

NanaWall WA67 The Aluminum Clad Wood Folding System

NFRC-Approved Thermal Performance

The WA67 with raised sill has been rated, certified and labeled in accordance with NFRC 100. See the Performance Section for further details.

Ventilated Rain-Screened, Extruded Aluminum Cladding

Extruded aluminum is attached to the wood using the back ventilated, rain screen principle to protect and isolate the wood on the inside.

Choice of Quality Interior Wood and Finishes

Pine, Western Hemlock, Meranti, Douglas Fir, and other selected woods are available. Please note that the Meranti used is harvested from a certified sustainable forest and hence qualifies as a "green building product." Furniture quality, environmentally-friendly finishes are also available.

Choice of Exterior Aluminum Finishes

Choice of hundreds of high quality anodized and powder coated finishes is available. See Color Selection for more information.

In addition to the RAL, NCS, and DB colors available, the following colors from other window and door manufacturers have been pre-matched: **Pella:** White, Black, Tan, Putty, Eldridge Gray, Morning Sky Gray, Hemlock, Hartford Green, Brown, Brick Red, Poplar White. **Andersen:** White, Sandstone, Terratone, Forest Green. **Marvin:** Stone White, Evergreen, Bahama Brown, Medium Bronze, Pebble Gray, Arctic White, French Vanilla, Desert Beige, Wineberry, Ebony. We are constantly adding new selections; please contact us if you would like to explore further color options.

Option of Top Hung (WA67/o) or Floor Mounted System (WA 67/u)

The standard system is top hung, where the main weight is carried by the head track. The bottom track is a guide.

The floor mounted system is recommended for applications where the load bearing capability of the header is a concern. The 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.

Versatile Function

The easy-to-operate system offers versatile functions, with options for swing entry/exit panel(s) and with the flexibility to open fully or partially. Openings of up to 30 feet can be rapidly opened or closed.

Multiple Stacking Configurations

Over forty-eight stacking configurations exist, with both

inward opening and outward opening options. Unhinged paired panel option facilitates maximum stacking flexibility. To see these operable wall concepts in action, view animations at www.nanawall.com

Outstanding Appearance

European styling and handsome, sleek lines allow glass areas to be maximized. All folding and locking hardware is integrated into the profiles for a clean look.

Secure

Concealed multiple point locking operates easily with a turn of a handle. The top and bottom shoot bolts between each folding pair of panels have a full 1" throw. Independent tests confirm that the locking system passes strict California forced-entry testing requirements.

Continued Long-Term Satisfactory Operation

Smooth sliding and folding operations are assured even when dirt or debris might collect in the bottom track. State-of-the-art hardware is used with patented, sealed, ball bearing running carriages. Long-term ease of operation is also assured with compensation and adjustment features.

Easy to Install, Complete System

The precision built system is easy to install and comes complete with pre-fitted hardware.

Design Flexibility

The designer has flexibility with custom sizes and glazing choices; options for raised or flush sills; a large selection of muntin layouts; and details such as horizontal mullions, glued-on muntins, solid panels, or other custom layouts.

Hardware Options

A choice of different locking options are available depending on need. The internal locking hardware is Schlage-compatible. Different handle finishes are also available (see Hardware Section). Depending on the configuration selected, door closers can be incorporated and units can be prepared for panic device provided by others. Custodial hardware is also available.

Complete, Coordinated Glass Walls

Complete, coordinated glass walls can be provided with various folding doors and folding window combinations, matching swing entry doors, transoms and side lites.

Motorized Screens

The Opening Screen Wall, a motorized, retractable, exterior overhead sun/insect screen, is available as an option. This system has been designed to be out of view when not in use. See "Screens" for more information.

Technical Description

General Description

The WA 67 is the commercial/residential folding paired-panel wood framed system with exterior clip on aluminum extrusion designed to provide an opening glass wall or storefront for widths up to 40 feet (see Maximum Size Chart). It is available in various configurations utilizing one to twelve panels (see elevation drawings). The option exists for a swing entry/exit panel(s). Units can be either inward-opening or outward-opening. (shown in section drawings).

Frame and Panels

The three-layer cross grain solid wood and clip on aluminum extrusion panel thickness is 66 mm (2 9/16"). See various frame profiles in section drawings. The aluminum head jamb of the WA 67/o system is clad with a matching wood fascia piece on the inside. Standard woods available are Douglas Fir, Pine, or Meranti. Other woods are also available. Frames and panels are factory-primed, sand sealed or finished from range of finishes. See "Wood Finish Options" in the Introduction tab. Standard finishes for the exterior clip on aluminum extrusion are clear anodized, dark bronze anodized, dark brown powder-coated or white powder coated. Custom finishes can be chosen from a range of over 200 RAL colors. See "Aluminum Finish Options" in the Introduction tab.

Panels are pre-assembled. All pins and screws to assemble the frame are provided.

The raised sill, a thermally broken aluminum with polyamide plastic, is available in a clear or dark anodized finish. The various aluminum flush sills are available in a clear or dark bronze anodized finish.

Glazing

Units are supplied glazed with 15/16" double clear insulating tempered, or insulating Low-E tempered glass.

Weatherstripping

All weather-stripping consisting of APTK, 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 of each pair of panels, for the WA 67/o top hung system, a load-bearing, upper-running carriage and a lower-running guide carriage is attached between the two panels (shown in the section drawings). The double pair, twin-tandem, upper-running carriage is constructed to ensure even distribution of pressure on all four rollers. For the WA 67/u floor mounted system, a floor supported, lower running carriage and an upper running

carriage as a guide is attached between the panels. Rollers have sealed bearings and are coated with toughened Polyamide to ensure sound-free running and optimal resistance to extreme temperature. Two to five patented hinges per connection are provided to connect panels together and to connect panels to the frame.

Locking Hardware and Handle Options

For each pair of folding panels and on swing panel(s), if any, provided is two point locking hardware consisting of top and bottom Polyamide capped locking rods operated by a 180 ° turn of a flat handle.

Standard flat handle finishes are dark brown, white, white aluminum or dark gray.

If there is a swing panel, there are the following additional hardware options on the primary swing panel:

1. Multi-point Locking. Consisting of lever handles on both sides, a Schlage compatible lockset, lockable latch, deadbolt and rods at the top and the bottom. Depression of handles withdraws latch, lifting of handles engages rods and turn of key or thumbturn engages deadbolt and locks.

2. Deadbolt Lock. ADA approved nylon pull handles on both sides with deadbolt(s) operated by lockset. Turn of key or thumb turn operates lock. Lockset option of having key operation on both sides. 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.

If a unit is inward opening and there is no swing panel, an option to enable a unit to be opened from the outside is to provide on the folding pair to be opened first : Two point locking hardware consisting of top and bottom Polyamide capped locking rods operated by a 180 ° turn of a L-shaped handle on the inside and a flat handle on the outside. Lockable with a lockset. Turn of key or thumb turn operates lock.

The lever handles are available in nylon with 13 colors or available in dark brown or satin chrome finish. From 13 available colors, the nylon handle color will be the closest match to the flat handle color.

Installation Considerations

The approximate weight of a panel is about 5.5 lbs/ft² for a double-glazed panel. The maximum structural deflection of the header is to be the lesser of L/720 of the span and 1/4". See "Pre-Installation Preparation and Installation Guidelines" and "Owner's Manual" with installation instructions available for this system.

Performance of the WA67 NanaWall - Testing Results

RAISED SILL		
Type of Test	Inward Opening Units	Outward Opening Units
* Air Infiltration: ASTM E-283, ft. ³ /min/ft.	@ 1.57 psf (25 mph): 0.15 @ 6.24 psf (50 mph): 0.23	@ 1.57 psf (25 mph): 0.12 @ 6.24 psf (50 mph): 0.28
* Water Penetration: ASTM E-547-86	No uncontrolled water entry @ 12 psf (68 mph)	No uncontrolled water entry @ 12 psf (68 mph)
* Structural Load Deflection ASTM E-330-90: pass See design windload charts for other sized panels. Note that the structural test pressures were 50% higher than the design pressures.	<u>Standard Unit with Extended Caps</u> Design Pressure Positive @ 35 psf (116 mph) Design Pressure Negative @ 65 psf (159 mph) <u>Top and bottom reinforced locking point unit</u> Design Pressure Positive @ 45 psf (132 mph) Design Pressure Negative @ 80 psf (176 mph)	<u>Standard Unit with Extended Caps</u> Design Pressure Positive @ 65 psf (159 mph) Design Pressure Negative @ 35 psf (116 mph) <u>Top and bottom reinforced locking point unit</u> Design Pressure Positive @ 80 psf (176 mph) Design Pressure Negative @ 45 psf (132 mph)
Thermal Performance: Rated, certified and labeled in accordance with NFRC 100	With 24 mm (15/16") thick Insulated Glass: Glass thickness of .157" (4 mm) and gap thickness of .623" (16 mm) <u>U-Factor</u> <u>Solar Heat Gain Coefficient</u> Clear (air filled) .50 .57 Low E (air filled) .38 .42 Low E (argon filled) .35 .43 (.38 with coating on #2 surface)	With 24 mm (15/16") thick Insulated Glass: Glass thickness of .157" (4 mm) and gap thickness of .623" (16 mm) <u>U-Factor</u> <u>Solar Heat Gain Coefficient</u> Clear (air filled) .49 .57 Low E (air filled) .36 .42 Low E (argon filled) .33 .43 (.38 with coating on #2 surface)
* Forced Entry Resistance	In accordance with AAMA-1303.5 and CAWM 300-96 requirements.	

* Excerpts of results of a 9'2" W x 7'10" H three panel units (3L and 3R configurations) with Raised Sill tested by Architectural Testing, Inc., Fresno, CA, an independent testing laboratory in February 2003.

LOW PROFILE SADDLE SILL, LOW PROFILE STEPPED SILL, STANDARD FLUSH SILL		
Type of Test	Inward Opening Units	Outward Opening Units
Water Penetration: ASTM E-547-86 Internally Tested Not applicable for standard flush sill	No uncontrolled water entry @ 3.75 psf (38 mph) subject to the following adaptations in the field by others: 1. Remove the gaskets covering the inner channel. 2. Drill weep holes through the bottom of this channel (about one 1" x 1/4" weep hole per panel.) 3. Drill weep holes through the bottom of the sill or lower front face of the sill to drain water collected to a lower point (about one 1" x 1/4" weep hole per panel.) 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 instructions provided by Nana Wall Systems, Inc. and in accordance with good waterproofing techniques. Note that in some applications drain connections may not be possible.	
Structural Load Deflection ASTM E-330-90: pass Per engineering letter based on raised sill testing. See design windload charts for other sized panels. Note that the structural test pressures were 50% higher than the design pressures.	<u>Standard Unit</u> Design Pressure Positive @ 35 psf (116 mph) Design Pressure Negative @ 65 psf (159 mph) <u>Top and bottom reinforced locking point unit</u> Design Pressure Positive @ 45 psf (132 mph) Design Pressure Negative @ 80 psf (176 mph)	<u>Standard Unit</u> Design Pressure Positive @ 65 psf (159 mph) Design Pressure Negative @ 35 psf (116 mph) <u>Top and bottom reinforced locking point unit</u> Design Pressure Positive @ 80 psf (176 mph) Design Pressure Negative @ 45 psf (132 mph)
Thermal Performance: Summary of NFRC U-Factor Computer Simulation Report prepared by Architectural Testing	With 24 mm (15/16") thick Insulated Glass: Glass thickness of .157" (4 mm) and gap thickness of .623" (16 mm) <u>U-Factor</u> <u>Solar Heat Gain Coefficient</u> Clear (air filled) .56 .57 Low E (air filled) .43 .44 Low E (argon filled) .40 .39	With 24 mm (15/16") thick Insulated Glass: Glass thickness of .157" (4 mm) and gap thickness of .623" (16 mm) <u>U-Factor</u> <u>Solar Heat Gain Coefficient</u> Clear (air filled) .53 .57 Low E (air filled) .41 .44 Low E (argon filled) .37 .39
* Forced Entry Resistance	In accordance with AAMA-1303.5 and CAWM 300-96 requirements.	