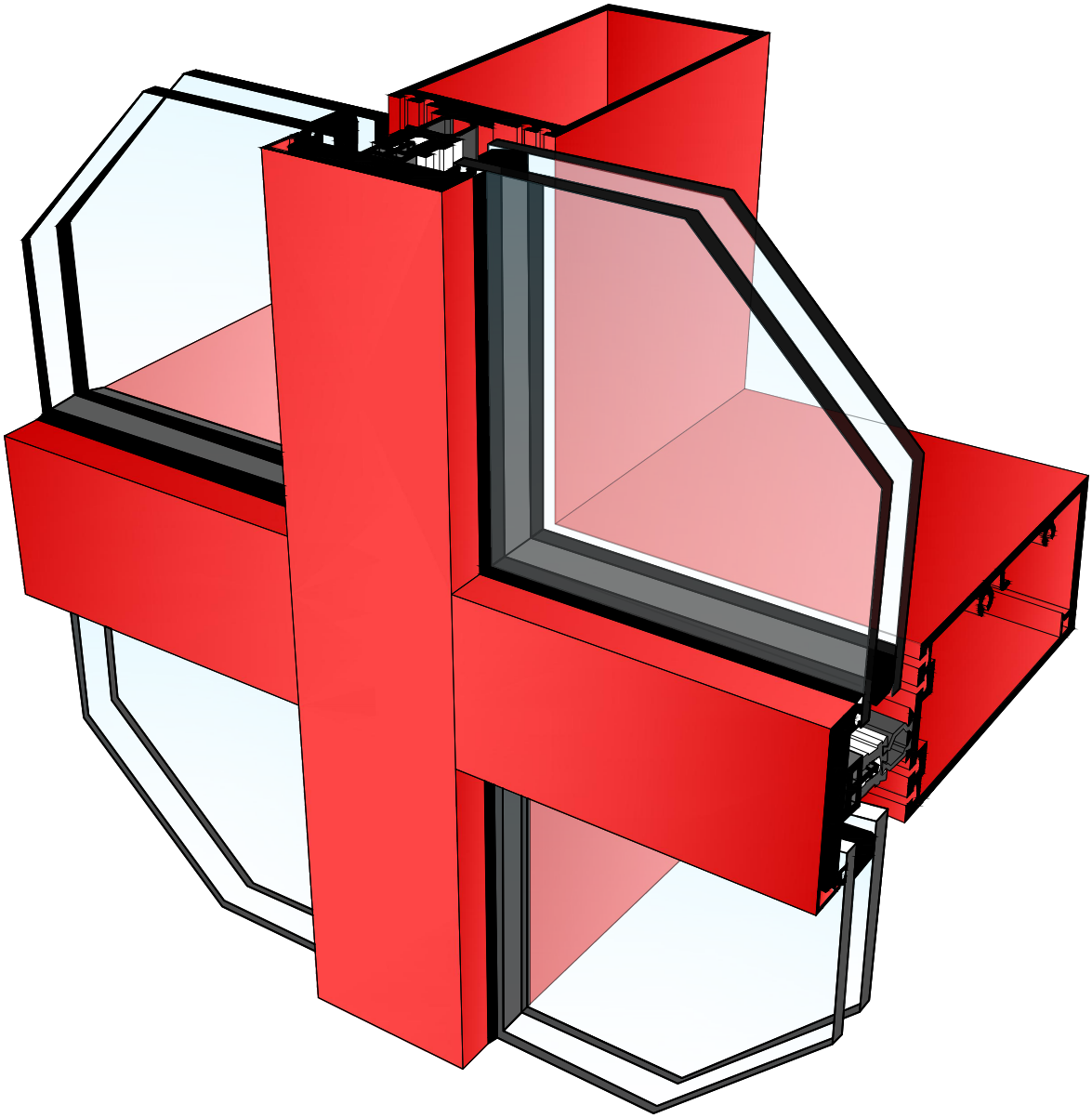
TUBELITE®

DEPENDABLE

LEADERS IN ECO-EFFICIENT STOREFRONT, CURTAINWALL AND ENTRANCE SYSTEMS



400TU SERIES
ULTRA - THERMAL CURTAIN WALL
• SHEAR CLIP CONSTRUCTION •

INSTALLATION INSTRUCTIONS

3056 Walker Ridge Dr. NW, Suite G • Walker, MI 49544 • 800-866-2227

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GENERAL CONSTRUCTION NOTES

1. These instructions cover typical product application, fabrication, installation and standard conditions and are general in nature. They provide useful guidelines, but the final shop drawings may include additional details specific to the project. Any conflict or discrepancies must be clarified prior to execution.

2. Materials stored at the job site must be kept in a safe place protected from possible damage by other trades. Stack with adequate separation so materials will not rub together and store off the ground. Cardboard or paper wrapped materials must be kept dry. Check arriving materials for quantity and keep a record of where various materials are stored.

3. All field welding must be done in accordance with AISC guidelines. All aluminum and glass should be shielded from field welding to avoid damage from weld splatter. Results will be unsightly and may be structurally unsound. Advise general contractor and other trades accordingly.

4. Coordinate protection of installed work with general contractor and/or other trades.

5. Coordinate sequence of other trades which affect framing installation with the general contractor (e.g. fire proofing, back up walls, partitions, ceilings, mechanical ducts, HVAC, etc.).

6. General contractor should furnish and guarantee bench marks, offset lines and opening dimensions. These items should be checked for accuracy before proceeding with erection. Make certain that all adjacent substrate construction is in accordance with the contract documents and/or approved shop drawings. If not, notify the general contractor in writing before proceeding with installation because this could constitute acceptance of adjacent substrate construction by others.

7. Isolate all aluminum to be placed directly in contact with masonry or other incompatible materials with a heavy coat of zinc chromate or bituminous paint. Fasteners attaching framing to building structure are typically not provided by Tubelite.

8. Sealant selection is the responsibility of the erector, installer and/or glazing contractor and must be approved by the sealant manufacturer with regard to application and compatibility for its intended use. All sealants must be used in strict accordance with the manufacturer’s instructions and applied only by trained personnel to surfaces that have been properly prepared.

9. Sealant must be compatible with all materials with which they have contact, including other sealant surfaces. Consult the sealant manufacturer for recommendations relative to shelf life, compatibility, cleaning of substrate, priming, tooling adhesion, etc. Recommend sealant manufacturer perform adhesion "pull test" at "wet" glazing for quality assurance.

10. Drainage gutters and weep holes must be kept clean at all times. Tubelite will not accept responsibility for improper drainage as a result of clogged gutters and weep holes.

11. This product requires clearances at the head, sill and jambs to allow for thermal expansion and contraction as well as construction tolerances. Refer to final distribution drawings for joint sizes. Joints smaller than 1/2" may be subject to failure. Consult the sealant manufacturer for proper sizing of joints.

12. All framing members, entrances and other materials are to be installed plumb, level and true with regard to established bench marks, column center lines or other working points established by the general contractor and checked by the erector, installer and/or glazing contractor.

13. After sealant is set and a representative amount of the wall has been glazed (500 square feet or more), run a water hose test to check installation. On large projects, a hose test should be repeated during glazing operation. This testing should be conducted in accordance with AAMA 501.2 specifications.

14. Cleaning of exposed aluminum surfaces should be done per AAMA recommendations.

15. Care must be taken when assembling aluminum framing components. Over tightening any fastener may cause stripping or fastener failure. Tubelite recommends the use of drill motors with clutches engaged to provide satisfactory tightening of the screw while preventing over torque. The use of impact drill motors is not recommended due to the absence of a clutch device.

16. Check www.tubeliteinc.com for any installation instruction updates.

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GENERAL CONSTRUCTION NOTES

Tubelite's POLYAMIDE (P4633) and THERMAL (PTB120 & PTB240) pressure plates can be used in place of the standard aluminum pressure plate for improved thermal performance. Please note the following important information while planning your project.

- Tubelite offers two alternate standard size pressure plates as noted above. The polyamide pressure plate is extruded in black and the thermal pressure plates are extruded in white with both available at 24'-2".
- Polyamide and Thermal pressure plate anchor screw holes are pre-machined. Weep holes must be drilled in shop. Anchor holes are 8"(203.2mm) o/c and weeps are 5/16"(7.9mm) diameter holes. When installing screws in the polyamidepressure plate, use S479 screw.
- ALL anchor holes must be utilized for proper load distribution.
- Polyamide pressure plates do not require special tooling for cutting and drilling, however, carbide tipped blades are recommended for cutting or diamond tip blades for better longevity.
- The same protective wear(i.e. gloves, safety goggles, etc.) worn to fabricate aluminum pressure plates can be worn to fabricate polyamide and thermal pressure plates. Protective wear guidelines for PTB120 & PTB240 thermal pressure plates can be found online in the MSDS.
- Tubelite offers one typical vertical and horizontal face cover (E031TU) that is specifically designed to engage with the polyamide pressure plates. Nominal dimension from face of glass to face of cover measures 13/16" (20.6mm). Typical face covers can be used with the thermal pressure plates.
- Tubelite offers one typical aluminum corner cover (E325TU for dual glaze; E330TU for triple glaze) that is designed for the pressure plate. Nominal dimension from face of glass to face of cover measures 3/4"(19mm).
- A PVC pocket filler (P3967) has been designed to be used at perimeter members where a return leg pressure plate is not available.
- Tubelite recommends not to exceed 90 days direct exposure to sunlight for the thermal pressure plates PTB120 and PTB240.

QUICK REFERENCE CHECKLIST

1. Make sure the opening is square and the caulk joints are ½" (12.7mm) minimum around the frame.
2. Ensure surfaces that will be sealed are free of contaminants that can lead to adhesion issues.
3. Check that all weeps and baffles (optional, if required) conform to the locations and sizes called out in these instructions.
4. Seal ends of horizontal frame members that are joined to vertical members.
5. Water dam installation and sealing is critical to system performance. Check installation against instructions to ensure conformity.
6. Apply sealant between all corner gasket joints.
7. Glass bites must be equal on all sides.
8. Double check anchor size and location against installation instructions or approved shop drawings.
9. Ensure pressure plate fasteners are torqued to 90 in-lbs. Do not over torque polyamide pressure plate fasteners.
10. When polyamide pressure plates are used add two additional fasteners on each side of a vertical/ horizontal intersection. See Fig. 48.1.

GLASS SIZE CALCULATION

Captured Mullions	= D.L.O. + 1" (25.4mm) (1/2" (12.7mm) glass bite)
SSG Vertical Mullions	= D.L.O. + 2" (50.8mm) (1" (25.4mm) glass bite)
SSG Horizontal Mullions	= D.L.O. + 1 ¾" (44.5mm)
SSG Vertical Mullion Adjacent to Captured Jamb	= D.L.O. + 1 ½" (38.1mm)(width only)
Sunshade Brackets at Captured Mullions	= D.L.O. + 1" (25.4mm) (1/2" (12.7mm) glass bite)
Sunshade Brackets at SSG Vertical Mullions	= D.L.O. + 1 ½" (38.1mm) (¾" (19mm) glass bite)
Corner Mullions	= See Approved Shop Drawings

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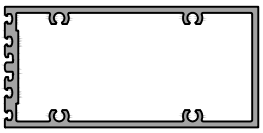
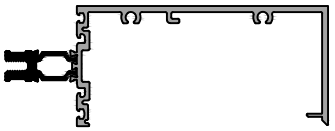
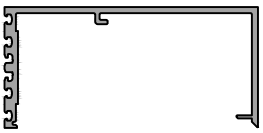
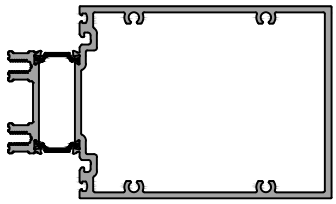
TYPICAL FRAMING EXTRUSIONS

SHAPE	DESCRIPTION		PART NUMBER	
			DUAL GLAZE	TRIPLE GLAZE
	Captured Mullion	3¾" (95.3mm) Member	A010420	AT010420
		5¼"(133.4mm) Member	A010520	AT010520
		7¾"(196.9mm) Member	A010820	AT010820
	SSG Mullion	3¾" (95.3mm) Member	E432TU	E432TU
		5¼"(133.4mm) Member	E532TU	E532TU
		7¾"(196.9mm) Member	E832TU	E832TU
	SSG Horizontal	3¾" (95.3mm) Member	E488TU	E488TU
		5¼"(133.4mm) Member	E588TU	E588TU
		7¾"(196.9mm) Member	E888TU	E888TU
	Horizontal (Optional Roll Over)	3¾" (95.3mm) Member	A010481	AT010481
		5¼"(133.4mm) Member	A010581	AT010581
		7¾"(196.9mm) Member	A010881	AT010881
	SSG Horizontal (Optional Roll Over)	3¾" (95.3mm) Member	E484TU	E484TU
		5¼"(133.4mm) Member	E584TU	E584TU
		7¾"(196.9mm) Member	E884TU	E884TU
	Closure Plate for A010461, A010561, A010861, E464TU, E864TU & E564TU	3¾" (95.3mm) Member	E162TU	E162TU
		5¼" (133.4mm) Member	E161TU	E161TU
		7¾" (196.9mm)Member	E163TU	E163TU
	4" Tubular Horizontal	3¾" (95.3mm) Member	A015485	AT015585
		5¼" (133.4mm) Member	A015585	AT015585
		7¾" (196.9mm) Member	N/A	N/A

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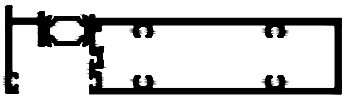
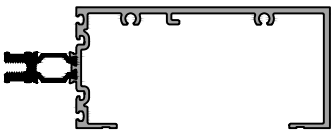
TYPICAL FRAMING EXTRUSIONS

SHAPE	DESCRIPTION		PART NUMBER	
			DUAL GLAZE	TRIPLE GLAZE
	Upper Expansion Horizontal	3¾" (95.3mm) Member	A010486	AT010486
		5¼" (133.4mm) Member	A010586	AT010586
		7¾" (196.9mm) Member	A010886	AT010886
	Lower Expansion Horizontal	3¾" (95.3mm) Member	A011486	AT011486
		5¼" (133.4mm) Member	A011586	AT011586
		7¾" (196.9mm) Member	A011886	AT011886
	Head/Sill/Jamb	3¾" (95.3mm) Member	A010480	AT010480
		5¼" (133.4mm) Member	A010580	AT010580
		7¾" (196.9mm) Member	A010880	AT010880

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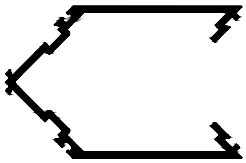
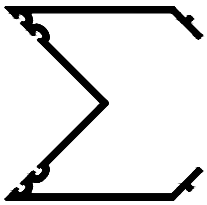
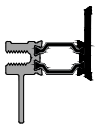
CORNER EXTRUSIONS

SHAPE	DESCRIPTION		PART NUMBER	
			DUAL GLAZE	TRIPLE GLAZE
	90º Outside Corner for Captured and SSG Glazing	3¾" (95.3mm) Member	E445TU	E445TU
		5¼"(133.4mm) Member	E545TU	E545TU
		7¾"(196.9mm) Member Requires E145TU	E545TU	E545TU
	90º Inside Corner for SSG Glazing	3¾" (95.3mm) Member	E455TU	E455TU
		5¼"(133.4mm) Member	E555TU	E555TU
		7¾"(196.9mm) Member Requires E155TU	E555TU	E555TU
	90º Outside Corner Adapter for Captured and SSG Glazing	7¾"(196.9mm) Member Used with E545TU	E145TU	E145TU
	90º Inside Corner Adapter for SSG Glazing	7¾"(196.9mm) Member Used with E555TU	E146TU	E146TU
	90º Outside Corner Nose Adapter for Captured Glazing		A140326	AT140326
	90º Outside Corner Adapter for SSG Glazing		E148TU	E148TU

Contact Tubelite for additional system extrusions for enhanced project applications.
Or, visit our web site at: http://www.tubeliteinc.com/400tu-high-performance-thermal-curtain-wall/.

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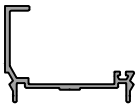
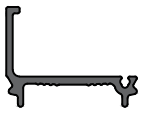
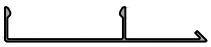
PRESSURE BARS, FACE CAPS, TRIMS and SETTING CHAIRS

SHAPE	DESCRIPTION	PART NUMBER	
		DUAL GLAZE	TRIPLE GLAZE
	Intermediate Pressure Plate	M300TU	M300TU
	Polyamide Pressure Plate	P4633	P4633
	Thermal Pressure Plate	PTB120	PTB120
	Perimeter Pressure Plate	M301TU	M301TU
	Thermal Perimeter Pressure Plate	PTB240	PTB240
	Face Cover (Standard) for Aluminum Pressure Plate only	E4TB64	E4TB64
	Face Cover (Standard) for Polyamide Pressure Plate only	E301TU	E301TU
	Face Cover (Standard) for OS 90° Pressure Plate only	E325TU	E325TU
	Pressure Plate for Expansion Horizontal	M305TU	M305TU
	Face Cover for Expansion Horizontal	E032TU	E032TU
	Pressure Plate for Captured 4”(101.6mm) Sight Line Horizontal/Vertical	M306TU	M306TU
	Face Cover for Captured 4” (101.6mm) Sight Line Horizontal/Vertical	E033TU	E033TU
	Interior Trim for Expansion Horizontal	E040TU	E040TU
 6"(152.4mm) Long	Interior Trim Clip for Expansion Horizontal	P4646	P4646
 6"(152.4mm) Long	Setting Chair	P5123	P5136
	Setting Chair at SSG, 10"(254mm) - for 1"(25.4mm) to 1 3/4"(44.5mm) IG Unit	P5150	P5137

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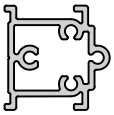
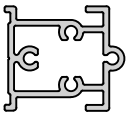
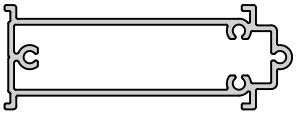
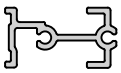
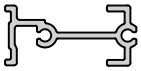
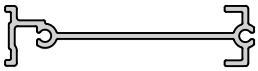
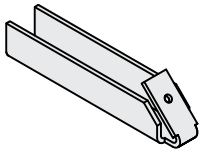
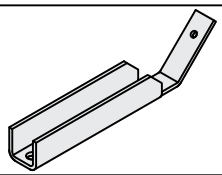
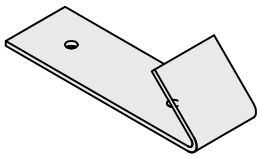
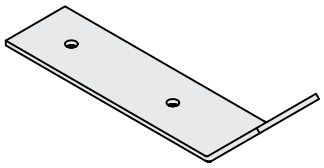
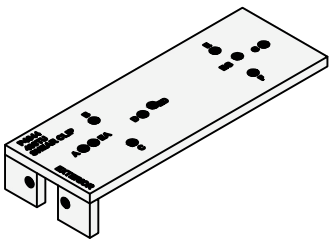
ANCHORS and SHEAR CLIPS

SHAPE	DESCRIPTION		PART NUMBER DUAL GLAZE	PART NUMBER TRIPLE GLAZE
	Shear Clip (for 3 3/4" (95.3mm) Horizontal)		P5194	P5194
	Shear Clip (for 5 1/4" (133.4mm) Horizontal)		P5122	P5122
	Shear Clip (for 7 3/4" (196.9mm) Horizontal)		P5151	P5151
	Shear Clip (for 3 3/4" (95.3mm) Expansion Horizontal)		P5192	P5192
	Shear Clip (for 5 1/4" (133.4mm) Expansion Horizontal)		P5193	P5193
	Shear Clip (for 7 3/4" (196.9mm) Expansion Horizontal)		P5152	P5152
	Shear Clip for 90º Outside Corner (Expansion Horizontal)	3¾" (95.3mm) Member	P4673	P4673
		5¼"(133.4mm) Member	P4673	P4673
		7¾"(196.9mm) Member	P4675	P4675
	Shear Clip for 90º Inside Corner (Expansion Horizontal)	3¾" (95.3mm) Member	P4672	P4672
		5¼"(133.4mm) Member	P4672	P4672
		7¾"(196.9mm) Member	P4674	P4674
	Shear Clip for 90º Outside Corner	3¾" (95.3mm) Member	P4676	P4676
		5¼"(133.4mm) Member	P4621	P4621
		7¾"(196.9mm) Member	P4677	P4677
	Shear Clip for 90º Inside Corner	3¾" (95.3mm) Member	P4678	P4678
		5¼"(133.4mm) Member	P4679	P4679
		7¾"(196.9mm) Member	P4680	P4680
	Drill Fixture		P4644	P4644

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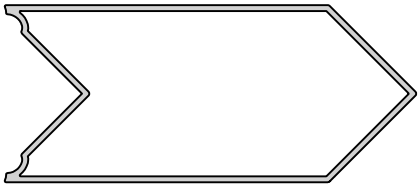
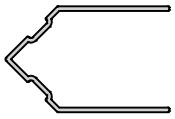
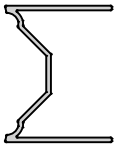
MULLION SPLICE SLEEVE and ANCHORS

SHAPE	DESCRIPTION		PART NUMBER	
			DUAL GLAZE	TRIPLE GLAZE
	Splice Sleeve for 90º Outside Corner	3¾" (95.3mm) Member	P4670	P4670
		5¼" (133.4mm) Member	P4647	P4647
		7¾" (196.9mm) Member	N/A	N/A
	Splice Sleeve for 90º Inside Corner	3¾" (95.3mm) Member	P4671	P4671
		5¼" (133.4mm) Member	P4639	P4639
		7¾" (196.9mm) Member	P4639	P4639
	Splice Sleeve for Captured Vertical	3¾" (95.3mm) Member	P5160	P5160
		5¼" (133.4mm) Member	P5127	P5127
		7¾" (196.9mm) Member	P5161	P5161
	Splice Sleeve for SSG Vertical	3¾" (95.3mm) Member	P4658	P4658
		5¼" (133.4mm) Member	P4638	P4638
		7¾" (196.9mm) Member	P4659	P4659
	Splice Sleeve for Open Back Jamb	3¾" (95.3mm) Member	P5208	P5208
		5¼" (133.4mm) Member	P5209	P5209
		7¾" (196.9mm) Member	P5210	P5210
	Face Cover Splice		P1628A	P1628A
	Splice Sleeve for 7-3/4" (196.9mm) Screw Spline O/S 90°Use with E145TU	3¾" (95.3mm) Member	N/A	N/A
		5¼" (133.4mm) Member	N/A	N/A
		7¾" (196.9mm) Member	P4699	P4699
	Splice Sleeve for 7-3/4" (196.9mm) Screw Spline O/S 90°Use with E146TU	3¾" (95.3mm) Member	N/A	N/A
		5¼" (133.4mm) Member	N/A	N/A
		7¾" (196.9mm) Member	P4700	P4700

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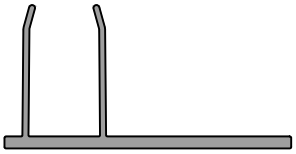
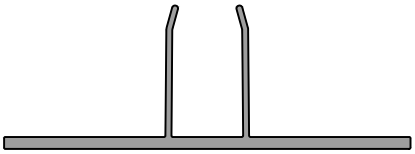
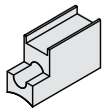
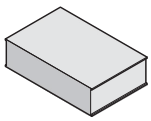
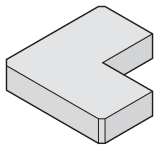
MULLION SPLICE SLEEVE and ANCHORS

SHAPE	DESCRIPTION		PART NUMBER DUAL GLAZE	PART NUMBER TRIPLE GLAZE
	'F' Anchor for Jambs	3¾" (95.3mm) Member	P4653	P4653
		5¼" (133.4mm) Member	P4617	P4617
		7¾" (196.9mm) Member	P4654	P4654
	'T' Anchor for Typical Mullions (Captured & SSG)	3¾" (95.3mm) Member	P4655	P4655
		5¼"(133.4mm) Member	P4616	P4616
		7¾"(196.9mm) Member	P4701	P4701
	'T' Anchor for 90º Outside Corners	3¾" (95.3mm) Member	P4643	P4643
		5¼"(133.4mm) Member	P4641	P4641
		7¾"(196.9mm) Member	P4641	P4641
	'T' Anchor for 90º Inside Corners	3¾" (95.3mm) Member	P4657	P4657
		5¼"(133.4mm) Member	P4642	P4642
		7¾"(196.9mm) Member	P4642	P4642

MISCELLANEOUS EXTRUSIONS

SHAPE	DESCRIPTION	PART NUMBER DUAL GLAZE	PART NUMBER TRIPLE GLAZE
	Glazing Horn for SSG Vertical Mullion	A010149	AT010149
	Thermal Door Jamb	A626667	A626667
	Door Stop for Thermal Door Jamb	E6268	E6268
	Pocket Filler	TA311TU	TA310TU

ACCESSORIES

SHAPE	DESCRIPTION		PART NUMBER	
			DUAL GLAZE	TRIPLE GLAZE
	PVC Perimeter Filler Tube		P4607 at P4663 only	P4662
	Thermal Isolator Gasket for Aluminum Pressure Plates		P4605	**P4605**
	Thermal Isolator Gasket for Thermal Pressure Plates		P4830	**P4830**
	Glazing Gasket		P4606	P4606
	Spacer Gasket for SSG		P4631	P4631
	Exterior Wedge Gasket for Lower Expansion Horizontal		P2501	P2501
	Wiper Gasket for Pressure Plate at Expansion Horizontal		P4630	P4630
	Glazing Gasket for Perimeter Pressure Plate		P2003	P2003
	Glazing Gasket for Perimeter Pressure Plate		PTB33	PTB33
	Water Dam for Captured		P4601	P4613
	Water Dam for SSG		P4602	P4663
	Water Dam for 90º SSG Corners	Inside	P4614	P4664
		Outside	P4711	P5131

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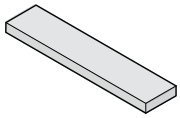
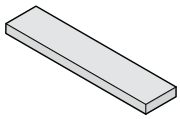
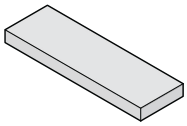
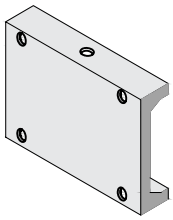
ACCESSORIES

SHAPE	DESCRIPTION		PART NUMBER	
			DUAL GLAZE	TRIPLE GLAZE
	Setting Block	Silicone	P5103S	P5112S
		EPDM	P5103	P5112
	Setting Block, 10" (254mm) -for 1"(25.4mm) or 1-3/4"(44.5mm) IG Unit	Silicone	P5156S	P5212S
		EPDM	P5156	P5212
	Edge Block	Silicone	P4629	P4629
		EPDM	P4628	P4628
	Drill Jig for PTB120 Thermal Pressure Plate		PTB138	PTB138

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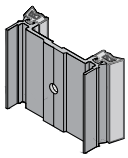
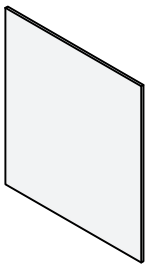
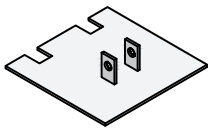
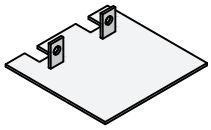
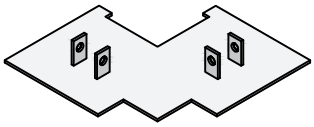
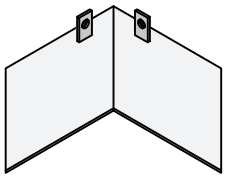
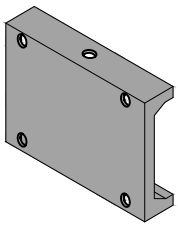
ACCESSORIES

SHAPE	DESCRIPTION	PART NUMBER	
		DUAL GLAZE	TRIPLE GLAZE
	Temporary Glazing Retainer	P4634	P4634
	Nylatron Slip Pad for Steel Anchor Locations	P4608	P4608
	End Cap for Captured Mullion	P4609	P4666
	End Cap for SSG Mullion	P4635	P4667
	End Cap for 90º Outside Corner	P4610	P4668
	End Cap for 90º Inside Corner	P4611	P4669
	Drill Jig for PTB120 Thermal Pressure Plate	PTB138	PTB138

TUBELITE® DEPENDABLE

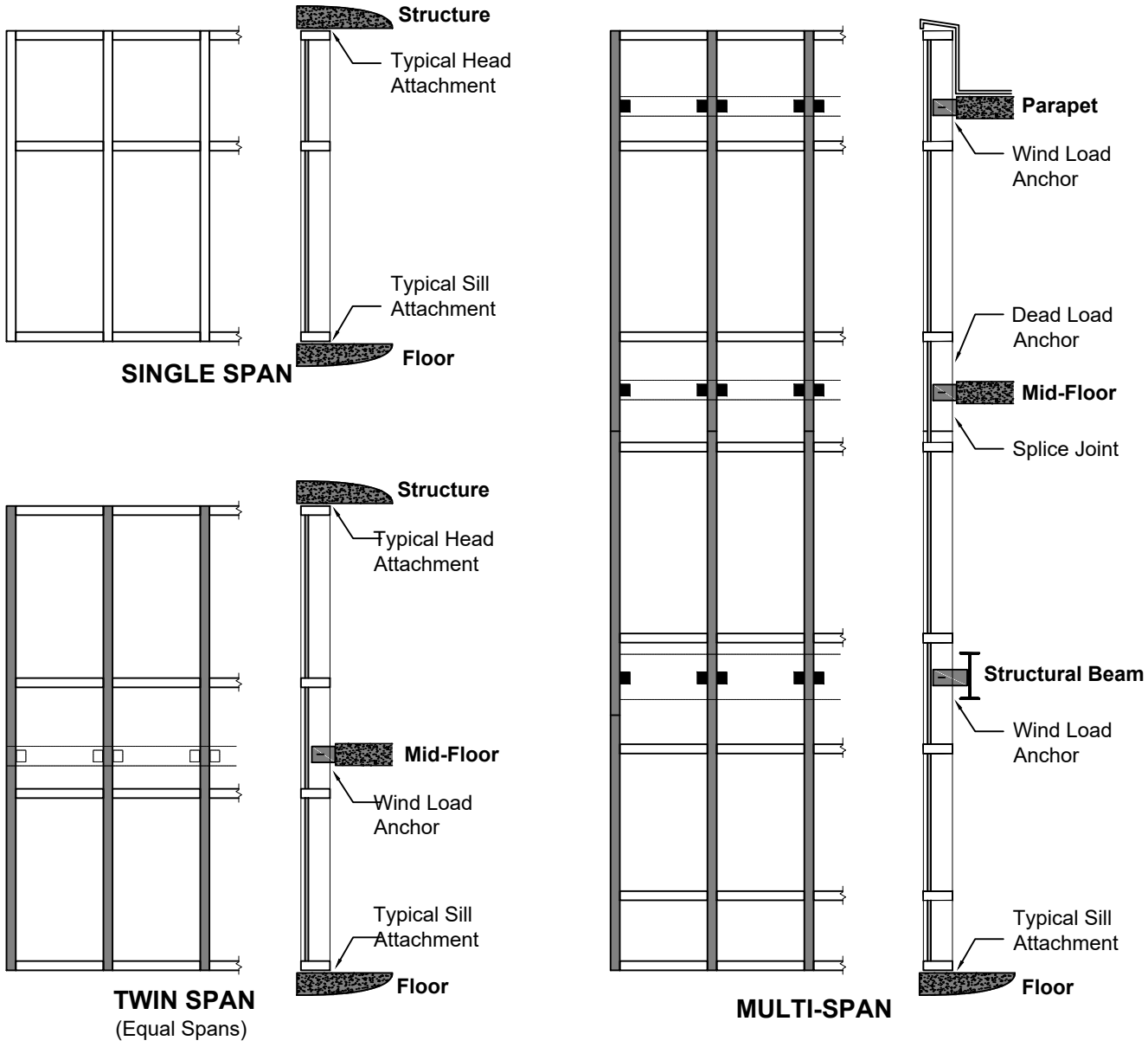
FASTENERS

SHAPE	DESCRIPTION	PART No.
	#10 x 5/8" PH type 'B' Attachment of A010140 to Corner Mullion	S017
	#10 x 5/8" FH type 'B' Attachment of E148TU to Corner Mullion	S192
	#12-24 x 1" HH Door Frame Attachment	S204
	#10-24 x 3/4" PH type '23' Attachment of Glazing Horn to SSG Mullion	S270
	#10 x 3/8" TH Attachment of End Caps to Mullion	S293
	1/4-20 x 11/2" HWH type 'F' Attachment of Shear Clip to Mullion	S359
	1/4-20 x 3/4" HWH type 'CA' Attachment of Shear Clip to Corner Mullion	S369
	#12-14 x 11/2" HWH 18-8 TEK Pressure Plate Screw	S425
	#10-24 x 5/8" PH type 'F' Attachment of Horizontal to Shear Clips	S426
	#10-16 x 3/4" HWH TEK Interior Trim at Expansion Horizontal	S441
	#12-14 x 11/2" HWH 18-8 TEK w/Washer Pressure Plate Screw for P4633	S479
	0.312” ID x 1” OD x 0.045 18-8 Flat Washer for Polyamide Pressure Plate	S437
	¼”-20 x 2 ¾” HWH Type F for captured Vertical Sunshade	S439
	#10-16 x 1/2", Philips Flat Head (Used with E0799 Interlocker)	S443
	1/4”-14 x 4-1/2” Phillips FH 18-8 TEK #3 O/S Corner Adaptor Screw	S446

ELEVATION TYPES

TYPES OF CURTAIN WALL INSTALLATION

The 400TU Series curtain wall system can be constructed a variety of ways. The most common are single span, twin span and multi-span as illustrated below. Refer to approved shop drawings for specific guidance on splicing and anchoring.



Span configurations will vary per project requirements. Conditions must be approved by engineer calculations.

Fig. 15.1

ELEVATION and WALL SECTIONS

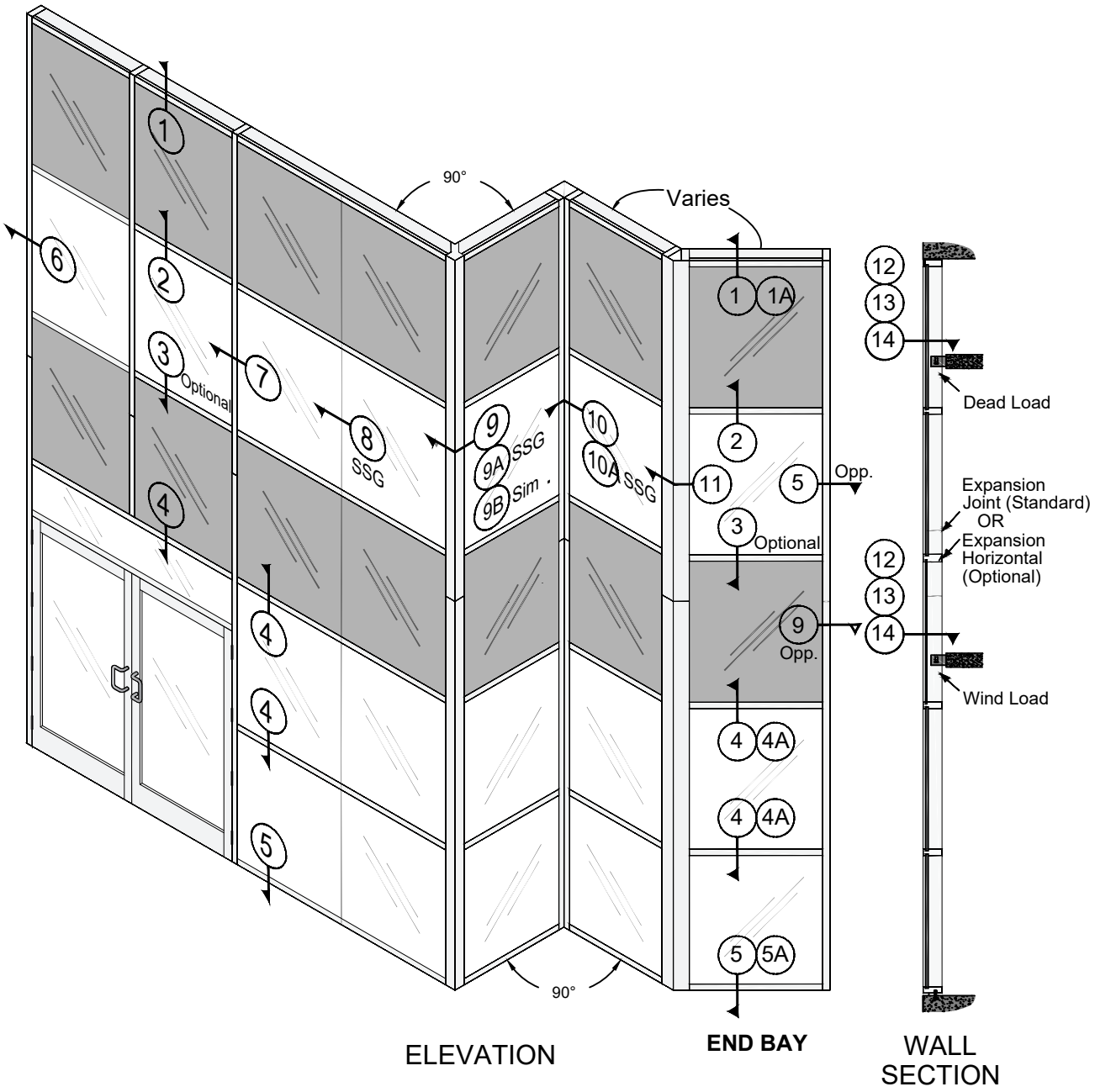
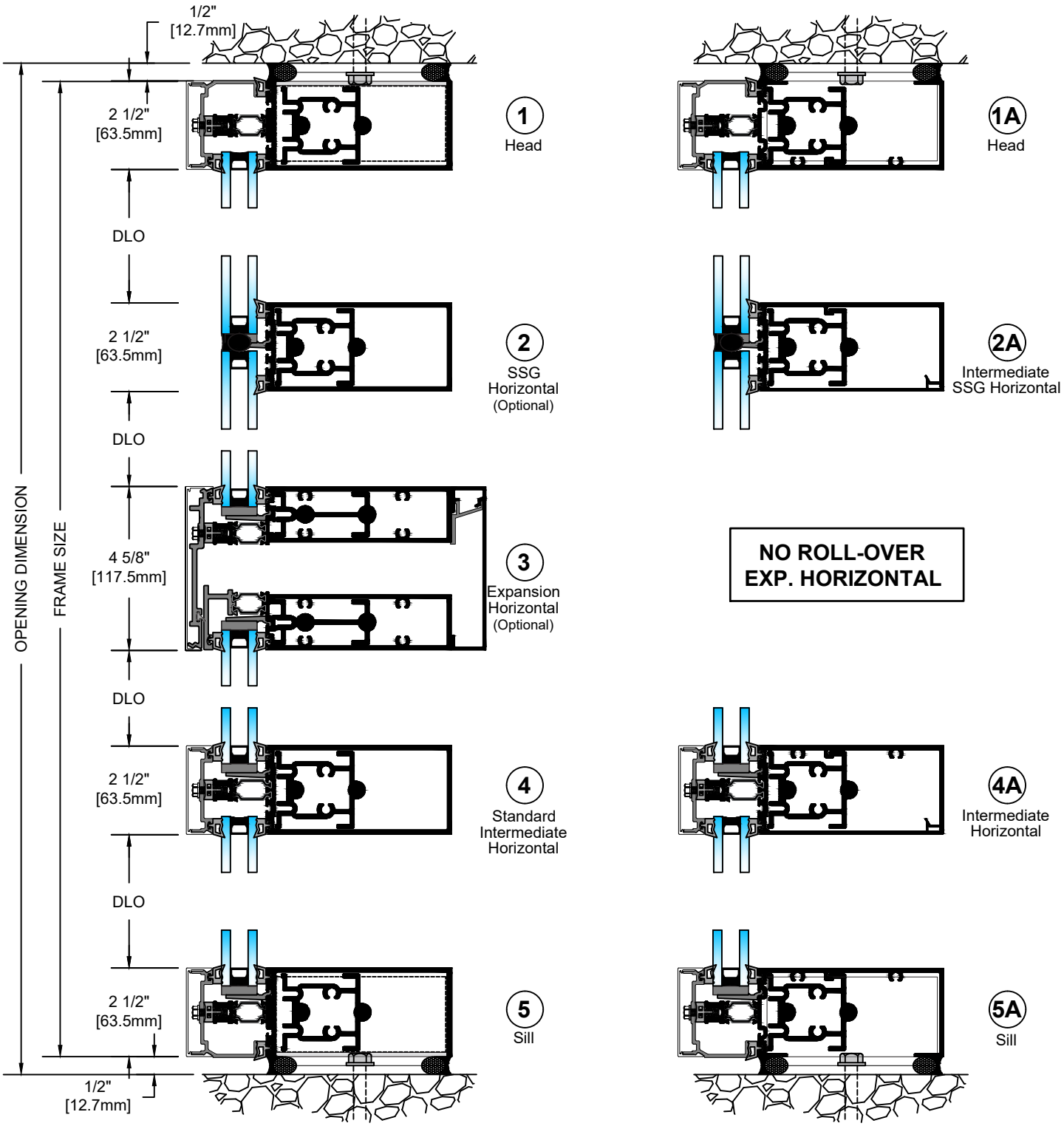


Fig. 16.1

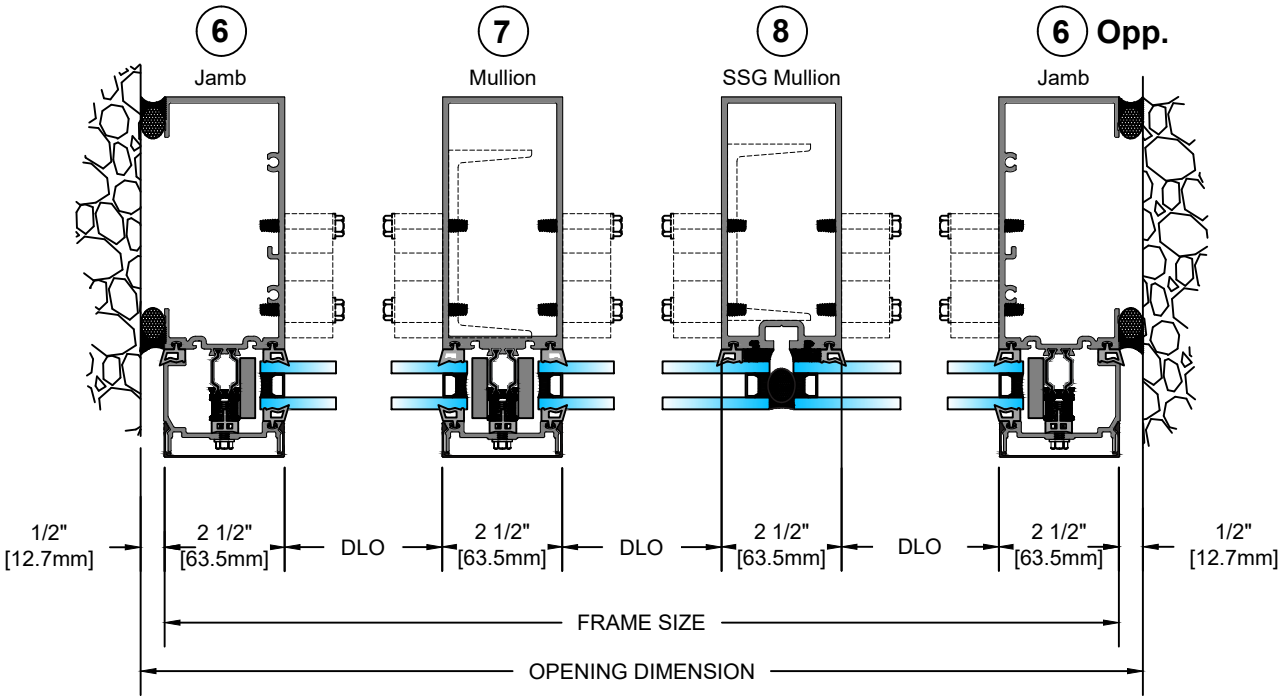
HORIZONTAL DETAILS



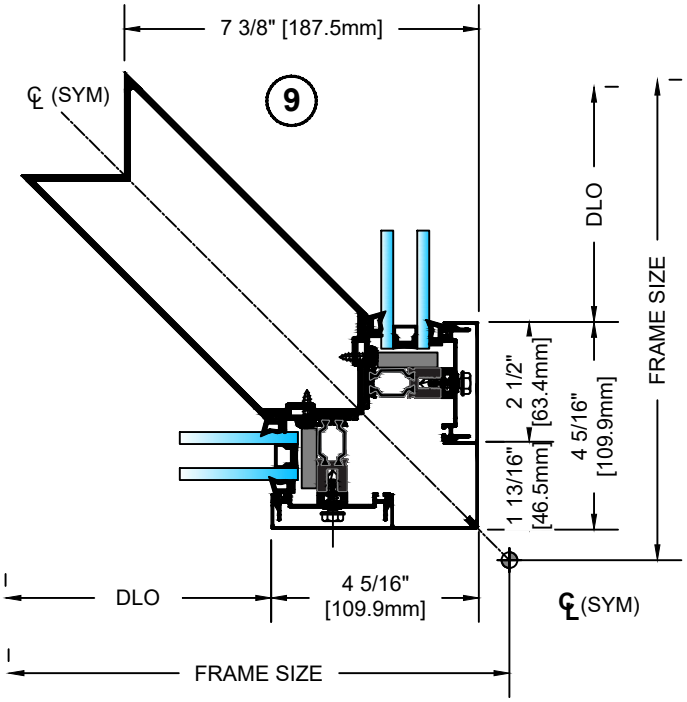
TUBULAR HORIZONTALS

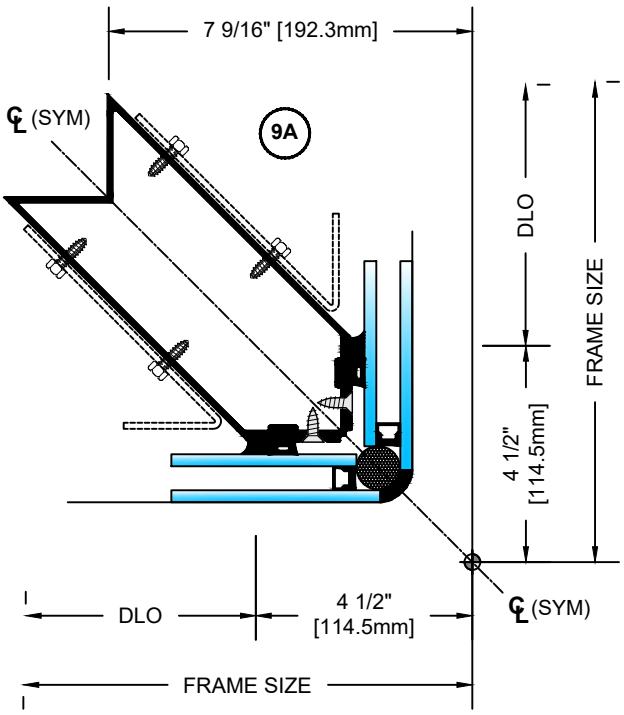
ROLL-OVER HORIZONTALS
(Optional at Intermediates; Standard at Head and Sill)

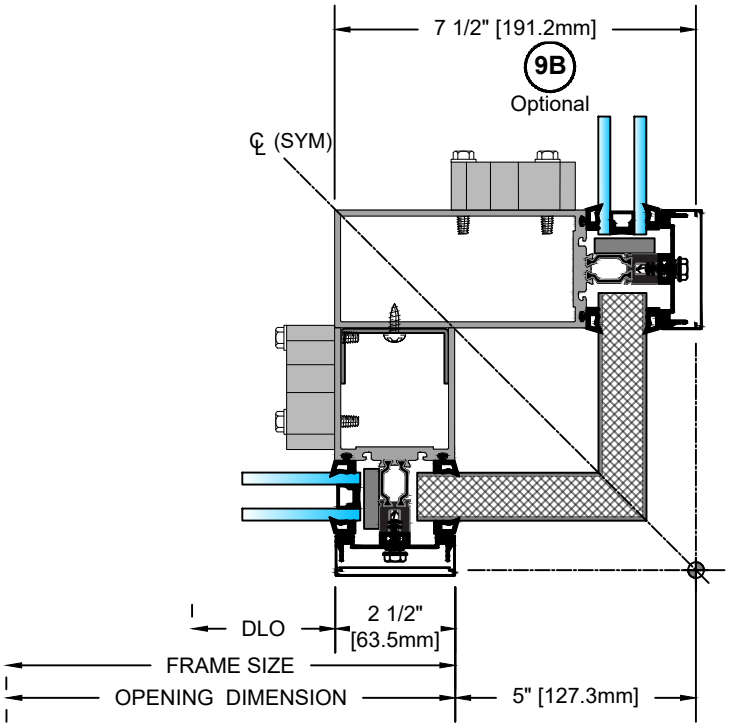
VERTICAL DETAILS



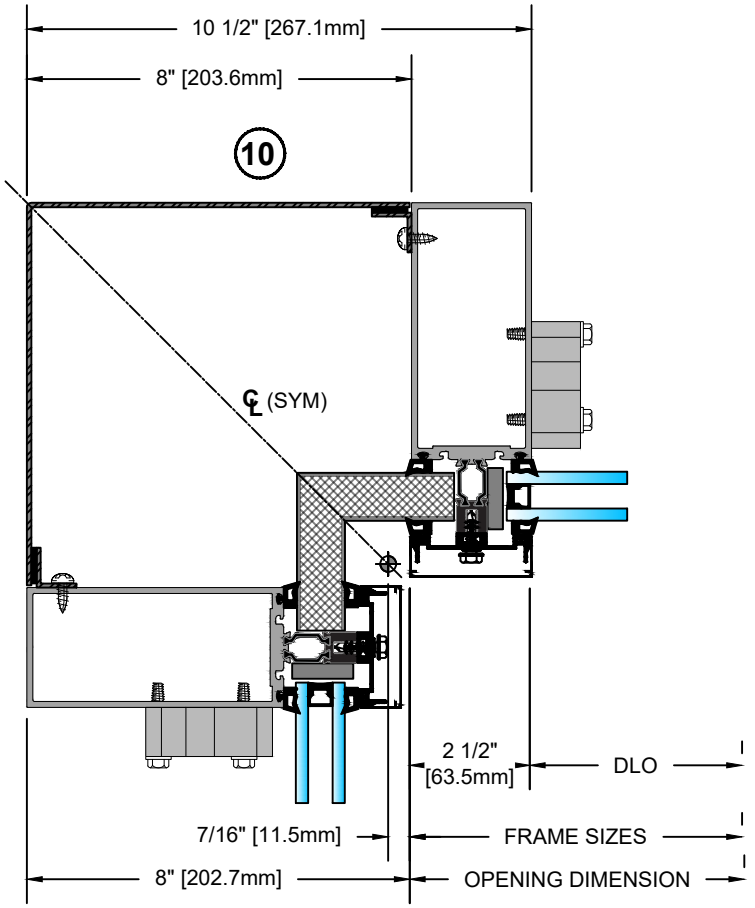
CORNER DETAILS

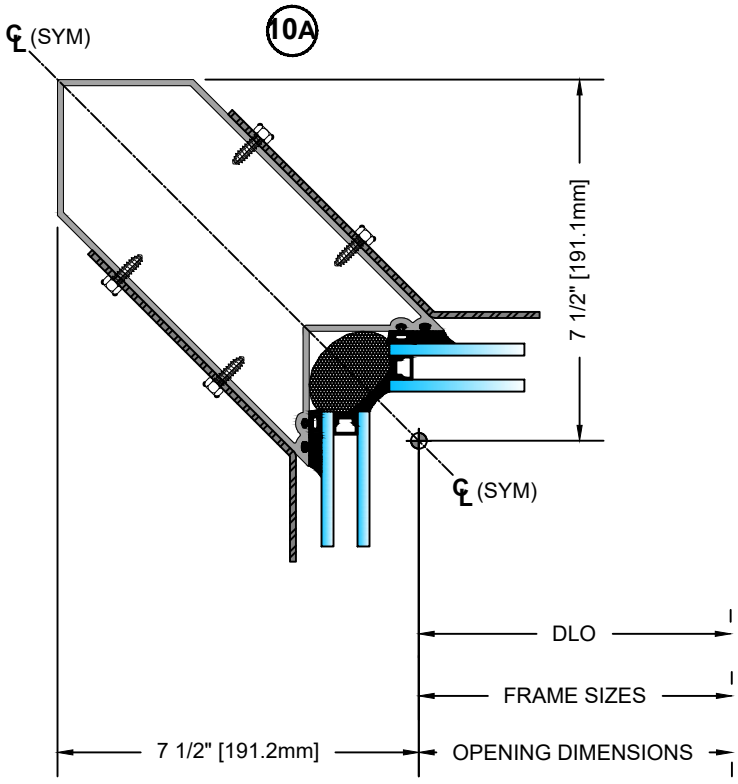


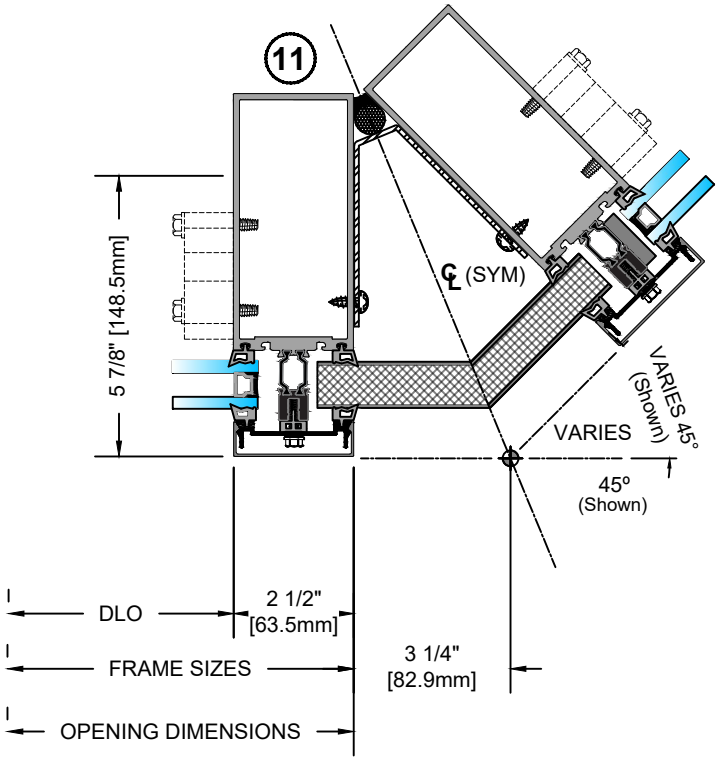




CORNER DETAILS







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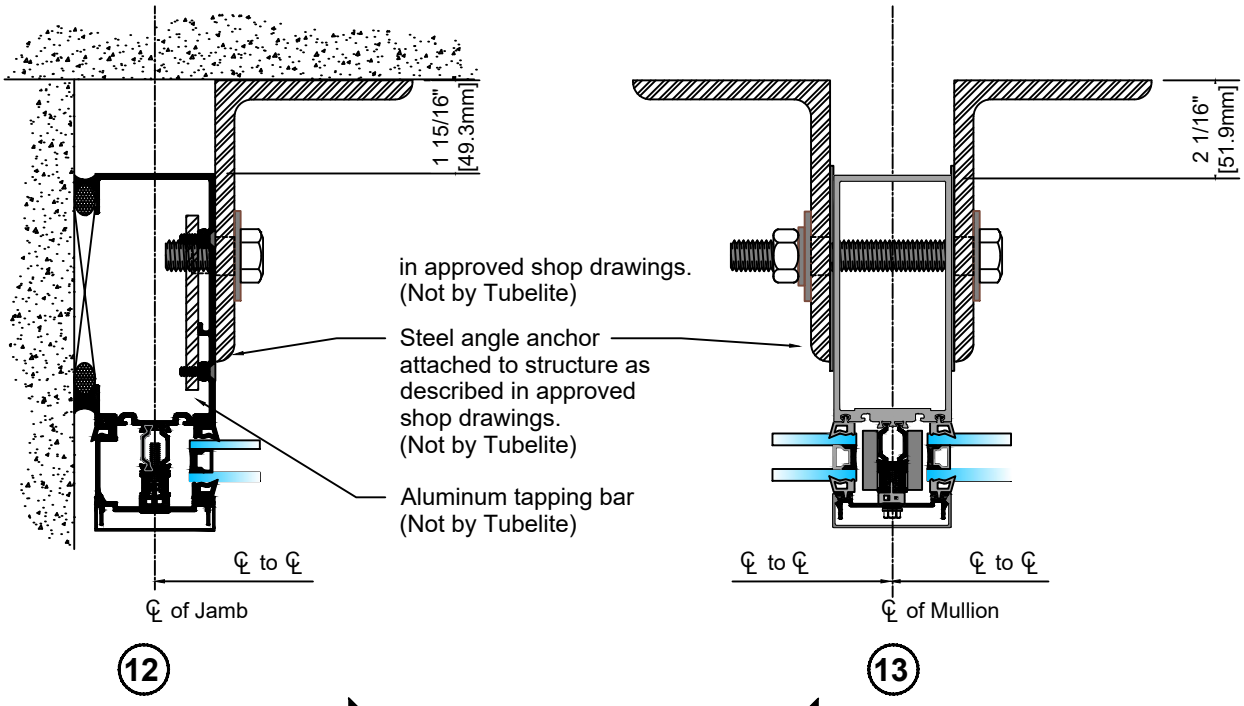
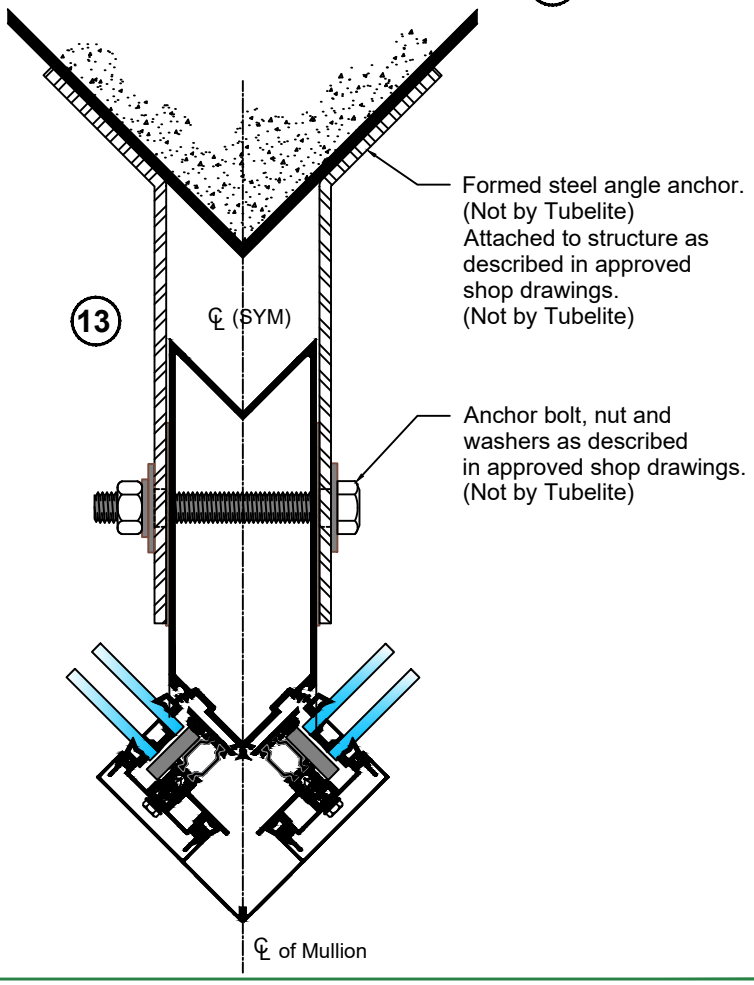
MID-SPAN ANCHOR DETAILS

Anchor details on pages 23 and 24 represent one of several methods of anchoring. Refer to approved shop drawings for job specific applications.



12 13



MID-SPAN ANCHOR DETAILS

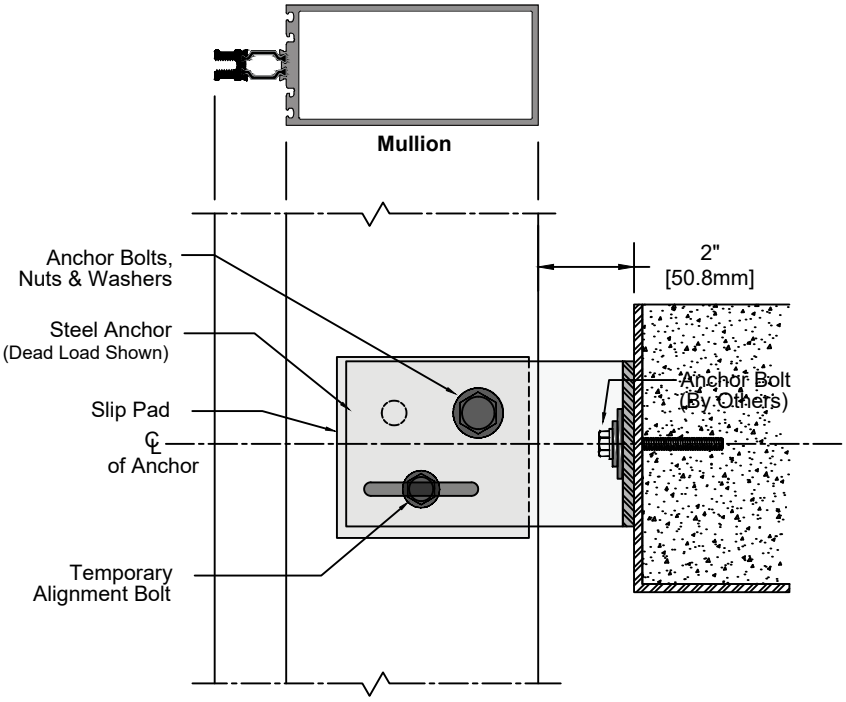


Fig. 22.1

Mullion Anchor Side View

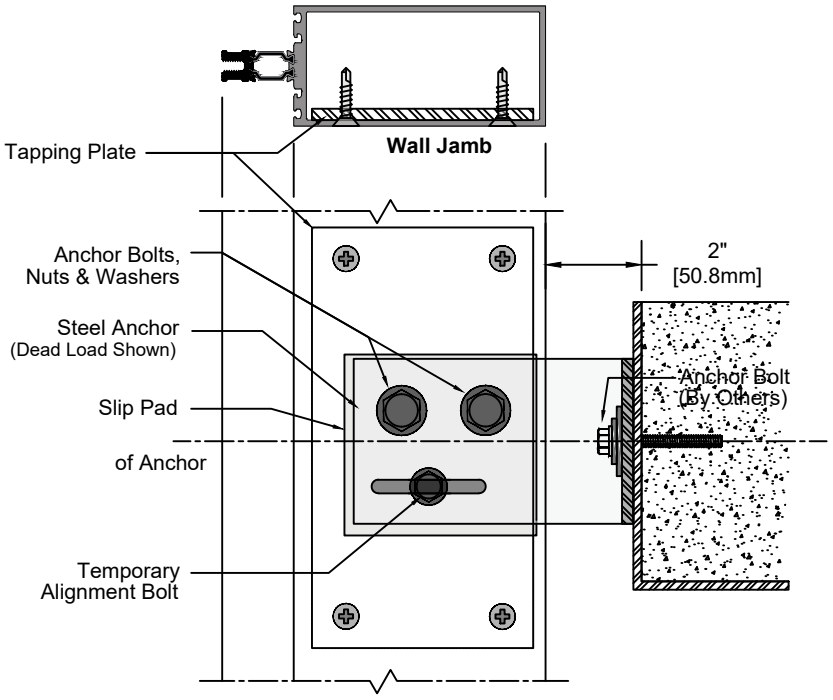


Fig. 22.2

Jamb Anchor Side View

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FRAME FABRICATION

Step 1: Determine Frame Size

Frame Width

A. Make sure the opening is square and plumb. Measure each diagonal of the opening. SEE Fig. 23.1.
B. Measure the width of the opening (Rough Opening) at the top, middle and bottom. Select the smallest of these dimensions and subtract the left and right caulk joint width per approved shop drawing (1/2" (12.7mm) minimum caulk joint at jambs). SEE Fig. 23.2.
C. Allow a larger clearance to accommodate building tolerances, an out-of-square opening, anticipated thermal expansion within the unit or as required by shop drawings.

Frame Height

D. Measure the height of the opening (Rough Opening) at several points along the entire width of the opening. Select the smallest of these dimensions and subtract 1" (25.4mm) to allow a minimum of ½" (12.7mm) at sill and head for shim and caulking. SEE Fig. 23.3.
E. Allow a larger clearance to accommodate building tolerances, an out-of-square opening, anticipated thermal expansion within the unit or as required by shop drawings.

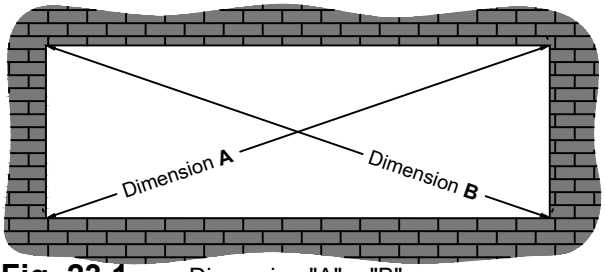


Fig. 23.1 Dimension "A" = "B"

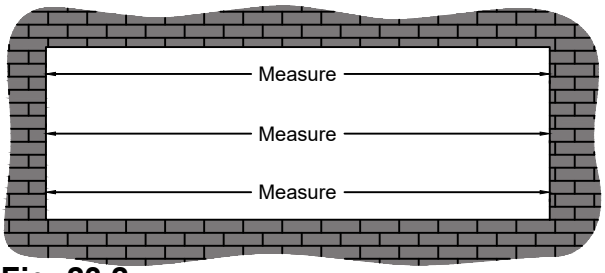


Fig. 23.2

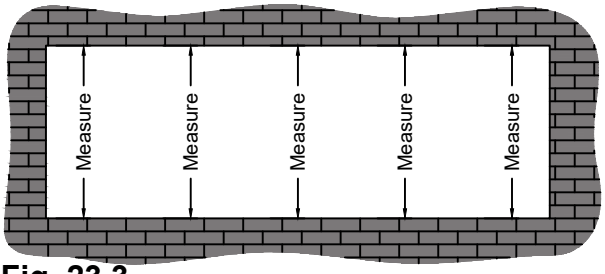
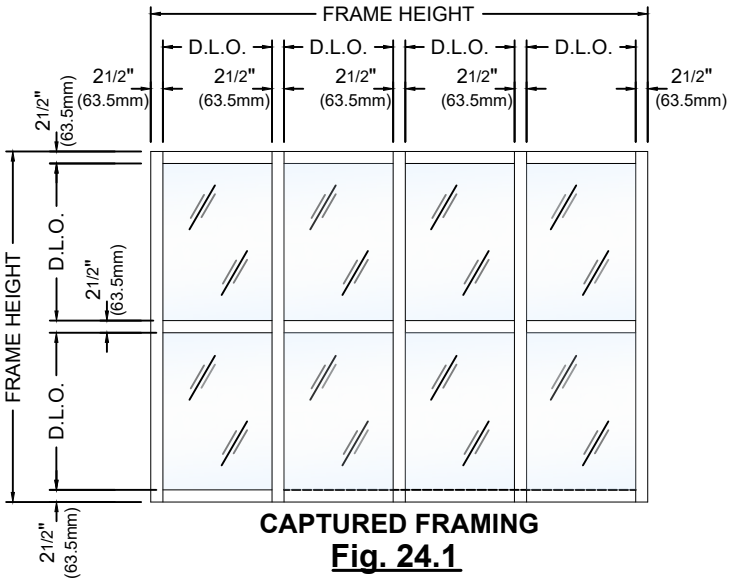


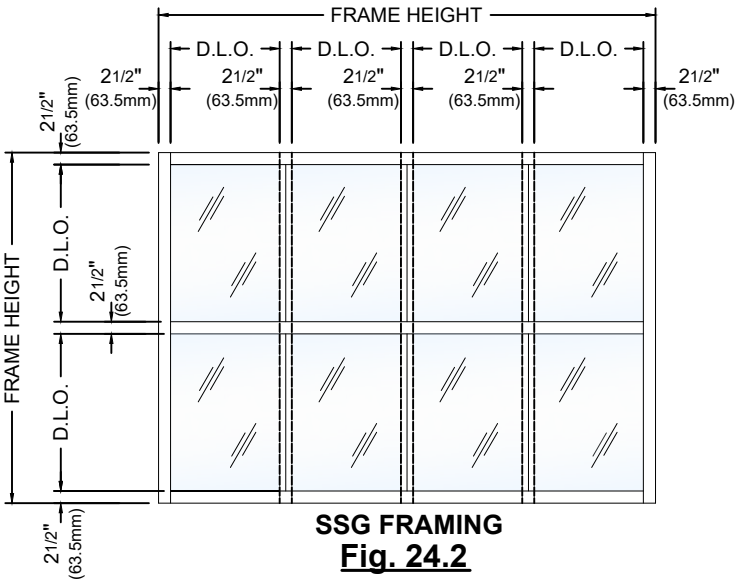
Fig. 23.3

FRAME FABRICATION

Step 2: **Cut Materials to Size**



CAPTURED FRAMING
Fig. 24.1



SSG FRAMING
Fig. 24.2

Framing Members

Verticals ..... Frame Height *
Tubular Head, Horizontal & Sill ..... D.L.O.
Rollover Head, Horizontal & Sill ..... D.L.O. – 1/16” (1.6mm)
Rollover Horizontal Snap in Filler ..... D.L.O. – 1/16” (1.6mm)
Vertical Pressure Plates ..... Frame Height * At the vertical pressure plates below an expansion horizontal joint, cut pressure plate 1”(25.4mm) below the D.L.O. At the vertical pressure plates above an expansion horizontal joint, cut the pressure plate to be flush with the bottom of the lower expansion horizontal.
Vertical Face Covers ..... Frame Height * At the vertical face cover below an expansion horizontal joint, cut face cover 15/16”(23.8mm) below the D.L.O.. At the vertical face cover above an expansion horizontal joint, cut the face cover to be flush with the bottom of the lower expansion horizontal.
Horizontal Pressure Plates ..... D.L.O. – 3/8”(9.5mm)
Horizontal Pressure Plates @ SSG Vert ..... 3 Lites Wide Maximum *
Horizontal Face Covers ..... D.L.O. – 1/16”(1.6mm)
Horizontal Face Covers @ SSG Vert ..... 3 Lites Wide Maximum *
Expansion Horizontal Trim ..... Frame Width (Splice as needed)
Horizontal Glazing Adaptors ..... D.L.O. – 1/16”(1.6mm)
Vertical Glazing Adaptors ..... D.L.O. + 1”(25.4mm)
Pocket Filler at Perimeter ..... D.L.O. – 1/16”(1.6mm)
(for use with PTB120 thermal or P4633 polyamide pressure plate)

Accessories

Exterior Vertical Gasket ..... Pressure Plate Length + Allowance*
Interior Vertical Gasket ..... D.L.O. + 1”(25.4mm) + Allowance*
Interior Horizontal Gasket ..... D.L.O. + Allowance*
Silicone Spacer Gasket (SSG Vert) ..... D.L.O. + 1”(25.4mm) + Allowance*
*Allowance = 1/8”(3.2mm) extra length per foot of D.L.O.

*** Note: For splicing cutting allowances see: step 5, page 29; step 12, page 34; step 19, page 54.**

Note: Door framing material is cut to size from the factory.

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FRAME FABRICATION

Step 3: Drill Holes in Vertical Members for Shear Clips (Typical Horizontal)

A. Drill .201" diameter pilot holes for #14 screws in the vertical members according to holes labeled on the P4644 drill fixture:

a. Head, Intermediate Horizontal & Sill members – A,D for 3¾"(95.3mm) and 5¼"(133.4mm) back members; A,F for 7¾"(196.9mm) back members. NOTE:Holes B,C (3¾"(95.3mm) and 5¼"(133.4mm) back members) and E,G (7¾"(196.9mm) backmembers) are optional and can be utilized for high load applications or as noted on approved

shop drawings. See Fig. 25.2 through Fig. 25.4.

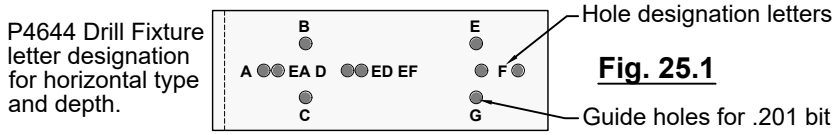
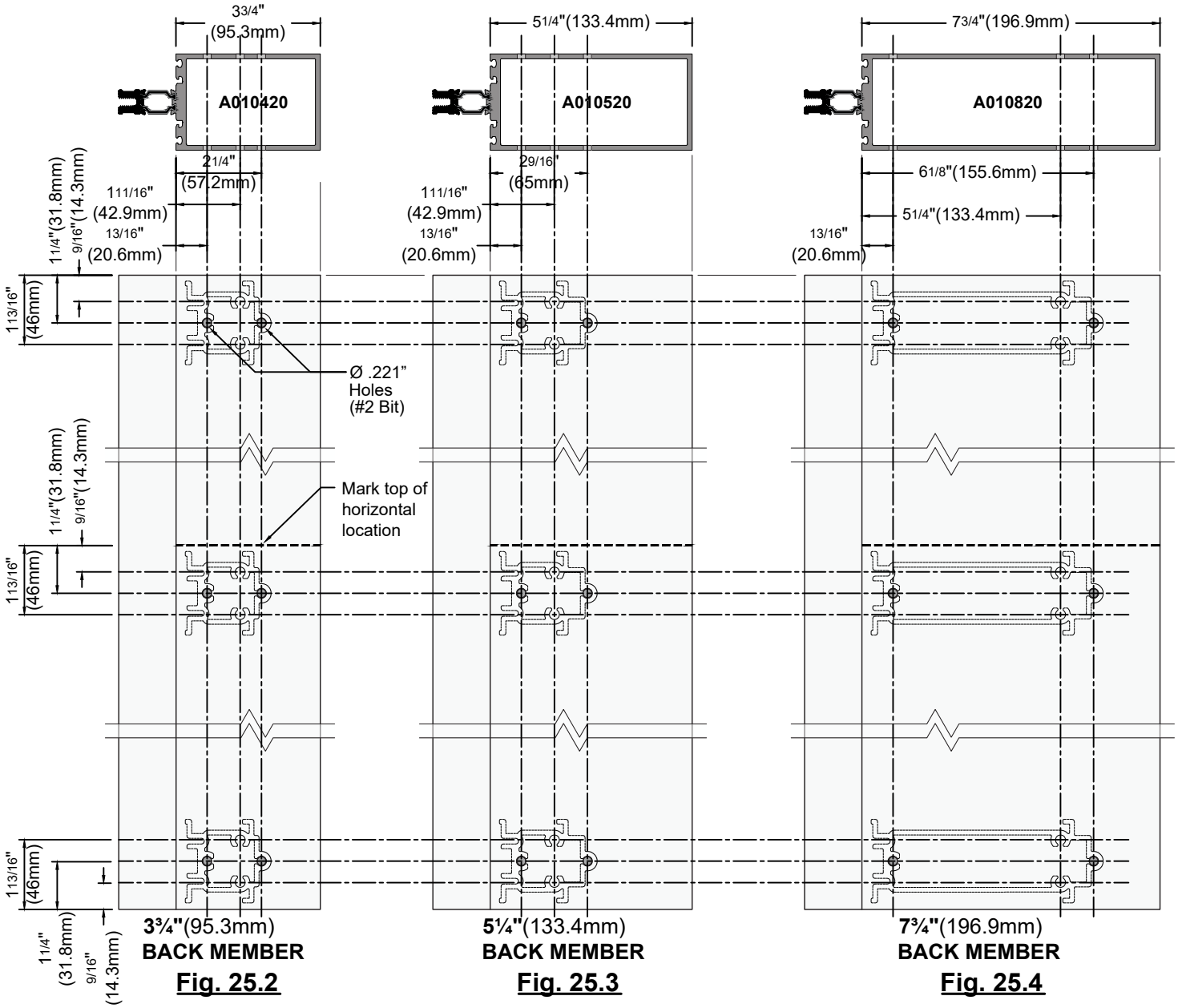


Fig. 25.1



3¾"(95.3mm) **BACK MEMBER**

Fig. 25.2

5¼"(133.4mm) **BACK MEMBER**

Fig. 25.3

7¾"(196.9mm) **BACK MEMBER**

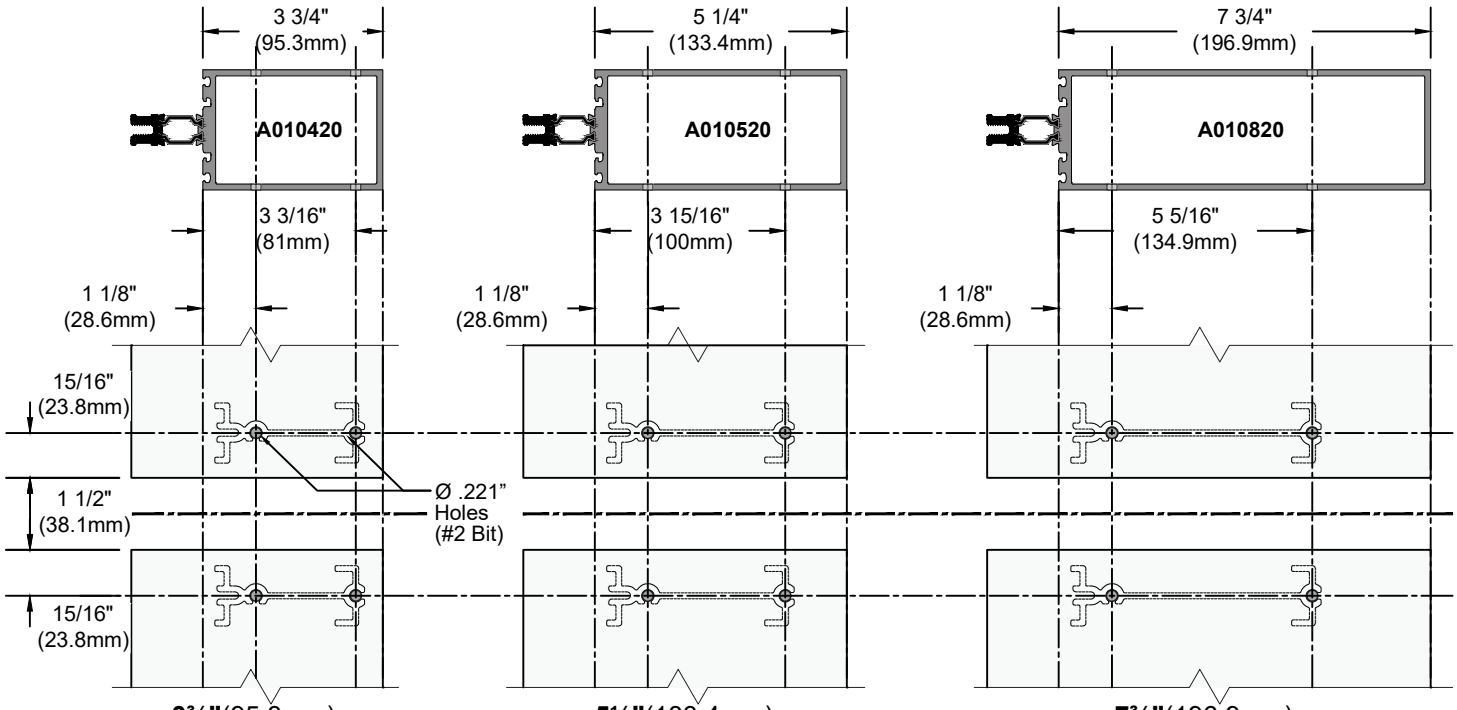
Fig. 25.4

NOTE: Two screws per clip is typical, refer to approved shop drawings for project requirements.

FRAME FABRICATION

Step 3: Drill Holes in Vertical Members for Shear Clips (Continued)

b. Expansion Horizontals – EA,ED for 3¾"(95.3mm) and 5¼"(133.4mm) back members; EA,EF for 7¾"(196.9mm) back members.
See Fig. 26.1 through Fig. 26.3.



3¾"(95.3mm) **BACK MEMBER** **Fig. 26.1**

5¼"(133.4mm) **BACK MEMBER** **Fig. 26.2**

7¾"(196.9mm) **BACK MEMBER** **Fig. 26.3**

Step 4: Drill Holes in Horizontal for Attachment to Shear Clips

A. Drill (2) .201"(5.1mm) diameter clearance holes for #10 screws in the horizontal sections for attachment to the shear clips. Use the P4644 drill fixture to locate holes.

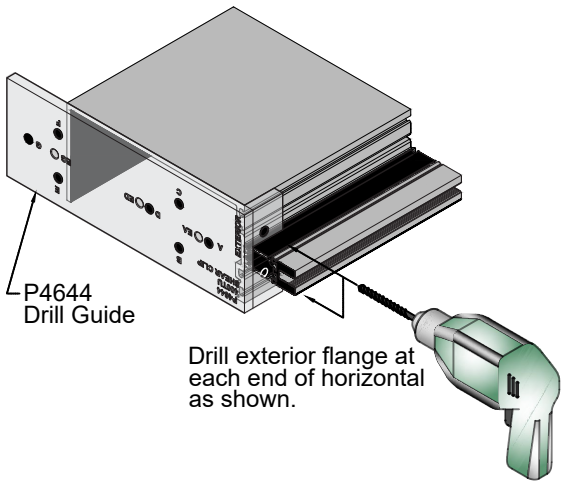
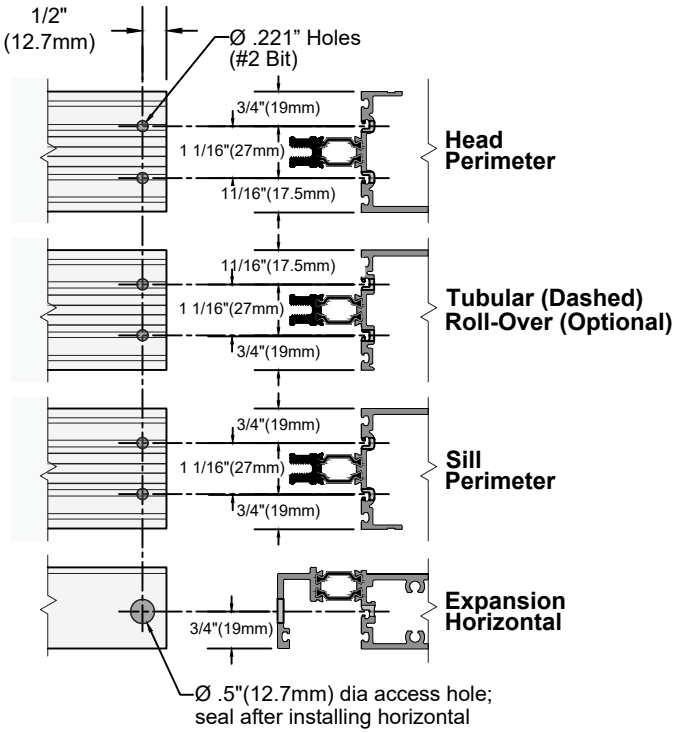


Fig. 26.4



TUBELITE® DEPENDABLE

FRAME FABRICATION

Step 5: Fabricate Pressure Plates

A. Drill two 5/16”(7.9mm)diameter weep holes per horizontal pressure plate at 1/4 points at each end. Locate the holes on the V-groove above the center line of the pressure plate. See **Fig. 27.3** & **Fig. 27.4.**

B. Aluminum, polyamide, and thermal pressure plates are factory punched on center for pressure plate screws. For polyamide pressure plates drill additional hole(s) as required to ensure a maximum of 2”(50.8mm) from the ends of the plates and at horizontal/vertical intersections. See **Fig. 48.1** for instructions regarding polyamide pressure plate plate anchor holes at these intersections. For pressure plates at OS 90 deg corners and expansion horizontals, .228”(5.8mm) diameter screw holes must be drilled at 8”(203.2mm) O.C.

C. When SSG verticals are used in the elevation, horizontal pressure plates can run up to 3 lites wide maximum. Additional weep holes must be drilled in these cases.

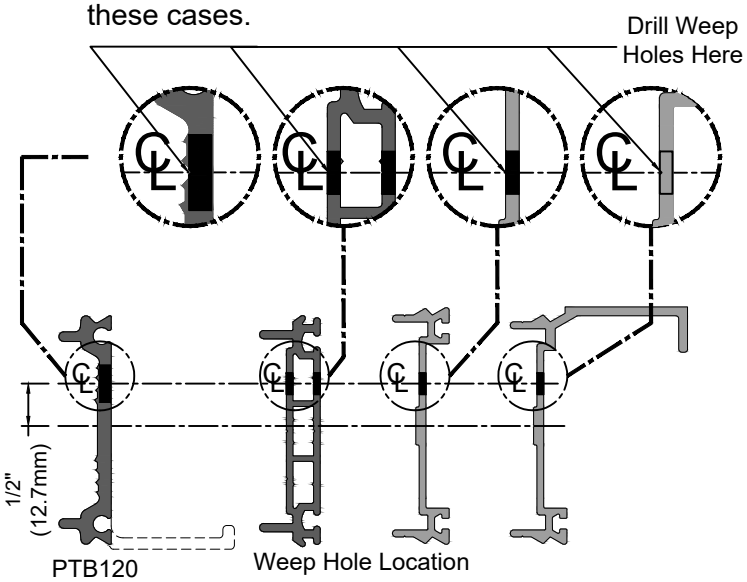
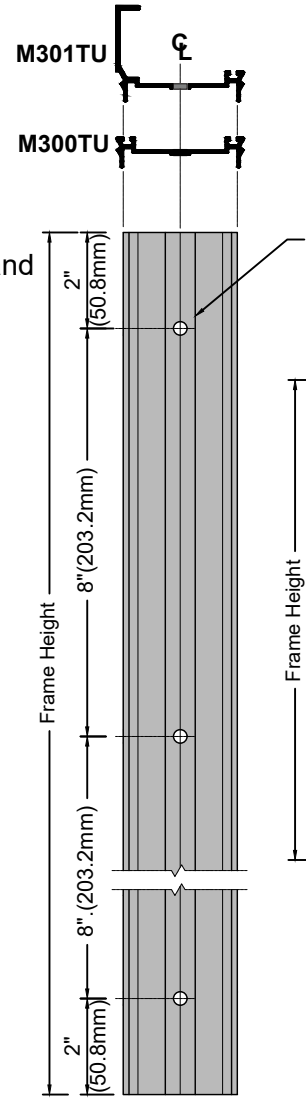
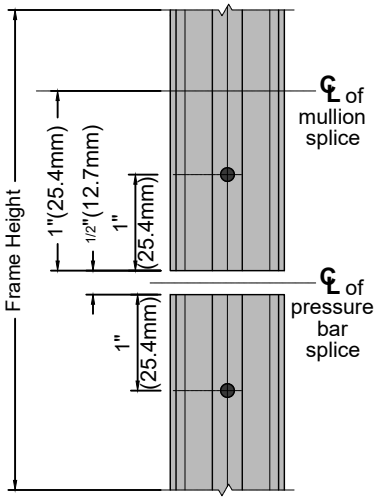


Fig. 27.4



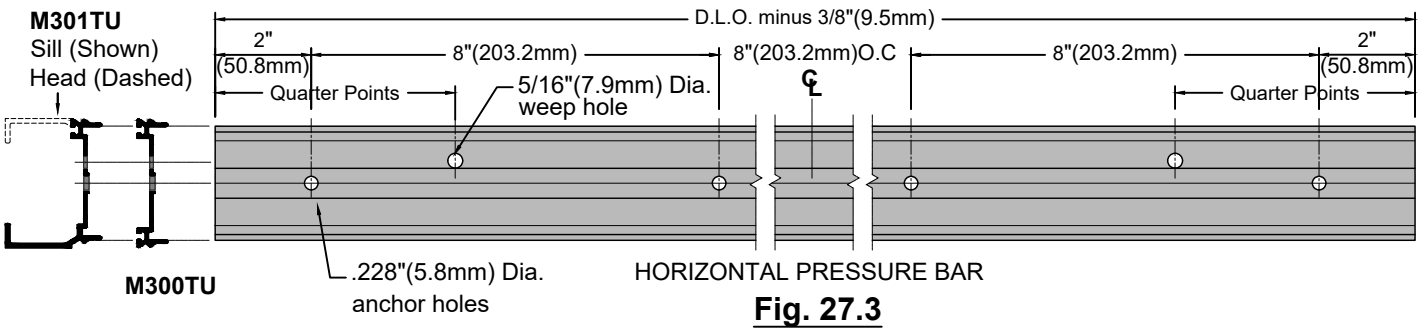
VERTICAL PRESSURE BAR

Fig. 27.1



VERTICAL PRESSURE BAR at SPLICE

Fig. 27.2



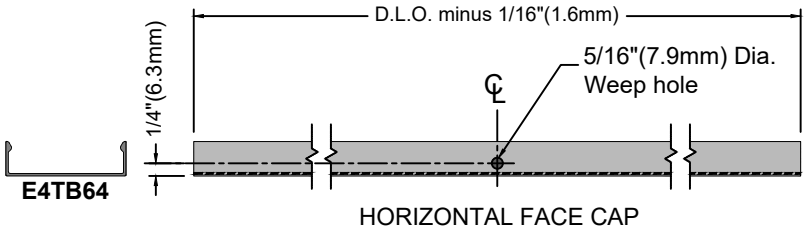
HORIZONTAL PRESSURE BAR

Fig. 27.3

FRAME FABRICATION

Step 6: <u>Fabricate Weep Holes in Horizontal Face Covers</u>

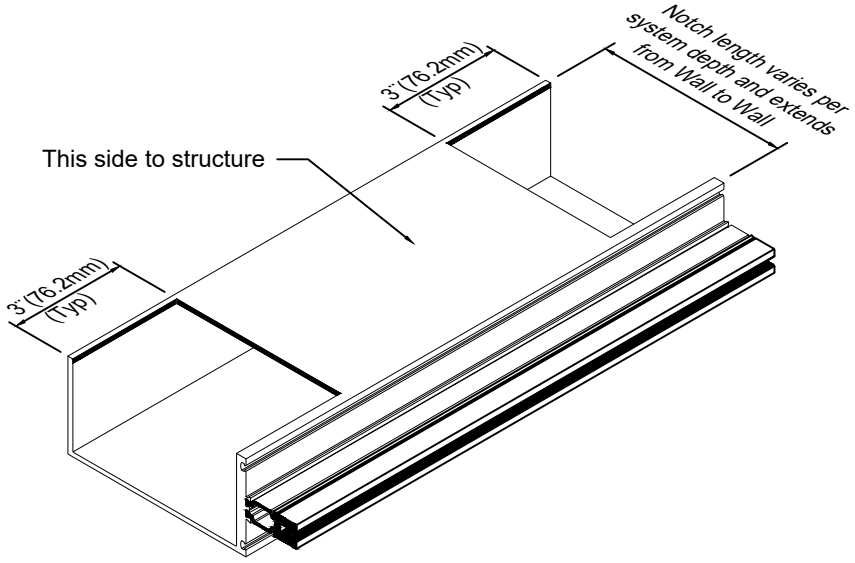
A. At captured glazing: Fabricate (1) 5/16”(7.9mm) weep hole on the bottom center of each horizontal face cover.
B. At structural silicone glazing: Fabricate (1) 5/16”(7.9mm) weep hole on the bottom center of each D.L.O. of horizontal face cover.



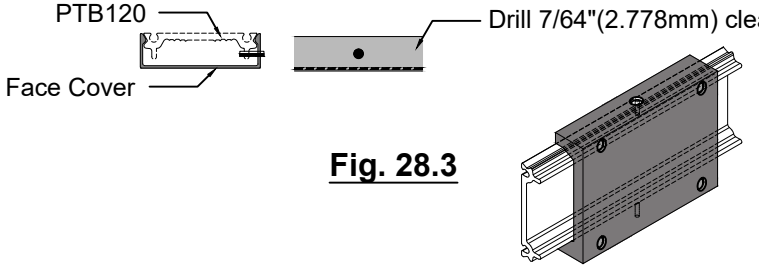
<u>Fig. 28.1</u>

Step 7: <u>Notch Heads and Sills to Clear Shear Clips</u> (Applies to Tubular Head/Sill Members Only)

A. Notches must be cut in the head and sill members to provide clearance for the shear clips. See **Fig. 28.2** for proper notch size.



<u>Fig. 28.2</u>



<u>Fig. 28.3</u>

NOTE:
If shop drawings call for pinning the horizontal and/or vertical face covers to the thermal pressure plate PTB120, drill holes using fixture PTB138 shown in **Fig. 28.3**

TUBELITE® DEPENDABLE

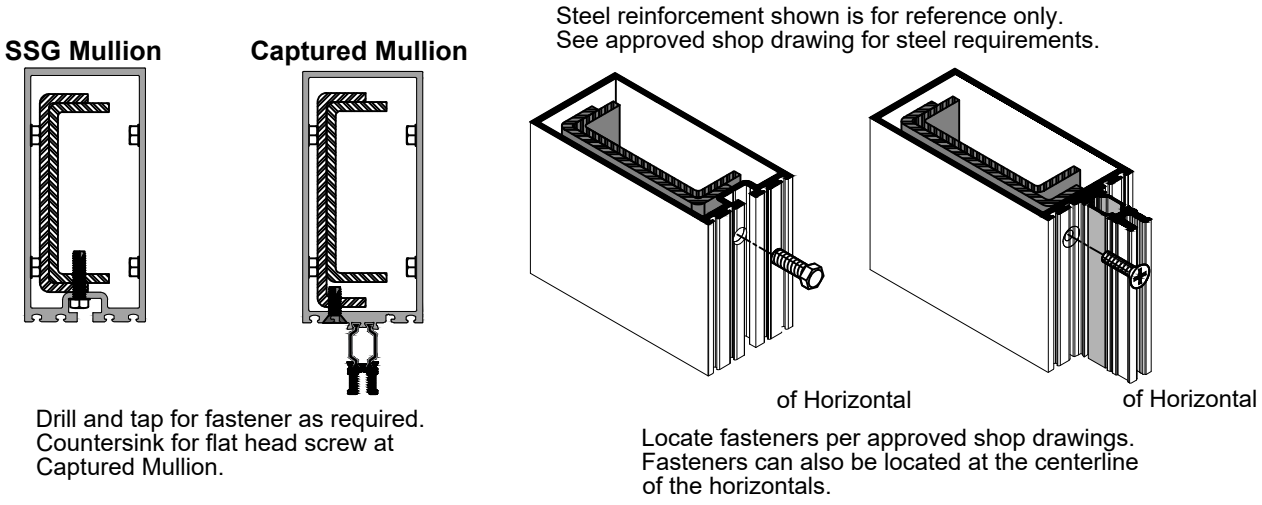
FRAME FABRICATION

Step 8: End Bay Horizontals

A. Optional end bay roll-over horizontals/open back perimeter: An open back roll-over horizontal may be used at the head, horizontal and sill locations. Follow step 4 for fabrication of attachment holes. See details 1a and 5a on page 17.

Step 9: Add Steel Reinforcement As Required

A. Refer to approved shop drawings to determine where steel reinforcing may be required.
B. Steel should be installed prior to the attachment of shear clips.
C. If T and F anchors are used, steel should be sized to stop short of the top and bottom of the vertical for clearance.
D. Locate and prep for attachment of the steel located under the horizontal shear clips if possible. Anchor the steel to the vertical using fasteners and spacing per approved shop drawings (not supplied by Tubelite).



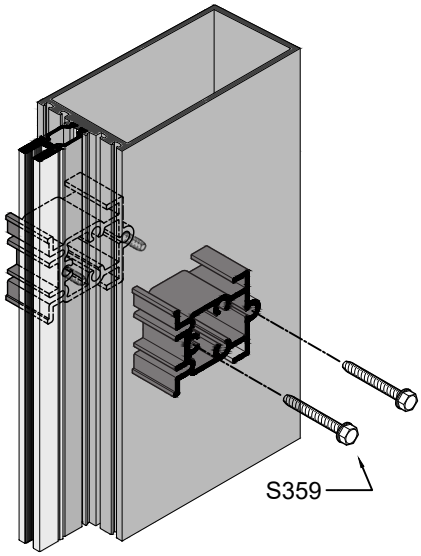
TYPICAL APPLICATION
Fig. 29.1

FRAME FABRICATION

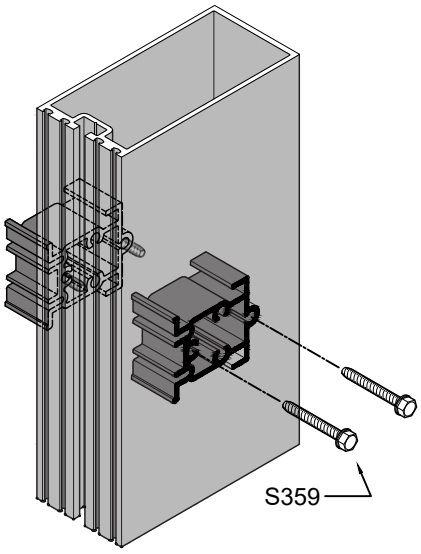
Step 10: Fasten Shear Clips

A. Fasten the shear clips to the verticals using S359 fasteners.

NOTE: If steel reinforcement is required, it must be installed prior to shear clip attachment.



Shear Clip at Captured Glazing



Shear Clip at SSG Glazing

Fig. 30.1

TUBELITE® DEPENDABLE

FRAME FABRICATION

Step 11: Installing Vertical Mullions

NOTE: Check D.L.O. and diagonal dimensions every four bays to ensure correct spacing and frame squareness. When installing tubular horizontals, frame must be stick erected. When installing rollover horizontals, all verticals can be erected first.

Single Span Installations

A. Install vertical mullions plumb and level, shimming between the bottom of the vertical and T or F anchor for proper deadload distribution.

B. Anchor T or F anchor to building per approved shop drawings.
NOTE: Do not shim the top of the vertical to allow for thermal and liveload movement.

Multi-Span Installations

A. Install lower vertical mullion plumb and level, shimming between the bottom of the vertical and T or F anchor for proper deadload distribution.

B. Anchor T or F anchor to building per approved shop drawings.

C. At the mid-span anchor, temp the vertical in place plumb and level. Check joint at the mullion splice and use a shim to hold joint at the correct size.

D. When the entire frame is installed and securely anchored to the mid-span anchor(s), remove shims from the vertical mullion splices and back off nut 1/4 turn at all windload anchor connections and stake the bolts. Be sure any temporary screws are removed from windload anchors.

E. Refer to Step 12, pages 32 and 33 to complete the splice sleeve installation.

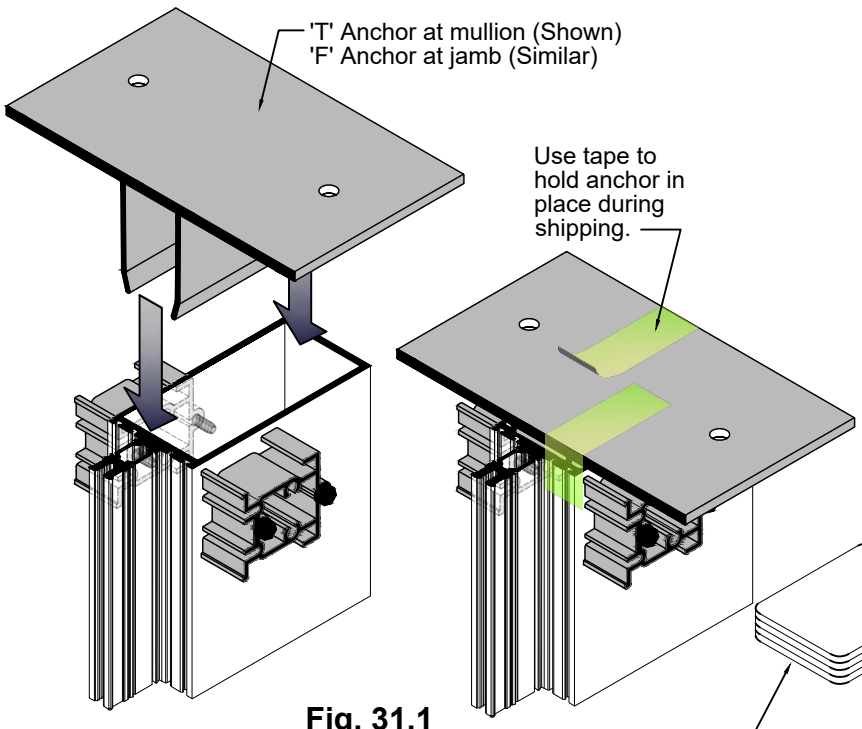


Fig. 31.1

Head conditions shown, head condition similar.

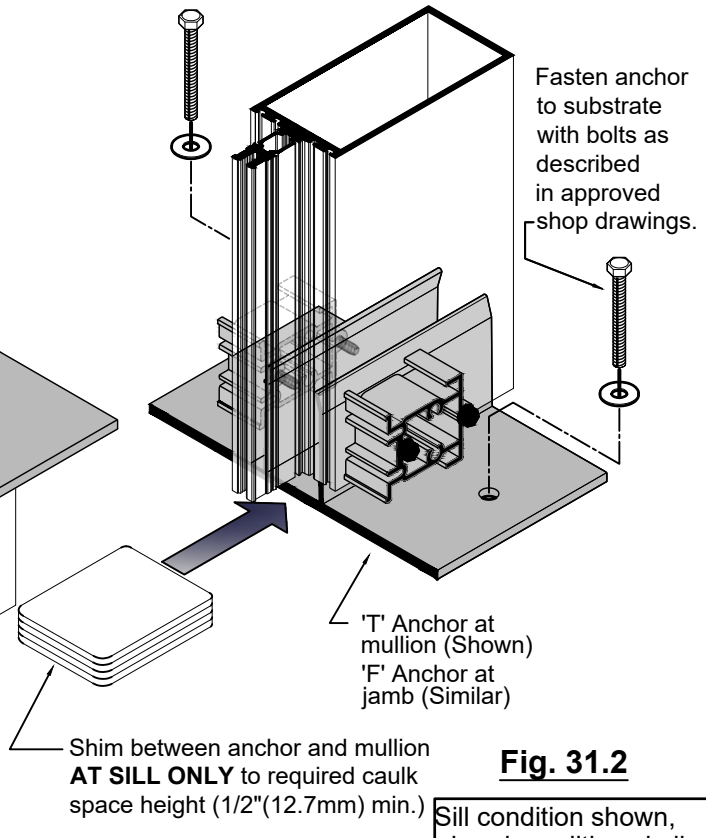


Fig. 31.2

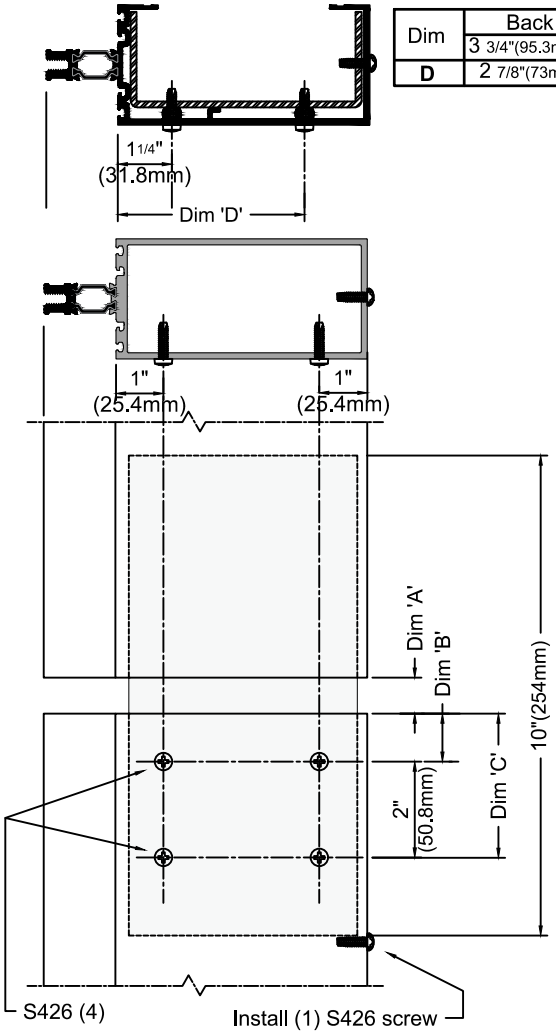
Sill condition shown, head condition similar.

Captured Verticals shown, SSG verticals are similar.

FRAME INSTALLATION

Step 12: Splice Sleeve Attachment

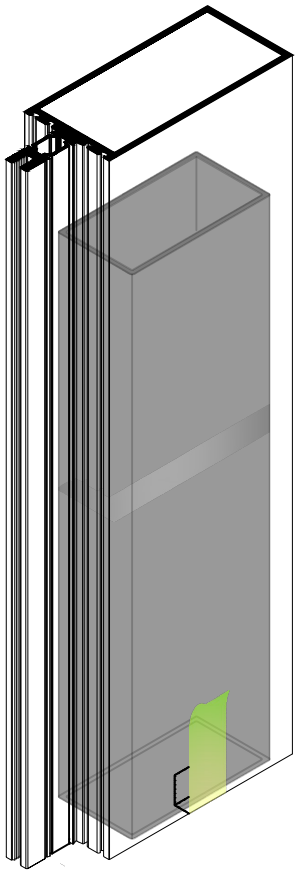
A. Consult approved shop drawings for number and size of fasteners required to attach the splice sleeve to the verticals.
B. Drill holes on both sides of the lower vertical in the locations shown on the approved shop drawings.
C. Slide the splice sleeve into the upper vertical mullion. Tape the sleeve into position temporarily until verticals are erected. See **Fig. 32.2.**
D. After the lower and upper verticals are erected, remove the tape holding the splice sleeve and slide into place, securing to the lower mullion as shown on approved shop drawings. See **Fig. 32.3.**
E. Apply bond breaker tape to the face of the splice sleeve between the lower and upper verticals, returning back 1”(25.4mm) on each side.



Dim	Back Member Depth		
	3 3/4"(95.3mm)	5 1/4"(133.4mm)	7 3/4"(196.9mm)
D	2 7/8"(73mm)	3 7/8"(98.4mm)	6 3/8"(161.9mm)

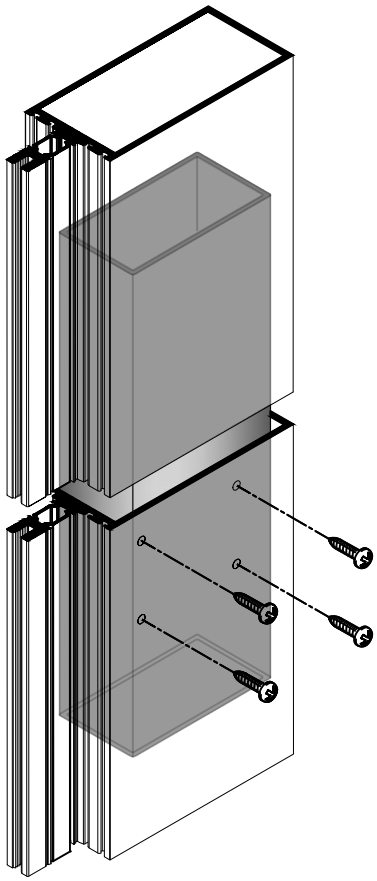
Dim	Mid-Lite	Exp. Horizontal
A	3/4"(19mm)	1 1/2"(38.1mm)
B	1"(25.4mm)	2 9/16"(65.1mm)
C	4 5/8"(117.5mm)	5 19/32"(142mm)

Fig. 32.1



Slide splice sleeve assembly into bottom of upper mullion and tape in place.

Fig. 32.2

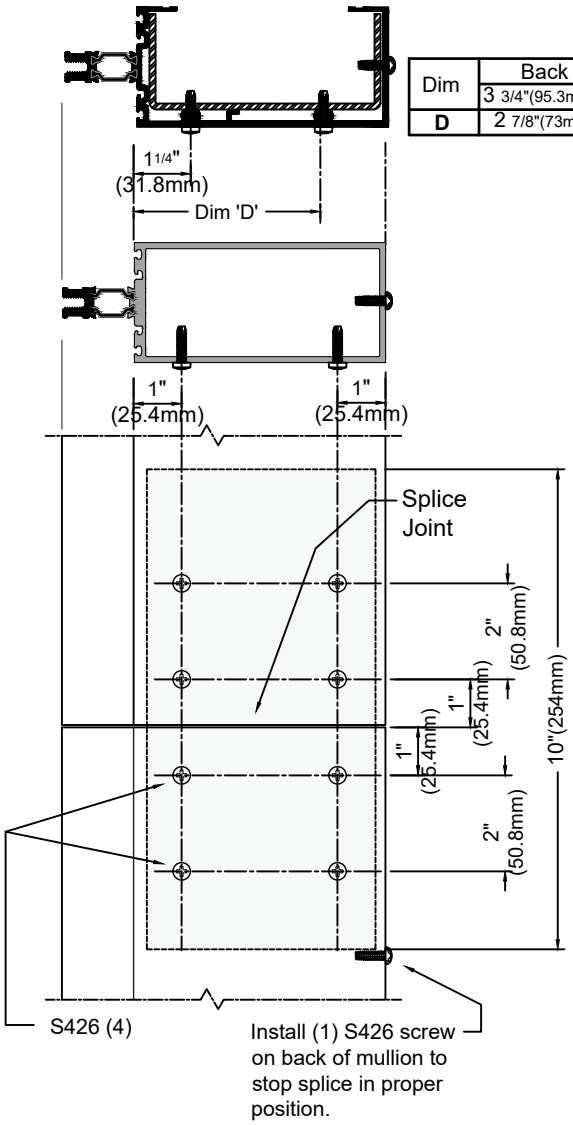


Remove tape to allow splice sleeve to drop into lower mullion and fasten in place.

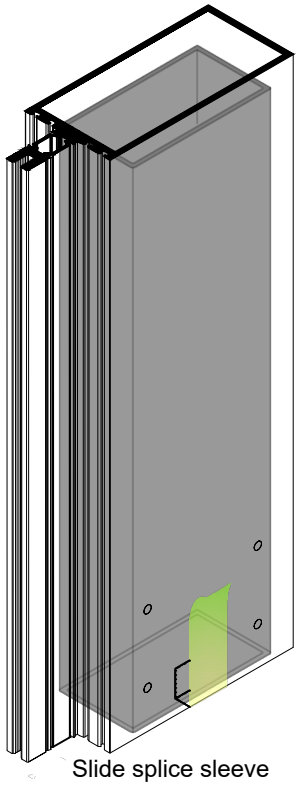
Fig. 32.3

Vertical Expansion Splice

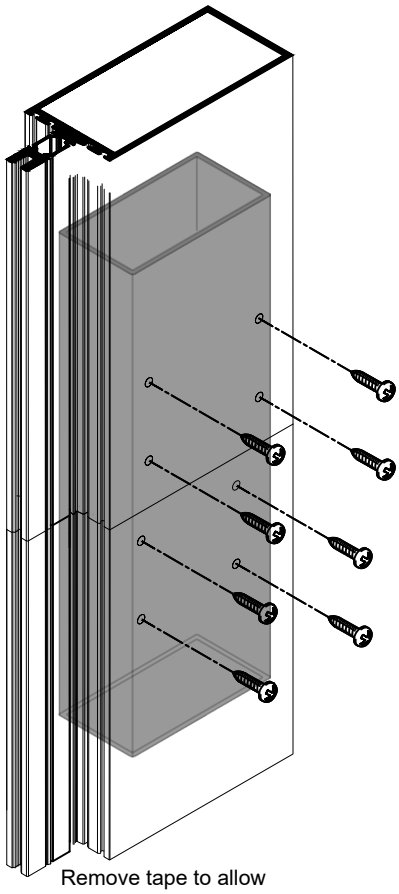
FRAME INSTALLATION



Dim	Back Member Depth		
	3 3/4"(95.3mm)	5 1/4"(133.4mm)	7 3/4"(196.9mm)
D	2 7/8"(73mm)	3 7/8"(98.4mm)	6 3/8"(161.9mm)



Slide splice sleeve assembly into bottom of upper mullion and tape in place.



Remove tape to allow splice sleeve to drop into lower mullion and fasten in place.

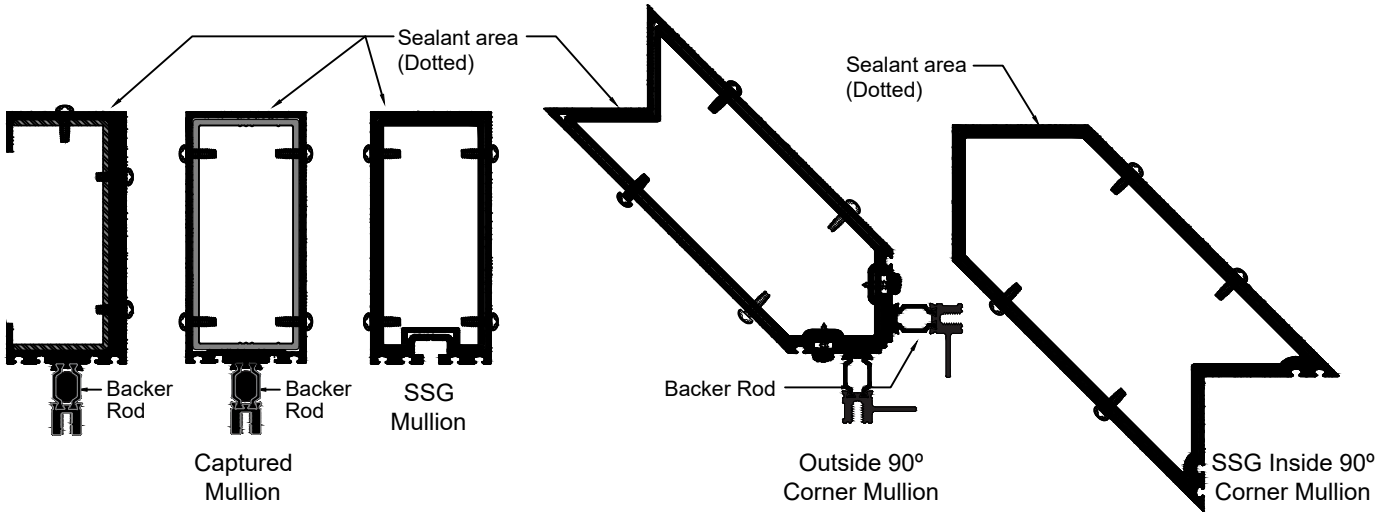
Fig. 33.1 **Fig. 33.2** **Fig. 33.3**

Vertical Fixed Splice

FRAME INSTALLATION

Step 12: Splice Sleeve Attachment (continued)

F. Apply sealant over bond breaker tape at joint and screw heads. Tool sealant. See **Fig. 34.2.**



Insert backer rod into large voids and apply sealant to splice joint.

Fig. 34.1

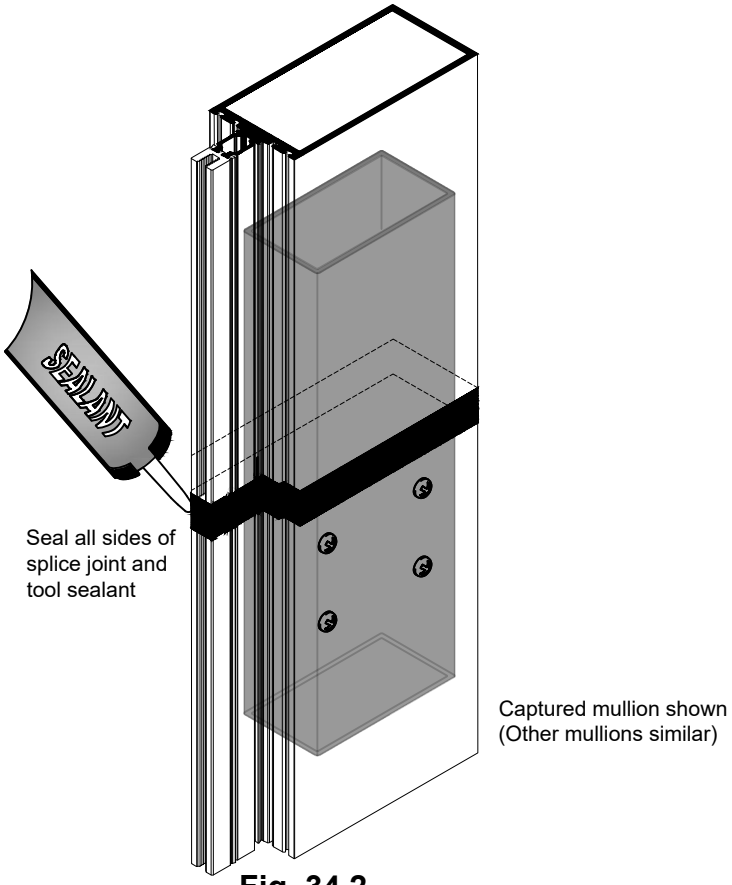


Fig. 34.2

TUBELITE® DEPENDABLE

FRAME INSTALLATION

Step 13: Install Vertical End Caps

A. Install top and bottom end caps on mullions. Tool sealant. **See Fig. 35.**1 and **Fig. 35.2.**

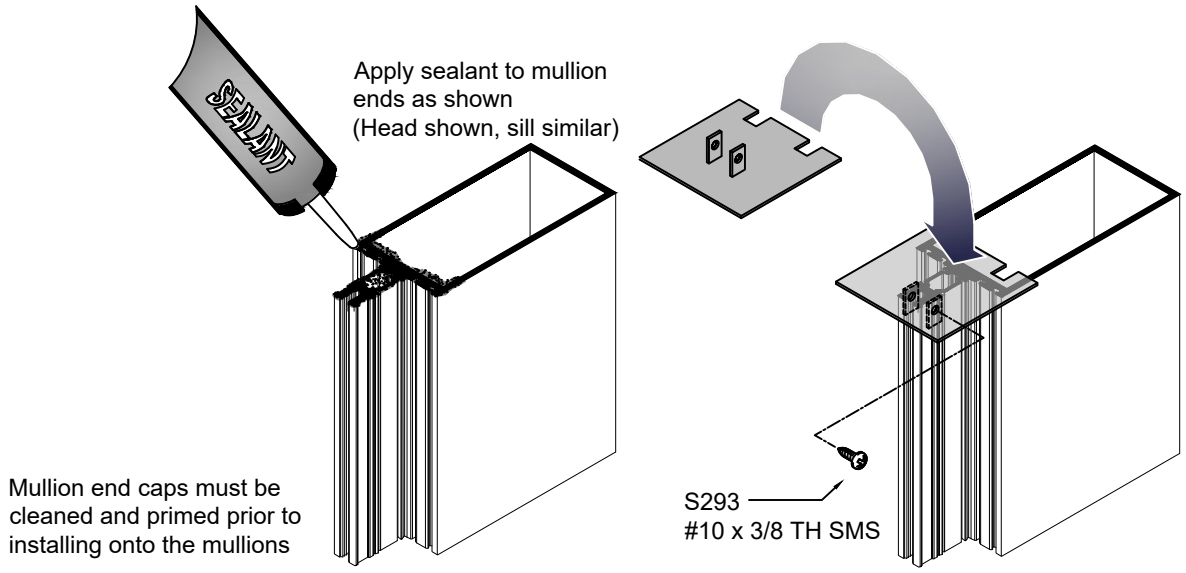


Fig. 35.1

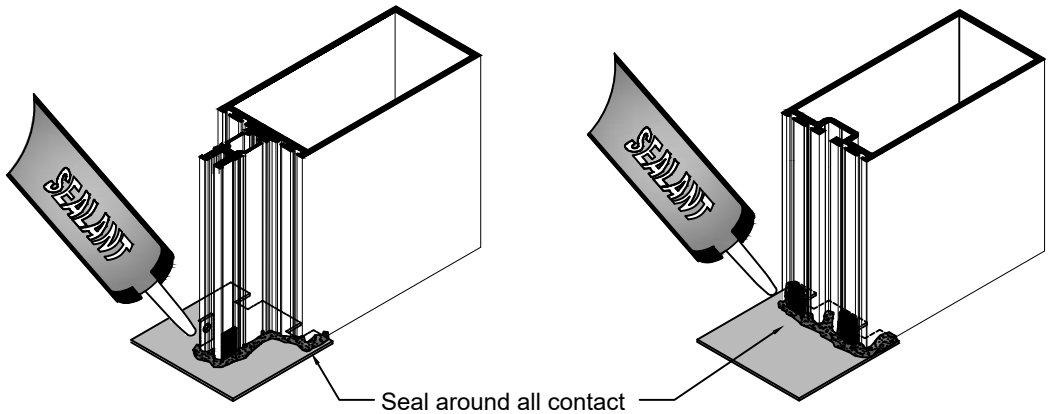


Fig. 35.2

FRAME INSTALLATION

Step 13: Attach Horizontals to Shear Clips

A. Seal shear clip prior to installing the horizontal member. **See Fig. 36.1.**
B. Seal the ends of the horizontal back member and attach to the shear clip using S426 screws. Seal the heads of the screws.
C. Tool sealant at the horizontal/vertical intersection.
D. When P4633 polyamide (dual & triple glaze) and PTB120 thermal pressure plate (triple glaze only) is used, install the P4607 PVC pocket filler tube into perimeter members. **See Fig. 35.1** through **Fig. 35.4.**

NOTE: Tubular horizontal installation is similar.

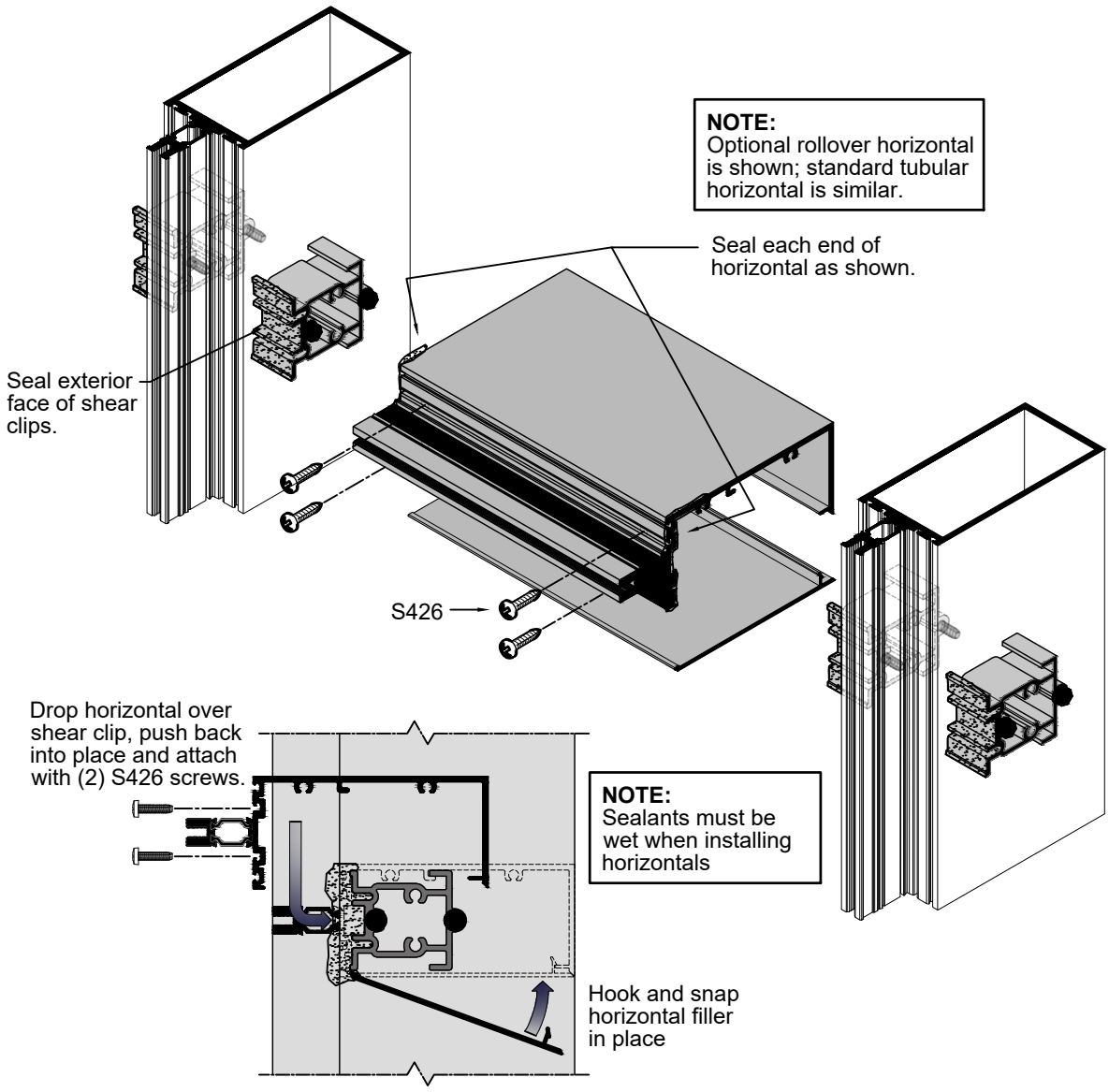


Fig. 36.1

FRAME INSTALLATION

Step 13: Attach Horizontals to Shear Clips and Anchor Clips (Continued)

F. When P4633 polyamide (dual & triple glaze) or PTB120 thermal pressure plates (triple glaze only) are used, install P4607 pocket filler into perimeter members. **See Fig. 37.1** and **Fig. 37.2.** Do not over torque polyamide pressure plate fasteners.

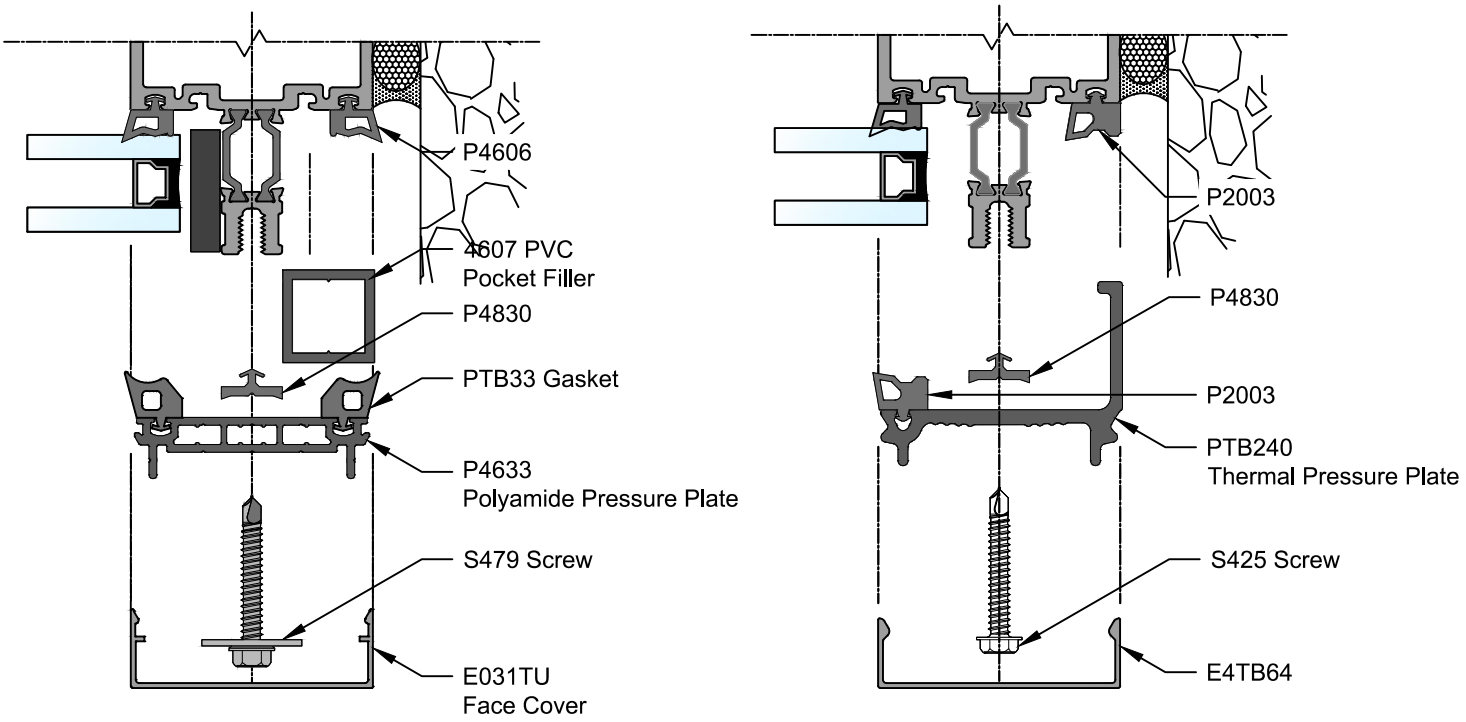


Fig. 37.1

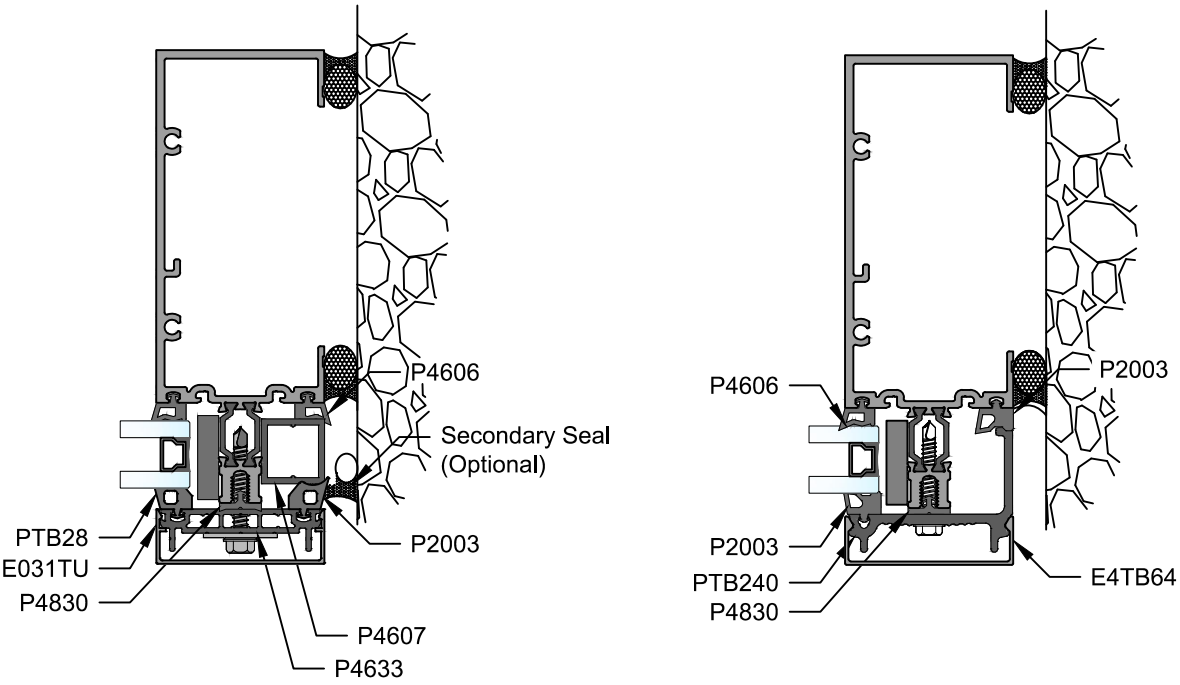


Fig. 37.2

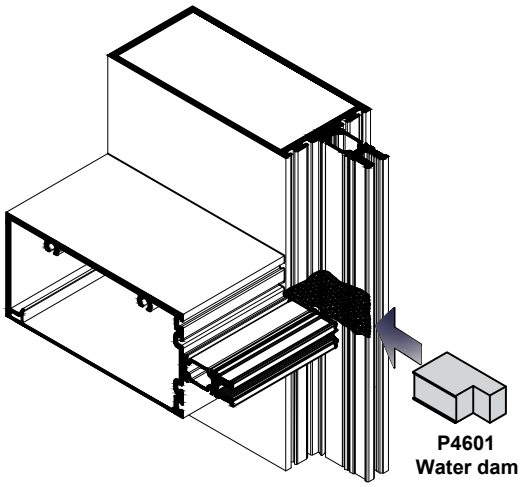
JAMB at ALTERNATE PRESSURE PLATES

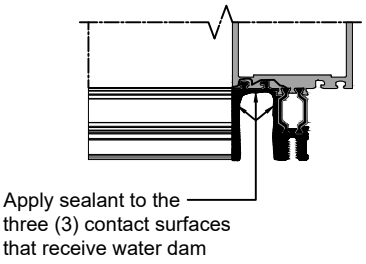
TUBELITE® DEPENDABLE

FRAME INSTALLATION

Step 14: Install Water Dams

A. Seal the end of the horizontal member across the vertical member. This sealant should be applied liberally. **See Fig. 38.1** and **Fig. 38.2.**
B. NOTE: Both upper and lower expansion horizontals are to receive water dams.
C. Push the water dam into the void between the horizontal member and the vertical tongue. This is a pressure ft.
D. After the water dam is in place, apply silicone between the top of the dam and end of horizontal, tooling over the end dam for a water tight seal. Seal over the top of the water dam onto the horizontal tongue, damming the end of the horizontals. **THIS IS A CRITICAL SEAL.**
E. For vertical SSG applications, follow the same sealing procedures as with a captured system noted above. **See Fig. 38.2.**





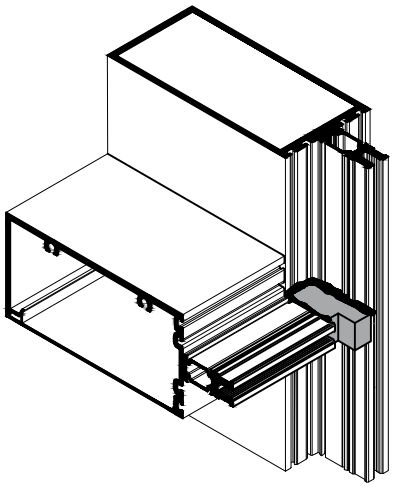
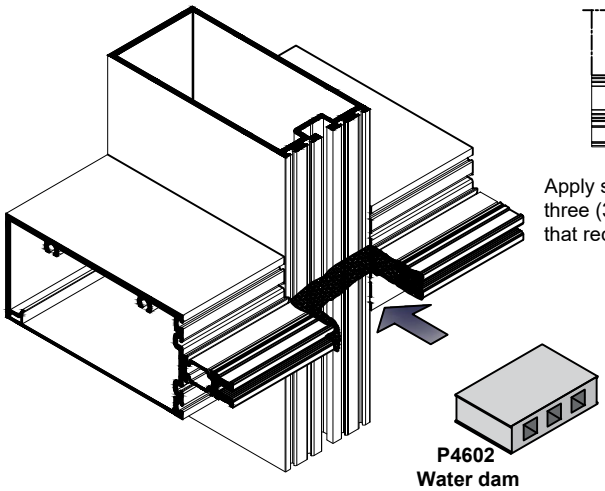
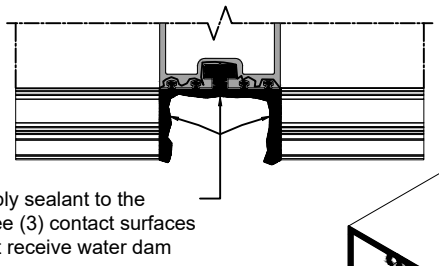


Fig.38.1

NOTE:
Optional rollover horizontal is shown; standard tubular horizontal is similar.





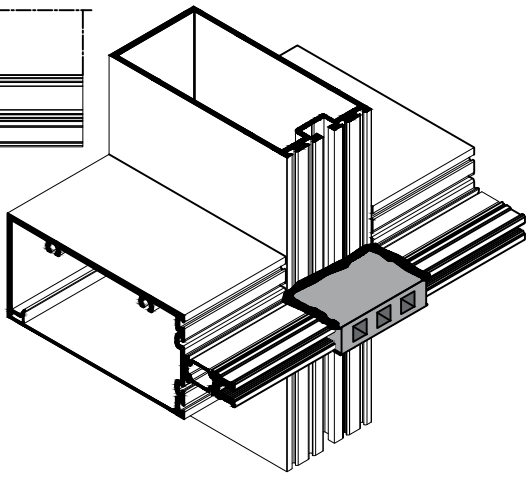
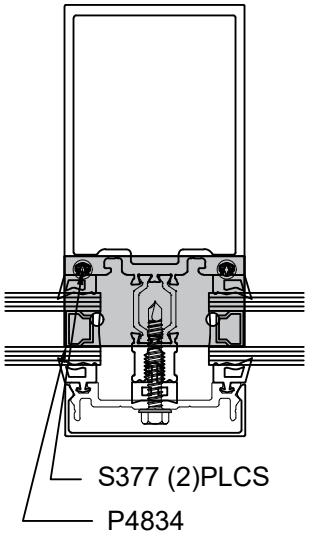
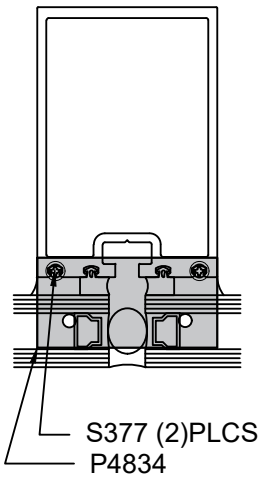
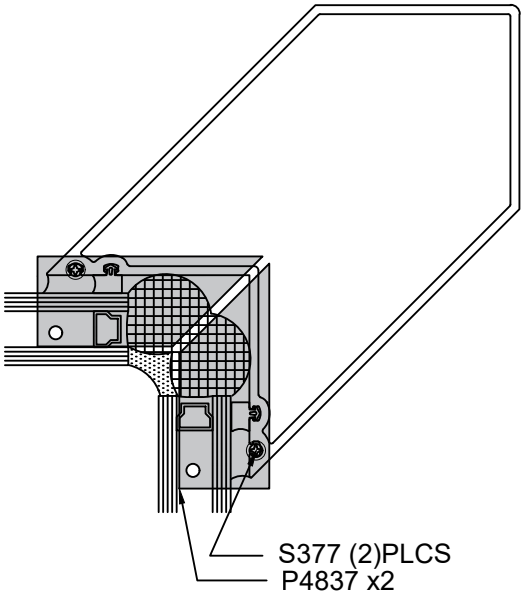


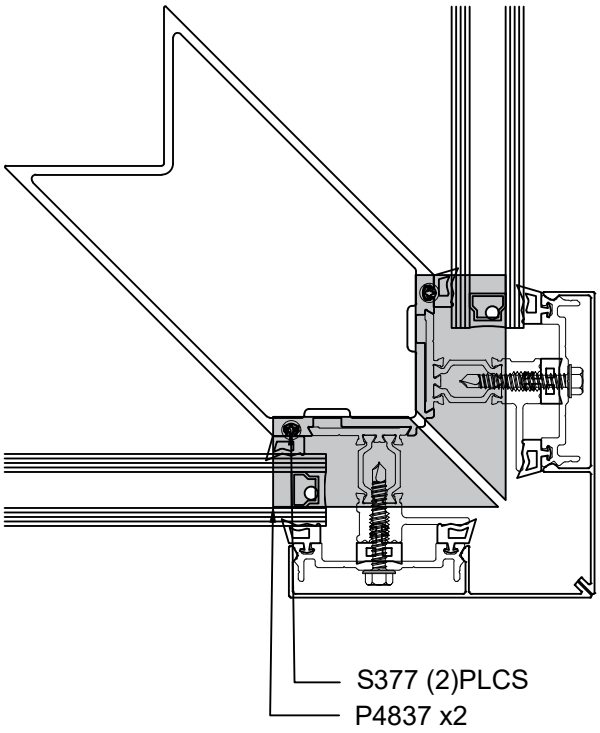
Fig.38.2

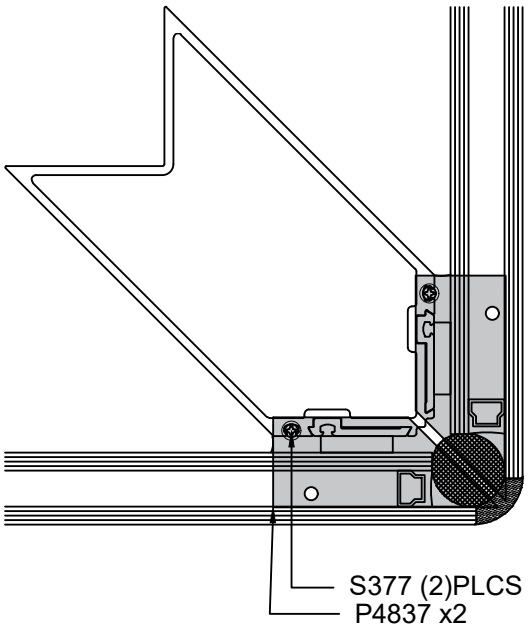
Mullion Cap Installation







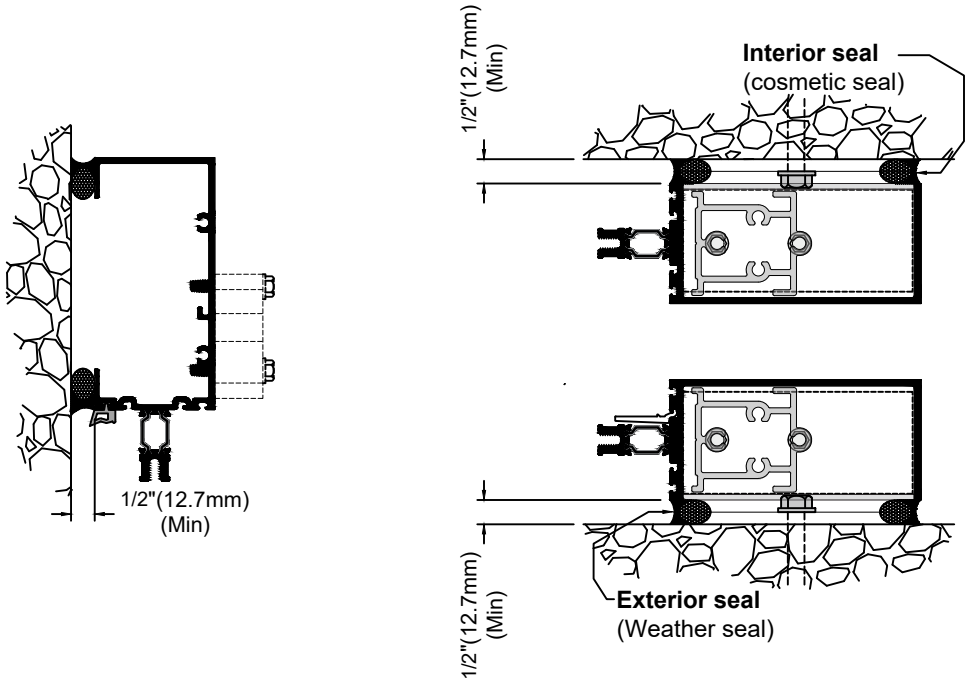




FRAME INSTALLATION

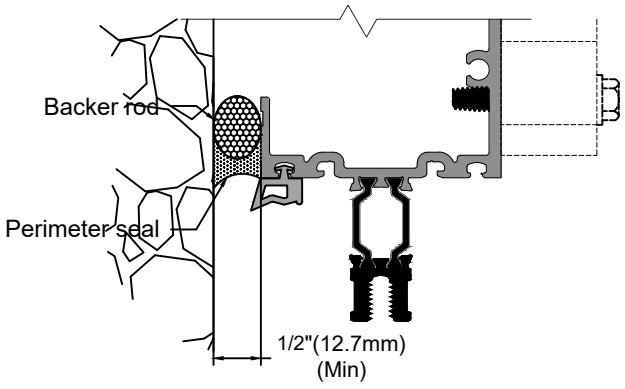
Step 15: Seal Perimeter of Installation

A. Insert backer rod into the gap between the building substrate and curtain wall frame.
B. Apply sealant around the perimeter of the frame and tool the sealant.
NOTE: When using thermal or polyamide pressure plates, install perimeter seal as shown in step 13, page 39.



NOTE: Exterior and Interior perimeter seals must run continuous full perimeter of framing.

Fig. 39.1



Exterior (shown)
Interior (Similar)

TUBELITE® DEPENDABLE

GLAZING

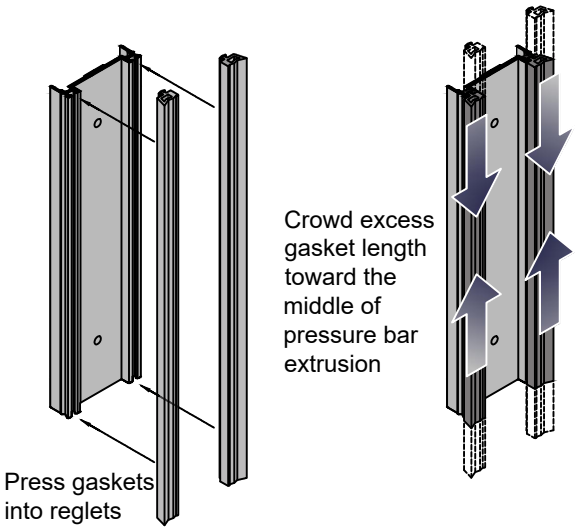
Step 16: Glazing Preparation

A. Remove any debris from the glazing pockets.
B. Trim excess silicone from edges of glazing units to allow for maximum glazing clearance.

Step 17: Install Gaskets

NOTE: Crowd gaskets toward the center of the member during installation to avoid gaps caused by relaxation of the gasket material.

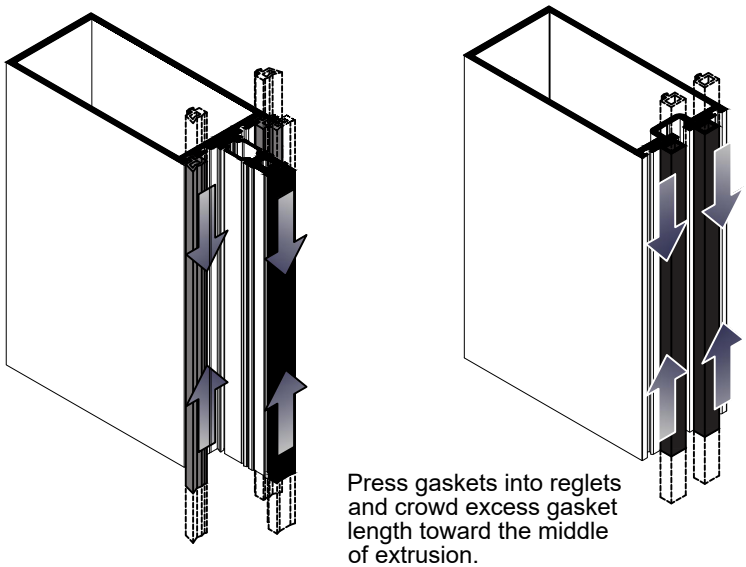
A. Install P4606 gasket into vertical and horizontal pressure plates. See **Fig. 40.1.**
B. Install P4606 gasket into vertical mullions. See **Fig. 40.2.** Vertical mullion gaskets run beyond the horizontals. Run the vertical gasket through the vertical splice joint, setting in fresh sealant at the splice. Notch darts off the gasket as required for proper fit.
C. Install P4606 gasket into the horizontals.
D. Install P4605 isolator gasket into vertical and horizontal tongues. Run the isolator through the vertical splice joints.
E. For SSG vertical applications, install the P4631 gasket into vertical mullion with equal overlap into each horizontal pocket. **See Fig. 40.2** and **Fig. 41.1.**



See **pages 27 & 28** for gasket cut lengths

Fig. 40.1

Typical with vertical and horizontal gaskets.



Press gaskets into reglets and crowd excess gasket length toward the middle of extrusion.

Fig. 40.2

GLAZING

Step 17: Install Gaskets (Continued)

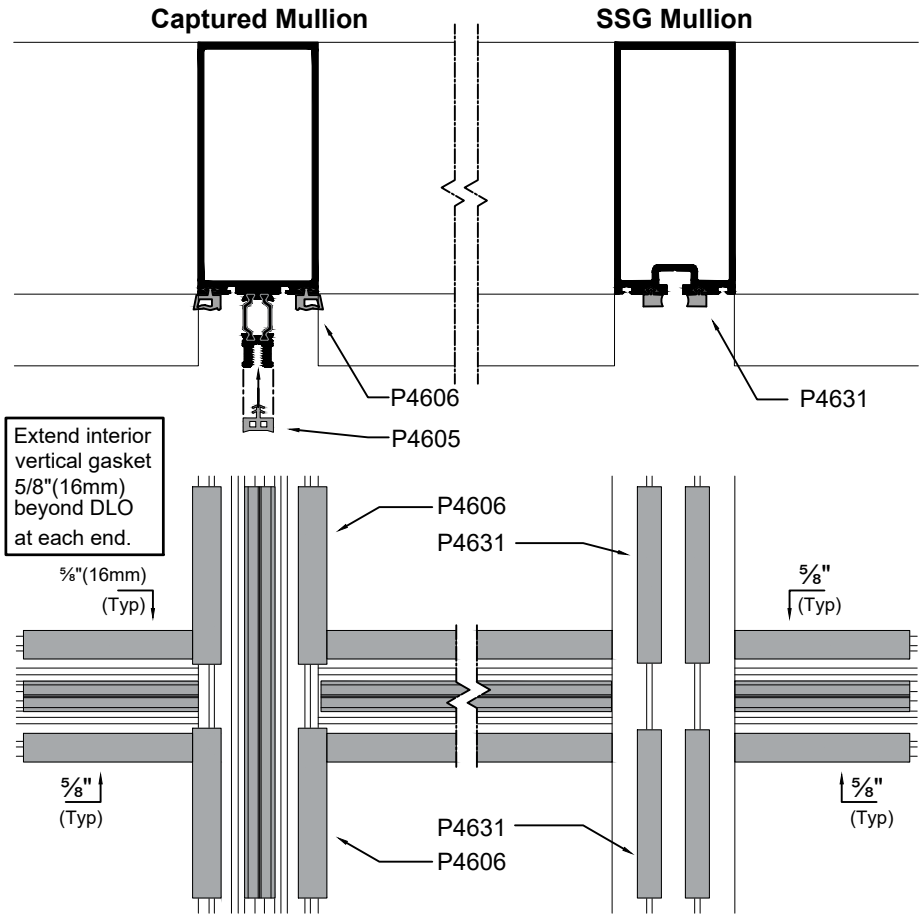


Fig. 41.1

TUBELITE® DEPENDABLE

GLAZING

Step 18: Installing Glass

NOTE: Pre-seal gaskets only in the opening to be glazed to avoid sealant curing and becoming contaminated before glass is set in place.

A. Pull interior horizontal gaskets away from vertical gaskets and seal corners where gaskets abut. Release horizontal gasket back to its original position. See **Fig. 42.1.**

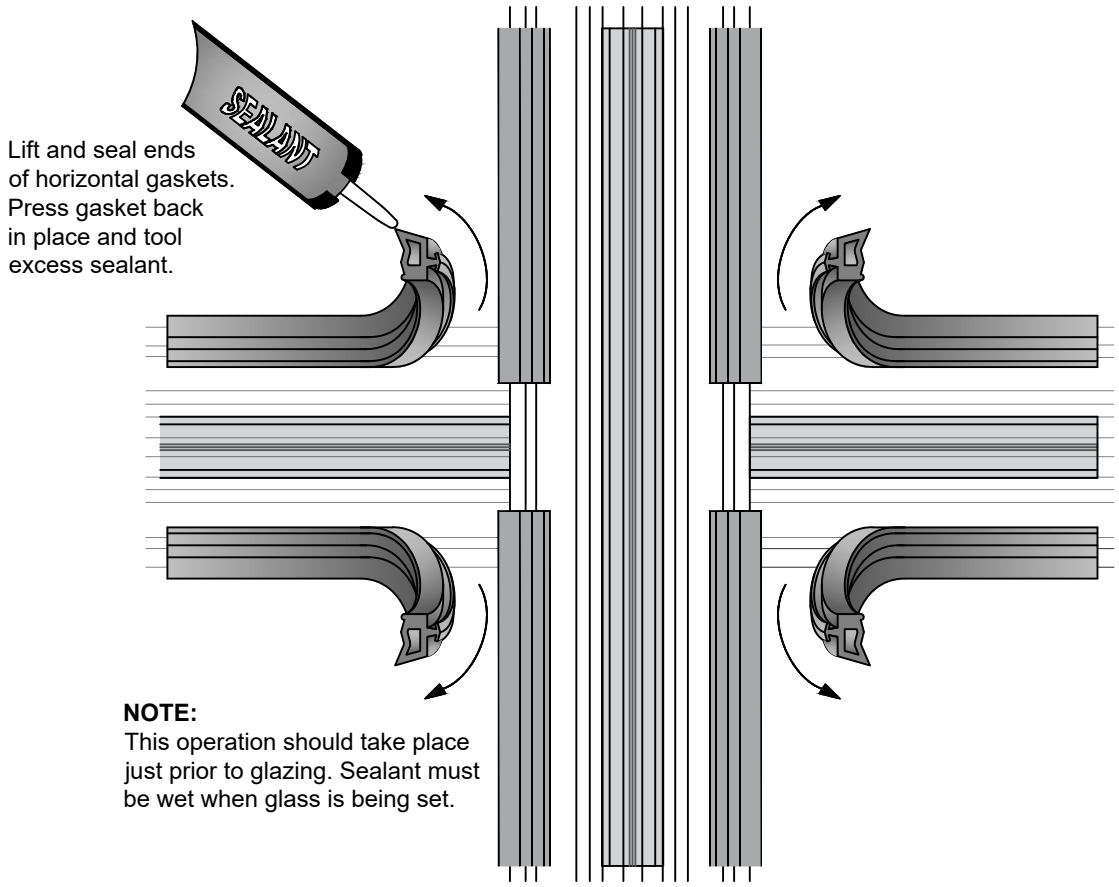


Fig. 42.1

GLAZING

Step 18: Installing Glass (Continued)

B. Install two setting chairs onto the horizontal at quarter points or as indicated on approved shop drawings. Place one setting block centered on each setting chair. **See Fig. 43.3.**
Note: Consult glass manufacturer for correct length and location for glass size over 40 sq.ft.
C. Install glass onto setting block, positioning glass for proper glass bite into vertical mullions. Make sure the glass is firmly against interior gaskets before installing temporary glazing clips or pressure plates.
D. Make sure sealant is not bridging or blocking the water flow area between the edges of the glass and the framing system.

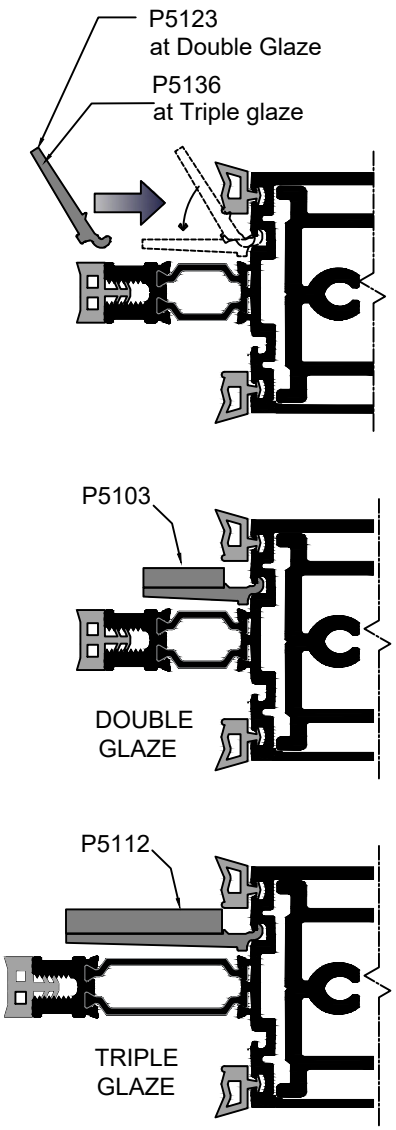


Fig. 43.1

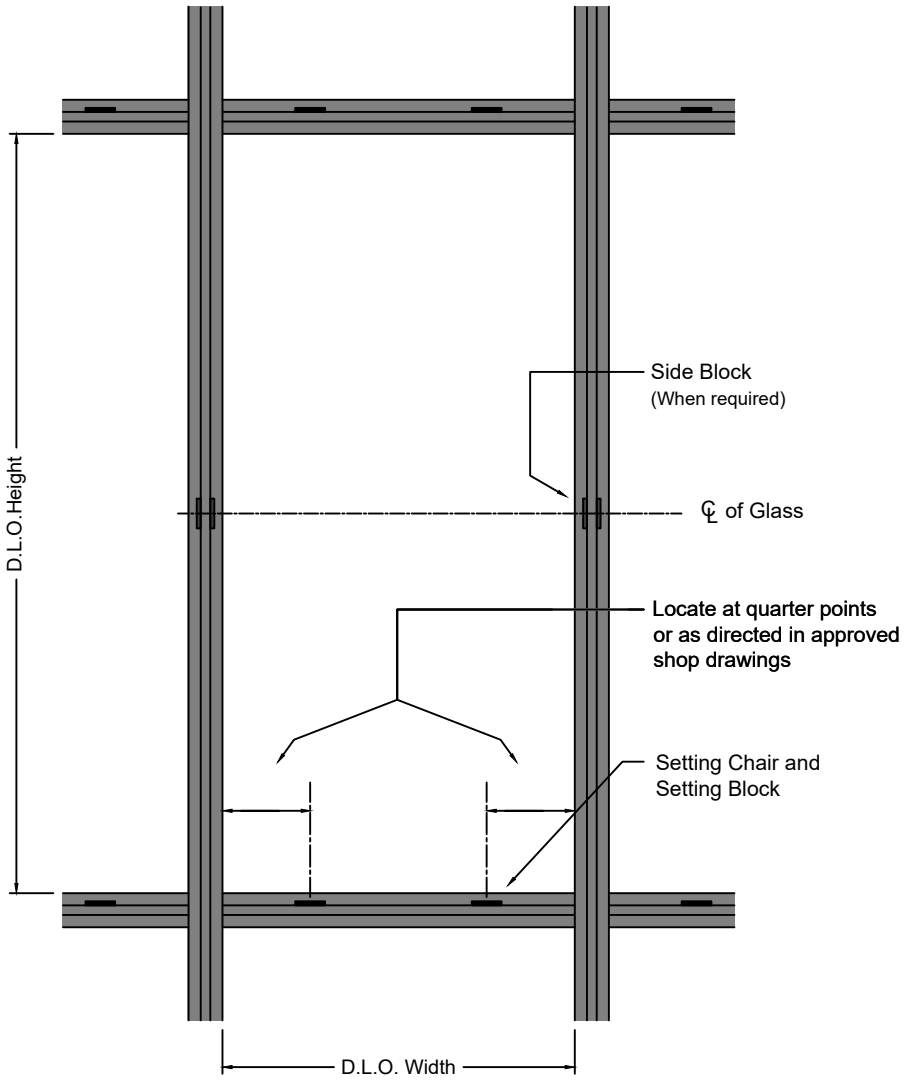


Fig. 43.2

TUBELITE® DEPENDABLE

GLAZING

Step 18: Installing Glass (Continued)

E. Hold the glass in place using P4634 temporary glazing retainers at SSG and at captured applications. Locate retainers near each corner of the glass and at mid points.
Temporary glazing retainers are intended for short term use only. Additional retainers or full length pressure plates may be required if high windload pressures are anticipated before the installation is complete.

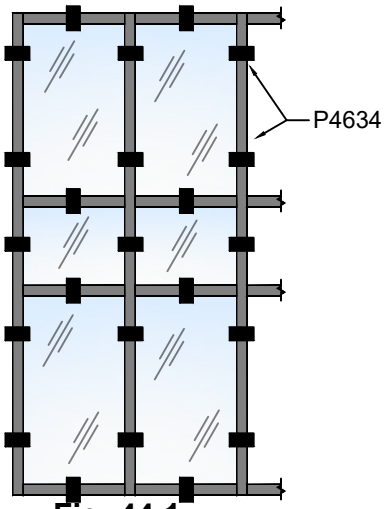


Fig. 44.1

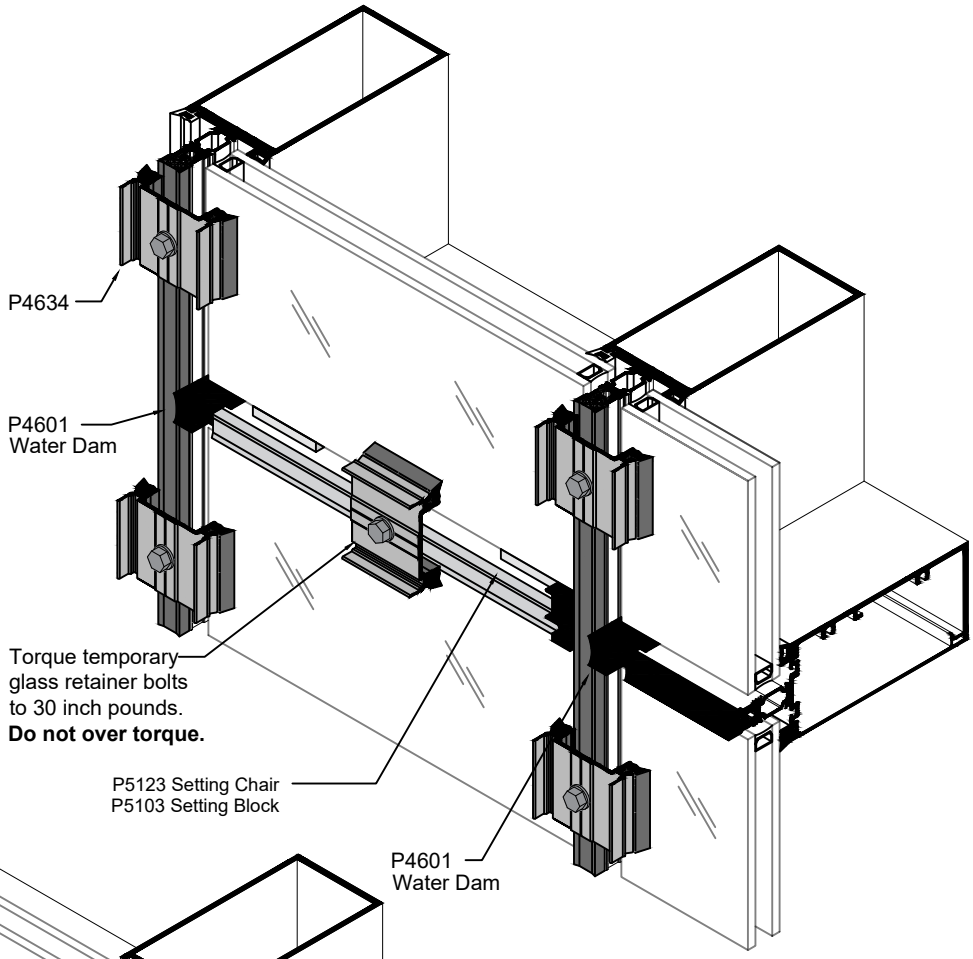


Fig. 44.2

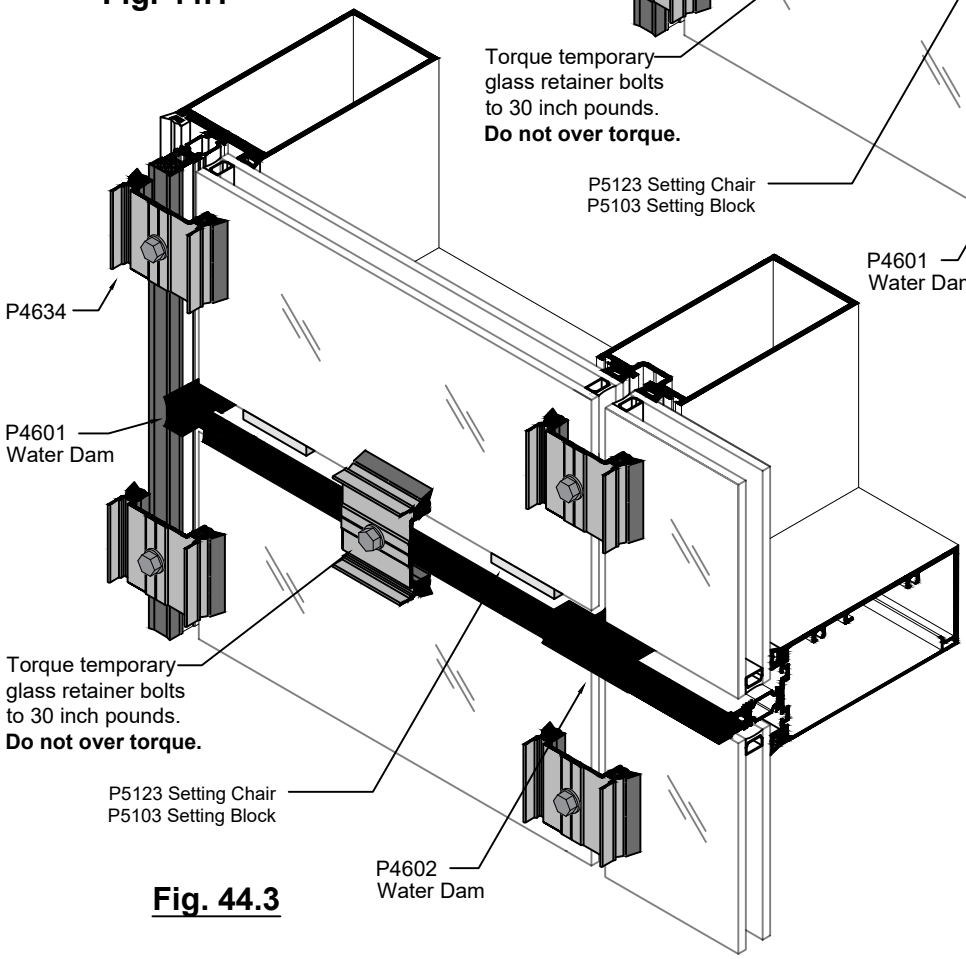


Fig. 44.3

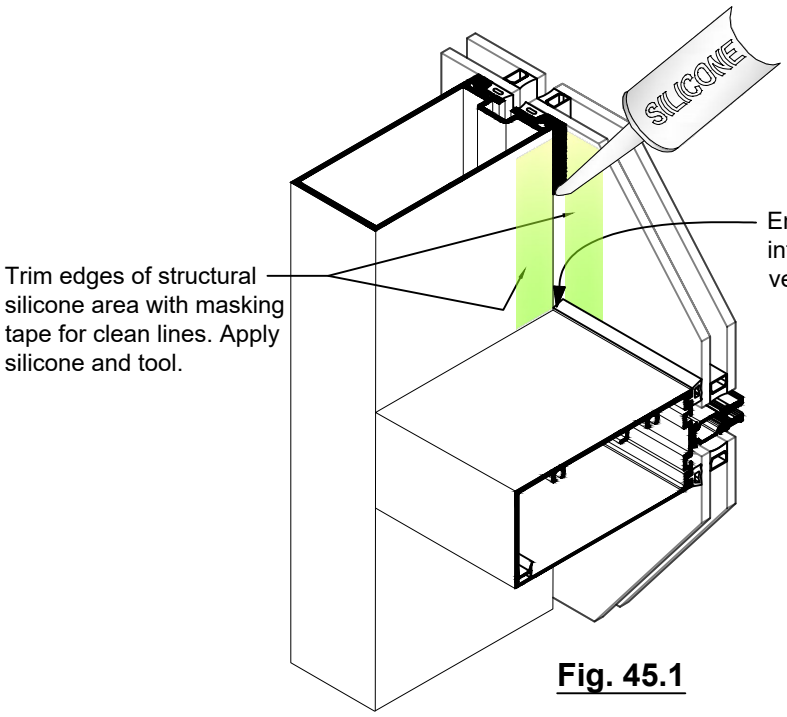
NOTE:
Optional rollover horizontal is shown; standard tubular horizontal is similar.

TUBELITE® DEPENDABLE

GLAZING

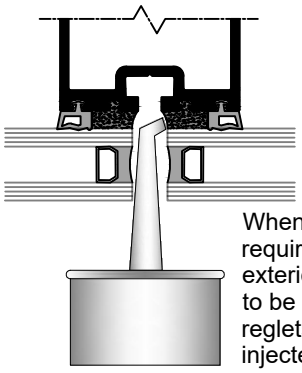
Step 18: Installing Glass (Continued)

F. For SSG applications, tape off the side of SSG mullion and glass prior to applying structural silicone. After structural silicone has cured per silicone manufacturer's recommendations, remove the temporary glazing retainers and apply a weather seal between the lites of glass.



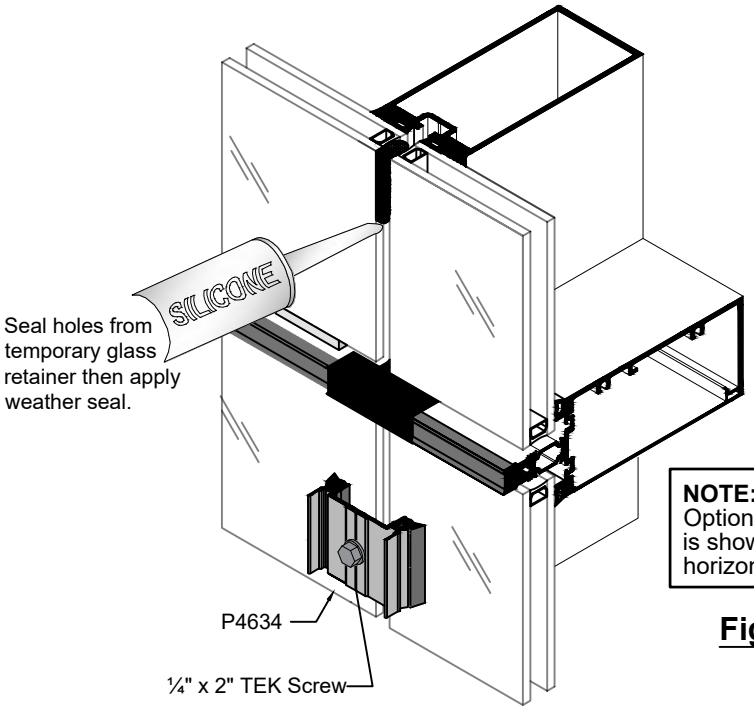
NOTE:
Optional rollover horizontal is shown; standard tubular horizontal is similar.

Fig. 45.1



When structural sealant requires application from exterior, spacer gasket are to be installed in the outer reglets and sealant is injected using a angled tip on applicator as shown.

Fig. 45.2



NOTE:
Optional rollover horizontal is shown; standard tubular horizontal is similar.

Fig. 45.3

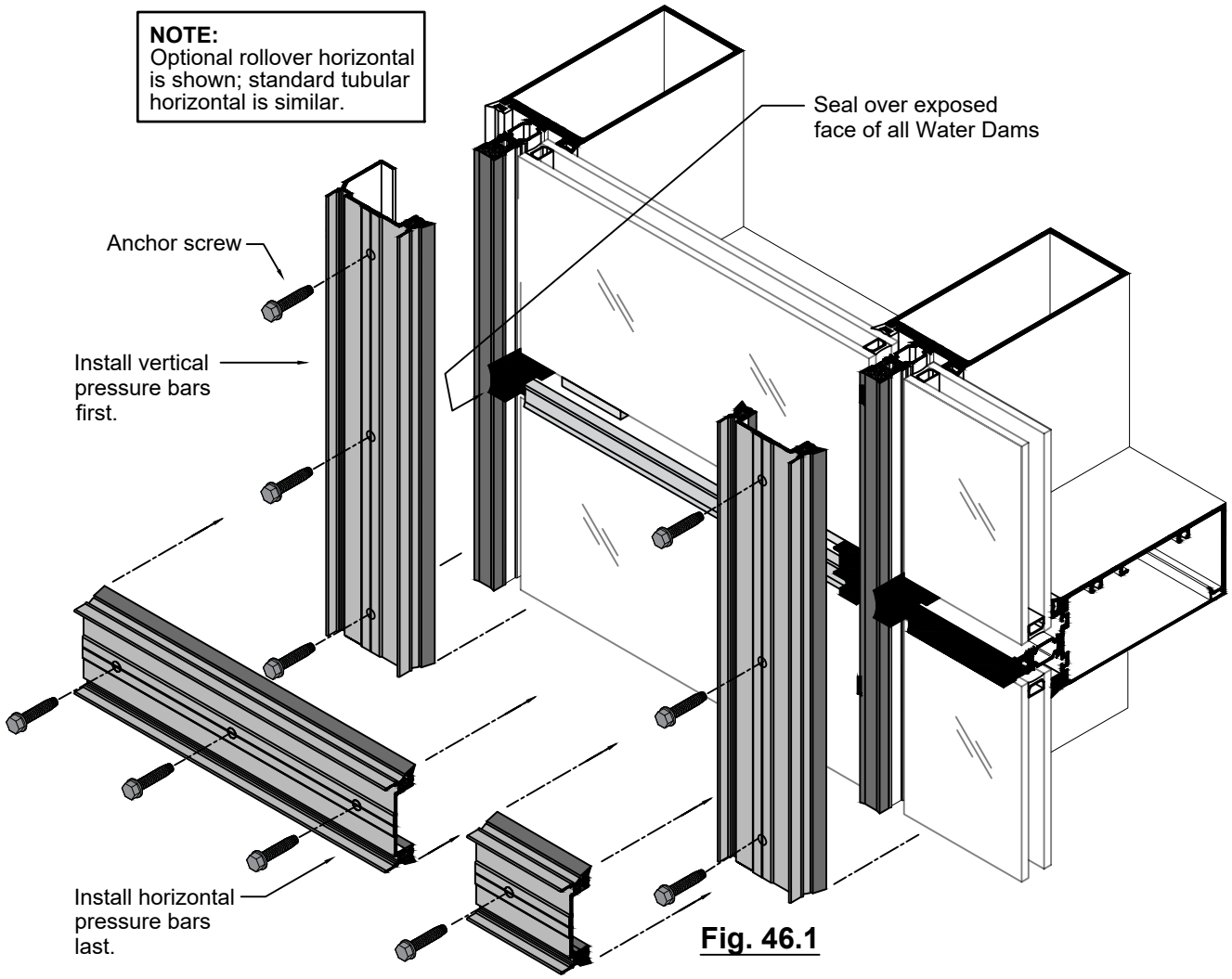
TUBELITE® DEPENDABLE

GLAZING

Step 19: <u>Install Pressure Plates and Face Covers</u>

A. Remove temporary glazing retainers from verticals as required.
B. Vertical pressure plates must be installed first. Prior to installing, apply sealant to the face of each water dam. For vertical pressure plates below expansion horizontals, maintain a 1”(25.4mm) joint between the bottom of the expansion horizontal and the top of the pressure plate.
C. Install the vertical pressure plates using the following:
- Aluminum: S425 screws
- Thermal (PTB120 & PTB240): S425 screws
- Polyamide (P4633): S479 screws

For applications using SSG verticals, captured vertical mullions adjacent to an SSG vertical must have weep holes drilled into the face of the vertical pressure plate.
D. Remove temporary glazing retainers from horizontals as required.
E. Install the horizontal pressure plates using the following, ensuring that weep holes are on the top side of the pressure plate:
- Aluminum: S425 screws
- Thermal (PTB120 & PTB240): S425 screws
- Polyamide (P4633): S479 screws



<u>Fig. 46.1</u>

Also see **Fig. 49.1** and **Fig. 50.1.**

GLAZING

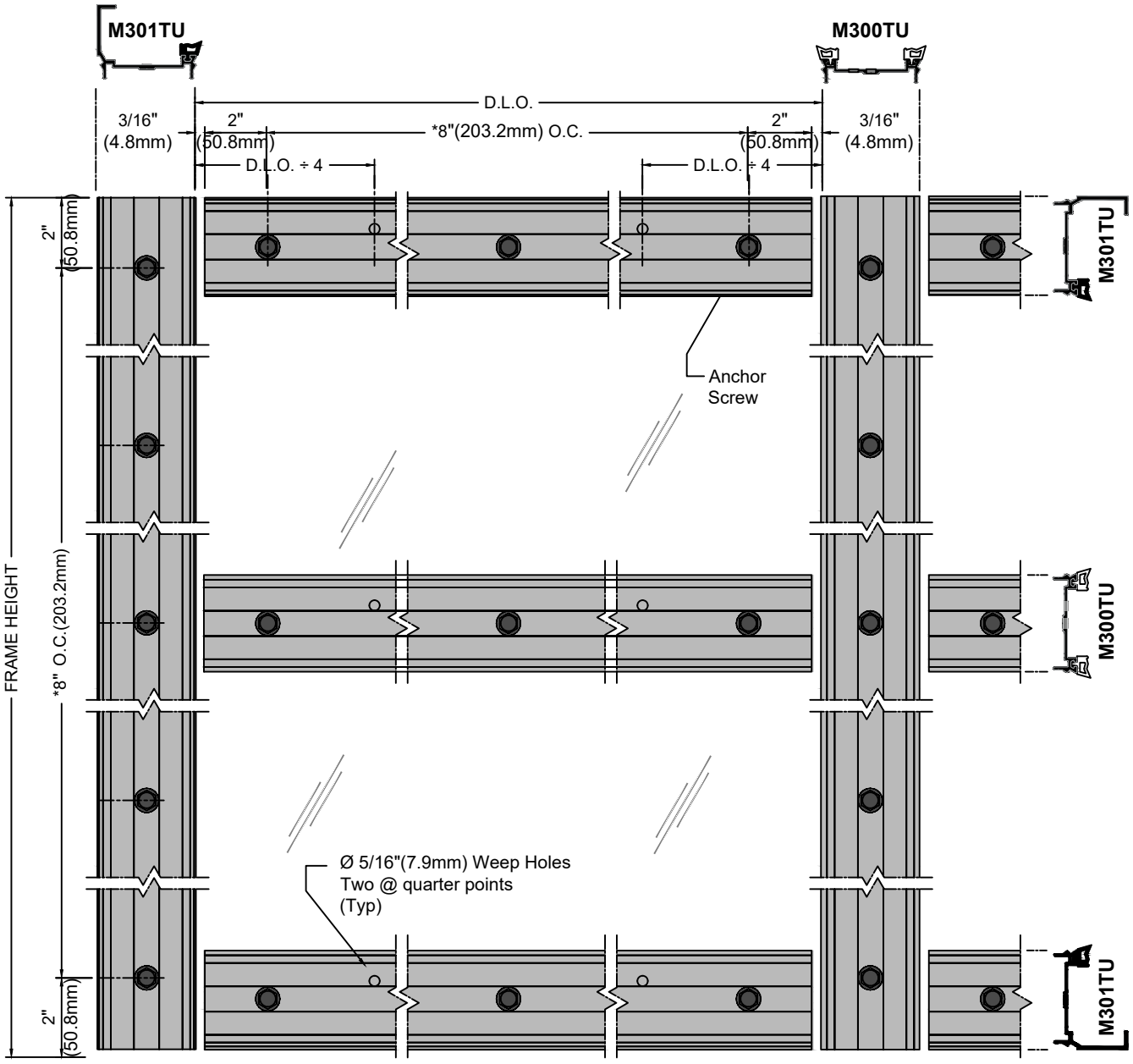
Step 19: Install Pressure Plates and Face Covers (Continued)

F. At the expansion horizontal, make sure the P4630 wiper gasket is installed continuously into the pressure plate and crimped in place at each end.

G. Ensure there are anchor holes in the pressure plates 2”(50.8mm) max from the ends and 2”(50.8mm) max from each horizontal/vertical intersection to maintain proper compression on the glass. When using polyamide pressure plates, add two additional fasteners on each side of a vertical/horizontal intersection.**See Fig. 48.1**

H. Torque all pressure plate screws to 90 in-lbs. When using a cordless drill with a torque limiter, check torque periodically against a torque wrench. Do not over torque polyamide pressure plate fasteners.

I. Remove short pieces of P2501 wedge gasket at the top of the lites at the expansion horizontal. Install P2501 wedge gasket at the top of this lite, sealing the ends of the gasket to the vertical gaskets.



*** See page 29 for pressure plate anchor spacing chart**

Fig. 47.1

CAPTURED PRESSURE BAR INSTALLATION

TUBELITE® DEPENDABLE

GLAZING

Step 19: Install Pressure Plates and Face Covers (Continued)

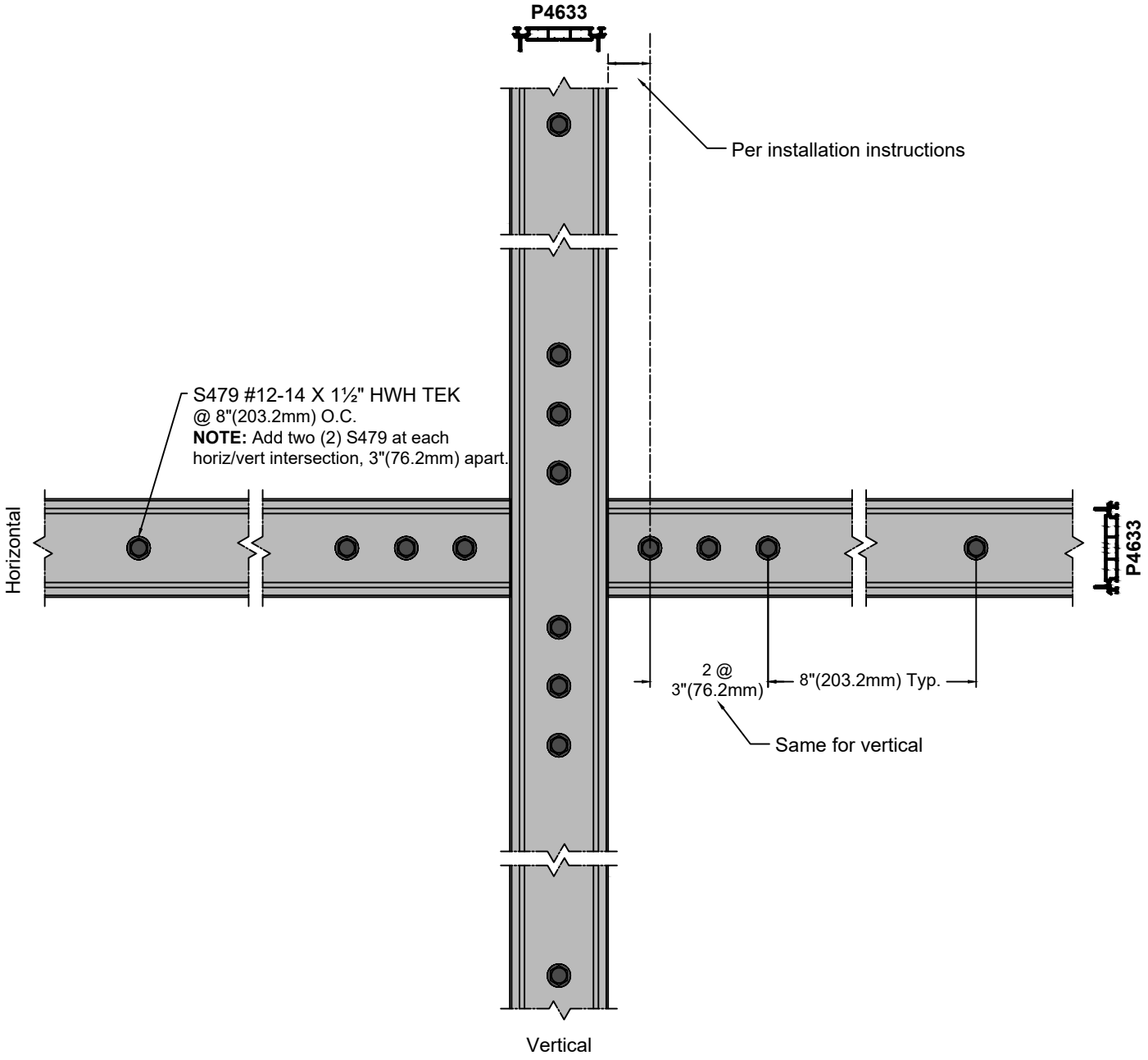
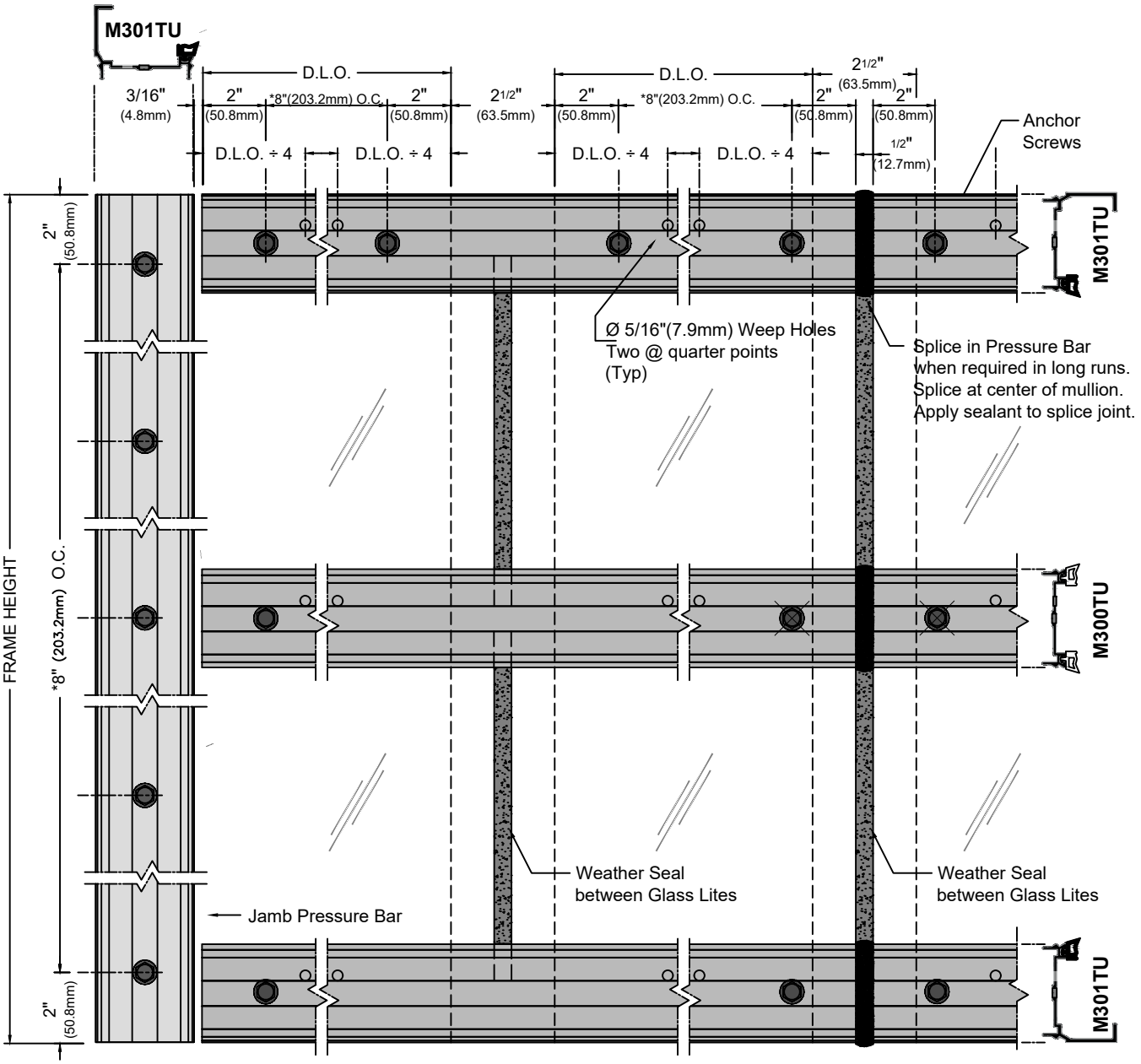


Fig. 48.1

GLAZING

Step 19: Install Pressure Plates and Face Covers (Continued)

J. Install the vertical face covers using a wood block to protect the face cover. Seal the tops of the vertical face covers below an expansion horizontal using backer rod. Slope the sealant away from the glass, creating a watershed.
K. Seal the tops of all vertical face covers as shown in **Fig. 49.4.**
L. Seal the horizontal pressure plates to the vertical face covers, tooling the sealant into the joint.
M. Install the horizontal face covers with equal gaps on each end. Make sure the weep slots in the face cover are pointing down.
N. At expansion horizontals, install interior trim (E040TU) with trim clip (P4646) as required.



*** See page 29 for pressure plate anchor spacing chart**

Fig. 49.1

SSG PRESSURE BAR INSTALLATION

TUBELITE® DEPENDABLE

GLAZING

Step 19: Install Pressure Plates and Face Covers (Continued)

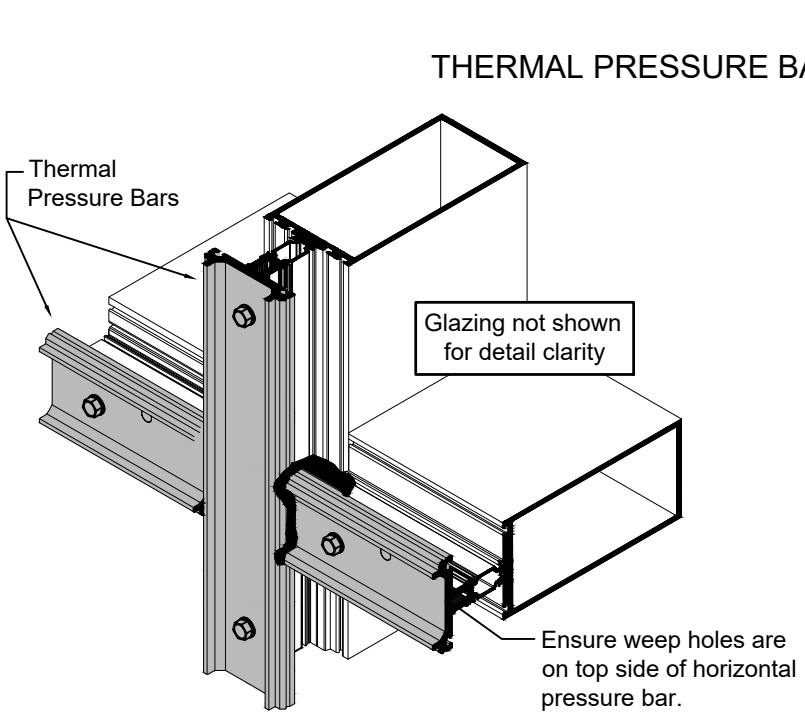


Fig. 50.1

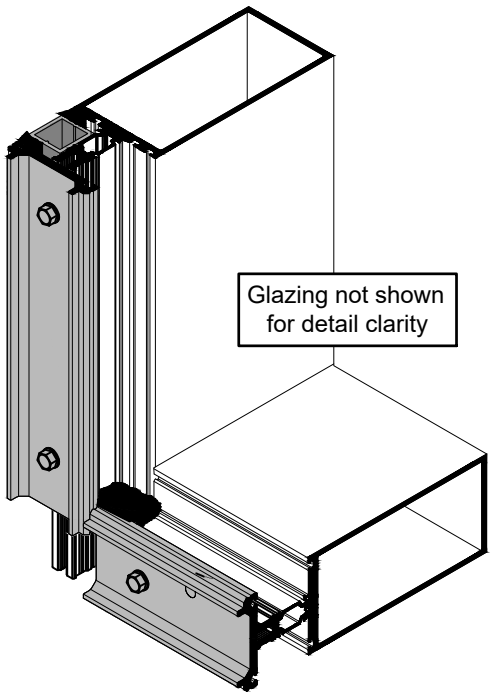
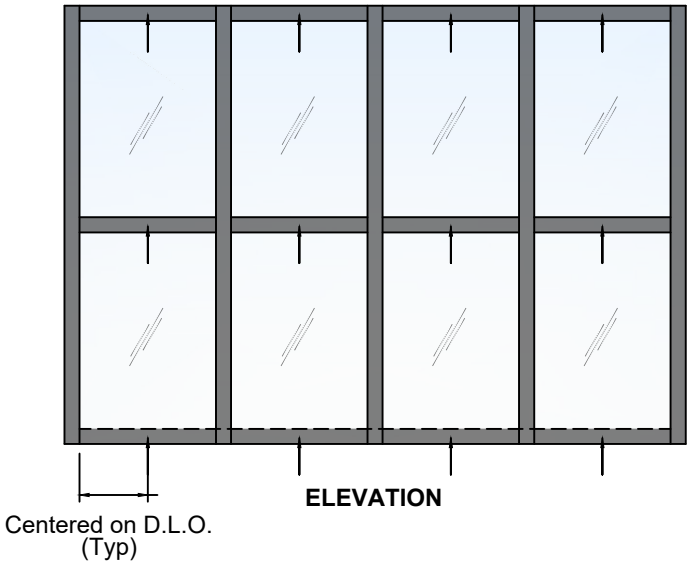


Fig. 50.2



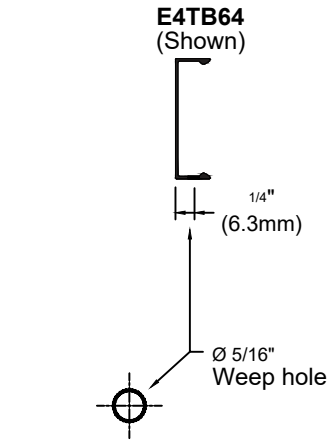


Fig. 50.3

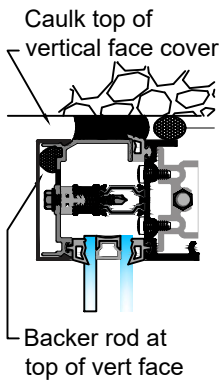


Fig. 50.4

TUBELITE® DEPENDABLE

GLAZING

Step 19: Install Pressure Plates and Face Covers (Continued)

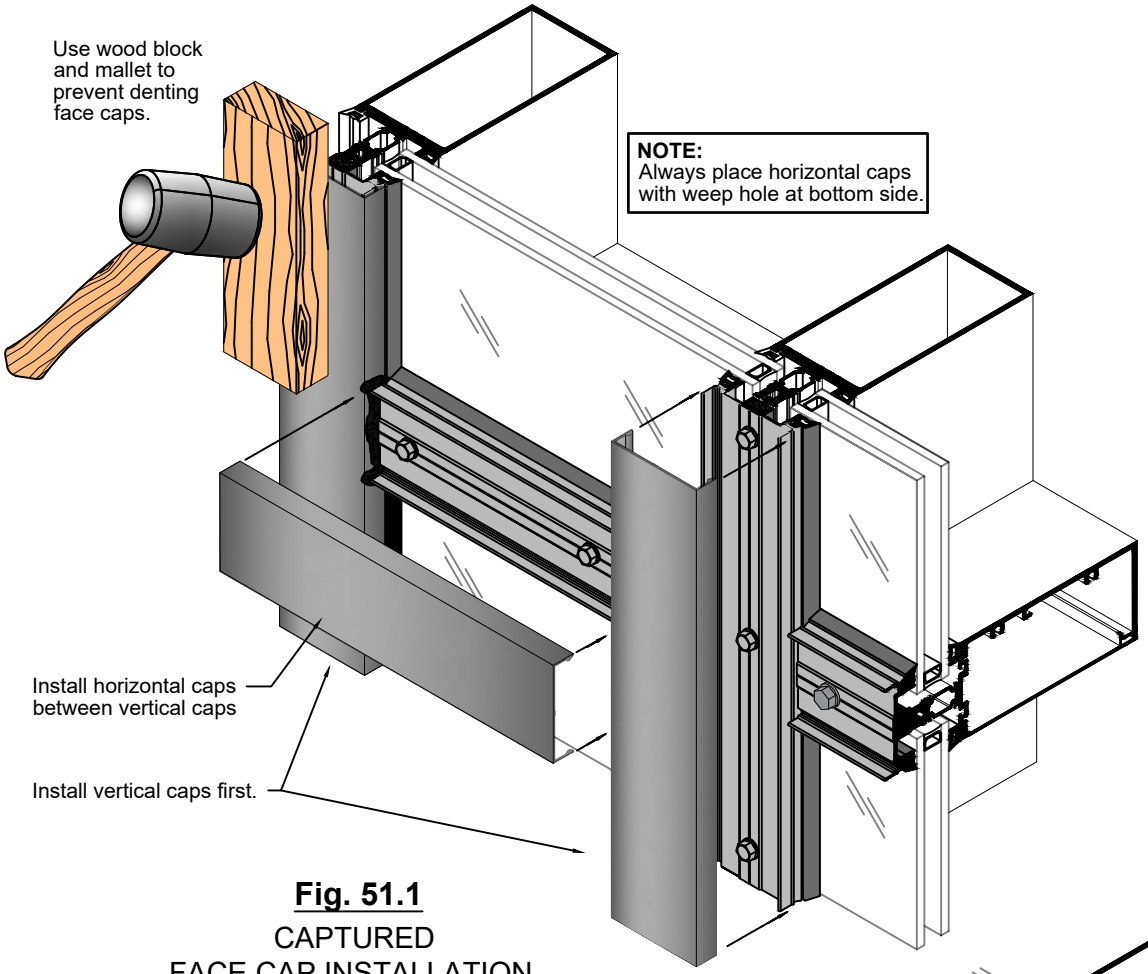


Fig. 51.1
CAPTURED
FACE CAP INSTALLATION

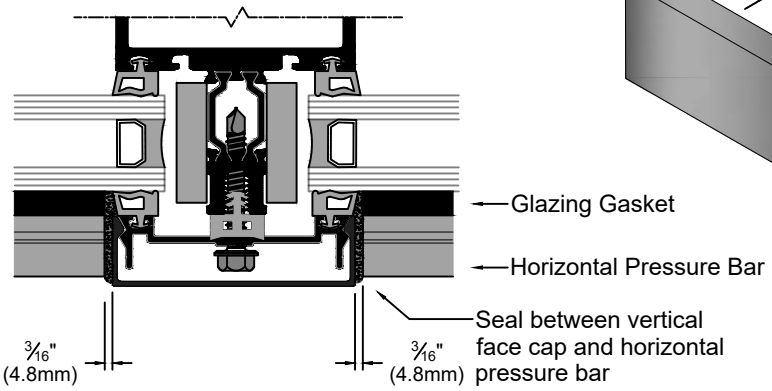


Fig. 51.2

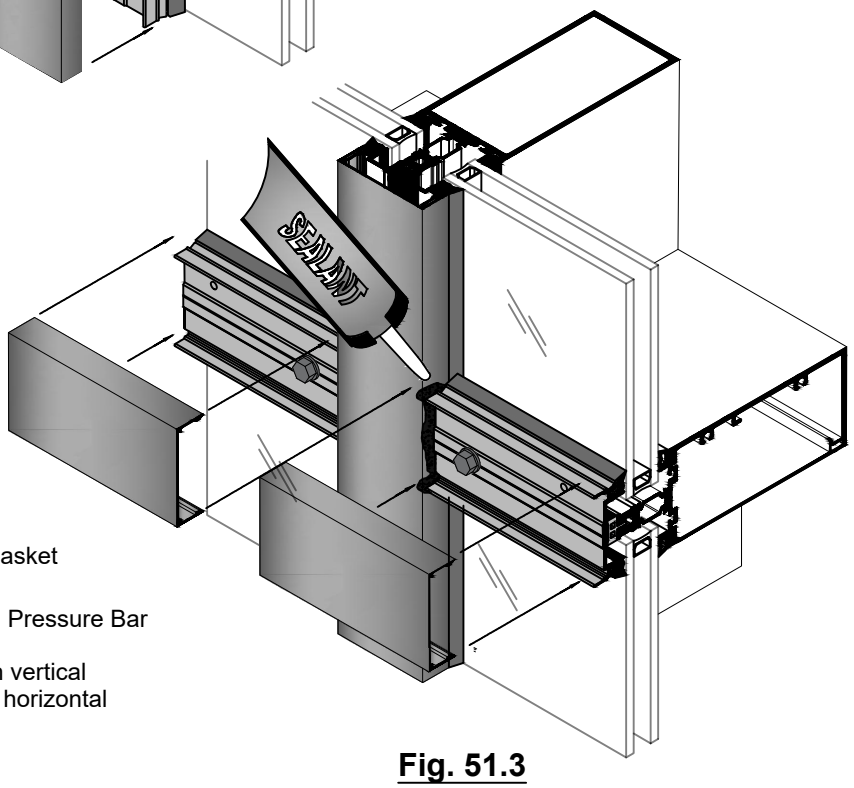


Fig. 51.3

TUBELITE® DEPENDABLE

GLAZING

Step 19: Install Pressure Plates and Face Covers (Continued)

Pressure Bar and Face Cap at typical multi-span mullion splice.

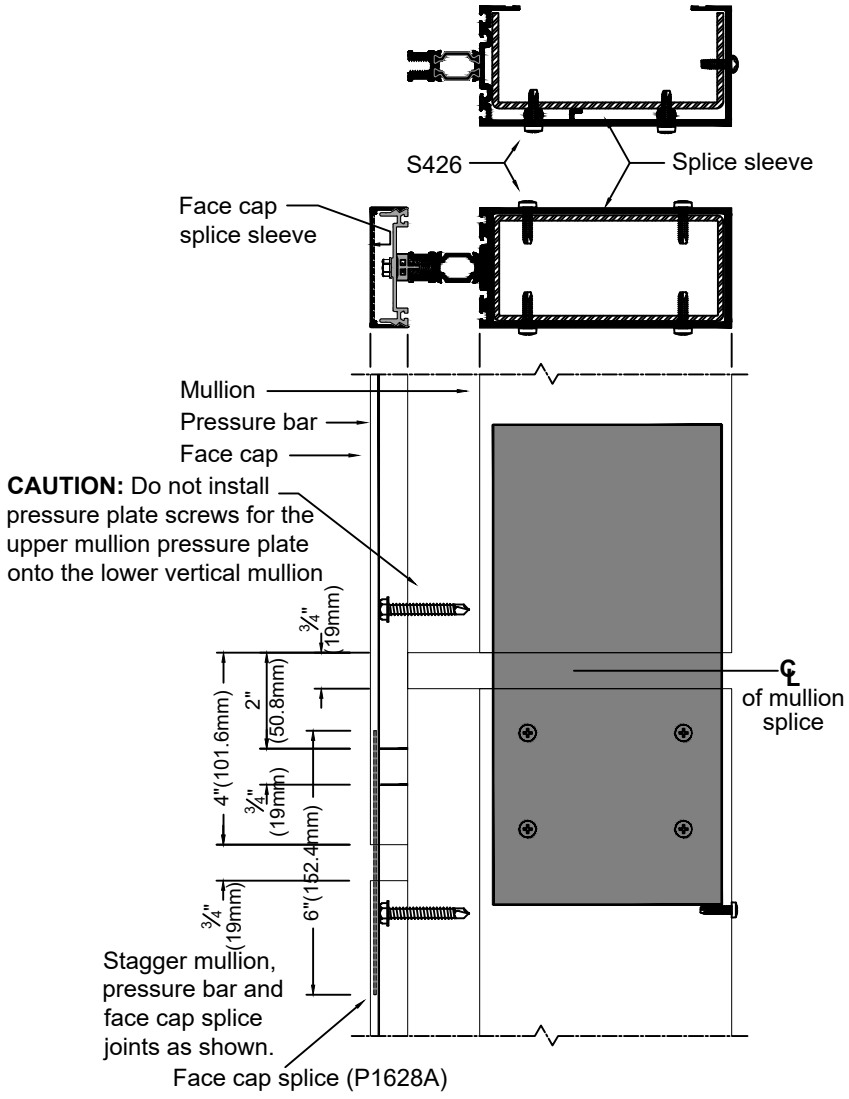


Fig. 52.1

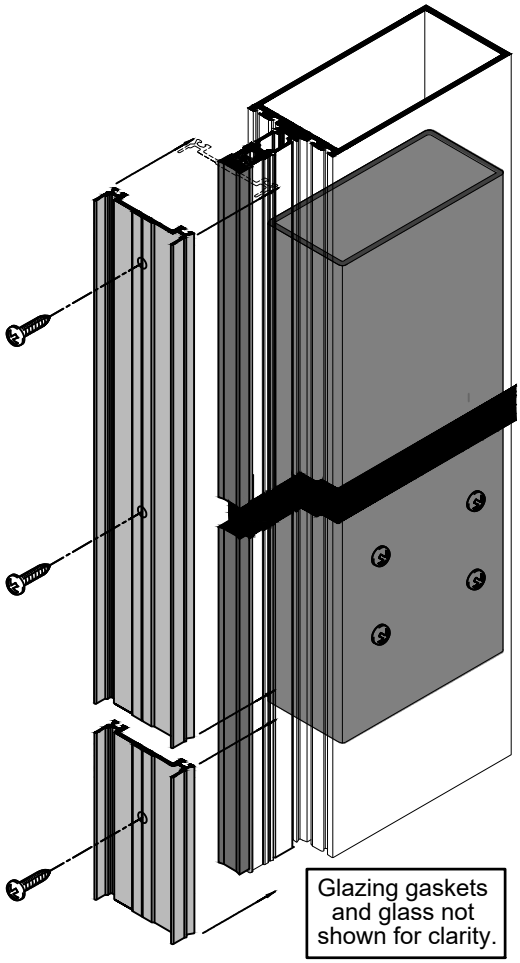


Fig. 52.2

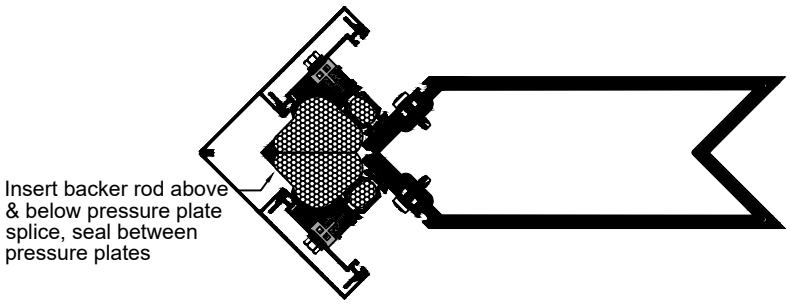


Fig. 52.3

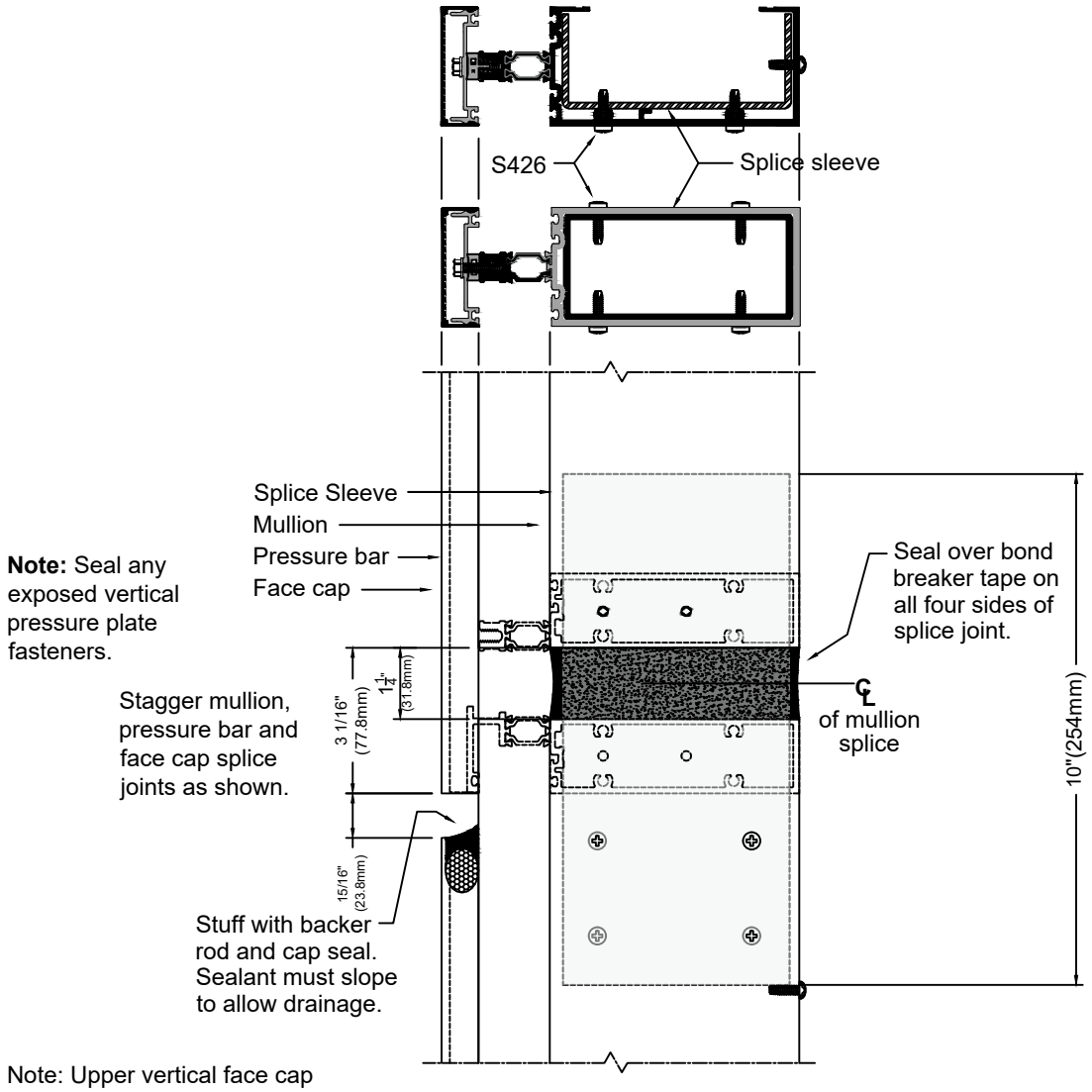
See **Step 13** for mullion splice procedure.

TUBELITE® DEPENDABLE

GLAZING

Step 19: Install Pressure Plates and Face Covers (Continued)

Pressure Bar and Face Cap at optional expansion horizontal splice.
(Also see page 32 for splice installation)



Note: Seal any exposed vertical pressure plate fasteners.

Note: Upper vertical face cap at expansion horizontal may need minor notching at the bottom where it intersects the lower expansion horizontal mullion.

Fig. 53.1

TUBELITE® DEPENDABLE

GLAZING

Step 19: Install Pressure Plates and Face Covers (Continued)

Pressure Bar and Face Cap at multi-span mullion splice.

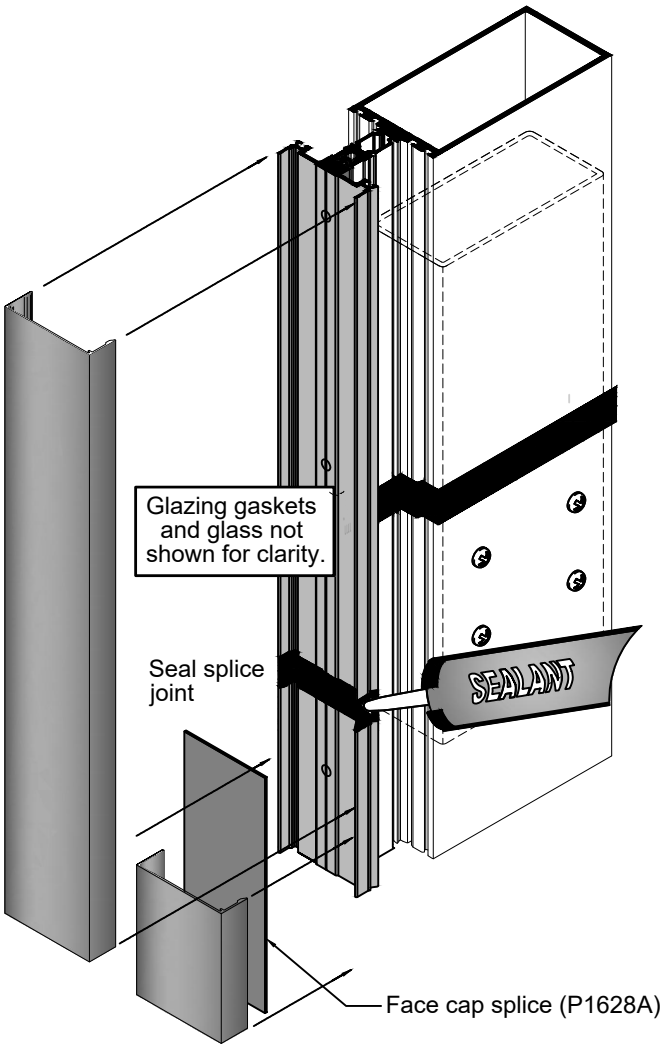


Fig. 54.1

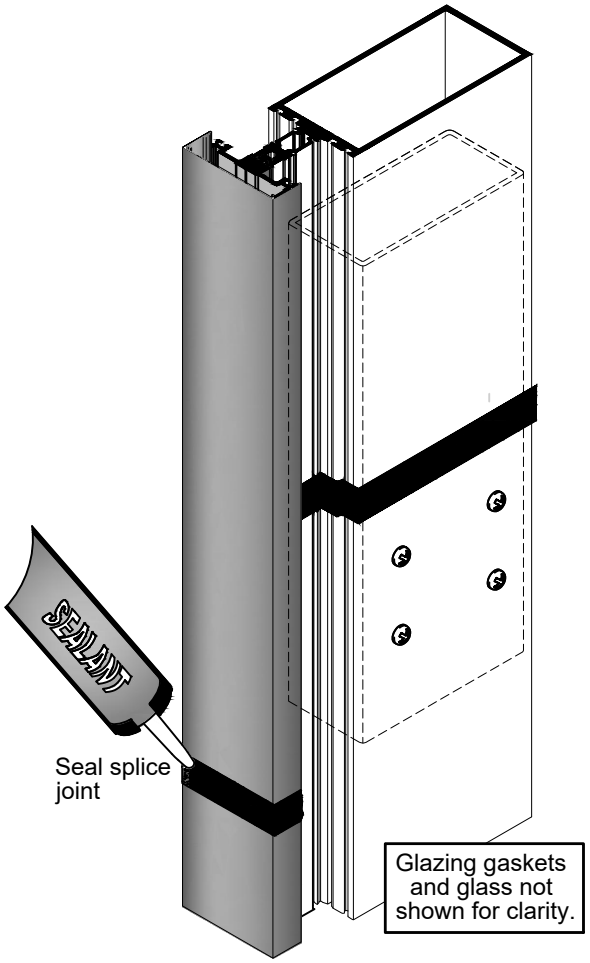


Fig. 54.2

Step 19: Install Pressure Plates and Face Covers (Continued)

Pressure Face Cap at SSG splice.

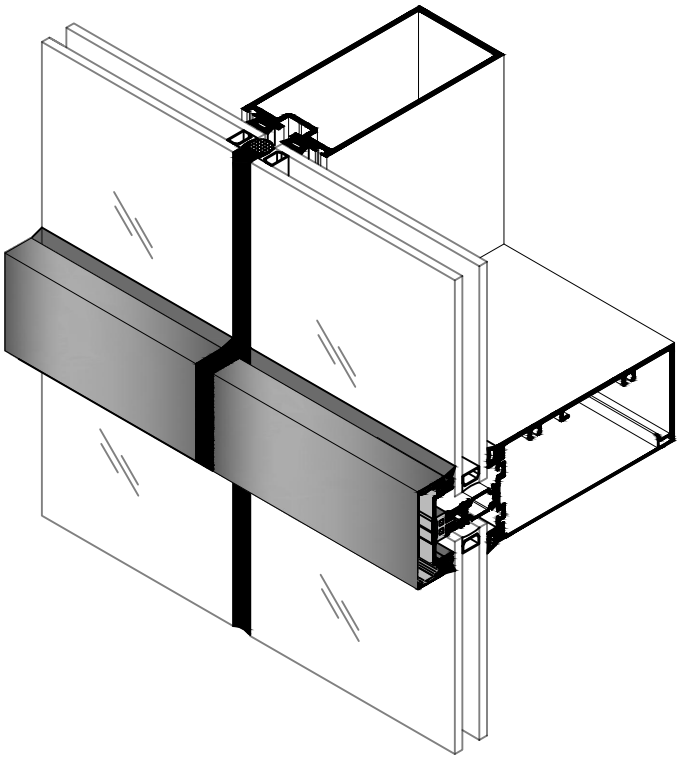


Fig. 55.1
SSG FACE CAP
at SPLICE

TUBELITE® DEPENDABLE

ENTRANCE FRAMING

ENTRANCE FRAMING

A. All door framing is shipped fabricated from the factory. Curtain wall frames can be installed in the field prior to installing the doors.

B. Curtain wall verticals and door subframes run to floor. Bed verticals in sealant and anchor to building per approved shop drawings. **See Fig. 56.1** for possible anchoring method.

Always refer to approved shop drawings for specific requirements.

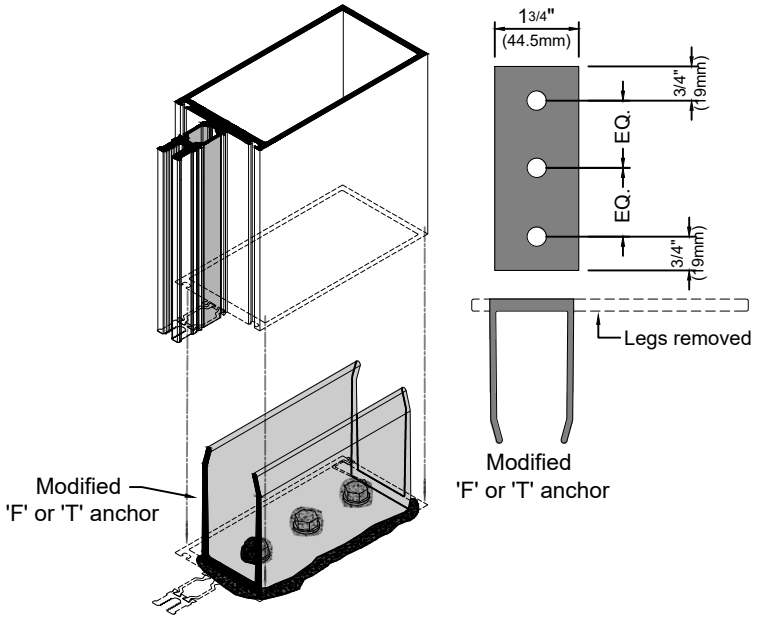


Fig. 56.1

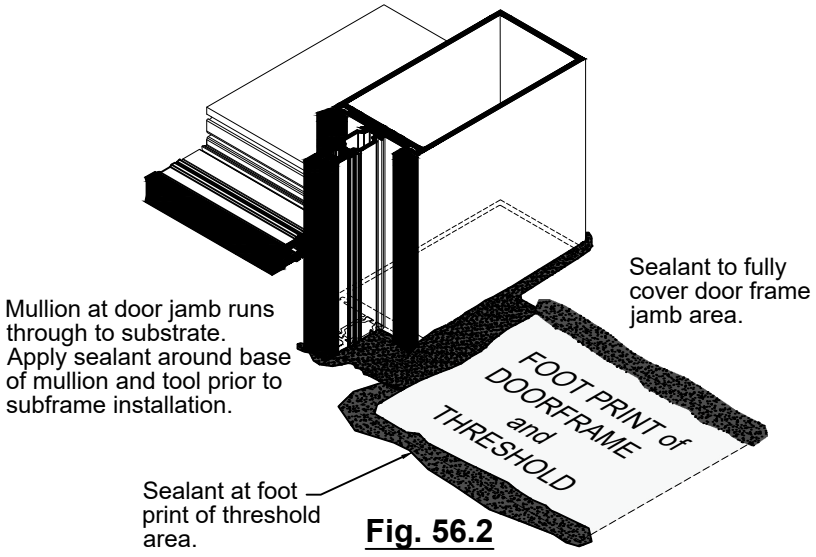


Fig. 56.2

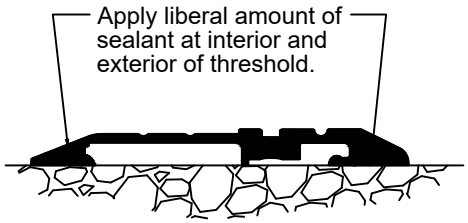


Fig. 56.3

ENTRANCE FRAMING

ENTRANCE FRAMING (Continued)

C. SUBFRAME INSTALLATION

- o Prep the curtain wall frame with pocket closures or as detailed on approved shop drawings.
- o Prior to installing the subframe, lay down a bed of sealant where the threshold will be installed. See **Fig. 57.2** and **Fig. 57.3.**
- o Install subframe onto curtain wall mullion, shimming equally from side to side. Attach subframe per approved shop drawings. Cap seal all fasteners and seal joint between subframe and curtain wall.
- o Seal the top of the jamb subframe as shown in **Fig. 57.3.**
- o Attach threshold to building per approved shop drawings.
- o Install door per Tubelite's Entrances and Frames Installation Manual.

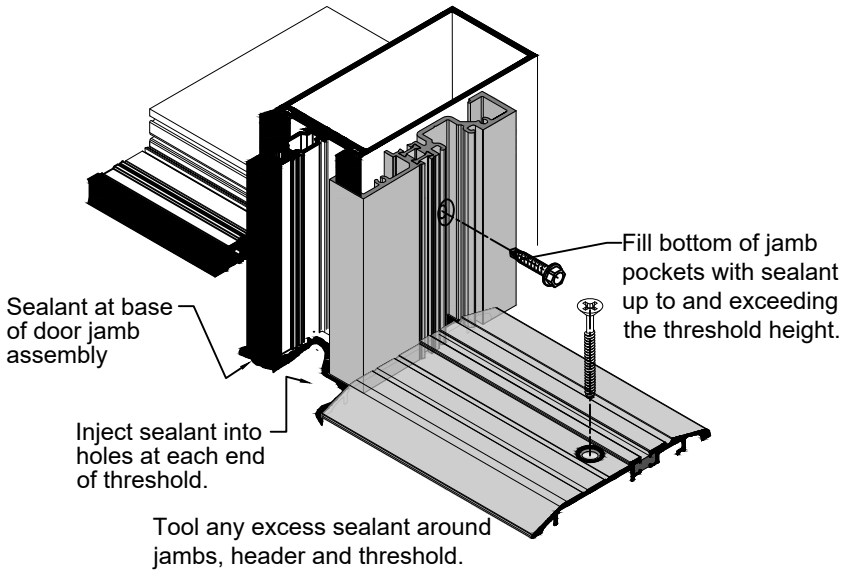


Fig. 57.1

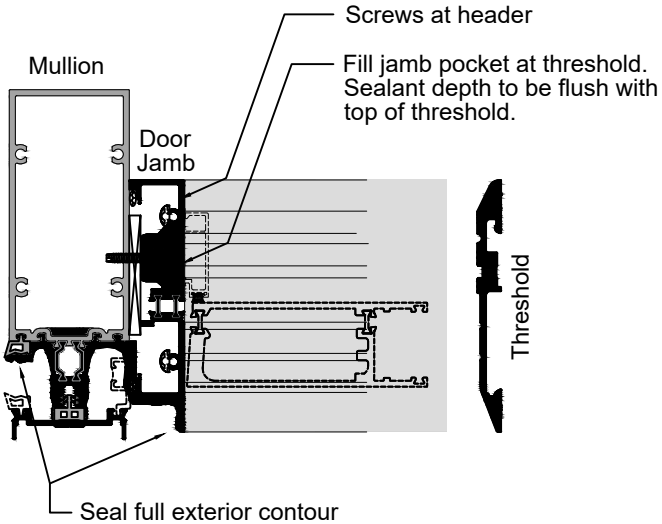


Fig. 57.2

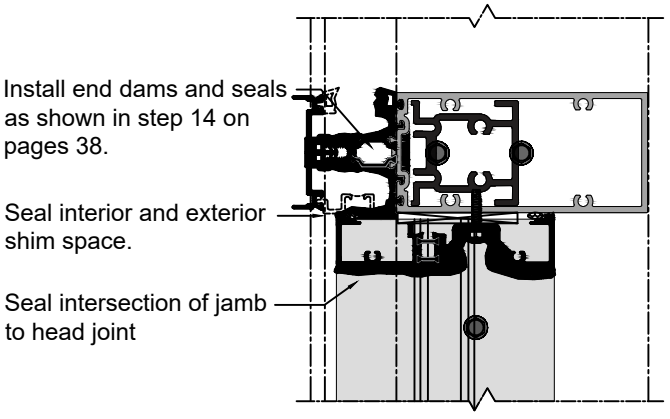


Fig. 57.3

REGLAZING

REGLAZING

A. Reglazing is done from the exterior.
B. Carefully remove face covers surrounding the lite to be removed.
C. Remove vertical and horizontal pressure plates adjacent to affected lite.
D. Temp surrounding glass in place with P4634 temporary retainers per Step 18, page 46. Remove lite of glass and gaskets from opening. Clean debris and sealant from the glass pocket and glazing reglets.
E. Install new glass in opening per **Step 19-21, pages 42 through 53.**

CORNER CONDITIONS

CAPTURED OUTSIDE CORNER

A. Attach shear clips and mull caps to the corner mullion.
B. Set corner mullions per Step 11 and 12, pages 33 through 35.
C. Install horizontals to corner mullion.
D. Install water dams as noted in Step 14, page 40.
E. Attach glazing gaskets and isolator gaskets and seal as noted in step 17, page 42.
F. Install glass, pressure plates and face covers per Step 18 and 19, pages 45 through 53.

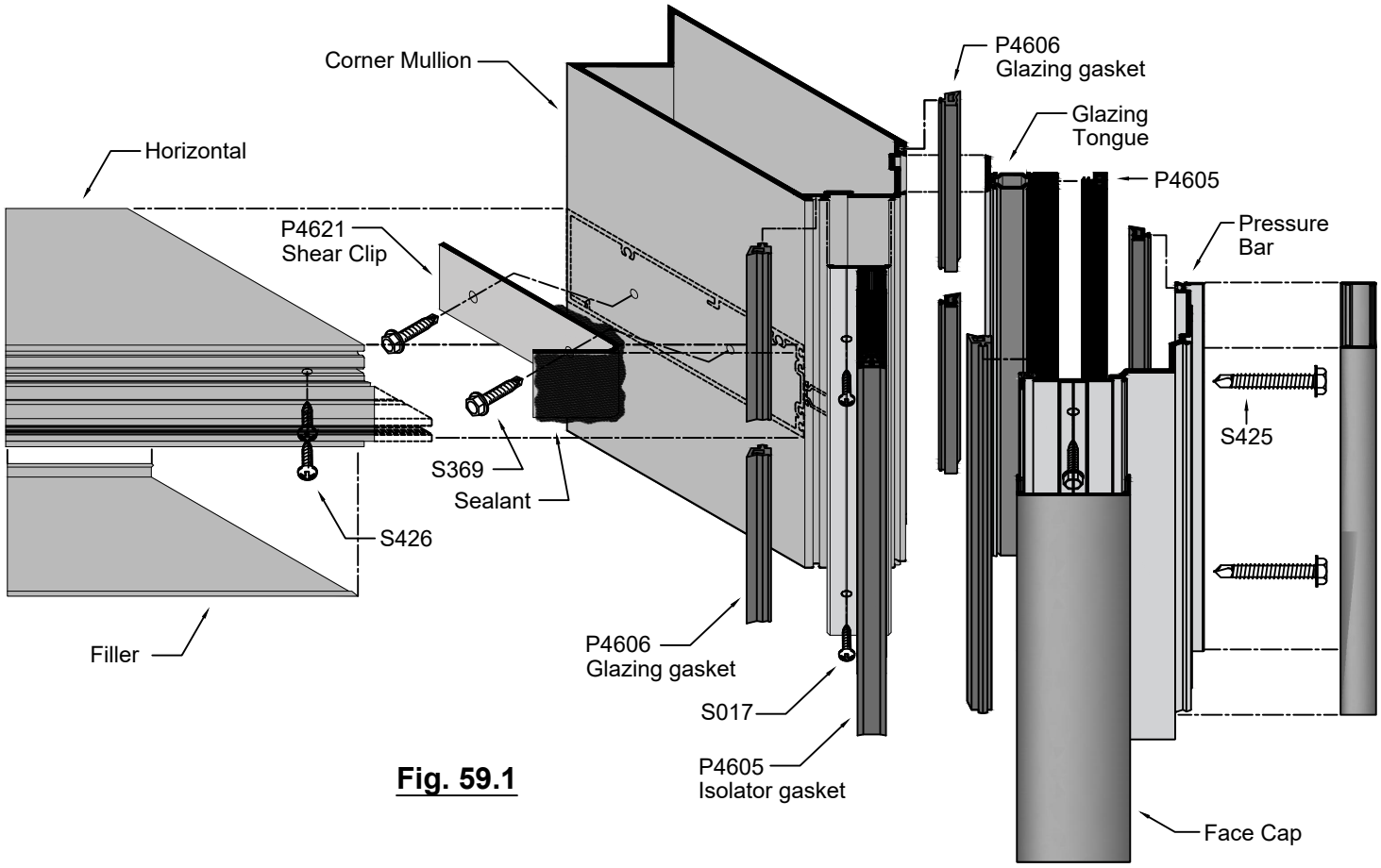


Fig. 59.1

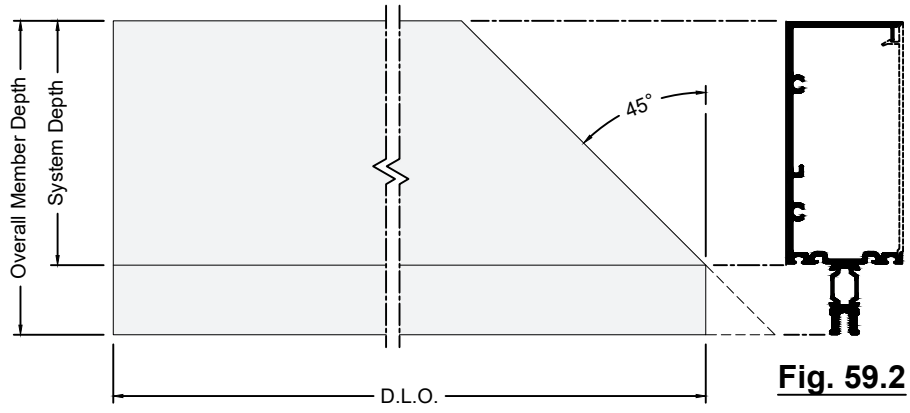


Fig. 59.2

Horizontal at outside 90° corners (Handed)

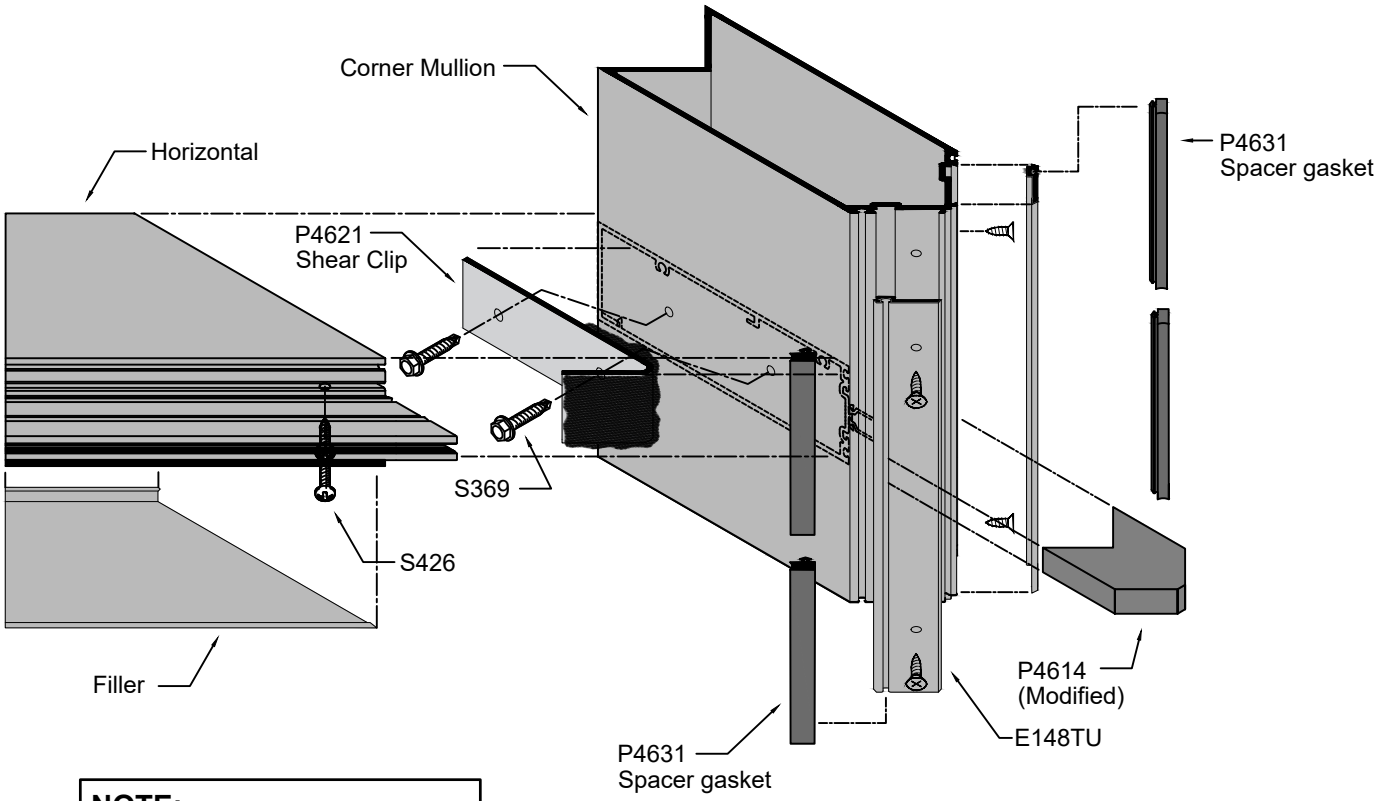
NOTE:
Rollover horizontal shown as optional at corners. Standard tubular horizontal is similar.

TUBELITE® DEPENDABLE

CORNER CONDITIONS

SSG OUTSIDE CORNER

A. Attach shear clips and mull caps to the corner mullion.
B. Set corner mullions per Step 11 and 12, pages 33 through 35.
C. Install horizontals to corner mullion.
D. Install water dams as noted in Step 14, page 40.
E. Install the P4631 SSG spacers into the corner mullion.
F. Install the glass at the corner.
G. Apply structural sealant between the glass and the mullion.
H. Insert a foam rod to fill the void between the two corner lites of glass.
I. Apply sealant between the lites of glass.



NOTE:
Rollover horizontal shown as optional at corners. Standard tubular horizontal is similar.

Fig. 60.1

CORNER CONDITIONS

SSG INSIDE CORNER

A. Attach shear clips and mull caps to the corner mullion.
B. Set corner mullions per Step 11 and 12, pages 33 through 35.
C. Install horizontals to corner mullion.
D. Install water dams as noted in Step 14, page 40.
E. Install the P4631 SSG spacers into the corner mullion.
F. Install the glass at the corner.
G. Apply structural sealant between the glass and the mullion.
H. Insert a foam rod to fill the void between the two corner lites of glass.
I. Apply sealant between the lites of glass.

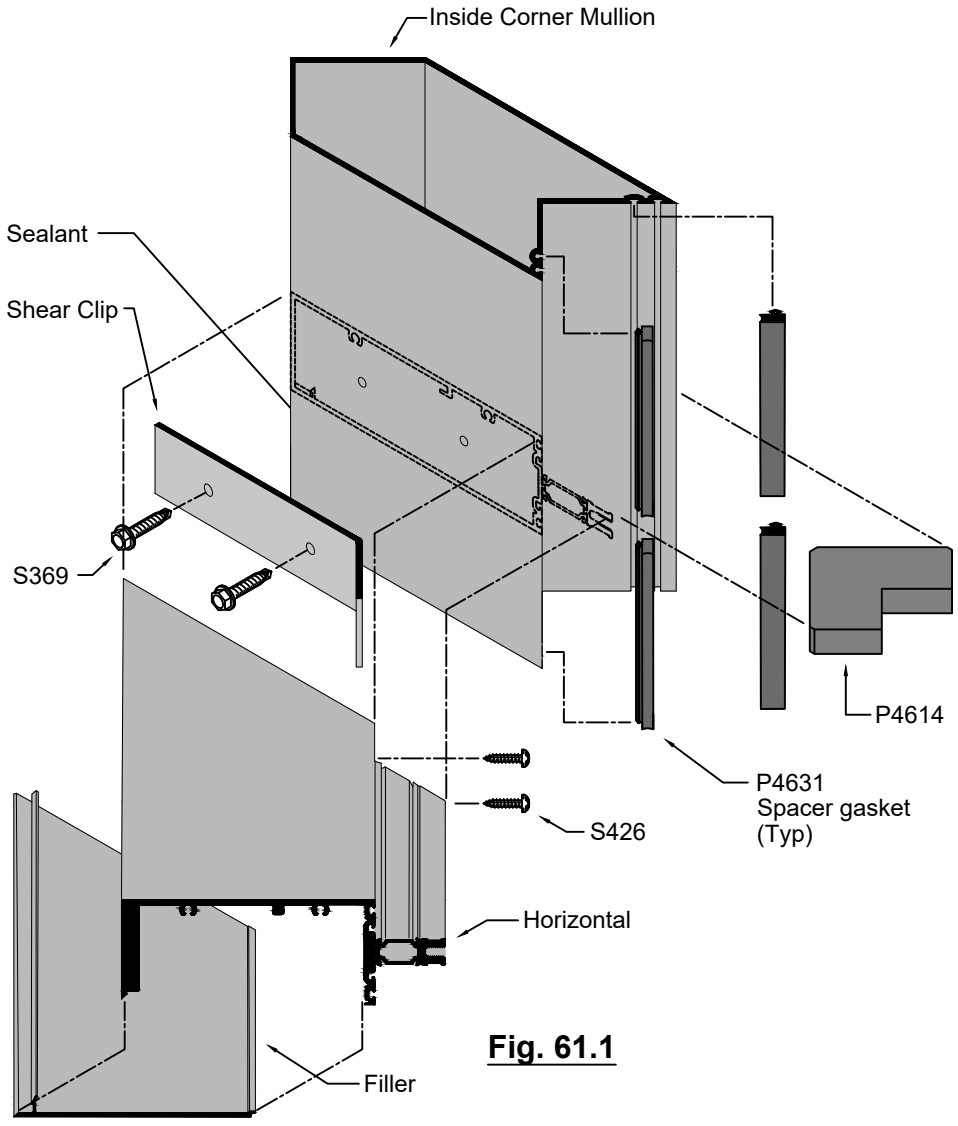


Fig. 61.1

NOTE:
Rollover horizontal shown as optional at corners. Standard tubular horizontal is similar.