

## **SL73 - Aluminum Framed Thermally Broken Hurricane Approved Folding System Approved with Impact Glass in Florida High Velocity Hurricane Zone (HVHZ) with FLO Product Approval #FL20107**

Suitable for Single Family Residences, both Mid and Low Rise Buildings

The SL73 is a monumentally-sized, thermally broken aluminum folding panel system designed to provide an opening glass wall or storefront up to 38' (11.5 m) wide (Florida Product Approval limit is max. width of 28' 8"). It is available in various configurations utilizing one to any number of panels. The running astragal design provides extra stability.

For benefits of all NanaWall systems, see the "General Introduction" section. For features common to aluminum folding systems, see the "Aluminum Folding Systems" Introduction.

For many applications, the SL73 provides hurricane protection that meets stringent hurricane code requirements and protects your property. With impact rated glass, there is no need of unattractive and inconvenient to use shutters. With the thermally broken aluminum profiles and with the use of insulated impact glass, it also meets many low energy code requirements.

### **Florida Product Approval FL #20107 - Hurricane and Impact Rated**

In accordance with Florida Test Protocols TAS 201 (large missile impact), TAS 202 (structural pressure, air, water (higher weather performance only), forced entry), and TAS 203 (cyclic pressure), NanaWall Systems has successfully tested and passed the SL73 in both inswing and outswing applications. The results apply for all stacking configurations. With panel sizes of 3' x 8', SL73 inswing with the higher weather performance sill achieved a DP rating of +70 psf / -100 psf, SL73 outswing with higher weather performance and SL73 inswing/outswing with saddle sill achieved DP ratings of +/- 70 psf.

With smaller panel sizes, higher DP ratings of up to +80 psf / -110 psf for inswing with a higher weather performance sill and +80 psf / -90 psf for outswing with a higher weather performance sill and inswing/outswing with a saddle sill are possible. See the Design Windload Charts for possibilities.

The SL73 inswing system with a higher weather performance or low profile saddle sill is approved with FL Product Approval #FL20107.1.

The SL73 outswing system with a higher weather performance or low profile saddle sill is approved with FL Product Approval #FL20107.2.

### **High Ratings with AAMA 506 Hurricane Impact and AAMA/WDMA/CSA 101/I.S.2/A440 Tests**

Units with panel sizes of 3' x 8' were tested per AAMA 506, "Voluntary Specifications for Hurricane Impact and Cycling Testing of Fenestration Products" and ASTM E1886 and ASTM E1996 with missile impacts corresponding to Missile Level D and Wind Zone 4. SL73 inswing with a Higher weather performance sill met the performance requirements for a +90 psf/ -110 psf Design Pressure. SL73 outswing with a Higher weather performance sill and inswing/outswing with saddle sills met the performance requirements for a +/- 90 psf Design Pressure.

AAMA A440 test results for structural pressure, air, water and forced entry were the same as Dade County Protocol TAS 202.

For detailed results, please see Performance pages.

### **High Ratings with Both Static and Dynamic Pressure Water Resistance Tests**

SL73 inswing/outswing with a Higher weather performance sill achieved a water rating of no leakage at 9 psf per ASTM E547/ E331 static water test. SL73 inswing with a Higher weather performance sill achieved a Performance Level 2 (no leakage more than allowable at 6-18 psf) and SL73 outswing with a Higher weather performance sill achieved a Performance Level 1 (no leakage more than allowable at 5-15 psf) per AAMA 520 dynamic water test.

### **NFRC-Approved Thermal Performance**

SL73 inswing and outswing models with all sill options have been rated, certified, and labeled in accordance with NFRC 100 and NFRC 200. With certain glass options, U-factor and SHGC values for certain climate zones can be met. See "Performance and Testing Results" section for more details.

### **Acoustical Performance**

Although the SL73 system has not been tested for acoustical performance with impact glass, the SL70 (which has the same profiles) has been tested by an independent acoustic lab for acoustical performance. The SL70 with a recessed sill and insulated tempered STC 32 glass achieved STC and Rw values of 33 and with STC 43 insulated laminated glass achieved

STC and Rw values of 41. Based on these results, the acoustical performance of the SL73 with insulated impact glass and with any of the sill options is estimated to be about STC 38.

### **Vandal-resistant / Bear-resistant**

The same qualities that make the SL73 hurricane-resistant also make it vandal-resistant and bear-resistant.

### **Dry Glazed Impact System**

The SL73 is dry glazed. The new improved glazing system for impact glass without the need of wet glazing with silicone makes a more efficient and flexible system.

### **Running Post, Floor Supported**

This system is ideal for applications where load-bearing capability of the header is a concern. The system's main weight is carried by the floor track. The upper track is merely a guide. The lower running carriages ride on top of the sill track and lie above the water run-off level.

### **Superior Thermal Break**

The system is thermally broken with a wide polyamide plastic reinforced with glass fibers. This thermal barrier provides increased strength, superior humidity control, improved acoustics, and energy savings.

### **Hardware Options**

For the main entry panel, several different locking options are available. Push-pull handles and kickplates are also available.

## **General Description**

The SL73 is a thermally broken aluminum folding panel system designed to provide an opening glass wall or storefront up to 38 feet (11.5 m) or more wide (see Maximum Size Chart). It is available in various configurations utilizing one to twelve panels or more (see elevation drawings). The running post design provides extra stability. An option for swing entry/exit panel(s) is available. Units can be either inward or outward opening (see details in the section drawings).

## **Frame and Panels**

The frame components, except for the saddle sill, are 3 1/8" (80 mm) wide extruded aluminum that is thermally broken with 3/4" (20 mm) wide polyamide plastic. The panels and running posts are 2 3/4" (70 mm) wide extruded aluminum that is thermally broken with a 15/16" (24 mm) wide polyamide plastic (see section drawings). In addition to the choices from the NanaWall Powder Coating Finish Chart, the full range of RAL high gloss and matte powder coatings are available. Anodized and flouropolymer kynar painted finishes are also available. See "Aluminum Finish Options" in the General Introduction. It is possible to have different finishes on the interior and exterior surfaces.

Panels and running posts are pre-assembled. All pins and screws to assemble frame are provided. Besides the higher weather performance (raised) sill, a thermally broken aluminum saddle sill (shown in section drawings) is available in a clear or dark bronze anodized finish.

## **Glazing**

Units can be supplied glazed with either annealed or heat strengthened 7/16" (11 mm) single impact glass or 1 1/8" (28 mm) insulated impact glass. According to the Dade County approval and engineering analysis, heat strengthened glass needs to be used for larger sized panels and/or higher design windloads; see product approval details.

## **Weatherstripping**

All weather stripping (consisting of EPDM or brush seals) is provided for sealing between panels and between panels and frames (see section drawings).

## **Sliding/Folding Hardware**

For sliding and folding each pair of panels, a patented, floor-supported lower running carriage is attached to the running post profile. An upper running carriage is attached as a guide (see the section drawings). The four roller lower running carriage lies above the water run-off level and is constructed to ensure even distribution of pressure on all four rollers.

Rollers are stainless steel and have sealed bearings to ensure reduced sound running and resistance to extreme temperature. Three to five hinges per connection are provided to connect panels and running post profiles together and to connect panels to the frame. Finish of standard zinc die cast hinges would be closest powder coat match to panel profile. Available as an option are stainless steel hinges.

### Locking Hardware and Handle Options

For each pair of folding panels (except for the pair to be opened first in a unit with no swing panel) provided is two-point locking hardware consisting of top and bottom Polyamide capped locking rods operated by a 180° turn of a handle on the inside only.

If there is a **swing panel**, there are the following hardware options on the main entry panel:

**1. Multi-point Locking.** Consisting of lever handles on both sides, a lockset, lockable latch, deadbolt, and rods at the top and the bottom. After turn of key or thumbturn, depression of handles withdraws latch, lifting of handles engages rods and turn of key or thumbturn engages deadbolt and locks. Locking is independently tested for acoustics, structural, air, water, and forced entry. For a unit with a secondary **swing panel** available are matching dummy lever handles on both sides and concealed flush bolts that operate the rods at the top and the bottom. Available with European profile cylinder or an adapter to accommodate a 7 pin SFIC core (SFIC core supplied by others).

**2. Deadbolt Lock and one point locking at the top and bottom.** Consisting of push/pull handles on both sides with deadbolt(s) operated by a lockset. Turn of key or thumb turn operates lock. Available is a lockset option of having key operation on both sides. Also provided is one point locking, which consists of Polyamide capped locking rods operated by a 180° turn of a flat handle on the inside at the top and bottom. The deadbolt is locked with a European profile cylinder or an adapter to accommodate a 7 pin SFIC core (SFIC core supplied by others). To keep the panel closed when locking points are disengaged, a door closer should be field installed, but note that a door closer can only be installed to a swing panel that is attached to the side jamb.

For a unit with **no swing panel**, on the folding pair is to be opened first: Two point locking hardware consisting of top and bottom Polyamide capped locking rods operated by a 180° turn of handle on either inside or outside. Lockable with a lockset. Turn of key or thumb turn operates lock.

For a unit where locking/handles inside only is desired, like in window applications, on all swing panels or pair of folding panels to be opened first, provided is two point locking with a handle on the inside only.

### Handle Finish Options:

Standard - Stainless steel lever, standard and L-shaped handles in brushed satin or black titanium finishes.

Optional - Brass lever handles in oil rubbed, satin nickel, or white finish.

Push/pull handles are available in brushed stainless steel.

# Higher Weather Performance (Raised) Sill

## SL73

TYPE OF TEST	INWARD OPENING UNITS Approved with Impact Glass in FL High Velocity Hurricane Zone (HVHZ) FL Product Approval #FL20107.1	OUTWARD OPENING UNITS Approved with Impact Glass in FL High Velocity Hurricane Zone (HVHZ) FL Product Approval #FL20107.2				
 <p><b>Air Infiltration</b> <sup>①</sup> Protocol TAS 202 and ASTM E-283, cfm/ft<sup>2</sup></p>	<p>@ <b>1.57</b> psf (75 Pa): <b>0.08 to 0.30</b> <b>A1 to A3</b> <sup>②</sup></p>	<p>@ <b>1.57</b> psf (75 Pa): <b>0.02 to 0.14</b> <b>A1 to A3</b> <sup>②</sup></p>				
 <p><b>Static Water Penetration</b> <sup>①</sup> Protocol TAS 202 and ASTM E-547 and E331</p>	<p>No uncontrolled water entry @ <b>9</b> psf (440 Pa)</p>	<p>No uncontrolled water entry @ <b>9</b> psf (440 Pa)</p>				
 <p><b>Dynamic Water Penetration</b> <sup>③</sup> AAMA 520 &amp; ASTM E-2268</p>	<p>Performance Level 2: No water entry above allowable @ <b>6-18</b> psf (300-860 Pa)</p>	<p>Performance Level 1: No water entry above allowable @ <b>5-15</b> psf (250-715 Pa)</p>				
 <p><b>Structural Load Deflection</b> <sup>①</sup> TAS 202 &amp; ASTM E-330: pass <i>Note that the structural test pressures were 50% higher than the design pressures.</i></p>	<p><b>DESIGN PRESSURE</b></p> <table border="0"> <tr> <td>Positive @ <b>70</b> psf (3350 Pa)</td> <td>Negative @ <b>100</b> psf (4785 Pa)</td> </tr> </table> <p>Class SP-PG70, Panel size - 3' x 8' (915 mm x 2438 mm) <sup>②</sup></p>	Positive @ <b>70</b> psf (3350 Pa)	Negative @ <b>100</b> psf (4785 Pa)	<p><b>DESIGN PRESSURE</b></p> <table border="0"> <tr> <td>Positive @ <b>70</b> psf (3350 Pa)</td> <td>Negative @ <b>70</b> psf (3350 Pa)</td> </tr> </table> <p>Class SP-PG70, Panel size - 3' x 8' (915 mm x 2438 mm) <sup>②</sup></p>	Positive @ <b>70</b> psf (3350 Pa)	Negative @ <b>70</b> psf (3350 Pa)
Positive @ <b>70</b> psf (3350 Pa)	Negative @ <b>100</b> psf (4785 Pa)					
Positive @ <b>70</b> psf (3350 Pa)	Negative @ <b>70</b> psf (3350 Pa)					
 <p><b>Missile Impact &amp; Cycling</b> <sup>①</sup> Protocols TAS 201 &amp; 203: Pass ASTM E1886 and E1996</p>	<p><b>WITH EITHER 7/16" SINGLE IMPACT OR 1 1/8" INSULATED IMPACT GLASS*</b></p> <p><b>DESIGN PRESSURE</b></p> <table border="0"> <tr> <td>Positive @ <b>90</b> psf (4300 Pa)</td> <td>Negative @ <b>110</b> psf (5260 Pa)</td> </tr> </table>	Positive @ <b>90</b> psf (4300 Pa)	Negative @ <b>110</b> psf (5260 Pa)	<p><b>WITH EITHER 7/16" SINGLE IMPACT OR 1 1/8" INSULATED IMPACT GLASS*</b></p> <p><b>DESIGN PRESSURE</b></p> <table border="0"> <tr> <td>Positive @ <b>90</b> psf (4300 Pa)</td> <td>Negative @ <b>90</b> psf (4300 Pa)</td> </tr> </table>	Positive @ <b>90</b> psf (4300 Pa)	Negative @ <b>90</b> psf (4300 Pa)
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Positive @ <b>90</b> psf (4300 Pa)	Negative @ <b>90</b> psf (4300 Pa)					
 <p><b>Forced Entry Resistance</b> <sup>①</sup></p>	<p>In accordance with Protocol TAS 202, AAMA-1304 and ASTM F842 requirements +F1</p>					

① Excerpts of results of 3 separate units of various panels and configurations tested by Architectural Testing, Inc., Fresno, CA, an independent testing laboratory in October 2009.

② For Canada, tested to NAFS-08 or equivalent and CSA A44051-09 (with weep holes in sills by others to drain standing water in sill channels)

③ Excerpts of results of 12' 11" W x 8' 3" H four panel units 1L3R tested by Architectural Testing, Inc., Fresno, CA, an independent testing laboratory in October 2009.

# Higher Weather Performance (Raised) Sill

## SL73



### Thermal Performance

Rated, certified and labeled in accordance  
with NFRC 100 and NFRC 200

TYPE OF GLASS (1 LITE)	CENTER OF GLASS U-FACTOR	INWARD OPENING UNITS			OUTWARD OPENING UNITS		
		UNIT U-FACTOR	SHGC <sup>③</sup>	VT <sup>④</sup>	UNIT U-FACTOR	SHGC <sup>③</sup>	VT <sup>④</sup>
Double IG Impact (air filled)	.45	.49	.48	.51	.50	.48	.51
Double IG Impact Low E (argon filled)	.24	.35	.19	.42	.36	.19	.42
Double IG Impact Low E #2 & #4 surfaces (argon filled)	.20	.32	.18	.40	.34	.18	.40
Single Impact	.94	.79	.51	.57	.81	.51	.57
Single Impact Low E (SB 70)	.94	.79	.25	.39	.81	.24	.39

### NOTES






③ SHGC = Solar Heat Gain Coefficient

④ VT = Visible Transmittance

Shown above are thermal values for select glass options only. Thermal values for many other glass options are available. These may be able to meet specific requirements, such as Energy Star values for other zones, CA Title 24 prescriptive values, other state and local energy codes, etc. Thermal values for glass with other Low E coatings and Suituitive dynamic glass are available. Please contact NanaWall for more information.

## Low Profile Saddle Sill

### SL73

TYPE OF TEST	INWARD OPENING UNITS Approved with Impact Glass in FL High Velocity Hurricane Zone (HVHZ) FL Product Approval #FL20107.1	OUTWARD OPENING UNITS Approved with Impact Glass in FL High Velocity Hurricane Zone (HVHZ) FL Product Approval #FL20107.2
 <b>Air Infiltration</b> <sup>①</sup> Protocol TAS 202 and ASTM E-283, cfm/ft <sup>2</sup>	@ <b>1.57</b> psf (75 Pa): <b>0.10</b> <b>A3</b> <sup>②</sup>	@ <b>1.57</b> psf (75 Pa): <b>0.11</b> <b>A3</b> <sup>②</sup>
	@ <b>6.24</b> psf (300 Pa): <b>0.26</b> without sweeps @ <b>6.24</b> psf (300 Pa): <b>0.31</b> with sweeps	@ <b>6.24</b> psf (300 Pa): <b>0.29</b> without sweeps @ <b>6.24</b> psf (300 Pa): <b>0.32</b> with sweeps
 <b>Water Penetration</b> <sup>①</sup> ASTM E-547 and E331 Not Dade County water rated	No uncontrolled water entry @ <b>5.25</b> psf (250 Pa)	No uncontrolled water entry @ <b>6.00</b> psf (300 Pa)
	Subject to the following adaptations of the sill in the field by others: <ol style="list-style-type: none"> <li>1. Remove the gaskets covering the inner channel.</li> <li>2. Drill weep holes through the bottom of this channel (about one 3/8" diameter weep hole per panel.)</li> <li>3. Drill weep holes through the lower front face of the sill to drain water collected (about two 3/8" diameter weep holes per panel through to the inside lower chamber.)</li> <li>4. Drill 3/8" diameter weep holes (one per panel) through the middle channel.</li> </ol> <p>Please note that due to varying site requirements and conditions, these sills will not be prepared for drainage by Nana Wall Systems, Inc. If this drainage system is desired, we recommend that a qualified professional construct this system on the project site strictly in accordance with NanaWall instructions with good waterproofing techniques. If drain connections are not made or are not possible, unit may leak with wind driven rain.</p>	
 <b>Structural Load Deflection</b> <sup>①</sup> TAS 202 & ASTM E-330: Pass	<b>DESIGN PRESSURE</b> Positive   Negative @ <b>70</b> psf   @ <b>70</b> psf (3350 Pa)   (3350 Pa) Class SP-PG70, Panel size - 3' x 8' (915 mm x 2438 mm) <sup>②</sup>	<b>DESIGN PRESSURE</b> Positive   Negative @ <b>70</b> psf   @ <b>70</b> psf (3350 Pa)   (3350 Pa) Class SP-PG70, Panel size - 3' x 8' (915 mm x 2438 mm) <sup>②</sup>
	<b>WITH EITHER 7/16" SINGLE IMPACT OR 1 1/8" INSULATED IMPACT GLASS*</b>	
 <b>Missile Impact &amp; Cycling</b> <sup>①</sup> Protocols TAS 201 & 203 ASTM E 1886 and E 1996: Pass	<b>DESIGN PRESSURE</b> Positive   Negative @ <b>90</b> psf   @ <b>90</b> psf (4300 Pa)   (4300 Pa)	<b>DESIGN PRESSURE</b> Positive   Negative @ <b>90</b> psf   @ <b>90</b> psf (4300 Pa)   (4300 Pa)
	<b>WITH EITHER 7/16" SINGLE IMPACT OR 1 1/8" INSULATED IMPACT GLASS*</b>	
 <b>Forced Entry Resistance</b> <sup>①</sup>	In accordance with TAS 202, AAMA-1304 and ASTM F842 requirements +F1	

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② For Canada, tested to NAFS-08 or equivalent and CSA A44051-09.

# Low Profile Saddle Sill

## SL73



### Thermal Performance

Rated, certified and labeled in accordance  
with NFRC 100 and NFRC 200

TYPE OF GLASS (1 LITE)	CENTER OF GLASS U-FACTOR	INWARD OPENING UNITS			OUTWARD OPENING UNITS		
		UNIT U-FACTOR	SHGC <sup>③</sup>	VT <sup>④</sup>	UNIT U-FACTOR	SHGC <sup>③</sup>	VT <sup>④</sup>
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Single Impact	.94	.80	.52	.57	.82	.51	.57
Single Impact Low E (SB 70)	.94	.80	.25	.39	.82	.25	.39

#### NOTES

③ SHGC = Solar Heat Gain Coefficient

④ VT = Visible Transmittance

Shown above are thermal values for select glass options only. Thermal values for many other glass options are available. These may be able to meet specific requirements, such as Energy Star values for other zones, CA Title 24 prescriptive values, other state and local energy codes, etc. Thermal values for glass with other Low E coatings and Suituitive dynamic glass are available. Please contact NanaWall for more information.

ALLOWABLE DESIGN PRESSURE FOR INWARD OPENING UNITS WITH HIGHER WEATHER PERFORMANCE (RAISED) SILL									
MAXIMUM PANEL HEIGHT	MAXIMUM PANEL WIDTH	ALLOWABLE PRESSURE (PSF) FOR TYPES OF IMPACT GLASS							
		HEAT STRENGTHENED GLASS (ALL GLASS TYPES)		SINGLE ANNEALED GLASS		INSULATED ANNEALED GLASS WITH 3/16" OUTBOARD PANE		INSULATED ANNEALED GLASS WITH 1/4" OUTBOARD PANE	
		POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
8' 0"	3' 0"	70	100	70	87.4	70	94.3	70	99.8
	2' 9"	75.8	108.2	75.8	105	75.8	108.2	75.8	108.2
	2' 6"	80	110	80	110	80	110	80	110
	2' 3" and less	80	110	80	110	80	110	80	110
7' 6"	3' 0"	74.5	106.4	74.5	92.9	74.5	100	74.5	106
	2' 9"	80	110	80	107	80	110	80	110
	2' 6" and less	80	110	80	110	80	110	80	110
7' 0"	3' 0"	79.6	110	79.6	97.5	79.6	105	79.6	110
	2' 9"	80	110	80	110	80	110	80	110
6' 6" and less	3' 0"	80	110	80	102	80	110	80	110
	2' 9" and less	80	110	80	110	80	110	80	110

Allowable Design Pressures for other sizes can be extrapolated from the above values.

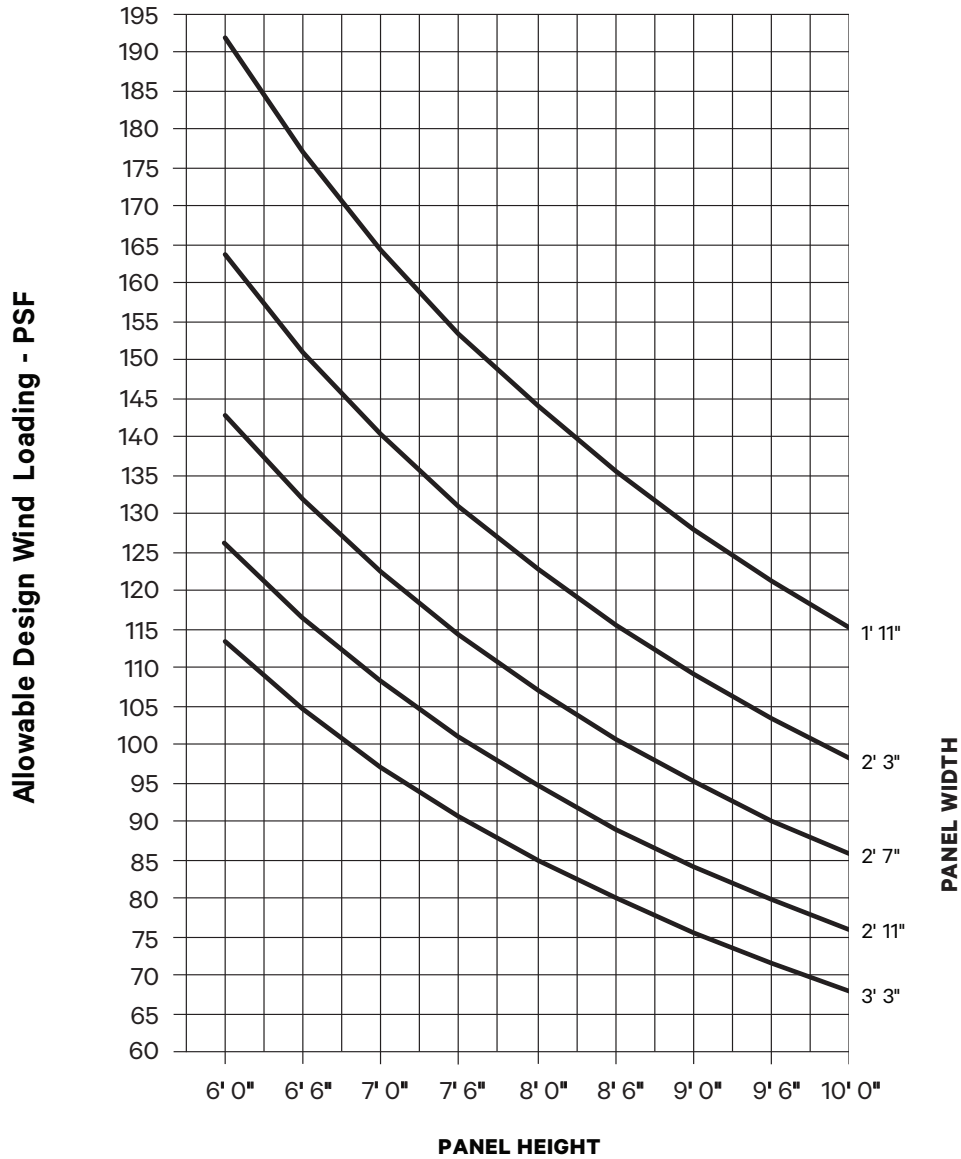
ALLOWABLE DESIGN PRESSURE FOR OUTWARD OPENING UNITS WITH EITHER HIGHER WEATHER PERFORMANCE (RAISED) OR LOW PROFILE SADDLE SILL AND FOR INWARD OPENING WITH LOW PROFILE SADDLE SILL									
MAXIMUM PANEL HEIGHT	MAXIMUM PANEL WIDTH	ALLOWABLE PRESSURE (PSF) FOR TYPES OF IMPACT GLASS ALL GLASS TYPES BOTH ANNEALED AND HEAT STRENGTHENED							
		POSITIVE				NEGATIVE			
8' 0"	3' 0"	70				70			
	2' 9"	75.8				75.8			
	2' 6"	80				82.5			
	2' 3" and less	80				90			
7' 6"	3' 0"	74.5				74.5			
	2' 9"	80				80.6			
	2' 6"	80				87.8			
	2' 5" and less	80				90			
7' 0"	3' 0"	79.6				79.6			
	2' 9"	80				86.1			
	2' 7" and less	80				90			
6' 6" and less	3' 0"	80				84.4			
	2' 9" and less	80				90			

Allowable Design Pressures for other sizes can be extrapolated from the above values.



**For Areas Where Comparative Analysis is Accepted in Lieu of FL Product Approval**

**Applies to Negative Design Pressures for  
Inswing Units with the Higher Weather Performance Sill  
(In Accordance with Allowable Stress Design (ASD) Design Pressures\*)**



**Any Custom is Possible. See Maximum Frame Size Chart for Maximum Possible Sizes.**

(Derived from Comparative Analysis) Test Panel Size: 3'0" W x 9'8" H

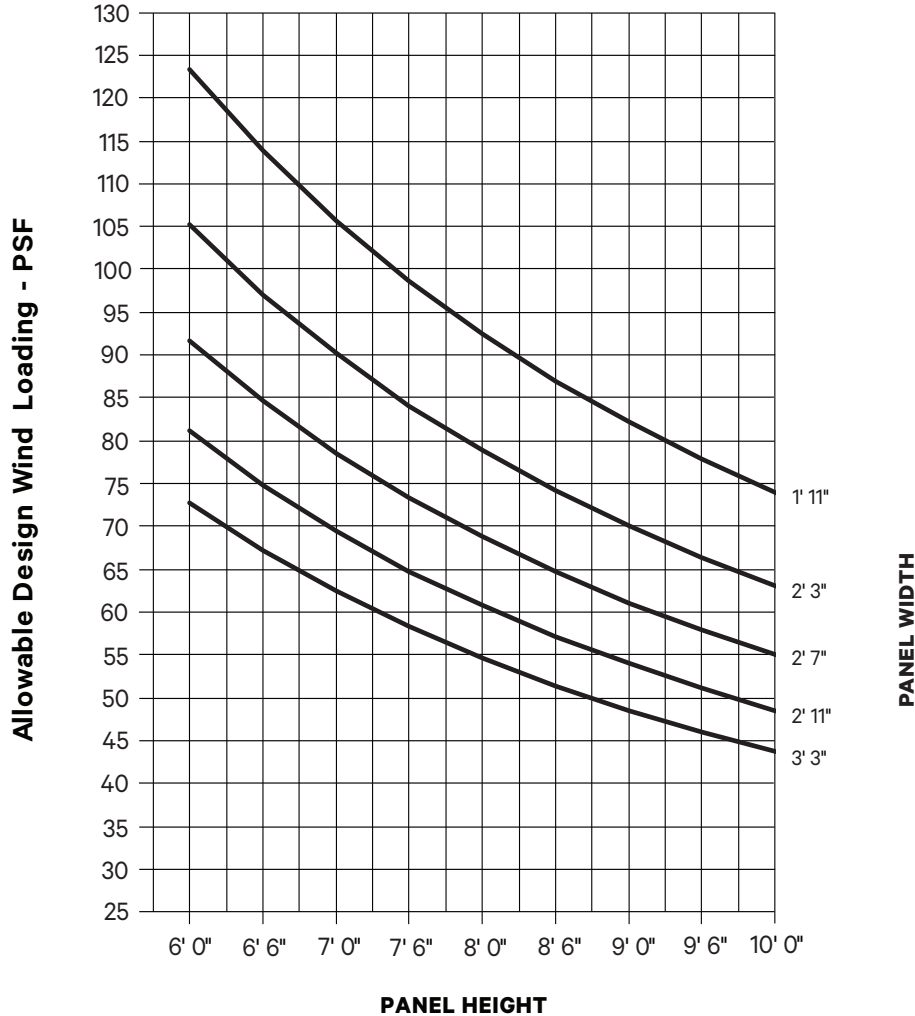
Please note that some jurisdictions may limit the use of these charts or may not accept them at all. Design pressures and/or sizes may be restricted to what was tested. This chart is only applicable for units with referenced NanaWall supplied locking.

\* If the project design pressures have been calculated in accordance with Ultimate Design Wind Speed (ULT), then these design pressures have to be multiplied by a factor of 0.6 to obtain the equivalent ASD design pressures shown in this chart.

**For Areas Where Comparative Analysis is Accepted in Lieu of FL Product Approval**

**Applies to Positive Design Pressures for Inswing Units and Negative Design Pressures for Outswing Units with the Higher Weather Performance, Low Profile Saddle, and Flush Sill; Positive Design Pressures for Outswing Units with the Higher Weather Performance Sill**

(In Accordance with Allowable Stress Design (ASD) Design Pressures\*)



**Any Custom Size is Possible. See Maximum Frame Size Chart for Maximum Possible Sizes.**

(Derived from Comparative Analysis) Test Panel Size: 3' 0" W x 9' 8" H

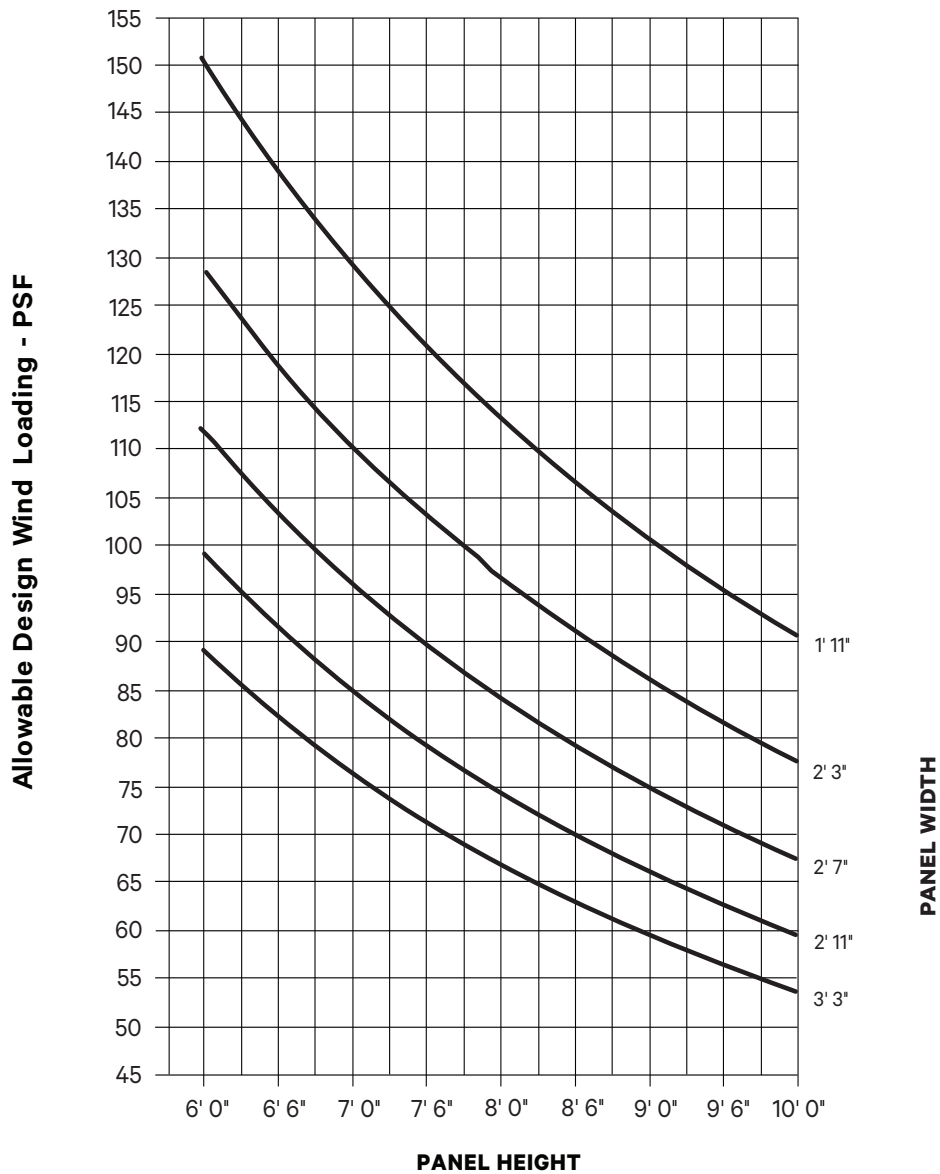
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**For Areas Where Comparative Analysis is Accepted in Lieu of FL Product Approval**

**Applies to Negative Design Pressures for Inswing Units and Positive Design Pressures for Outswing Units with the Low Profile Saddle and Flush Sills**

(In Accordance with Allowable Stress Design (ASD) Design Pressures\*)



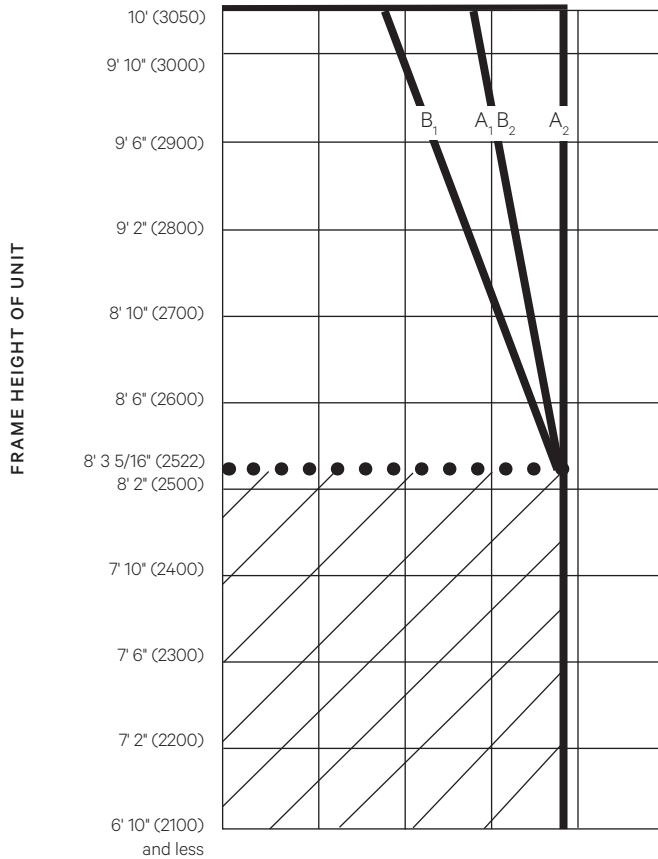
**Any Custom Size is Possible. See Maximum Frame Size Chart for Maximum Possible Sizes.**

(Derived from Comparative Analysis) Test Panel Size: 3' 0" W x 9' 8" H

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\* If the project design pressures have been calculated in accordance with Ultimate Design Wind Speed (ULT), then these design pressures have to be multiplied by a factor of 0.6 to obtain the equivalent ASD design pressures shown in this chart.

**NOTE:** English dimensions are approximate.  
Dimensions in parenthesis are in millimeters.



NUMBER OF PANELS IN UNIT	FRAME WIDTH OF UNIT				
	1' 11" (600)	2' 3" (700)	2' 7" (800)	2' 11" (900)	3' 2" (965)
1	1' 11" (600)	2' 3" (700)	2' 7" (800)	2' 11" (900)	3' 2" (965)
2	3' 11" (1200)	4' 7" (1400)	5' 3" (1600)	5' 10" (1800)	6' 4" (1930)
3	5' 10" (1800)	6' 10" (2100)	7' 10" (2400)	8' 10" (2700)	9' 6" (2895)
4	7' 10" (2400)	9' 2" (2500)	10' 6" (3200)	11' 9" (3600)	12' 8" (3860)
5	9' 10" (3000)	11' 5" (3500)	13' 1" (4000)	14' 9" (4500)	15' 10" (4825)
6	11' 9" (3600)	13' 10" (4200)	15' 8" (4800)	17' 8" (5400)	19' 0" (5790)
7	13' 10" (4200)	16' (4900)	18' 4" (5600)	20' 7" (6300)	22' 2" (6755)
8	15' 8" (4800)	18' 4" (5600)	20' 11" (6400)	23' 6" (7200)	25' 4" (7720)
9	17' 9" (5400)	20' 7" (6300)	23' 6" (7200)	26' 5" (8100)	28' 6" (8685)
10	19' 8" (6000)	22' 10" (7000)	26' 1" (8000)	29' 4" (9000)	31' 8" (9650)
11	21' 7" (6600)	25' 1" (7700)	28' 8" (8800)	32' 5" (9900)	34' 10" (10615)
12	23' 6" (7200)	27' 4" (8400)	31' 5" (9600)	35' 5" (10800)	38' 0" (11580)

**Any Custom Size is Possible Up to the Maximum Size Shown.**

— Solid dark line on chart indicates maximum frame height possible for a given maximum frame width.

▨ FL Product Approval maximum sizes and/or units with insulated glass.

**For units taller than 8' 3 5/16" (2522 mm) there are the following limitations:**

1. Units will not be FL Product approved.
2. However, depending on building jurisdiction, an engineering letter may be accepted in lieu of FL Product approval.
3. Units can only be with 7/16" single impact glass. Please check Design Windload Chart on pages 9-11 for allowable design pressures for size desired.
4. The following size limits based on configurations and applications:

- B<sub>1</sub>** Line is "B" configurations for commercial applications
- A<sub>1</sub>B<sub>2</sub>** Line is "A" configurations for commercial applications & "B" configurations for residential applications.
- A<sub>2</sub>** Line is "A" configurations for residential applications.

**Configurations**

**A.** Either for configurations with folding panels only or for configurations with folding panels and a swing door hinged to a side jamb – includes Models 1L, 1R, 1L1R, 2L, 2R, 1L2R, 2L1R, 4L, 4R, 2L2R, 1L4R, 4L1R, 6L, 6R, 2L4R, 4L2R, 1L6R, 6L1R, 2L6R, 4L4R, 6L2R, 4L6R, 6L4R, & 6L6R

**B.** For all configurations.

For configurations with no swing panels, the minimum panel width needed is 2' 3" (700 mm).

**Dimensions in millimeters unless noted. Calculation applies to the standard stiles and rails.**

**Glass dimensions of all panels in a unit are equal.**

Nominal Panel Height (PH) is defined as Glass Daylight Opening Height + 117 = Glass Opening Height + 4 5/8".

Nominal Panel Width (PW) is defined as Glass Daylight Opening Width + 117 = Glass Opening Width + 4 5/8".

Panel Height is as seen from the inside on an inward opening unit and is as seen from the outside on an outward opening unit. Please note that with the overlap of the head jamb and the sill with the panel, the Clear Opening Height will not be the same as the Panel Height.

See Cross-Section Details of both stiles of each panel to determine actual Panel Width. With astragals, overlapping, etc., the actual Panel Width not only varies with position of panel in a configuration, but the inside and outside surface widths of each stile may be different. Running posts and astragals are not included in Panel Width dimensions.

For each configuration, the Frame Width (FW) is the sum of the nominal Panel Width (PW) x the number of panels + a number (N) which is the sum of the side jamb dimensions and dimensions of space between panels in excess of the nominal Panel Width as shown in the Cross-Section Details.

**Frame Height (FH) SL73 System**

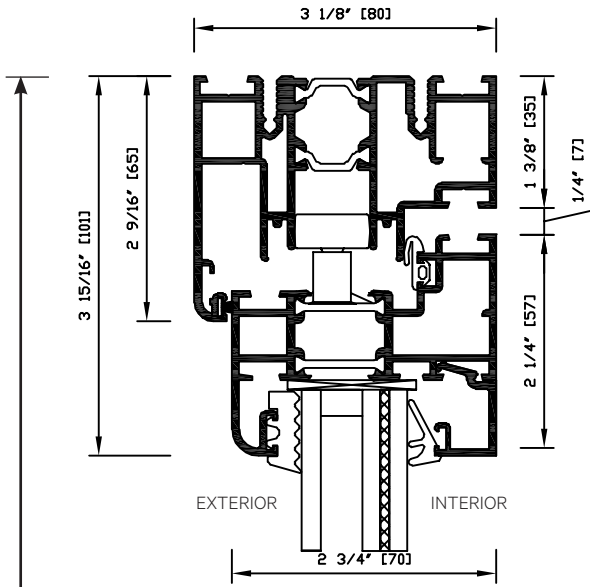
Raised Sill : Frame Height = Panel Height + 74 (2 15/16") = Clear Opening Height + 120 (4 3/4")

Low Profile Saddle Sill : Frame Height = Panel Height + 84 (3 5/16") = Clear Opening Height + 100 (3 15/16")

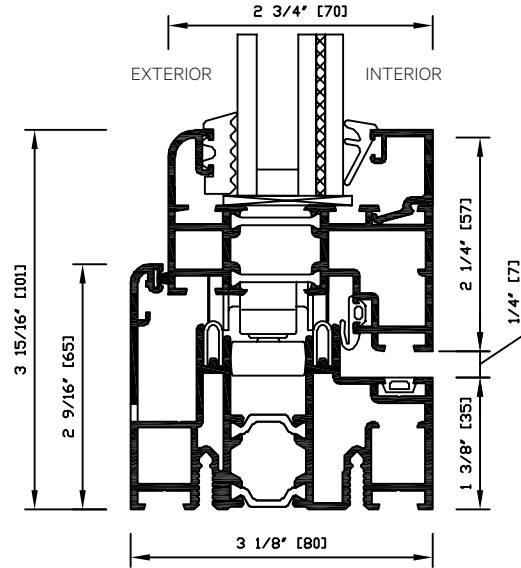
**Frame Widths for Different Configurations with Majority of Panels Folding to Right (and their Mirror Image Configurations with Majority of Panels Folding to Left). See Maximum Size Charts for size limits.** These numbers can be used as a guideline only. Contact NanaWall for the exact calculations for a particular unit.

Model 1R	Frame Width = 1 x Panel Width + 129 = 1 x Panel Width + 5 1/2"
Model 1L1R	Frame Width = 2 x Panel Width + 162 = 2 x Panel Width + 6 3/4"
Model 2R	Frame Width = 2 x Panel Width + 180 = 2 x Panel Width + 7 1/2"
Model 3R	Frame Width = 3 x Panel Width + 210 = 3 x Panel Width + 8 5/8"
Model 1L2R	Frame Width = 3 x Panel Width + 212 = 3 x Panel Width + 8 3/4"
Model 4R	Frame Width = 4 x Panel Width + 260 = 4 x Panel Width + 10 5/8"
Model 1L3R	Frame Width = 4 x Panel Width + 242 = 4 x Panel Width + 9 15/16"
Model 2L2R	Frame Width = 4 x Panel Width + 290 = 4 x Panel Width + 11 13/16"
Model 5R	Frame Width = 5 x Panel Width + 290 = 5 x Panel Width + 11 13/16"
Model 1L4R, Model 2L3R	Frame Width = 5 x Panel Width + 292 = 5 x Panel Width + 11 15/16"
Model 3L3R, Model 1L5R	Frame Width = 6 x Panel Width + 322 = 6 x Panel Width + 13'
Model 2L4R	Frame Width = 6 x Panel Width + 370 = 6 x Panel Width + 14 15/16"
Model 6R	Frame Width = 6 x Panel Width + 340 = 6 x Panel Width + 13 3/4"
Model 3L4R, Model 2L5R, Model 1L6R	Frame Width = 7 x Panel Width + 373 = 7 x Panel Width + 15 1/16"
Model 4L4R, Model 2L6R	Frame Width = 8 x Panel Width + 450 = 8 x Panel Width + 18 1/8"
Model 3L5R	Frame Width = 8 x Panel Width + 402 = 8 x Panel Width + 16 1/4"
Model 4L5R, Model 3L6R	Frame Width = 9 x Panel Width + 453 = 9 x Panel Width + 18 3/16"
Model 5L5R	Frame Width = 10 x Panel Width + 482 = 10 x Panel Width + 19 3/8"
Model 4L6R	Frame Width = 10 x Panel Width + 530 = 10 x Panel Width + 21 1/4"
Model 5L6R	Frame Width = 11 x Panel Width + 533 = 11 x Panel Width + 21 3/8"
Model 6L6R	Frame Width = 12 x Panel Width + 610 = 12 x Panel Width + 24 7/16"

**Detail 1.0** Head Jamb

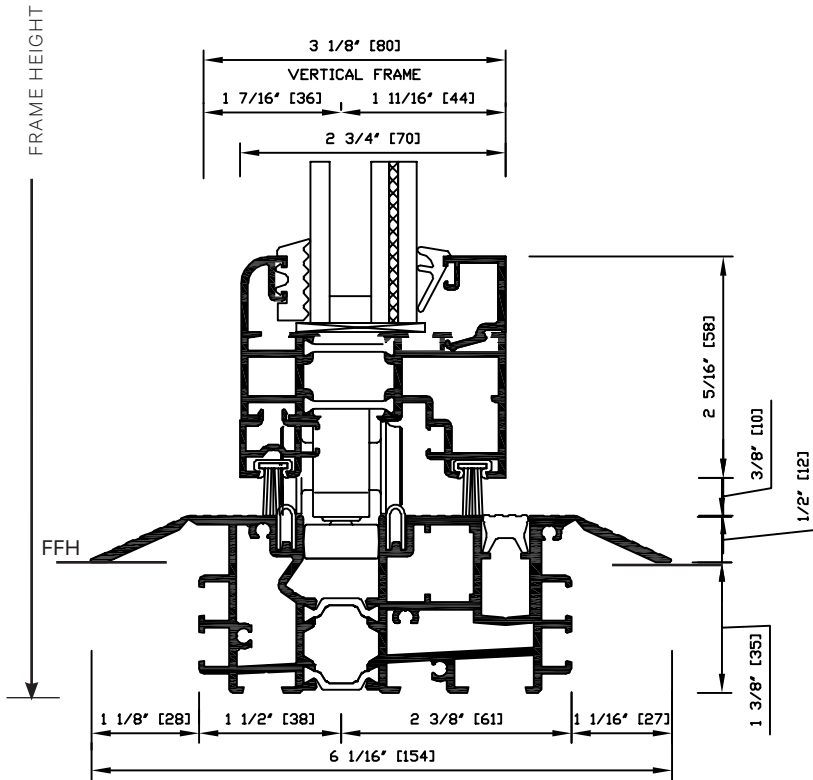


**Detail 2.0** Raised Sill  
(Higher Weather Performance Sill)



**Detail 24.0** Low Profile Saddle Sill

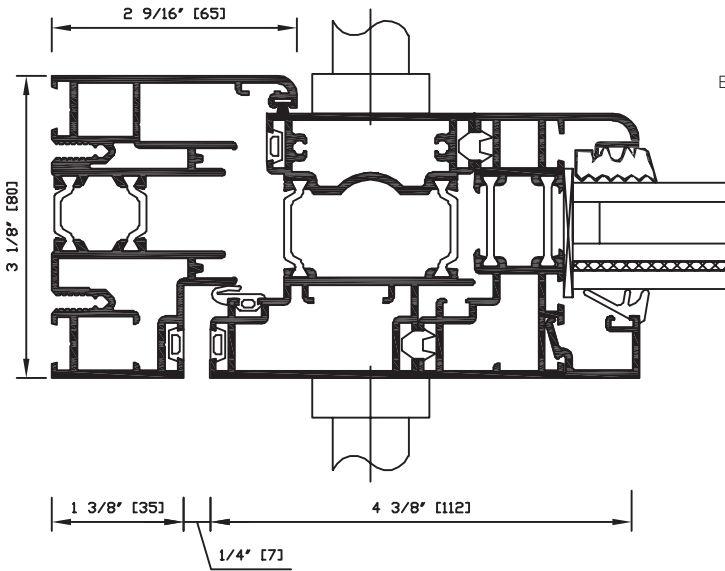
(No FL Product Approval Water Rating, but can be used if there is adequate overhang.  
Weep holes and drainage by others necessary for water rating. See Performance details.)



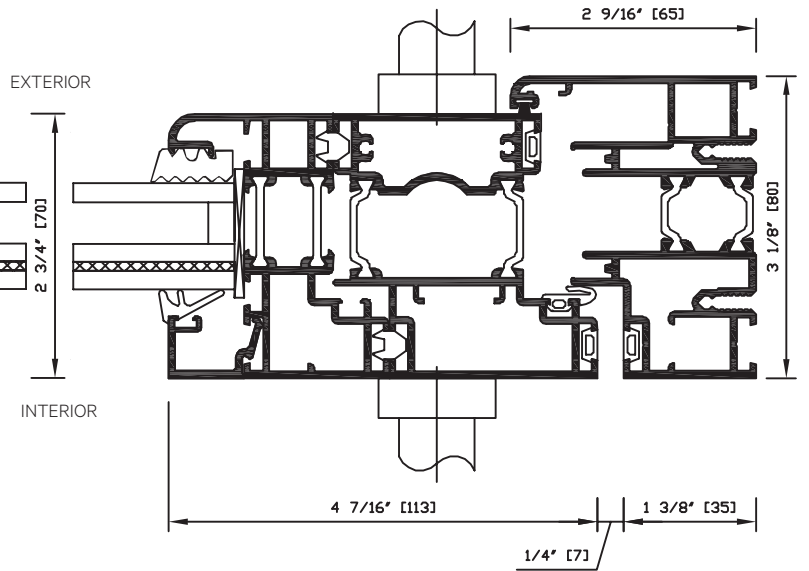
**Notes:**

1. For ADA compliance in commercial projects, a gasket to cover the channel in the sill at swing panels is provided for the saddle sill, surface mounted sill, and flush sill.
2. The low profile saddle sill is not centered to the other frame members.

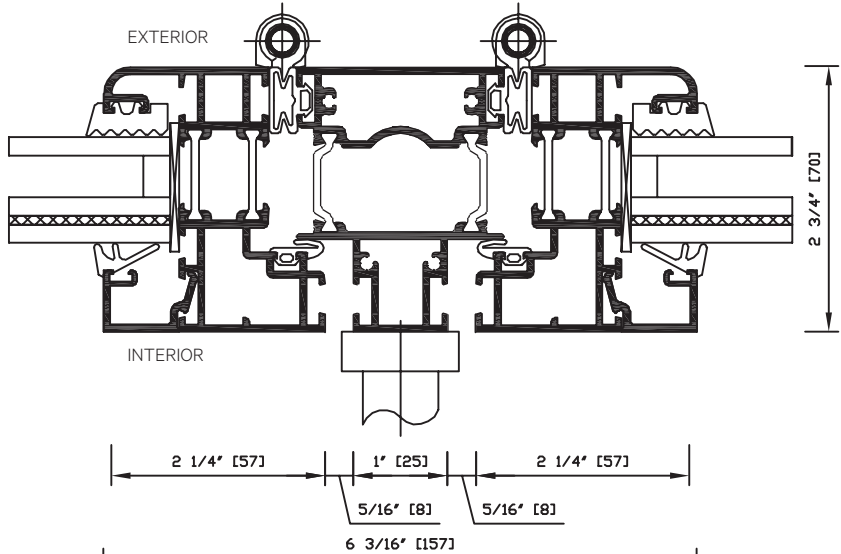
**Detail 4.0** Swing panel with locking at left side jamb



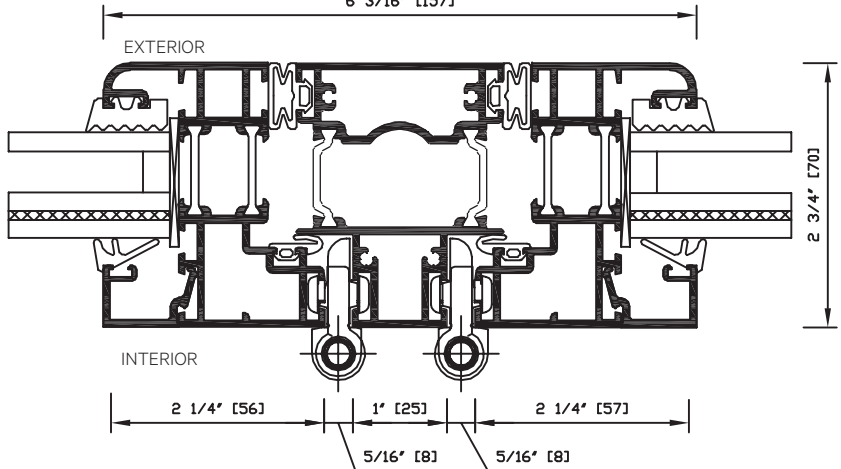
**Detail 4R.0** Swing panel with locking at right side jamb



**Detail 7.0 & 7R.0**  
Folding panels with locking

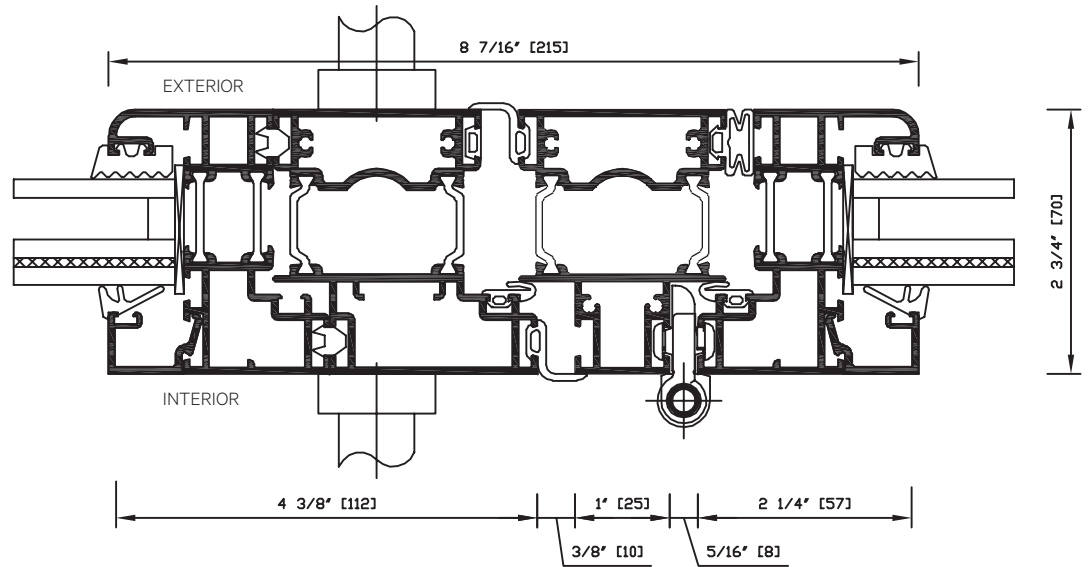


**Detail 7C.0 & 7RC.0**  
Folding panels with running carriage set



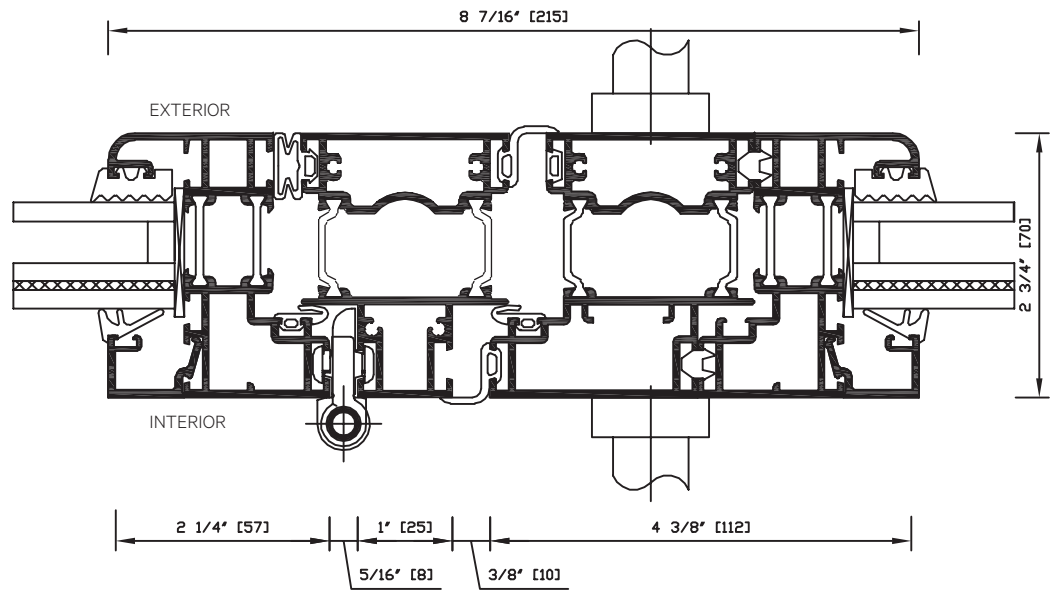
**Detail 10.0**

Meeting of swing panel with locking on left and folding panel with running carriage set on right



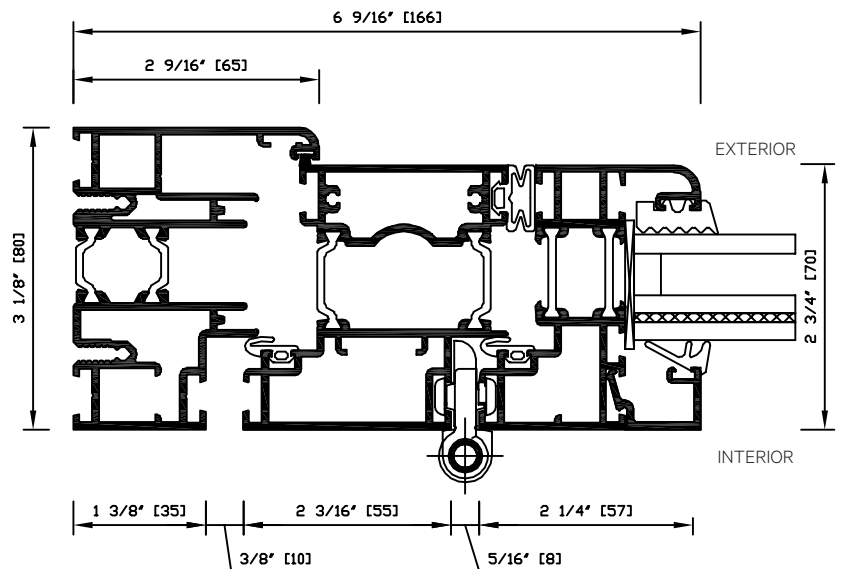
**Detail 10R.0**

Meeting of swing panel with locking on right and folding panel with running carriage set on left

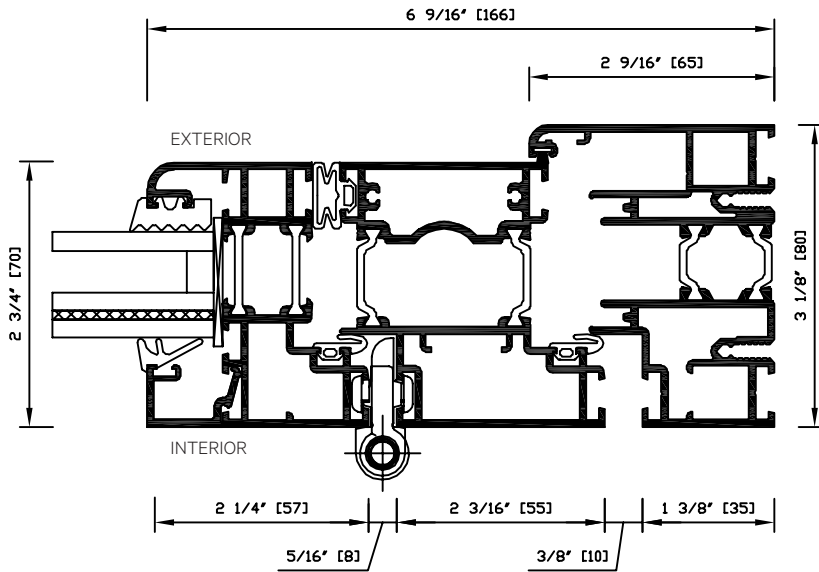


**Detail 5.0**

Panel with running carriage set meeting left side jamb

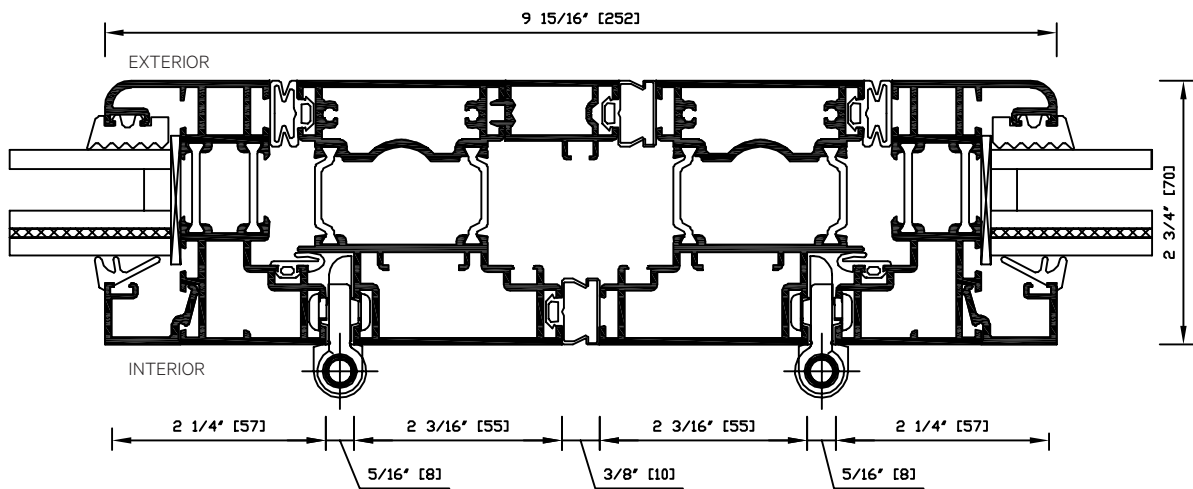




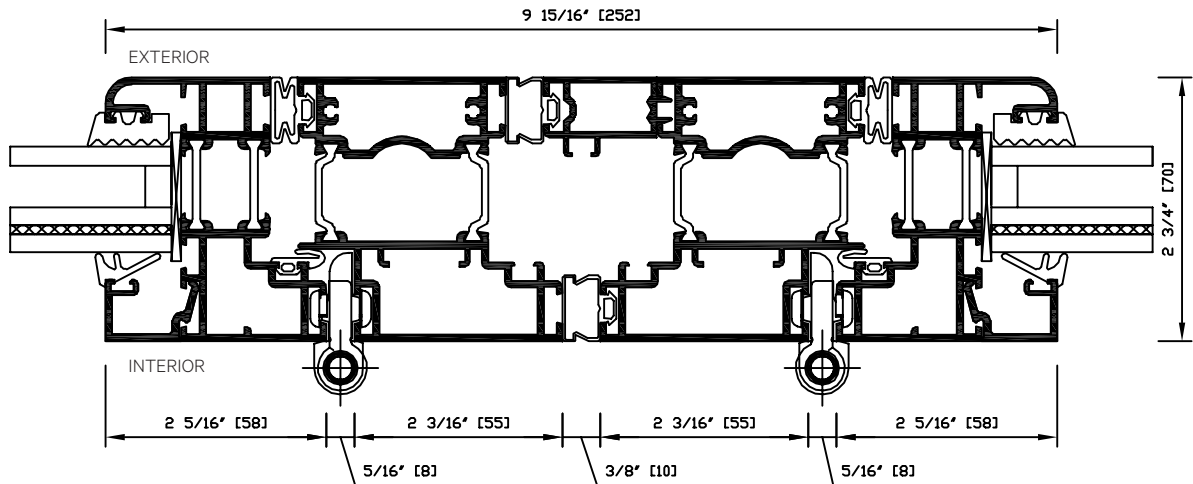


**Detail 5R.0**  
Panel with running carriage set meeting right side jamb

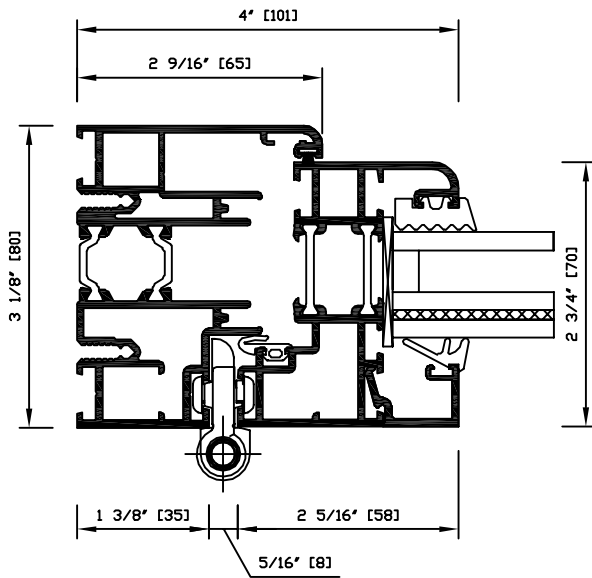
**Detail 9R.0**  
Meeting of panels folding to opposite sides (no swing panel).  
Running carriage sets on both panels



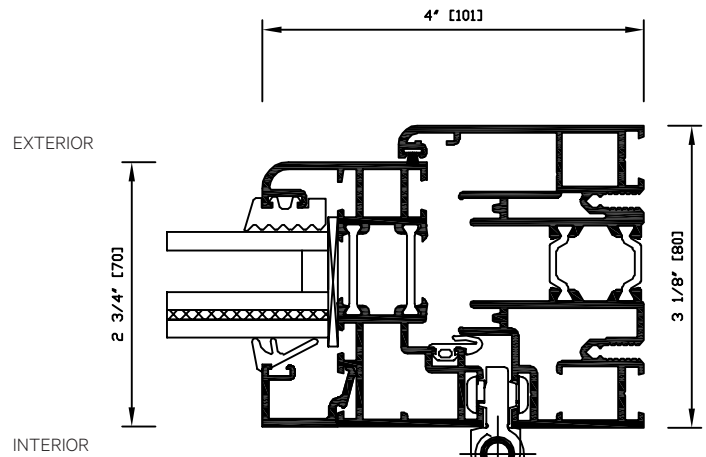
**Detail 9.0**  
Meeting of panels folding to opposite sides (no swing panel).  
Running carriage sets on both panels



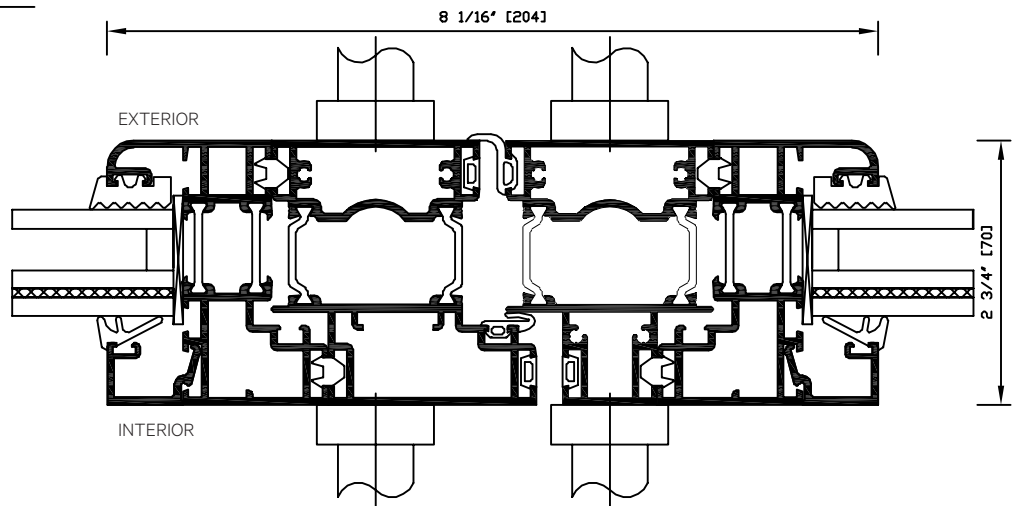
**Detail 3R.0** Panel hinged at left side jamb



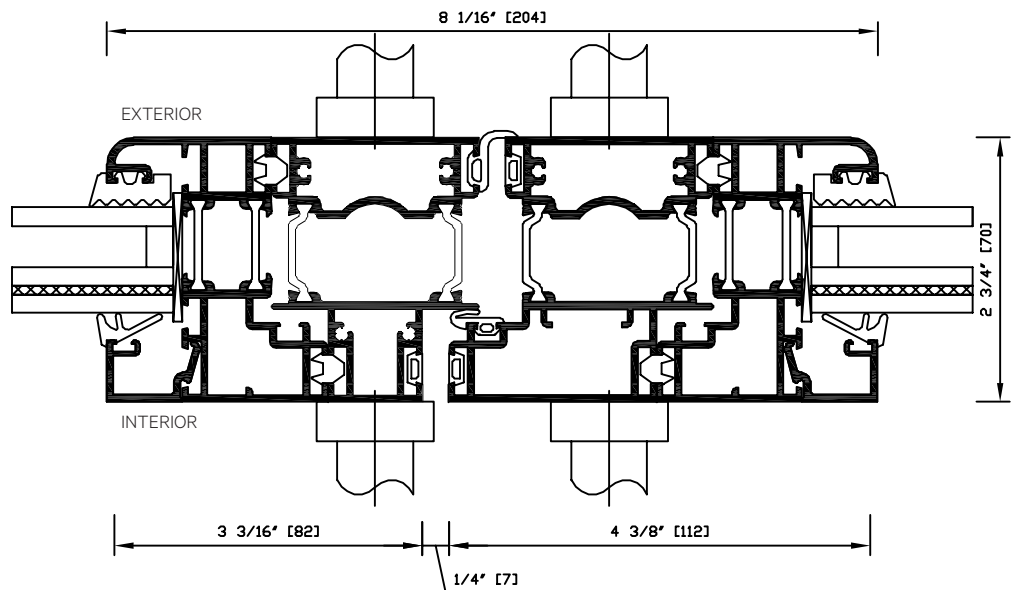
**Detail 3.0** Panel hinged at right side jamb



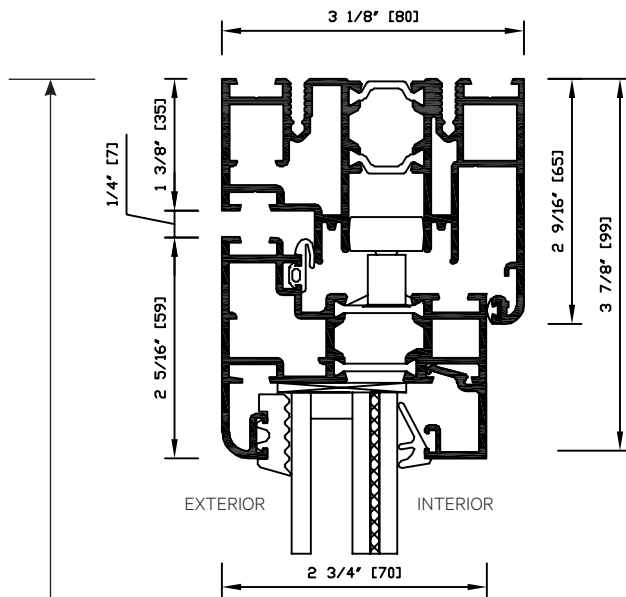
**Detail 8.0**  
Two swing panels with locking: left panel opening first



**Detail 8R.0**  
Two swing panels with locking: right panel opening first

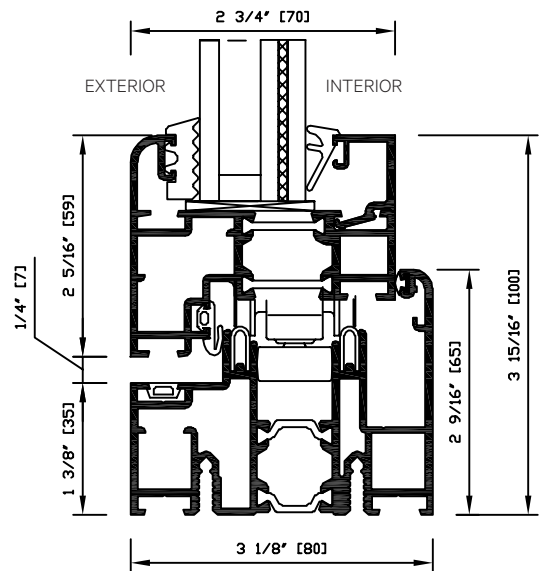


**Detail 1.1** Head Jamb



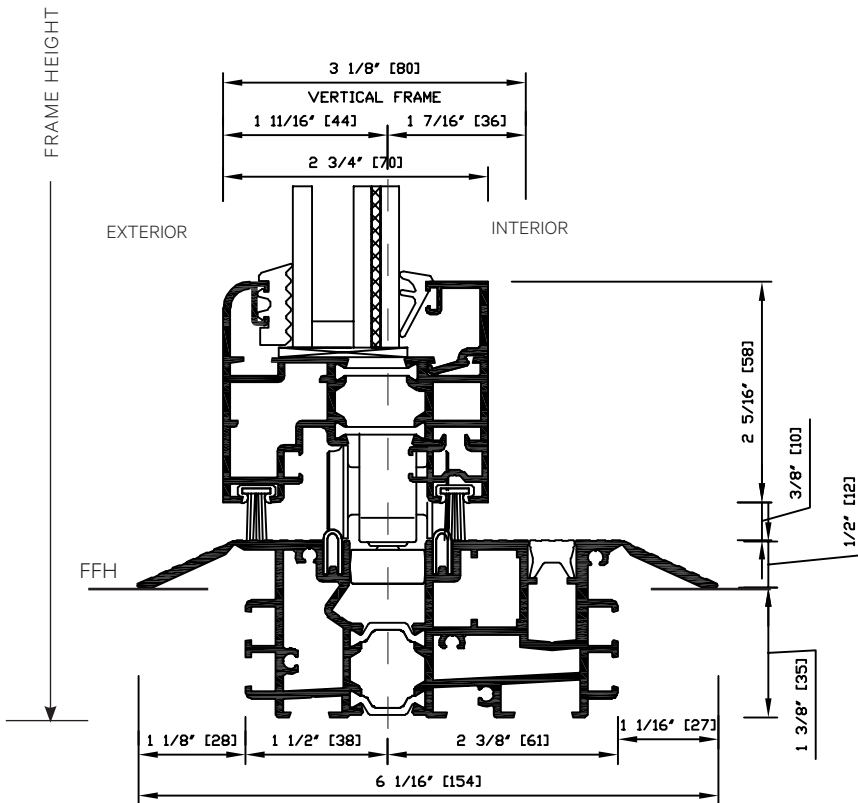
**Detail 2.1** Raised Sill

(Higher Weather Performance Sill)

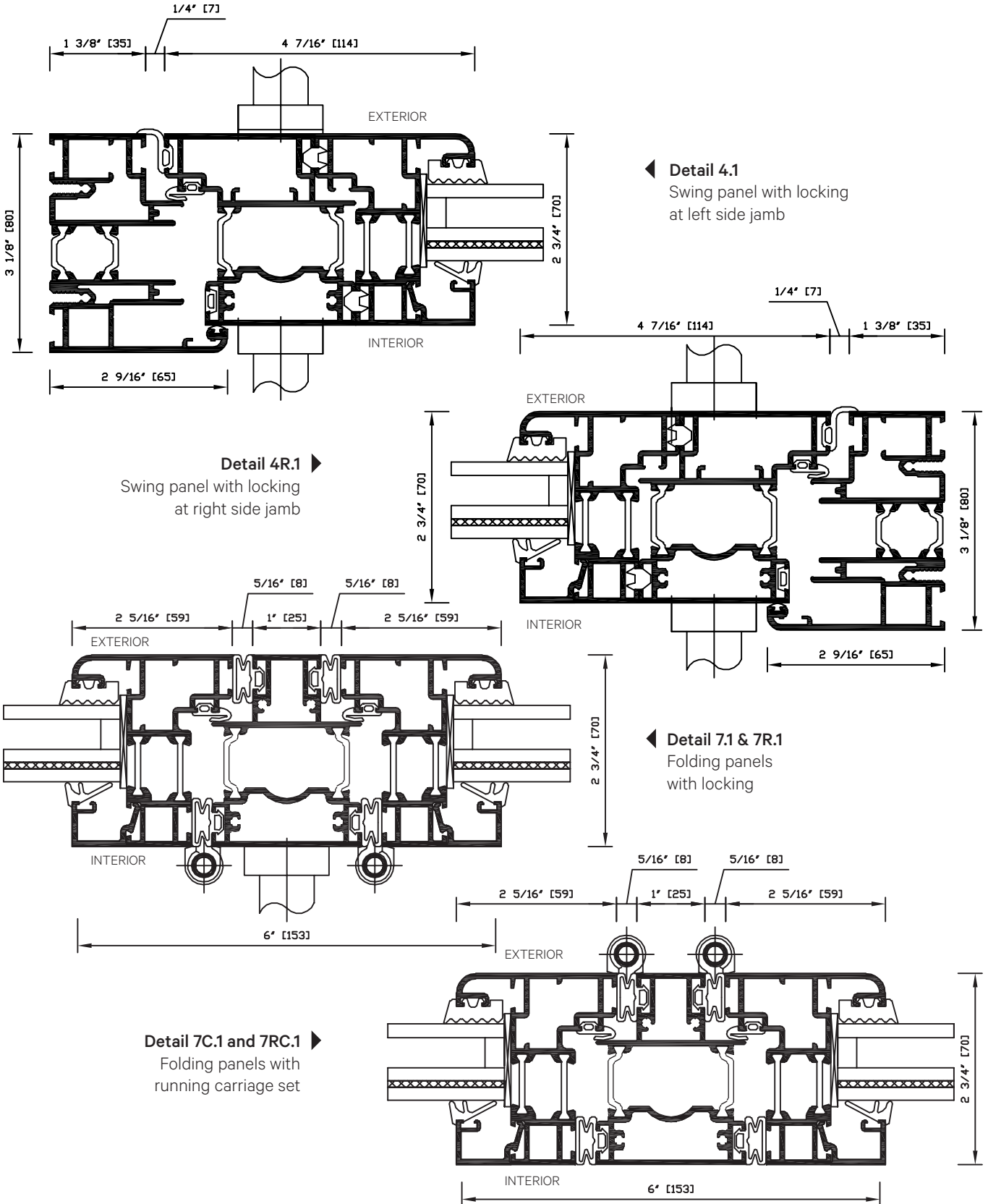


**Detail 24.1** Low Profile Saddle Sill

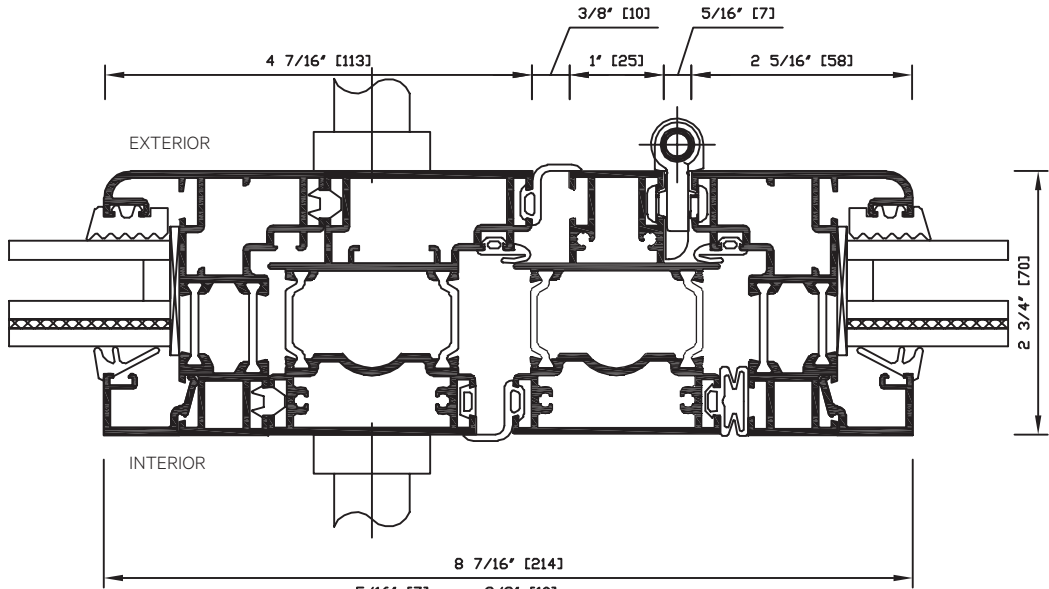
(No FL Product Approval Water Rating, but can be used if there is adequate overhang. Weep holes and drainage by others necessary for water rating. See Performance details.)



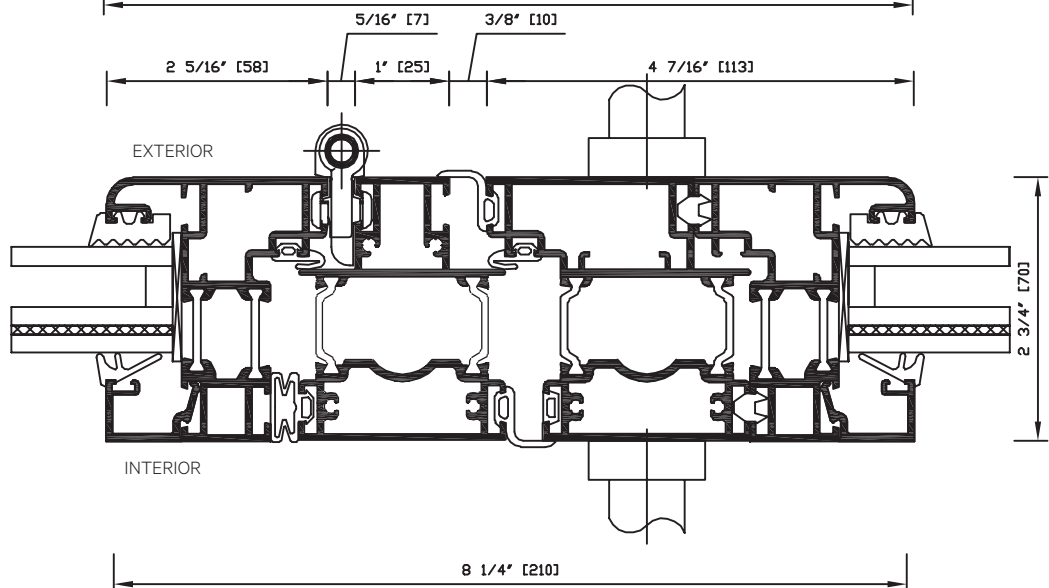
- Notes:**
1. For ADA compliance in commercial projects, a gasket to cover the channel in the sill at swing panels is provided for the saddle sill, surface mounted sill, and flush sill.
  2. The low profile saddle sill is not centered to the other frame members.



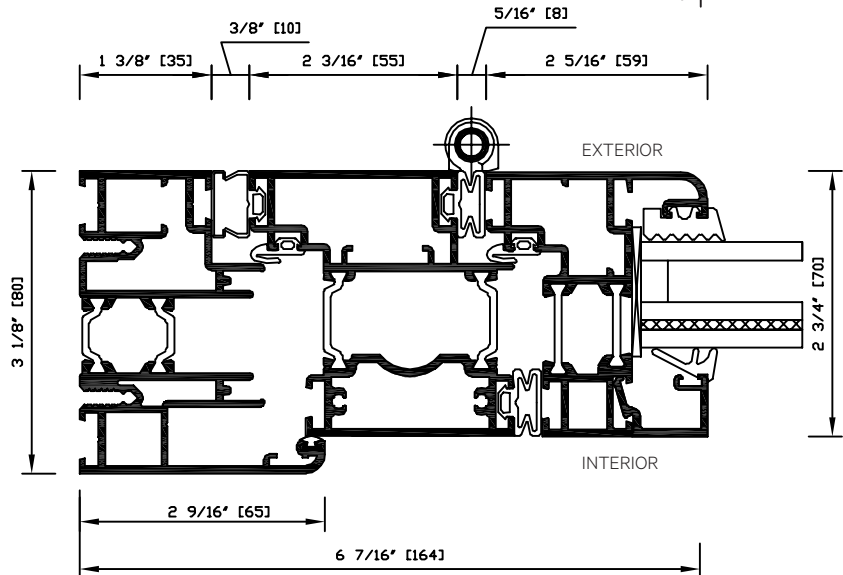
**Detail 10.1**  
Meeting of swing panel with locking on left and folding panel with running carriage set on right.



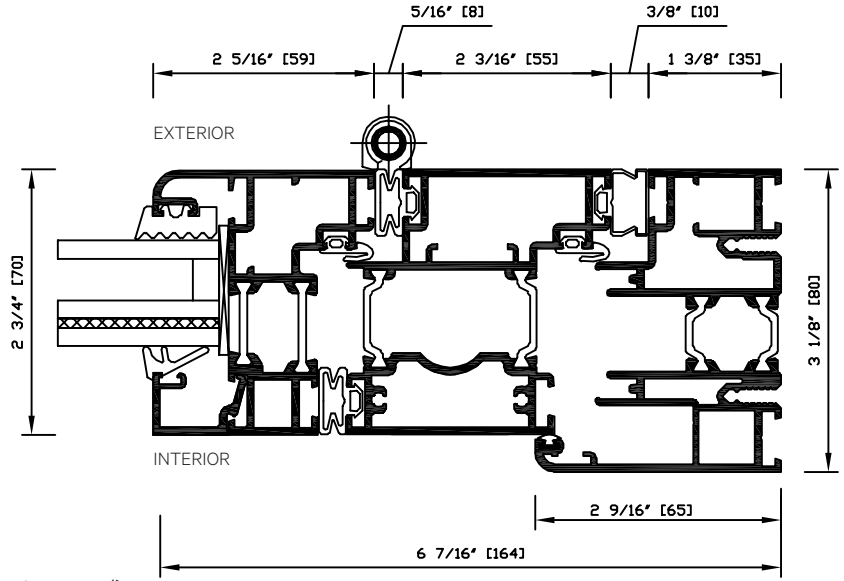
**Detail 10R.1**  
Meeting of swing panel with locking on right and folding panel with running carriage set on left.



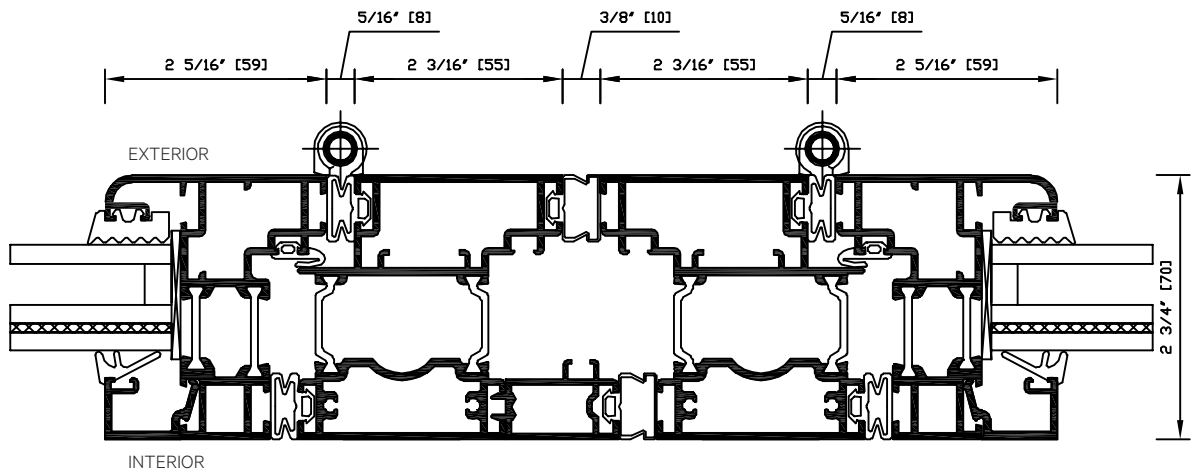
**Detail 5.1**  
Panel with running carriage set meeting left side jamb



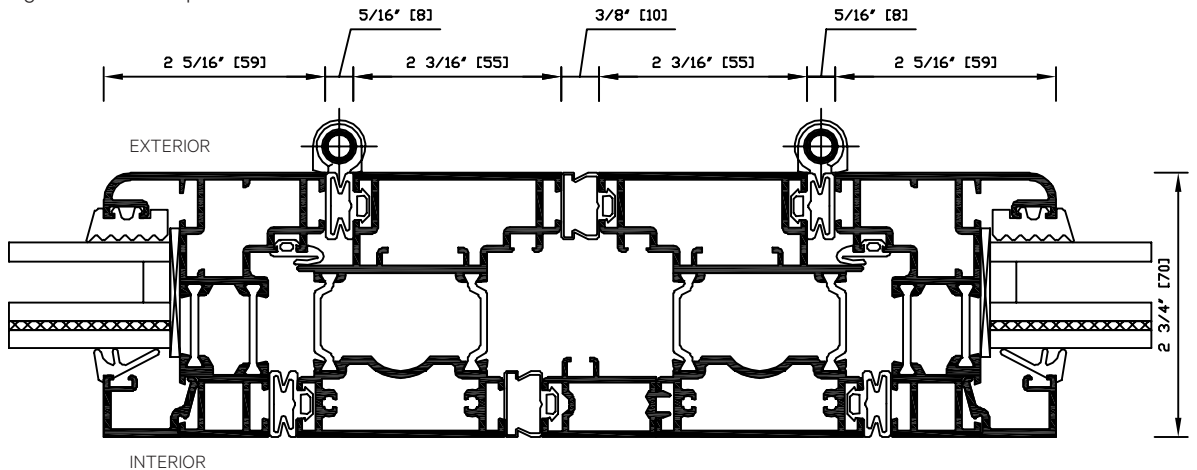
**Detail 5R.1**  
 Panel with running carriage set meeting right side jamb



**Detail 9R.1**  
 Meeting of panels folding to opposite sides (no swing panel).  
 Running carriage sets on both panels

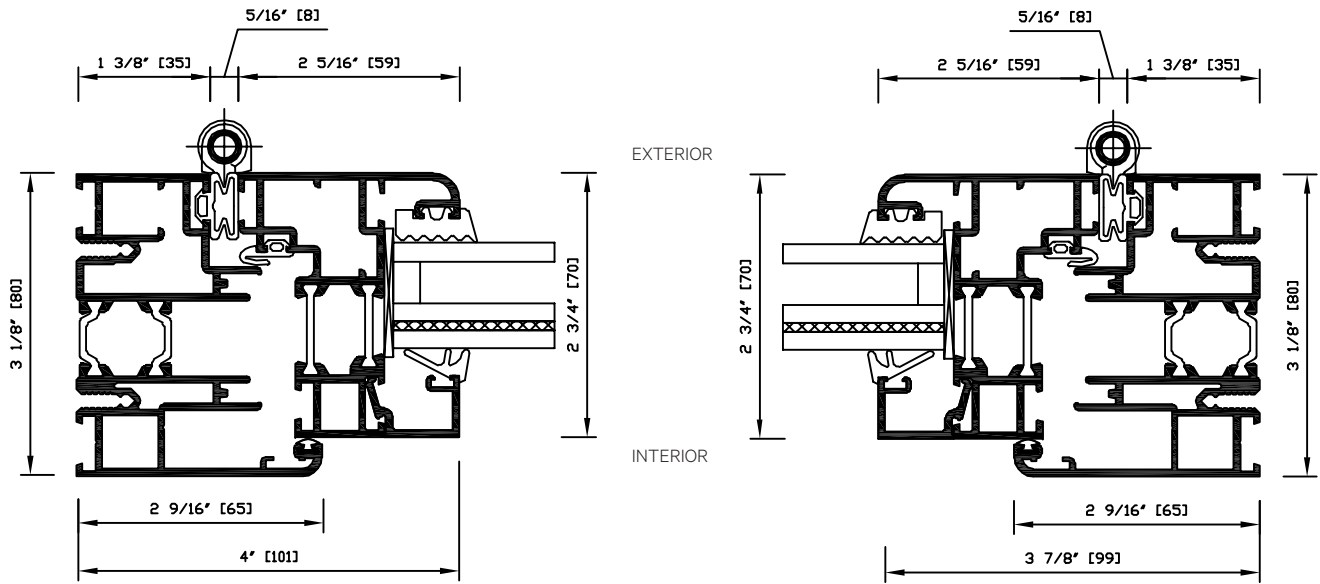


**Detail 9.1**  
 Meeting of panels folding to opposite sides (no swing panel).  
 Running carriage sets on both panels

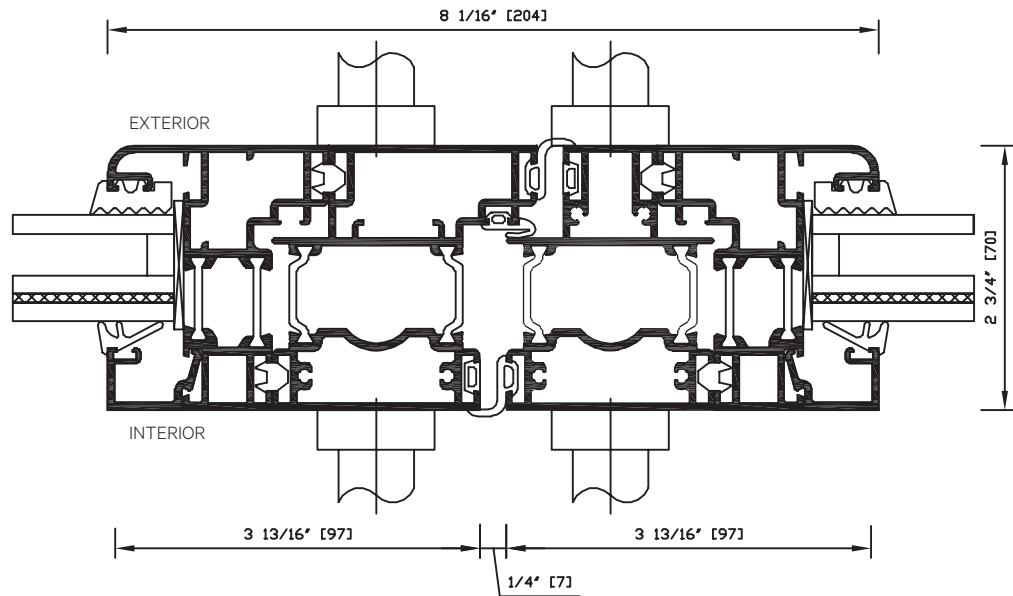


**Detail 3R.1** Panel hinged at left side jamb

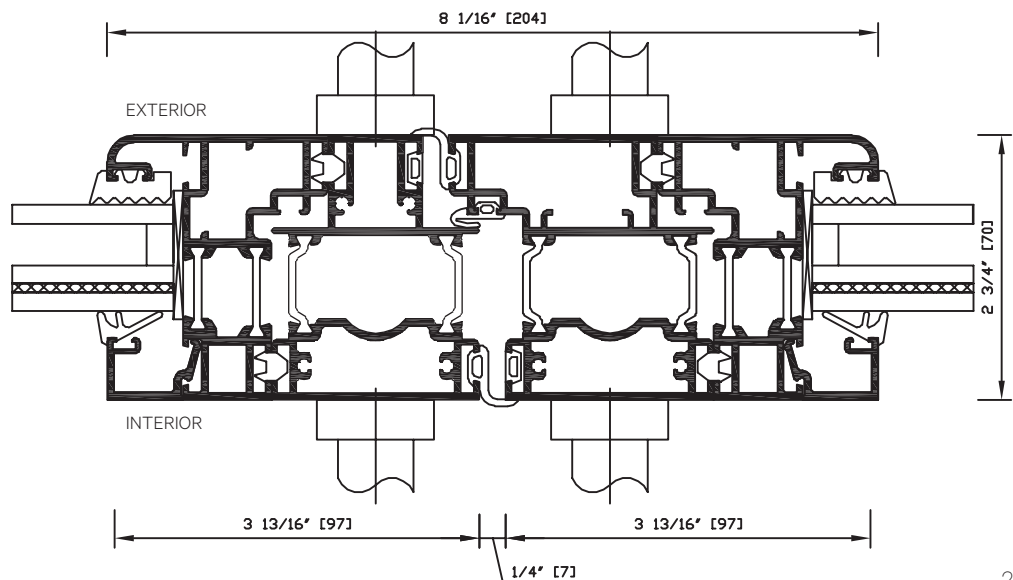
**Detail 3.1** Panel hinged at right side jamb

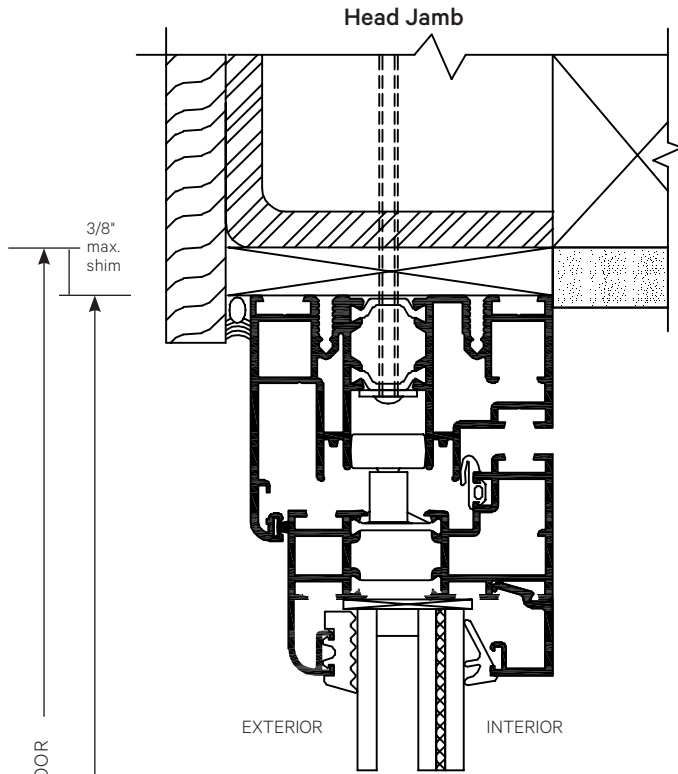


**Detail 8.1**  
Two swing panels with locking: left panel opening first



**Detail 8R.1**  
Two swing panels with locking: right panel opening first





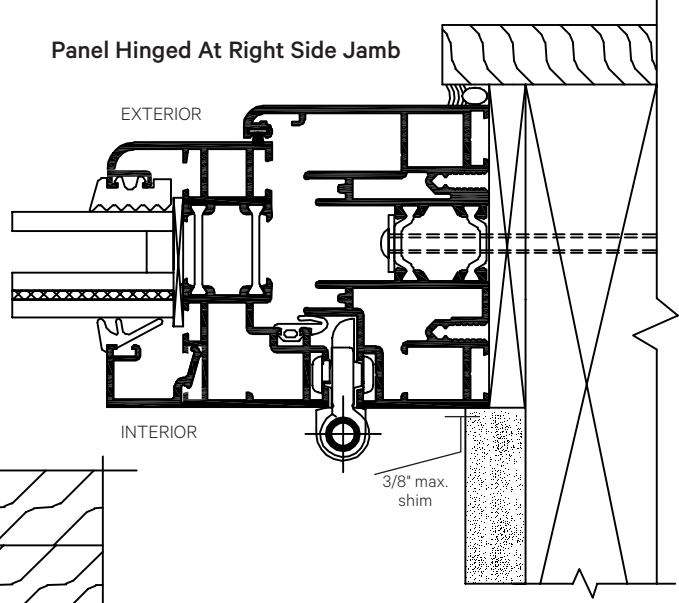
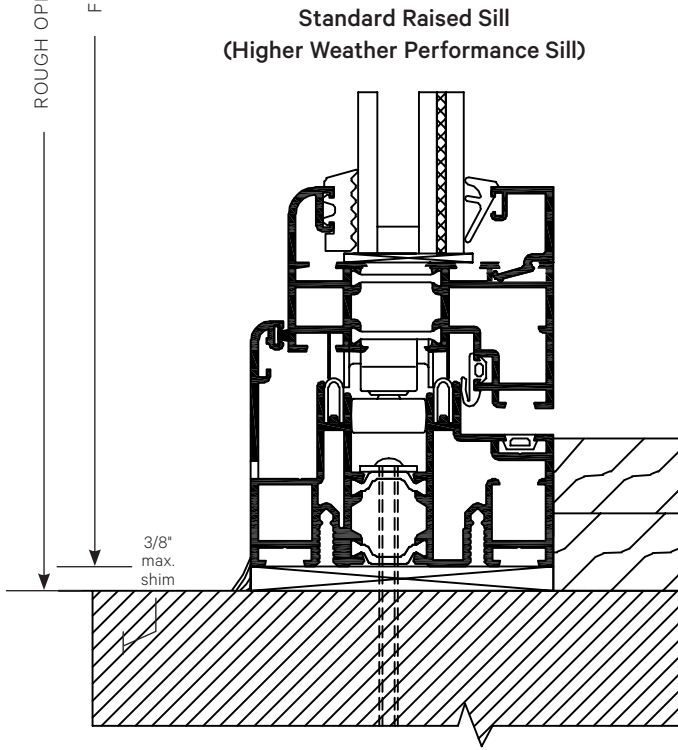
**INSTALLATION NOTES**

Suggested Typical Installation drawings shown are very general and may not be suitable for any particular installation. Product placement, fasteners, flashing, waterproofing, sealant, trim, and other details for specific surrounding conditions must be properly designed and provided by others. **Unit must be installed in conformance with FL Product Approval documents.**

**Installation Considerations**

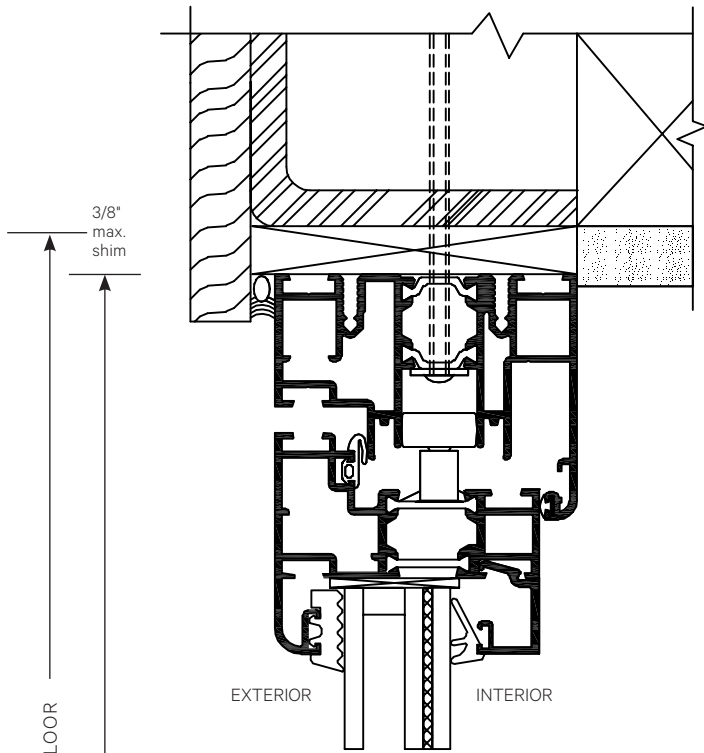
The approximate weight of a panel with 7/16" (11 mm) impact glazing is 8 lbs/ft<sup>2</sup> (39 kg/m<sup>2</sup>), and with insulated impact glass is 11 lbs/ft<sup>2</sup> (54 kg/m<sup>2</sup>). The vertical structural deflection of the header should be the lesser of L/720 of the span and 1/4" (6 mm) under full loads. Although for Floor Supported systems, there is no vertical load on the header from the panels, structural support for lateral loads (both windload and when the panels are stacked open) must be provided. See "Pre-Installation Preparation and Installation Guidelines" in the General Introduction. An owner's manual with installation instructions is available upon request.

It is recommended that all building dead loads be applied to the header prior to installing the NanaWall. If so and if a reasonable amount of time has been allowed for the effect of this dead load on the header, then only the building's live load can be used to meet the above requirements of L/720 or 1/4" (6 mm). If not, both the dead and live loads need to be considered. Because the SL73 is Floor Supported, please note that there is no vertical load on the header.





Head Jamb



**INSTALLATION NOTES**

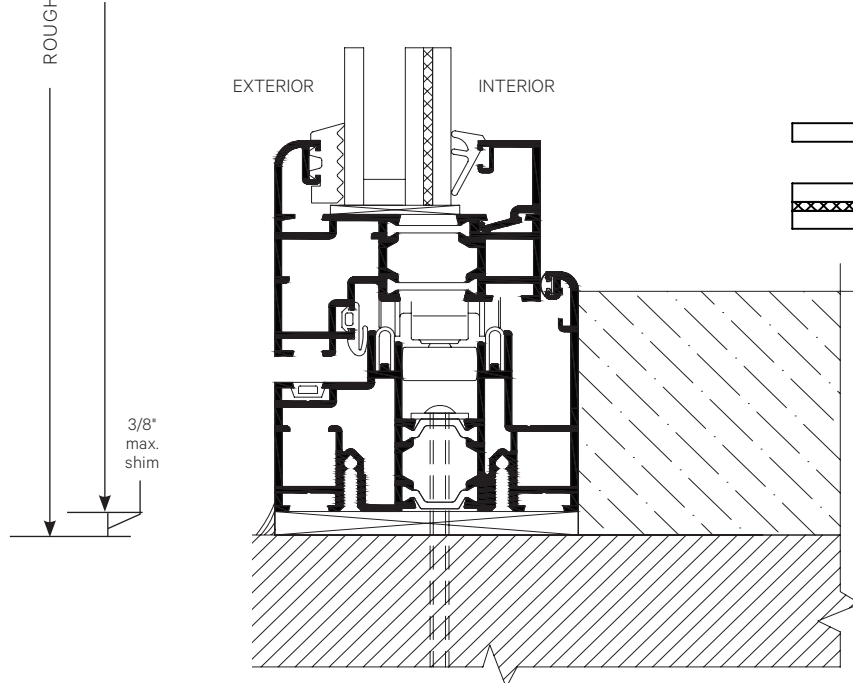
Suggested Typical Installation drawings shown are very general and may not be suitable for any particular installation. Product placement, fasteners, flashing, waterproofing, sealant, trim, and other details for specific surrounding conditions must be properly designed and provided by others. **Unit must be installed in conformance with FL Product Approval documents.**

**Installation Considerations**

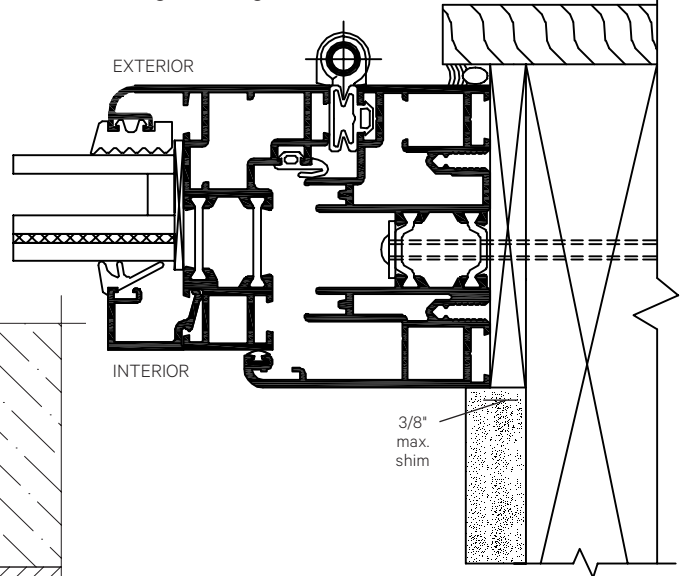
The approximate weight of a panel with 7/16" (11 mm) impact glazing is 8 lbs/ft<sup>2</sup> (39 kg/m<sup>2</sup>), and with insulated impact glass is 11 lbs/ft<sup>2</sup> (54 kg/m<sup>2</sup>). The vertical structural deflection of the header should be the lesser of L/720 of the span and 1/4" (6 mm) under full loads. Although for Floor Supported systems, there is no vertical load on the header from the panels, structural support for lateral loads (both windload and when the panels are stacked open) must be provided. See "Pre-Installation Preparation and Installation Guidelines" in the General Introduction. An owner's manual with installation instructions is available upon request.

It is recommended that all building dead loads be applied to the header prior to installing the NanaWall. If so and if a reasonable amount of time has been allowed for the effect of this dead load on the header, then only the building's live load can be used to meet the above requirements of L/720 or 1/4" (6 mm). If not, both the dead and live loads need to be considered. Because the SL73 is Floor Supported, please note that there is no vertical load on the header.

**Standard Raised Sill (higher weather performance sill) Installation**



**Panel Hinged At Right Side Jamb**



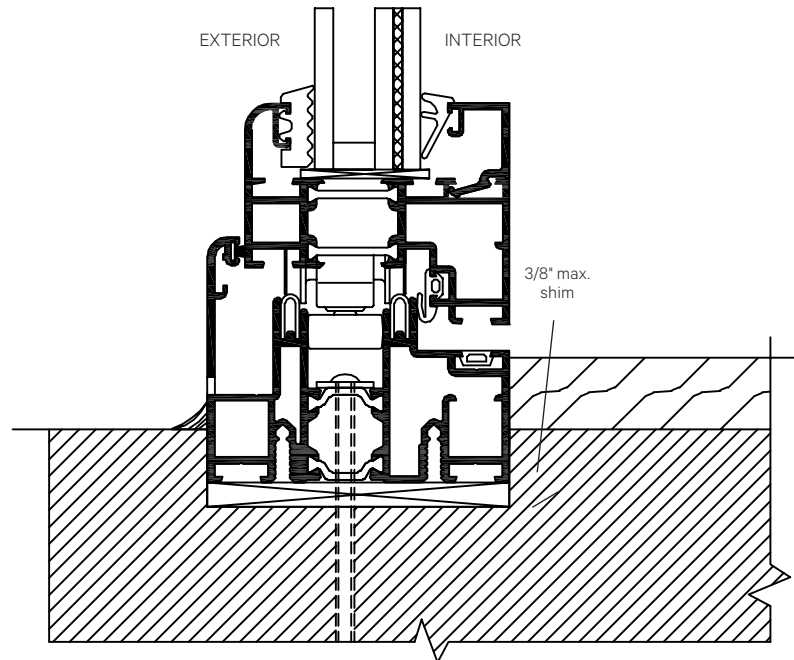
## INSTALLATION NOTES

Suggested Typical Installation drawings shown are very general and may not be suitable for any particular installation. Product placement, fasteners, flashing, waterproofing, sealant, trim, and other details for specific surrounding conditions must be properly designed and provided by others.

**Unit must be installed in conformance with FL Product Approval documents.**

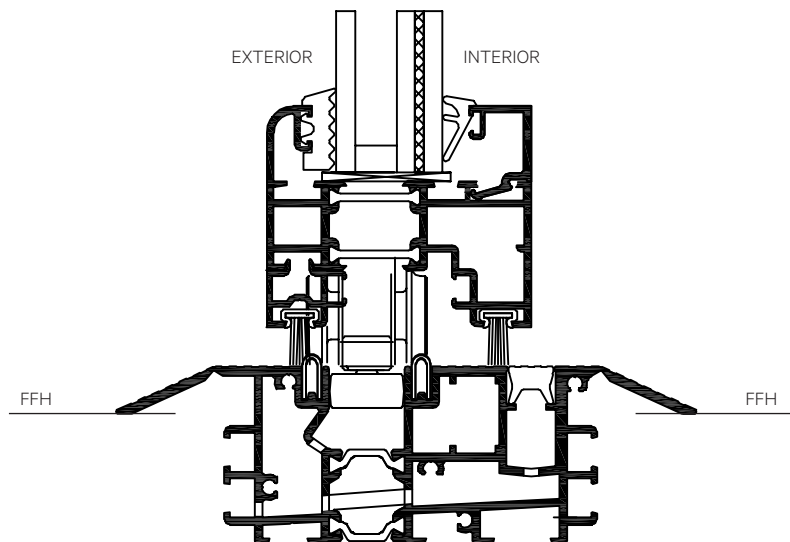
See installation considerations on page 24-25.

### Recessed Higher Weather Performance Sill Installation (Inward Opening)



### Low Profile Saddle Sill\* (Inward Opening)

(No FL Product Approval Water Rating, but can be used if there is adequate overhang. Weep holes and drainage by others necessary for water rating. See Testing Results.)



#### \* FOR LOW PROFILE SADDLE SILL:

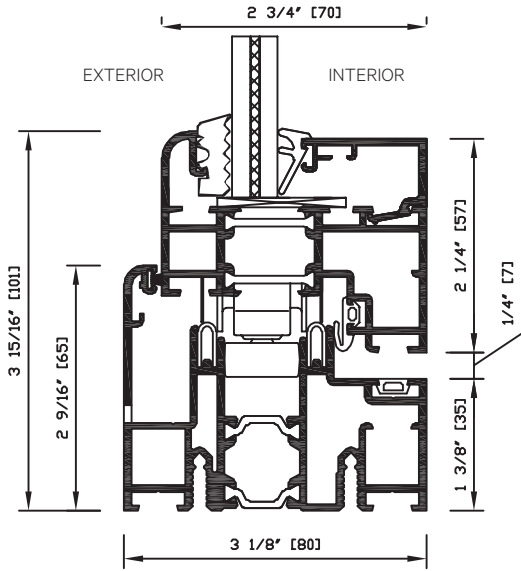
For resistance against wind driven rain, recommend the following by others.

1. Remove the gasket covering the inner channel.
2. Provide necessary weep holes at the bottom of the channels and on the outside face of the sill.
3. Make necessary drain connections.

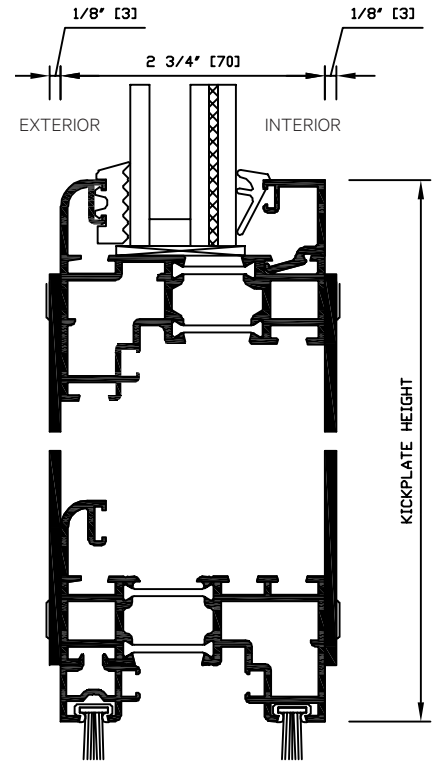
Contact NanaWall for a detailed drawing.

**Inward Opening Detail 2.0**

Typical cross-section detail with single impact glass



**Typical Kickplate**



**Outward Opening Detail 2.1**

Typical cross-section detail with single impact glass

