

WD65 — Wood Framed Folding/Paired Panel System for Special Applications

The WD65 is the folding or paired-panel wood framed system for special applications designed to provide an opening glass wall or storefront for widths up to 43' (13 m) with 12 panels. With additional paired panels, virtually unlimited widths are possible. It is a top-hung system.

For benefits of all NanaWall® systems, see the “General Introduction” section. For features common to wood folding systems, see the “Wood Folding Systems” Introduction.

NFRC-Approved Thermal Performance

The WD65 has been rated, certified, and labeled in accordance with NFRC 100 and 200; see the “Performance Testing Results” section for more details. Energy Star values can be met with select glazing.

Acoustical Performance

A WD65 unit has been tested by an independent acoustic lab for acoustical performance. The WD65 with STC 38 laminated glass achieved STC and Rw values of 36.

Stacking Configurations for Special Applications

In addition to all inward opening panels or all outward opening panels, FoldFlat® option where the panels can be stacked completely out of the opening and options for combinations (some panels opening inward and others opening outward) are also available. All possible configurations show in section drawings. Unhinged paired panel options are offered for maximum stacking flexibility. In addition to 90° or 135°, segmented units are possible to create large bay or “curved” openings. To see these operable wall concepts in action, visit www.nanawall.com and click on the “3D CAD/Revit/Spec Configurator” link.

Monumental Sized Systems

The system features monumental-sized panels made of cross-grained, solid wood construction; panel frame heights up to 10' (3050 mm) and panel widths up to 3' 7" (1100 mm) are possible. Heavier and/or thicker glass, such as bullet-resistant laminated glazing, can also be used (note that sizes will be restricted with heavier glass).



General Description

WD65 is the folding/paired-panel wood framed system for special applications designed to provide an opening glass wall or storefront for unlimited widths; see Maximum Size Chart. It is available in various configurations utilizing one to twelve panels or more with unhinged pairs of panels; see elevation drawings. The option exists for a swing entry/exit panel(s); note, however, the further panel size constraints with a swing panel not hinged to a side jamb.

Frame and Panels

The nominal, three-layer cross grained solid wood frame and panel thickness is 2 5/8" (66 mm); see profiles in section drawings. The aluminum head jamb is clad with matching wood fascia pieces on both sides. Standard woods are Sapeli Mahogany, European Pine, and Meranti. Contact NanaWall for other wood options. Frames and panels have a sanding sealer or a base coat applied for field finishing by others. Panels are pre-assembled. On a folding pair of panels hinged to a side jamb, the panel hinged to the side jamb is 2 3/8" (62 mm) narrower in nominal width than other panels. All pins and screws to assemble the frame are provided. All the available sills can be provided in a clear or dark anodized aluminum finish.

Glazing

Units can be supplied glazed with: 15/16" (24 mm) double insulating safety, 1 1/8" (28 mm) triple insulating Low-E safety, insulating Low-E safety glass, 1/4" (6 mm) single tempered or laminated, other high performing safety glass such as Heat Mirror, special tint, etc., or other glass on request.

Weatherstripping

Double APTK weatherstripping is provided for vertical sealing between panels and between panels and frames; brush seals with flexible plastic web are provided for all horizontal sealing; see section drawings.

Sliding/Folding Hardware

For sliding and folding of each pair of panels, a patented, load-bearing, upper-running carriage is attached to the upper corner of a panel (shown in the section drawings); attached to the lower corner is a lower-running carriage as a guide. The double pair, twin-tandem, upper-running carriage is constructed to ensure even distribution of pressure on all four rollers. Rollers have sealed bearings and are coated with toughened Polyamide to ensure running and optimal resistance to extreme temperature. Two to five patented clear or dark bronze anodized hinges per connection are provided to connect panels together and to connect panels to the frame.

Locking Hardware and Handle Options

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

If there is a **swing panel**, there are the following hardware options on the primary swing 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. For a unit with a secondary swing panel, available are matching dummy lever handles on both sides and a concealed flush bolt that operates the rods at the top and the bottom. Available with European profile cylinder or adapter to accommodate a 5-7 pin SFIC core (SFIC core supplied by others).

2. Deadbolt Lock. 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. Secured with European profile cylinder or adapter to accommodate a 5-7 pin SFIC core (SFIC core supplied by others).

To keep the panel closed, a door closer should be field installed, but please note that a door closer can only be installed for a swing panel that is attached to the side jamb.

3. No Hardware. For panic hardware to be prepped, supplied, and installed by others, the main entry panel can be supplied with no locking hardware. (Wind load testing results will not be applicable).

For a unit with **no swing panel**, on the folding pair to be opened first provided is two-point locking hardware consisting of top and bottom Polyamide capped locking rods operated by a 180° turn of an L-shaped handle for an inward opening unit and a flat handle for an outward opening unit on the inside. In both cases, there will be a flat handle on the outside. Lockable with a lockset. Turn of key or thumb turn operates lock. Please note that for an outward opening unit, locking from the inside will need to be with a key that may not meet egress requirements.






For a unit where locking/handles on the 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 flat handle on the inside only.

Handle Finish Schemes:

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

Optional - Brass lever handles in oil rubbed or satin nickel and flat handles powdercoated dark brown or silver gray. Push/pull handles are available in brushed stainless steel.

Standard Sill WD65

| TYPE OF TEST | INWARD OPENING UNITS | OUTWARD OPENING UNITS | | | | |
|---|--|--|--|--|--|--|
|  <p>Air Infiltration ^① ASTM E-283, cfm/ft²</p> | @ 1.57 psf (75 Pa): 0.15 | @ 1.57 psf (75 Pa): 0.12 | | | | |
| | @ 6.24 psf (300 Pa): 0.23 | @ 6.24 psf (300 Pa): 0.38 | | | | |
|  <p>Water Penetration ^① ASTM E-547</p> | Pending | Pending | | | | |
|  <p>Structural Load Deflection ^① ASTM E-330: pass See design windload charts for other sized panels <i>Note that the structural test pressures were 50% higher than the design pressures.</i></p> | <p>DESIGN PRESSURE</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; border-right: 1px solid black;"> Positive @ 25 psf (1200 Pa) </td> <td style="width: 50%; text-align: center;"> Negative @ 25 psf (1200 Pa) </td> </tr> </table> | Positive @ 25 psf (1200 Pa) | Negative @ 25 psf (1200 Pa) | <p>DESIGN PRESSURE</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; border-right: 1px solid black;"> Positive @ 25 psf (1200 Pa) </td> <td style="width: 50%; text-align: center;"> Negative @ 25 psf (1200 Pa) </td> </tr> </table> | Positive @ 25 psf (1200 Pa) | Negative @ 25 psf (1200 Pa) |
| Positive @ 25 psf (1200 Pa) | Negative @ 25 psf (1200 Pa) | | | | | |
| Positive @ 25 psf (1200 Pa) | Negative @ 25 psf (1200 Pa) | | | | | |
|  <p>Forced Entry Resistance ^①</p> | In accordance with CAWM 300 requirements | | | | | |
|  <p>Acoustical Performance ^②</p> | The WD65 with STC 38 laminated glass achieved STC and RW values of 36. | | | | | |

① Excerpts of results of 10' 9" W x 8' 2" H three panel unit with Standard sill tested by Architectural Testing, Inc., Fresno, CA, an independent testing laboratory in February 2000 per AAMA/NWWDA 101/I.S.2 standards.

② Excerpts of results of a unit tested by Nusing Mobile Trennwandtechnile, Munster, Germany, an independent testing laboratory in November 2003.

Standard Sill

WD65



Thermal Performance

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

| | | | INWARD OR OUTWARD OPENING UNITS | | | |
|---|--------------------------|--------------------|---------------------------------|-------------------|-----------------|------------------|
| TYPE OF GLASS (1 LITE) ^③ | CENTER OF GLASS U-FACTOR | IG GLASS THICKNESS | UNIT U-FACTOR | SHGC ^④ | VT ^⑤ | 2015 ENERGY STAR |
| Double IG Clear (air filled) | .48 | 15/16" (24 mm) | .43 | .46 | .49 | - |
| Double IG Standard Low E (argon filled) | .26 | 15/16" (24 mm) | .28 | .21 | .42 | * |
| Double IG Standard Low E (air filled) | .30 | 15/16" (24 mm) | .31 | .21 | .42 | - |
| Triple IG Low E x 2 (argon filled) | .12 | 1 1/8" (28 mm) | .23 | .18 | .33 | * |
| Triple IG Low E x 2 (air filled) | .15 | 1 1/8" (28 mm) | .26 | .18 | .33 | * |

NOTES

③ U-Factor results with one horizontal mullion will be .01 to .02 higher than the above results.

④ SHGC = Solar Heat Gain Coefficient
 ⑤ VT = Visible Transmittance

* 2015 Energy Star Qualification Criteria: U-Factor for doors in all climate zones ≤.30, SHGC ≤.25 in South/South Central zones and ≤.40 in North/North Central zones. (For guidance only. NanaWall is not a participant of the Energy Star program.)

Call NanaWall for U-Factor & SHGC for other glass types.

Low Profile Saddle Sill

WD65

| TYPE OF TEST | INWARD OPENING UNITS | OUTWARD OPENING UNITS | | | | | | | | | | | | | | | | |
|--|---|---|--|----------|----------|------------------------------|------------------------------|---|--|---|-----------------|--|----------|----------|------------------------------|------------------------------|---|--|
|  Air Infiltration ^① ASTM E-283 and NFRC 400, cfm/ft ² | @ 1.57 psf (75 Pa): 0.10 (0.10 exfiltration) A3 ^② | @ 1.57 psf (75 Pa): 0.10 (0.10 exfiltration) A3 ^② | | | | | | | | | | | | | | | | |
| | @ 6.24 psf (300 Pa): 0.25 | @ 6.24 psf (300 Pa): 0.25 | | | | | | | | | | | | | | | | |
|  Water Penetration ^① ASTM E-547 and ASTM E-331 | <p>#1. Unit with weep holes from middle channel: No uncontrolled water entry @ 2.1 psf (100 Pa)</p> <p>Subject to the following adaptations of the sill in the field by others:</p> <ol style="list-style-type: none"> 1. Remove the gaskets covering the middle channel. 2. Drill weep holes through the outer bottom wall in middle channel (3/8" weep hole per panel). 3. Drill weep holes through the lower front face of sill (3/8" weep hole per panel). | | | | | | | | | | | | | | | | | |
| | <p>#2. Unit with weep holes from inner channel: No uncontrolled water entry @ 4.2 psf (200 Pa)</p> <p>Subject to the following adaptations of the sill in the field by others:</p> <ol style="list-style-type: none"> 1. Remove the gaskets covering the inner channel. 2. Drill weep holes through the bottom of this channel (about one 3/8" weep hole per panel). 3. Drill weep holes through the lower front face of the sill to the inner channel bottom (about 3/8" weep hole per panel). <p>Please note that due to varying site requirements and conditions, these sills will not be prepared for drainage by NanaWall 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 waterproofing techniques. If drain connections are not made or are not possible, unit may leak with wind driven rain.</p> | | | | | | | | | | | | | | | | | |
|  Structural Load Deflection ^① ASTM E-330: pass See design windload charts for other sized panels <i>Note that the structural test pressures were 50% higher than the design pressures.</i> | <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center; border-bottom: 1px solid black;">DESIGN PRESSURE</th> </tr> <tr> <th style="width: 50%; text-align: center;">Positive</th> <th style="width: 50%; text-align: center;">Negative</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">@ 25 psf (1200 Pa)</td> <td style="text-align: center;">@ 25 psf (1200 Pa)</td> </tr> <tr> <td colspan="2" style="text-align: center; font-size: small;">For saddle sill specimen #2 above, Class SP-PG25, Panel size - 950 mm x 2482 mm ^② (weepholes by others)</td> </tr> </tbody> </table> | DESIGN PRESSURE | | Positive | Negative | @ 25 psf (1200 Pa) | @ 25 psf (1200 Pa) | For saddle sill specimen #2 above, Class SP-PG25, Panel size - 950 mm x 2482 mm ^② (weepholes by others) | | <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center; border-bottom: 1px solid black;">DESIGN PRESSURE</th> </tr> <tr> <th style="width: 50%; text-align: center;">Positive</th> <th style="width: 50%; text-align: center;">Negative</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">@ 25 psf (1200 Pa)</td> <td style="text-align: center;">@ 25 psf (1200 Pa)</td> </tr> <tr> <td colspan="2" style="text-align: center; font-size: small;">For saddle sill specimen #2 above, Class SP-PG25, Panel size - 950 mm x 2482 mm ^② (weepholes by others)</td> </tr> </tbody> </table> | DESIGN PRESSURE | | Positive | Negative | @ 25 psf (1200 Pa) | @ 25 psf (1200 Pa) | For saddle sill specimen #2 above, Class SP-PG25, Panel size - 950 mm x 2482 mm ^② (weepholes by others) | |
| DESIGN PRESSURE | | | | | | | | | | | | | | | | | | |
| Positive | Negative | | | | | | | | | | | | | | | | | |
| @ 25 psf (1200 Pa) | @ 25 psf (1200 Pa) | | | | | | | | | | | | | | | | | |
| For saddle sill specimen #2 above, Class SP-PG25, Panel size - 950 mm x 2482 mm ^② (weepholes by others) | | | | | | | | | | | | | | | | | | |
| DESIGN PRESSURE | | | | | | | | | | | | | | | | | | |
| Positive | Negative | | | | | | | | | | | | | | | | | |
| @ 25 psf (1200 Pa) | @ 25 psf (1200 Pa) | | | | | | | | | | | | | | | | | |
| For saddle sill specimen #2 above, Class SP-PG25, Panel size - 950 mm x 2482 mm ^② (weepholes by others) | | | | | | | | | | | | | | | | | | |
|  Forced Entry Resistance ^① | In accordance with AAMA-1304 requirements | | | | | | | | | | | | | | | | | |
|  Acoustical Performance ^② | The WD65 with STC 38 laminated glass achieved STC and RW values of 36. | | | | | | | | | | | | | | | | | |
| <p>① Excerpts of results of 13' 1" W x 8' 6" H (4000 mm x 2600 mm) four panel unit with Low Profile Saddle sill tested by Architectural Testing, Inc., Fresno, CA, an independent testing laboratory, in October 2015 per AAMA/WDMA/CSA 101/IS.2/A440, NAFS - North American Fenestration Standard.</p> <p>② For Canada, tested to NAFS-08 or equivalent and CSA A44051-09 with weep holes by others.</p> <p>③ Excerpts of results of a unit tested by Nusing Mobile Trennwandtechnik, Munster, Germany, an independent testing laboratory in November 2003.</p> | | | | | | | | | | | | | | | | | | |

Low Profile Saddle Sill WD65







Thermal Performance

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

| | | | INWARD OR OUTWARD OPENING UNITS | | | |
|---|--------------------------|--------------------|---------------------------------|-------------------|-----------------|------------------|
| TYPE OF GLASS (1 LITE) ^④ | CENTER OF GLASS U-FACTOR | IG GLASS THICKNESS | UNIT U-FACTOR | SHCC ^⑤ | VT ^⑥ | 2015 ENERGY STAR |
| Double IG Clear (air filled) | .48 | 15/16" (24 mm) | .44 | .46 | .49 | - |
| Double IG Standard Low E (argon filled) | .26 | 15/16" (24 mm) | .29 | .21 | .43 | * |
| Double IG Standard Low E (air filled) | .30 | 15/16" (24 mm) | .32 | .21 | .43 | - |
| Triple IG Low E x 2 (argon filled) | .12 | 1 1/8" (28 mm) | .24 | .18 | .33 | * |
| Triple IG Low E x 2 (air filled) | .15 | 1 1/8" (28 mm) | .27 | .18 | .33 | * |

| NOTES | |
|--|--|
| <p>④ U-factor results with one horizontal mullion will be .01 to .02 higher than the above results.</p> | <p>⑤ SHGC = Solar Heat Gain Coefficient ⑥ VT = Visible Transmittance</p> |
| <p>* 2015 Energy Star Qualification Criteria: U-Factor for doors in all climate zones ≤.30, SHGC ≤.25 in South/South Central zones and ≤.40 in North/North Central zones. (For guidance only. NanaWall is not a participant of the Energy Star program.)</p> | |
| <p>Call NanaWall for U-Factor & SHGC for other glass types.</p> | |

Flush Sill WD65

| TYPE OF TEST | INWARD OPENING UNITS | OUTWARD OPENING UNITS |
|--|---|---|
|  Air Infiltration ^① ASTM E-283, cfm/ft ² | @ 1.57 psf (75 Pa): 0.10 (0.10 exfiltration) A3 ^② | @ 1.57 psf (75 Pa): 0.10 (0.10 exfiltration) A3 ^② |
| | @ 6.24 psf (300 Pa): 0.25 | |
|  Structural Load Deflection ^① ASTM E-330: pass See design windload charts for other sized panels <i>Note that the structural test pressures were 50% higher than the design pressures.</i> | DESIGN PRESSURE Positive Negative @ 25 psf @ 25 psf (1200 Pa) (1200 Pa) | DESIGN PRESSURE Positive Negative @ 25 psf @ 25 psf (1200 Pa) (1200 Pa) |
|  Forced Entry Resistance ^① | In accordance with AAMA-1304 requirements | |
|  Acoustical Performance ^② | The WD65 with STC 38 insulated laminated glass achieved STC and RW values of 36. | |

① Excerpts of results of 13' 1" W x 8' 6" H (4000 mm x 2600 mm) four panel unit with Low Profile Saddle sill tested by Architectural Testing, Inc., Fresno, CA, an independent testing laboratory, in October 2015 per AAMA/WDMA/CSA 101/I.S.2/A440, NAFS - North American Fenestration Standard.

② Excerpts of results of a unit tested by Nusing Mobile Trennwandtechnik, Munster, Germany, an independent testing laboratory in November 2003.

Flush Sill

WD65



Thermal Performance

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

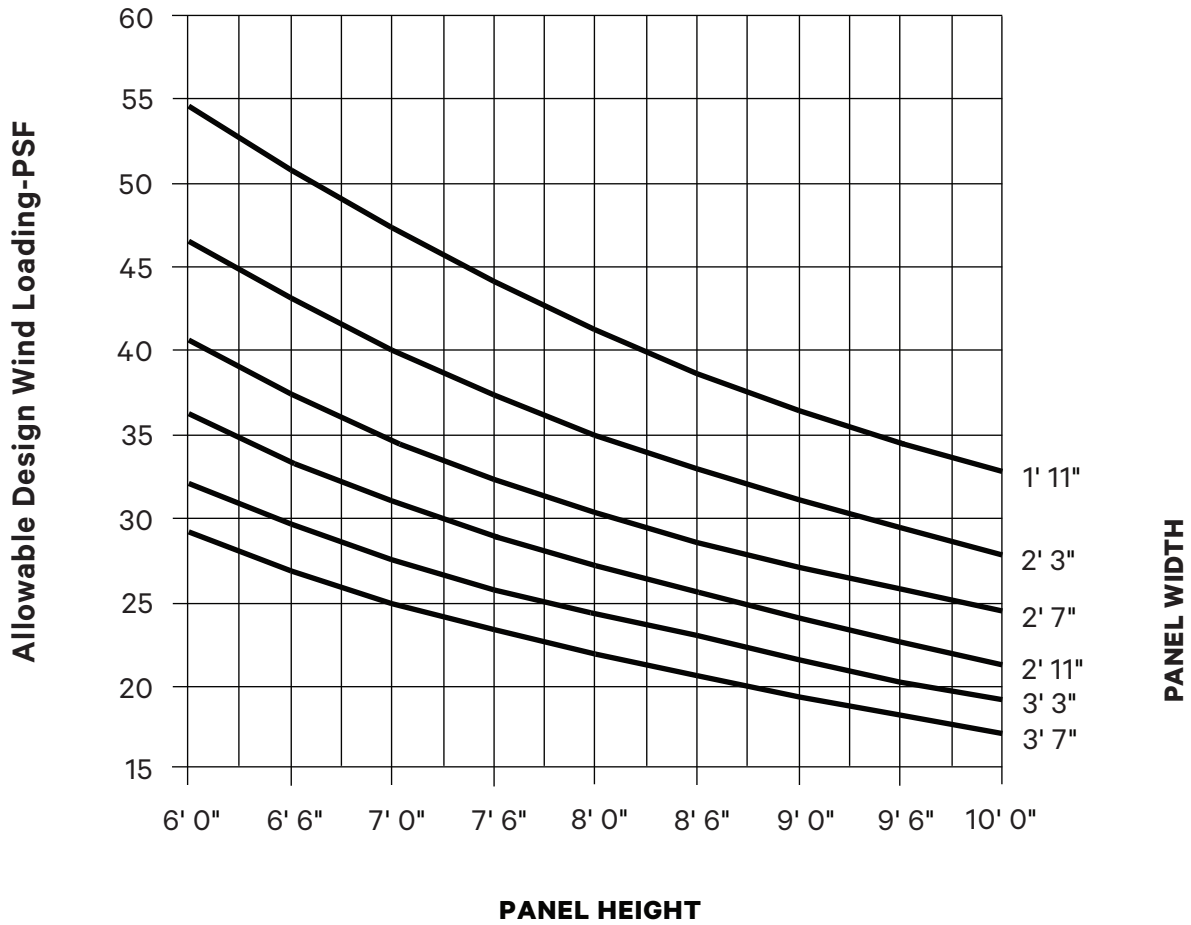
| | | | INWARD OR OUTWARD OPENING UNITS | | | |
|---|--------------------------|--------------------|---------------------------------|--------|------|------------------|
| TYPE OF GLASS (1 LITE) ④ | CENTER OF GLASS U-FACTOR | IG GLASS THICKNESS | UNIT U-FACTOR | SHGC ⑤ | VT ⑥ | 2015 ENERGY STAR |
| Double IG Clear (air filled) | .48 | 15/16" (24 mm) | .43 | .46 | .49 | - |
| Double IG Standard Low E (argon filled) | .26 | 15/16" (24 mm) | .28 | .21 | .43 | * |
| Double IG Standard Low E (air filled) | .30 | 15/16" (24 mm) | .31 | .21 | .43 | - |
| Triple IG Low E x 2 (argon filled) | .12 | 1 1/8" (28 mm) | .23 | .18 | .34 | * |
| Triple IG Low E x 2 (air filled) | .15 | 1 1/8" (28 mm) | .26 | .18 | .34 | * |

NOTES

| | |
|---|--|
| ④ U-factor results with one horizontal mullion will be .01 to .02 higher than the above results. | ⑤ SHGC = Solar Heat Gain Coefficient ⑥ VT = Visible Transmittance |
| * 2015 Energy Star Qualification Criteria: U-Factor for doors in all climate zones ≤.30, SHGC ≤.25 in South/South Central zones and ≤.40 in North/North Central zones. (For guidance only. NanaWall is not a participant of the Energy Star program.) | |
| Call NanaWall for U-Factor & SHGC for other glass types. | |

Applies to Positive Design Pressures and Negative Design Pressures for Outswing and Inswing Units - All Sills

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

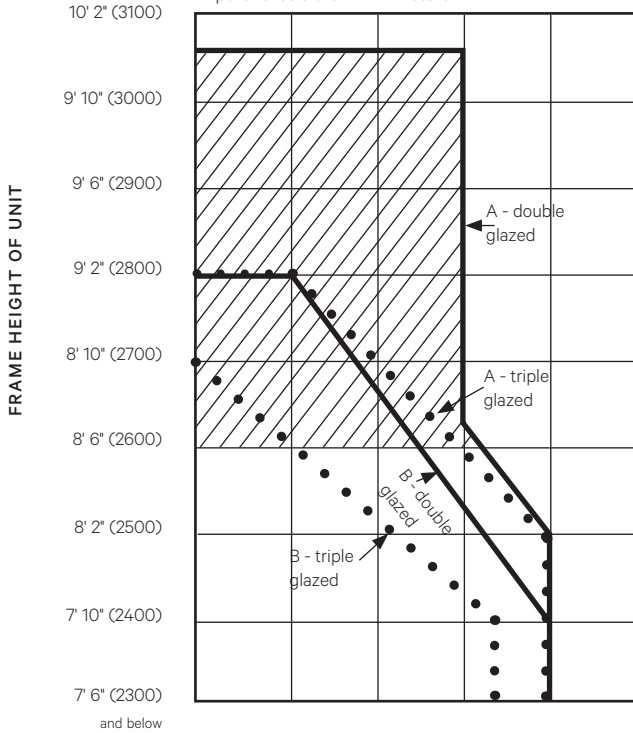


Any Custom Size is Possible. See Maximum Frame Size Chart for Maximum Possible Sizes.

Derived from Comparative Analysis - based on unit tested in October 2015 with panel sizes of about 3' 1" W x 8' 2" 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. Please also note that 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.

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



| NUMBER OF PANELS IN UNIT | FRAME WIDTH OF UNIT | | | | |
|--------------------------|---------------------|----------------|----------------|----------------|----------------|
| | 1 | 2 | 3 | 4 | 5 |
| 1 | 1' 11" (600) | 2' 3" (700) | 2' 7" (800) | 2' 11" (900) | 3' 3" (1000) |
| 2 | 3' 11" (1200) | 4' 7" (1400) | 5' 3" (1600) | 5' 10" (1800) | 6' 6" (2000) |
| 3 | 5' 10" (1800) | 6' 10" (2100) | 7' 10" (2400) | 8' 10" (2700) | 9' 10" (3000) |
| 4 | 7' 10" (2400) | 9' 2" (2800) | 10' 6" (3200) | 11' 9" (3600) | 13' 1" (4000) |
| 5 | 9' 10" (3000) | 11' 5" (3500) | 13' 1" (4000) | 14' 9" (4500) | 16' 4" (5000) |
| 6 | 11' 9" (3600) | 13' 10" (4200) | 15' 8" (4800) | 17' 8" (5400) | 19' 8" (6000) |
| 7 | 13' 10" (4200) | 16' (4900) | 18' 4" (5600) | 20' 7" (6300) | 22' 10" (7000) |
| 8 | 15' 8" (4800) | 18' 4" (5600) | 20' 11" (6400) | 23' 6" (7200) | 26' 1" (8000) |
| 9 | 17' 9" (5400) | 20' 7" (6300) | 23' 6" (7200) | 26' 5" (8100) | 29' 4" (9000) |
| 10 | 19' 8" (6000) | 22' 10" (7000) | 26' 1" (8000) | 29' 4" (9000) | 32' 9" (10000) |
| 11 | 21' 7" (6600) | 25' 1" (7700) | 28' 8" (8800) | 32' 5" (9900) | 36' 1" (11000) |
| 12 | 23' 6" (7200) | 27' 4" (8400) | 31' 5" (9600) | 35' 5" (10800) | 39' 4" (12000) |

Double and Triple Glazed

Units with up to twelve panels are shown on the graph below. With additional unhinged paired panels, virtually unlimited unit widths are possible. Any custom panel 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 for a unit with double glazing.

Dotted line on chart indicates maximum frame height possible for a given maximum frame width for a unit with triple glazing.

On chart indicates that heights above 8' 6" (2600 mm), a horizontal mullion is needed and for heights above 9' 2" (2800 mm), 3/4" (95 mm) stiles and rails are also needed.

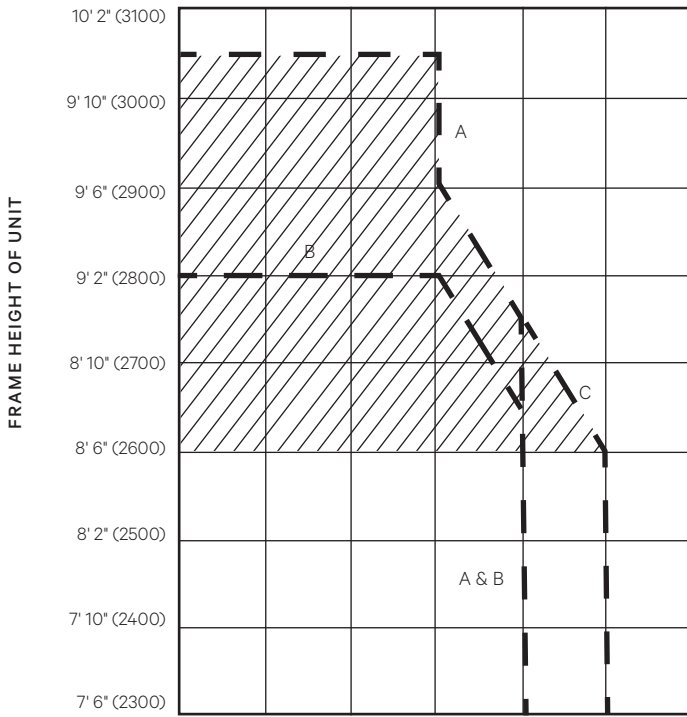
A. Either for configurations with folding panels only or for configurations with folding panels and a swing door hinged to a side jamb - includes Models 1L, 1R, 1L1R, 2L, 2R, 1L2R, 2L1R, 4L, 4R, 2L2R, 1L4R, 4L1R, 6L, 6R, 2L4R, 4L2R, 1L6R, 6L1R, 2L6R, 4L4R, 6L2R, 4L6R, 6L4R, and 6L6R.

B. For all configurations

The maximum size limits for double glazed units are based on the maximum weight of a panel that has a net glass thickness of 5/16" (8 mm) or 5/32" (4 mm) for each glass pane. The maximum size limits for triple glazed units are based on the maximum weight of a panel that has a net glass thickness of 1/2" (12 mm) or 5/32" (4 mm) for each glass pane. For net thicker glass, this maximum size limit chart will not apply.

For configurations with no swing panels, the minimum panel width needed is 1' 8" (510 mm).

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' 3" (1000) | widths not possible |
| 1 | 3' 11" (1200) | 4' 7" (1400) | 5' 3" (1600) | 5' 10" (1800) | 6' 6" (2000) | 7' 2" (2200) |
| 2 | 5' 10" (1800) | 6' 10" (2100) | 7' 10" (2400) | 8' 10" (2700) | 9' 10" (3000) | widths not possible |
| 3 | 7' 10" (2400) | 9' 2" (2800) | 10' 6" (3200) | 11' 9" (3600) | 13' 1" (4000) | 14' 5" (4400) |
| 4 | 9' 10" (3000) | 11' 5" (3500) | 13' 1" (4000) | 14' 9" (4500) | 16' 4" (5000) | widths not possible |
| 5 | 11' 9" (3600) | 13' 10" (4200) | 15' 8" (4800) | 17' 8" (5400) | 19' 8" (6000) | 21' 7" (6600) |
| 6 | 13' 10" (4200) | 16' (4900) | 18' 4" (5600) | 20' 7" (6300) | 22' 10" (7000) | widths not possible |
| 7 | 15' 8" (4800) | 18' 4" (5600) | 20' 11" (6400) | 23' 6" (7200) | 26' 1" (8000) | 28' 10" (8800) |
| 8 | 17' 9" (5400) | 20' 7" (6300) | 23' 6" (7200) | 26' 5" (8100) | 29' 4" (9000) | widths not possible |
| 9 | 19' 8" (6000) | 22' 10" (7000) | 26' 1" (8000) | 29' 4" (9000) | 32' 5" (9900) | 36' 1" (11000) |
| 10 | 21' 7" (6600) | 25' 1" (7700) | 28' 8" (8800) | 32' 5" (9900) | 36' 1" (11000) | widths not possible |
| 11 | 23' 6" (7200) | 27' 4" (8400) | 31' 5" (9600) | 35' 5" (10800) | 39' 4" (12000) | 43' 3" (13200) |
| 12 | | | | | | |

Single Glazed

Units with up to twelve panels are shown on the graph below. With additional unhinged paired panels, virtually unlimited unit widths are possible. Any custom panel size is possible up to the maximum size shown.

Broken line **— — —** on chart indicates maximum frame height possible for a given maximum frame width for a unit with single glazing.

On chart indicates that heights above 8' 6" (2600 mm), a horizontal mullion is needed and for heights above 9' 2" (2800 mm), 3 3/4" (95 mm) stiles and rails are also needed.

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.

C. On chart indicates the following additional limitation: no units with swing panel allowed, only the following configurations allowed 2L, 2R, 4L, 4R, 2L2R, 6L, 6R, 2L4R, 4L2R, 2L6R, 4L4R, 6L2R, 4L6R, 6L6R

The maximum size limits for single glazed units are based on a glass thickness of 1/4" (6 mm). For net thicker glass, this maximum size limit chart will not apply.

For configurations with no swing panels, the minimum panel width needed is 1' 8" (510 mm).

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

Glass dimensions of all panels in a unit are equal, except for glass width of panel(s) that is hinged to either side jamb that has at least one other panel hinged to it. This glass width is 60 mm (2 3/8") less than the glass width of the other panels.

Nominal Panel Height (PH) is defined as Glass Daylight Opening Height + 156 = (6 1/8")

Nominal Panel Width (PW) is defined as Glass Daylight Opening Width + 156 = (6 1/8")

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.

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.

For each configuration, the Frame Width (FW) is the sum of the nominal Panel Width (PW) x the number of panels - 60 mm x number of panels hinged to side jamb with at least one other panel hinged to it plus 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)

Standard Sill:

Flush/Low Profile Sill:

Surface Mounted Interior Sill:

WD65 System

Frame Height = Panel Height + 108 (4 1/4") = Clear Opening Height + 94 (3 11/16")

Frame Height = Panel Height + 118 (4 11/16") = Clear Opening Height + 104 (4 1/8")

Frame Height = Panel Height + 104 (4 1/8") = Clear Opening Height + 87 (3 7/16")

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.

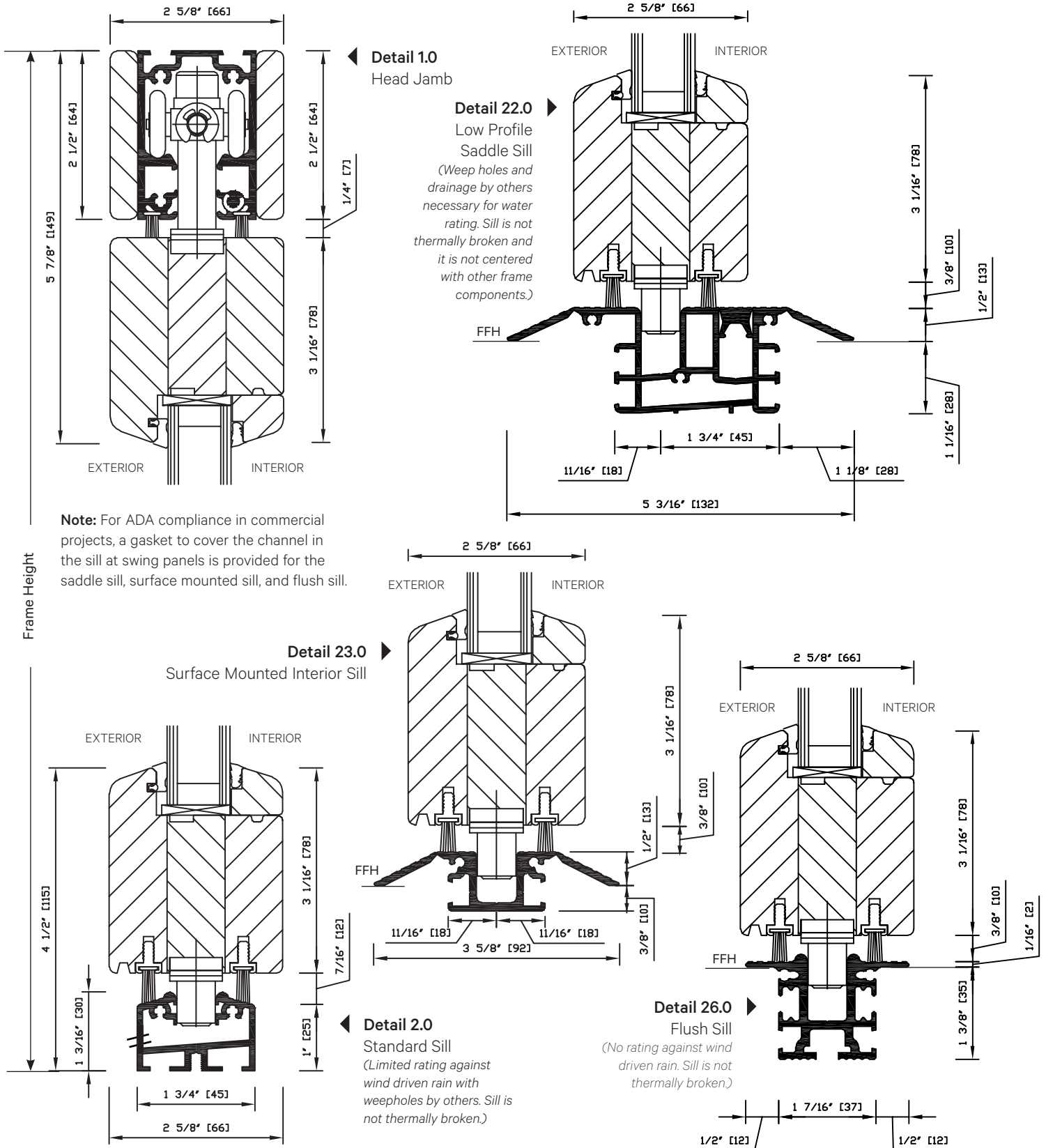
Please note that widths for units with unhinged panels or angle turns will be different.

| | |
|----------------------------|--|
| Model 1R | Frame Width = 1 x Panel Width + 133 = 1 x Panel Width + 5 1/4" |
| Model 1L1R | Frame Width = 2 x Panel Width + 143 = 2 x Panel Width + 5 5/8" |
| Model 2R* | Frame Width = 2 x Panel Width - 60 + 145 = 2 x Panel Width + 3 3/8" |
| Model 3R*, Model 1L2R* | Frame Width = 3 x Panel Width - 60 + 153 = 3 x Panel Width + 3 11/16" |
| Model 4R* | Frame Width = 4 x Panel Width - 60 + 160 = 4 x Panel Width + 3 15/16" |
| Model 1L3R* | Frame Width = 4 x Panel Width - 60 + 163 = 4 x Panel Width + 4 1/16" |
| Model 2L2R** | Frame Width = 4 x Panel Width - 120 + 165 = 4 x Panel Width + 1 3/4" |
| Model 5R*, Model 1L4R* | Frame Width = 5 x Panel Width - 60 + 173 = 5 x Panel Width + 4 7/16" |
| Model 2L3R** | Frame Width = 5 x Panel Width - 120 + 173 = 5 x Panel Width + 2 1/16" |
| Model 3L3R** | Frame Width = 6 x Panel Width - 120 + 183 = 6 x Panel Width + 2 1/2" |
| Model 2L4R** | Frame Width = 6 x Panel Width - 120 + 185 = 6 x Panel Width + 2 9/16" |
| Model 1L5R* | Frame Width = 6 x Panel Width - 60 + 183 = 6 x Panel Width + 4 13/16" |
| Model 6R* | Frame Width = 6 x Panel Width - 60 + 185 = 6 x Panel Width + 4 15/16" |
| Model 1L6R* | Frame Width = 7 x Panel Width - 60 + 193 = 7 x Panel Width + 5 1/4" |
| Model 2L5R**, Model 3L4R** | Frame Width = 7 x Panel Width - 120 + 193 = 7 x Panel Width + 2 7/8" |
| Model 4L4R**, Model 2L6R** | Frame Width = 8 x Panel Width - 120 + 205 = 8 x Panel Width + 3 3/8" |
| Model 3L5R** | Frame Width = 8 x Panel Width - 120 + 203 = 8 x Panel Width + 3 1/4" |
| Model 4L5R**, Model 3L6R** | Frame Width = 9 x Panel Width - 120 + 213 = 9 x Panel Width + 3 11/16" |
| Model 4L6R** | Frame Width = 10 x Panel Width - 120 + 225 = 10 x Panel Width + 4 1/8" |
| Model 5L5R** | Frame Width = 10 x Panel Width - 120 + 223 = 10 x Panel Width + 4 13/16" |
| Model 5L6R** | Frame Width = 11 x Panel Width - 120 + 233 = 11 x Panel Width + 4 7/16" |
| Model 6L6R** | Frame Width = 12 x Panel Width - 120 + 245 = 12 x Panel Width + 4 15/16" |

* One panel that is 60 mm (2 3/8") narrower than other panels

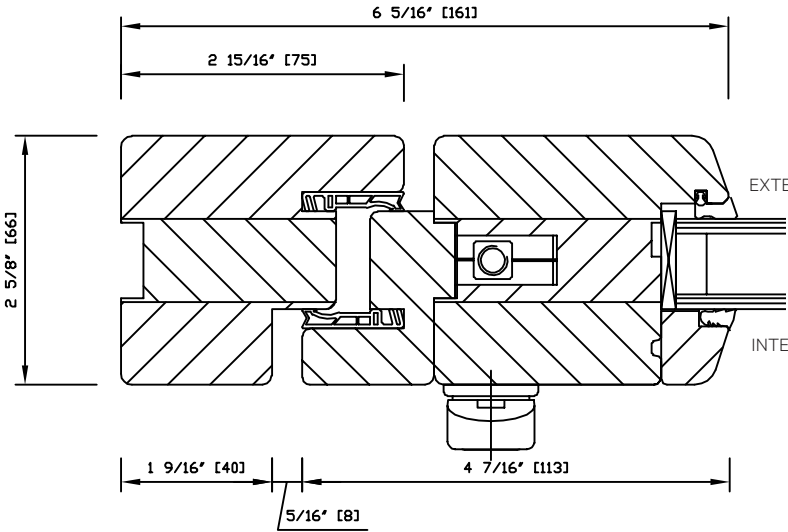
** Two panels that are 60 mm (2 3/8") narrower than other panels

Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.

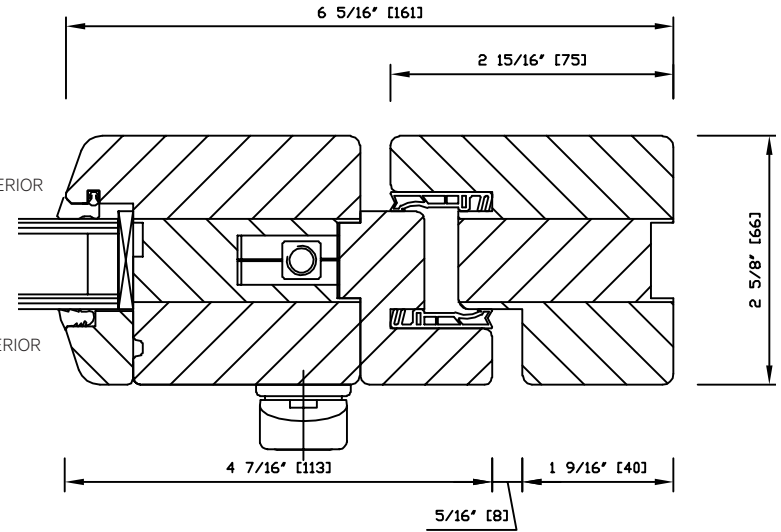


Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.

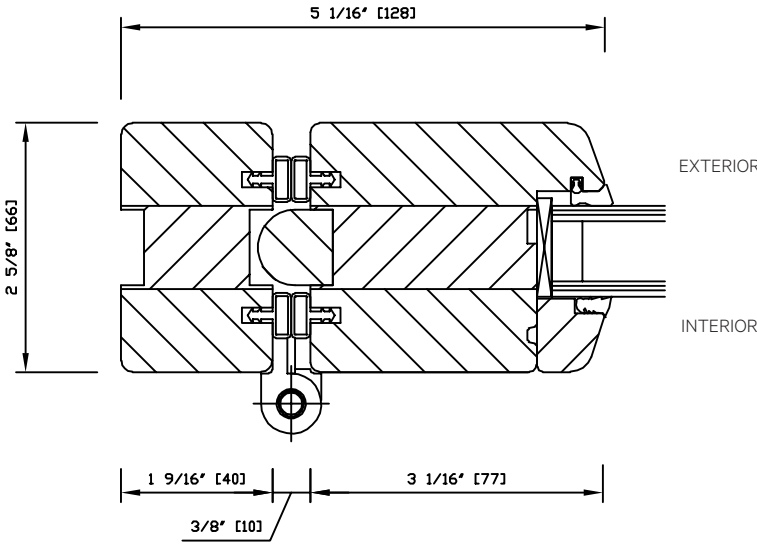
Detail 4.0 Swing panel with locking at left side jamb



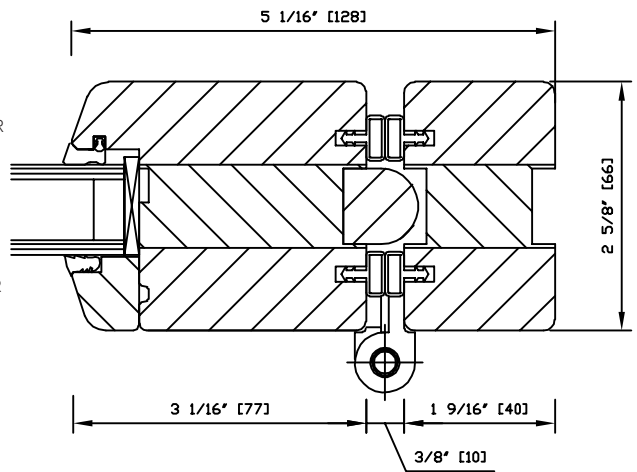
Detail 4R.0 Swing panel with locking at right side jamb



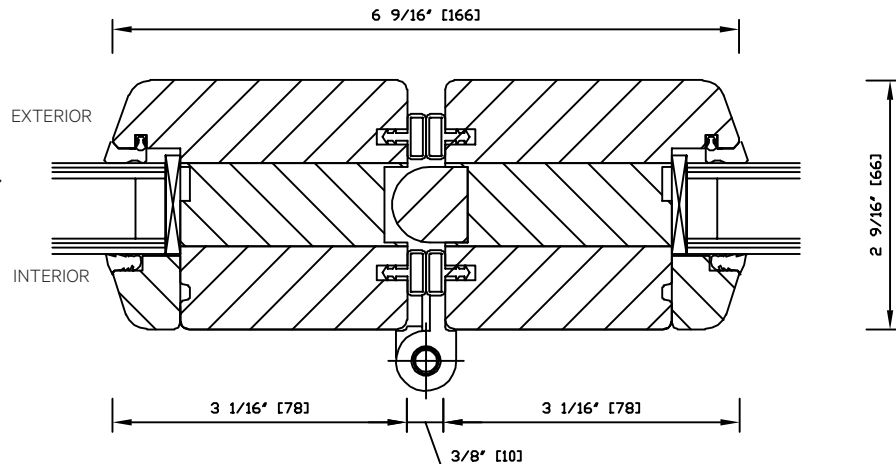
Detail 3R.0 Panel hinged at left side jamb



Detail 3.0 Panel hinged at right side jamb

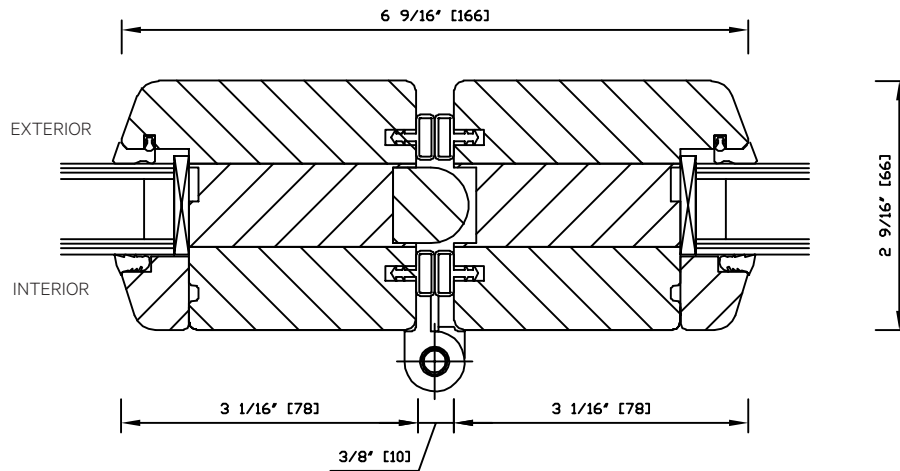


Detail 7C.0 Right folding panel with running carriage set

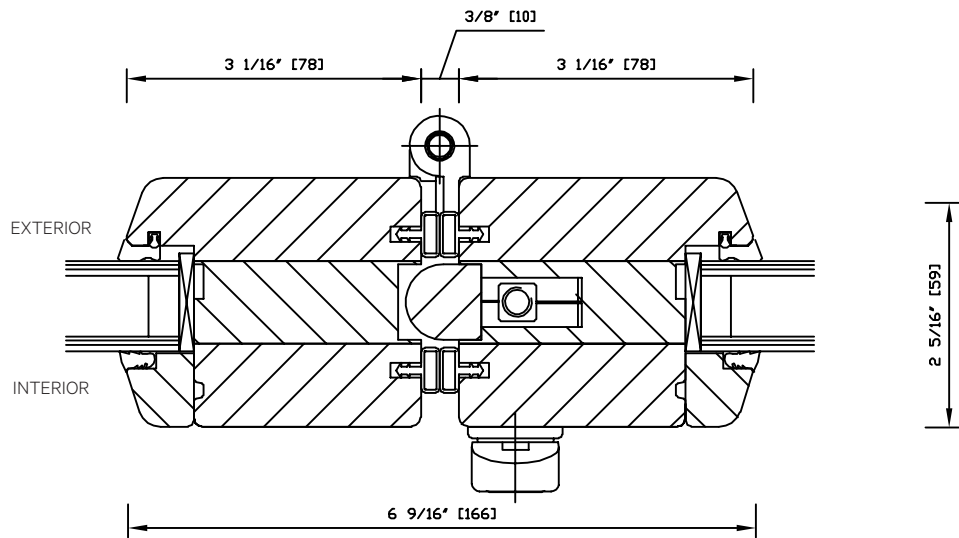


Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.

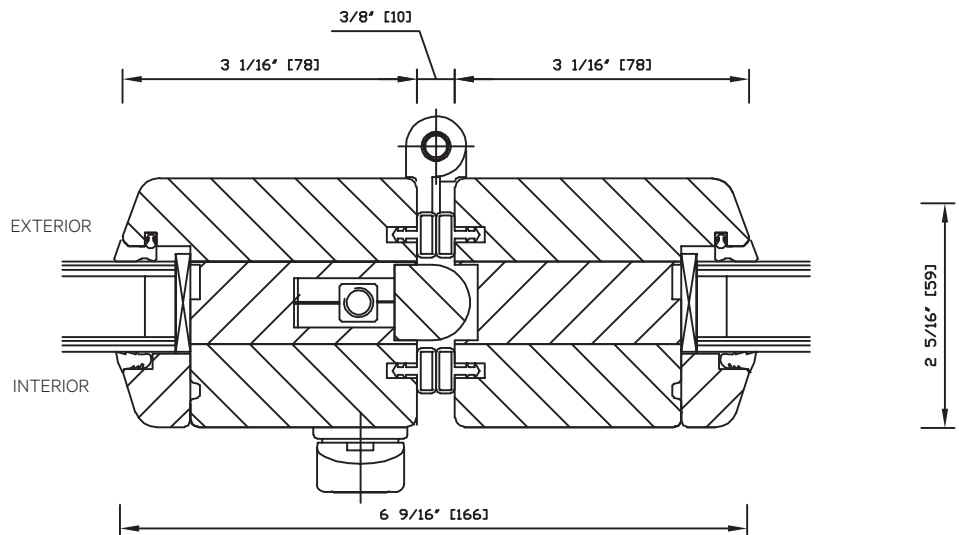
Detail 7RC.0
Left folding panels with running carriage set



Detail 7.0
Right folding panel with locking

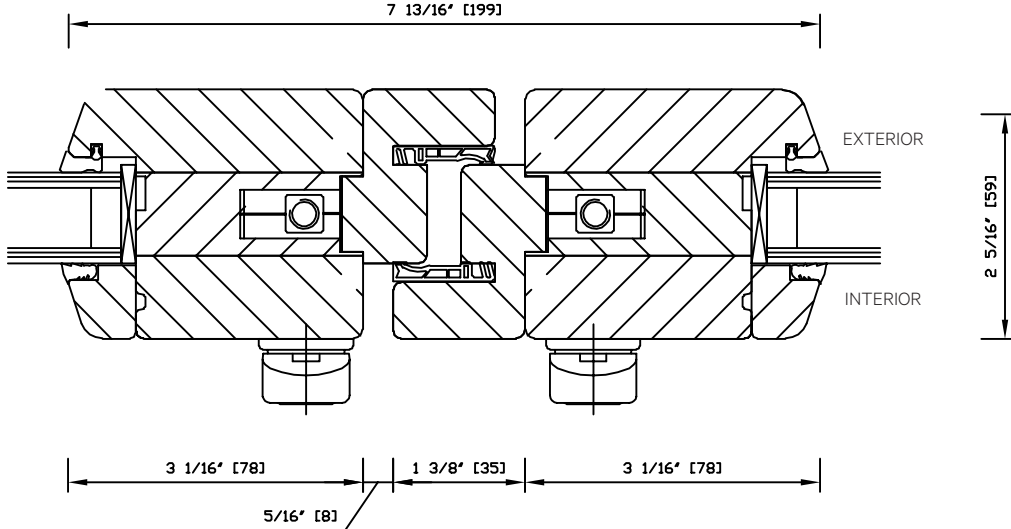
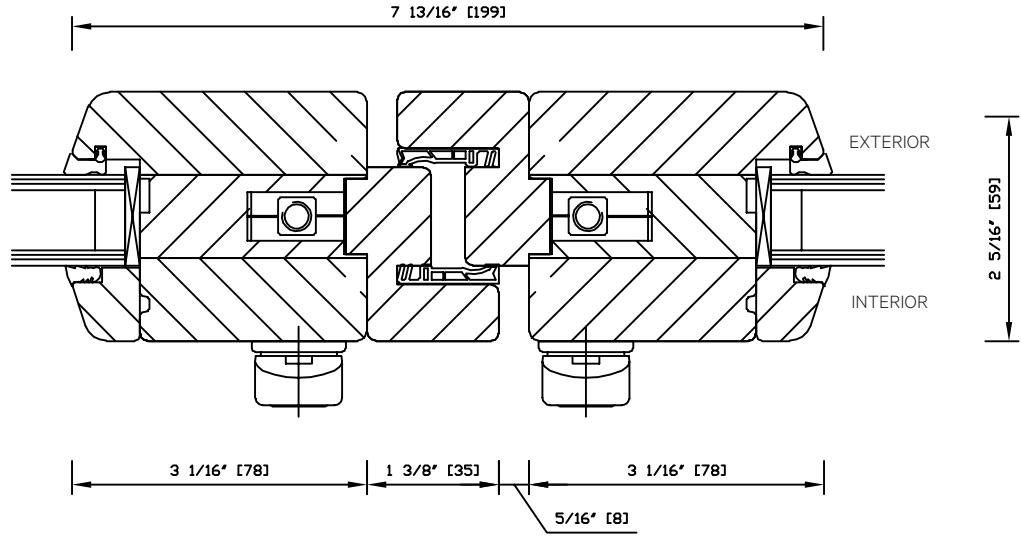


Detail 7R.0
Left folding panel with locking



Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.

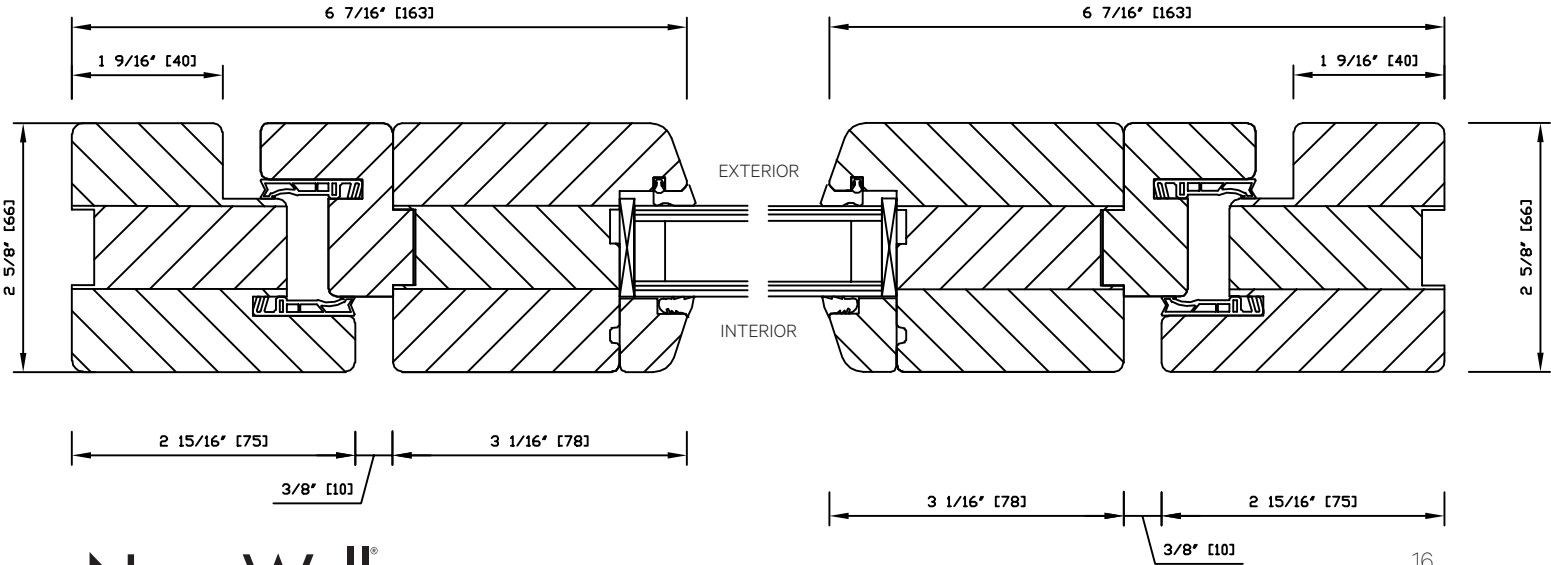
Detail 8.0, 9.0 & 10.0
Opening point of panels
(handles and locking only
if swing panel(s))



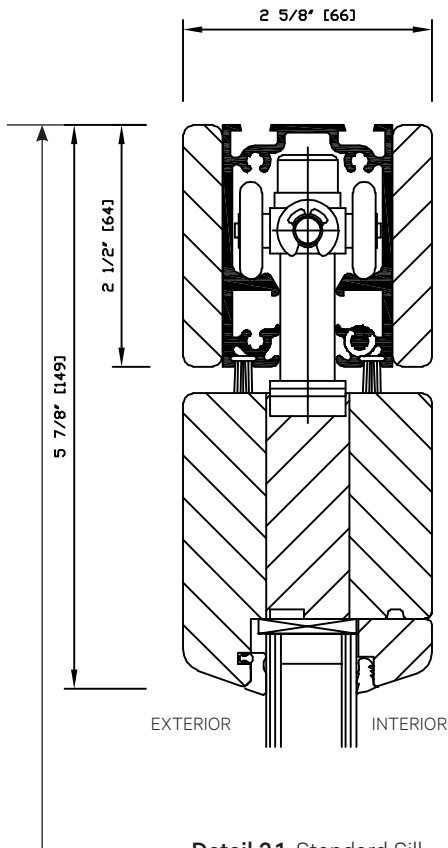
Detail 8R.0, 9R.0 & 10R.0
Opening point of panels
(handles and locking only
if swing panel(s))

Detail 5.0
Panel with running carriage set meeting left side jamb

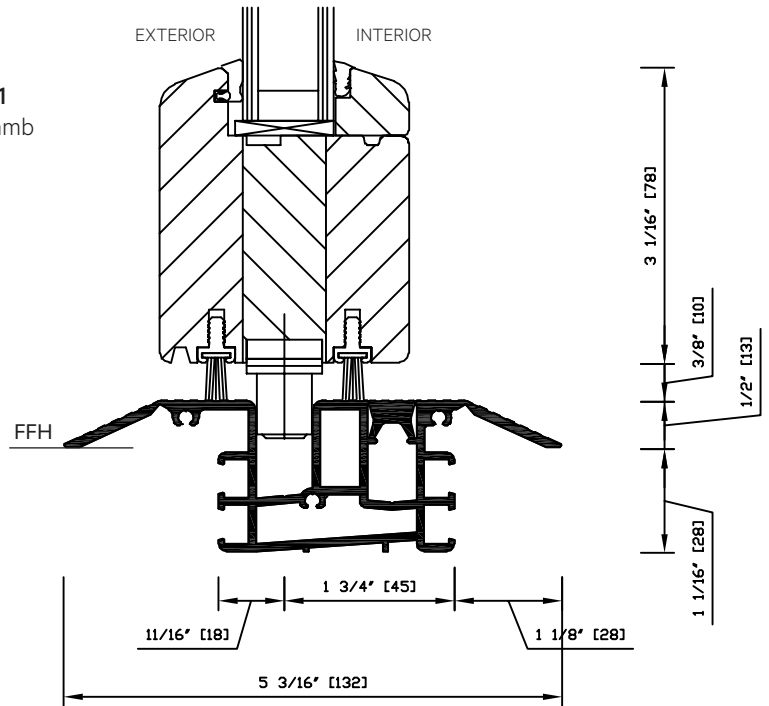
Detail 5R.0
Panel with running carriage set meeting right side jamb



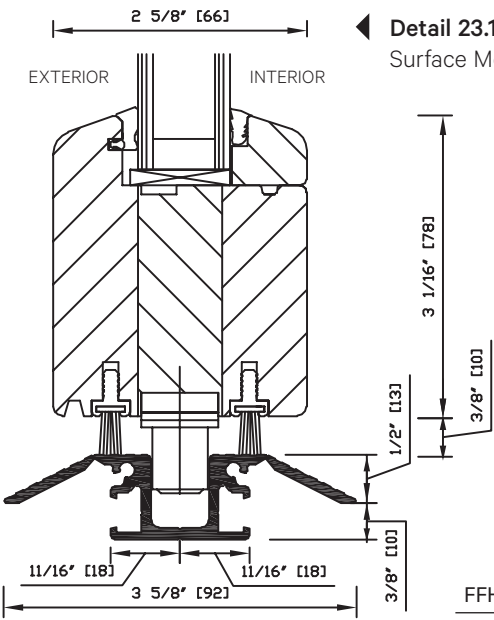
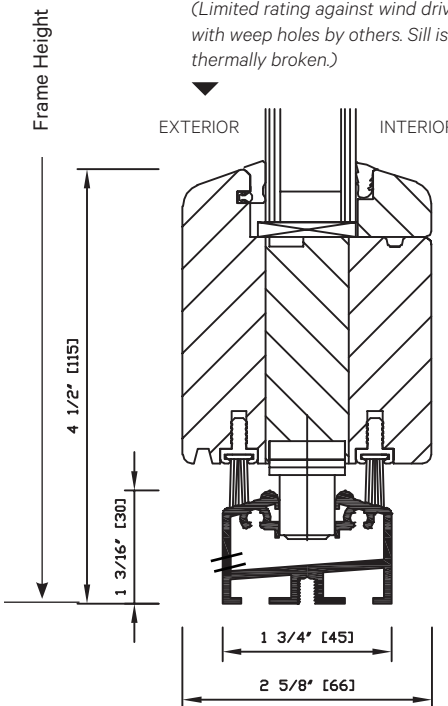
Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.



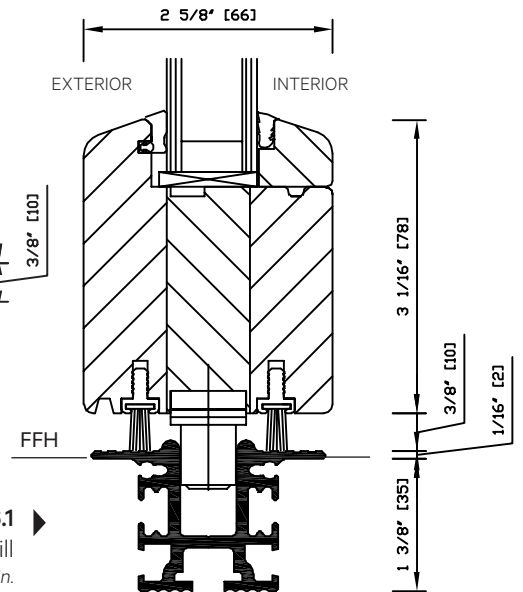
Detail 1.1
Head Jamb



Detail 2.1 Standard Sill
(Limited rating against wind driven rain with weep holes by others. Sill is not thermally broken.)



Detail 23.1
Surface Mounted Interior Sill



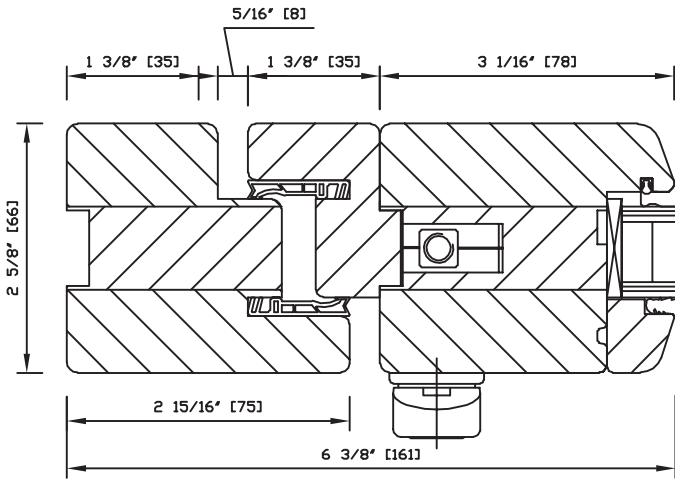
Detail 26.1
Flush Sill

(No rating against wind driven rain. Sill is not thermally broken.)

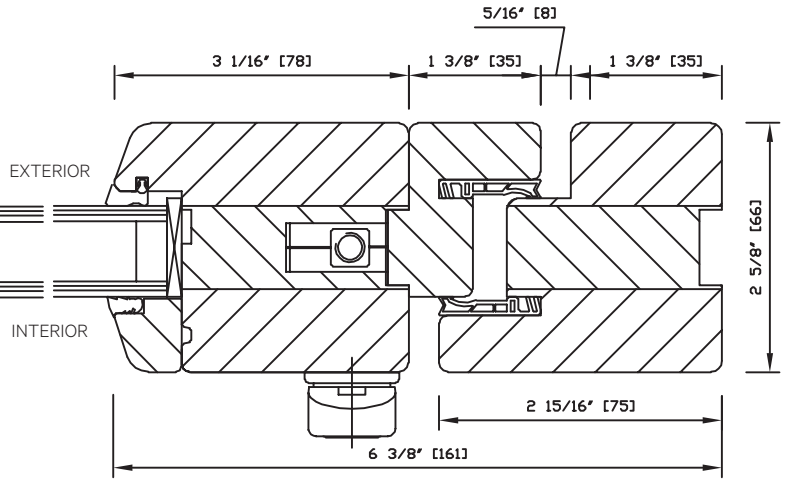
Note: For ADA compliance in commercial projects, a gasket to cover the channel in the sill at swing panels is provided for the saddle sill, surface mounted sill, and flush sill.

Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.

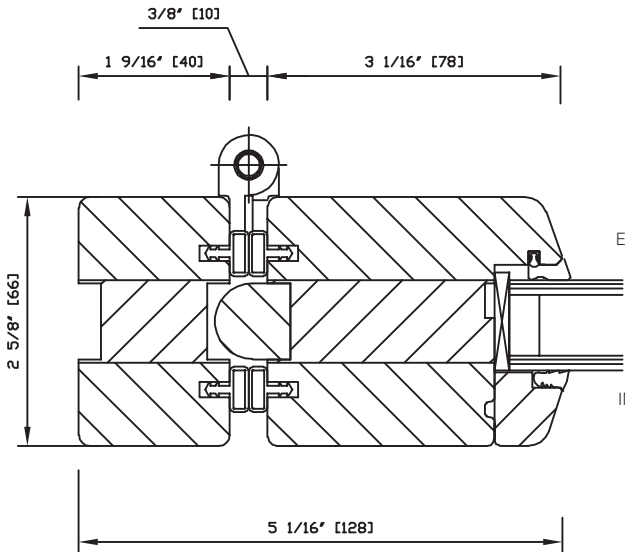
Detail 4.1 Swing panel with locking at left side jamb



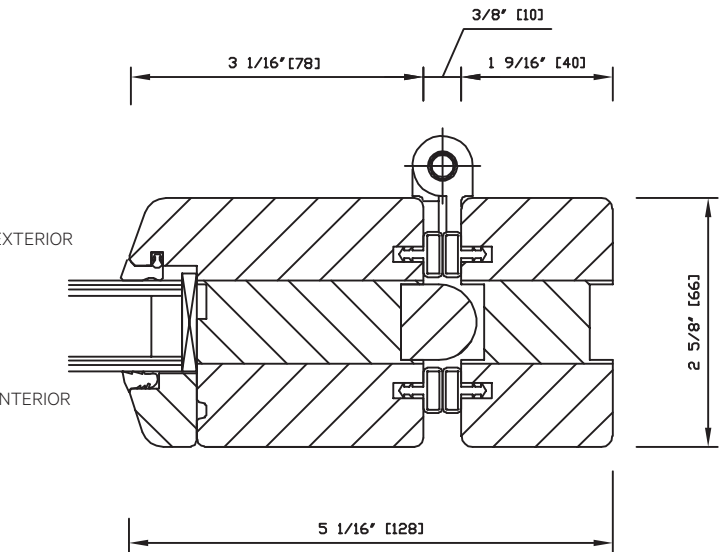
Detail 4R.1 Swing panel with locking at right side jamb



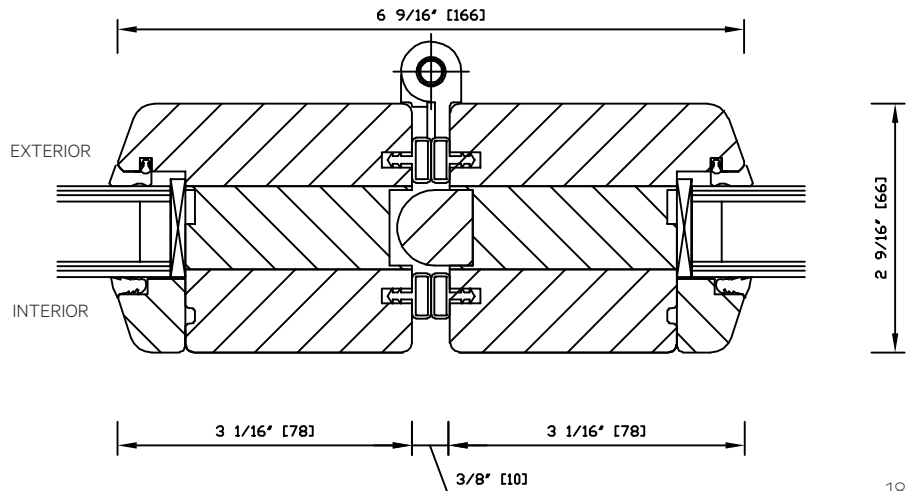
Detail 3R.1 Panel hinged at left side of jamb



Detail 3.1 Panel hinged at right side of jamb

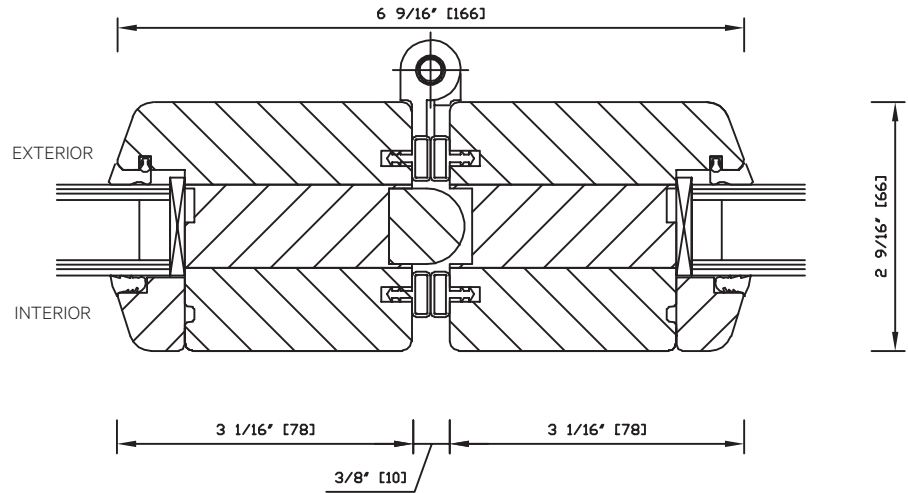


Detail 7C.1
Right folding panels with running carriage set

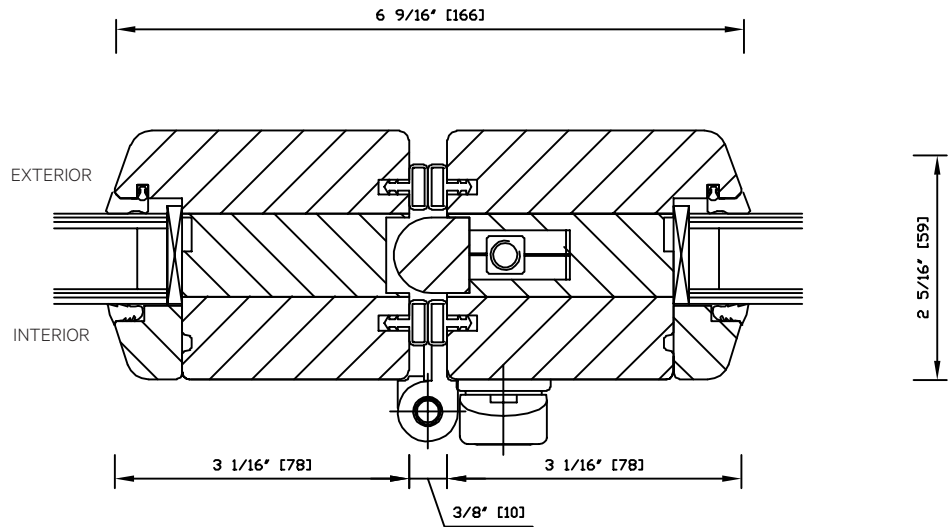


Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.

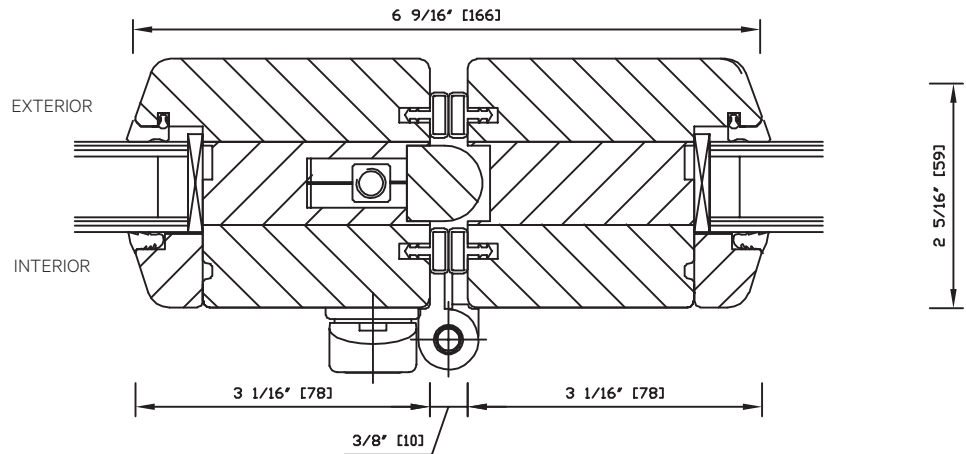
Detail 7RC.1
Left folding panels with running carriage set



Detail 7.1
Right folding panels with locking

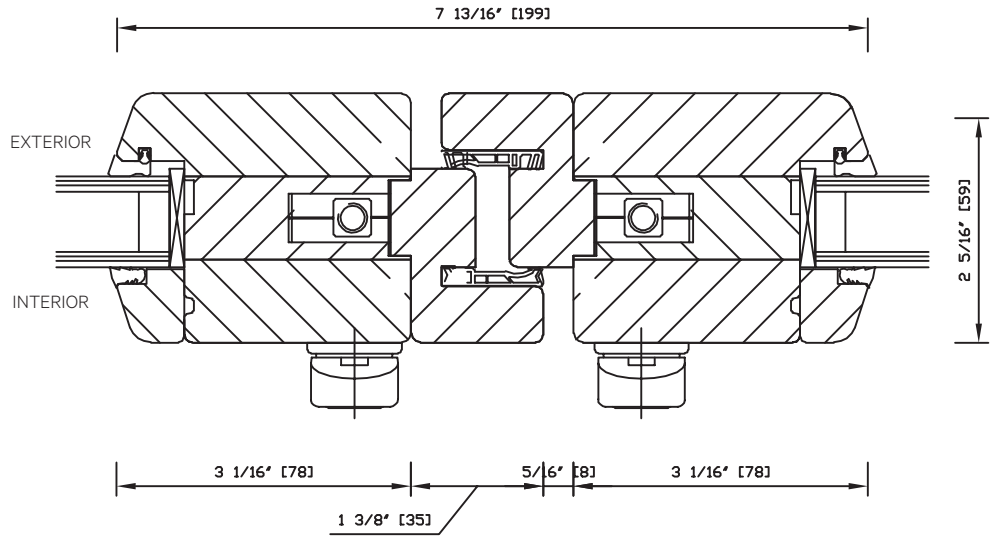


Detail 7R.1
Left folding panels with locking

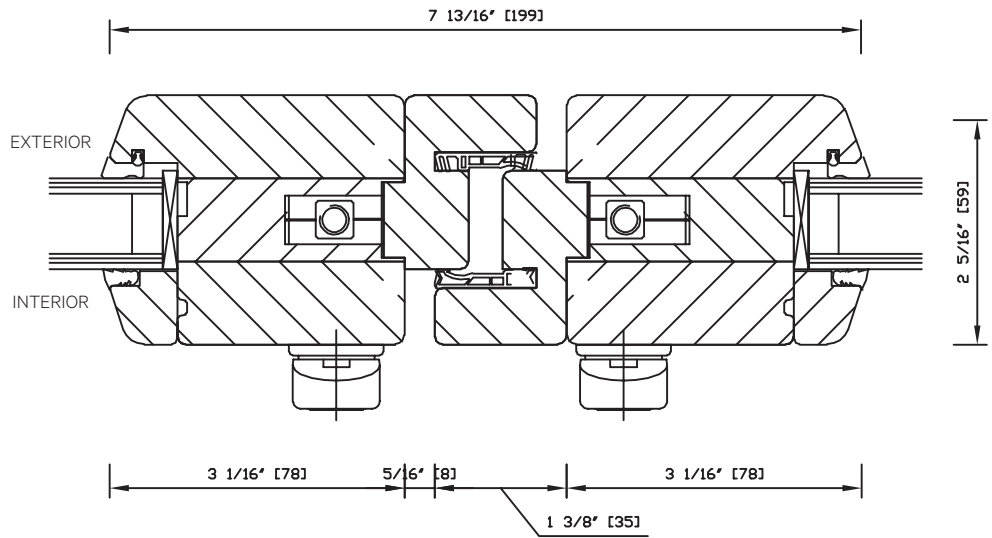


Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.

Detail 8R.1, 9R.1 & 10R.1
Opening point of panels
(Locking and handles only if
swing panel(s))

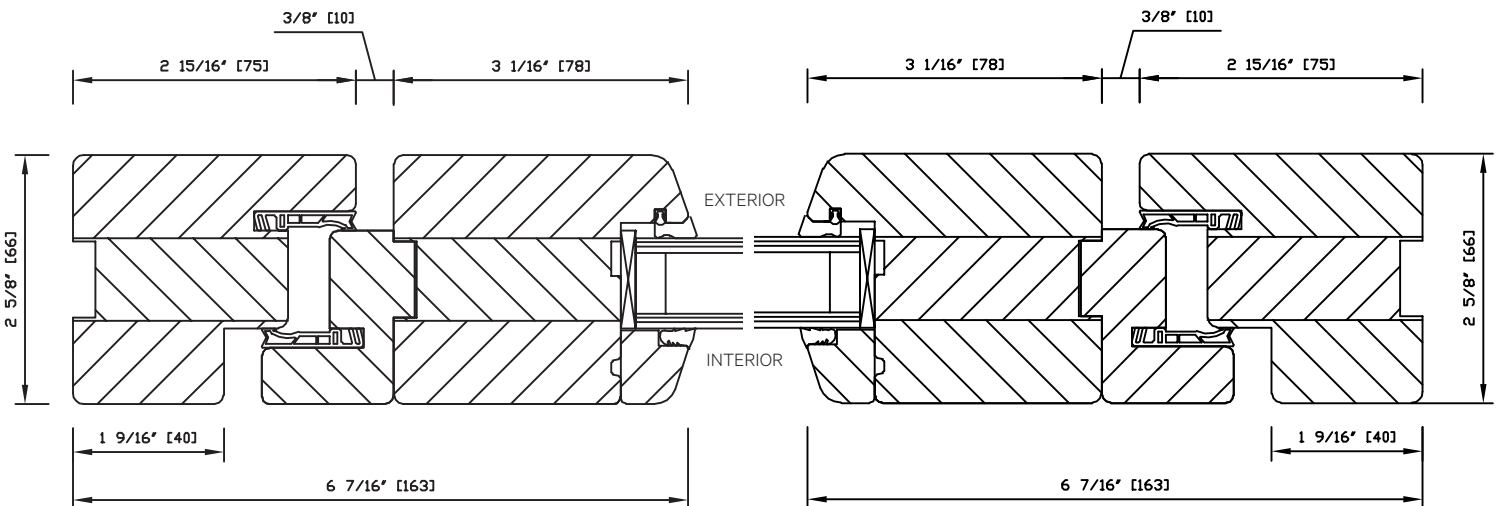


Detail 8.1, 9.1 & 10.1
Opening point of panels
(Locking and handles only if
swing panel(s))

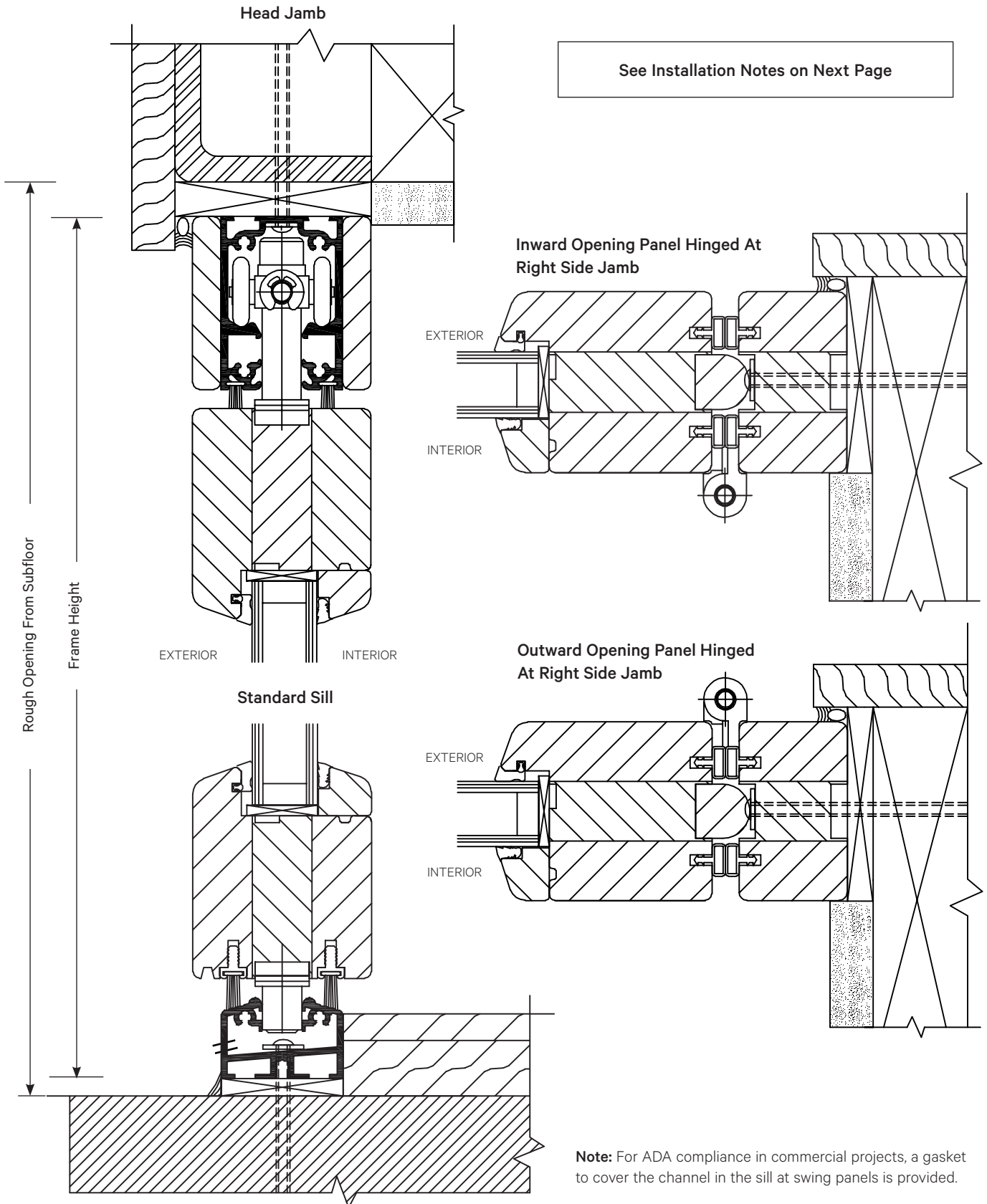


Detail 5.1
Panel with running carriage set meeting left side jamb

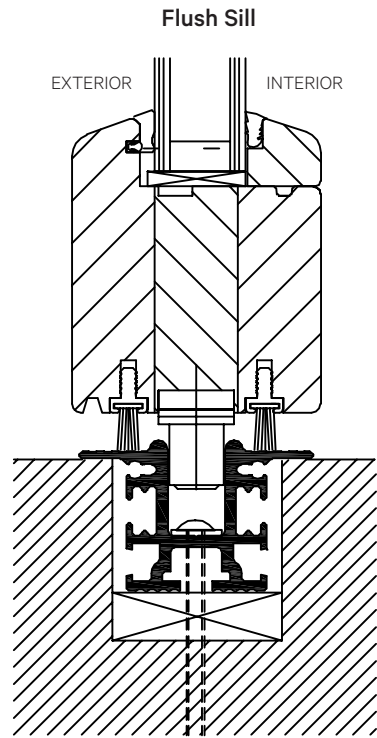
Detail 5R.1
Panel with running carriage set meeting right side jamb



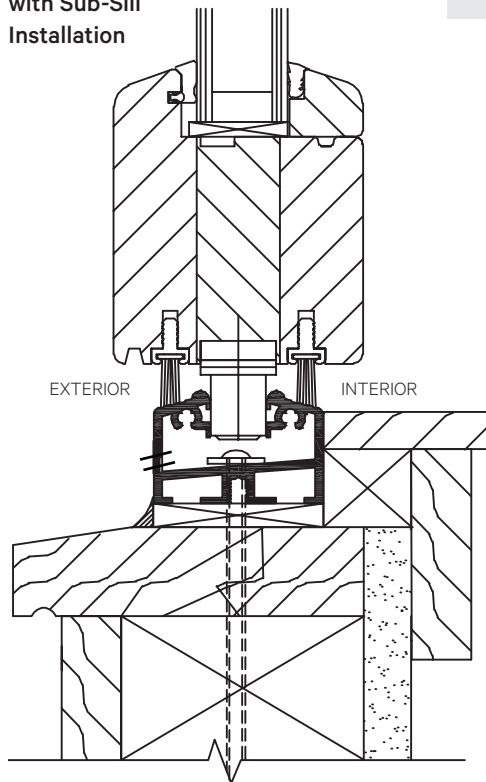
Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.



Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option.



Standard Sill with Sub-Sill Installation



Note: For ADA compliance in commercial projects, a gasket to cover the channel in the sill at swing panels is provided.

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.

INSTALLATION CONSIDERATIONS

The approximate weight of a panel with standard insulated double glazing is 5.5 lbs/ft² (27 kg/m²). 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.

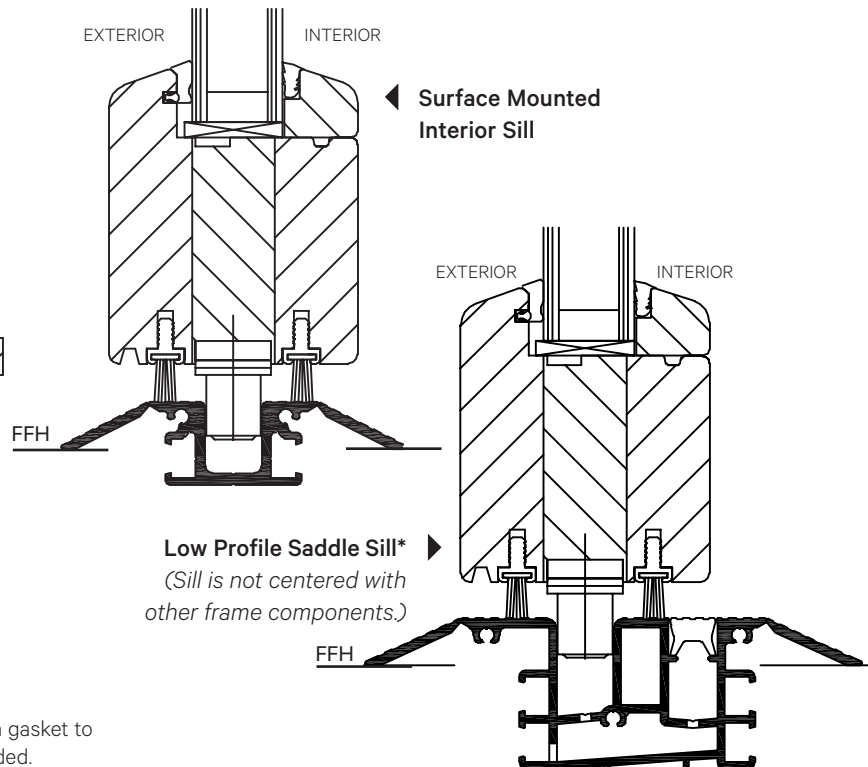
It is recommended that all building dead loads be applied to the header prior to installing the NanaWall. If so and if a reasonable amount of time has been allowed for the effect of this dead load on the header, then only the building's live load can be used to meet the above requirements of L/720 or 1/4" (6 mm). If not, both the dead and live loads need to be considered.

***FOR LOW PROFILE SADDLE SILL**

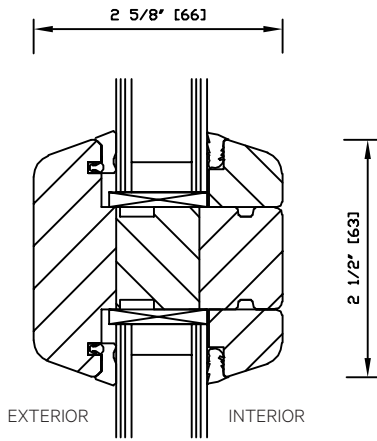
For resistance against wind driven rain, the following is recommended by others:

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

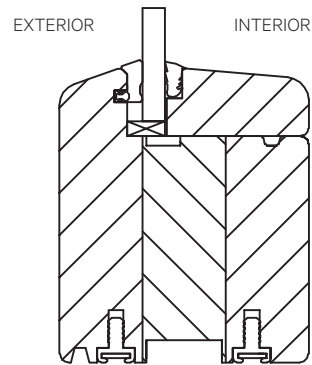
Contact NanaWall for a detailed drawing.



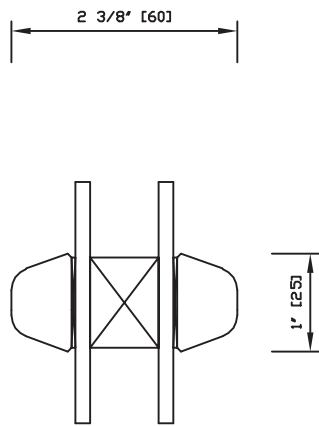
Typical Mullion Profile
 (Note that different mullion widths are available)



Typical Stile and Rail with Single 1/4\"/>



Typical Simulated Divided Lites Muntins with Spacers Between Insulated Glass (SDL)



Typical Higher Bottom Rail

