

14000I/O Storefront

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









TABLE OF CONTENTS

GENERAL CONS	STRUCTION NOTES	4
PARTS LIST		5-21
QUICK REFEREI	NCE CHECKLIST	22
ELEVATION DET	TAILS	23-28
FRAME FABRICA	ATION	
Step 1	Determine Frame Size	
Step 2	Cut Material to Size	
Step 3	Sill Flashing	30-31
Step 4	Head Receptor	
Step 5	Verticals &Closer Pockets for Horizontals	
Step 6	Horizontals for Alignment Key	
Step 7	Horizontals for Shear Clip Assembly	
Step 8	Corner Sill Flashing Fabrication	39
FRAME ASSEME	BLY	
Step 9	Install End Dams	40-41
Step 10	Assemble Frames	42-45
FRAME INSTALL	LATION	
Step 11	Corner Sill Flashing Installation	46
Step 12	Corner Frames	47
Step 13	Sill Flashing Installation	48
Step 14	Sill Flashing Splices	49
Step 15	Install Frames	
Step 16	Install Frames With E/T14055 Sill Flashing	51
Step 17	Install Frames at Entrance	52
GLAZING		
Step 18	Glazing Preparation	53
Step 19 & 20	Installing Glazing Units	54-55
Step 21	Install Gaskets	56
	SILICONE GLAZED	
SSG - Steps 1	1-8	57-63

July 2025





GENERAL CONSTRUCTION NOTES

- 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. For cold weather installations, glazing materials (including but not limited to glazing gaskets, isolators and gaskets for air seals and expansion mullions) can become more rigid and thus more difficult to install. These materials should be installed at temperatures above 40°F for proper system performance and ease of installation. A hot box may be required to warm the glazing materials prior to installation. Allow glazing materials to lay flat at 50°F minimum temperature for several hours prior to installing.
- 4. 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.
- 5. Coordinate protection of installed work with general contractor and/or other trades.
- 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.).
- 7. 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.
- 8. 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.
- 9. 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.
- 10. 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, environment, temperature, and humidity. Recommend sealant manufacturer perform adhesion "pull test" at "wet" glazing for quality assurance.
- 11. 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.
- 12. 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 $\frac{1}{4}$ " (6.3mm) may be subject to failure. Consult the sealant manufacturer for proper sizing of joints.
- 13. 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.
- 14. 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.
- 15. Cleaning of exposed aluminum surfaces should be done per AAMA recommendations.
- 16. Care must be taken when assembling aluminum framing components. Over tightening any fastener may cause stripping or fastener failure. Tubelite recommends the use of clutched drivers 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.
- 17. Check www.TubeliteUSA.com for any installation instruction updates.





Vertical Extrusions

SHAPE	DESCRIPTION	PART No.
r 1	Head/Jamb/Sill (Use with P1745, P2474, P1130, T6251, P2445	E15301
		T15301
k thi	or TU24442)	TU15301
r 1		E15311
	Optional Vertical Mullion & Jamb (Use with E15343, T15343, TU15343 or E15342)	T15311
	,	TU15311
r 4 1		E15306
<u> </u>	Standard Vertical Mullion (Use with E15302)	T15306
الع درت ت	,	TU15306
	Llagar Vertical Mullian	E15356
	Heavy Vertical Mullion (Use with E15302)	T15356
العام المرابع		TU15356
TO TOTAL	Vertical Filler	E15302
		E15366
Cenn	Heavy Tubular Vertical Mullion	T15366
		TU15366
	Male Expansion Vertical	E15336
	(Use with E15346, T15346 or TU15346	T15336
3	with P1221 gasket)	TU15336
	Female Expansion Vertical (Use with E15336, T15336 or TU15336)	E15346
		T15346
	,	TU15346
Center Plane to I/O Plane Vertical, use with E15342 (or E/T/TU15312, NOTE:	E15321	
, "	E/T15321 prep is handed, refer to details)	T15321





Vertical Extrusions

SHAPE	DESCRIPTION	PART No.
و و الأمار	4-1/2" x 4-1/2" (114.3mm x 114.3mm) Tubular Vertical	E15396
		T15396
		TU15396
	Deep Pocket Head/Jamb (use with E15339 flat filler (optional))	E15340
		T15340
		TU15340





Horizontal Extrusions

SHAPE	DESCRIPTION	PART No.
Sill- Outside Glazed (Use with E15314 Stop)	E15310	
	Sill- Outside Glazed (Use with E15314 Stop)	T15310
		TU15310
eho o		E15313
hern	Intermediate Horizontal- Outside Glazed (Use with E15314 Stop)	T15313
	` ' '	TU15313
efra ra		E15363
	Pinnable Sill- Outside Glazed (Use with E15364 Stop)	T15363
		TU15363
	4-1/2" x 4-1/2" (114.3mm x 114.3mm)	E15347
	Horizontal- Outside Glazed (Use with E15314 Stop, E15312, T15312 or	T15347
	TU15312)	TU15347
r em		E15303
	Head & Intermediate Horizontal- Inside Glazed (Use with E15304 Stop)	T15303
		TU15303
	Glass Stop - Inside Glazed (Use with E15303, T15303 or TU15303)	E15304
	Glass Stop - Outside Glazed (Use with E15310, T15310, TU15310, E15313, T15313, TU15313, E15347, T15347 or TU15347)	E15314
	Glass Stop- Outside Glazed (Use With E15363, T15363, TU15363, E15353, T15353 or TU15353)	E15364
	Curvable Head (Use with E14389)	E14388
	Curvable Head Snap (Use with E14388)	E14389





Structural Silicone Glaze Extrusions

SHAPE	DESCRIPTION	PART No.
ר ערתן	COO De en De electule e d O Jerrele	E15350
	SSG Deep Pocket Head & Jamb (Use with E15339)	T15350
		TU15350
	SSG Intermediate Vertical & Horizontal	E15326
	Female SSG Expansion Vertical (Use with E15376)	E15386
	Male SSG Expansion Vertical (Use with E15386)	E15376
		E15323
	Captured SSG Horizontal (Use with E15324)	T15323
Ta Luci		TU15323
	Glass Stop - Outside Glazed (Use with E15323, T15323 or TU15323)	E15324
		E15353
Pinnable Sill- Wet Glazed, Use with (Use with E15364 Stop)	Pinnable Sill- Wet Glazed, Use with SSG vertical (Use with E15364 Stop)	T15353
	(333 21333 . 335)	TU15353





Head Receptor and Sill Flashing Extrusions

SHAPE	DESCRIPTION	PART No.
	Standard Head Receptor	E15129
12	(Use with E9410 with P6296 Gasket & P15455 End Dam)	T15129
ĕ	F 13433 End Dam)	TU15129
d d	Standard Head Receptor Snap (Use with E15129, T15129 or TU15129 with P6296 Gasket)	E9410
	Lightweight Head Receptor	E14090
J	(Use with E14091 with P6296 Gasket)	T14090
<u></u>	Lightweight Head Receptor Snap (Use with E14090 or T14090 with P6296 Gasket)	E14091
1		E15259
5	Standard Subsill (Use with P15455 End Dam)	T15259
	(000 111111 1000 2111 2 1111)	TU15259
	Subsill Starter (Optional) (Use with E15259, T15259 or TU15259)	E15260
	Non-Thermal Subsill (Use with P2455 End Dam)	E14059
	Optional Subsill (Use with P2455 End Dam)	T14055
	Optional Subsill (Use with P2455 End Dam)	T14259





Corner Extrusions

SHAPE	DESCRIPTION	PART No.
		E15362
	OS 90° Corner Half (Use with E15361, T15361 or TU15361)	T15362
		TU15362
		E15361
ا ا	OS 90° Corner Half (Use with E15362, T15362 or TU15362)	T15361
٥		TU15361
	135° Corner Vertical	E15319
<u>c ac a</u>	* Outside Outboard or Inside Inboard Corner Only	T15319
		TU15319
	Female SSG OS 90° Corner (Use with E15348)	E15349
	Male SSG OS 90° Corner (Use with E15349)	E15348





Pocket Fillers and Glazing Adaptors

SHAPE	DESCRIPTION	PART No.
		E15312
الم	Shallow Pocket Filler	T15312
සා සහ ස		TU15312
		E15332
	Deep Pocket Filler	T15332
لله علله عا		TU15332
A Surviv	Non-Thermal Shallow Pocket Filler	E15342
V V	Flat Aluminum Snap Filler	E4543
₹ T	6" Aluminum Flat Snap in Filler Anchor Plate Use at Head and Jamb Anchor Points as Required	P1745
4 6	Flat PVC Snap in Filler Use Between Anchor Points as Required	P2474
	Flat Aluminum Snap in Filler	T6251
	6" Flat Aluminum Snap in Filler Use at Head and Jamb Anchor Points as Required	P1130
		E15248
7 1111 7	Snap in Sidelite Base Adaptor	T15248
		TU15248
		E15343
V LLTT V	Flat Snap in FIller	T15343
		TU15343





Pocket Fillers and Glazing Adaptors

SHAPE	DESCRIPTION	PART No.
	Thermal Closure Plate	TU24442
	6" Flat Thermal Snap in Filler Use at Head and Jamb Anchor Points as Required	P2445
₹ >	Deep Pocket Jamb, Flat Snap in Filler	E15339
T	Aluminum 1" (25.4mm) Pocket Filler	E1411
T	PVC 1" (25.4mm) Pocket Filler	P4563
		E15011
	Thermal 1" (25.4mm) Pocket Filler	T15011
OL.	Snap in 1/4" (6.3mm) Glazing Adaptor	E15036
থা	Snap in 1/2" (12.7mm) Glazing Adaptor	E15061
-	Slide in Brake Metal Receiver	E15139





Door Frame Extrusions

SHAPE	DESCRIPTION	PART No.
	Standard Tubular Door Header	E15124
land political	Tubular Door Header	E15125
	Open Back Tubular Door Jamb (Use with E15343, T15343, TU15343, E15312, T15312, TU15312 or E15342)	E15325
	Open Back Door Jamb (Use with E15343, T15343, TU15343, E15312, T15312, TU15312 or E15342)	E14305
	Tubular Door Jamb	E14341
	Tubular Intermediate Door Jamb	E14145
	Heavy Tubular Intermediate Door Jamb	E14245
	4-1/2" x 4-1/2" (114.3mm x 114.3mm) Tubular Door Jamb	E14250
	4-1/2" x 4-1/2" (114.3mm x 114.3mm) Tubular Intermediate Door Jamb	E45009





Door Frame Extrusions

SHAPE	DESCRIPTION	PART No.
	Strutted Tubular Door Jamb	A649192
	Strutted Open Back Door Jamb (Use with TU15343 or TU15312)	A648585
	Strutted Open Back Tubular Door Jamb (Use with TU15343 or TU15312)	A648080
	Strutted Tubular Intermediate Door Jamb	A646565
	Strutted Tubular Door Head	A645859

OPTIONAL TUBE MEMBERS

SHAPE	DESCRIPTION	PART No.
	2" x 4 1/2" x 1/8" (50.8 mm x 114.3mm x 3.2mm) Tube	E1451
	4 1/2" x 4 1/2" x 1/8" (114.3mm x 114.3mm x 3.2mm) Tube	E0133





Door Frame Accessories

SHAPE	DESCRIPTION	PART No.
51	Non-Thermal Snap-in Door Stop	E4531
	Offset Arm Door Stop	E2298
	1/2" Thermal Door Stop For 3/16" Inset 1-3/4" Door	E5926
'1*t	PVC Lower Door Stop	P5923
	3/4" Thermal Door Stop For 3/16" Inset 1-3/4" Door 1/2" Thermal Door Stop For 1/16"-1/8" Inset 1-3/4" Door 3/4" Thermal Door Stop For 1/16"-1/8" Inset 1-3/4" Door 1/2" Thermal Door Stop For Flush 1-3/4" Door 3/4" Thermal Door Stop For Flush 1-3/4" Door	E5928
		E5946
		E5948
		E5966
		E5968
	Threshold	E2550
	THESHOL	TA2550





Door Frame Accessories

SHAPE	DESCRIPTION	PART No.
	Snap in Transom Glazing Gutter	E14315
	Transom Gutter Glass Stop	E4015
	Screw Applied Transom Glazing Gutter	E1414
	Snap in Transom Glazing Gutter	E14325
	Thermal Transom Glazing Gutter, use with E15375 glass stop	T15374
	Thermal Transom Glass Stop	E15375
	Sidelite Base Anchor Clip (use with E14027, (2) S149 & (2) S191 screws per clip)	P1137
	Steel Reinforcing - Primer Painted 12'-0" lengths	P1437





Shear Clips

SHAPE	DESCRIPTION	PART No.
7	Horizontal Alignment Key	P15315
	Shear Clip for Inside Glazed Horizontal & Head	P15373
	Shear Clip For Outside Glazed Horizontal & Head	P15316
	Shear Clip for SSG Horizontal	P15327
	Shear Clip for SSG Captured Horizontal & Sill	P15357
	Shear Clip For Outside Glazed 4-1/2" x 4-1/2" Horizontal & Sill	P15397
	Shear Clip for 4-1/2" (114.3mm) Door Header	P532A
	Shear Clip for 4-1/2" (114.3mm) Door Header	P917A
	Shear Clip for 2" (50.8mm) Door Header	P1141A
	Shear Clip for 4-1/2" (114.3mm) Door Header	P531A





Gaskets and P-Parts

SHAPE	DESCRIPTION	PART No.
<u> </u>	Roll-in Glazing Gasket for 1" (25.4mm) Glass	P2728
77	Roll-in Glazing Gasket for 1-1/8" (28.6mm) Glass	P487
<u>Ji</u>	Roll-in Glazing Gasket for Undersized Glass	P2428
	SSG Spacer Gasket	P6587
*	Wiper Gasket for One Piece Head Receptor, Expansion Mullion, and Rotational Mullion	P1221
ОІ	Bulb Gasket for Thermal Door Frames	P6296
T	Wedge Gasket for Standard Subsill	P2901
	Pile Weathering for Thermal Door Frames	P1098A
	Typical Setting Block	P2470 (EPDM) P2470S (Silicone)
	Setting Block (use with E/T/TU15363 sill)	P1167 (EPDM) P1167S (Silicone)
	Inside Glazed Horizontal Setting Block	P2413 (EPDM) P2413S (Silicone)
	Setting Block at Transom	P4720 (EPDM) P4732 (Silicone)





Gaskets and P-Parts

SHAPE	DESCRIPTION	PART No.
	Setting Block, use for E/T/TU15323 horizontal	P946 (EPDM) P947 (Silicone)
	Setting Block, use for E/T/TU15353 sill	P2075 (EPDM) P2505 (Silicone)
	Setting Block, use for horizontal SSG	P5103 (EPDM) P5103S (Silicone)
	Setting Shelf, use for horizontal SSG	P15328
	Setting Block (alternative to P2470 or P1167)	P1180 (EPDM) P1180S (Silicone)
	Temporary Glazing Clip, use for SSG applications	P1108
	Frame Clip for Curving Head Members	P1707
	Water Diverter 12'0", use for Curved Head	P1709
	Optional, Open Cell Weep Baffle 1/2" x 1" x 3" long	PTB42
	Clip for Perimeter Curving - Back	P289





Gaskets and P-Parts

SHAPE	DESCRIPTION	PART No.
	Water Diverter Use at Intermediate Horizontals	P1135
	End Dam for Standard Subsill	P15455
	End Dam for Non-Thermal Subsill	P2455
	EPDM AntiWalk "W" Block (Optional) (Use at Deep Pockets on Verticals and Jambs)	P1917
	SSG Water Diverter	P2407
	Silicone Splice Sleeve (Standard) (Use at T14055, E14059, and T14259 Sill Flashing)	P3444
	Head Receptor Strap Anchor (Optional use in15129 head receptor)	P2918
	14000 I/O Mullion Cap	P15337
O	14000 I/O Drill Fixture (screw spline & shear clip)	P15300





Fasteners

SHAPE	DESCRIPTION	PART No.
	#10 1 3/4" type B Philips Pan Head (Fastens shear block to verticals)	S009
←	#10 x 1/2" Philips Truss Head (Fastens horizontal and sill to shear block & P1137 anchor to vertical)	S191
	#8 x 3/8" type A Philips Pan Head (Fastens end dam to sill flashing)	S196
	#12-24 x 1" Type 23 hex head washer (Screw spline frame assembly screws)	S204
	#12-24 x 5/8" Phillips Flat Head (Shear Clip Attachment Screws)	S286
	#12-14 x 1-1/2" Hex Washer Head Self-Drilling (SSG shear clip attachment)	S419



TUBELITE® DEPENDABLE

Quick Refrence Checklist

- 1. Make sure the opening is square and the caulk joints are $\frac{1}{4}$ "(6.3mm) minimum around the frame. Note: Frames that utilize the T14259, or E15259 sill flashing must have a minimum of $\frac{3}{8}$ " (9.5mm) caulk joint at head.
- 2. Ensure surfaces that will be sealed are free of contaminants that can lead to adhesion issues.
- 3. Sill flashing must be properly shimmed and level from left to right and front to back for proper drainage.
- 4. A continuous line of sealant must be applied between the sill and the top interior leg of the sill flashing.
- 5. Check that all weeps and baffles (if required) conform to the locations and sizes called out in these instructions.
- 6. Ensure that sill flashing weep holes are not plugged by the perimeter seal.
- 7. A sill flashing splice is needed in openings larger than 24 feet (7315.2mm). Follow instructions for installing and sealing.
- 8. End dams must be installed and sealed onto the sill flashing. Fasteners used must also be sealed.
- 9. Where the sill flashing abuts a door jamb, the jamb pocket cavity must be completely sealed to dam this area.
- 10. Cap seal any exposed anchor or screw.
- 11. Seal ends of horizontal frame members that are joined to vertical members.
- 12. Water diverter installation and sealing is critical. Check installation against instructions to ensure conformity.
- 13. Apply sealant between all corner gasket joints.
- 14. Glass bites must be equal on all sides.
- 15. Double check anchor size and location against installation instructions or approved shop drawings.
- 16. Ensure that interior seal is married to sill flashing interior leg.
- 17. Field modify P4543a snap-in PVC filler at the sill to clear the anchors in the sill flashing. See page 50

GLASS SIZE CALCULATION Width tolerance = + 0", $-\frac{1}{16}$ "(-1.6mm)

Typical Framing:

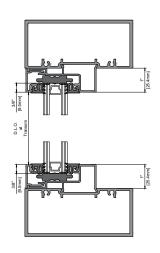
Glass Width = D.L.O plus $\frac{3}{4}$ "(19mm)

Glass Height = D.L.O plus $\frac{3}{4}$ "(19mm)

Transoms with Sash:

Glass Width = Pocket filler D.L.O plus $\frac{3}{4}$ "(19mm)

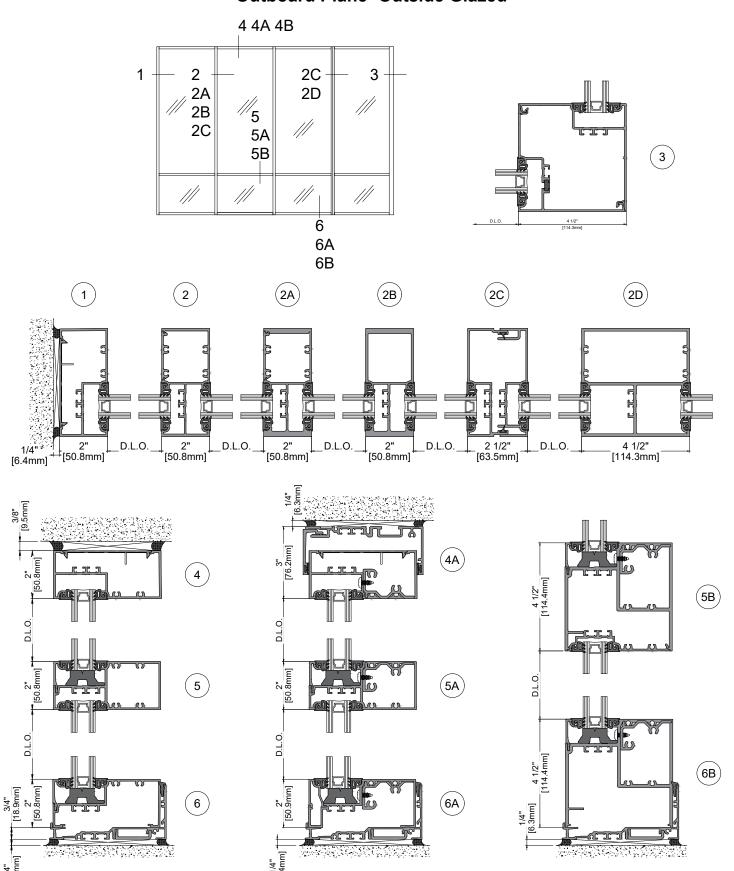
Glass Height = Pocket filler D.L.O plus $\frac{3}{4}$ "(19mm)







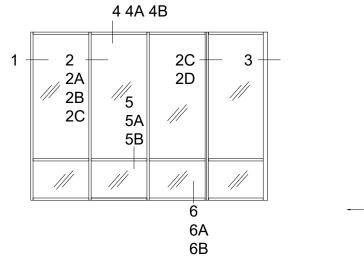
Typical Elevation With Details Outboard Plane- Outside Glazed

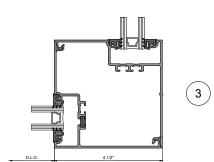


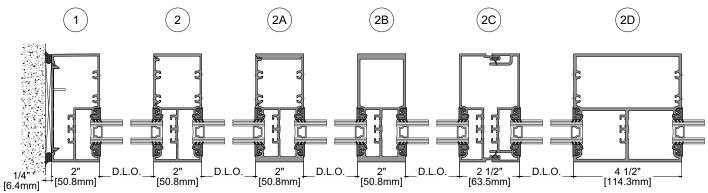


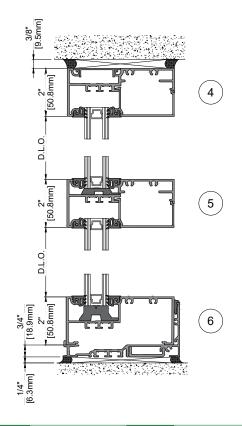


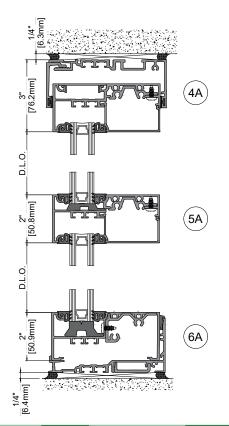
Typical Elevation With Details Outboard Plane- Inside Glazed







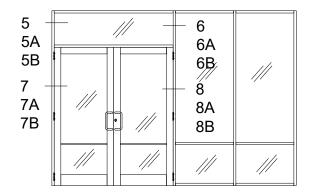


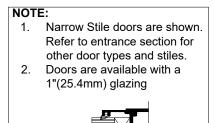


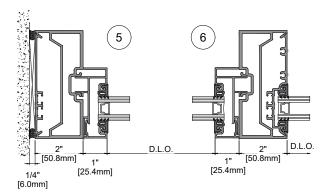


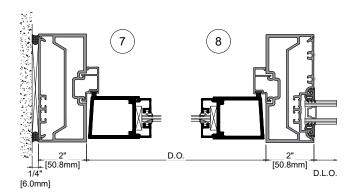


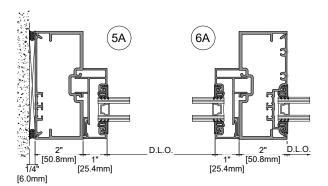
Door Frame Elevation With Details Outboard Plane

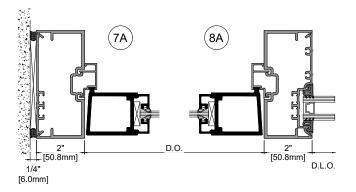


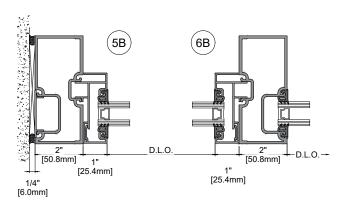


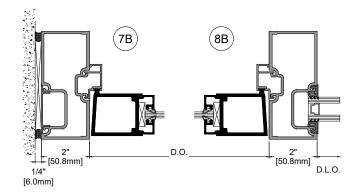








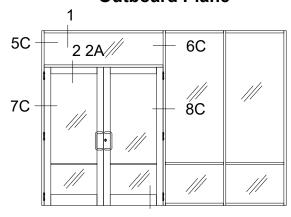


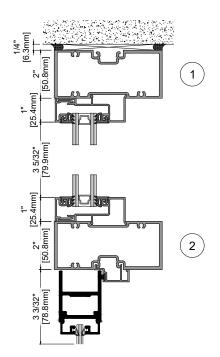


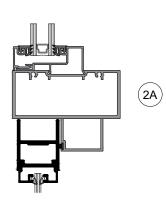


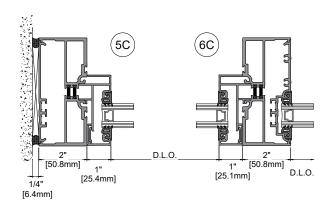


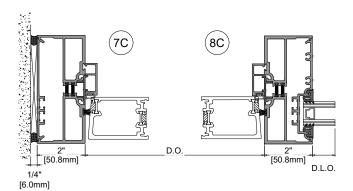
Door Frame Elevation With Details Outboard Plane









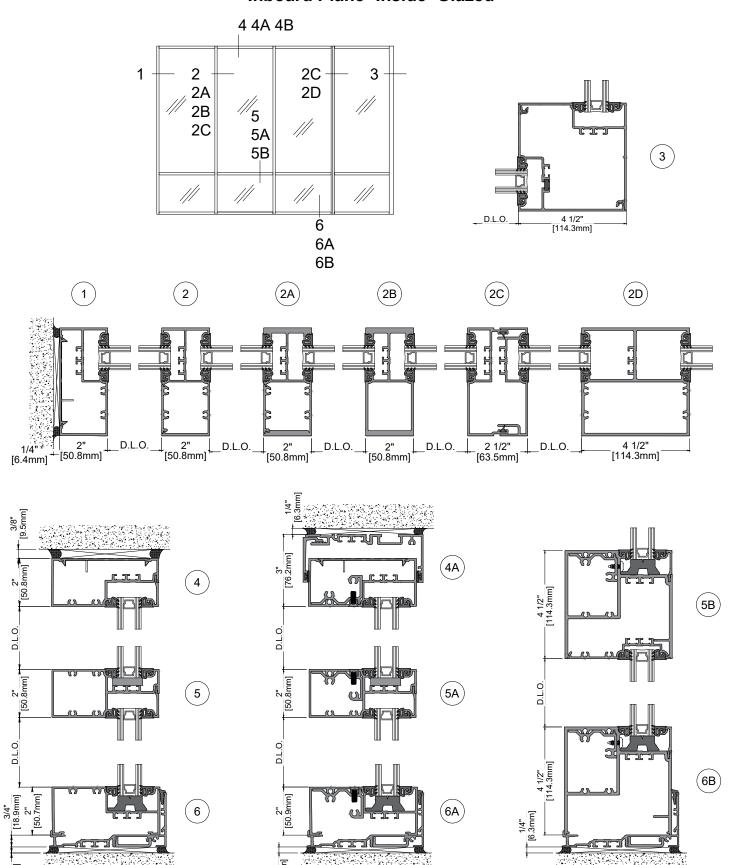


July 2025





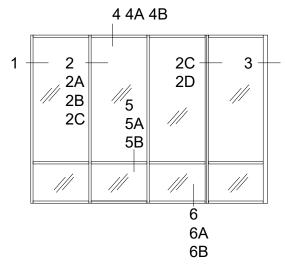
Typical Elevation With Details Inboard Plane-Inside Glazed

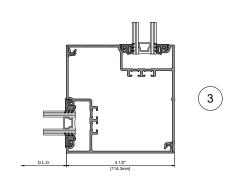


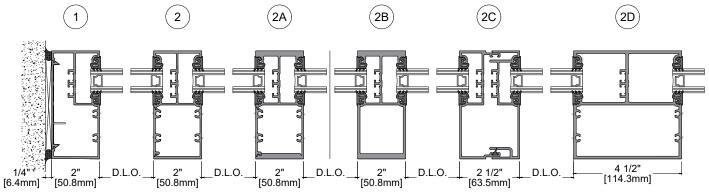


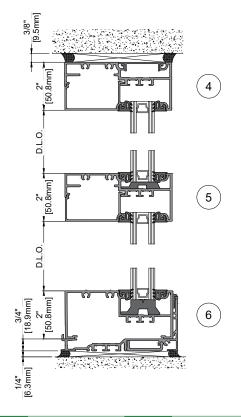


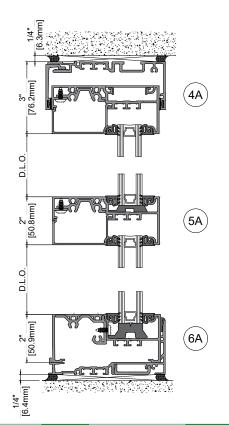
Typical Elevation With Details Inboard Plane- Outside Glazed











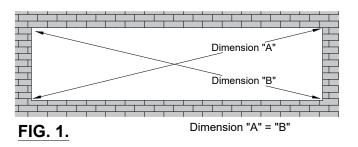


Frame Fabrication

NOTE: Non-thermal extrusions are shown in these instructions for clarity. Fabrication and installation of thermal members are the same.

Step 1: Determine Frame Size

Make sure the opening is square and plumb. Measure each diagonal of the opening. SEE Fig. 1.



Frame Width

Measure the width of the 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 drawings $\binom{1}{4}$ (6.3mm) min caulk joint at each jamb). SEE Fig. 2.

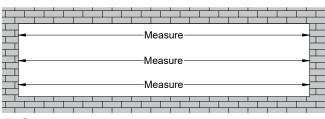
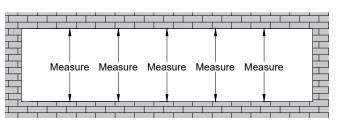


FIG. 2.

Frame Height

Measure the height of the opening at several points along the entire width of the opening. Select the smallest of these dimensions and subtract the top and bottom caulk joint height per approved shop drawings ($\frac{1}{4}$ "(6.3mm) minimum caulk joint at sill. At head, caulk joint can be $\frac{1}{4}$ "(6.3mm) using T14055 or similar flashing. When using T14259, E14059 or E/T/TU15259 sill flashing, head caulk joint must be $\frac{3}{8}$ "(9.5mm)). **FIG. 3.** SEE Fig. 3.







FRAME FABRICATION

Step 2: Cut Material to Size

Note: Door framing material comes cut to size from the factory. In cases of door frames with transoms, the door jambs must be cut down in the field to size and head member attached per standard instructions shown within this manual.

Door Jamb with Transom height will equal the Rough Opening height - head caulk gap (minimum $\frac{1}{4}$ " (6.3mm) or match head caulk gap of adjacent storefront based on sill flashing. **See Fig. 1**.)

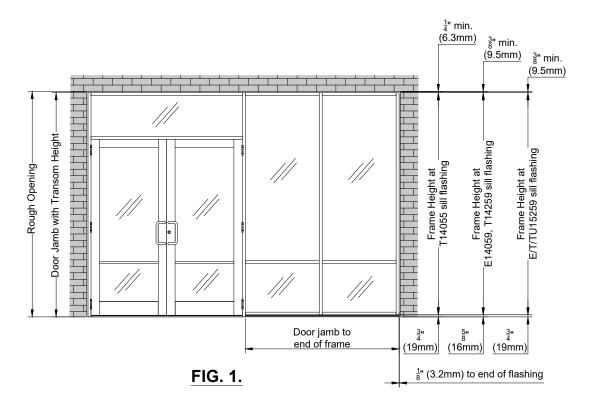
Framing Members

	Sill Flashing with Entrance	Door Jamb to End of Frame + $\frac{1}{8}$ " (+3.2mm) (SEE <u>Fig. 1.</u>)
	Sill Flashing without Entrance	Frame Width + $\frac{1}{4}$ " (+6.3mm)
	Verticals	See Fig. 1.
	Head Receptor	Frame Width $+\frac{1}{4}$ " (+6.3mm)
	Head Receptor Snap Stop	Frame Width $+\frac{1}{4}$ " (+6.3mm)
	Head, Horizontal & Sill	D.L.O.
	Horizontal & Sill Glass Stops	D.L.O. $-\frac{1}{32}$ " (-0.8mm)
	Closure Pockets at Verticals	See Fig. 4
	Glazing Adaptors	D.L.O. $-\frac{1}{32}$ " (-0.8mm)
	Snap-In Fillers	Refer to Approved Shop Drawings
Acces	ssories	
	Exterior Gasket	D.L.O. + Allowance*
	Interior Gasket	D.L.O. + Allowance*

^{*}Allowance = $\frac{1}{8}$ "(3.2mm)extra length per foot of D.L.O.

Sill Flashing Note:

For openings wider than 24'(7315.2mm), the sill flashing must be spliced at the center line of a D.L.O. every twelve to fifteen feet. Splice joint should be $\frac{3}{8}$ "(9.5mm) wide. **SEE Step 14, Page 51** for sill flashing splice details.





TUBELITE®

Frame Fabrication

Step 3: Fabricate Sill Flashing

A. When using E/T/TU15259, drill two 5/16"(8mm) dia. weep holes at $\frac{1}{4}$ points of the DLO.

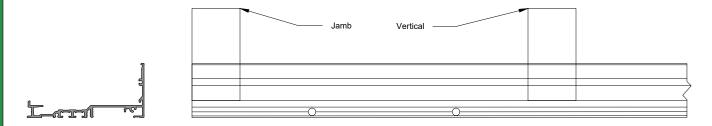


FIG. 1.

B. Drill clearance holes for perimeter anchors. Size and quantity vary per job. Refer to to approved shop drawings. Note: if head receptors are used, follow the same procedure as on the sill flashing

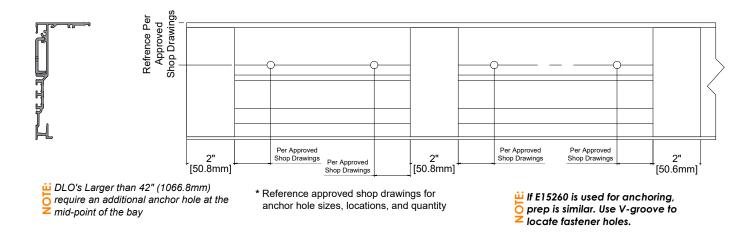
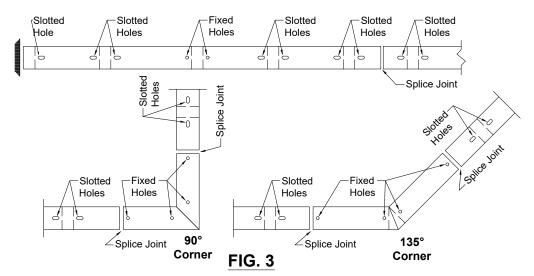


FIG. 2.



Typical Sill Flashing Anchor Hole Patterns (Head channel similar) (Refer to approved shop drawings for project requirements)

www.TUBELITEUSA.com Page 31

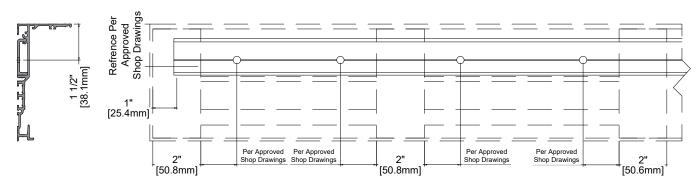


TUBELITE®

Frame Fabrication

Step 3: Fabricate Sill Flashing

A. When using E/T/TU15259 with E15260 Starter, cut E15260 starter 2" short of sill flashing length (1" short each end). Use V-notch in E15260 Starter to guide anchor locations. V-notch is 1-1/2" from interior face of E/T/TU15259 sill flashing. Follow anchor layout in E15260 Starter shown on previous page, or alternatively prep for anchors 24" O.C. and 2" from each end or E15260. Defer to approved shop drawings.



* Reference approved shop drawings for anchor hole sizes, locations, and quantity

FIG. 1.

B. When using the E15260 Starter at a corner condition, cut Starter 1" short of shortest dimension of mitered sill flashing. Not necessary to miter the E15260 Starter. Run E15260 starter through at a sill flashing splice, or stagger starter splice and sill flashing splice. Not necessary to seal the splice gap of the E15260 Starter.

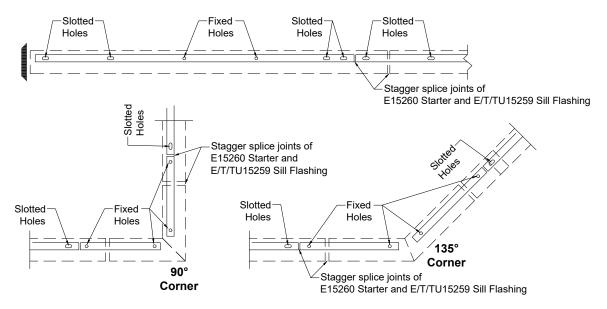


FIG. 2

Typical Anchor Hole Patterns for E15260 Starter at Corner and Splice Conditions (Refer to approved shop drawings for project requirements)



TUBELITE DEPENDABLE

FRAME FABRICATION

Step 3: Fabricate Sill Flashing (optional Flashing)

£14059, T14055, and T14259 sill flashing are only tested to 10 PSF water

A. When using T14259 or E14059, drill two $\frac{7}{32}$ "(5.6mm) dia. weep holes at 2"(50.8") and 6"(152.4mm) from each side of the verticals

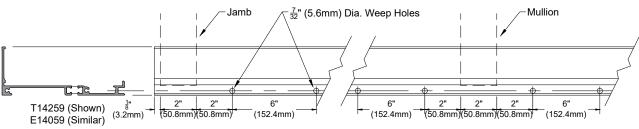
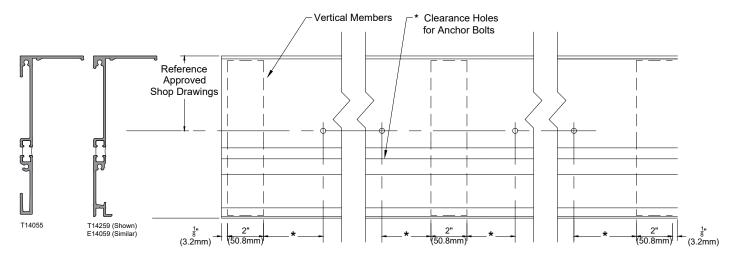


FIG. 1.

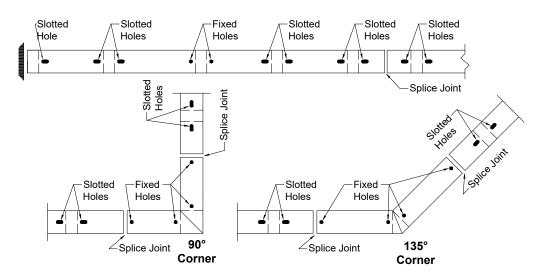
B. Drill clearance holes for perimeter anchors. Size and quantity vary per job. Refer to to approved shop drawings. Note: if head receptors are used, follow the same procedure as on the sill flashing



- DLO's Larger than 42" (1066.8mm) require an additional anchor hole at the
- require an additional anchor hole at the mid-point of the bay

FIG. 2.

* Reference approved shop drawings for anchor hole sizes, locations, and quantity



Typical Sill Flashing Anchor Hole Patterns (Head channel similar)

(Refer to approved shop drawings for project requirements)

FIG. 3.



TUBELITE DEPENDABLE

FRAME FABRICATION

Step 4: Fabricate Head Receptor

A. Drill clearance holes for perimeter anchors. Size and quantity vary per job. Refer to to approved shop drawings.

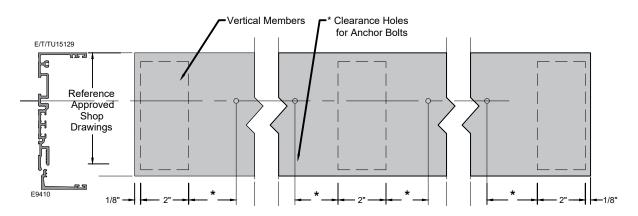
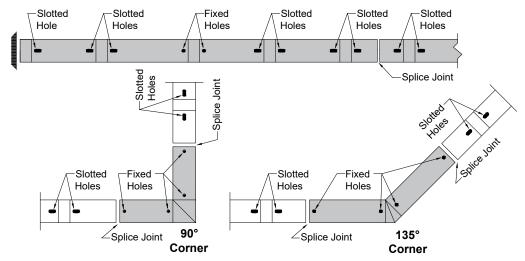


FIG. 1.

NOTE:

Additional fasteners may be required on either side of mullion

* Reference approved shop drawings for anchor hole sizes, locations, and quantity



Typical Head Receptor Anchor Hole Patterns (Refer to approved shop drawings for project requirements)

FIG. 2.

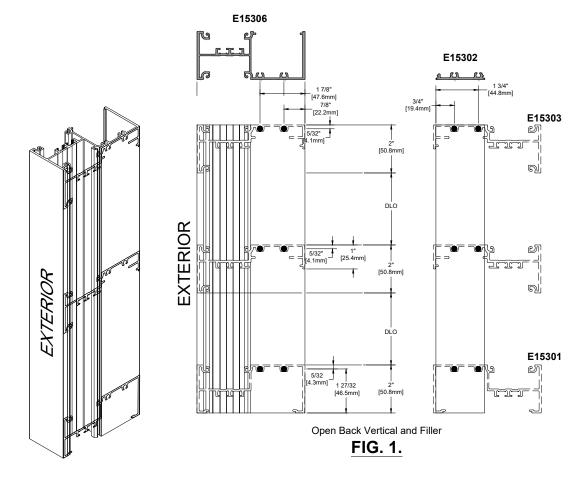




FRAME FABRICATION - SCREW SPLINE OUTBOARD PLANE - INSIDE GLAZE

Step 5: Fabricate Verticals & Closure Pockets for Horizontals

- A. Drill frame assembly holes in verticals, jambs, & vertical closure pockets for screw spline assembly.
 - a. Drill #12 clearance hole (#2 drill bit) as shown in FIG.1 below.
 - b. Use short cut-off of horizontals to aid in hole layout.



July 2025

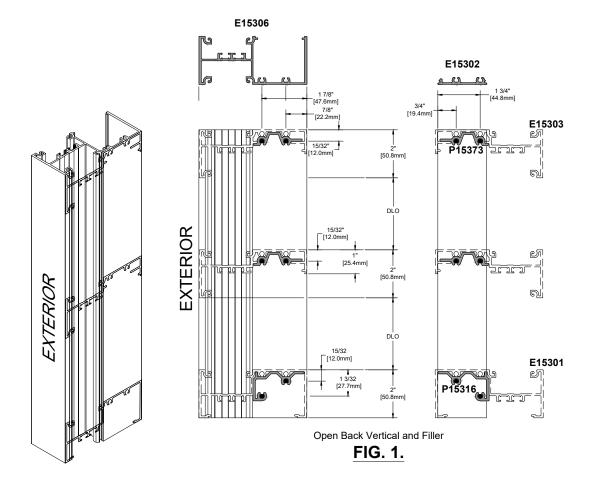




FRAME FABRICATION - SHEAR CLIP OUTBOARD PLANE - INSIDE GLAZE

Step 5: Fabricate Verticals & Closure Pockets for Horizontals

- A. Drill frame assembly holes in verticals, jambs, & vertical closure pockets for shear clip assembly.
 - a. Drill #10 pilot hole .149"(3.8mm) dia. as shown in **FIG.1** below.
 - b. Use short cut-off of horizontals to aid in hole layout.







FRAME FABRICATION - SCREW SPLINE OUTBOARD PLANE - OUTSIDE GLAZE

Step 5: Fabricate Verticals & Closure Pockets for Horizontals

- A. Drill frame assembly holes in verticals, jambs, & vertical closure pockets for screw spline assembly.
 - a. Drill #12 clearance hole (#2 drill bit) as shown in FIG.1 below.
 - b. Use short cut-off of horizontals to aid in hole layout.

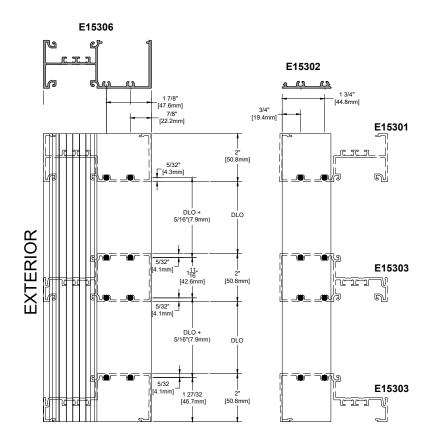


FIG. 1.





FRAME FABRICATION - SHEAR CLIP OUTBOARD PLANE - OUTSIDE GLAZE

Step 5: Fabricate Verticals & Closure Pockets for Horizontals

- A. Drill frame assembly holes in verticals, jambs, & vertical closure pockets for shear clip assembly.
 - a. Drill #10 pilot hole .149"(3.8mm) dia. as shown in **FIG.1** below.
 - b. Use short cut-off of horizontals to aid in hole layout.

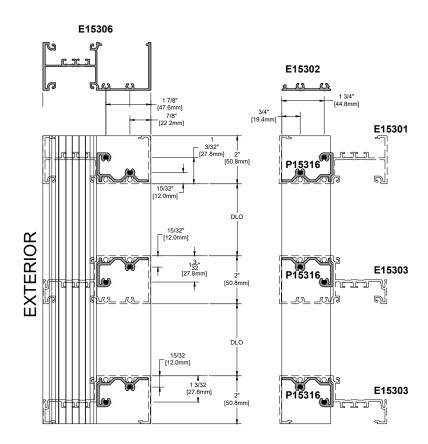


FIG. 1.

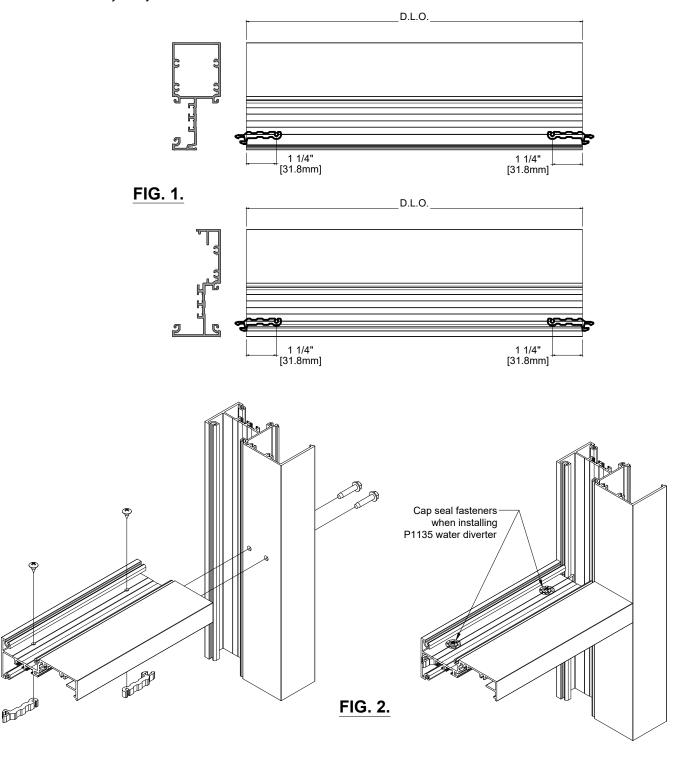




FRAME FABRICATION

Step 6: Fabricate Intermediate Horizontal Members for Alignment Key, P15315

- A. Drill .1695" (4.3mm) dia. clearance holes (#18 drill bit) for #8 screw 1.25" (31.8mm) from each end of intermediate horizontal members, as shown in **Fig. 1** (**Head & Sill members optional**). Center hole in V-notch.
- B. Required for D.L.O. 32" (812.8mm) or above, optional use in head, sill, and D.L.O. under 32" to aid in horizontal to vertical joinery.







FRAME FABRICATION

Step 7: Fabricate Horizontal Members for Shear Blocks

- A. For shear block assembly of E/T/TU15303, drill .201"(5.1mm) dia. holes in the hidden interior leg on the underside of the horizontal as shown in **FIG. 1.**
- B. For E/T/TU15301, drill .221"(5.6mm) dia. holes in the top face, and drill countersink for flat head S286 screw as shown in **FIG. 2.** (Note: exposed fasteners are necessary).
- C. For E/T/TU15313 & E/T/TU15310 horizontals, drill .201"(5.1mm) dia. holes through back wall of glazing pocket as shown in **FIG. 3.**

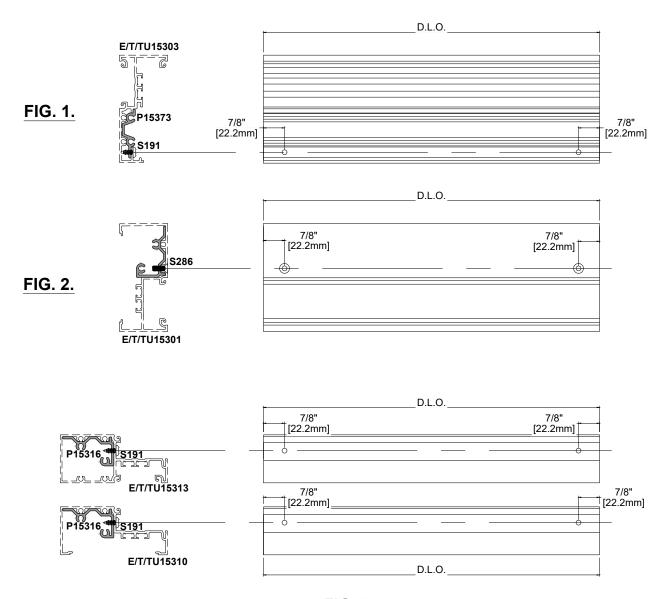


FIG. 3.

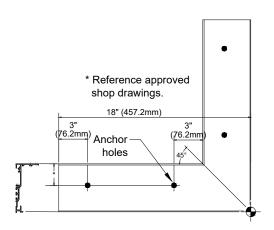




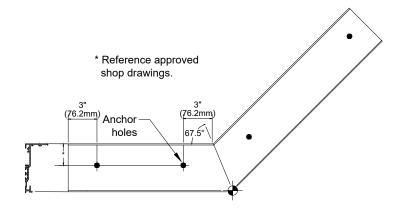
FRAME FABRICATION

Step 8: Corner Sill Flashing Fabrication

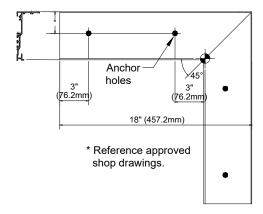
- A. Miter ends of sill flashing as shown in FIGs. 1-4 (One left hand and one right hand.)
- B. Drill anchor holes as show.



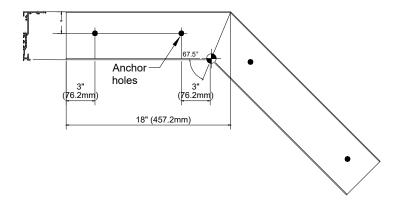
90° OUTSIDE CORNER FIG. 1.



135° OUTSIDE CORNER FIG. 2



90° INSIDE CORNER FIG. 3



135° INSIDE CORNER FIG. 4



TUBELITE®

FRAME ASSEMBLY

Step 9: Install End Dams

- A. Install end dams to sill flashing.
 - E/T/TU15259 sill flashing, use P15455 end dam.
 - E/T14259 or E/T14055 sill flashing, use P2455 end dam.
- B. Apply sealant to the end of the sill flashing.
- C. Install end dam to sill flashing with S196, #8 x $\frac{3}{8}$ " pan head screws.
 - P15455 use (3) S196 screws
 - P2455 use (2) S196 screws
- D. Cap seal heads of all S196 screws, and tool sealant at end dam connection. Apply additional sealant if needed.

NOTE:

If sill flashing is spliced, install end dams on jamb-end only. Refer to **Step 12**, **page 47** for splicing instructions.

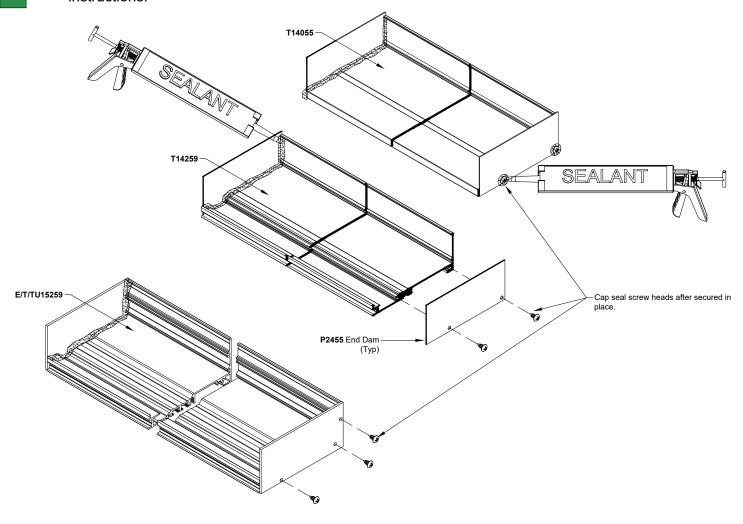


FIG. 1.





FRAME ASSEMBLY

Step 9: Install End Dams

- A. Install end dams to head receptor.
 - E/T/TU15259 sill flashing, use P15455 end dam.
- B. Apply sealant to the end of the sill flashing.
- C. Install end dam to head receptor with S196, #8 $x \frac{3}{8}$ " pan head screws.
 - P15455 use (3) S196 screws
- D. Cap seal heads of all S196 screws, and tool sealant at end dam connection. Apply additional sealant if needed.

NOTE:

If sill flashing is spliced, install end dams on jamb-end only. Refer to **Step 12**, **page 47** for splicing instructions.

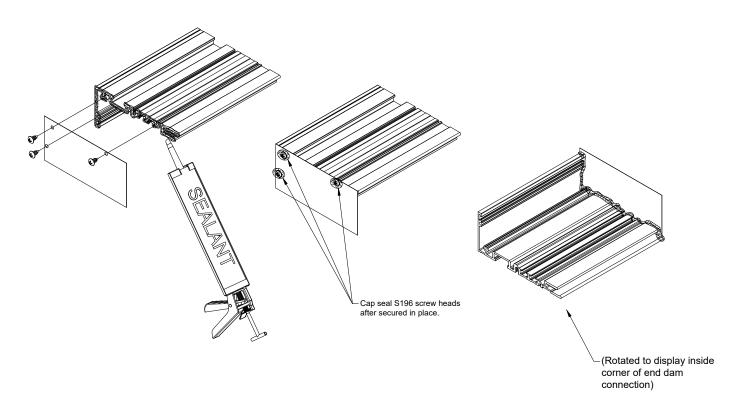


FIG. 1.



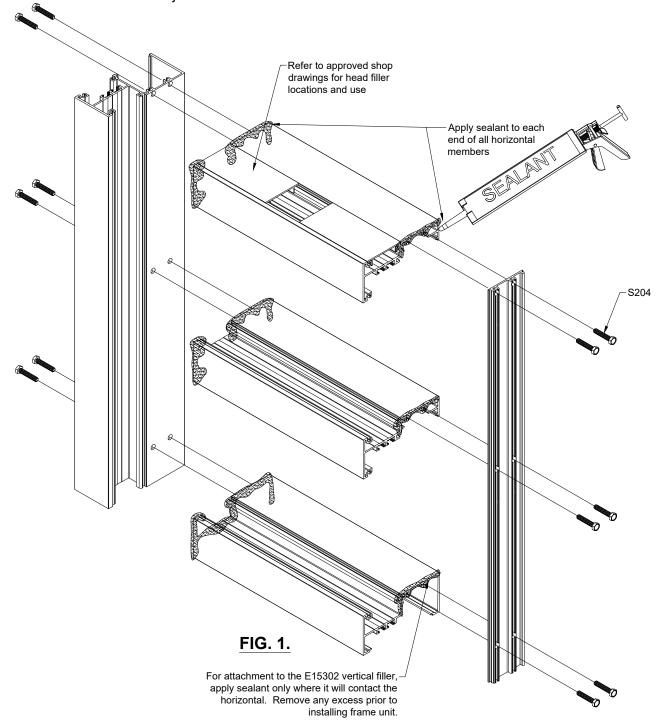


FRAME ASSEMBLY - SCREW SPLINE OUTBOARD PLANE - INSIDE GLAZED

Step 10: Assemble Frames

Screw Spline Assembly

- A. Clean all mating surfaces on horizontal & vertical.
- B. Apply sealant to ends of the head, horizontal and sill members prior to attaching to the vertical members. **SEE Fig. 1**.
- C. Attach head, horizontal and sill members to the vertical and closure pocket members with S204 frame assembly screw.
- D. Tool sealant at each joint.





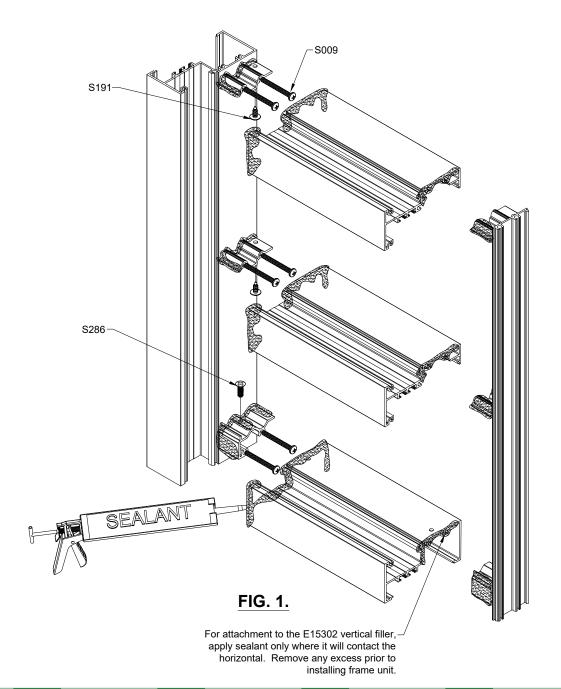


FRAME ASSEMBLY - SHEAR CLIP OUTBOARD PLANE - INSIDE GLAZED

Step 10: Assemble Frames

Shear Clip Assembly

- A. Clean all mating surfaces on horizontal, vertical, and shear clip.
- B. Attach shear clips to vertical members with S009 screws.
- C. Apply sealant to ends of the horizontals and on mating surfaces of the shear clip. SEE FIG. 1.
- D. Attach horizontal members to the vertical and secure the horizontal to the vertical by fastening the horizontal to the shear clip with S191 (S286 for exposed flat head fastener).
- E. Tool sealant at each joint.





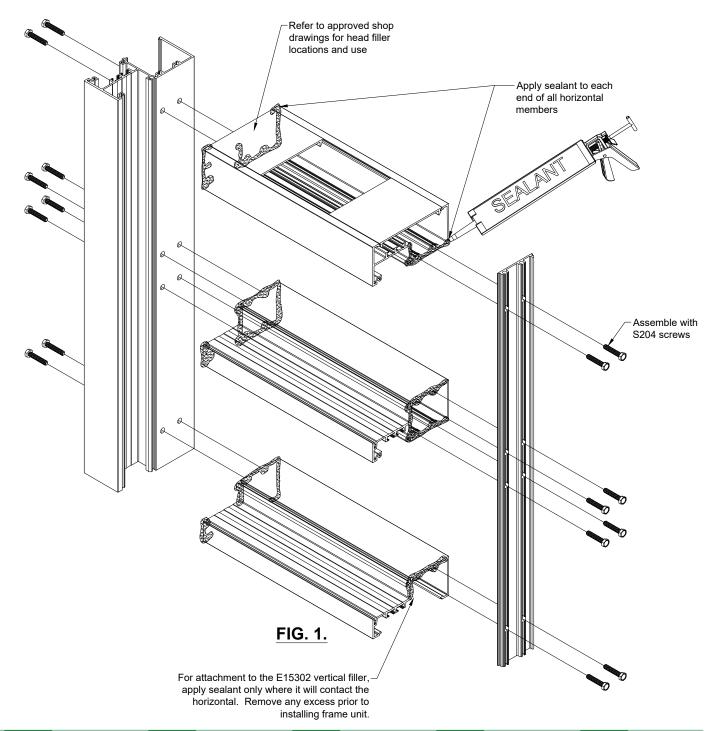


FRAME ASSEMBLY - SCREW SPLINE OUTBOARD PLANE - OUTSIDE GLAZED

Step 10: Assemble Frames

Screw Spline Assembly

- A. Clean all mating surfaces on horizontal & vertical.
- B. Apply sealant to ends of the head, horizontal and sill members prior to attaching to the vertical members. **SEE Fig. 1**.
- C. Attach head, horizontal and sill members to the vertical and closure pocket members with S204 frame assembly screw.
- D. Tool sealant at each joint.



www.TUBELITEUSA.com Page 46



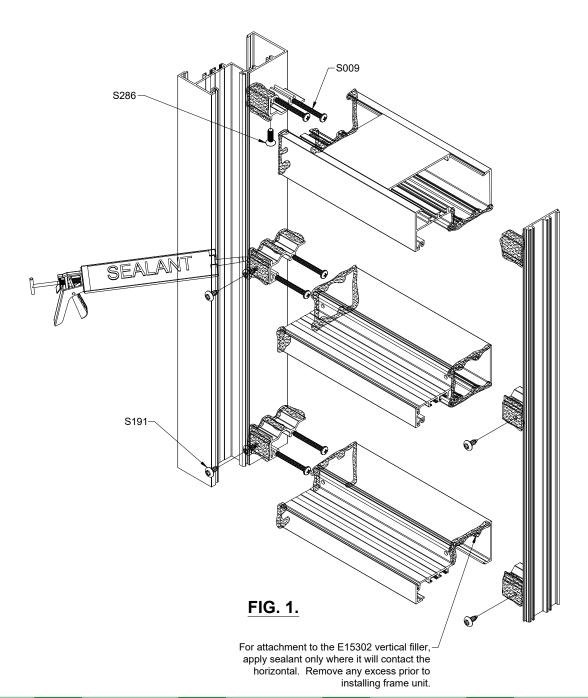


FRAME ASSEMBLY - SHEAR CLIP OUTBOARD PLANE - INSIDE GLAZED

Step 10: Assemble Frames

Shear Clip Assembly

- A. Clean all mating surfaces on horizontal, vertical, and shear clip.
- B. Attach shear clips to vertical members with S009 screws.
- C. Apply sealant to ends of the horizontals and on mating surfaces of the shear clip. SEE FIG. 1.
- D. Attach horizontal members to the vertical and secure the horizontal to the vertical by fastening the horizontal to the shear clip with S191 (S286 for exposed flat head fastener).
- E. Tool sealant at each joint.





TUBELITE® DEPENDABLE

Page 48

FRAME INSTALLATION

Step 11: Corner Sill Flashing Installation

- A. Install flashing corner members in place.
- B. Apply sealant full length of mitered joint. See Fig. 2.
- C. Splice corner flashing to sill flashing using procedures shown on page 47

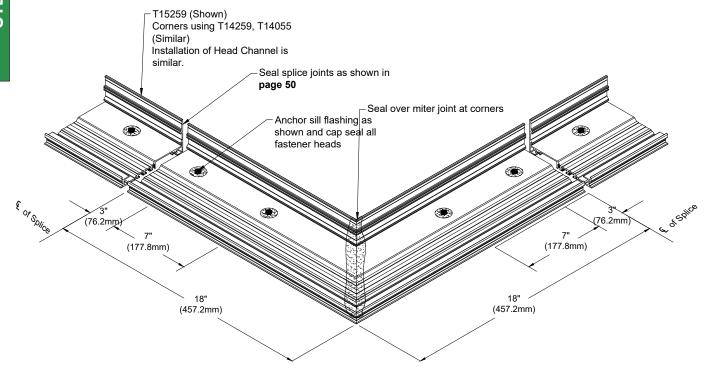
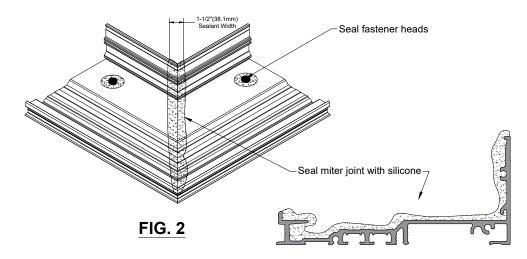


FIG. 1.







Step 12: Corner Frame Installation

- A. Recommended to assemble the 2 adjacent corner frame units together.
- B. Set corner frame assembly into sill flashing as a single unit.

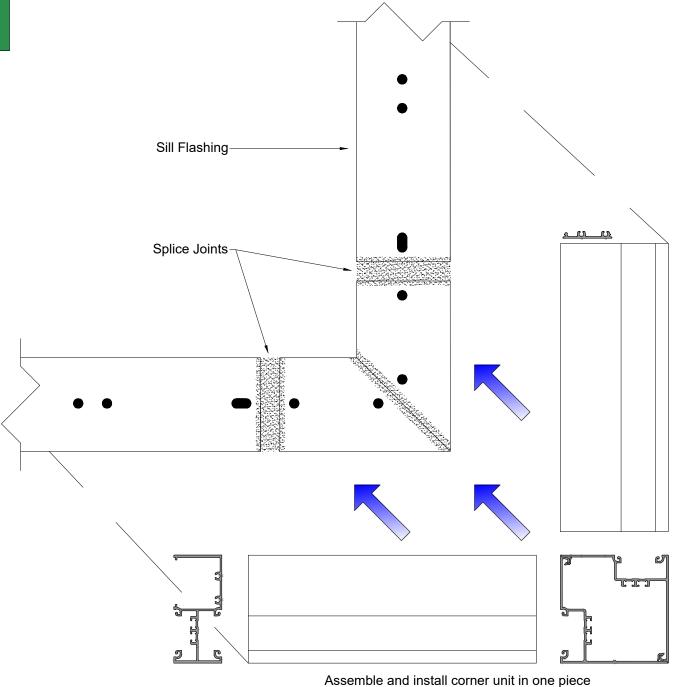


FIG. 1.

July 2025 www.ALUMICOR.com www.TUBELITEUSA.com Page 49

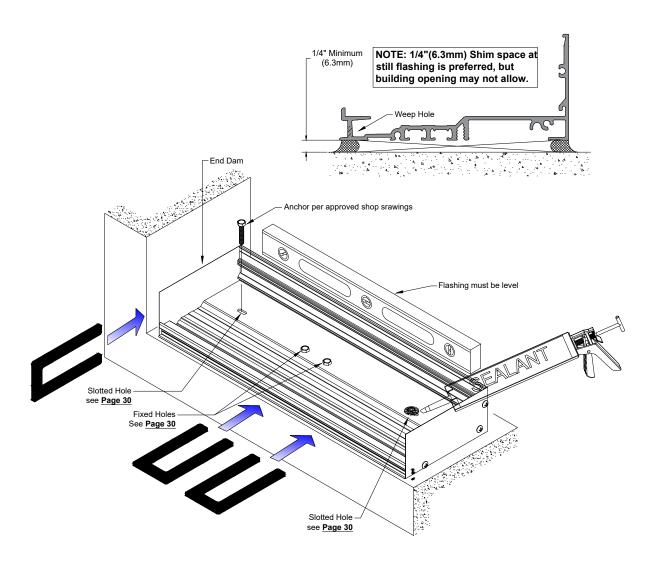
(90° corner shown. 135° corner is similar)





Step 13: Install Sill Flashing (If required)

- A. Center the sill flashing in the opening. If sill flashing is spliced, be sure the joint at the jamb is per approved shop drawings (jamb caulk joint minus $\frac{1}{8}$ "(3.2mm)). Splice joint to be $\frac{3}{8}$ "(9.5mm) minimum.
- B. At the highest point of the sill (smallest rough opening height), shim the sill flashing with a minimum $\frac{1}{4}$ "(6.3mm) shim space. Sill flashing must be installed level side to side and front to back.
- C. Shim tight between the sill flashing end dam and building condition to ensure end dam is not dislodged during frame installation. Remove shim after frames are set in place.
- D. Anchor sill flashing to building substrate per approved shop drawings. Cap seal anchors after installation. Where the sill flashing abuts a door jamb, the sill flashing anchor must be located within 6"(152.4mm) of the door jamb.



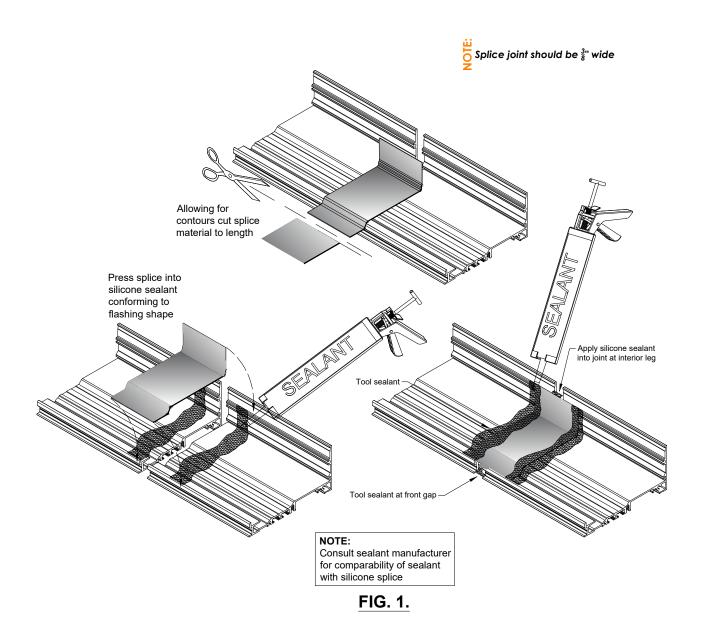




Step 14: Sill Flashing Splice

Continue installing sill flashing per Step 13 across the opening.

- A. Lay P3444 silicone sheet into sill flashing at splice location (center of D.L.O.) and cut to length.
- 3. Install backer rod under the sill flashing at the splice joint.
- C. Clean surfaces where splice will be applied. Apply sealant as shown in Fig. 1.
- D. Set silicone splice sleeve in place and tool sealant. Seal front and back joints.
- E. Do not locate a splice directly below a vertical mullion. Center line of D.L.O. is preferred.







Step 15: Install Frames

condition

- A. Starting on one side of the opening, apply a bead of silicone to the back of the sill flashing and the end dam prior to installing each frame. Apply a sealant bead on the back of the flashing only for the frame to be installed.
- B. Lift the first frame onto the sill flashing, snug against the end dam.
- C. Lift each frame onto the sill flashing and engage with the previous frame.
- D. Check to ensure frame is plumb, level and jamb caulk joint is per approved shop drawings.
- E. Install P2901 wedge gasket into the flashing along the length of the frames
- F. Shim head and jamb at anchor points and attach to the building structure. Size, quantity and location of anchors are per approved shop drawings. Remove shims between sill flashing end dams and secure before proceeding.
- G. When the frame is anchored to the structure, apply the exterior perimeter seal at the head, sill and jambs. Interior perimeter seal must be applied to the head, sill and jambs.

NOTE: When using P4543A, make sure clearance holes are made in the snap-in filler to avoid the sill flashing anchors. 6" (152.4mm)long filler is required at bottom of jamb for seal between jamb and flashing end dam Seal end dam P2901 Gasket along back leg Seal along the Drill clearance holes in P4543A for sill flashing anchor to pass through Refer to approved shop Cap Seal all screw heads drawings for proper sizing and spacing of perimeter anchors NOTE: Similar installation at head FIG. 1.





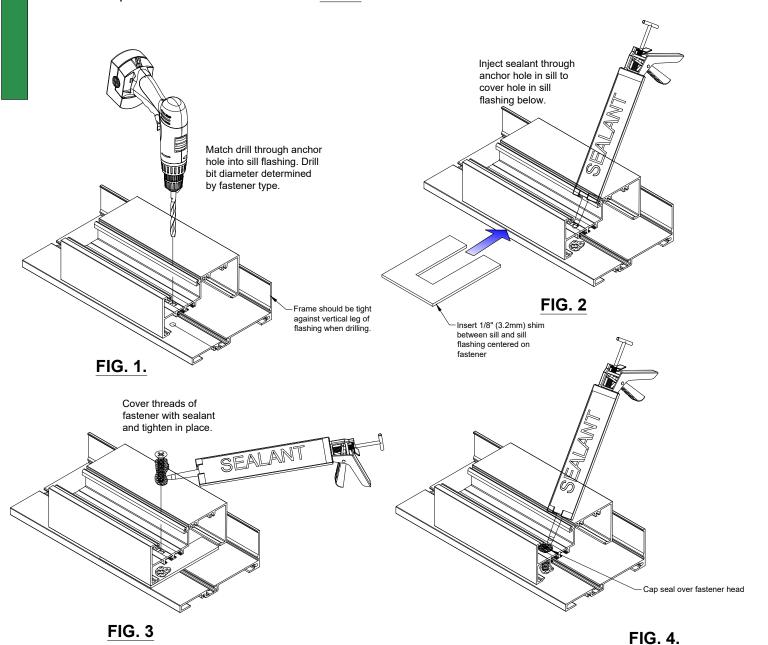
T14055

FRAME INSTALLATION

Step 16: Install Frames (Continued)

Frame installation when using the optional T14055 sill flashing.

- G. Install frame units as directed in steps A and B on page 50.
- H. Push frame tight to vertical fin of sill flashing and match drill through sill anchor holes into sill flashing. See <u>FIG. 1</u>. Sill anchor not by Tubelite and is to be sized according to project loading requirements.
- I. Shim between sill and flashing centered on anchor. See FIG. 2.
- J. Inject sealant into anchor hole to cover hole in flashing. See FIG. 2.
- K. Apply sealant to threads of fastener and secure frame to sill flashing. See FIG. 3.
- L. Cap seal all fastener heads. See FIG. 4.

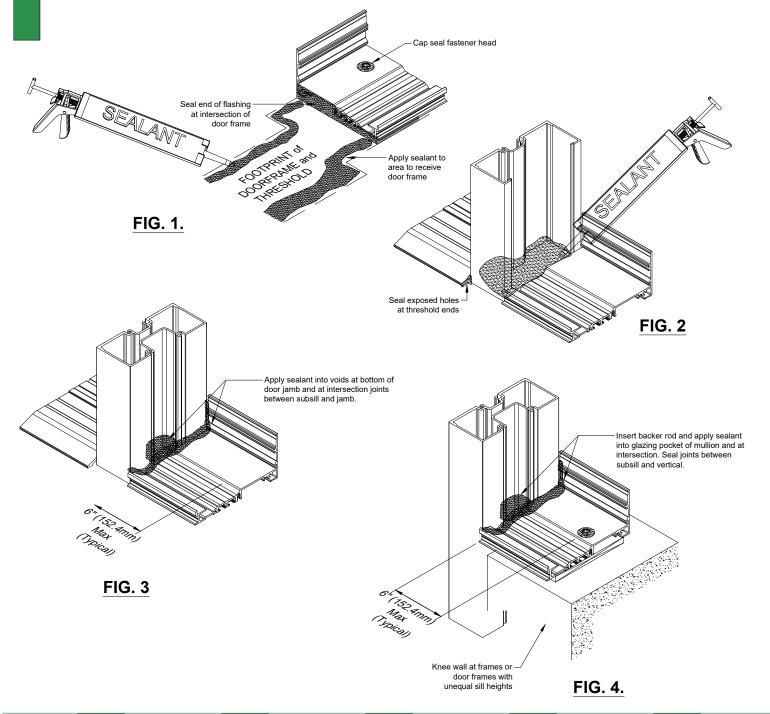






Step 17: Install Frames at Door Jamb

- A. Establish footprint of door frame and threshold. Apply sealant to footprint of door jamb (and threshold if applicable).
- B. Seal end of sill flashing intersecting the door frame.
- C. Set door frame in bed of sealant and tool the door frame to floor intersection. Seal any holes at end of threshold to prevent water intrusion.
- D. Fill void within door jamb with sealant and tool for water to flow into sill flashing.





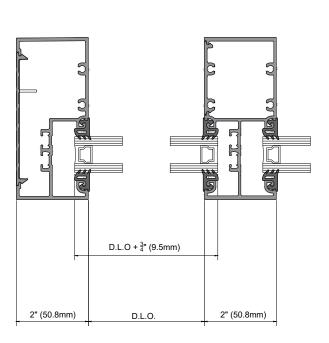


GLAZING

Step 18: 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.

Glazing pockets are designed to accept IGU's up to and including 1-1/8" (28.6mm) thick. Refer to our online details for a full list of glazing size options for this system.



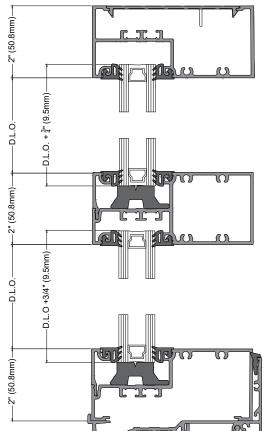


FIG. 1.
GLASS LITE SIZES



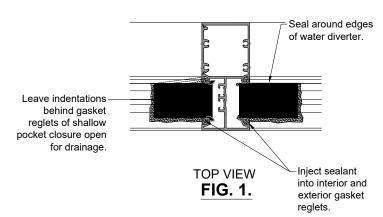
TUBELITE® DEPENDABLE

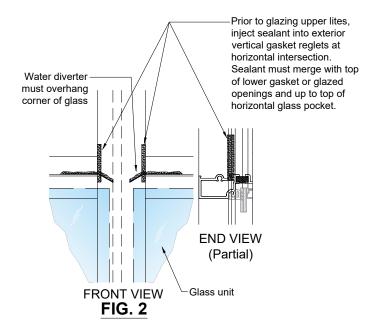
GLAZING

Step 19: Installing the Glazing Units

NOTE: Glazing must be done from bottom of frame up.

- A. Seal the corners of the previously installed gaskets (refer to Step 21, page 56).
- B. Set the glass by installing into the deep pocket of the vertical first, then carefully sliding into the shallow pocket. Set glass onto (2) setting blocks located at quarter points or per approved shop drawings. Consult glass manufacturer if glass size exceeds 40 sq. ft. (3.72 sq.m)
- C. In applications where glass shifting is anticipated through seismic activity or other forces acting on the frame, install P1917 anti-walk blocks into the deep pocket side of the vertical per glazing manufacturer recommendations.
- D. Install remaining gaskets on the vertical sides of the glass, holding back at the bottom to allow for glass stop installation.
- E. Install glass stop at the bottom of the lite.
- F. Pump sealant into glazing reglet 1" (25.4mm) away from each corner and the horizontal-to-vertical joint from the water diverter up to the glazing reglet.
- G. Finish installing gaskets at top and bottom of D.L.O.
- H. Repeat steps 19 A-G for the remaining row of lites.
- I. Prior to glazing the next row of lites, install water diverter P1135 at ends of intermediate horizontals. See **Fig. 1**.





NOTE: Position water diverter to cover glass

corner. Seal diverter to horizontal, leaving the gap at the front and side open in the vertical glazing pocket. See **Fig. 1 & 2**. (Also see isometric details on page 55)





TUBELITE DEPENDABLE

GLAZING

Step 20: Installing the Glazing Units (Continued)

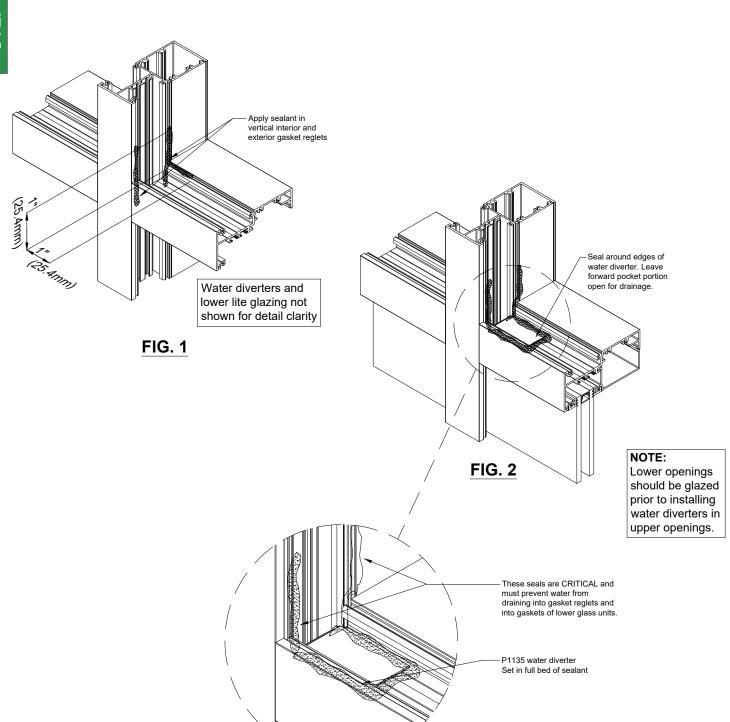


FIG. 3





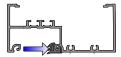
GLAZING

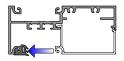
Step 21: Install Gaskets

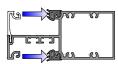
- A. Install glazing gasket on one side of the framing member, depending upon direction of glazing.
 - 1. For inside glazing, install gaskets on exterior side of framing first.
 - 2. For outside glazing, install gaskets on interior side of framing first.

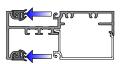
DO NOT STRETCH GASKETS WHEN INSTALLING. Start at the center of D.L.O. and work towards the ends.

Allowance = $\frac{1}{8}$ "(3.2mm) extra length per foot of D.L.O.

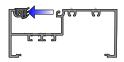










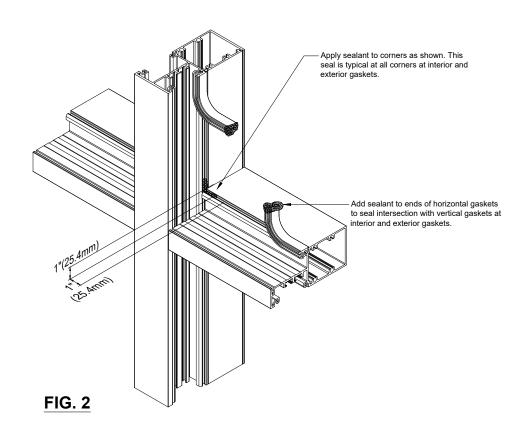


OUTSIDE GLAZE

INSIDE GLAZE

FIG. 1.

<u>IMPORTANT NOTE:</u> Clean ends of gaskets with IPA prior to sealing the corners.



က

SSG - STEP

TUBELITE®

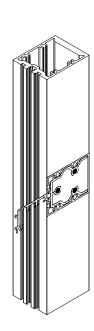
STRUCTURAL SILICONE GLAZED - SSG

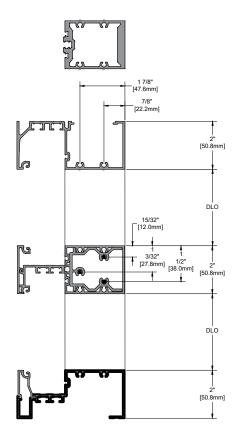
Step 1: Fabricate Sill Flashing

A. Refer to Step 3 of Frame Fabrication on page 30.

Step 2: Fabricate Vertical Framing Members

- A. Drill frame assembly holes in verticals & jambs as shown in FIG. 1.
- B. Use short off-cut of horizontal to aid in assembly hole locations.





Step 3: Fabricate Horizontal Members for Shear Blocks

A. For SSG condition, shear block assembly must be used. Drill 0.221" dia holes in the horizontal members as shown in **FIG. 2**.

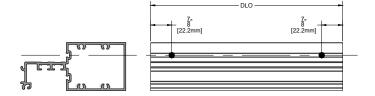


FIG. 1



Step 4: Assemble Frames

Shear Block Assembly - SSG

- Install shear blocks onto vertical with S009 #10 x 1 $\frac{3}{4}$ " PH screw as shown in **FIG. 1**.
- Clean all mating surfaces on horizontal, vertical, and shear blocks.
- Apply sealant to ends of the horizontal and shear blocks prior to attaching to the horizontal members to the vertical members.
- Slide horizontal over the shear blocks. D.
- Match drill hole in horizontal shear blocks with drill for #10 screws.
- Secure intermediate horizontal E/T/TU15323 with (1) S191 #10 $x \frac{1}{2}$ " truss head screw. See **FIG. 1**. F.
- Head and sill members run through between jambs.

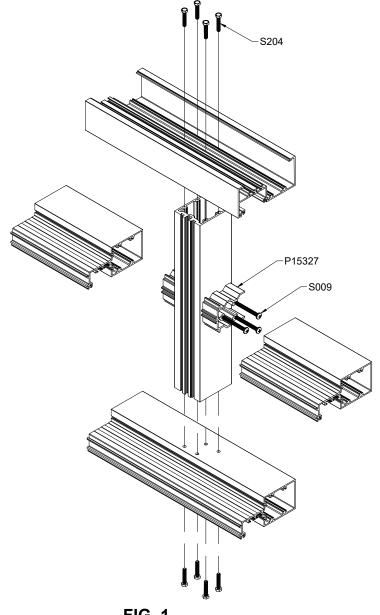


FIG. 1

www.ALUMICOR.com www.TUBELITEUSA.com Page 60 July 2025

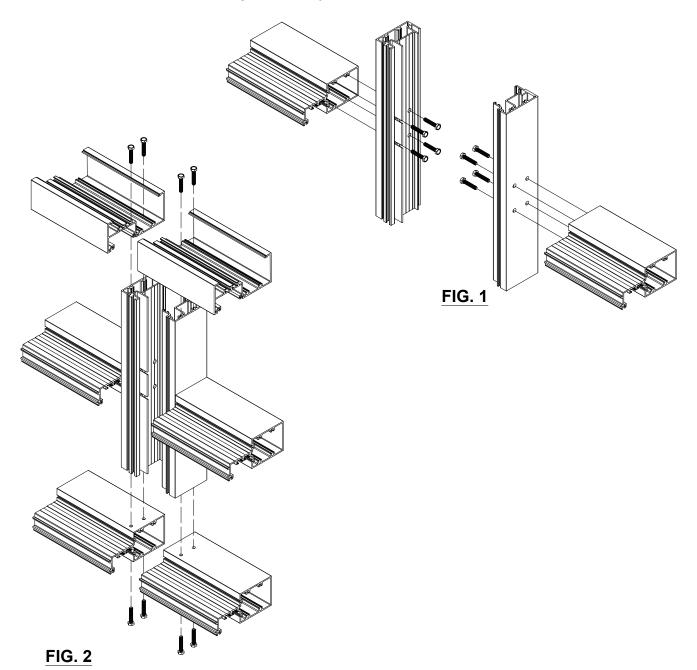




Step 4: Assemble Frames

Shear Block Assembly - SSG Expansion Mullion

- A. Clean all mating surfaces on horizontals & verticals.
- B. Apply sealant to ends of the horizontal, prior to attaching to the vertical members.
- C. Attach horizontal members to expansion verticals with (4) S204 screws. See FIG. 1.
- D. Attach head & sill members to verticals with (4) S204 screws. See FIG. 2.
- E. Fabricate bond breaker splices at head and sill for both exterior and interior locations. See FIG. 2.
- F. Head and sill members run through between jambs.







Step 5: Install Water Diverter

- A. Water diverters can only be installed once the frame is assembled.
- B. Apply silicone to horizontal glazing pocket where the water diverter will be resting. See **FIG. 1**.
- C. Place P2407 water diverter evenly across the horizontal to cover the void between the horizontal members.
- D. Bend the water diverter 90 degrees.
- E. Seal around edges of water diverter. THIS IS A CRITICAL SEAL. Do not seal front of water diverter. See **FIG. 3**.

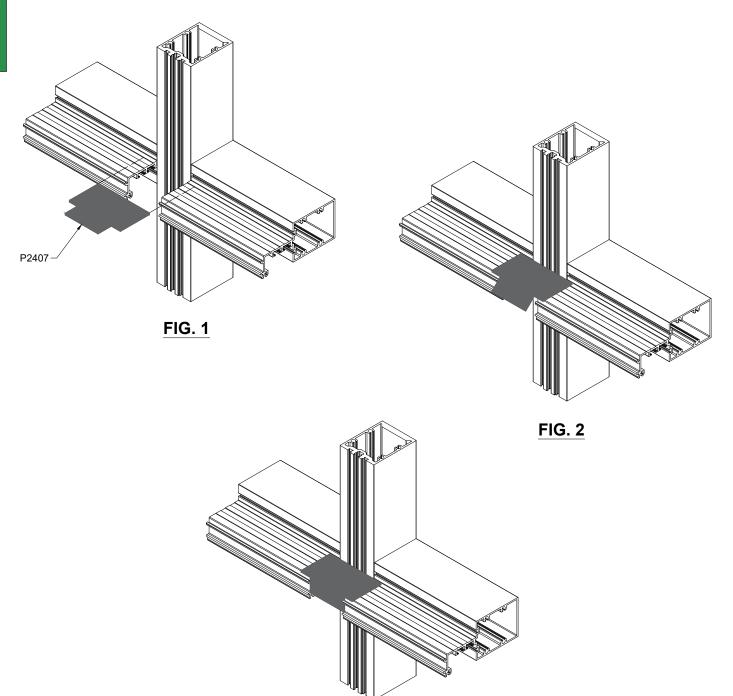


FIG. 3





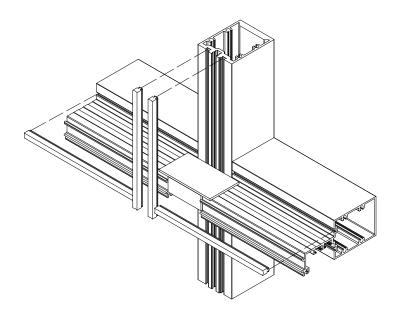
Step 6: Install Glazing Gaskets

- A. Remove any debris from the glazing pockets and reglets.
- B. Install P6587 gasket into the reglets of the mullions to be structurally sealed. See FIG. 1.
- C. Refer to approved shop shop drawings for mixed dry and structural glazed applications. Install P2728 gasket for any dry glazed sections.

DO NOT STRETCH GASKETS WHEN INSTALLING

Start at the center of D.L.O. and work toward ends.

NOTE: Allowance = $\frac{1}{8}$ " extra length per foot of D.L.O. to allow for gasket to relax after installation.





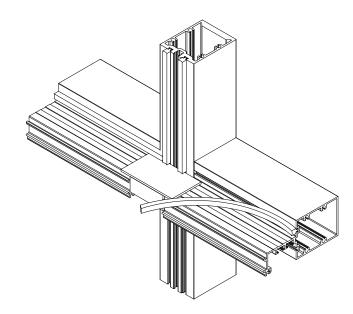


FIG. 2



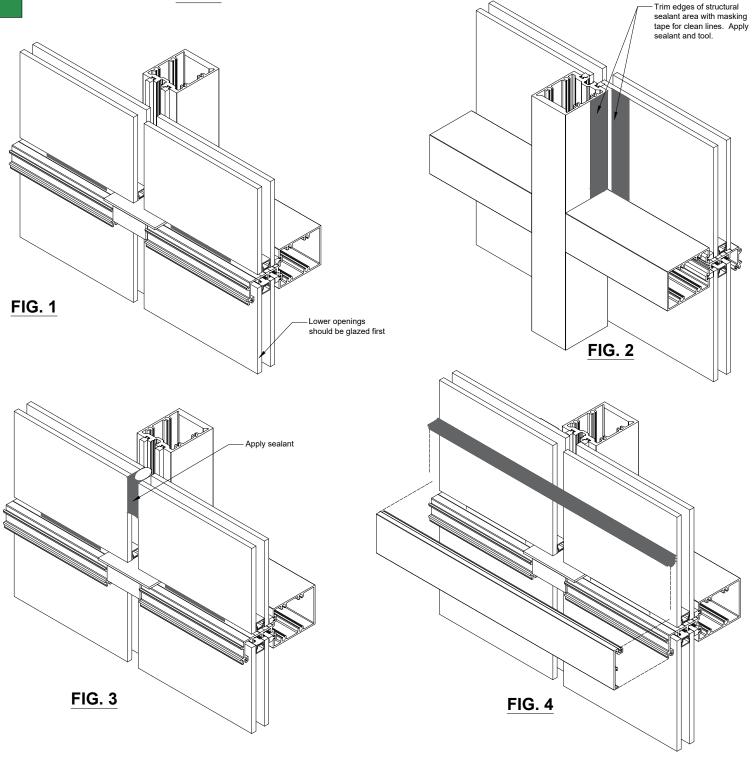
TUBELITE DEPENDABLE

STRUCTURAL SILICONE GLAZED - SSG

Step 7: Install Glazing Units

- A. Set glass onto (2) setting blocks located at quarter points or per approved shop drawings.
- B. Tape off side of SSG vertical and glass prior to applying structural sealant. Apply structural sealant as shown on interior. See **FIG. 2**. Use P1108 temporary glazing clip to secure glass as interior seal cures.
- C. Apply structural sealant as shown in FIG. 3.

D. Install exterior gaskets (P2728) on head, sill, and jambs. Install outside glass stop (E15324) on horizontal. See **FIG. 4.**





TUBELITE®

STRUCTURAL SILICONE GLAZED - SSG

Step 8: Install SSG Corner

- A. Place the male SSG corner member (E15348) and female SSG corner member (E15349).
- B. Install P6587 glazing gaskets to corner members
- C. Set glass. Tape off side of SSG vertical and glass prior to applying sealant. Apply backer rod and structural sealant as shown in **FIG. 1** & **FIG. 2**

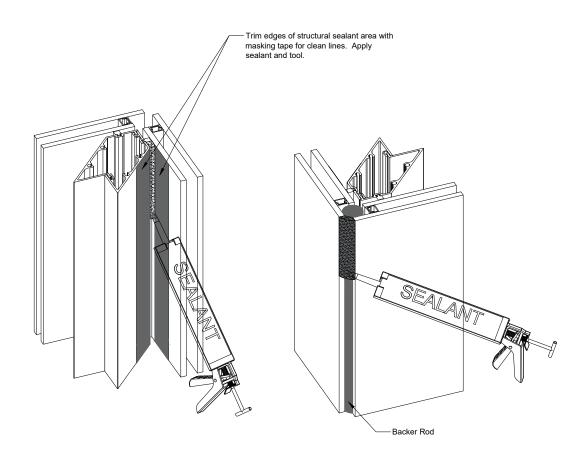


FIG. 1 FIG. 2