evaluate relevant hardware schedule information. When ordering wood or hollow metal doors, you must supply our engineering staff with the manufacturer, model number, fabrication templates, door handing and, if required, physical samples. If TGP must prepare special fabrication drawings to accommodate your hardware needs, your project lead time may be extended.

General Information

FIRE-RATED GLAZING OPTIONS

Technical Glass Products provides a complete line of fire-rated glazing options to complement the Fireframes Designer Series Frame System. Alternatively, refer to your Technical Glass Products SpeciFIRE® Selection Guide, available from your sales representative or online at www.fireglass.com.

Please consult your Technical Glass Products sales representative to determine the best option for your application.

Glazing Product	Available Fire Rating (minutes)	Offers High Impact Safety	Passes Hose Stream Test	Temperature Rise	Complies with Energy Codes	Compatible with TGP Framing	Provides Acoustic Barrier	Advantages / Disadvantages
Fireglass® 20	20	•*				•		+ Moderate initial investment - Cannot withstand thermal shock
FireLite®	20/45/60/90		•			•		+ Heat resistance of ceramic - Low impact resistance
FireLite IGU	20/45/60/90	•*	•		•	•	•	+ Energy efficient + Acoustic Barrier + Wide choice of appearances
FireLite NT	20/45/60/90	•*	•			•		+ Surface applied approved fire-rated film + High impact resistance
FireLite Plus®	20/45/60/90	•*	•			•		+ Durable laminated construction + High impact resistance
Pilkington Pyrostop®	45/60/90	•*	•	•**	•***	•	•	+ High clarity + Larger sizes + Temperature Rise - Can be heavy

Note: * Meets CPSC 16CFR1201: Category I and II
 ** Meets temperature rise 250°F at 30 minutes in the U.S. and temperature rise 250°C at 60 minutes in Canada.
 *** Complies with energy codes for doors. Consult product literature for maximum ratings in other openings.

General Information

GLAZING SPECIFICATIONS

Closed cell 1/2" wide single or double sided adhesive PVC glazing tape of any common brand (available from your local glazing supply house) is recommended. See "Glazing Tape" on the Material Key Chart. Refer to table below for glazing tape thickness required for specific glazing products.

NOTE: Special fire-rated tape is supplied by the Fireframes manufacturer for 90 minute rated window and door assemblies only. Glass panels exceeding 1,393 sq. inches in a 90-minute rated application must be glazed with this fire-rated glazing tape when not using Pyrostop glazing materials. See "Fire-Rated Glazing Tape" on the Material Key Chart.

Glazing Product	Weight (Approx.) Pounds per Sq. Ft.	Glazing Thickness		Glazing Tape Thickness Used		Glazing Tape Thickness Used (Wide Stile)	
Fireglass® 20	3.0	1/4"	6 mm	3/16"	5 mm	3/16"	5 mm
Fireglass 20 IGU	6.5	1"	25 mm	3/16"	5 mm	3/16"	5 mm
FireLite® Standard	2.4	3/16"	5 mm	3/16"	5 mm	3/16"	5 mm
FireLite Premium	2.4	3/16"	5 mm	3/16"	5 mm	3/16"	5 mm
FireLite IGU	5.9	1"	25 mm	1/8"	3 mm	1/8"	3 mm
FireLite NT Standard	2.4	3/16"	5 mm	3/16"	5 mm	3/16"	5 mm
FireLite NT Premium	2.4	3/16"	5 mm	3/16"	5 mm	3/16"	5 mm
FireLite NT IGU	5.9	1"	25 mm	1/8"	3 mm	1/8"	3 mm
FireLite NT Obscure	2.4	3/16"	5 mm	3/16"	5 mm	3/16"	5 mm
FireLite Plus® Standard	4.0	5/16"	8 mm	5/32"	4 mm	5/32"	4 mm
FireLite Plus Premium	4.0	5/16"	8 mm	5/32"	4 mm	5/32"	4 mm
FireLite Plus IGU Standard	7.5	1"	25 mm	3/16"	5 mm	3/16"	5 mm
FireLite Plus IGU Premium	7.5	1"	25 mm	3/16"	5 mm	3/16"	5 mm
FireLite Plus IGU Obscure	7.5	1"	25 mm	3/16"	5 mm	3/16"	5 mm
Pilkington Pyrostop® 45-200	9.22	3/4"	19 mm	1/8"	3 mm	1/8"	3 mm
Pilkington Pyrostop 60-101	10.85	7/8"	23 mm	5/32"	4 mm	5/32"	4 mm
Pilkington Pyrostop 60-201	12.90	1-1/16"	27 mm	1/16"	2 mm	1/16"	2 mm
Pilkington Pyrostop 90-102	17.61	1-7/16"	37 mm	5/32"	4 mm	5/32"	4 mm
Pilkington Pyrostop 120-202	18.64	1-9/16"	40 mm	1/8"	3 mm	1/8"	3 mm

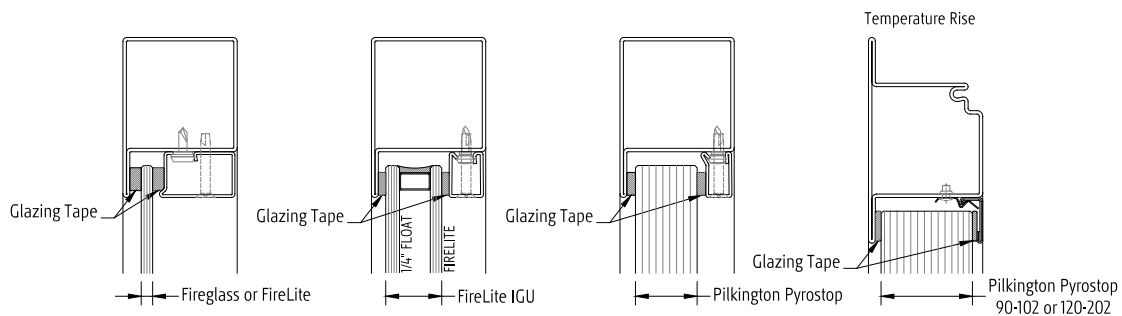


Figure 3 - Typical Glazing Options

General Information

ARCHED TOP (RADIUS) FRAMES

Fireframes Designer Series window frames can be bent to custom requirements. Refer to Figures 4 and 5 for minimum bend radius for each frame profile.

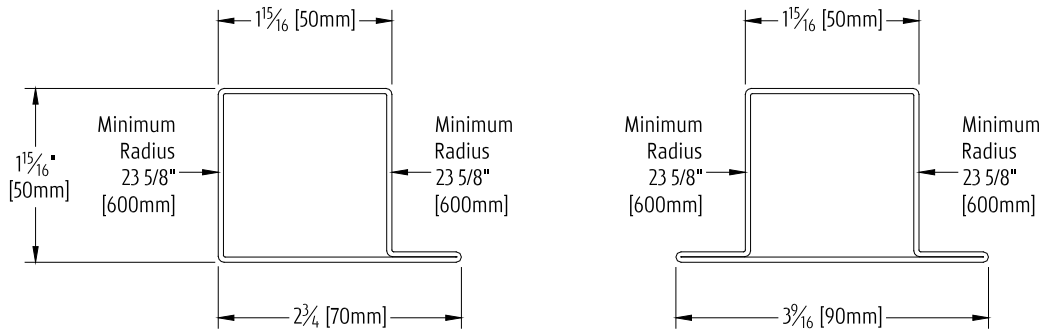


Figure 4 - Profiles

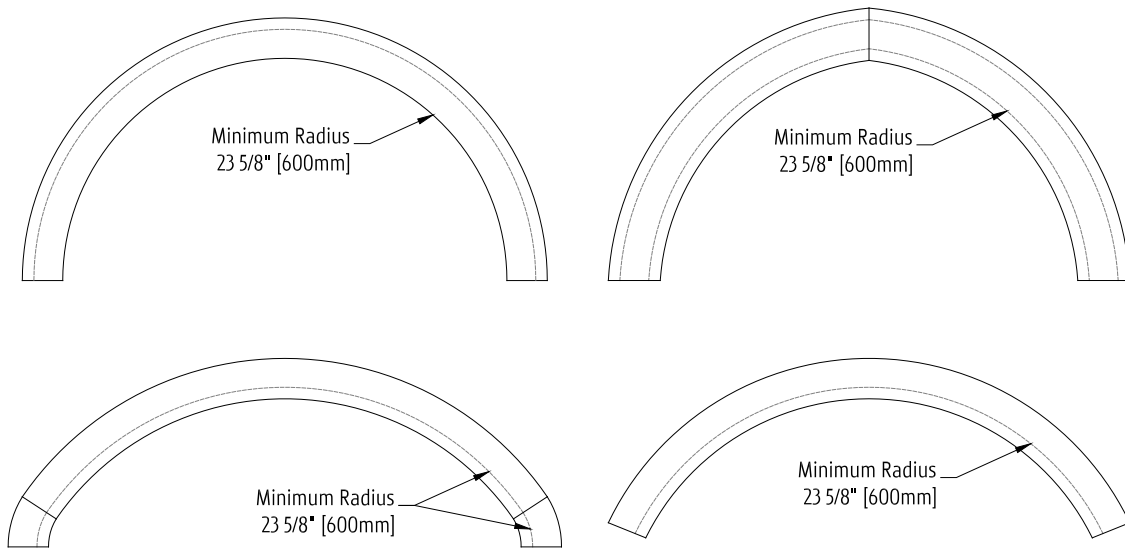


Figure 5 - Arched Top Examples

General Information

HOW TO DETERMINE DOOR HANDING

Doors are always viewed and identified by the secure (lockable) side of the door (except for double egress). The non-lockable side is not secured and always available for emergency egress (panic exit).

- NOTE:** * The fixed leaf in a pair can be outfitted with either a manual or automatic flushbolt.
 ** Active/Active pairs of doors require exit devices be installed on both leaves.
 *** Double egress pair of doors are unsecured and require exit devices be installed on both leaves.

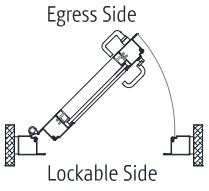
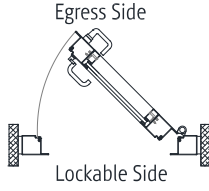
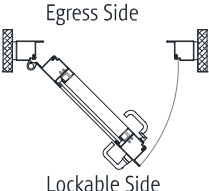
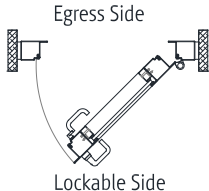
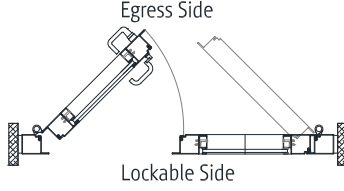
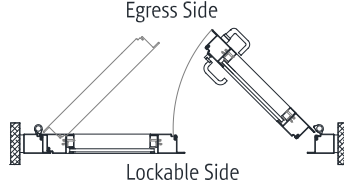
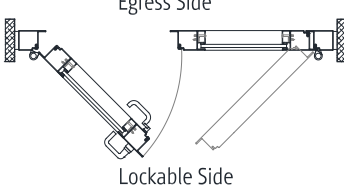
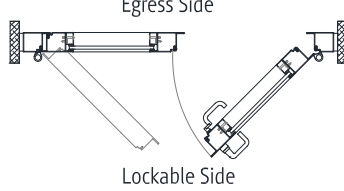
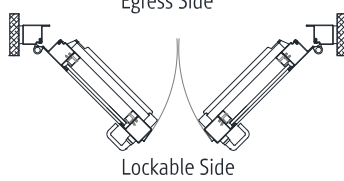
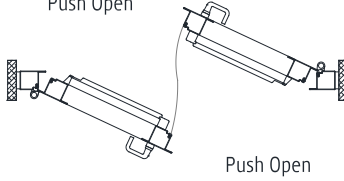
LH	Left Hand Single Door	RH	Right Hand Single Door
			
LHR	Left Hand Reverse Single Door	RHR	Right Hand Reverse Single Door
			
LHA Pair	Left Hand Active & Right Hand Fixed Pair of Doors *	RHA Pair	Right Hand Active & Left Hand Fixed Pair of Doors *
			
LHRA Pair	Left Hand Reverse Active & Right Hand Reverse Fixed Pair of Doors *	RHRA Pair	Right Hand Reverse Active & Left Hand Reverse Fixed Pair of Doors *
			
LHRA/RHRA Pair (Active / Active)	Left Hand Reverse Active & Right Hand Reverse Pair of Doors **	Double Egress	Dual Left Hand Reverse Pair of Doors ***
			

Figure 6 - Door Handing Chart

General Information

DOOR HARDWARE CONFIGURATIONS AND HARDWARE OPTIONS

The Fireframes Designer Series has been developed with narrow steel profiles which exceed traditional fire-rated frame systems in aesthetics and performance. TGP offers a complete line of select hardware options which have been fit- and function-tested for use with these profiles. Not all fire-rated hardware components available are compatible with TGP’s narrow profile systems. Should you request an item of hardware not standardly supplied by TGP, please forward all relevant information (manufacturer, model number, fabrication template and if required physical sample) to TGP for evaluation by our engineering staff, to determine if it can be supplied by TGP for use. Use of non-standard hardware may incur additional cost and lead time.

Compare door swing types (LH, RH, LHR, etc.) from the Door Handing Chart (Figure 6) to the chart’s types to see available hardware standards and options for each door swing combination. For detailed hardware information refer to individual cut sheets available from Technical Glass Products.

Required: ● Required Option: ⊙ Optional: ○ Not Available: Blank

Door Swing Type	LH	RH	LHR	RHR	LHRA/ RHRA (PAIR)	LHA (PAIR)	RHA (PAIR)	LHRA (PAIR)	RHRA (PAIR)	Manufacturer - Notes
Door Bottom Smoke Seal	●	●	●	●	●	●	●	●	●	Pemko – Automatically seals to floor when door is closed.
Perimeter Gaskets	●	●	●	●	●	●	●	●	●	TGP – Double overlapping seal system provide effective seal against weather and smoke.
Weld-On Pivot	●	●	●	●	●	●	●	●	●	TGP – Three pivots standard.
Closer	⊙	⊙	⊙	⊙	⊙					Dorma – TS9315 Surface Mounted, Pull Side standard.
						⊙	⊙	⊙	⊙	Dorma – TS9315GSR, with integrated coordinator.
	⊙	⊙	⊙	⊙	⊙					Dorma – ITS96-1, Concealed.
	⊙	⊙	⊙	⊙	⊙					LCN – 4040XP Surface Mounted, Pull Side standard.
Flushbolt						⊙	⊙	⊙	⊙	LCN – 4040XP, with Trimco 3092 coordinator.
						⊙	⊙	⊙	⊙	Trimco – Automatic. Latches fixed door leaf.
Exit Device and Latching						⊙	⊙	⊙	⊙	Trimco – Semi-Automatic. Latches fixed door leaf.
	●	●	⊙	⊙		●	●	⊙	⊙	TGP – Mortise Lock and Lever Handle Trim. With panic function for emergency egress.
			⊙	⊙				⊙	⊙	Dorma – Rim Exit Device.
			⊙	⊙	⊙			⊙	⊙	Dorma – Surface Vertical Rod.
			⊙	⊙	⊙			⊙	⊙	Dorma – Concealed Vertical Rod.
			⊙	⊙	⊙			⊙	⊙	Von Duprin – Surface Vertical Rod.
Electric Strike			⊙	⊙				⊙	⊙	Von Duprin – Concealed Vertical Rod.
			⊙	⊙						Von Duprin – Rim Exit Device.
Electric Strike	○	○	○	○		○	○	○	○	RCI – With mortise lock only, not for use with exit devices.
Profile Lock Cylinder	○	○	○	○		○	○	○	○	TGP –Schlage C Keyway (with mortise locks only).
Magnetic Shear Lock	○	○	○	○	○	○	○	○	○	Securitron – SAM2-24 concealed mounting.
Concealed Power Transfer	○	○	○	○	○	○	○	○	○	Securitron – For use with electric options.
Power Supply	○	○	○	○	○	○	○	○	○	Dorma or Von Duprin – Power for electric exit devices.

Figure 7 - Hardware Configuration Chart

Recommended Guidelines

1. REVIEW CONTRACT DOCUMENTS

Review architectural drawings, specifications, and approved TGP project drawings, installation instructions, and shipping lists to become thoroughly familiar with the project. The TGP project drawings take precedence and include specific details for your installation. These installation instructions are of a general nature and cover most conditions.

2. BUILDING CODES

Due to the diversity in local, state / provincial, or federal laws and the codes that govern design and application of architectural products, it is the responsibility of the individual architect / owner and installer to ensure that products selected for use on projects comply with all the applicable building codes and laws. Technical Glass Products exercises no control over the use or application of its products, glazing materials, and operating hardware and assumes no responsibility thereof. Compliance of TGP project drawings with applicable codes for a given project shall be the responsibility of the Buyer.

3. COORDINATION WITH OTHER TRADES

Coordinate with the general contractor any sequence with other trades which impact installation (i.e. fire proofing, back-up walls, partitions, ceilings, mechanical ducts, converters etc.) or in which installation may impact the work of adjacent trades.

4. INSTALLATION

All materials are to be installed plumb and level.

5. BENCH MARKS

All work should start from bench marks and/or column lines as established by the architectural drawings and the general contractor with guaranteed accuracy. Using these datum points and lines, determine:

- a. The plane of the wall in reference to offset lines provided on each floor;
- b. The finish floor lines in reference to bench marks on the outer building columns; and
- c. Mullion spacing from both ends of openings to prevent dimensional build-up of daylight opening.

6. SURROUNDING CONDITIONS

- a. Coordination of adjacent material and construction tolerances to TGP' s systems may be facilitated by TGP as part of preparing project drawings, and these drawings may indicate acceptable tolerances for critical dimensions. The installer should verify that surrounding construction is in accordance with the approved project drawings. Do not accept rough opening dimensions less than shown on project drawings. It is assumed that the minimal joint dimensions shown on the TGP project drawings match the field conditions. A frame may fit within a given opening but sealants may not perform as detailed if a smaller sealant joint is installed. Expansion / contraction issues may also be compromised. **IF THE JOINTS ARE SMALLER THAN THAT SHOWN ON THE TGP PROJECT DRAWINGS, DO NOT PROCEED.** Notify the General Contractor that the conditions are not as detailed and wait for corrective work to be completed before starting this work.

Recommended Guidelines

- b. The installer **MUST** notify and receive approval from TGP and the general contractor when conditions are not in accordance with approved project drawings and/or change any aspect of the structural performance of the Fireframes series before making any modifications to the TGP-furnished material or making changes which are different from those shown on the TGP project drawings. These conditions include, but are not limited to, anchor placement/location, changes in adjacent materials the anchor is being connected to or changes to dimensional relationships between framing, anchors and connection to adjacent materials.
- c. TGP must review and approve any changes required prior to the subcontractor installing any “corrective” work. These reviews may incur additional charges, which must be approved by the TGP customer prior to TGP’s review.

7. FRAME CONSTRUCTION VARIES

Depending on size restrictions, frames are shipped fully welded ready for installation or “K-D” (knock-down) to be assembled on site with mechanical joints.

8. FASTENING

Within the body of these instructions, “fastening” means any method of securing one part to another or to adjacent materials by means other than welding, adhering or using a mechanical fastener as shown on the approved details. Only those fasteners used within the system are specified in these instructions. **Due to the varying perimeter conditions and performance requirements, perimeter and anchor fasteners are not specified in these instructions and are the responsibility of the installer.**

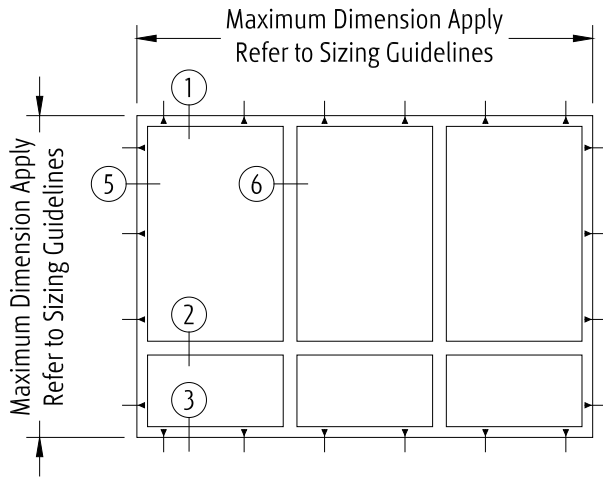
9. SEALANTS

- a. Sealants must be compatible with all materials they are in contact with, including other sealant surfaces. Consult with sealant manufacturer for recommendations relative to joint size, shelf life, compatibility, cleaning/priming, tooling, adhesion, etc.
- b. The chemical compatibility and/or adhesion of all glazing materials and framing sealants with each other and with like materials used in glass and frame fabrication must be established by the installer. This is required on every project.
- c. If required by the project specifications, it is the responsibility of the glazing contractor to submit any documentation or samples from the sealant manufacturer indicating that glass and glazing material has been tested for chemical compatibility and / or adhesion with glazing sealants. **This applies to all TGP materials in contact with any sealant.** TGP will furnish samples of these materials upon request.
- d. The implementation of the test results is the responsibility of the installing contractor, and includes material performance and recommendations for primers and substrate preparation required to obtain adhesion.

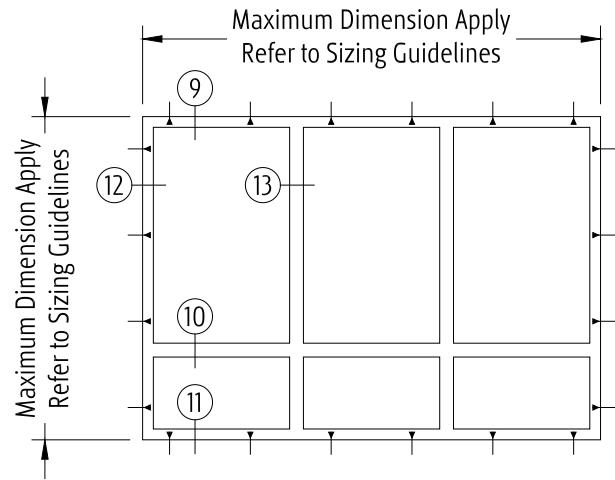
10. PERIMETER JOINTS

Perimeter seals and/or expansion joints shown in these instructions and in the TGP project drawings are shown at nominal size. Actual dimensions may vary due to perimeter conditions and / or difference in metal temperature between the time of fabrication and the time of installation. Design and detailing have been based on a fabrication / installation temperature of 70° F (21° C). If extreme temperatures exist at time of installation, gaps between expansion members may require slight adjustment.

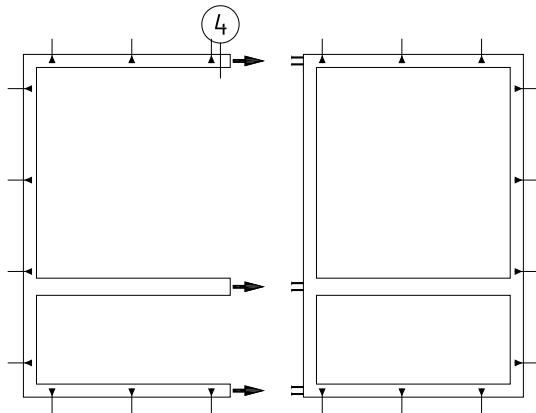
Sample Elevations – Windows



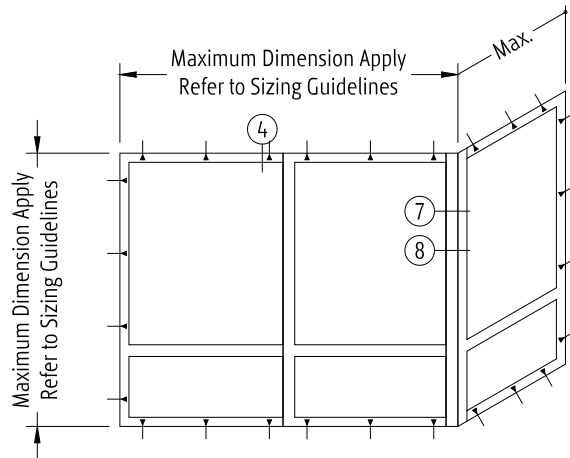
**Figure 8 - Window (Welded Joinery)
INTERIOR Application**




**Figure 9 - Window (Welded Joinery)
EXTERIOR Application**



**Figure 10 - Mechanical Joinery Example
INTERIOR Application**



**Figure 11 - Mechanical Joinery and Corner
INTERIOR Application**

Perimeter Anchors - 
Approximate anchor hole location

Sample Section Details – Windows

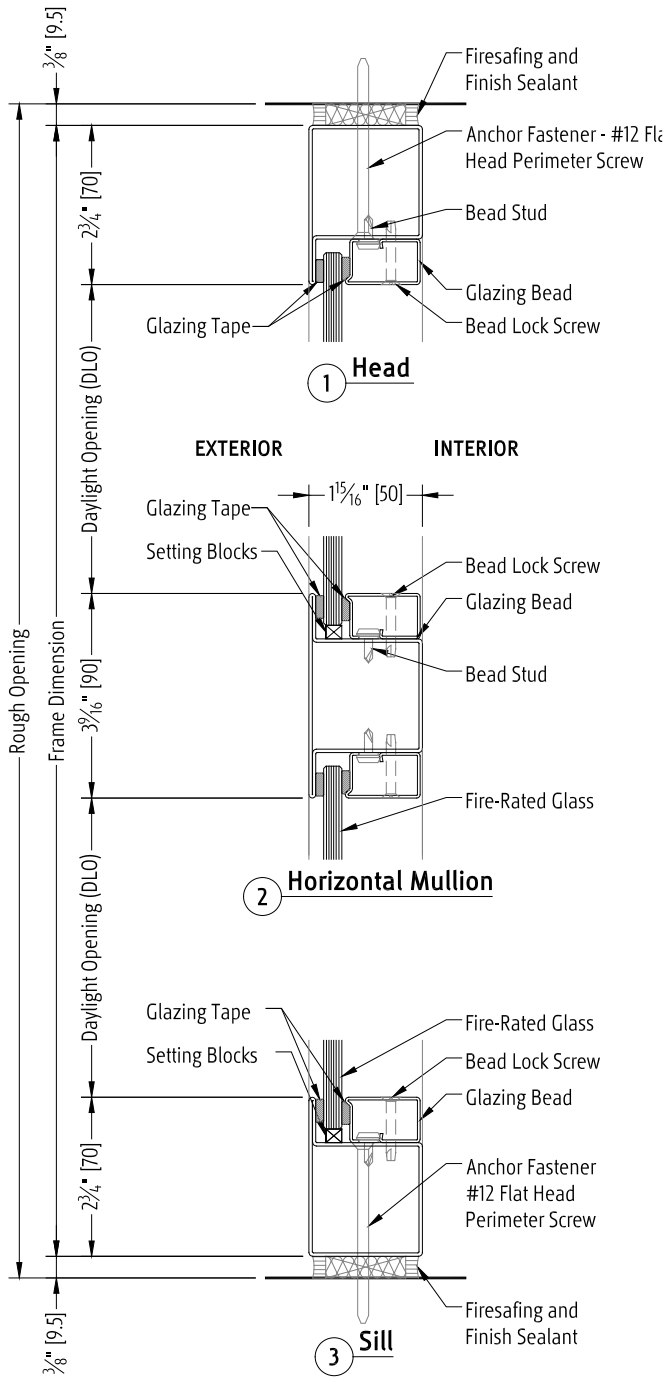


Figure 12 - INTERIOR Application

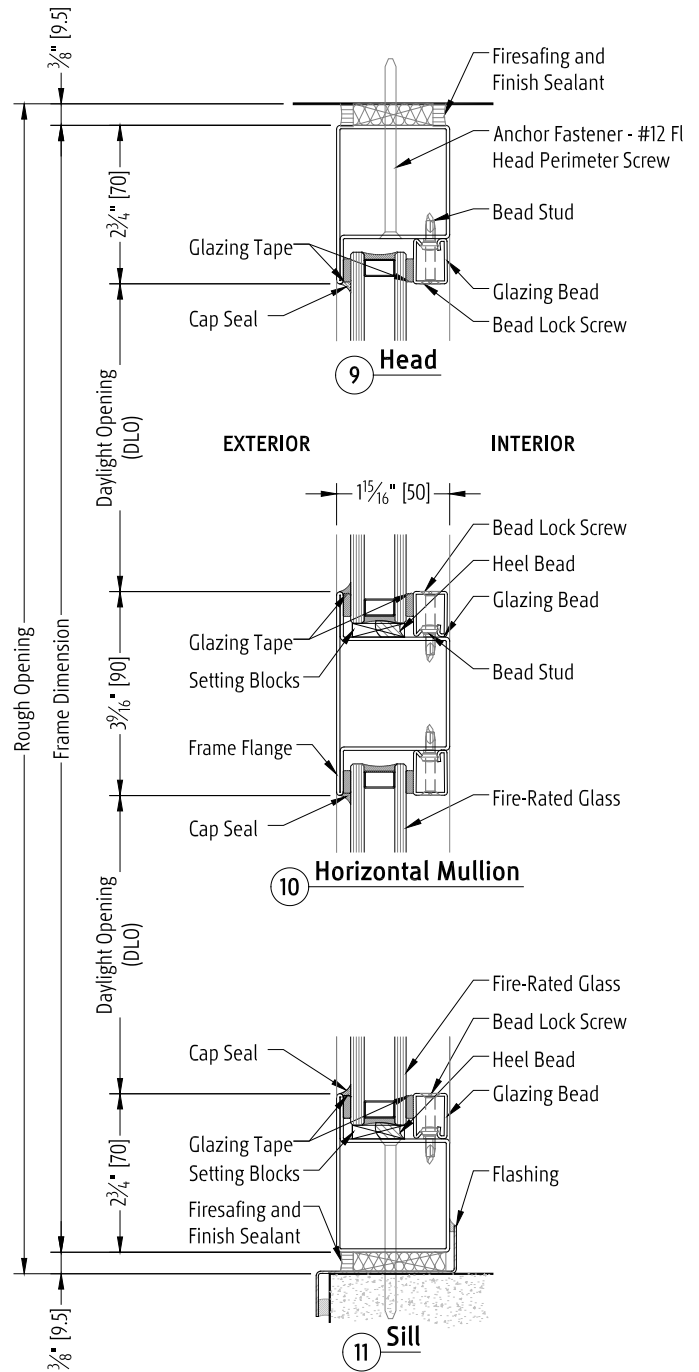


Figure 13 - EXTERIOR Application

NOTE: Install Frame Flange on the EXTERIOR of opening. Typical IGU shown.

Sample Section Details – Windows

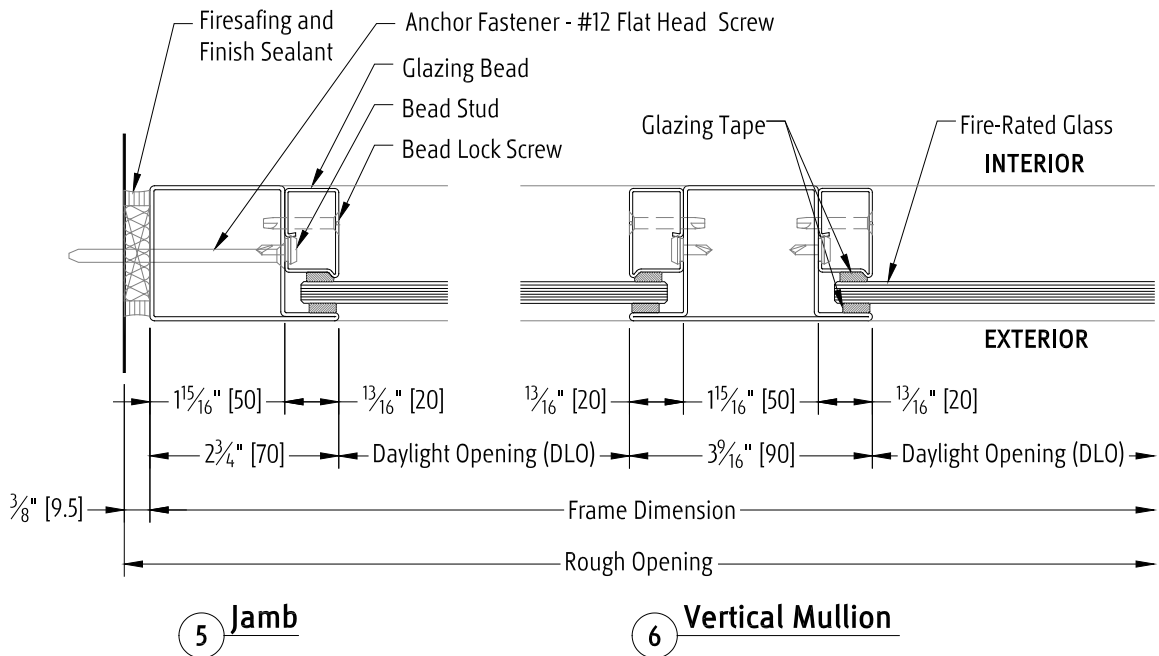


Figure 14 - INTERIOR Application

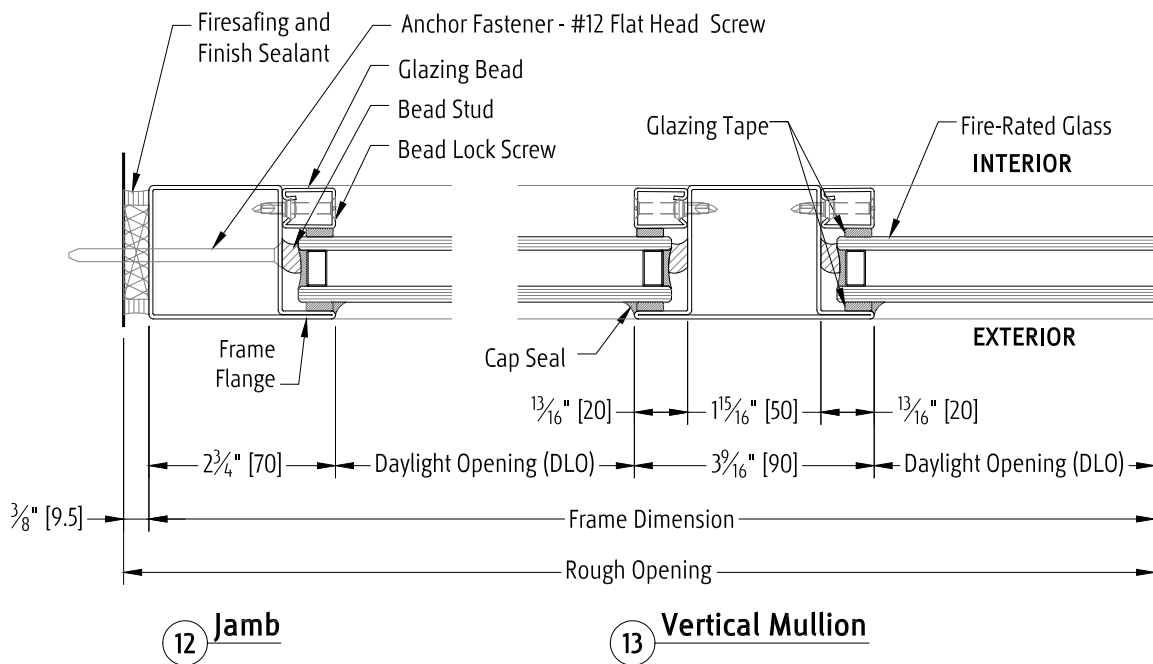
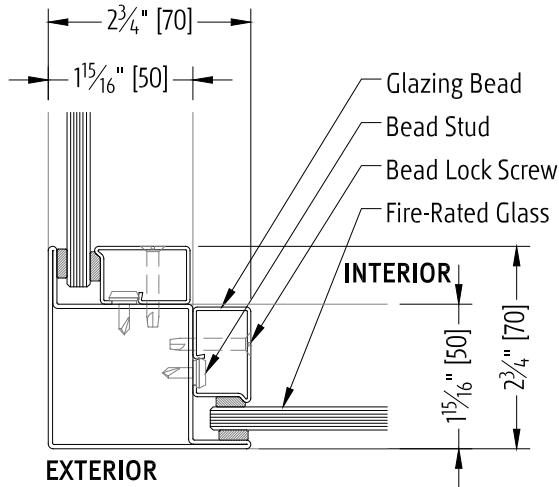


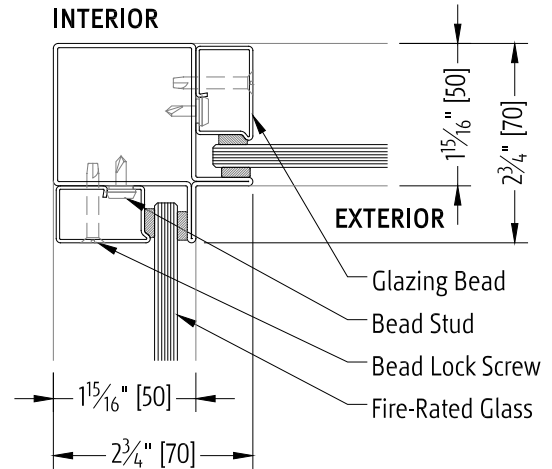
Figure 15 - EXTERIOR Application

Sample Section Details – Windows



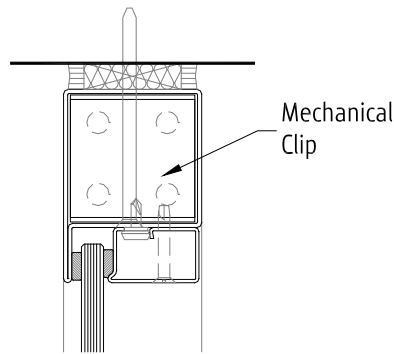
8 90° Outside Corner

Figure 16 - INTERIOR Application - "Outside" Corner



7 90° Inside Corner

Figure 17 - INTERIOR Application - "Inside" Corner



4 Mechanical Joinery

Figure 18 - INTERIOR Application - Mechanical Joint

Sample Elevations – Single Doors

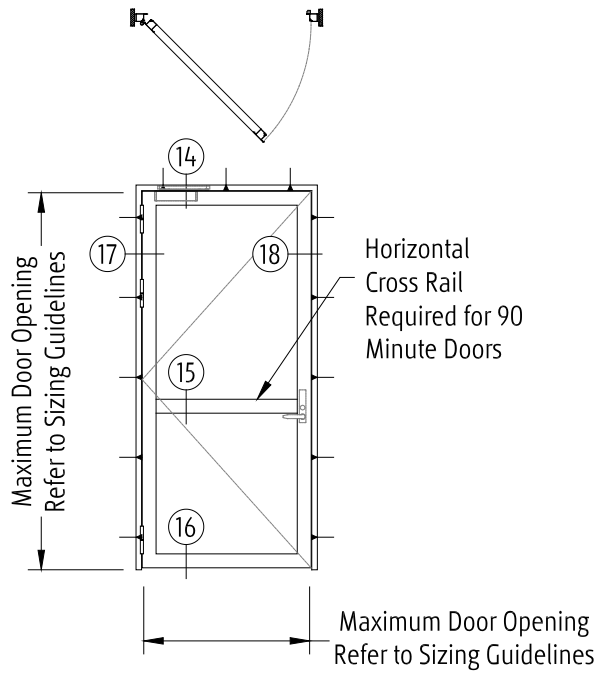


Figure 19 - Standalone Door

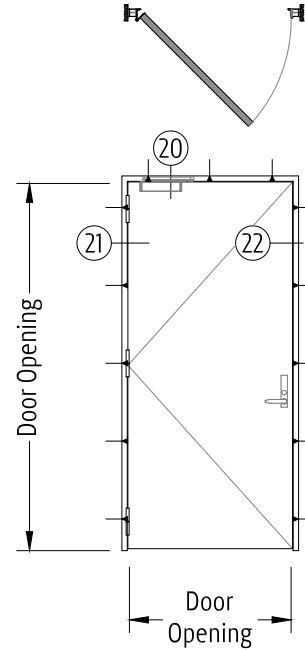
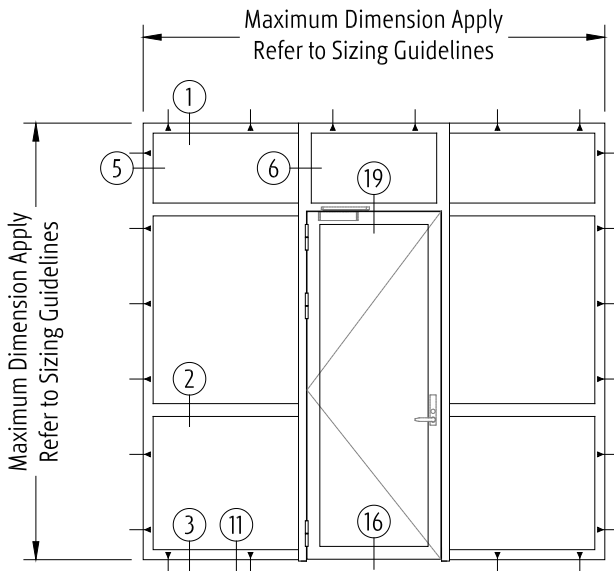



Figure 20 - Standalone Door By Others (DBO)



**Figure 21 Single Door with Sidelite and Transom
INTERIOR - Application Shown**

Perimeter Anchors - 
Approximate anchor hole location

Sample Elevations – Door Pairs

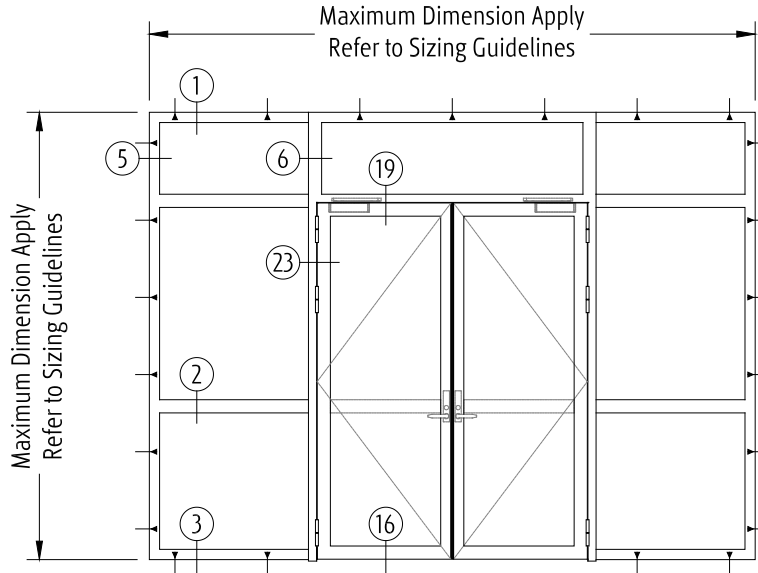


Figure 22 - Pair of Doors with Sidelite and Transom
INTERIOR Application Shown

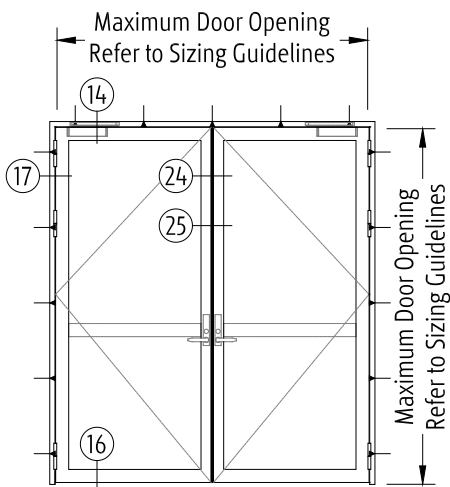
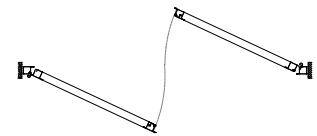
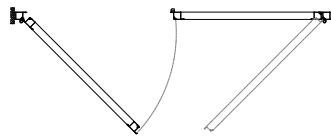
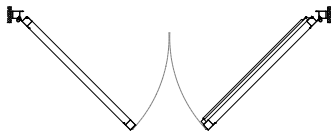


Figure 23 - Active/Active Pair

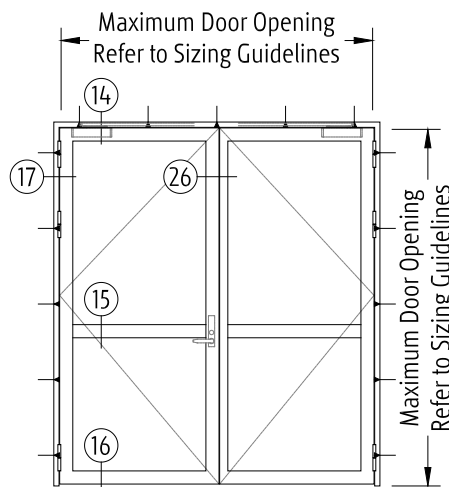


Figure 24 - Active / Fixed Pair

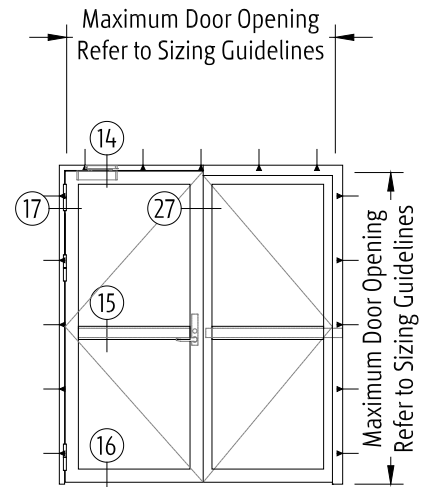


Figure 25 - Double Egress Pair

Perimeter Anchors -
Approximate anchor hole location

Sample Elevations – Wide Stile Doors
For Deep Backset Mortise Locks

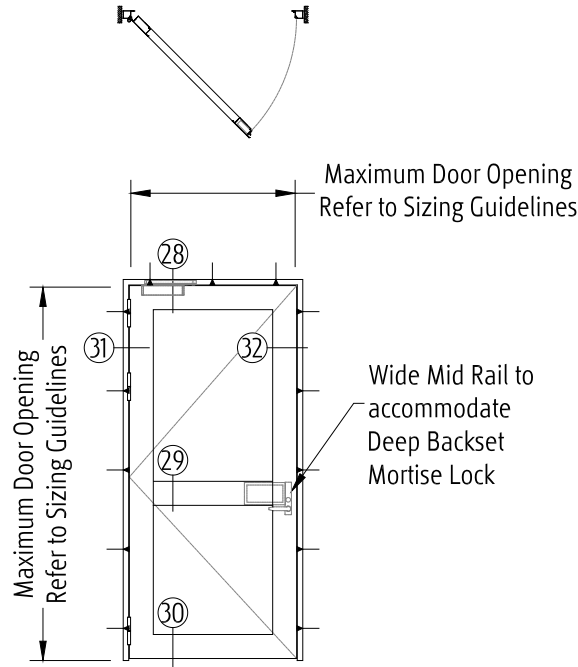


Figure 26 - Standalone Wide Stile Door

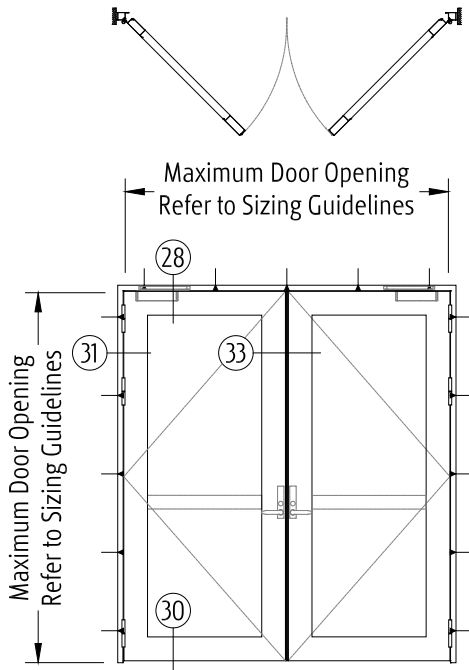


Figure 27 - Pair of Wide Stile Doors
Active / Active

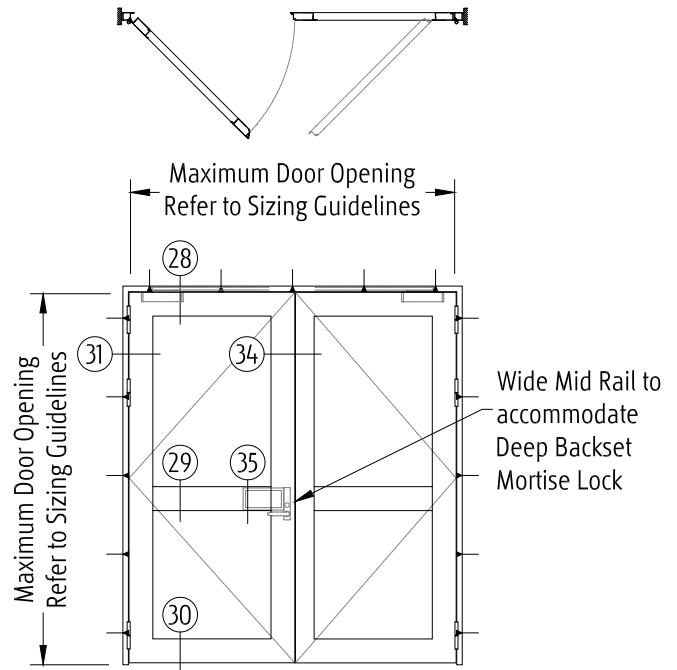



Figure 28 - Pair of Wide Stile Doors
Active / Fixed

Perimeter Anchors - 
Approximate anchor hole location

Sample Section Details – Doors

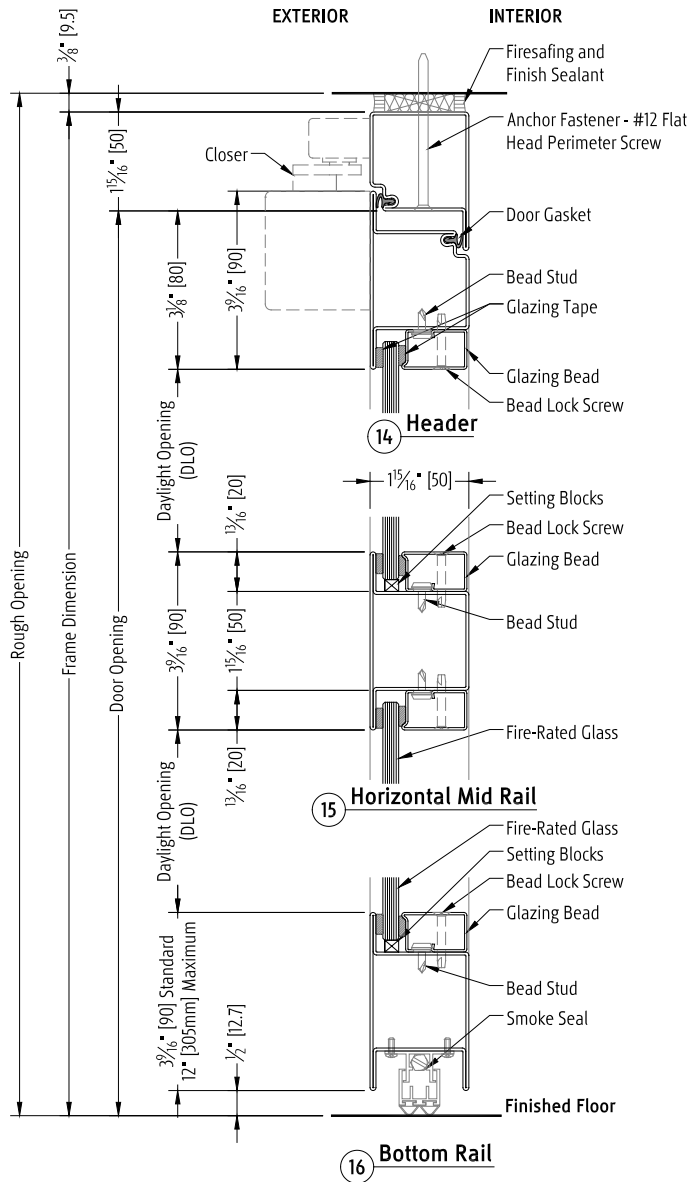


Figure 29 - Standalone Door

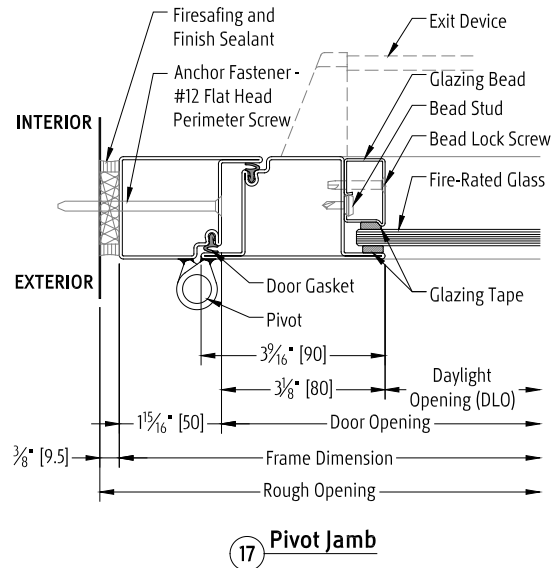


Figure 30 Standalone Door Jamb at Pivot Side

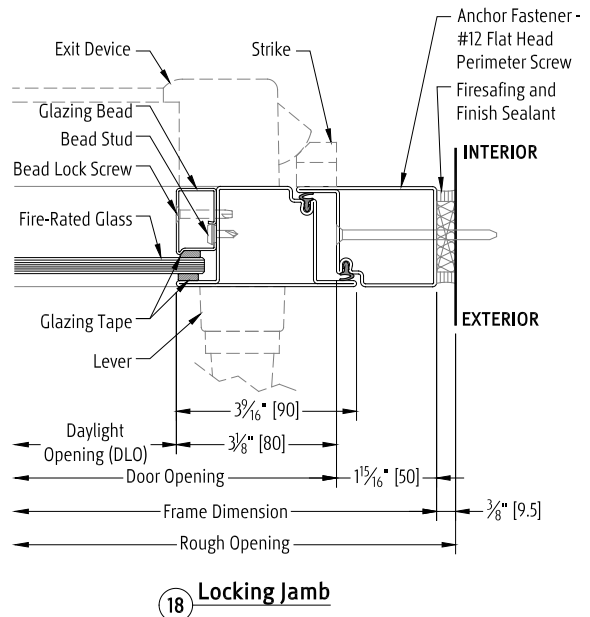
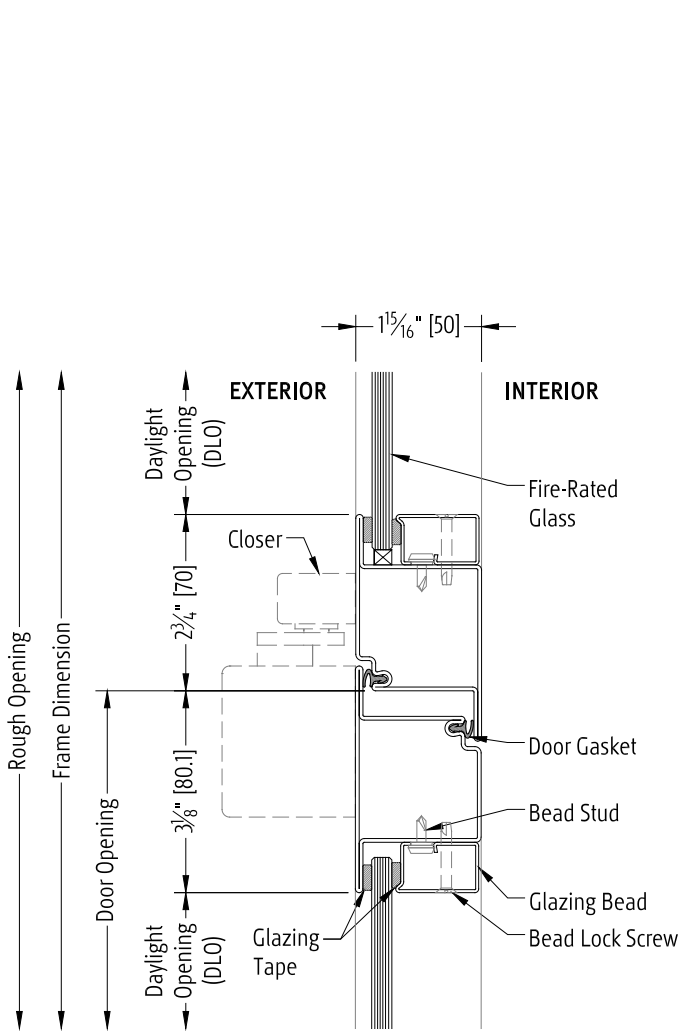


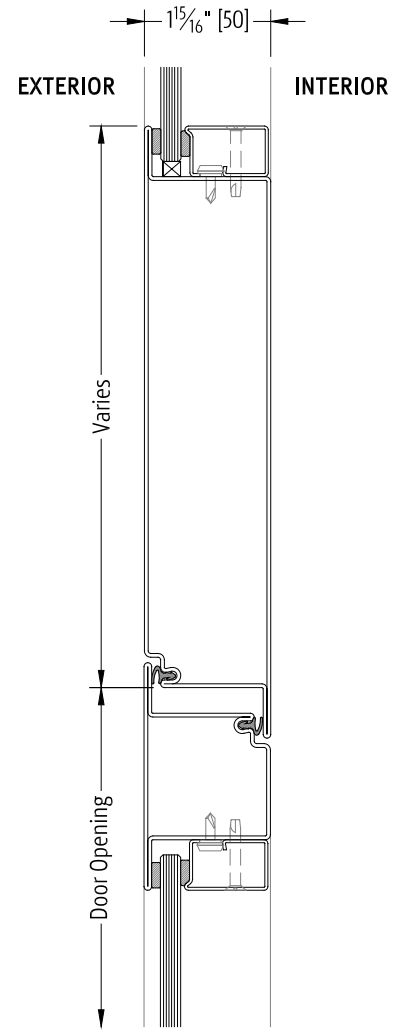
Figure 31 - Standalone Door Jamb at Lever Side

Sample Section Details – Doors



19A Door Header with Transom

Figure 32 - Door with Transom



19B Extended Door Header
Used with Auto-Operator (NB TGP)

Figure 33 - Door with Extended Header

Sample Section Details – Doors

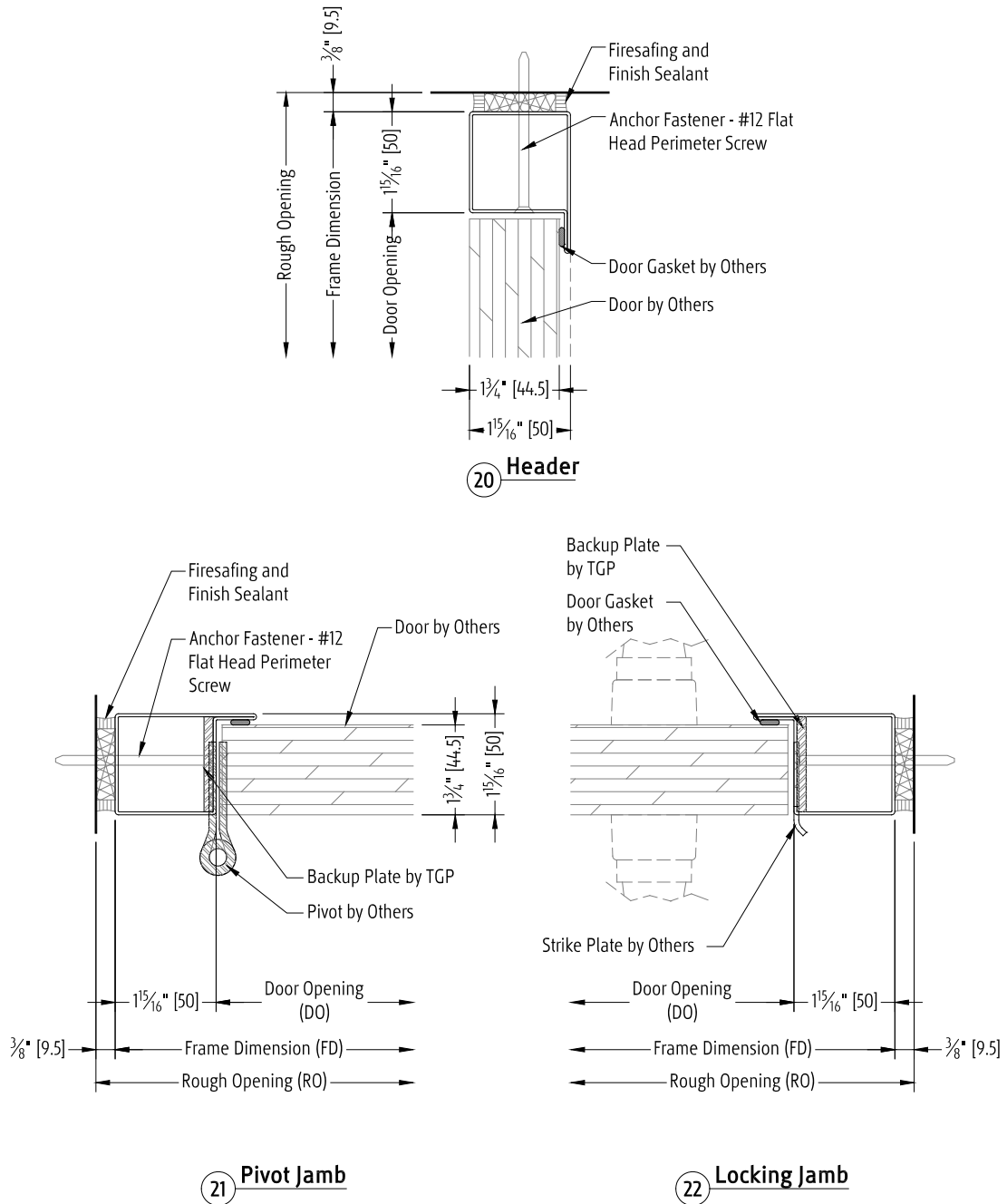
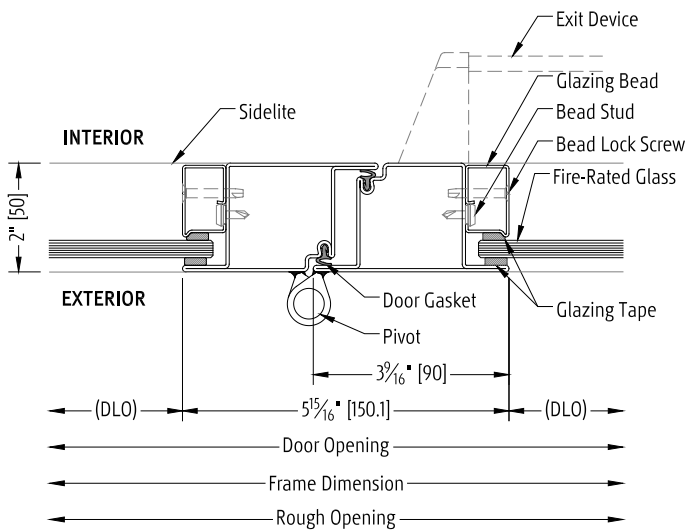
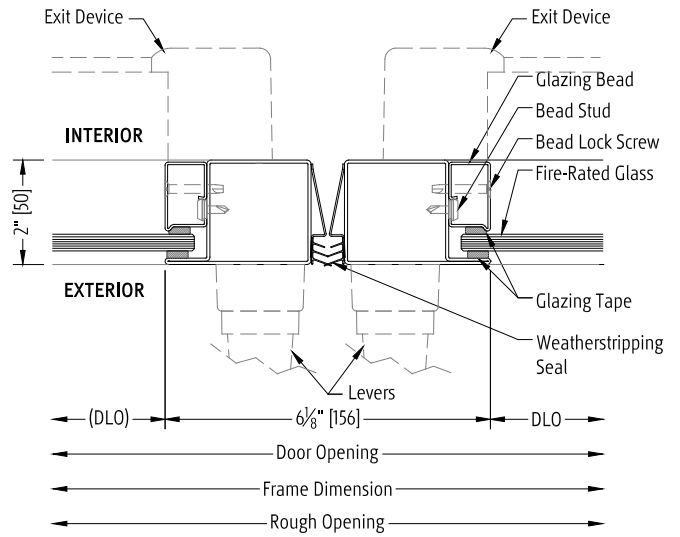


Figure 34 - Fireframes Designer Series Frame with Door By Others (DBO)

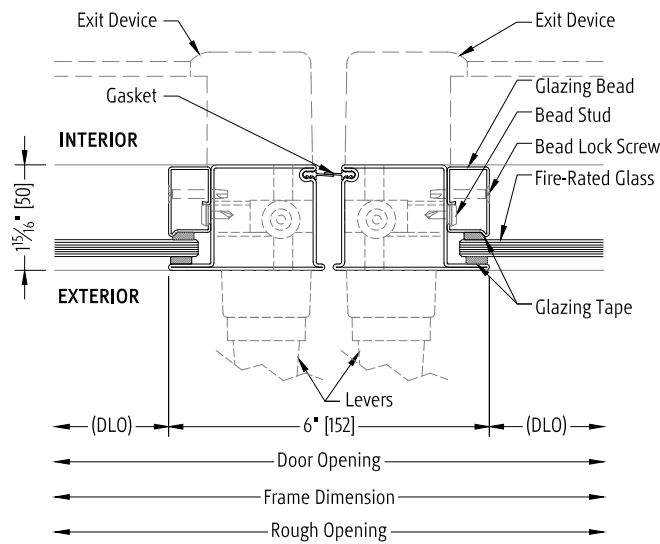
Sample Section Details – Doors



23 Pivot Jamb with Sidelite



24 Active / Active Meeting Stile (Stainless Steel Profiles)



25 Active / Active Meeting Stile (Steel Profiles)

Figure 35 - Typical Meeting Stile Combinations

Sample Section Details – Doors

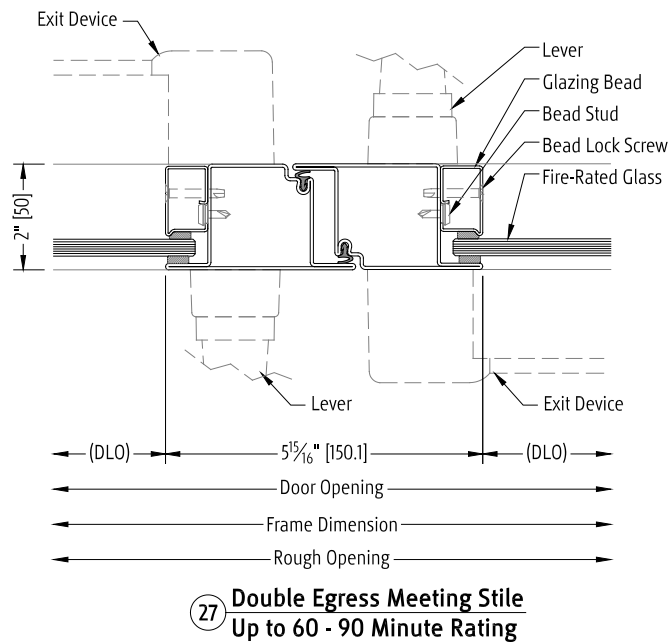
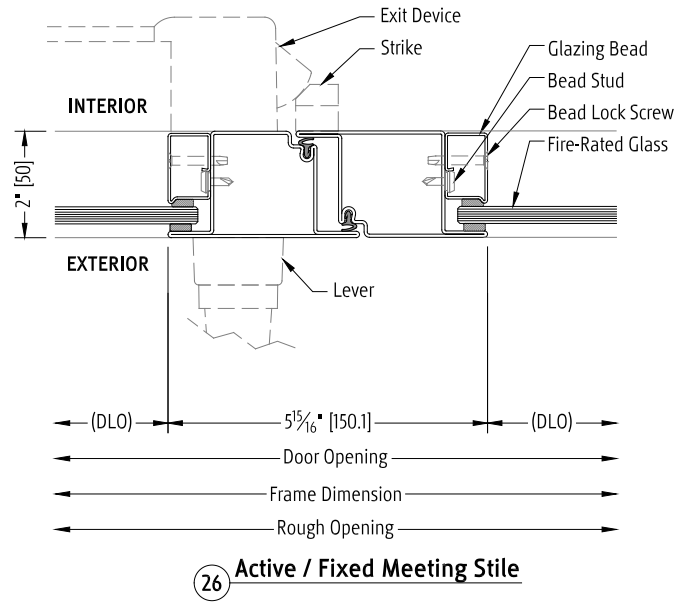


Figure 36 - Typical Meeting Stile Combinations

Sample Section Details – Doors

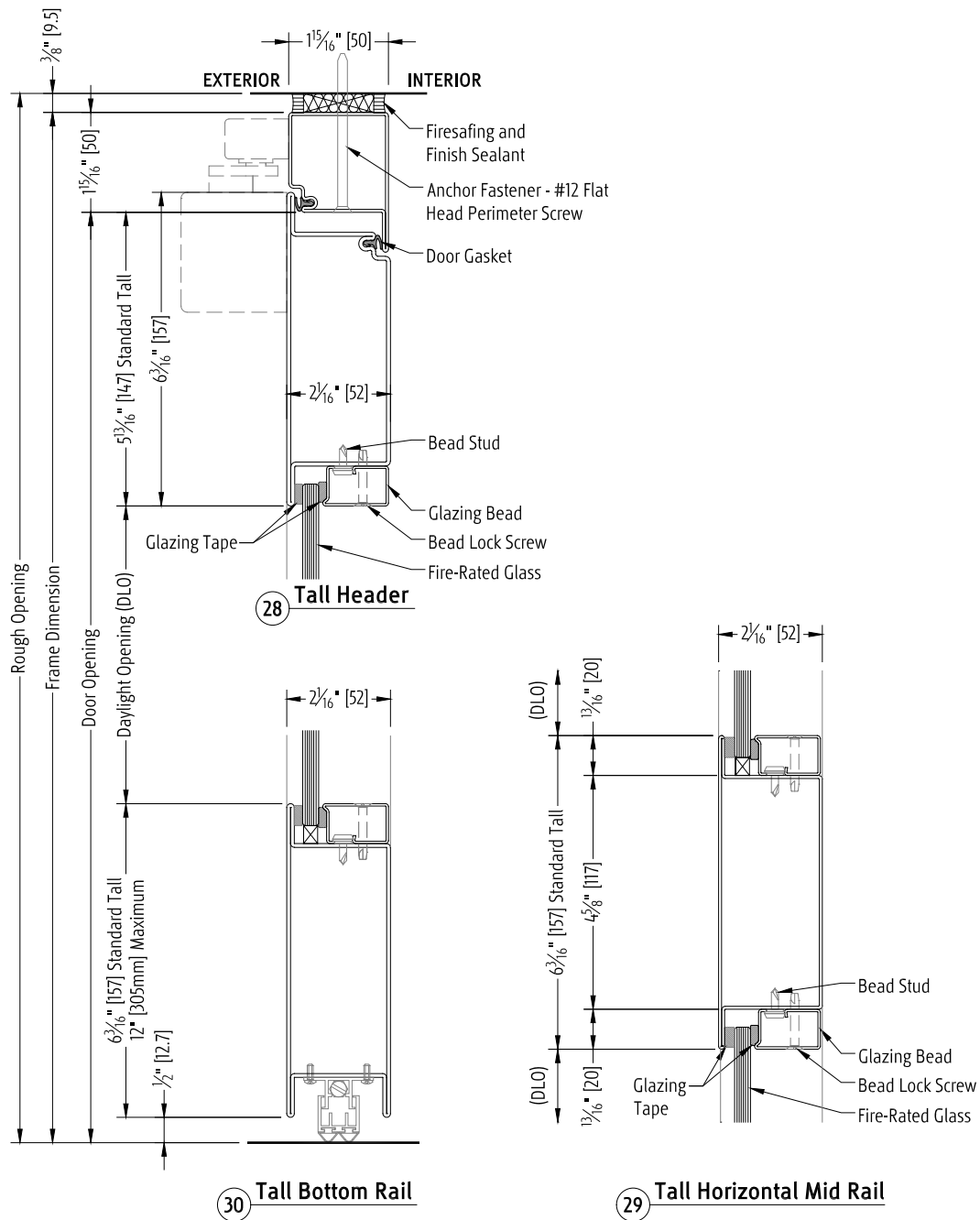


Figure 37 - Wide Stile Door Details

Sample Section Details – Doors

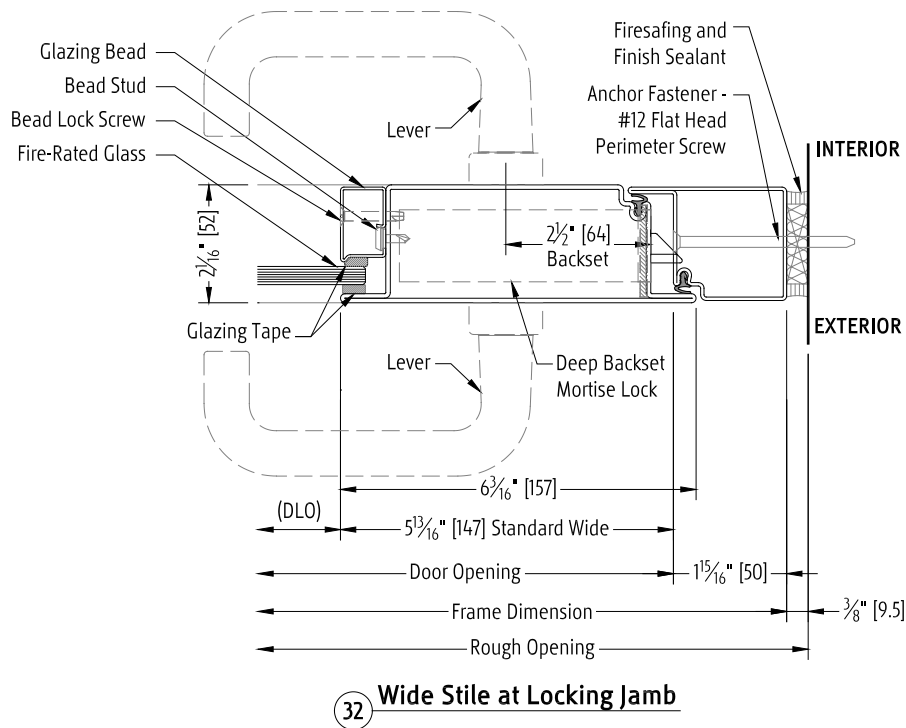
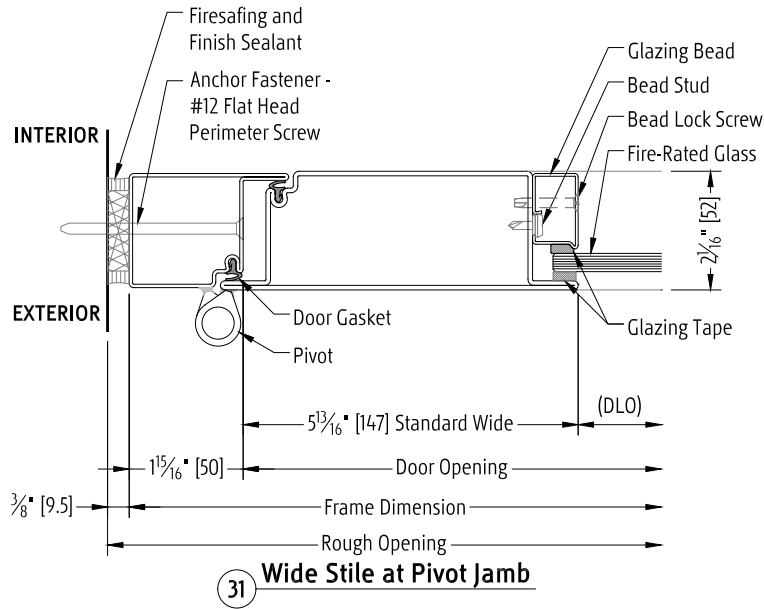


Figure 38 - Wide Stile Jamb Combinations

Sample Section Details – Doors

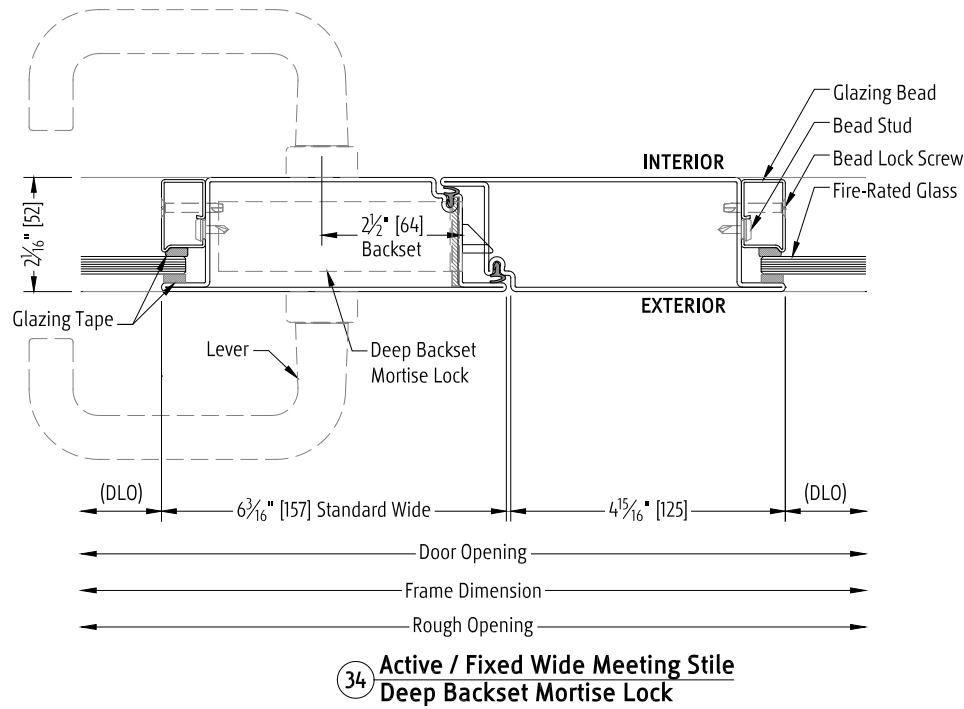
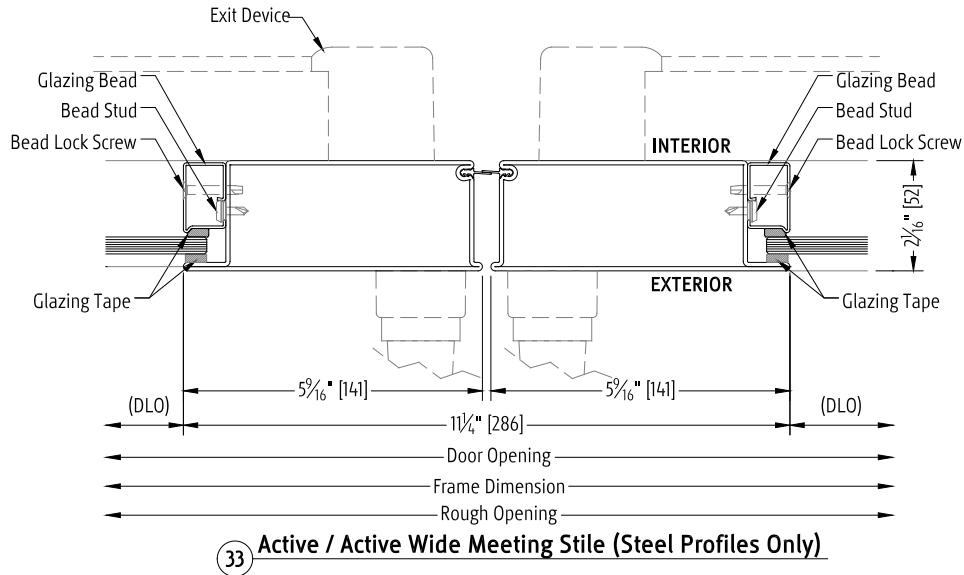
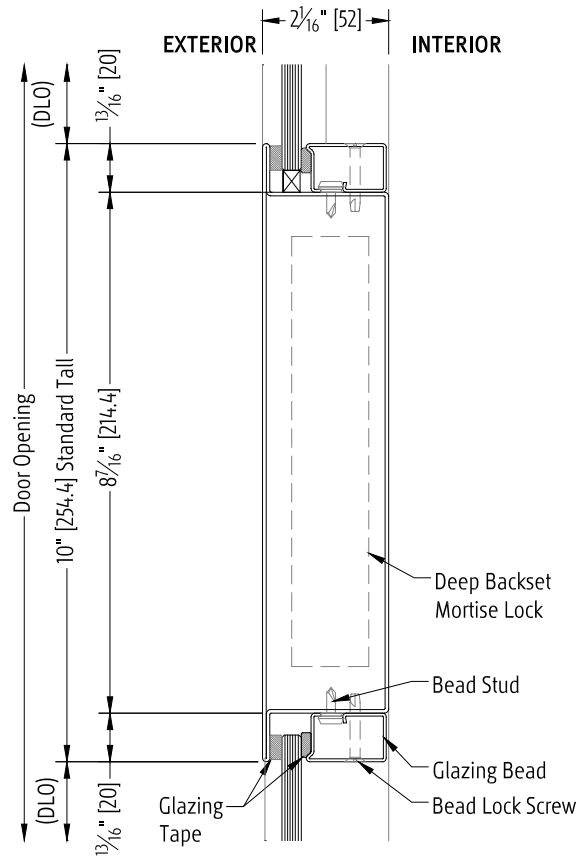


Figure 39 - Wide Stile Meeting Combinations

Sample Section Details – Doors



35 Wide Mid Rail for Deep Backset Mortise Lock

Figure 40 - Extra Wide Mid Rail Detail

In accordance with California Prop 65, products received from TGP may contain the required warning label (below) indicating that they may contain door hardware or other components known to cause cancer and reproductive harm. For more information, go to www.P65Warnings.ca.gov.

In accordance with California PROP65 -
⚠️ WARNING: Cancer and Reproductive Harm-www.P65Warnings.ca.gov
⚠️ ADVERTENCIA: Cáncer y Daño Reproductivo-www.P65Warnings.ca.gov
⚠️ AVERTISSEMENT: Cancer et Troubles de l'appareil reproducteur-
www.P65Warnings.ca.gov P518-742