



## **Features**

- Flush appearance with face sheet of aluminum that is captured on four sides by integral extruded reglets
- Door is 1-3/4" (44.5 mm) Deep
- Dual moment welded corner construction
- Internal 500 wide stile frame has 5" (127 mm) vertical stiles, 5" (127 mm) top rail and 5" (127 mm) bottom rail
- 5 lb/ft<sup>3</sup> urethane foam core
- Single acting
- Vision lite infills of 1/4" (6.4 mm), 1" (25.4 mm) or 1" (25.4 mm) impact infill
- Offset pivots, butt hinges or continuous geared hinge
- MS locks or exit device hardware
- Surface mounted or concealed closers
- Architects Classic push/pulls
- Adjustable astragal utilizing pile weathering with polymeric fin at meeting stiles
- Polymeric bulb weatherstripping in door frames
- Aluminum panels with two texture choices, smooth and embossed
- Permanodic® anodized finishes option
- Painted finishes in standard and custom choices

## **Optional Features**

- Paneline® exit device or Paneline® MEL exit device
- Large Missile, Small Missile and Hurricane Impact tested
- Blast Mitigation tested

## **Product Applications**

- Flushline® is designed for high traffic applications such as schools, universities as well as highly corrosive environments such as coastal applications, manufacturing facilities and waste water treatment plants

For specific product applications,  
consult your Kawneer representative.

Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

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Metric (SI) conversion figures are included throughout these details for reference. Numbers in parentheses ( ) are millimeters unless otherwise noted.

The following metric (SI ) units are found in these details:

- m – meter
- cm – centimeter
- mm – millimeter
- s – second
- Pa – pascal
- MPa – megapascal

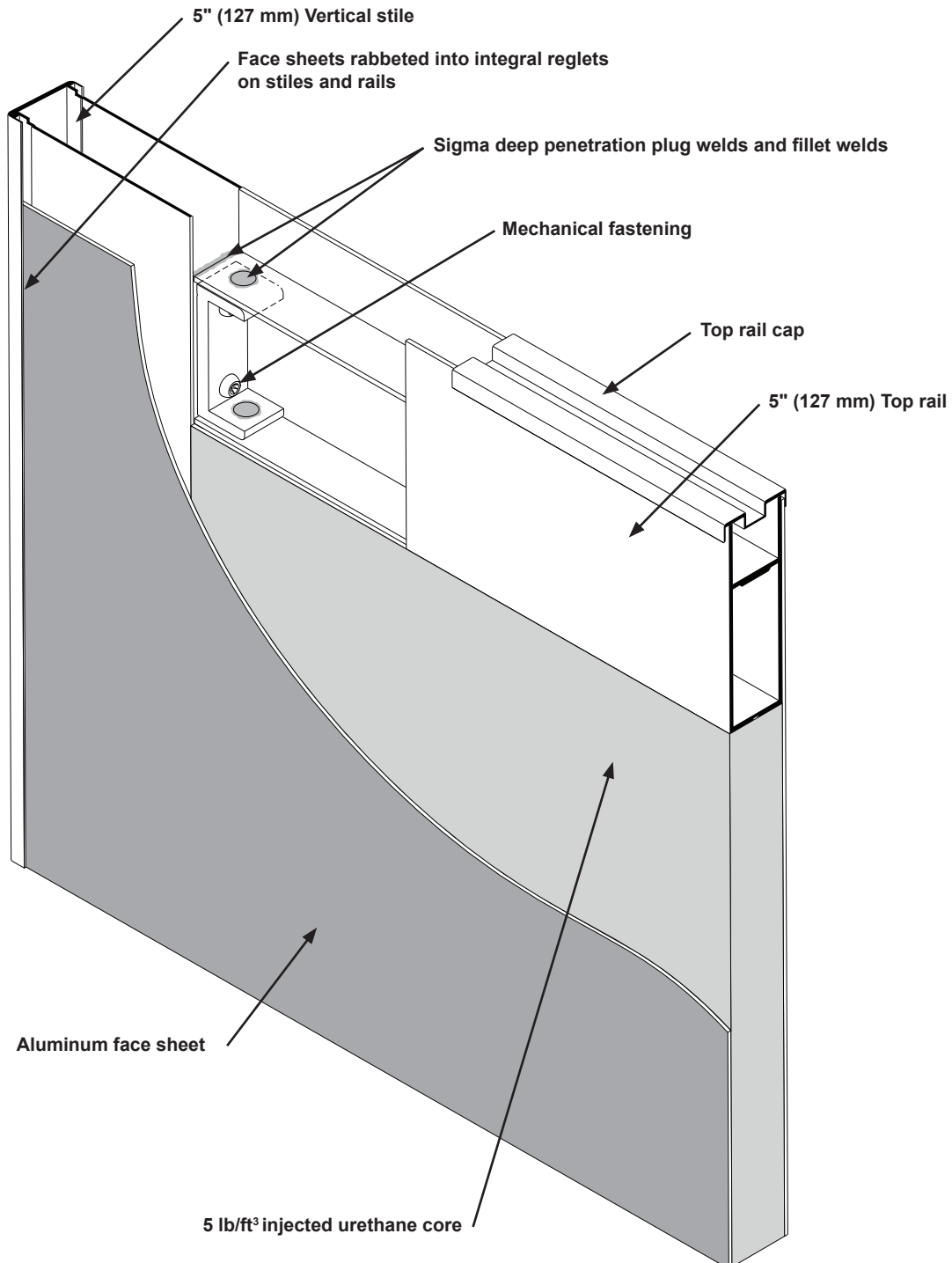
FACE SHEET TYPE AND FINISH	FINISH OF DOOR SUB-FRAME		
	#17 CLEAR ANODIZED	#40 BRONZE ANODIZED	PAINTED TO MATCH
ALUMINUM	SELECT ANODIZED OR PAINTED FINISH AS REQUIRED		

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**DOOR CONSTRUCTION**

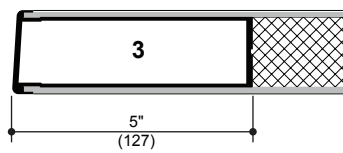
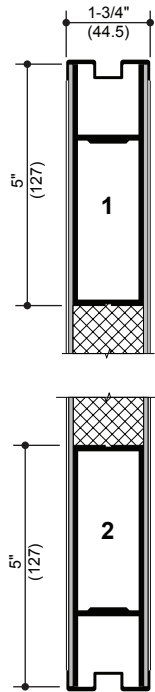
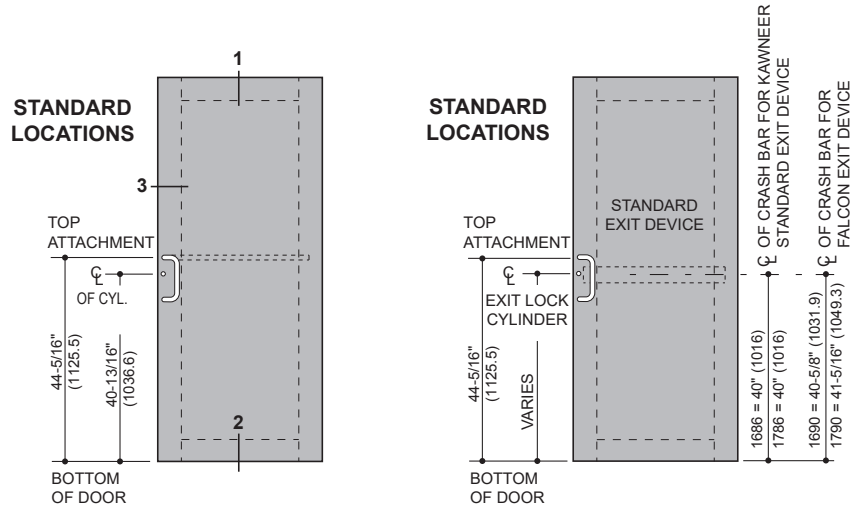
The chassis for Kawneer's Flushline® Series door utilizes Kawneer's dual moment welded corner construction. Face sheets interlock with the aluminum stiles and rails to create a hollow cavity which is then injected with urethane foam. The exceptional characteristics of urethane foam assures a strong chemical bond with all internal aluminum surfaces and a tough, dimensionally stable core. Doors are constructed with 5" (127 mm) wide stiles and rails internally to support surface applied and mortised hardware.



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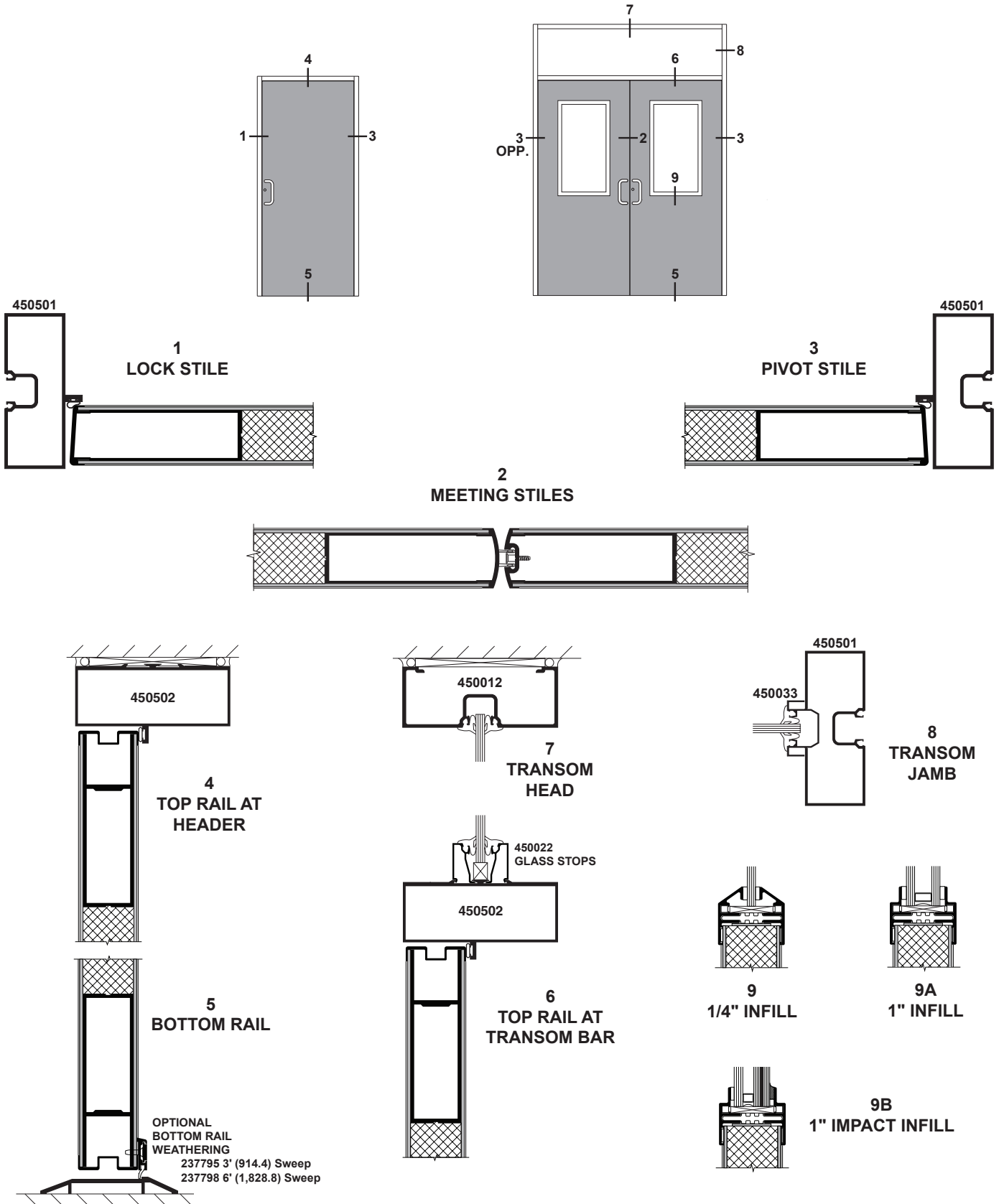
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**NOTE:** Details show Trifab® VersaGlaze® 450 (Center) framing. Flushline® doors may be used with other Kawneer framing. Refer to other framing sections for specific details.

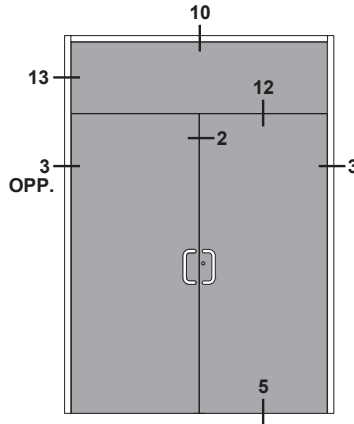
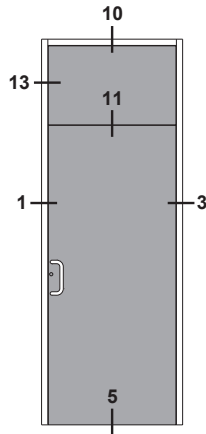
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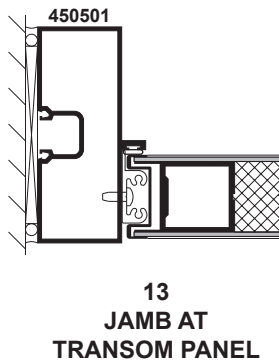
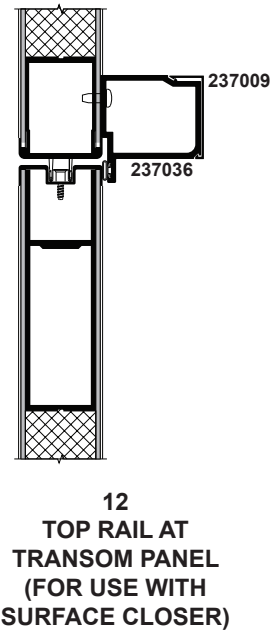
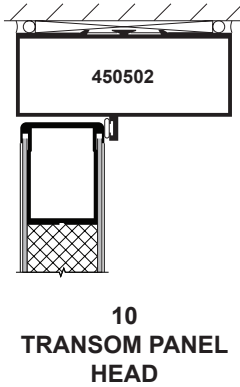


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**NOTE: Transom Panel**  
**Maximum Size:**  
 Single Door - 4' 0" x 3' 0"  
 Pairs of Doors - 8' 0" x 3' 0"

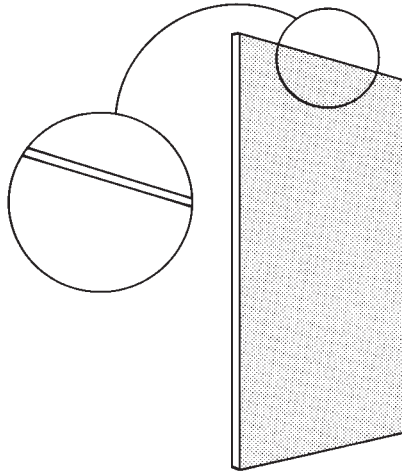


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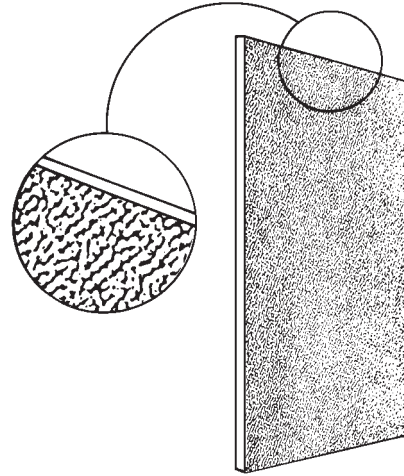
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**ALUMINUM DOOR FACE SHEETS**

FOR EXTERIOR AND INTERIOR SURFACES



**Smooth (Unpatterned)  
Aluminum Sheet**  
0.090 (2.3) Thick



**Embossed Aluminum Sheet**  
0.090 (2.3) Thick

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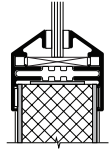
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STANDARD CONFIGURATIONS SHOWN

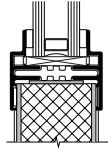
Consult your Kawneer representative for vision lites other than configurations shown.

ALUMINUM FRAMED VISION LITES

1/4" GLASS, 1" INSULATING GLASS or 1" IMPACT GLASS



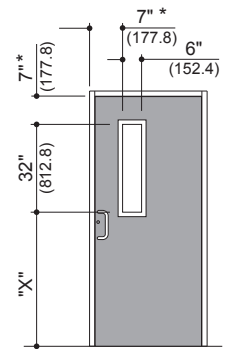
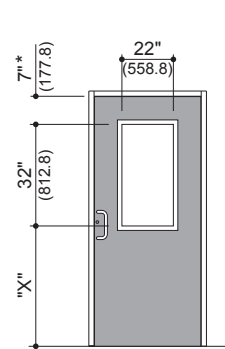
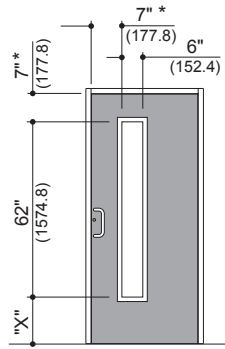
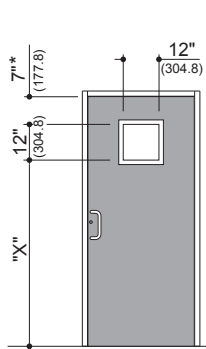
1/4" INFILL



1" INFILL



1" IMPACT INFILL



Vision Lite Size	Width	12" (304.8)	6" (152.4)	22" (558.8)	6" (152.4)
	Height	12" (304.8)	62" (1,574.8)	32" (812.8)	32" (812.8)
Placement in Door		Centered	Lock Side	Centered	Lock Side
Minimum Edge Dimension		7" (177.8) Top and Sides of Door			
		12" (304.8) Bottom of Door			
* Edge dimensions shown are minimum allowed due to manufacturing constraints. Please specify dimension "X" [Bottom of Door to Bottom of Vision Lite. Minimum dimension 12" (304.8)].					

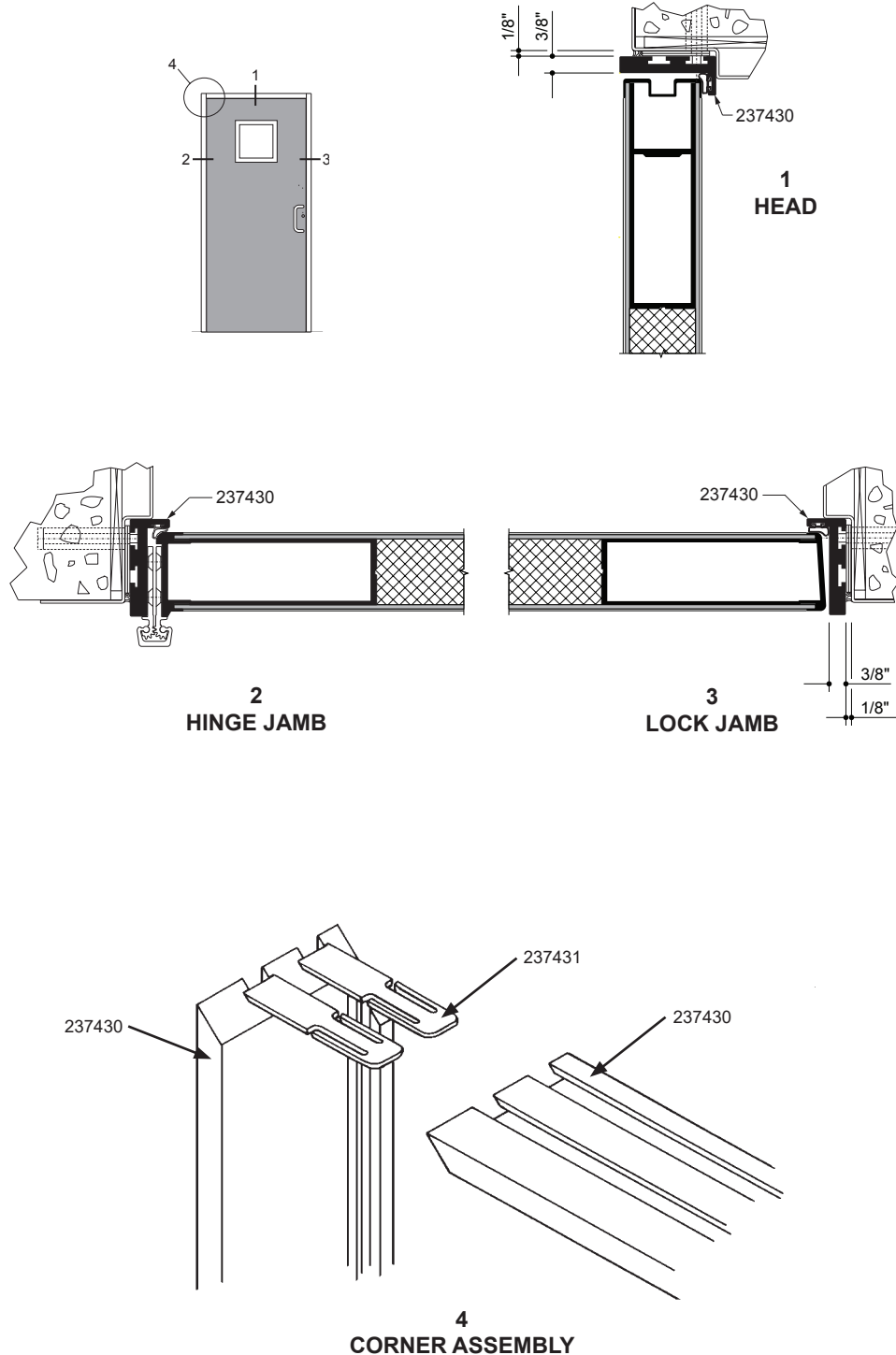
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The Flushline® Frame Adapter is an economical answer for remodel/retrofit projects where new entrance doors are being installed into existing frames. The Flushline® Frame Adapter utilizes polymeric bulb weathering for a resistive weatherseal on three sides of the door. When the frame adapter is used in conjunction with a continuous hinge the need for existing frame tear-out and attempting to align hardware on a new door with an existing frame is eliminated.

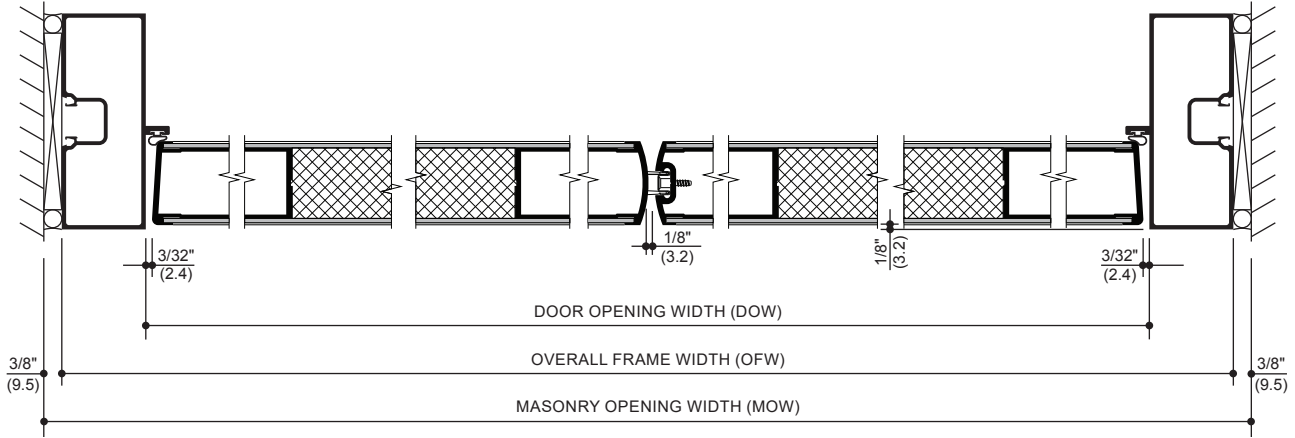
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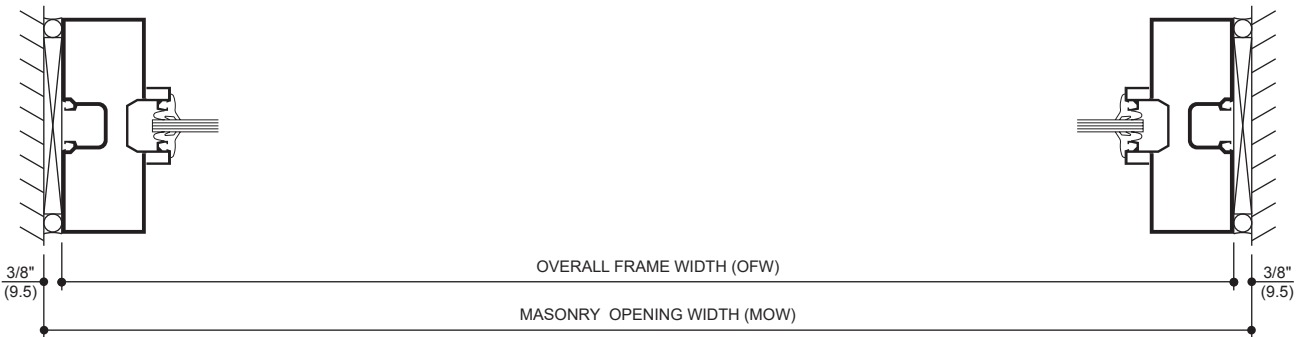


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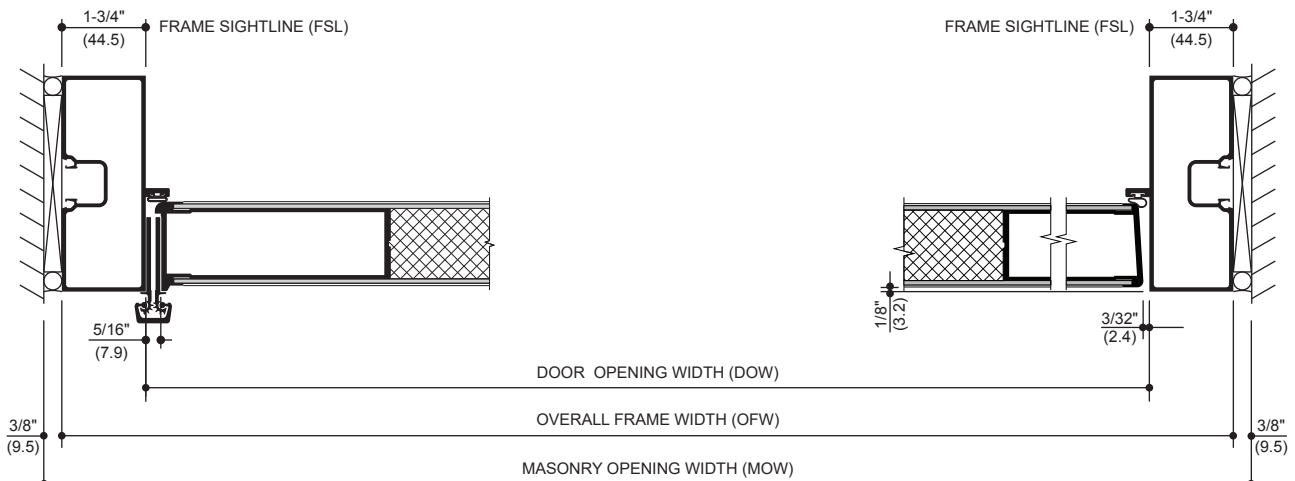
**DIMENSIONS ARE NOMINAL**



**SINGLE ACTING DOORS**



**TRANSOM JAMBS**



**CONTINUOUS HINGE JAMB**

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**STANDARD SIZES (TRIFAB® VG 450 CENTER FRAMES)**

**WITH AND WITHOUT TRANSOM**

Door Opening Dimension (DOW)		Overall Frame Dimension (OFW)	Masonry Opening Dimension (MOW)		
3' 0"	(914)	3' 3-1/2"	(1,003)	3' 4-1/4"	(1,022)
3' 6"	(1,067)	3' 9-1/2"	(1,156)	3' 10-1/4"	(1,175)
6' 0"	(1,829)	6' 3-3/4"	(1,924)	6' 4-1/4"	(1,937)

**WITH AND WITHOUT TRANSOM**

OFW = DOW + 2 FSL  
 MOW = OFW + 3/4"

**Note:** Dimensions shown above reflect A1 Price Book standard stock door frame height with transom at 10' 3-1/2" (3,137).

**STANDARD SIZES (TRIFAB® VG 451 CENTER FRAMES)**

**WITH AND WITHOUT TRANSOM**

Door Opening Dimension (DOW)		Overall Frame Dimension (OFW)	Masonry Opening Dimension (MOW)		
3' 0"	(914)	3' 4"	(1,016)	3' 4-3/4"	(1,035)
3' 6"	(1,067)	3' 10"	(1,168)	3' 10-3/4"	(1,187)
6' 0"	(1,829)	6' 4"	(1,930)	6' 4-3/4"	(1,949)

**WITH AND WITHOUT TRANSOM**

OFW = DOW + 2 FSL  
 MOW = OFW + 3/4"

**Note:** Dimensions shown above reflect A1 Price Book standard stock door frame height with transom at 10' 3-1/2" (3,137).

**STANDARD SIZES (FLUSHLINE SUB DOOR FRAME ADAPTER (Use with continuous geared hinge only))**

**WITH AND WITHOUT TRANSOM**

Door Opening Dimension (DOW)		Overall Frame Dimension (OFW)	Masonry Opening Dimension (MOW)	
3' 0"	(914)	3' 3/4"	(933)	N/A
3' 6"	(1,067)	3' 6-3/4"	(1,086)	N/A
6' 0"	(1,829)	6' 3/4"	(1,848)	N/A

**WITH AND WITHOUT TRANSOM**

N/A	N/A	N/A
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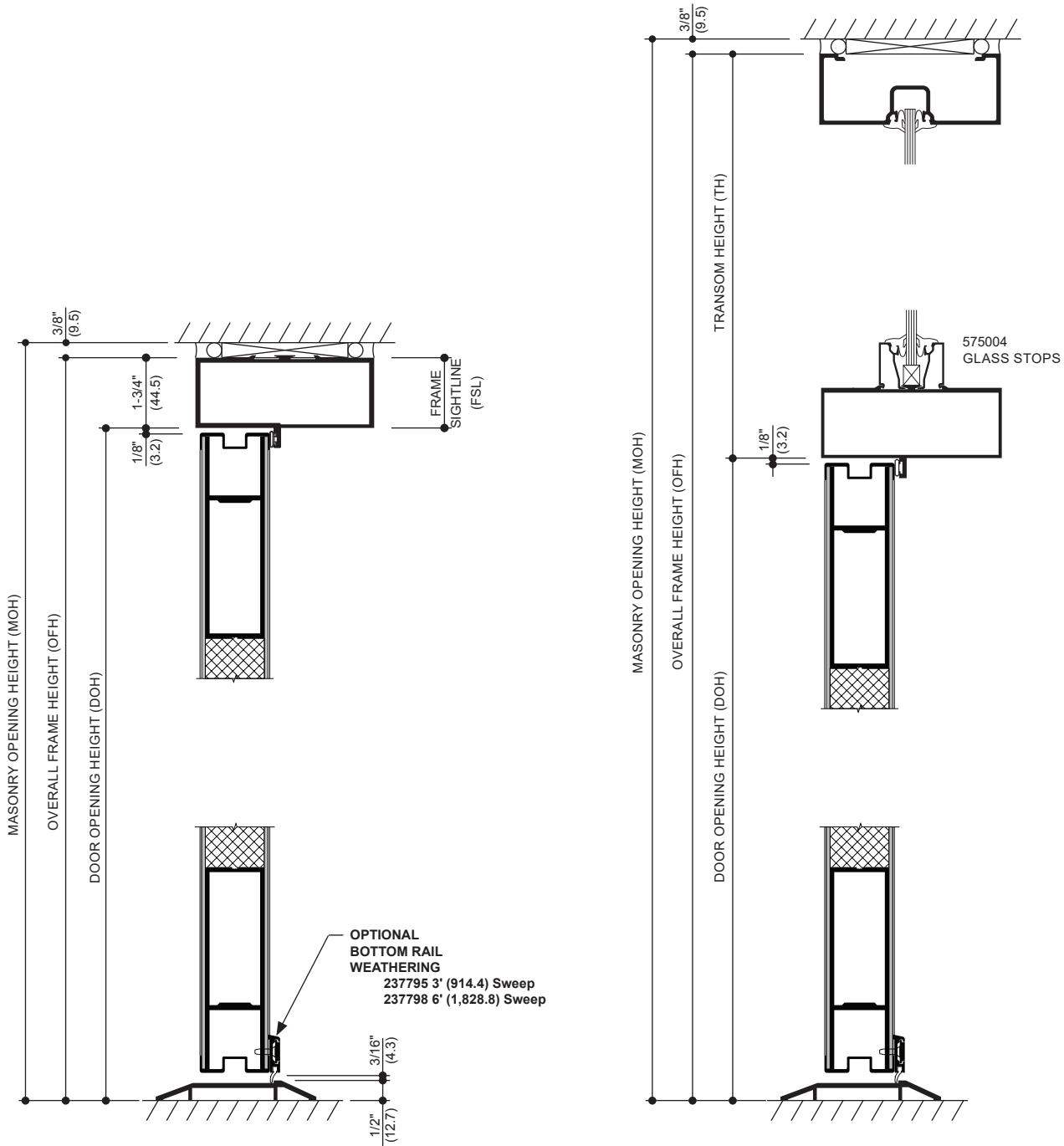
**Note:** Dimensions shown above are not applicable with A1 Price Book standard stock door frame height with transom at 10' 3-1/2" (3,137).

**Note:** For hurricane impact framing refer to test reports and product approvals for available frame options.

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**STANDARD SIZES (TRIFAB® VG 450 CENTER FRAMES)**

**WITHOUT TRANSOM**

Door Opening Dimension (DOH)		Overall Frame Dimension (OFH)		Masonry Opening Dimension (MOH)	
7' 0"	(2,134)	7' 1-3/4"	(2,178)	7' 2-1/8"	(2,188)
7' 0"	(2,134)	7' 1-3/4"	(2,178)	7' 2-1/8"	(2,188)
7' 0"	(2,134)	7' 1-3/4"	(2,178)	7' 2-1/8"	(2,188)

**WITHOUT TRANSOM**

OFH = DOH + FSL  
 MOH = OFH + 3/8"

**WITH TRANSOM PANEL**

OFH = DOH + TH  
 MOH = OFH + 3/8"

**Note:** Dimensions shown above reflect A1 Price Book standard stock door frame height with transom at 10' 3-1/2" (3,137).

**STANDARD SIZES (TRIFAB® VG 451 CENTER FRAMES)**

**WITHOUT TRANSOM**

Door Opening Dimension (DOH)		Overall Frame Dimension (OFH)		Masonry Opening Dimension (MOH)	
7' 0"	(2,134)	7' 2"	(2,184)	7' 2-3/8"	(2,194)
7' 0"	(2,134)	7' 2"	(2,184)	7' 2-3/8"	(2,194)
7' 0"	(2,134)	7' 2"	(2,184)	7' 2-3/8"	(2,194)

**WITHOUT TRANSOM**

OFH = DOH + FSL  
 MOH = OFH + 3/8"

**WITH TRANSOM PANEL**

OFH = DOH + TH  
 MOH = OFH + 3/8"

**Note:** Dimensions shown above reflect A1 Price Book standard stock door frame height with transom at 10' 3-1/2" (3,137).

**STANDARD SIZES (FLUSHLINE SUB DOOR FRAME ADAPTER (Use with continuous geared hinge only))**

**WITHOUT TRANSOM**

Door Opening Dimension (DOH)		Overall Frame Dimension (OFH)		Masonry Opening Dimension (MOH)	
7' 0"	(2,134)	7' 3/8"	(2,143)	N/A	
7' 0"	(2,134)	7' 3/8"	(2,143)	N/A	
7' 0"	(2,134)	7' 3/8"	(2,143)	N/A	

**WITH TRANSOM**

N/A		N/A		N/A	
-----	--	-----	--	-----	--

**Note:** Dimensions shown above are not applicable with A1 Price Book standard stock door frame height with transom at 10' 3-1/2" (3,137).

**Note:** For hurricane impact framing refer to test reports and product approvals for available frame options.

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LOCKING OPTIONS	MAXIMUM DOOR SIZE	MAXIMUM DESIGN PRESSURE	HINGING OPTIONS	GLAZING STOP OPTIONS	GLASS THICKNESS
MS 1850 3-Point Lock (Active leaf)  Flushbolts (Inactive leaf)	Single 3' 6" x 7' 6" (1,066.8 x 2,286) Pair 7' 0" x 7' 6" (2,133.6 x 2,286)	± 70 PSF	Offset Pivots Butt Hinges Continuous Hinge	1	1" (25.4)
Kawneer 1686 Concealed Rod Exit Device (MEL option)	Single 3' 6" x 7' 6" (1,066.8 x 2,286) Pair 7' 0" x 7' 6" (2,133.6 x 2,286)	± 70 PSF	Offset Pivots Butt Hinges Continuous Hinge	1	1" (25.4)
Corbin Russwin ED5200S Rim Device	Single 3' 6" x 7' 6" (1,066.8 x 2,286) Pair 7' 0" x 7' 6" (2,133.6 x 2,286)	± 50 PSF (Zone 3 only)	Offset Pivots Butt Hinges Continuous Hinge	1	1" (25.4)
Schlage L9453P Mortise Lock	Single 3' 6" x 7' 6" (1,066.8 x 2,286)	± 75 PSF	Offset Pivots Butt Hinges Continuous Hinge	1	1" (25.4)

**Glazing Stop Options:**

1 - Structural silicone with 0.090 Kuraray or Eastman PVB inter layer.

## ENTRANCE HARDWARE OFFERINGS



LOCKING OPTIONS	MAXIMUM DOOR SIZE	MAXIMUM BLAST LOADING	HINGING OPTIONS	GLAZING STOP OPTIONS	GLASS THICKNESS
MS 1850 3-Point Lock (Active leaf)  Flushbolts (Inactive leaf)	Single 3' 6" x 6' 6" (1,066.8 x 1,981.2) Pair 7' 0" x 6' 6" (2,133.6 x 1,981.2)	Peak Pressure: 4 PSI  Impulse: 28 PSI•MSEC	Offset Pivots Butt Hinges	1	1" (25.4)
Schlage L9453P Mortise Lock	Single 3' 6" x 6' 6" (1,066.8 x 1,981.2)	Peak Pressure: 4 PSI  Impulse: 28 PSI•MSEC	Offset Pivots Butt Hinges	1	1" (25.4)

Test conditions shown. Other conditions may be supported through calculation.

**Glazing Stop Options:**

1 - Structural silicone with 0.060 Kuraray or Eastman PVB inter layer.

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	STANDARD	OPTIONAL
<b>Doors</b>	Flushline® doors prepared for attachment hardware.	
<b>Door Sizes Std.</b>	Standard sizes shown on pages 12 thru 15.	Any size up to 4' 0" x 8' 0" (1,219 x 2,438).
<b>Glass Stops</b>	Vision Lite for 1/4" (6.4) or 3/16" (4.0) infill.	Vision Lite for 1" (25.4) infill. Vision Lite for 1" (25.4) impact infill.
<b>Door Frames</b>	<b>Trifab® VG 450</b> Center - 1-3/4" x 4-1/2" (44.5 x 114.3) for single glazing. <b>Trifab® VG 451</b> Center - 2" x 4-1/2" (50.8 x 114.3) for double glazing.	Any Kawneer framing system suitable for door frames may be selected, but manufactured per order. For hurricane impact framing refer to test reports and product approvals for available frame options.
<b>Push-Pulls</b>	<b>Single Acting:</b> Architects Classic Hardware CO-9 Pull and CP-II Push Bar.  Architects Classic Hardware CO-9 Pull and CP Push Bar.	<b>Single Acting:</b> Architects Classic Hardware CO-12 and CP-II push bar.  Architects Classic Hardware CO-12 and CP push bar.  Architects Classic Hardware CO-9/CO-9 Pulls.  Architects Classic Hardware CO-12/CO-12 Pulls  Recessed Pull
<b>Door Closers</b>	<b>Single Acting:</b> Norton 1601 adjustable or 1601 BF adjustable surface closer with back-check and with or without adjustable hold-open.  Standard concealed overhead closer with single acting offset arm.	<b>Single Acting:</b> LCN 4040 surface closer with or without adjustable hold-open.  LCN 2030 or 5010 concealed overhead closers with or without hold-open.  LCN 1260 adjustable surface closer.  Norton 8100 surface closer with a 50% spring power adjustment (for opening forces of less than 8 pounds). Closer is available with standard back-checks and with or without the hold-open feature.  International single acting concealed overhead closer.  Falcon SC 60 surface closer.
<b>Hinging</b>	<b>Single Acting:</b> Kawneer top and bottom offset pivots (or) Kawneer top and bottom 4-1/2" x 4" (114.3 x 101.6) ball bearing butt hinge with non-removable pin (NRP) (or) Kawneer continuous gear hinge.	
<b>Intermediate Pivots/Butts</b>	<b>Single Acting:</b> Rixson M-19 or IVES #7215-INT intermediate offset pivot (or) Kawneer 4-1/2" x 4" (114.3 x 101.6) ball bearing butt hinge with non-removable pin (NRP).	
<b>Power Transfers</b>	<b>Single Acting:</b> Rixson M-19 EL or IVES #7215-INT intermediate offset pivot (or) Kawneer EL 4-1/2" x 4" (114.3 x 101.6) ball bearing butt hinge with wire transfer (or) EPT (Electric Power Transfer).	
<b>Power Supply</b>	<b>SP-1000X Power Supply:</b> For use with Paneline® EL exit devices. For use with Falcon EL 1690 and EL 1790 exit devices.  <b>SP-2000 Power Supply:</b> For use with Paneline® MEL exit devices.	<b>NP1 Power Supply:</b> For use with Kawneer 1686 MEL and 1786 MEL exit devices only.
<b>Locks - Active Leaf</b>	Adams-Rite MS 1850A deadlock with two 1-5/32" (29.4) diameter 5 pin cylinders.	Adams-Rite #4510 latch lock. Adams-Rite #1850A-020 short throw deadlock. Adams-Rite #1850A-050 hookbolt lock. Adams-Rite #4015 two-point Lock. Adams-Rite #4085 three-point Lock. Adams-Rite #4089 exit indicator. Kawneer cylinder guard. Kawneer thumbturn (in lieu of cylinder). Schlage L9453P mortise lock. Yale 8860 mortise lock. Yale 5407 knob lock. Corbin Russwin CK4451 knob lock.

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	STANDARD	OPTIONAL
<b>Locks - Inactive Leaf</b>	One pair of Kawneer flush bolts in the inactive leaf of a pair of doors.	
<b>Thresholds</b>	A 1/2" x 4" (12.7 x 101.6) aluminum mill finish threshold.	A 1/2" x 6-3/4" (12.7 x 171.5) aluminum mill finish threshold.
<b>Weathering</b>	<b>Single Acting:</b> Weathering system in the door and frame consisting of a dense, bulb polymeric material, which remains resilient and retains its weathering ability under temperature extremes. (The system is complete with an optional EPDM blade gasket sweep strip applied to the bottom door rail with concealed fasteners).	Bottom Door Sweep
<b>Exit Device</b>	<p><b>Kawneer 1686 Concealed Rod Exit Device</b> with or without a mortised type cylinder.</p> <p><b>Kawneer 1786 Rim Exit Device</b> is a rim type exit device with or without a rim type cylinder. Pairs of doors require a Kawneer RM-86 removable mullion.</p> <p><b>Paneline®</b> exit device is a concealed rod exit device applicable to single or pairs of doors. It features an activating panel contained within the door cross rail.</p>	<p><b>Kawneer 1686 MEL Concealed Rod Exit Device</b> electric modification is available.</p> <p><b>Kawneer 1786 MEL Rim Exit Device</b> electric modification is available.</p> <p><b>Kawneer 1686 CD Concealed Rod Exit Device</b> available with cylinder dogging.</p> <p><b>Kawneer 1786 CD Rim Exit Device</b> available with cylinder dogging.</p> <p><b>Kawneer 1686 Lever Handle</b> is available for the Kawneer 1686 concealed rod exit device.</p> <p><b>Kawneer 1786 Lever Handle</b> is available for the Kawneer 1786 rim type exit device.</p> <p><b>Falcon 1690 Concealed Rod Exit Device</b> with or without a mortised type cylinder.</p> <p><b>Falcon 1790 Rim Exit Device</b> is a rim type exit device with or without a rim type cylinder.</p> <p><b>Falcon EL 1690</b> electric modification is also available.</p> <p><b>Falcon EL 1790</b> electric modification is also available</p> <p><b>Paneline® MEL</b> electric modification is also available.</p> <p><b>Corbin Russwin ED5200S Rim Exit Device</b> is a rim type exit device. Pairs of doors require a removable mullion, WS707/708AKM.</p> <p><b>Falcon 1990</b> is a concealed rod exit device with or without a rim type cylinder.</p> <p><b>Falcon 2090</b> is a rim type exit device with or without a rim type cylinder. Pairs of doors require a removable aluminum mullion. RM-70 with the Falcon 2090 exit device.</p>
	<p><b>Exit Device Pulls:</b> Architects Classic CO-9 Pull with Kawneer 1686 and 1786 exit devices. Architects Classic CO9 Pull for Paneline® and Paneline® MEL exit devices.</p>	<p><b>Optional Exit Device Pulls:</b> Architects Classic CO-12 Pull with Kawneer 1686 and 1786 exit devices.</p>

## APPLICATION CRITERIA

As indicated on page 13, the standard sizes of swing doors are 3' 0" x 7' 0" (914.4 x 2,133.6) or 3' 6" x 7' 0" (1,067 x 2,134) for single doors and 6' 0" x 7' 0" (1,828.8 x 2,133.6) for pairs of doors. When these sizes are exceeded the following criteria should be administered.

1. Larger doors should not be subject to heavy traffic or strong prevailing wind conditions.
2. Larger doors should use a door closer with a good back check action.
3. When a door exceeds 9' 0" (2,743.2) in height, a crossrail or push bar is recommended to reinforce the internal vertical stiles.
4. When an offset hung door exceeds 7' 6" (2,286.0) in height, an intermediate butt or offset pivot should be used.
5. Tall doors should be prevented from racking by proper utilization of hardware, including door closers, door holders and door stops.
6. Maximum door height for Paneline® MEL = 8' 0" (2,438.4).
7. Maximum door height for Embossed Aluminum Face Sheets = 8' 0" (2,438.4).

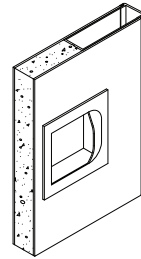
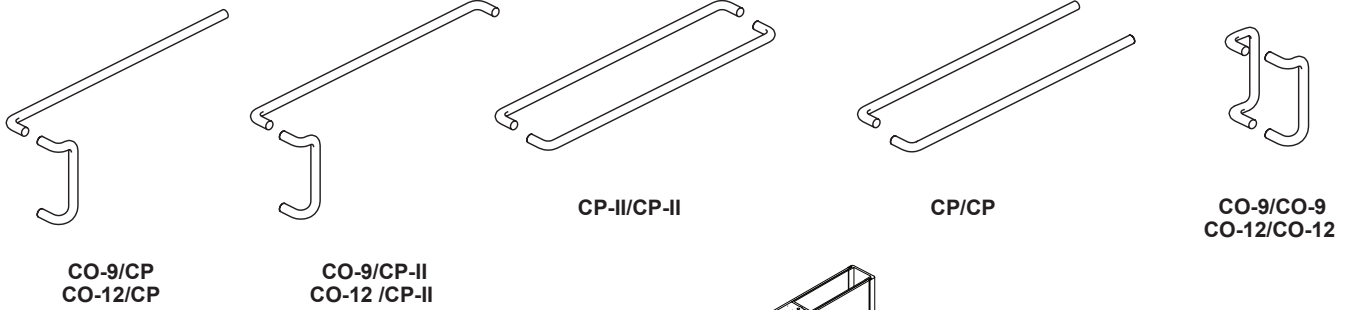
### NOTE:

SOME OF THESE CRITERIA ARE OF A SUBJECTIVE NATURE, CONTACT YOUR FACTORY REPRESENTATIVE FOR APPLICATION ASSISTANCE.

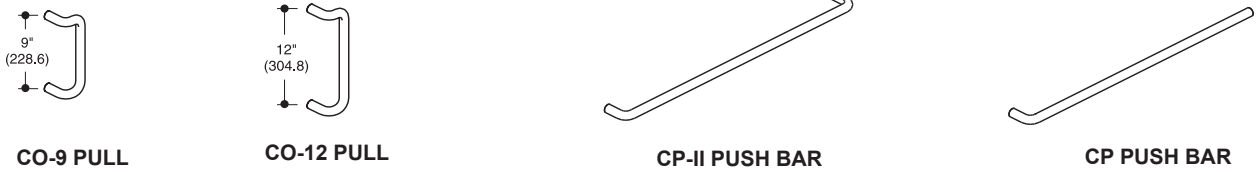
REFER TO **HARDWARE SECTION** FOR COMPLETE HARDWARE INFORMATION.

**ARCHITECTS CLASSIC (PUSH PULL SETS)**

SINGLE ACTING DOORS USE A PULL HANDLE AND PUSH BAR AS STANDARD

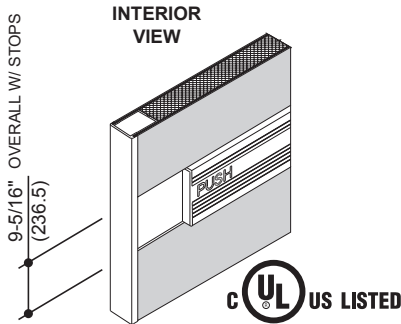


**ARCHITECTS CLASSIC (COMPONENTS)**

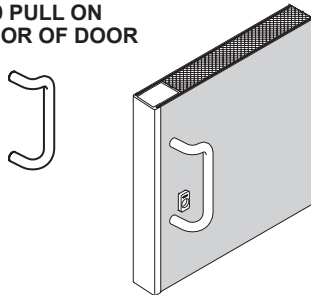


**EXIT DEVICES**

**KAWNEER PANELINE® / PANELINE® MEL**



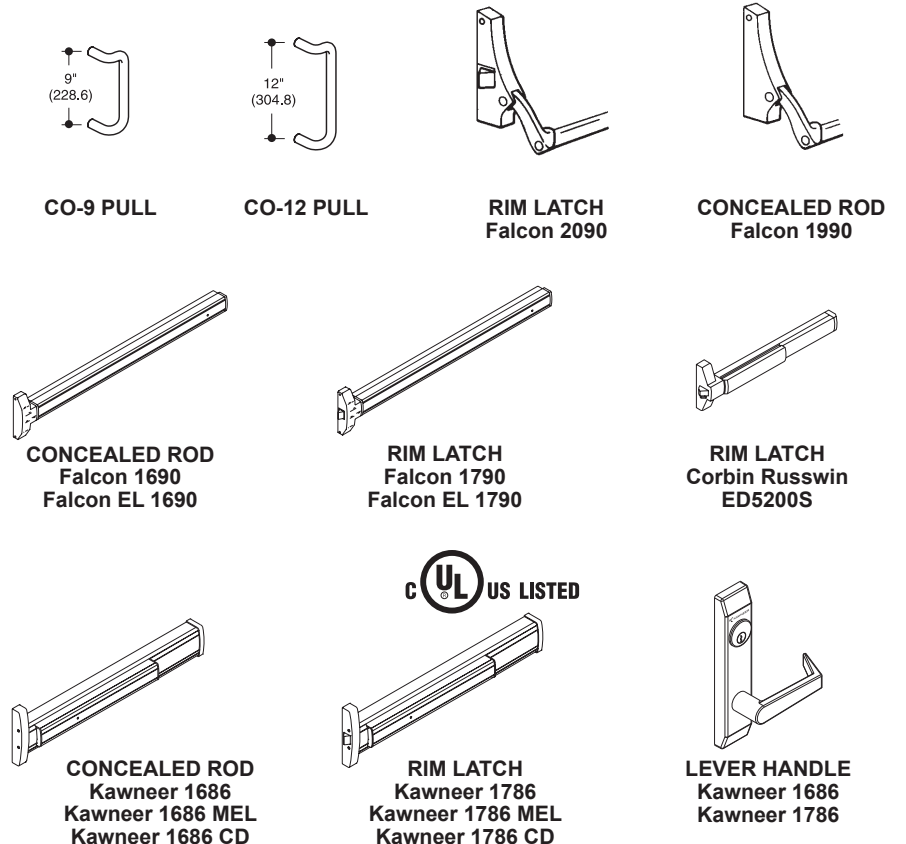
**CO9 PULL ON EXTERIOR OF DOOR**



EXTERIOR VIEW OF FLUSHLINE® DOOR  
CO9 PULL AND OPTIONAL CYLINDER GUARD SHOWN.

SEE PAGE 20 AND 21 FOR COMPLETE  
PANELINE® INFORMATION

**EXIT DEVICES AND PULLS**



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The Paneline® concealed rod exit device for Flushline® doors will accommodate variations in stile width and door width as shown in the following illustrations. Sidelites adjacent to Paneline® equipped doors not requiring exit devices may be fitted with fixed panels as detailed below to match the general appearance of the Paneline® cross rail.



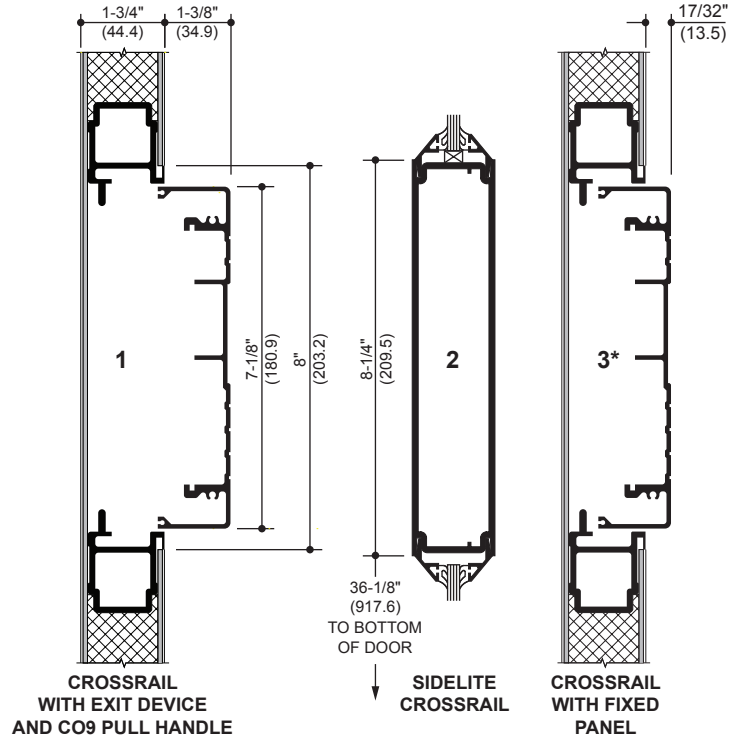
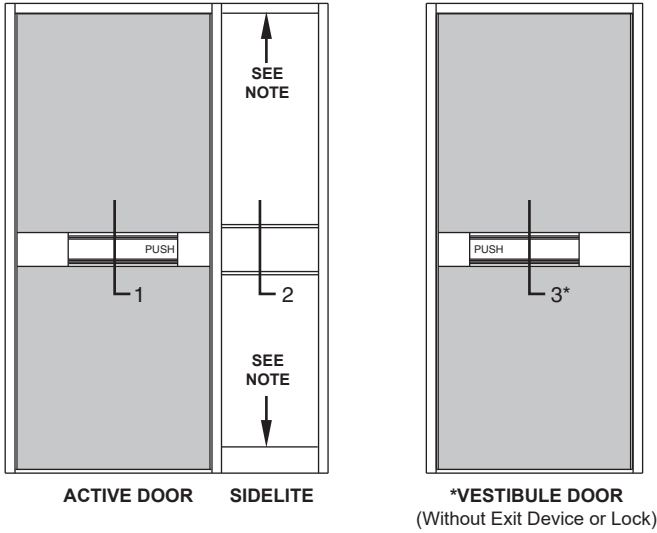
The Optional Paneline® MEL device is designed for electrified access control and is compatible with most key pad and card reader systems.

See **Hardware Section** for complete description of Paneline® hardware, including finish of units.

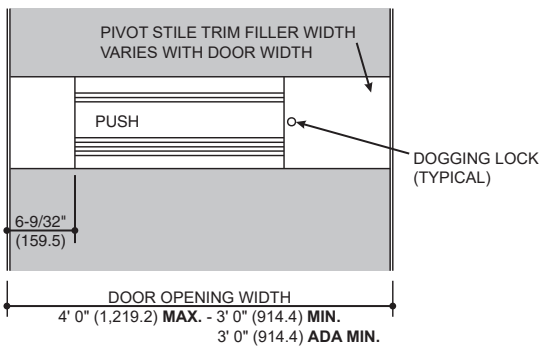
**Paneline® uses mortise cylinder in lieu of the normal rim-type. Dummy Paneline® units are not for use with any type of lock.**

### INTERIOR ELEVATIONS

**NOTE:** Sidelites must be stop glazed above and below rail.



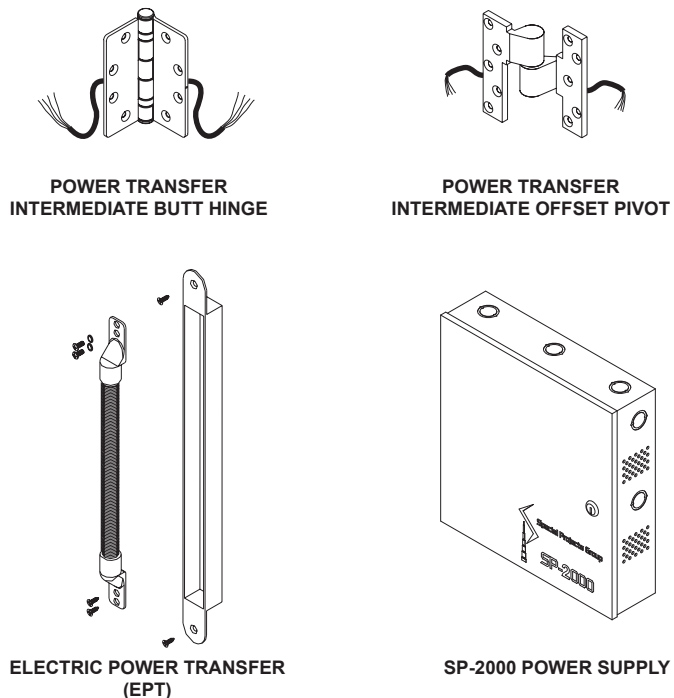
### INTERIOR VIEW



### EXTERIOR VIEW



### PANELINE® MEL COMPONENTS



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Sidelites adjacent to Paneline® equipped doors not requiring exit devices may be fitted with fixed panels as detailed below to match the general appearance of the Paneline® cross rail.

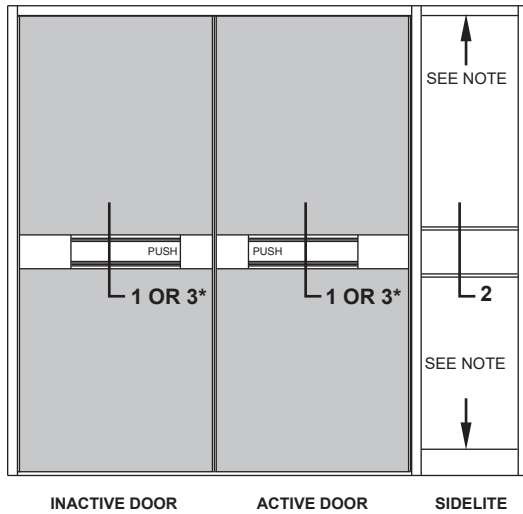
See **Hardware Section** for complete description of Paneline® hardware, including finish of units.

**Paneline® uses mortise cylinder in lieu of the normal rim-type. Dummy Paneline® units should not use any type of lock.**

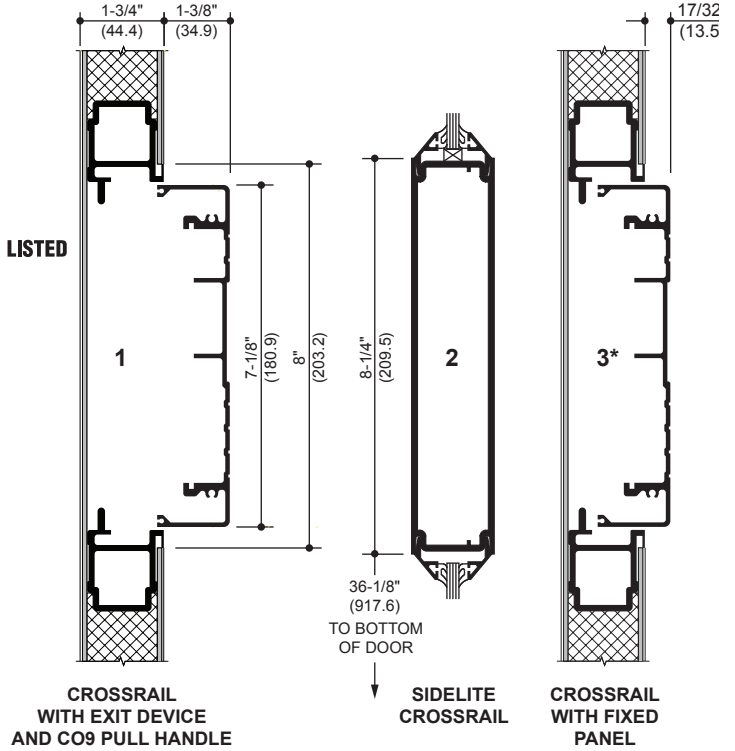
Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

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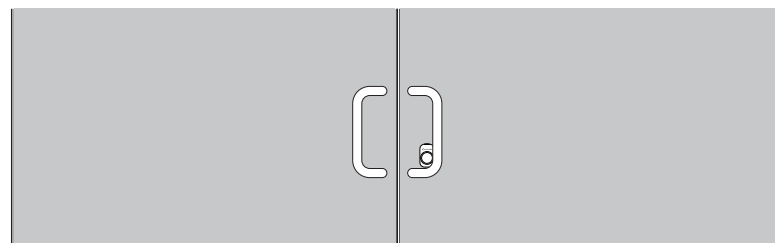
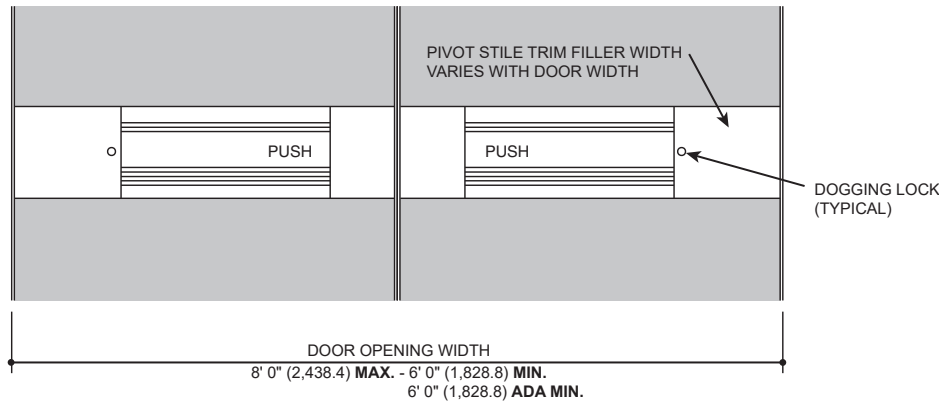
**INTERIOR ELEVATION**  
NOTE: Sidelites must be stop glazed above and below rail.



**\* ALTERNATE CROSSRAIL FOR VESTIBULE DOORS (Without Exit Device or Lock)**



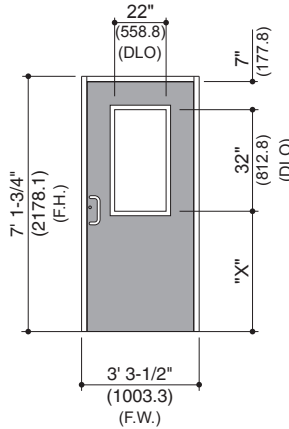
**INTERIOR VIEW**



**EXTERIOR VIEW WITH "CO9" PULL AND STANDARD CYLINDER GUARD SHOWN**

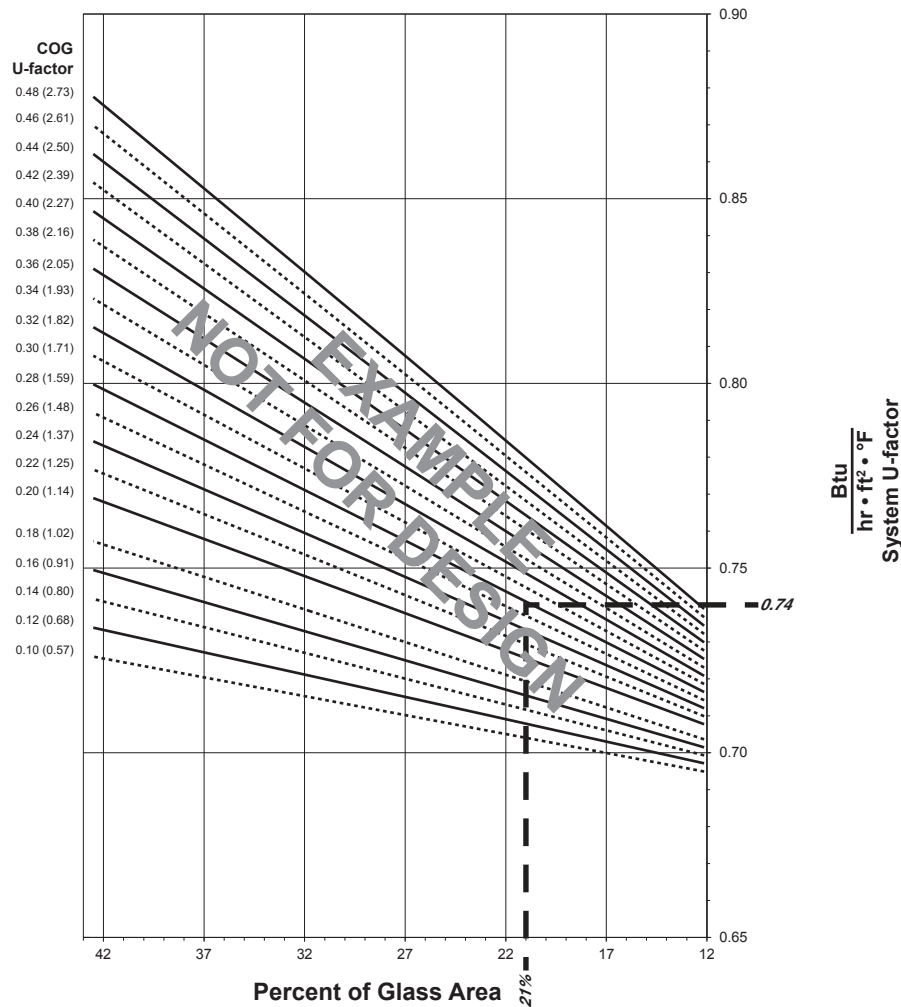


**Generic Project Specific U-factor Example Calculation**  
 (Percent of Glass will vary on specific products depending on sitelines)



Example Glass U-Factor = 0.28 Btu/hr • ft<sup>2</sup> • °F  
 Total Daylight Opening = 22" x 32" = 4.89 ft<sup>2</sup>  
 Total Projected Area = 3' 3-1/2" x 7' 1-3/4" = 23.52 ft<sup>2</sup>  
 Percent of Glass = (Total Daylight Opening ÷ Total Projected Area)100  
 = (4.89 ÷ 23.52)100 = 21%

**System U-factor vs Percent of Glass Area**



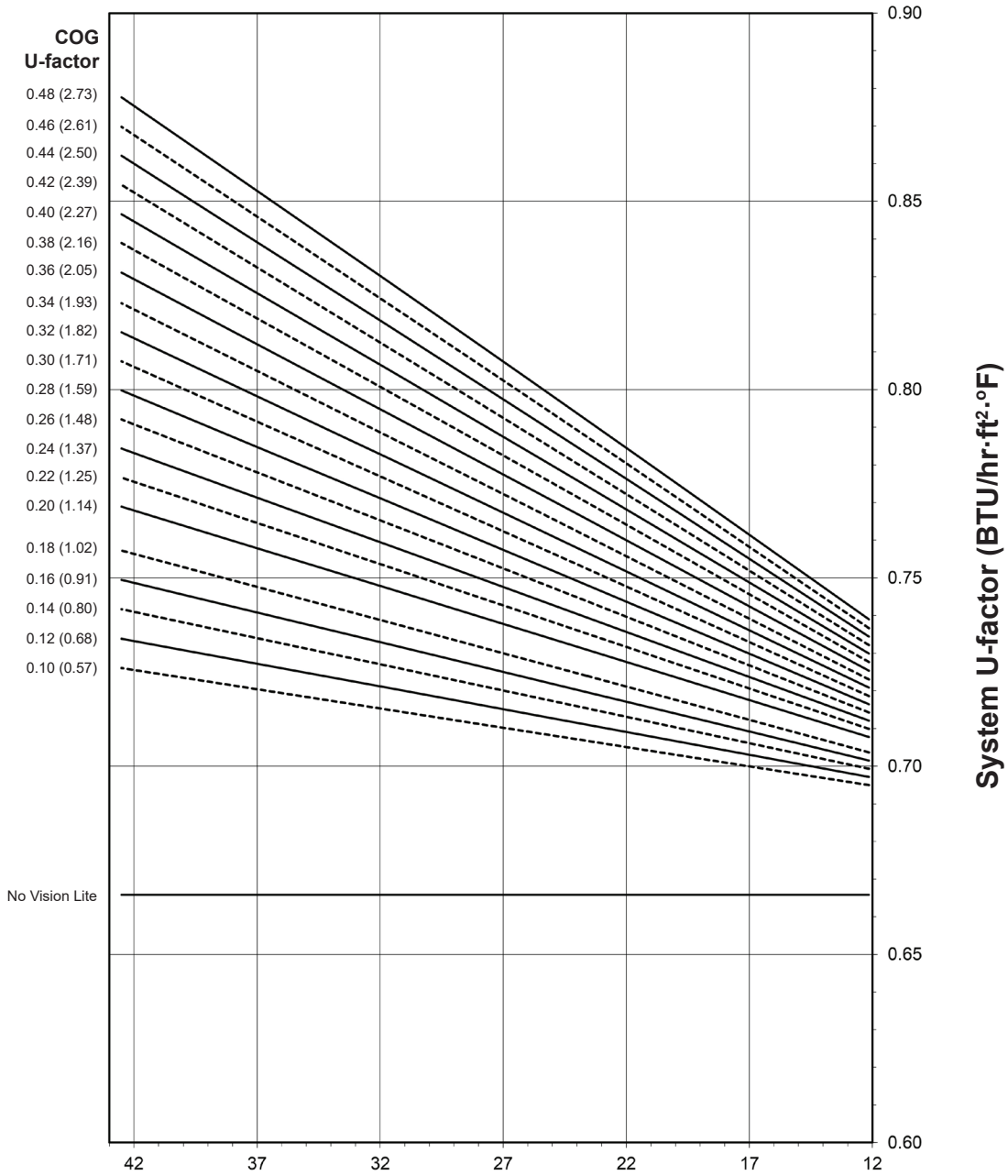
Based on 21% glass and center of glass (COG) U-factor of 0.28  
 System U-factor is equal to 0.74 Btu/hr • ft<sup>2</sup> • °F

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**FLUSHLINE® DOOR WITH ALUMINUM SKIN**

**System U-factor vs Percent of Glass Area**



**Percent of Glass = Vision Area/Total Area  
(Total Daylight Opening / Projected Area)**

**Notes for System U-Factor, SHGC and VT charts:**

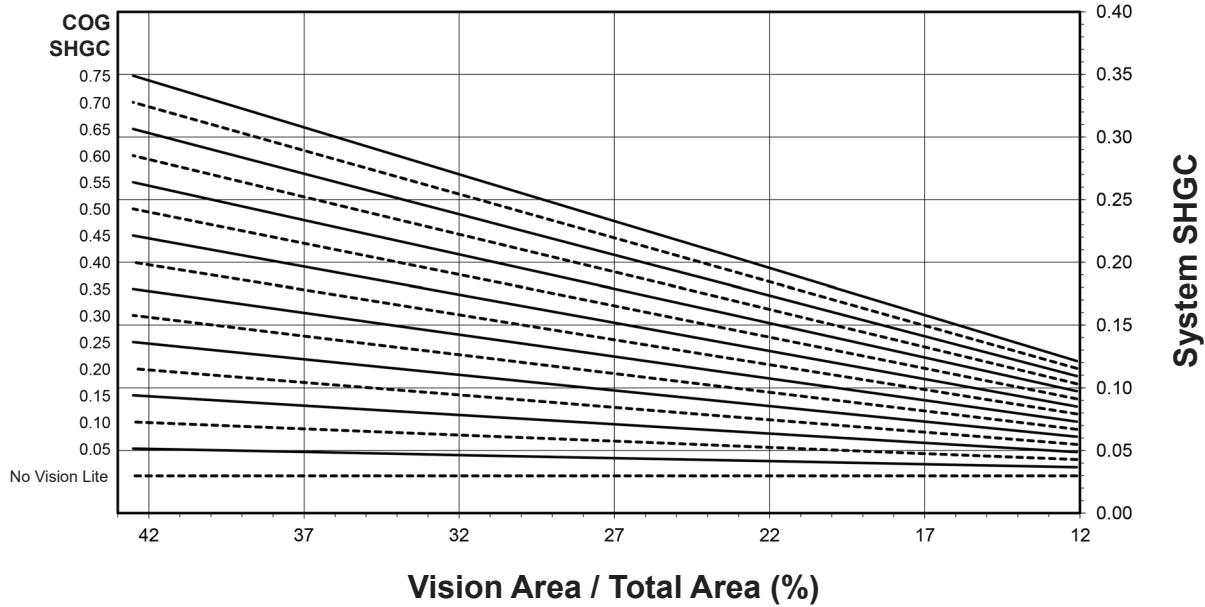
For glass values that are not listed, linear interpolation is permitted.  
Glass properties are based on center of glass values (winter conditions) and are obtained from your glass supplier.

Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

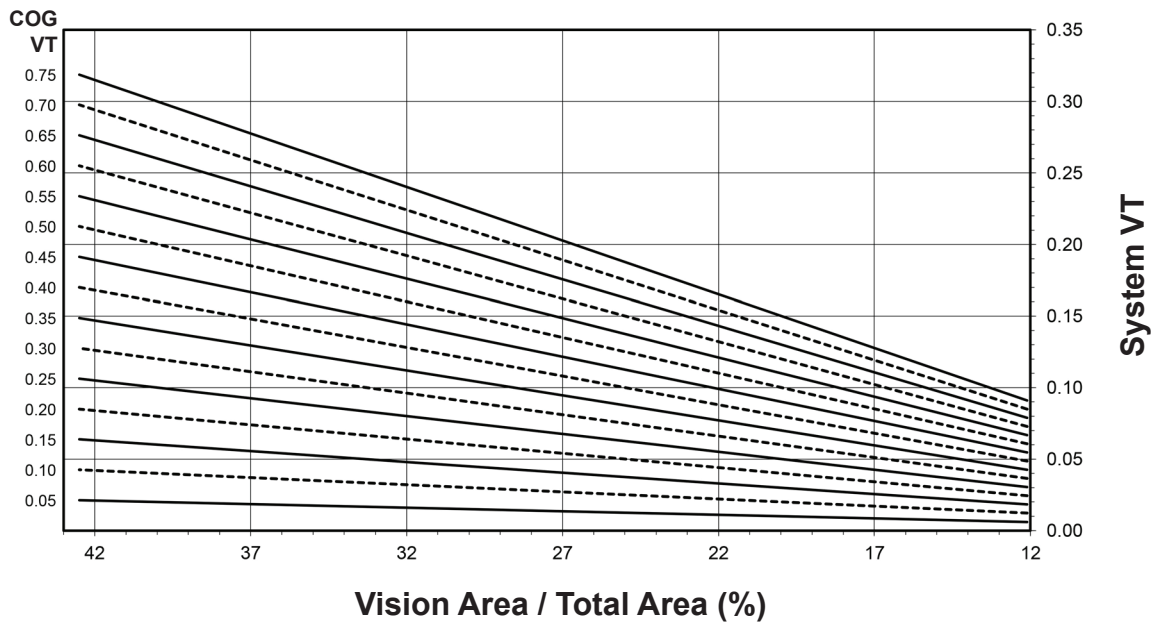
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FLUSHLINE® DOOR WITH ALUMINUM SKIN

**System Solar Heat Gain Coefficient (SHGC) vs Percent of Vision Area**



**System Visible Transmittance (VT) vs Percent of Vision Area**



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**Thermal Transmittance <sup>1</sup> (BTU/hr • ft<sup>2</sup> • °F)**

Glass U-Factor <sup>3</sup>	Overall U-Factor <sup>4</sup>
0.48	0.74
0.46	0.74
0.44	0.73
0.42	0.73
0.40	0.73
0.38	0.73
0.36	0.73
0.34	0.72
0.32	0.72
0.30	0.72
0.28	0.72
0.26	0.71
0.24	0.71
0.22	0.71
0.20	0.71
0.18	0.70
0.16	0.70
0.14	0.70
0.12	0.70
0.10	0.69
No Vision Lite	0.67

**Single Door with Aluminum Panel and 1/4 Vision Lite**

**NOTE:** For glass values that are not listed, linear interpolation is permitted.

1. U-Factors are determined in accordance with NFRC 100.
2. SHGC and VT values are determined in accordance with NFRC 200.
3. Glass properties are based on center of glass values (winter conditions) and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 1,920 mm wide by 2,090 mm high (75-1/2" by 82-3/8").

**SHGC Matrix <sup>2</sup>**

Glass SHGC <sup>3</sup>	Overall SHGC <sup>4</sup>
0.75	0.12
0.70	0.12
0.65	0.11
0.60	0.10
0.55	0.10
0.50	0.09
0.45	0.09
0.40	0.08
0.35	0.07
0.30	0.07
0.25	0.06
0.20	0.05
0.15	0.05
0.10	0.04
0.05	0.04
No Vision Lite	0.03

**Visible Transmittance <sup>2</sup>**

Glass VT <sup>3</sup>	Overall VT <sup>4</sup>
0.75	0.09
0.70	0.08
0.65	0.08
0.60	0.07
0.55	0.07
0.50	0.06
0.45	0.05
0.40	0.05
0.35	0.04
0.30	0.04
0.25	0.03
0.20	0.02
0.15	0.02
0.10	0.01
0.05	0.01
No Vision Lite	0.00

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### Thermal Transmittance <sup>1</sup> (BTU/hr • ft<sup>2</sup> • °F)

Glass U-Factor <sup>3</sup>	Overall U-Factor <sup>4</sup>
0.48	0.79
0.46	0.79
0.44	0.78
0.42	0.78
0.40	0.77
0.38	0.77
0.36	0.77
0.34	0.76
0.32	0.76
0.30	0.75
0.28	0.75
0.26	0.74
0.24	0.74
0.22	0.74
0.20	0.73
0.18	0.72
0.16	0.72
0.14	0.72
0.12	0.71
0.10	0.71
No Vision Lite	0.67

### Single Door with Aluminum Panel and 1/2 Vision Lite

**NOTE:** For glass values that are not listed, linear interpolation is permitted.

1. U-Factors are determined in accordance with NFRC 100.
2. SHGC and VT values are determined in accordance with NFRC 200.
3. Glass properties are based on center of glass values (winter conditions) and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 960 mm wide by 2,090 mm high (37-3/4" by 82-3/8").

### SHGC Matrix <sup>2</sup>

Glass SHGC <sup>3</sup>	Overall SHGC <sup>4</sup>
0.75	0.21
0.70	0.20
0.65	0.18
0.60	0.17
0.55	0.16
0.50	0.15
0.45	0.14
0.40	0.12
0.35	0.11
0.30	0.10
0.25	0.09
0.20	0.08
0.15	0.07
0.10	0.05
0.05	0.04
No Vision Lite	0.03

### Visible Transmittance <sup>2</sup>

Glass VT <sup>3</sup>	Overall VT <sup>4</sup>
0.75	0.18
0.70	0.17
0.65	0.15
0.60	0.14
0.55	0.13
0.50	0.12
0.45	0.11
0.40	0.09
0.35	0.08
0.30	0.07
0.25	0.06
0.20	0.05
0.15	0.04
0.10	0.02
0.05	0.01
No Vision Lite	0.00

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