SECTION 08 41 00.10

GENERATION 4 FOLDING GLASS WALLS BY NANAWALL - EXTERIOR AND INTERIOR

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\*\* NOTE TO SPECIFIER \*\* Nana Wall Systems, Inc.; Opening glass walls, folding glass wall systems, sliding glass wall systems.
This section is based on the products of Nana Wall Systems, Inc., which is located at:100 Meadow Creek Dr., Suite 250Corte Madera, CA 94925Toll Free Tel: 800-873-5673Tel: 415-383-3148Fax: 415-383-0312Email: [request info (info@nanawall.com)](https://arcat.com/rfi?action=email&company=Nana%252BWall%252BSystems%252C%252BInc.&message=RE%253A%2520Spec%2520Question%2520(08411nan)%253A%2520&coid=34380&spec=08411nan&rep=&fax=415-383-0312)
Web: <https://www.nanawall.com>
 [ [Click Here](https://arcat.com/company/nana-wall-systems-inc-34380) ] for additional information.
Nana Wall redefined the category of opening glass wall systems. During our years in business, we have earned the trust of architects, builders, design professionals, and homeowners as a solutions provider for re-imagining how buildings, people and the elements interact. By combining precision engineering and outstanding design options across more than 20 unique systems, we advance design possibilities beyond the conventional for almost any space.

1. GENERAL
	1. SECTION INCLUDES
		1. Generation 4 Folding Glass Walls by NanaWall:

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + - 1. Thermally-broken, sliding-folding aluminum-framed systems. (NW Aluminum 840)
			2. Thermally broken, sliding-folding, wood-framed system. (NW Wood 540)
			3. Thermally broken, sliding-folding, aluminum-framed system. (NW Aluminum 640)
			4. Thermally broken, sliding-folding acoustically rated, aluminum-framed system. (NW Acoustical 645)
			5. Thermally broken, sliding-folding, aluminum clad wood framed system. (NW Clad 740)
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete sections below not relevant to this project; add others as required.

* + 1. Section 06 10 00 - Rough Carpentry Wood framing R.O. and blocking.
		2. Section 06 20 00 - Finish Carpentry.
		3. Section 07 27 00 - Air Barriers.
		4. Section 07 62 00 - Sheet Metal Flashing and Trim.
		5. Section 07 90 00 - Joint Protection.
		6. Section 08 40 00 - Entrances, Storefronts, and Curtain Walls.
		7. Section 08 41 13 - Aluminum-Framed Entrances and Storefronts.
		8. Section 08 41 26 - All-Glass Entrances and Storefronts.
		9. Section 08 43 29 - Sliding Storefronts.
		10. Section 08 43 33 - Folding Glass Wall System.
		11. Section 08 51 13 - Aluminum Windows.
		12. Section 08 70 00 - Hardware.
		13. Section 08 83 13 - Mirrored Glass Glazing.
		14. Section 09 22 16 - Non-Structural Metal Framing. R.O. and reinforcement.
		15. Section 10 23 26 - Operable Glass Partition.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American Architectural Manufacturer's Association (AAMA):
			1. AAMA 205-15, In-Plant Testing Guidelines for Manufacturers, and Independent Laboratories.
			2. AAMA 502, Voluntary Specification for Field Testing of Newly Installed Fenestration Products.
			3. AAMA 611, Voluntary Specification for Anodized Architectural Aluminum.
			4. AAMA 920-11, Specification for Operating Cycle Performance of Side-Hinged Exterior Door System.
			5. AAMA 1304, Voluntary Specification for Forced Entry Resistance of Side-Hinged Door Systems.
			6. AAMA 2604, Voluntary Specifications, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
			7. AAMA/WDMA/CSA 101/I.S.2/A440-17, NAFS, North American Fenestration Standard - Specification for Windows, Doors, and Skylights.
		2. American National Standards Institute: ANSI Z97.1 - For Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.
		3. ASTM International (ASTM):
			1. ASTM C1036, Standard Specification for Flat Glass.
			2. ASTM C1048, Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.
			3. ASTM E90-09, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
			4. ASTM E283-04 (2012), Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Difference Across the Specimen.
			5. ASTM E330-00 (2016), Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
			6. ASTM E331-00 (2016), Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Statics Air Pressure Difference.
			7. ASTM E413-16, Classification for Rating Sound Insulation.
			8. ASTM E547-00 (2016), Standard Test Method for Water Penetration of Exterior Windows, Skylights, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential.
			9. ASTM E2068-00 (2016), Standard Test Method for Determination of Operating Force of Sliding Windows and Doors.
			10. ASTM E987-88 (2017), Standard Test Methods for Deglazing Force of Fenestration Products.
			11. ASTM E1332, Standard Classification for Rating Outdoor-Indoor Sound Attenuation.
			12. ASTM F842, Standard Test Methods for Measuring the Forced Entry Resistance of Sliding Door Assemblies, Excluding Glazing Impact.
		4. Construction Product Directive (CPD), a legal mandate of the European Commission; CE Mark.
		5. Consumer Product Safety Commission (CPSC): CPSC 16CFR-1201, Safety Standard for Architectural Glazing Materials.
		6. CSA Group (Canadian Standards Association), CSA A440S1 - The Canadian supplement to North American (NAFS) standards.
		7. German Institute for Standardization (DIN) & International Organization for Standardization (ISO):
			1. DIN EN 1090, Manufacturing qualification for welding of supporting building components.
			2. DIN EN 1191, Windows, and Pedestrian Doors - Resistance to repeated opening and closing - Mechanical Durability Test Method.
			3. DIN EN ISO 717-1, Acoustics - Rating of sound insulation in buildings and building elements.
			4. DIN EN ISO 10140-1, 2, 4 and 5, Airborne sound measurement.
			5. DIN EN ISO 12400, Windows, and pedestrian doors - Mechanical durability - Requirements and classification.
		8. National Fenestration Rating Council (NFRC):
			1. NFRC 100 - Procedure for Determining Fenestration Product U-factors.
			2. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.
			3. NFRC 400 - Procedure for Determining Fenestration Product Air Leakage.
			4. NFRC 500 - Procedure for Determining Fenestration Product Condensation Resistance Rating Values.
		9. U.S. Environmental Protection Agency (EPA): Energy Star program.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Independently tested data listing performance criteria.
			4. Product literature for systems incorporated in the Work. Performance test results and details of construction relative to materials, dimensions of individual components, profiles, and colors.
			5. Manufacturers' Instructions: Owner's Manual from manufacturer which includes installation instructions, operation, and maintenance data.
			6. Certificates: CE Mark Certificate.
		3. Product Drawings: Including but not limited to the following.
			1. Indicate system component sizes, dimensions and framing R.O., configuration, swing panels, direction of swing, stacking layout, typical head jamb, side jambs and sill details, type of glazing material, handle height and field measurements.
			2. Elevations of rough opening requirements and details for field-applied components.
		4. Contract Closeout Submittal: Owner's Manual from manufacturer. Identify Owner's Manual with project name, location and completion date, type and size of unit installed.
	2. QUALITY ASSURANCE
		1. Regulatory Requirements: CE Mark certified.
		2. Manufacturer: Complete, precision built, engineered, pre-fitted units by a single source manufacturer with 35-year experience in providing folding and sliding door systems for large openings in the North American market.
			1. ISO 9001: 2015 quality management system registration.
			2. ISO 14001: 2015 environmental management system registration.
		3. Installer Qualifications:
			1. Experienced in installation of manufacturer's products or similar products.
			2. Reference list of 3 projects of similar scale and complexity successfully completed in the last 3 years.

\*\* NOTE TO SPECIFIER \*\* Delete if longer warranty is not required.

* + - 1. Installer trained and certified by manufacturer.
		1. Single Source: Furnish system materials from one manufacturer for entire Project.
	1. DELIVERY, STORAGE, AND HANDLING
		1. Deliver materials to job site in sealed, unopened cartons or crates.
			1. Upon receipt, inspect shipment. Ensure it is complete, in good condition and meets project requirements.
		2. Store products in manufacturer's unopened packaging until installation. Store flat in well-ventilated area, no direct sunlight, in a clean and dry location. Protect units against weather and defacement or damage from construction activities, especially to panel edges.
	2. PROJECT CONDITIONS
		1. Mark field measurements on Product Drawing submittal. Contractor shall field verify dimensions including but not limited to rough openings and inset components.
		2. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	3. WARRANTY
		1. Manufacturer's warranty against defects in materials and workmanship and as follows:
			1. Rollers and Glass Seal Failure: 10 years.
			2. All Other Components (excluding screens): 10 years beginning with the earliest of 120 days from date of delivery by manufacturer or date of Substantial Completion.
			3. Exception: Five (5) years if not installed by manufacturer's specific system approved or certified trained installer.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Nana Wall Systems, Inc., which is located at:100 Meadow Creek Dr., Suite 250Corte Madera, CA 94925Toll Free Tel: 800-873-5673Tel: 415-383-3148Fax: 415-383-0312Email: [request info (info@nanawall.com)](https://arcat.com/rfi?action=email&company=Nana%252BWall%252BSystems%252C%252BInc.&message=RE%253A%2520Spec%2520Question%2520(08411nan)%253A%2520&coid=34380&spec=08411nan&rep=&fax=415-383-0312);Web: <https://www.nanawall.com>

\*\* NOTE TO SPECIFIER \*\* Delete the following two paragraphs; coordinate with requirements of Division 01 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for Substitutions: Considered in accordance with provisions of Section 01 60 00.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. SLIDING-FOLDING THERMALLY-BROKEN ALUMINUM, WOOD, AND ALUMINUM CLAD WOOD-FRAMED GLASS PANEL SYSTEMS
		1. Basis of Design: Model NW Aluminum 840 sliding-folding thermally broken aluminum-framed glass panel system as manufactured by Nana Wall Systems, Incorporated. Nominal frame stile width of 3-7/8 inch (99 mm) between folding panels, floor track supported system. Manufacturer's standard thermally broken frame and panel profiles, with head track, side jambs, sill and panels with dimensions as shown on Drawings.
			1. System Components: Aluminum frame, threshold. panels, sliding-folding and locking hardware, weather stripping, glass and glazing, panel catch, bionic turtle thermal break and accessories as required for a complete working installation.

\*\* NOTE TO SPECIFIER \*\* Delete sill and opening type options not required.

* + - 1. Weeps, to be drilled in field by installer to manufacturer's requirements.
			2. Air infiltration and water penetration testing results are only applicable if unit matches tested panel and unit size, direction of opening and type of sill. Results shown apply to odd-odd, odd-even, odd-frame and even-frame configurations and not even-even configurations. Structural load testing results are only applicable for the test unit size and type of locking and rods. Comparative analysis charts by manufacturer shows which panel sizes, meet structural loading design pressures specifically required for project. Check for limitations on use of charts in project jurisdiction.
			3. Forced entry testing results are only applicable for test unit type of locking. Check for requirements in jurisdiction of project. See manufacturer's latest published data regarding performance. It is expected installed system's performance would be not more than 2/3rds of the following certified laboratory test data in accordance with AAMA 502.
			4. Performance Requirements (NW Aluminum 840): Lab tested.
				1. Sill and Opening Type: Performance Sill, Inward Opening:

Folding Glass Door Units tested to AAMA/WDMA/CSA 101/ I.S.2/A440-17 (NAFS-17):

Class CW-PG40 - FLD 157.5 x 102 inch (4000 x 2600 mm) and Class LC-PG50 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.04 cfm per sq ft (0.20 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.11 cfm per sq ft (0.56 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at static test pressure of 9 psf (450 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 50 psf (2400 Pa).

Design Pressure; Negative: 55 psf (2670 Pa).

Uniform Load Deflection; L/175: Pass 40 psf (1945 Pa).

* + - * 1. Sill and Opening Type: Performance Sill, Outward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG40 - FLD 157.5 x 102 inch (4000 x 2600 mm) and Class LC-PG50 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.04 cfm per sq ft (0.20 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.10 cfm per sq ft (0.5 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static test pressure of 9 psf (450 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 55 psf (2670 Pa).

Design Pressure; Negative: 50 psf (2400 Pa).

Uniform Load Deflection; L/175: Pass 45 psf (2150 Pa).

* + - * 1. Sill and Opening Type: Low Profile Saddle Sill, ADA Compliant, Inward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.12 cfm per sq ft (0.61 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.30 cfm per sq ft (1.52 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static, with weeps, test pressure of 5.43 psf (260 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive and Negative: 50 psf (2400 Pa).

Uniform Load Deflection, L/175: Pass 40 psf (1945 Pa).

* + - * 1. Sill and Opening Type: Low Profile Saddle Sill, ADA Compliant, Outward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.12 cfm per sq ft (0.61 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.29 cfm per sq ft (1.50 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static, with weeps, test pressure of 5.43 psf (260 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive and Negative: 50 psf (2400 Pa).

Uniform Load Deflection, L/175: Pass 40 psf (1945 Pa).

* + - * 1. Sill and Opening Type: Low Profile Saddle Sill with UniverSILL Insert, Outward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG40 - FLD 157.5 x 102 inch (4000 x 2600 mm) and Class LC-PG50 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.04 cfm per sq ft (0.20 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.07 cfm per sq ft (0.36 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static test pressure of 7.5 psf (360 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive and Negative: 50 psf (2400 Pa).

Uniform Load Deflection, L/175: Pass 40 psf (1945 Pa).

* + - * 1. Swing Panel - Operation / Cycling Performance (AAMA 920): 500,000 cycles.
				2. System - Life Cycle Testing Performance per EN 1191: Class 3; 20,000 cycles.
				3. Operating Force (ASTM E2068):

Swing Panel: Open 1 lbf (2.8 N) & Close 1 lbf (3.9 N).

Folding Panels:

Initiate Motion: Open 4 lbf (20 N) & Close 3 lbf (15 N).

Maintain Motion: Open 1 lbf (3 N) & Close 1 lbf (4 N).

\*\* NOTE TO SPECIFIER \*\* Forced entry and forced entry resistance testing results are only applicable for the test unit type of locking. See manufacturer's latest published data regarding performance.

* + - * 1. Forced Entry (AAMA 1304, DIN EN 1191): Pass.
				2. Forced Entry Resistance per ASTM F842, AAMA 1304, CAWM 300: Meets Grade 40; plus F2.

\*\* NOTE TO SPECIFIER \*\* For storefront units requiring acoustic performance keep the thermal performance paragraph. Edit the four following paragraphs to suit project conditions or delete if not required.

* + - * 1. Thermal Performance (U-factor): NFRC 100 rated, certified, and labeled.
				2. Solar Heat Gain Coefficient plus Visible Light Transmission: NFRC 200 rated, certified, and labeled.
				3. Air Leakage: NFRC 400 rated, certified, and labeled.
				4. Condensation Resistance Factor: NFRC 500 rated, certified, and labeled.
			1. Design Criteria:

\*\* NOTE TO SPECIFIER \*\* Go to <https://www.nanawall.com/resources/nw-aluminum-840> #configurations to see size and configuration options.

* + - * 1. Sizes and Configurations: As indicated on Drawings for selected number and size of panels, location of swing panels, and number of panels stacking to the left and to the right.
				2. Operation: Adjustable sliding and folding hardware with top and bottom tracks.

\*\* NOTE TO SPECIFIER \*\* Delete option for panel configuration not required.

* + - * 1. Panel Configuration: Straight.
				2. Panel Configuration: 90 degree angle turn.
				3. Panel Configuration: Single swing door.
				4. Panel Configuration: Window and door combination.

\*\* NOTE TO SPECIFIER \*\* Delete option for stack storage configuration not required.

* + - * 1. Stack Storage Configuration: Inswing type.
				2. Stack Storage Configuration: Outswing type.
				3. Mounting Type: Floor track supported with upper guide track.
				4. Hinged Panels:

\*\* NOTE TO SPECIFIER \*\* Delete primary swing panel option not required.

Primary Swing Panel of Paired Swing Panels Looking from Inside: On the left.

Primary Swing Panel of Paired Swing Panels Looking from Inside: On the right.

\*\* NOTE TO SPECIFIER \*\* Delete options below not required.

Entry and Egress Panel: Hinged to bi-folding panels.

Entry and Egress Panel: Hinged to side jamb.

Entry and Egress Panel: None.

\*\* NOTE TO SPECIFIER \*\* Bi-Folding panel sets hinged to side jambs have a Head Track Width of 2-13/16 inch (72 mm) only. Unhinged FourFold or SixFold panel sets must have a head track width of 3-7/8 inch (99 mm). Delete panel pairing configuration option not required.

* + - * 1. Panel Pairing Configuration: Bi-folding panels hinged to side jamb.
				2. Panel Pairing Configuration: Bi-folding panels unhinged FourFold or SixFold panel sets.
			1. Fabrication: Extruded aluminum frame and panel profiles, corner connectors, hinges, sliding and folding hardware, locking hardware, handles, glass and glazing, and weather stripping.
				1. Factory pre-assembled and shipped with system components, installation mounting plates, and instructions.
				2. Exposed work matched to produce continuity of line and design with joints.
				3. No raw edges visible at joints.
			2. Materials:

\*\* NOTE TO SPECIFIER \*\* Delete panels options not required. Refer to manufacturer's size chart for glass panel sizes requiring the use of horizontal mullions.

* + - * 1. Panels: Single lite; standard.
				2. Panels: Multiple lites with horizontal mullions at heights indicated on Drawings from bottom of panel.
				3. Panels: Single lite with simulated divided lites in pattern as shown on Drawings.

\*\* NOTE TO SPECIFIER \*\* Maximum panel sizes are 11 ft and 6 inches (3500 mm) high and 3 ft and 0 inches (913 mm) wide.

* + - * 1. Panel Size (W x H): \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ mm).
				2. Rail Depth: 3-5/16 inch (84 mm).
				3. Top Rail Width: 2-5/8 inch (66 mm).
				4. Typical Stile Width: 1-3/4 inch (45 mm) on both stile or a nominal frame stile width of 3-7/8 inch (99 mm) between folding panels.

\*\* NOTE TO SPECIFIER \*\* Delete bottom rail width option not required.

* + - * 1. Bottom Rail Width: 2-5/8 inch (67 mm).
				2. Bottom Rail Width: Manufacturer's standard kick-plate of 10 inches (254 mm).
			1. Frame:
				1. Thermally broken top track and side jambs with multi-purpose frame insert to hide anchoring frame connections.
				2. Frame Finish: To match panel finish.
				3. Frame Depth: Top Track and Side Jamb Depth; 3-5/16 inch (84 mm).

\*\* NOTE TO SPECIFIER \*\* Bi-Folding panel sets hinged to side jambs have a Head Track Width of 2-13/16 inch (72 mm) only. Unhinged FourFold or SixFold panel sets must have a head track width of 3-7/8 inch (99 mm). Delete head track width option not required.

* + - 1. Head Track Width: 2-13/16 inch (72 mm) standard.
			2. Head Track Width: 3-7/8 inch (99 mm) with anti-tilt feature for unhinged FourFold or SixFold panel set configurations.
			3. Side Jambs: 2-13/16 inch (72 mm) wide. Adjustment: Plus or minus 3/16 inch (5 mm).

\*\* NOTE TO SPECIFIER \*\* Low profile saddle sills with UniverSill is not available for inswing stack storage configurations. Delete sill type and finish options not required.

* + - 1. Sill Type: Performance sill, thermally broken with high heel protector insert.
			2. Sill Type: Low profile saddle sill, ADA compliant, thermally broken with high heel protector insert.
			3. Sill Type: Low profile saddle sill with UniverSILL, thermally broken with high heel protector insert.
			4. Sill Finish: Aluminum with clear anodized finish.
			5. Sill Finish: Aluminum with black anodized finish.
			6. Aluminum Extrusions: AIMgSi0.5 alloy, 6063-T5; F-22 - European standard.
				1. Thickness: 0.078 inch (2.0 mm) nominal.
				2. Thermal Break: 1-15/16 inches (49 mm) wide specially designed and patented (Patent Number: US10550625B2) glass fiber reinforced (GFR) polyamide "Bionic Turtle" for panels. Standard thermal break elsewhere.

\*\* NOTE TO SPECIFIER \*\* Delete finish paragraph not required and delete finish options not required.

* + - * 1. Finish: One color inside and outside.

Finish Type: Anodized per AAMA 611. Clear.

Finish Type: Anodized per AAMA 611. Dark bronze.

Finish Type: Powder coat per AAMA 2604.

Color: Chosen from standard selection of 50 colors. Matte.

Color: Chosen from full RAL selection. Gloss.

Finish Type: SE (Steel Effect) color as chosen from manufacturer's finish chart.

Finish Type: Custom finish.

* + - * 1. Finish: Different color inside and outside.

Interior: Powder coat per AAMA 2604.

Color: Chosen from standard selection of 50 colors. Matte.

Color: Chosen from full RAL selection. Gloss.

Interior: Custom finish.

Exterior: Powder coat per AAMA 2604.

Color: Chosen from standard selection of 50 colors. Matte.

Color: Chosen from full RAL selection. Gloss.

Exterior: Custom finish.

\*\* NOTE TO SPECIFIER \*\* Select and edit glass types to meet building code, wind-load design, acoustic and/or security, and other project requirements with other glass available from manufacturer. Glass thickness from 7/8 inches (22 mm) to3/8 inches (60 mm) possible.

Custom layouts with horizontal mullions, simulated divided lites, inserts, and high bottom rails are possible. Contact NanaWall for availability of other commercial glass types.

* + - 1. Glass and Glazing: Safety Glazing per ASTM C1036, ASTM C1048, ANSI Z97.1 and CPSC 16CFR 1201 for NW Aluminum 840.
				1. Glazing Units, Double Insulated: Dry glazed with glass stops on the inside.

Double IGU: 15/16 inch (24 mm), clear insulated tempered

\*\* NOTE TO SPECIFIER \*\* Delete insulated glazing unit fill options not required.

Insulated Glazing Unit Fill: Air.

Insulated Glazing Unit Fill: Argon.

Triple IGU: 1-9/16 inch (40 mm), Low E Insulated Tempered 176 No. 2 and No. 5.

Triple IGU: 1-9/16 inch (40 mm), Low E Insulated Tempered PL No. 2 and No. 5.

\*\* NOTE TO SPECIFIER \*\* Delete insulated glazing unit fill options not required.

Insulated Glazing Unit Fill: Air.

Insulated Glazing Unit Fill: Argon.

\*\* NOTE TO SPECIFIER \*\* Low iron, solar bronze, solar gray, and bird safe glass types available upon request. Contact NanaWall Design Support Team for choices such as tempered or laminated, coating in various low-e, and special tints.

* + - 1. Glass Type: Reduced iron, standard. (Light Transmission LT 89 percent)

\*\* NOTE TO SPECIFIER \*\* Delete glass spacers options not required.

* + - 1. Glass Spacers: Gray finish with capillary tube.
			2. Glass Spacers: Black finish with capillary tubes.
			3. Glass Spacers: Gray finish without capillary tubes.
			4. Glass Spacers: Black finish without capillary tubes.

\*\* NOTE TO SPECIFIER \*\* Alarmed Glazing by others is an option. Delete if not required.

* + - 1. Alarmed Glazing: Connection wiring to alarm system, position monitoring, locking detection and notification systems such as glass-breakage sensors by others.

\*\* NOTE TO SPECIFIER \*\* The Main Entry Panel, a Pair of Folding Panels and Sliding-Folding Hardware are required for the configuration to be complete. Delete article if not required.

* + - 1. Locking Hardware and Handle for Sliding-Folding Systems:

\*\* NOTE TO SPECIFIER \*\* Delete Main Entry Panel options and subsequent options not required.

* + - * 1. Main Entry Panels: Lockset with lockable latch, multi-point locking with deadbolt and rods at top and bottom on primary panels only.

Application: Single swing panel.

Application: Pair of swing panels.

Operation: After turn of key or thumb turn, depression of handles withdraws latch. Lifting of handles engages rods and turn of key or thumb turn engages deadbolt and operates lock.

Rods: Concealed, not edge mounted.

Lever Handles: Lever handles on inside and outside.

Lever Handles: Lever handles with return on inside and outside.

\*\* NOTE TO SPECIFIER \*\* Lever handle with return only available in "Brushed satin stainless steel" Other compatible lever handle styles and finishes are available with an upcharge from other suppliers.

Lever Handle Finish: Brushed satin stainless steel; standard.

Lever Handle Finish: Black titanium stainless steel; standard.

Locking: Standard profile cylinder.

Secondary Swing Panel: Concealed two-point, edge locking.

* + - * 1. Main Entry Panels: Deadbolt lock(s) and push/pull handles on the inside and outside, with a key/key European profile cylinder, only recommended for end swing panel with door closer by others.

Application: Single swing panel.

Application: Pair of swing panels.

Push/Pull Handle: Brushed satin stainless steel; standard.

Locking: Key/Key European profile cylinder.

* + - * 1. Main Entry Panels: Flat handle on inside only with concealed two-point locking hardware operated by 180 degrees turn of handle for window units only; the main entry panel is operable from inside only and there is no latch.
				2. Pairs of Folding Panels: Handles and concealed two-point locking hardware operated by 180 degrees turn of handle between each pair. Face applied flush bolt locking NOT acceptable.

Handles: Manufacturer's flat handles.

\*\* NOTE TO SPECIFIER \*\* Delete flat handle finish option not required. Copper-nickel available with upcharge.

Flat Handle Finish: Brushed satin stainless steel.

Flat Handle Finish: Black titanium stainless steel.

* + - * 1. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel unless otherwise indicated on Drawings.
				2. Locking Rods: End caps top and bottom: Rod Stroke: 15/16 inch (24 mm).

\*\* NOTE TO SPECIFIER \*\* Delete additional profile cylinders option not required.

* + - * 1. Additional Profile Cylinders: Keyed alike.
				2. Additional Profile Cylinders: Keyed differently.
				3. Panel catch: Panel catch to hold swing panel to adjacent folding panel to prevent incorrect operation when moving the panel.
				4. Sliding-Folding Hardware: Combination with top and bottom tracks and threshold.

Running carriages to have sealed, self-lubricating, double ball bearing multi-rollers.

Surface mounted hinges and bottom rollers not acceptable.

\*\* NOTE TO SPECIFIER \*\* Weight of panels borne by the bottom of the guide channel in the sill is not acceptable.

Bottom Rollers Carrying Capacity: 240 lb. (110 kg); bottom rollers provided with two vertical stainless-steel wheels with double row of ball bearings and two horizontal polyamide wheels.

Vertical wheels with Gothic arch feature to ride on top of stainless-steel guide track covers over full length of sill track. Wheels on aluminum surfaces are not acceptable.

Upper guide rollers with two horizontal polyamide guiding wheels. For configurations with unhinged FourFold or SixFold panel sets that can slide left or right, additional concealed, additional vertical tilt protection hardware.

Hinges and Rollers: Anodized aluminum with stainless steel security hinge pins and set-screws. Concealed panel alignment with a tight seal through the patented (Patent Number: US10711510B2) TwinX mechanism reinforced between panels for a tight seal. Double ball bearing stainless-steel wheel rollers match hinge finish.

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required.

Finish: Clear.

Finish: Black.

Spring-Loaded Pull Handle: For outswing units with larger panel sizes, a spring loaded-pull handle is supplied for ease of closing the system. The pull handle is located above the flat handle. When not in use, the handle lays flat against the adjacent panel and is supplied with bumpers to avoid metal to metal contact. Handles are stainless steel with the attachment to coordinate with the hinge hardware of the system.

Pull Handle Finish: Brushed satin stainless steel or black titanium stainless steel.

\*\* NOTE TO SPECIFIER \*\* The exact type of weather stripping and sound gasketing is determined at the factory based on direction of swing, panel configuration, type of locking, and sill.

* + - * 1. Weather Stripping and Sound Gasketing: Manufacturer's double layer EPDM between panels and EPDM gasket, Q-Ion gasket, or brush seal between panel and frame, or brush seals with a two-layer fiberglass reinforced polyamide fin attached at both inner and outer edge of bottom of door panels with a recessed sill or on frame for sealing between panels and between panel and frame.
				2. Fasteners: Installation plates for connecting frame components made of stainless steel with sealing cushion to avoid thermal connectivity.

\*\* NOTE TO SPECIFIER \*\* Delete insect screen if not required.

* + - * 1. Insect Screen by Others: Fully retractable non-pleated screen. Ultra-strong, polyester / PVC mesh riding on a single track.

Basis-of-Design Product by Manufacturer: S4 Screen and Shade System by Centor.

Centor which is located at 966-130 Corporate Boulevard, Aurora, IL 60502. Toll Free: (866) 255-0008; Telephone: (630) 957-1000; Fax: (630) 957-1001; Web: https://centor.com/us/

* + 1. Basis of Design: Model NW Wood 540 sliding-folding wood-framed glass panel system as manufactured by Nana Wall Systems, Incorporated. 3-3/8 inch (86 mm) thick, floor track supported system. Manufacturer's standard solid quadruple laminated wood panel profiles and wood clad thermally broken aluminum frame and profiles, with head and floor track, side jambs, sill and panels with dimensions as shown on Drawings.

\*\* NOTE TO SPECIFIER \*\* Market availability of quadruple laminated cross-grained wood may differ by wood species.

* + - 1. System Components: Solid quadruple laminated cross-grained wood frame profile, threshold, wood-framed panels, sliding-folding and locking hardware, weather stripping, glass and glazing, panel catch, and accessories as required for a complete working installation.

\*\* NOTE TO SPECIFIER \*\* Delete sill and opening type options not required.

* + - 1. Weeps, to be drilled in field by installer to manufacturer's requirements.
			2. Air infiltration and water penetration testing results are only applicable if unit matches tested panel and unit size, direction of opening and type of sill. Results shown apply to odd-odd, odd-even, odd-frame and even-frame configurations and not even-even configurations. Structural load testing results are only applicable for the test unit size and type of locking and rods. Comparative analysis charts by manufacturer shows which panel sizes meet structural loading design pressures specifically required for project. Check for limitations on use of charts in project jurisdiction.
			3. Forced entry testing results are only applicable for test unit type of locking. Check for requirements in jurisdiction of project. See manufacturer's latest published data regarding performance. It is expected installed system's performance would be not more than 2/3rds of the following certified laboratory test data in accordance with AAMA 502.
			4. Performance Requirements (NW Wood 540): Lab tested.
				1. Sill and Opening Type: Performance Sill, Inward Opening:

Folding Glass Door Units tested to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.06 cfm per sq ft (0.3 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.14 cfm per sq ft (0.7 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at static test pressure of 9 psf (450 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 39 psf (1850 Pa).

Design Pressure; Negative: 55 psf (2670 Pa)

Uniform Load Deflection; L/175: Pass 45 psf (2150 Pa).

* + - * 1. Sill and Opening Type: Performance Sill, Outward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.06 cfm per sq ft (0.3 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.14 cfm per sq ft (0.7 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static test pressure of 9 psf (450 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 55 psf (2670 Pa).

Design Pressure; Negative: 39 psf (1850 Pa).

Uniform Load Deflection; L/175: Pass 45 psf (2150 Pa).

* + - * 1. Sill and Opening Type: Low Profile Saddle Sill, ADA Compliant, Inward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.11 cfm per sq ft (0.6 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.28 cfm per sq ft (1.50 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static, with weeps, test pressure of 5.43 psf (260 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive:40 psf (1945 Pa).

Design Pressure; Negative: 45 psf (2150 Pa).

Uniform Load Deflection, L/175: Pass 49 psf (2380 Pa).

* + - * 1. Sill and Opening Type: Low Profile Saddle Sill, ADA Compliant, Outward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.13 cfm per sq ft (0.66 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.25 cfm per sq ft (1.28 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static, with weeps, test pressure of 5.43 psf (260 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 45 psf (2150 Pa).

Design Pressure; Negative: 40 psf (1945 Pa).

Uniform Load Deflection, L/175: Pass 52 psf (2520 Pa).

* + - * 1. Sill and Opening Type: Low Profile Saddle Sill with UniverSILL Insert, Outward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG40 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.04 cfm per sq ft (0.20 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.07 cfm per sq ft (0.36 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static test pressure of 7.5 psf (360 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 45 psf (2150 Pa).

Design Pressure; Negative: 40 psf (1945 Pa).

Uniform Load Deflection, L/175: Pass 52 psf (2520 Pa).

* + - * 1. Swing Panel - Operation / Cycling Performance (AAMA 920): 500,000 cycles.
				2. System - Life Cycle Performance per DIN EN 1191/12400: Class 3; 20,000 cycles.
				3. Operating Force (ASTM E2068):

Swing Panel: Open 1 lbf (2.8 N) & Close 1 lbf (3.9 N).

Folding Panels:

Initiate Motion - Open 4 lbf (20 N) & Close 3 lbf (15 N).

Maintain Motion - Open 1 lbf (3 N) & Close 1 lbf (4 N).

\*\* NOTE TO SPECIFIER \*\* Forced entry and forced entry resistance testing results are only applicable for the test unit type of locking. See manufacturer's latest published data regarding performance.

* + - * 1. Forced Entry (AAMA 1304, DIN EN 1191): Pass.
				2. Forced Entry Resistance per ASTM F842, AAMA 1304, CAWM 300: Meets Grade 40; plus F2.

\*\* NOTE TO SPECIFIER \*\* For storefront units requiring acoustic performance keep the thermal performance paragraph. Edit the four following paragraphs to suit project conditions or delete if not required.

* + - * 1. Thermal Performance (U-factor): NFRC 100 rated, certified, and labeled.
				2. Solar Heat Gain Coefficient plus Visible Light Transmission: NFRC 200 rated, certified, and labeled.
				3. Air Leakage: NFRC 400 rated, certified, and labeled.
				4. Condensation Resistance Factor: NFRC 500 rated, certified, and labeled.
			1. Design Criteria:

\*\* NOTE TO SPECIFIER \*\* Go to <https://www.nanawall.com/resources/nw-wood-540> #configurations to see size and configuration options.

* + - * 1. Sizes and Configurations: As indicated on Drawings for selected number and size of panels, location of swing panels, and number of panels stacking to the left and to the right.
				2. Operation: Adjustable folding sliding hardware with top and bottom tracks.

\*\* NOTE TO SPECIFIER \*\* Delete option for panel configuration not required.

* + - * 1. Panel Configuration: Straight.
				2. Panel Configuration: 90 degree angle turn.
				3. Panel Configuration: Window and door combination.

\*\* NOTE TO SPECIFIER \*\* Delete option for stack storage configuration not required.

* + - * 1. Stack Storage Configuration: Inswing type.
				2. Stack Storage Configuration: Outswing type.
				3. Mounting Type: Floor track supported with upper guide track.
				4. Hinged Panels:

\*\* NOTE TO SPECIFIER \*\* Delete primary swing panel option not required.

Primary Swing Panel of Paired Swing Panels Looking from Inside: On the left.

Primary Swing Panel of Paired Swing Panels Looking from Inside: On the right.

\*\* NOTE TO SPECIFIER \*\* Delete options below not required.

Entry and Egress Panel: Hinged to bi-folding panels.

Entry and Egress Panel: Hinged to side jamb.

Entry and Egress Panel: None.

\*\* NOTE TO SPECIFIER \*\* Bi-Folding panel sets hinged to side jambs have a Head Track Width of 2-13/16 inch (72 mm) only. Unhinged FourFold or SixFold panel sets must have a head track width of 3-7/8 inch (99 mm). Delete panel pairing configuration option not required.

* + - * 1. Panel Pairing Configuration: Bi-folding panels hinged to side jamb.
				2. Panel Pairing Configuration: Bi-folding panels unhinged FourFold or SixFold panel sets.
			1. Fabrication: Use solid, quad-layer, cross grained wood for panels, connected to hinges, sliding, folding hardware, locking hardware, handles, threshold and track, glass and glazing and weather stripping.
				1. Factory pre-assembled. Ship with system components and installation instructions.
				2. Exposed work matched to produce continuity of line and design with joints.
				3. Wood frame and panel components to be sealed with a clear sand sealer or primer.
				4. No raw edges visible at joints.
			2. Materials:

\*\* NOTE TO SPECIFIER \*\* Delete panels options not required. Refer to manufacturer's size chart for glass panel sizes requiring the use of horizontal mullions.

* + - * 1. Panels: Single lite; standard.
				2. Panels: Multiple lites with horizontal mullions at heights indicated on Drawings from bottom of panel.
				3. Panels: Single lite with simulated divided lites in pattern as shown on Drawings.

\*\* NOTE TO SPECIFIER \*\* Maximum Panel Sizes: Refer to NanaWall size chart. Maximum panel sizes are 9 ft and 10 inches (3000 mm) high and 3 ft (915 mm) wide.

Unit heights greater than6 ft (2.6 m) need to be stiffened with a horizontal mullion.

Heavier glass may limit maximum sizes possible.

* + - * 1. Panel Size (W x H): \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ mm).
				2. Rail Depth: 3-3/8 inch (86 mm).
				3. Top Rail Width: 3-1/4 inch (82 mm).
				4. Typical Stile Width: 2-5/8 inch (67 mm) for a total nominal frame stile width of 3-7/8 inch (143 mm) between folding panels.

\*\* NOTE TO SPECIFIER \*\* Delete bottom rail width option not required.

* + - * 1. Bottom Rail Width: 3-1/4 inch (82 mm).
				2. Bottom Rail Width: Manufacturer's standard kick-plate of 10 inches (254 mm).
			1. Frame:
				1. Thermally broken top track and side jambs with multipurpose frame insert to hide anchoring connections.
				2. Wood cladding on both sides.
				3. For long-term tight, consistent sealing, provide a lateral patented (Patent Number: US10683688B2) adjustment feature at the side jambs capable of adjustment of plus or minus 3/16 inch (5 mm).
				4. Frame Finish: To match panel finish.
				5. Frame Depth: Top Track and Side Jamb Depth; 3-9/16 inch (91 mm).

\*\* NOTE TO SPECIFIER \*\* Bi-Folding panel sets hinged to side jambs have a Head Track Width of 2-13/16 inch (72 mm) only. Unhinged FourFold or SixFold panel sets must have a head track width of 3-7/8 inch (99 mm). Delete head track width option not required.

* + - 1. Head Track Width: 2-13/16 inch (72 mm) standard.
			2. Head Track Width: 3-7/8 inch (99 mm) with anti-tilt feature for unhinged FourFold or SixFold panel set configurations.
			3. Side Jamb Width: 2 inch (51 mm) wide. Adjustment: Plus or minus 3/16 inch (5 mm).

\*\* NOTE TO SPECIFIER \*\* Low profile saddle sills with UniverSill is not available for inswing stack storage configurations. Delete sill type and finish options not required.

* + - 1. Sill Type: Performance sill, thermally broken, with high heel protector insert.
			2. Sill Type: Low profile saddle sill, ADA compliant, thermally broken, with high heel protector insert.
			3. Sill Type: Low profile saddle sill with UniverSILL, thermally broken, with high heel protector insert.

\*\* NOTE TO SPECIFIER \*\* Delete wood finish if not required.

* + - 1. Wood Species Finish: Sapeli Mahogany.
			2. Wood Species Finish: European Pine.
			3. Wood Species Finish: Red Grandis.
			4. Wood Species Finish: Western Hemlock.
			5. Wood Species Finish: Meranti.
			6. Wood Species Finish: European Oak
			7. Wood Finish: Factory water-based, open pore clear sanding sealer for stain with one additional clear coat. See Section 09 90 00.
			8. Wood Finish: Factory water-based, base coat applied for paint with one additional clear coat. See Section 09 90 00.

\*\* NOTE TO SPECIFIER \*\* Wind-load design, acoustic, and/or security, and other project requirements with other glass available from manufacturer. Glass thickness from 1-1/8 to 1-7/8 inches (28 to 48 mm) possible. Custom layouts with horizontal mullions, simulated divided lites, inserts, and high bottom rails are possible. Contact NanaWall for availability of other commercial glass types.

* + - 1. Glass and Glazing: Safety Glazing per ASTM C1036, ASTM C1048, ANSI Z97.1 and CPSC 16CFR 1201.
				1. Glazing Units: Dry glazed with glass stops on the inside.

\*\* NOTE TO SPECIFIER \*\* Delete the following glazing options not required.

Glass Lites: Tempered.

Glass Lites: Laminated.

Glass Lites: Tempered and Laminated.

Double Insulated: 1-1/4 inch (32 mm), 6 mm + 6 mm or 15/16 inch (24 mm) 4 mm + 4 mm tempered glass depending on panel height.

Double Insulated: 1-9/16 inch (40 mm), 12 mm + 10 mm STC 50 laminated glass to achieve unit STC of 42.

Triple Insulated: 1-9/16 inch (40 mm), 6 mm + 4 mm + 6 mm or 1-1/2 inch (36 mm) 4 mm + 4 mm + 4 mm tempered glass depending on panel height.

\*\* NOTE TO SPECIFIER \*\* Delete insulated glazing unit fill options not required.

* + - 1. Insulated Glazing Unit Fill: Air.
			2. Insulated Glazing Unit Fill: Argon.

\*\* NOTE TO SPECIFIER \*\* Reduced iron is standard. For low iron, solar bronze, and solar gray; Contact NanaWall.

* + - 1. Glass Type: Reduced iron (Light Transmission (VLT) 89%).

\*\* NOTE TO SPECIFIER \*\* Delete glass spacers options not required.

* + - 1. Glass Spacers: Gray finish with capillary tube.
			2. Glass Spacers: Black finish with capillary tubes.
			3. Glass Spacers: Gray finish without capillary tubes.
			4. Glass Spacers: Black finish without capillary tubes.

\*\* NOTE TO SPECIFIER \*\* Delete insulated glass unit surfaces option not required.

* + - 1. Insulated Glass Unit Surfaces: Clear.
			2. Insulated Glass Unit Surfaces: Low- E coating on No. 2 surface of double IGU.
			3. Insulated Glass Unit Surfaces: Low-E coating on No. 2 and No. 4 surface of double IGU.
			4. Insulated Glass Unit Surfaces: Low-E coating on No. 2 and No. 5 surface of triple IGU.

\*\* NOTE TO SPECIFIER \*\* Alarmed Glazing by others is an option. Delete if not required.

* + - 1. Alarmed Glazing: Connection wiring to alarm system, position monitoring, locking detection, and notification systems such as glass-breakage sensors by others.

\*\* NOTE TO SPECIFIER \*\* The Main Entry Panel, a Pair of Folding Panels and Sliding-Folding Hardware are required for the configuration to be complete. Delete article if not required.

* + - 1. Locking Hardware and Handle for Sliding-Folding Systems:

\*\* NOTE TO SPECIFIER \*\* Delete Main Entry Panel options and subsequent options not required.

* + - * 1. Main Entry Panels: Lockset with lockable latch, multi-point locking with deadbolt and rods at top and bottom on primary panels only.

Application: Single swing panel.

Application: Pair of swing panels.

Operation: After turn of key or thumb turn, depression of handles withdraws latch. Lifting of handles engages rods and turn of key or thumb turn engages deadbolt and operates lock.

Rods: Concealed, not edge mounted.

Lever Handles: Lever handles on inside and outside.

\*\* NOTE TO SPECIFIER \*\* Other compatible lever handle styles and finishes are available with an upcharge from other suppliers.

Lever Handle Finish: Brushed satin stainless steel; standard.

Lever Handle Finish: Black titanium stainless steel; standard.

Locking: Standard profile cylinder.

Secondary Swing Panel: Concealed two-point, edge locking.

* + - * 1. Main Entry Panels: Deadbolt lock(s) and push/pull handles on the inside and outside, with a key/key European profile cylinder, only recommended for end swing panel with door closer by others.

Application: Single swing panel

Application: Pair of swing panels

Push/Pull Handle Finish: Brushed satin stainless steel

Locking: Key/Key European profile cylinder

* + - * 1. Main Entry Panels: Flat handle on inside only with concealed two-point locking hardware operated by 180 degrees turn of handle; the main entry panel is operable from inside only and there is no latch.

\*\* NOTE TO SPECIFIER \*\* Structural test load results will not apply for locking devices by others.

* + - * 1. Pairs of Folding Panels: Handles and concealed two-point locking hardware operated by 180 degrees turn of handle between each pair. Face applied flush bolt locking NOT acceptable.

Handles: Manufacturer's flat handles.

\*\* NOTE TO SPECIFIER \*\* Delete flat handle finish option not required.

Flat Handle Finish: Brushed satin stainless steel.

Flat Handle Finish: Black titanium stainless steel.

* + - * 1. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel unless otherwise indicated on Drawings.
				2. Locking Rods: End caps top and bottom: Rod Stroke: 15/16 inch (24 mm).

\*\* NOTE TO SPECIFIER \*\* Delete additional profile cylinders option not required.

* + - * 1. Additional Profile Cylinders: Keyed alike.
				2. Additional Profile Cylinders: Keyed differently.
				3. Panel catch: Panel catch to hold swing panel to adjacent folding panel to prevent incorrect operation when moving the panel.
				4. Sliding-Folding Hardware: Combination with top and bottom tracks and threshold.

Bottom rollers to have sealed, self-lubricating, double ball bearing multi-rollers.

Surface mounted hinges and bottom rollers are not acceptable.

\*\* NOTE TO SPECIFIER \*\* Weight of panels borne by the bottom of the guide channel in the sill is not acceptable.

Bottom Rollers Carrying Capacity: 240 lb. (110 kg); bottom rollers provided with two vertical stainless-steel wheels with double row of ball bearings and two horizontal polyamide wheels.

Vertical wheels with Gothic arch feature to ride on top of stainless-steel guide track covers over full length of sill track. Wheels on aluminum surfaces are not acceptable.

Upper guide rollers with two horizontal polyamide guiding wheels. For configurations with unhinged FourFold and SixFold panel sets that can slide left or right, additional concealed, additional vertical tilt protection hardware.

Hinges and Rollers: Anodized aluminum with stainless steel security hinge pins and set-screws. Concealed panel alignment with a tight seal through the patented (Patent Number: US10711510B2) TwinX mechanism reinforced between panels for a tight seal. Double ball bearing stainless-steel wheel rollers match hinge finish.

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required.

Finish: Clear.

Finish: Black.

Spring-Loaded Pull Handle: For outswing units with larger panel sizes, a spring loaded-pull handle is supplied for ease of closing the system. The pull handle is located above the flat handle. When not in use, the handle lays flat against the adjacent panel and is supplied with bumpers to avoid metal to metal contact. Handles are stainless steel with the attachment to coordinate with the hinge hardware of the system.

Pull Handle Finish: Brushed satin stainless steel or black titanium stainless steel.

\*\* NOTE TO SPECIFIER \*\* The exact type of weather stripping and sound gasketing is determined at the factory based on direction of swing, panel configuration, type of locking, and sill.

* + - * 1. Weather Stripping and Sound Gasketing: Manufacturer's double layer EPDM between panels and EPDM gasket, Q-Ion gasket, or brush seal between panel and frame, or brush seals with a two-layer fiberglass reinforced polyamide fin attached at both inner and outer edge of bottom of door panels with a recessed sill or on frame for sealing between panels and between panel and frame.
				2. Fasteners: Installation plates for connecting frame components made of stainless steel with sealing cushion to avoid thermal connectivity.

\*\* NOTE TO SPECIFIER \*\* Delete insect screen if not required.

* + - * 1. Insect Screen by Others: Fully retractable non-pleated screen. Strong polyester / PVC mesh riding on a single track.

Basis-of-Design Product by Manufacturer: S4 Screen & Shade System by Centor.

Centor which is located at 966-130 Corporate Boulevard, Aurora, IL 60502. Toll Free: (866) 255-0008; Telephone: (630) 957-1000; Fax: (630) 957-1001; Web: https://centor.com/us/

* + 1. Basis of Design: Model NW Aluminum 640 sliding-folding thermally broken, aluminum-framed glass panel system as manufactured by Nana Wall Systems, Incorporated. 2-5/8 inch (67 mm) thick, floor track supported system. Manufacturer's standard thermally broken panels and frame profiles, with head track, side jambs, sill and panels with dimensions as shown on Drawings.
			1. System Components: Aluminum framed panel, threshold, sliding-folding and locking hardware, weather stripping, bionic turtle thermal break, glass and glazing, panel catch, and accessories as required for a complete working installation.

\*\* NOTE TO SPECIFIER \*\* Delete sill and opening type options not required.

* + - 1. Weeps, to be drilled in field by installer to manufacturer's requirements.
			2. Air infiltration and water penetration testing results are only applicable if unit matches tested panel and unit size, direction of opening and type of sill. Results shown apply to odd-odd, odd-even, odd-frame and even-frame configurations and not even-even configurations. Structural load testing results are only applicable for the test unit size and type of locking and rods. Comparative analysis charts by manufacturer shows which panel sizes meet structural loading design pressures specifically required for project. Check for limitations on use of charts in project jurisdiction.
			3. Forced entry testing results are only applicable for test unit type of locking. Check for requirements in jurisdiction of project. See manufacturer's latest published data regarding performance. It is expected installed system's performance would be not more than 2/3rds of the following certified laboratory test data in accordance with AAMA 502.
			4. Performance Requirements: Lab tested.
				1. Sill and Opening Type: Performance Sill, Inward Opening:

Folding Glass Door Units tested to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG25 - FLD 157.5 x 102 inch (4000 x 2600 mm) and Class LC-PG50 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.03 cfm per sq ft (0.15 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.07 cfm per sq ft (0.35 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at static test pressure of 9 psf (450 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 50 psf (2400 Pa).

Design Pressure; Negative: 55 psf (2670 Pa)

Uniform Load Deflection; L/175: Pass 25 psf (1190 Pa).

* + - * 1. Sill and Opening Type: Performance Sill, Outward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG25 - FLD 157.5 x 102 inch (4000 x 2600 mm) and Class LC-PG50 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.03 cfm per sq ft (0.15 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.07 cfm per sq ft (0.35 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static test pressure of 9 psf (450 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 55 psf (2670 Pa).

Design Pressure; Negative: 50 psf (2400 Pa).

Uniform Load Deflection; L/175: Pass 25 psf (1190 Pa).

* + - * 1. Sill and Opening Type: Low Profile Saddle Sill, ADA Compliant, Inward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG25 - FLD 157.5 x 102 inch (4000 x 2600 mm) and Class LC-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.12 cfm per sq ft (0.61 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.30 cfm per sq ft (1.52 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static, with weeps, test pressure of 5.43 psf (260 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive and Negative: 50 psf (2400 Pa).

Uniform Load Deflection, L/175: Pass 25 psf (1190 Pa).

* + - * 1. Sill and Opening Type: Low Profile Saddle Sill, ADA Compliant, Outward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG25 - FLD 157.5 x 102 inch (4000 x 2600 mm) and Class LC-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.12 cfm per sq ft (0.61 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.28 cfm per sq ft (1.50 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static, with weeps, test pressure of 5.43 psf (260 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive and Negative: 50 psf (2400 Pa).

Uniform Load Deflection, L/175: Pass 25 psf (1190 Pa).

* + - * 1. Sill and Opening Type: Low Profile Saddle Sill with UniverSILL Insert, Outward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) and Class LC-PG50 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.04 cfm per sq ft (0.20 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.07 cfm per sq ft (0.35 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static test pressure of 7.5 psf (360 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive and Negative: 50 psf (2400 Pa).

Uniform Load Deflection, L/175: Pass 25 psf (1190 Pa).

* + - * 1. Swing Panel - Operation / Cycling Performance (AAMA 920): 500,000 cycles.
				2. System - Life Cycle Performance per DIN EN 1191/12400: Class 3; 20,000 cycles.
				3. Operating Force (ASTM E2068):

Swing Panel: Open 1 lbf (2.8 N) & Close 1 lbf (3.9 N).

Folding Panels:

Initiate Motion: Open 4 lbf (20 N) & Close 3 lbf (15 N).

Maintain Motion: Open 1 lbf (3 N) & Close 1 lbf (4 N).

\*\* NOTE TO SPECIFIER \*\* Forced entry and forced entry resistance testing results are only applicable for the test unit type of locking. See manufacturer's latest published data regarding performance.

* + - * 1. Forced Entry (AAMA 1304, DIN EN 1191): Pass.
				2. Forced Entry Resistance per ASTM F842, AAMA 1304, CAWM 300: Meets Grade 40; plus F2.

\*\* NOTE TO SPECIFIER \*\* Edit the following four paragraphs to suit project conditions or delete if not required.

* + - * 1. Thermal Performance (U-factor): NFRC 100 rated, certified, and labeled.
				2. Solar Heat Gain Coefficient plus Visible Light Transmission: NFRC 200 rated, certified, and labeled.
				3. Air Leakage: NFRC 400 rated, certified, and labeled.
				4. Condensation Resistance Factor: NFRC 500 rated, certified, and labeled.
			1. Design Criteria:

\*\* NOTE TO SPECIFIER \*\* Go to <https://www.nanawall.com/resources/nw-aluminum-640> #configurations to see size and configuration options.

* + - * 1. Sizes and Configurations: As indicated on Drawings for selected number and size of panels, location of swing panels, and number of panels stacking to the left and to the right.
				2. Unit Operation: Adjustable sliding and folding hardware with top and bottom tracks.

\*\* NOTE TO SPECIFIER \*\* Delete option for panel configuration not required.

* + - * 1. Panel Configuration: Straight.
				2. Panel Configuration: 90 degree angle turn.
				3. Panel Configuration: Single swing door.
				4. Panel Configuration: Window and door combination.

\*\* NOTE TO SPECIFIER \*\* Delete option for stack storage configuration not required.

* + - * 1. Stack Storage Configuration: Inswing type.
				2. Stack Storage Configuration: Outswing type.
				3. Mounting Type: Floor track supported with upper guide track.
				4. Hinged Panels:

\*\* NOTE TO SPECIFIER \*\* Delete primary swing panel option not required.

Primary Swing Panel of Paired Swing Panels Looking from Inside: On the left.

Primary Swing Panel of Paired Swing Panels Looking from Inside: On the right.

\*\* NOTE TO SPECIFIER \*\* Delete options below not required.

Entry and Egress Panel: Hinged to bi-folding panels.

Entry and Egress Panel: Hinged to side jamb.

Entry and Egress Panel: None.

\*\* NOTE TO SPECIFIER \*\* Bi-Folding panel sets hinged to side jambs have a Head Track Width of 2-13/16 inch (72 mm) only. Unhinged FourFold or SixFold panel sets must have a head track width of 3-7/8 inch (99 mm). Delete panel pairing configuration option not required.

* + - * 1. Panel Pairing Configuration: Bi-folding panels hinged to side jamb.
				2. Panel Pairing Configuration: Bi-folding panels unhinged FourFold or SixFold panel sets.
			1. Fabrication: Extruded aluminum frame and panel profiles, corner connectors, hinges, sliding and folding hardware, locking hardware, handles, glass and glazing, and weather stripping.
				1. Factory pre-assembled. Ship with system components and installation instructions.
				2. Exposed work matched to produce continuity of line and design with joints.
				3. No raw edges visible at joints.
			2. Materials:

\*\* NOTE TO SPECIFIER \*\* Single lite is standard. Refer to manufacturer's size chart for glass panel sizes requiring the use of horizontal mullions.

* + - * 1. Panels: Single lite; standard.
				2. Panels: Multiple lites with horizontal mullions at heights indicated on Drawings from bottom of panel.
				3. Panels: Single lite with simulated divided lites in pattern as shown on Drawings.

\*\* NOTE TO SPECIFIER \*\* Maximum panel sizes are ft and 2 inches (3100 mm) high and 3 ft and 3 inches (1000 mm) wide.

* + - * 1. Panel Size (W x H): \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ mm).
				2. Rail Depth: 2-5/8 inch (67 mm).
				3. Top Rail Width: 2-5/8 inch (66 mm).
				4. Typical Stile Width: 1-3/4 inch (45 mm) on both stiles for a nominal frame stile width of 3-7/8 inch (99 mm) between folding panels.

\*\* NOTE TO SPECIFIER \*\* Delete bottom rail width option not required.

* + - * 1. Bottom Rail Width: 2-5/8 inch (66 mm).
				2. Bottom Rail Width: Manufacturer's standard kick-plate of 10 inches (254 mm).
			1. Frame:
				1. Thermally broken top track and side jambs to hide anchoring connections and conceal cable routing to security system by others.
				2. For long-term tight, consistent sealing, provide a lateral patented (Patent Number: US10683688B2) adjustment feature at the side jambs capable of adjustment of plus or minus 3/16 inch (5 mm).
				3. Frame Finish: To match panel finish.
				4. Frame Depth: Top Track and Side Jamb Depth; 2-5/8 inch (67 mm).

\*\* NOTE TO SPECIFIER \*\* Bi-Folding panel sets hinged to side jambs have a Head Track Width of 2-13/16 inch (72 mm) only. Unhinged FourFold or SixFold panel sets must have a head track width of 3-7/8 inch (99 mm). Delete head track width option not required.

* + - 1. Head Track Width: 2-13/16 inch (72 mm) standard.
			2. Head Track Width: 3-7/8 inch (99 mm) with anti-tilt feature for unhinged FourFold or SixFold panel set configurations.
			3. Side Jamb Width: 2 inch (51 mm) wide. Adjustment: Plus or minus 3/16 inch (5 mm).

\*\* NOTE TO SPECIFIER \*\* Low profile saddle sills with UniverSill is not available for inswing stack storage configurations. Delete sill type and finish options not required.

* + - 1. Sill Type: Performance sill, thermally broken, with high heel protector insert. Extruded Aluminum.
			2. Sill Type: Low profile saddle sill, ADA compliant, thermally broken, with high heel protector insert. Extruded Aluminum.
			3. Sill Type: Low profile saddle sill with UniverSILL, thermally broken, with high heel protector insert. Extruded Aluminum.
			4. Sill Finish: Aluminum with clear anodized finish.
			5. Sill Finish: Aluminum with black anodized finish.
			6. Aluminum Extrusion: AlMgSi0.5 alloy, 6063-T5 (F-22 - European Standard).
				1. Thickness: 0.078 inch (2.0 mm) nominal.
				2. Thermal Break: 1-15/16 inches (49 mm) wide specially designed and patented (Patent Number: US10550625B2) glass fiber reinforced (GFR) polyamide "Bionic Turtle" for panels. Standard thermal break elsewhere.

\*\* NOTE TO SPECIFIER \*\* Delete finish and color options not required.

* + - * 1. Finish: One color inside and outside.

Finish Type: Anodized per AAMA 611. Clear

Finish Type: Anodized per AAMA 611. Dark bronze.

Finish Type: Anodized per AAMA 611. Black.

Finish Type: Powder coat per AAMA 2604

Color: Chosen from standard selection of 50 colors. Matte.

Color: Chosen from full RAL selection. Gloss.

Finish Type: Custom finish.

* + - * 1. Finish: Different color inside and outside.

Interior: Powder coat per AAMA 2604.

Color: Chosen from standard selection of 50 colors. Matte.

Color: Chosen from full RAL selection. Gloss.

Exterior: Powder coat per AAMA 2604.

Color: Chosen from standard selection of 50 colors. Matte.

Color: Chosen from full RAL selection. Gloss.

\*\* NOTE TO SPECIFIER \*\* Wind-load design, acoustic, and/or security, and other project requirements with other glass available from manufacturer. Glass thickness from 1/4 to 1-3/4 inches ( to 45 mm) possible. Custom layouts with horizontal mullions, simulated divided lites, inserts, and high bottom rails are possible. Contact NanaWall for availability of other commercial glass types.

* + - 1. Glass and Glazing: Safety Glazing per ASTM C1036, ASTM C1048, ANSI Z97.1 and CPSC 16CFR 1201.
				1. Glazing Units, Double Insulated: Dry glazed with glass stops on the inside.

\*\* NOTE TO SPECIFIER \*\* Delete the following glazing options not required.

Single IGU: 1/4 inch (6 mm)

Double IGU: 15/16 inch (24 mm), clear insulated tempered.

Triple IGU: 1-3/8 inch (35 mm), Low E Insulated Tempered 176 #2 and #5.

Triple IGU: 1-3/8 inch (35 mm), Low E Insulated Tempered PL #2 and #5.

\*\* NOTE TO SPECIFIER \*\* Delete insulated glazing unit fill options not required.

* + - 1. Insulated Glazing Unit Fill: Air.
			2. Insulated Glazing Unit Fill: Argon.

\*\* NOTE TO SPECIFIER \*\* Low iron, solar bronze, and solar gray glass lite types are available upon request. Contact NanaWall Design Support Team for tempered, laminated, various low-e, and special tint.

* + - 1. Glass Lite Type: Reduced iron. (Light Transmission (VLT) 89%)

\*\* NOTE TO SPECIFIER \*\* Delete glass spacers options not required.

* + - 1. Glass Spacers: Gray finish with capillary tube.
			2. Glass Spacers: Black finish with capillary tubes.
			3. Glass Spacers: Gray finish without capillary tubes.
			4. Glass Spacers: Black finish without capillary tubes.

\*\* NOTE TO SPECIFIER \*\* Alarmed Glazing by others is an option. Delete if not required.

* + - 1. Alarmed Glazing: Connection wiring to alarm system, position monitoring, locking detection, and notification systems such as glass-breakage sensors by others.

\*\* NOTE TO SPECIFIER \*\* The Main Entry Panel, a Pair of Folding Panels and Sliding-Folding Hardware are required for the configuration to be complete. Delete article if not required.

* + - 1. Locking Hardware and Handle for Sliding-Folding Systems:

\*\* NOTE TO SPECIFIER \*\* Delete Main Entry Panel options and subsequent options not required.

* + - * 1. Main Entry Panels: Lockset with lockable latch, multi-point locking with deadbolt and rods at top and bottom on primary panels only.

Application: Single swing panel.

Application: Pair of swing panels.

Operation: After turn of key or thumb turn, depression of handles withdraws latch. Lifting of handles engages rods and turn of key or thumb turn engages deadbolt and operates lock.

Rods: Concealed, not edge mounted.

Lever Handles: Lever handles on inside and outside.

\*\* NOTE TO SPECIFIER \*\* Other compatible lever handle styles and finishes are available with an upcharge from other suppliers.

Lever Handle Finish: Brushed satin stainless steel; standard.

Lever Handle Finish: Black titanium stainless steel; standard.

Locking: Standard European profile cylinder.

Locking: Adapter for Small Format Interchangeable Core.

Secondary Swing Panel: Concealed two-point, edge locking.

* + - * 1. Main Entry Panels: Deadbolt lock(s) and push/pull handles on the inside and outside, with a key/key European profile cylinder, only recommended for end swing panel with door closer by others.

Application: Single swing panel.

Application: Pair of swing panels.

Locking: Key/key European profile cylinder.

Locking: Adapter casing with Small Format Interchangeable Core (SFIC) core.

\*\* NOTE TO SPECIFIER \*\* Non-standard locking options not tested for air/water/structural and forced entry is optional and available upon request.

Push/pull handle: Brushed satin stainless steel

* + - * 1. Main Entry Panels: Manufacturer's latch and deadbolt single motion operated by GU Rondo lever handles.

Locking: Standard European profile cylinder.

Locking: Adapter casing with Small Format Interchangeable Core (SFIC) core.

* + - * 1. Main Entry Panels: Commercial applications for supply by others with a latch and deadbolt single motion locking operated by lever handles with locking with a US mortise cylinder than can accommodate standard 5 - 7 pin, SFIC, FSIC, or LFIC cores.

Locking: Yale 8808-2 Series with Mortise Lock.

Locking: L/LV9000 Series from Schlage with Mortise Lock

* + - * 1. Main Entry Panels: Flat handle on inside only with concealed two-point locking hardware operated by 180 degrees turn of handle for windows only; the main entry panel is operable from inside only and there is no latch.
				2. Main Entry Panels: No hardware or locking provided by manufacturer; Field installed panic device from Section 08 71 00 prepped for commercial application for supply by others.

Application: Pair of swing panels.

\*\* NOTE TO SPECIFIER \*\* Structural test load results will not apply for locking devices by others

Panic Hardware: Von Duprin 33/35A Series Narrow Stile Rim Exit Devices.

Panic Hardware: Von Duprin 98/99 Series Rim Exit Device.

Panic Hardware: DORMA 9700 Series Narrow Stile Rim Exit Devices.

* + - * 1. Pairs of Folding Panels: Flat handles and concealed two-point locking hardware operated by 180 degrees turn of handle between each pair. Face applied flush bolt locking NOT acceptable.

Handles: Manufacturer's flat handles.

\*\* NOTE TO SPECIFIER \*\* Delete flat handle finish option not required.

Flat Handle Finish: Brushed satin stainless steel.

Flat Handle Finish: Black titanium stainless steel.

* + - * 1. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel unless otherwise indicated on Drawings.
				2. Locking Rods: End caps top and bottom: Rod Stroke: 15/16 inch (24 mm).

\*\* NOTE TO SPECIFIER \*\* Delete additional profile cylinders option not required.

* + - * 1. Additional Profile Cylinders: Keyed alike.
				2. Additional Profile Cylinders: Keyed differently.
				3. Panel catch: Panel catch to hold swing panel to adjacent folding panel to prevent incorrect operation when moving the panel.
				4. Sliding-Folding Hardware: Combination with top and bottom tracks and threshold.

Bottom rollers to have sealed, self-lubricating, double ball bearing multi-rollers.

Surface mounted hinges and bottom rollers are not acceptable.

\*\* NOTE TO SPECIFIER \*\* Weight of panels borne by the bottom of the guide channel in the sill is not acceptable.

Bottom Rollers Carrying Capacity: 240 lb. (110 kg); bottom rollers provided with two vertical stainless-steel wheels with double row of ball bearings and two horizontal polyamide wheels.

Vertical wheels with Gothic arch feature to ride on top of stainless-steel guide track covers over full length of sill track. Wheels on aluminum surfaces are not acceptable.

Upper guide rollers with two horizontal polyamide guiding wheels. For configurations with unhinged FourFold and SixFold panel sets that slide left or right, additional concealed, additional vertical tilt protection hardware.

Hinges and Rollers: Anodized aluminum with stainless steel security hinge pins and set-screws. Concealed panel alignment with a tight seal through the patented (Patent Number: US10711510B2) TwinX mechanism reinforced between panels for a tight seal. Double ball bearing stainless-steel wheel rollers match hinge finish.

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required.

Finish: Clear.

Finish: Black.

Spring-Loaded Pull Handle: For outswing units with larger panel sizes, a spring loaded-pull handle is supplied for ease of closing the system. The pull handle is located above the flat handle. When not in use, the handle lays flat against the adjacent panel and is supplied with bumpers to avoid metal to metal contact. Handles are stainless steel with the attachment to coordinate with the hinge hardware of the system.

Pull Handle Finish: Brushed satin stainless steel or black titanium stainless steel.

\*\* NOTE TO SPECIFIER \*\* The exact type of weather stripping and sound gasketing is determined at the factory based on direction of swing, panel configuration, type of locking, and sill.

* + - * 1. Weather Stripping and Sound Gasketing: Manufacturer's double layer EPDM between panels and EPDM gasket, Q-Ion gasket, or brush seal between panel and frame, or brush seals with a two-layer fiberglass reinforced polyamide fin attached at both inner and outer edge of bottom of door panels with a recessed sill or on frame for sealing between panels and between panel and frame.
				2. Fasteners: Installation plates for connecting frame components made of stainless steel with sealing cushion to avoid thermal connectivity.

\*\* NOTE TO SPECIFIER \*\* Delete insect screen if not required.

* + - * 1. Insect Screen by others: Fully retractable non-pleated screen. Strong polyester/ PVC mesh riding on a single track.

Basis-of-Design Product by Manufacturer: S4 Screen & Shade System by Centor.

Centor which is located at 966-130 Corporate Boulevard, Aurora, IL 60502. Toll Free: (866) 255-0008; Telephone: (630) 957-1000; Fax: (630) 957-1001; Web: https://centor.com/us/

* + 1. Basis of Design: Model NW Acoustical 645 sliding-folding thermally broken, acoustically rated, aluminum-framed glass panel system as manufactured by Nana Wall Systems, Incorporated. Nominal frame stile width of 3-7/8 inch (99 mm), floor track supported system. Manufacturer's standard thermally broken panels and frame profiles, with head track, side jambs, sill and panels with dimensions as shown on Drawings.
			1. System Components: Aluminum framed panel, threshold, sliding-folding and locking hardware, sound gasketing, bionic turtle thermal break, multipurpose frame insert, panel catch, glass and glazing, and accessories as required for a complete working installation.
			2. Performance Requirements: Lab tested.

\*\* NOTE TO SPECIFIER \*\* Delete sill opening type option not required.

* + - * 1. Sill and Opening Type: Surface Mounted Flush Sill and Flush Sill - Inward Opening.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.12 cfm per sq ft (0.61 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.30 cfm per sq ft (1.52 L per sec per sq m).

Canadian Air Infiltration/ Exfiltration Level: A2.

* + - * 1. Sill and Opening Type: Surface Mounted Flush Sill and Flush Sill - Outward Opening.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.12 cfm per sq ft (0.61 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.28 cfm per sq ft (1.50 L per sec per sq m).

Canadian Air Infiltration/ Exfiltration Level: A2.

\*\* NOTE TO SPECIFIER \*\* Go to <https://www.nanawall.com/resources/nw-acoustical-645> to see size and configuration options.

* + - 1. Sizes and Configurations: As indicated on Drawings for selected number and size of panels, location of swing panels, and number of panels stacking to the left and to the right.
			2. Unit Operation: Adjustable sliding and folding hardware with top and bottom tracks.
			3. Panel Configuration: Straight
			4. Panel Configuration: Single Swing Door..

\*\* NOTE TO SPECIFIER \*\* Delete option for stack storage configuration not required.

* + - 1. Stack Storage Configuration: Inswing type and stack storage inside jamb.
			2. Stack Storage Configuration: Outswing type and stack storage outside jamb.
			3. Mounting Type: Floor track supported with upper guide track.

\*\* NOTE TO SPECIFIER \*\* Bi-Folding panel sets hinged to side jambs have a Head Track Width of 2-13/16 inch (72 mm) only. Unhinged FourFold or SixFold panel sets must have a head track width of 3-7/8 inch (99 mm). Delete panel pairing configuration option not required.

* + - 1. Panel Pairing Configuration: Bi-folding panels hinged to side jamb.
			2. Panel Pairing Configuration: Bi-folding panels unhinged FourFold or SixFold panel sets.
			3. Fabrication: Extruded aluminum frame and panel profiles, corner connectors, hinges, sliding and folding hardware, locking hardware, handles, glass and glazing, and sound gasketing.
				1. Each unit factory pre-assembled and shipped with complete system components and installation instructions.
				2. Exposed work to be carefully matched to produce continuity of line and design with all joints.
				3. No raw edges visible at joints.
			4. Materials:

\*\* NOTE TO SPECIFIER \*\* Single lite is standard. Refer to manufacturer's size chart for glass panel sizes requiring the use of horizontal mullions.

* + - * 1. Panels: Single lite; standard.
				2. Panels: Multiple lites with horizontal mullions at heights indicated from bottom of the panel.
				3. Panels: Single lite with simulated divided lites in pattern as shown on Drawings.

\*\* NOTE TO SPECIFIER \*\* Maximum panel sizes are ft and 6 inches (3500 mm) high and 3 ft and 3 inches (1000 mm) wide.

* + - * 1. Panel Size (W x H): \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ mm).
				2. Rail Depth: 2-5/8 inch (67 mm).
				3. Top Rail and Stile Width: 2-7/8 inch (73 mm).

\*\* NOTE TO SPECIFIER \*\* Delete bottom rail width option not required.

* + - * 1. Bottom Rail Width: 2-5/8 inch (66 mm).
				2. Bottom Rail Width: Manufacturer's standard kick-plate of 10 inches (254 mm).
			1. Frame:

\*\* NOTE TO SPECIFIER \*\* Delete thermally broken option not required.

* + - * 1. Thermally broken top track and side jambs with multipurpose frame insert to hide anchoring frame connections and conceal cable routing to security system by others.
				2. For long-term tight, consistent sealing, provide a lateral patented (Patent Number: US10683688B2) adjustment feature at the side jambs capable of adjustment of plus or minus 3/16 inch (5 mm).
				3. Frame Finish: To match panel finish.
				4. Frame Depth: Top Track and Side Jamb Depth; 2-15/16 inch (74 mm).

\*\* NOTE TO SPECIFIER \*\* Bi-Folding panel sets hinged to side jambs have a Head Track Width of 2-13/16 inch (72 mm) only. Unhinged FourFold or SixFold panel sets must have a head track width of 3-7/8 inch (99 mm). Delete head track width option not required.

* + - 1. Head Track Width: 2-13/16 inch (72 mm) standard.
			2. Head Track Width: 3-7/8 inch (99 mm) with anti-tilt feature for unhinged FourFold or SixFold panel set configurations.
			3. Side Jamb Width: 2 inch (51 mm) wide. Adjustment: Plus or minus 3/16 inch (5 mm).

\*\* NOTE TO SPECIFIER \*\* Delete sill type and finish options not required.

* + - 1. Sill Type: Surface mounted flush sill - ADA compliant.
			2. Sill Type: Flush sill - ADA compliant with high heel protector insert.
			3. Sill Finish: Aluminum with clear anodized finish.
			4. Sill Finish: Aluminum with black anodized finish.
			5. Aluminum Extrusion: AlMgSi0.5 alloy, 6063-T5; F-22 - European standard.
				1. Thickness: 0.078 inch (2.0 mm) nominal.
				2. Acoustical Break: 1-1/4 inches (32 mm) wide specially designed and patented (Patent Number: US10550625B2) glass fiber reinforced (GFR) polyamide "Bionic Turtle" for panels.

\*\* NOTE TO SPECIFIER \*\* Delete finish and color options not required.

* + - * 1. Finish; One color inside and outside.

Finish Type: Anodized per AAMA 611. Clear.

Finish Type: Anodized per AAMA 611. Dark bronze.

Finish Type: Anodized per AAMA 611. Black.

Finish Type: Powder coat per AAMA 2604.

Color: Chosen from standard selection of 50 colors. Matte.

Color: Chosen from full RAL selection. Gloss.

* + - * 1. Finish: Different color inside and outside.

Interior: Powder coat per AAMA 2604.

Color: Chosen from standard selection of 50 colors. Matte.

Color: Chosen from full RAL selection. Gloss.

Exterior: Powder coat per AAMA 2604.

Color: Chosen from standard selection of 50 colors. Matte.

Color: Chosen from full RAL selection. Gloss.

\*\* NOTE TO SPECIFIER \*\* Wind-load design, acoustic, and/or security, and other project requirements with other glass available from manufacturer. Glass pockets can accommodate glass thicknesses from 1/4 (6 mm) monolithic to3/4 inches (45 mm) double insulated possible.

Custom layouts with horizontal mullions, simulated divided lites, inserts, and high bottom rails are possible. For laminated glass, check with NanaWall the availability of Vanceva White Collection and other color interlayers.

* + - 1. Glass and Glazing: Safety Glazing per ASTM C1036, ASTM C1048, ANSI Z97.1 and CPSC 16 CFR 1201.
				1. Glazing Units, Double Insulated: Dry glazed with glass stops on the inside.

\*\* NOTE TO SPECIFIER \*\* Choose either an insulated glass unit or a single glass unit. Delete insulated glass units and single glass options not required.

* + - 1. Insulated Glass Unit (IGU): 1-9/16 inch (40 mm), 10 mm + 8 mm STC 48 enhanced laminated glass to achieve unit STC of 45 with head track recessed.
			2. Insulated Glass Unit (IGU): 1-9/16 inch (40 mm), 10 mm + 8 mm STC 48 enhanced laminated glass to achieve unit STC of 44.
			3. Insulated Glass Unit (IGU): 1-5/8 inch (42 mm), 8 mm + 8 mm STC 47 enhanced laminated glass to achieve unit STC of 44 with head track recessed.
			4. Insulated Glass Unit (IGU): 1-5/8 inch (42 mm), 8 mm + 8 mm STC 47 enhanced laminated glass to achieve unit STC of 43.
			5. Insulated Glass Unit (IGU): 1-7/16 inch (36 mm), 6 mm + 6 mm STC 45 enhanced laminated glass to achieve unit STC of 43 with head track recessed.
			6. Insulated Glass Unit (IGU): 1-7/16 inch (36 mm), 6 mm + 6 mm STC 45 enhanced laminated glass to achieve unit STC of 42.
			7. Single Glass: 1/2 inch (12 mm) STC 39 enhanced laminated glass to achieve unit STC of 38.
			8. Single Glass: 3/8 inch (10 mm) STC 38 enhanced laminated glass to achieve unit STC of 37.
			9. Single Glass: 1/4 inch (6 mm) STC 36 enhanced laminated glass to achieve unit STC of 36.
			10. Single Glass: 1/4 inch (6 mm) STC 35 laminated glass to achieve unit STC of 35.
			11. Single Glass: 1/4 inch (6 mm) STC 31 tempered glass to achieve unit STC of 32.
			12. Insulated Glazing Unit Fill: Air.

\*\* NOTE TO SPECIFIER \*\* Low iron glass type is available upon request. Contact NanaWall Design Support Team for tempered, laminated, various low-e and special tint options.

* + - 1. Glass Type: Reduced iron. (Light Transmission (VLT) 89 percent)

\*\* NOTE TO SPECIFIER \*\* Delete glass spacers options not required.

* + - 1. Glass Spacers: Gray finish with capillary tube.
			2. Glass Spacers: Black finish with capillary tubes.
			3. Glass Spacers: Gray finish without capillary tubes.
			4. Glass Spacers: Black finish without capillary tubes.

\*\* NOTE TO SPECIFIER \*\* The Main Entry Panel, a Pair of Folding Panels, and Sliding-Folding Hardware are required for the configuration to be complete. Delete article if not required.

* + - 1. Locking Hardware and Handle for Sliding-Folding Systems:

\*\* NOTE TO SPECIFIER \*\* Delete Main Entry Panel options and subsequent options not required.

* + - * 1. Main Entry Panels: Lockset with lockable latch, multi-point locking with deadbolt and rods at top and bottom on primary panels only.

Application: Single swing panel.

Application: Pair of swing panels.

Operation: After turn of key or thumb turn, depression of handles withdraws latch. Lifting of handles engages rods and turn of key or thumb turn engages deadbolt and operates lock.

Rods: Concealed, not edge mounted.

Lever Handles: Lever handles on inside and outside.

\*\* NOTE TO SPECIFIER \*\* Other compatible lever handle styles and finishes are available with an upcharge from other suppliers.

Lever Handle Finish: Brushed satin stainless steel; standard.

Lever Handle Finish: Black titanium stainless steel; standard.

Locking: Standard European profile cylinder.

Locking: Adapter casing for Small Format Interchangeable Core (SFIC).

Secondary Swing Panel: Concealed two-point, edge locking.

* + - * 1. Main Entry Panels: Manufacturer's deadbolt lock(s) and push/pull handles on the inside and outside, with a key/key European profile cylinder, only recommended for end swing panel with door closer by others.

Locking: Key/Key European profile cylinder

Locking: Adapter casing with Small Format Interchangeable Core (SFIC)

* + - * 1. Main Entry Panels: Manufacturer's latch and deadbolt single motion operated by GU Rondo lever handles.

Locking: Standard European profile cylinder

Locking: Adapter casing with Small Format Interchangeable Core (SFIC)

* + - * 1. Main Entry Panels: Prepped for commercial applications for supply by others with a latch and deadbolt single motion locking operated by lever handles with locking with a US mortise cylinder that can accommodate 5 -7 pin, SFIC, FSIC, or LFIC cores.

Locking: Yale 8808-2 Series with Mortise Lock

Locking: L/LV9000 Series from Schlage with Mortise Lock

Locking: Single Latch Schlage ND Series Mechanical Lock

Secondary Swing Panel: Provide concealed two-point, edge locking.

* + - * 1. Main Entry Panels: Flat handle on inside only with concealed two-point locking hardware operated by 180 degrees turn of handle for windows only; the main entry panel is operable from inside only and there is no latch.
				2. Main Entry Panels: No hardware or locking provided by manufacturer; Field installed panic device from Section 08 71 00 prepped for commercial application.

Application: Single swing panel

\*\* NOTE TO SPECIFIER \*\* Structural test load and acoustical performance results will not apply for locking devices by others.

Panic Hardware: Von Duprin 33/35A Series Narrow Stile Rim Exit Device.

Panic Hardware: Von Duprin 98/99 Series Rim Exit Device.

Panic Hardware: DORMA 9700 Series Narrow Stile Rim Exit Device.

* + - * 1. Pairs of Folding Panels: Handles and concealed two-point locking hardware operated by 180 degrees turn of handle between each pair. Face applied flush bolt locking NOT acceptable.

Handles: Manufacturer's flat handles.

\*\* NOTE TO SPECIFIER \*\* Delete flat handle finish option not required.

Flat Handle Finish: Brushed satin stainless steel.

Flat Handle Finish: Black titanium stainless steel.

* + - * 1. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel unless otherwise indicated on Drawings.
				2. Locking Rods: End caps top and bottom: Rod Stroke: 15/16 inch (24 mm).

\*\* NOTE TO SPECIFIER \*\* Delete additional profile cylinders option not required.

* + - * 1. Additional Profile Cylinders: Keyed alike.
				2. Additional Profile Cylinders: Keyed differently.
				3. Panel catch: Panel catch to hold swing panel to adjacent folding panel to prevent incorrect operation when moving the panel.
				4. Sliding-Folding Hardware: Combination with top and bottom tracks and threshold.

All bottom rollers to have sealed, self-lubricating, double ball bearing multi-rollers.

Surface mounted hinges and bottom rollers are not acceptable.

\*\* NOTE TO SPECIFIER \*\* Weight of panels borne by the bottom of the guide channel in the sill is not acceptable.

Bottom Rollers Carrying Capacity: 250 lb. (120 kg); bottom rollers provided with two vertical stainless-steel wheels with double row of ball bearings and two horizontal polyamide wheels.

Vertical wheels with Gothic arch feature to ride on top of stainless-steel guide track covers over full length of sill track. Wheels on aluminum surfaces are not acceptable.

Upper guide rollers with two horizontal polyamide guiding wheels. For configurations with unhinged FourFold and SixFold panel sets that slide left or right, additional concealed, additional vertical tilt protection hardware.

Hinges and Rollers: Anodized aluminum with stainless steel security hinge pins and set-screws. Concealed panel alignment with a tight seal through the patented (Patent Number: US10711510B2) TwinX mechanism reinforced between panels for a tight seal. Double ball bearing stainless-steel wheel rollers match hinge finish.

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required.

Finish: Clear.

Finish: Black.

Spring-Loaded Pull Handle: For outswing units with larger panel sizes, a spring loaded-pull handle is supplied for ease of closing the system. The pull handle is located above the flat handle. When not in use, the handle lays flat against the adjacent panel and is supplied with bumpers to avoid metal to metal contact. Handles are stainless steel with the attachment to coordinate with the hinge hardware of the system.

Pull Handle Finish: Brushed satin stainless steel or black titanium stainless steel.

\*\* NOTE TO SPECIFIER \*\* The exact type of weather stripping and sound gasketing is determined at the factory based on direction of swing, panel configuration, type of locking, and sill.

* + - * 1. Weather Stripping and Sound Gasketing: Manufacturer's double layer EPDM between panels and EPDM gasket, Q-Ion gasket, or brush seal between panel and frame, or brush seals with a two-layer fiberglass reinforced polyamide fin attached at both inner and outer edge of bottom of door panels with a recessed sill or on frame for sealing between panels and between panel and frame.
				2. Fasteners: Installation plates for connecting frame components made of stainless steel with sealing cushion to avoid thermal connectivity.
		1. Basis of Design: Model NW Clad 740 sliding-folding, aluminum-clad wood framed glass panel system as manufactured by NanaWall Systems, Incorporated. Manufacturer's standard aluminum clad solid quadruple laminated cross-grained wood panel profiles to the interior and exterior aluminum cladding thermally broken aluminum frame with head and floor track, side jambs with dimensions as shown on Drawings. 3-3/8 inch (86 mm) thick, floor track supported system.

\*\*NOTE TO SPECIFIER\*\* Market availability of quadruple laminated cross-grained wood may differ by wood species.

* + - 1. System Components: Interior wood clad aluminum frame and running astragals, threshold, exterior aluminum clad wood panels, sliding-folding and locking hardware, weather stripping, glass and glazing, panel catch, and accessories as required for a complete working installation.

\*\* NOTE TO SPECIFIER \*\* Delete sill and opening type options are not required.

* + - 1. Weeps, to be drilled in field by installer to manufacturer's requirements.
			2. Air infiltration and water penetration testing results are only applicable if unit matches tested panel and unit size, direction of opening, and type of sill. Results shown apply to odd-odd, odd-even, odd-frame, and even-frame configurations and not even-even configurations. Structural load testing results are only applicable for the test unit size and type of locking and rods. Comparative analysis charts by manufacturers show which panel sizes meet structural loading design pressures specifically required for project. Check for limitations on use of charts in project jurisdiction.
			3. Forced entry testing results are only applicable for test unit type of locking. Check for requirements in jurisdiction of project. See manufacturer's latest published data regarding performance. It is expected installed system's performance would be not more than 2/3rds of the following certified laboratory test data in accordance with AAMA 502.
			4. Performance Requirements:
				1. Sill and Opening Type: Performance Sill, Inward Opening:

Folding Glass Door Units tested to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.06 cfm per sq ft (0.3 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.14 cfm per sq ft (0.7 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at static test pressure of 9 psf (450 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 39 psf (1850 Pa).

Design Pressure; Negative: 55 psf (2670 Pa).

Uniform Load Deflection; L/175: Pass 42 psf (2000 Pa).

* + - * 1. Sill and Opening Type: Performance Sill, Outward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.06 cfm per sq ft (0.3 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.14 cfm per sq ft (0.7 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static test pressure of 9 psf (450 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 55 psf (2670 Pa).

Design Pressure; Negative:39 psf (1850 Pa).

Uniform Load Deflection; L/175: Pass 45 psf (2150 Pa).

* + - * 1. Sill and Opening Type: Low Profile Saddle Sill, ADA Compliant, Inward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.12 cfm per sq ft (0.61 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.29 cfm per sq ft (1.50 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static, with weeps, test pressure of 5.43 psf (260 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 40 psf (1945 Pa).

Design Pressure; Negative: 45 psf (2150 Pa).

Uniform Load Deflection, L/175: Pass 45 psf (2150 Pa).

* + - * 1. Sill and Opening Type: Low Profile Saddle Sill, ADA Compliant, Outward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG35 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.12 cfm per sq ft (0.61 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.30 cfm per sq ft (1.52 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static, with weeps, test pressure of 5.43 psf (260 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 45 psf (2150 Pa).

Design Pressure; Negative: 40 psf (1945 Pa).

Uniform Load Deflection, L/175: Pass 45 psf (2150 Pa).

* + - * 1. Sill and Opening Type: Low Profile Saddle Sill with UniverSILL Insert, Outward Opening:

Folding Glass Door Units test to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

Class CW-PG40 - FLD 157.5 x 102 inch (4000 x 2600 mm) with 1L3R configuration.

Air Infiltration per ASTM E283:

Static air pressure difference of 1.57 psf (75 Pa): 0.04 cfm per sq ft (0.20 L per sec per sq m).

Static air pressure difference of 6.24 psf (300 Pa): 0.07 cfm per sq ft (0.36 L per sec per sq m).

Water Penetration per ASTM E331 and ASTM E547: No uncontrolled water leakage at a static test pressure of 7.5 psf (360 Pa). Not applicable for even-even configurations.

Structural Loading per ASTM E330: Wind load resistance.

Design Pressure; Positive: 45 psf (2150 Pa).

Design Pressure; Negative: 40 psf (1945 Pa).

Uniform Load Deflection, L/175: Pass 45 psf (2150 Pa).

* + - * 1. Swing Panel - Operation / Cycling Performance (AAMA 920): 500,000 cycles.
				2. System - Life Cycle Performance (DIN EN 1191/12400): Pass; 20,000 cycles.
				3. Operating Force (ASTM E2068):

Swing Panel: Open 1 lbf (2.8 N) & Close 1 lbf (3.9 N).

Folding Panel:

Initiate Motion - Open 4 lbf (20 N) & Close 3 lbf (15 N).

Maintain Motion - Open 1 lbf (3 N) & Close 1 lbf (4 N).

* + - * 1. Forced Entry (AAMA 1304): Meets 300 lb. (1330 N) point load requirement.

\*\* NOTE TO SPECIFIER \*\* Edit the following four paragraphs to suit project conditions or delete if not required.

* + - * 1. Thermal Performance (U-factor): NFRC 100 rated, certified, and labeled.
				2. Solar Heat Gain Coefficient plus Visible Light Transmission: NFRC 200 rated, certified, and labeled.
				3. Air Leakage: NFRC 400 rated, certified, and labeled.
				4. Condensation Resistance Factor: NFRC 500 rated, certified, and labeled.
			1. Design Criteria:

\*\* NOTE TO SPECIFIER \*\* Go tohttps://www.nanawall.com/resources/nw-clad-740 to see size and configuration options.

* + - * 1. Sizes and Configurations: As indicated on Drawings for selected number and size of panels, location of swing panels, and number of panels stacking to the left and to the right.
				2. Unit Operation: Adjustable sliding and folding hardware with top and bottom tracks.

\*\* NOTE TO SPECIFIER \*\* Delete option for panel configuration not required.

* + - * 1. Panel Configuration: Straight.
				2. Panel Configuration: 90 degree angle turn.
				3. Panel Configuration: Window and door combination.

\*\* NOTE TO SPECIFIER \*\* Delete option for stack storage configuration not required.

* + - * 1. Stack Storage Configuration: Inswing type.
				2. Stack Storage Configuration: Outswing type.
				3. Mounting Type: Floor track supported with upper guide track.
				4. Hinged Panels:

\*\* NOTE TO SPECIFIER \*\* Delete primary swing panel option not required.

Primary Swing Panel of Paired Swing Panels Looking from Inside: On the left.

Primary Swing Panel of Paired Swing Panels Looking from Inside: On the right.

\*\* NOTE TO SPECIFIER \*\* Delete options below not required.

Entry and Egress Panel: Hinged to bi-folding panels.

Entry and Egress Panel: Hinged to side jamb.

Entry and Egress Panel: None.

\*\* NOTE TO SPECIFIER \*\* Bi-Folding panel sets hinged to side jambs have a Head Track Width of 2-13/16 inch (72 mm) only. Unhinged FourFold or SixFold panel sets must have a head track width of 3-7/8 inch (99 mm). Delete panel pairing configuration option not required.

* + - * 1. Panel Pairing Configuration: Bi-folding panels hinged to side jamb.
				2. Panel Pairing Configuration: Bi-folding panels unhinged FourFold or SixFold panel sets.
			1. Fabrication: Thermally broken aluminum frame and black anodized aluminum astragal with wood cladding, quad-layer, cross grained, solid wood for panels with aluminum cladding, connecting to hinges, sliding, and folding hardware, locking hardware and handles, glass and glazing, threshold and track, and weather stripping.
				1. Factory pre-assembled. Ship with system components and installation instructions.
				2. Exposed work matched to produce continuity of line and design with all joints.
				3. No raw edges visible at joints.
				4. Wood frame and panel components to be sealed with a clear sand sealer or primer plus one additional coat.
			2. Materials:

\*\* NOTE TO SPECIFIER \*\* Refer to manufacturer's size chart for glass panel sizes requiring the use of horizontal mullions.

* + - * 1. Panels: Single lite; standard.
				2. Panels: Multiple lites with horizontal mullions at heights indicated on Drawings from bottom of panel.
				3. Panels: Single lite with simulated divided lites in pattern as shown on Drawings.

\*\* NOTE TO SPECIFIER \*\* Maximum panel sizes are 9 ft and 2 inches (2800 mm) high and 3 ft 3 inches ( mm) wide.

* + - * 1. Panel Size (W x H): \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ mm).
				2. Rail Depth: 3-3/8 inch (86 mm).
				3. Top Rail Width: 3-1/4 inch (82 mm).
				4. Typical Stile Width: 2-5/8 inch (68 mm) on both stiles for a nominal frame stile width of 5-11/16 inch (144 mm) between folding panels.

\*\* NOTE TO SPECIFIER \*\* Delete bottom rail width option not required.

* + - * 1. Bottom Rail Width: 3-1/4 inch (82 mm).
				2. Bottom Rail Width: Manufacturer's standard kick-plate of 10 inches (254 mm).
			1. Frame:
				1. Thermally broken top track and side jambs to hide anchoring connections.
				2. For long-term tight, consistent sealing, provide a lateral patented (Patent Number: US10683688B2) adjustment feature at the side jambs capable of adjustment of plus or minus 3/16 inch (5 mm).
				3. Frame Finish: Black anodized aluminum inside of top track and side jambs.
				4. Frame Depth: Top Track and Side Jamb Depth; 3 inch (76 mm).

\*\* NOTE TO SPECIFIER \*\* Bi-Folding panel sets hinged to side jambs have a Head Track Width of 2-13/16 inch (72 mm) only. Unhinged FourFold or SixFold panel sets must have a head track width of 3-7/8 inch (99 mm). Delete head track width option not required.

* + - 1. Head Track Width: 2-13/16 inch (72 mm) standard.
			2. Head Track Width: 3-7/8 inch (99 mm) with anti-tilt feature for unhinged FourFold or SixFold panel set configurations.
			3. Side Jamb Width: 2inch (51 mm) wide. Adjustment: Plus or minus 3/16 inch (5 mm).

\*\* NOTE TO SPECIFIER \*\*. Delete wood species and wood finish options not required.

* + - 1. Wood Species: Sapeli Mahogany.
			2. Wood Species: European Pine.
			3. Wood Species: Red Grandis
			4. Wood Species: Western Hemlock.
			5. Wood Species: Meranti.
			6. Wood Species: European Oak
			7. Wood Finish: Provide factory water-based, open pore clear base coat applied for paint with one additional clear coat; See Section 09 90 00
			8. Wood Finish: Provide factory water-based, open pore clear sanding sealer for stain with one additional clear coat; See Section 09 90 00.
			9. Aluminum Cladding and Frame Extrusion: AlMgSi0.5 alloy, 6063-T5 (F-22 - European standard).
				1. Thickness: 0.078 inch (2.0 mm) nominal.
				2. Alloy: AlMgSi0.5; 6063-T5 (F-22 - European standard).
			10. Panel Cladding Aluminum Finish:

\*\* NOTE TO SPECIFIER \*\* Delete finish option not required.

* + - * 1. Finish: One color inside and outside.

Finish Type: Anodized per AAMA 611. Clear.

Finish Type: Anodized per AAMA 611. Dark bronze.

Finish Type: Powder coat per AAMA 2604.

Color: Chosen from standard selection of 50 colors. Matte.

Color: Chosen from full RAL selection. Gloss.

Finish Type: Custom finish.

* + - * 1. Finish: Different color inside and outside.

Interior: Powder coat per AAMA 2604.

Color: Chosen from standard selection of 50 colors. Matte.

Color: Chosen from full RAL selection. Gloss.

Interior: Custom finish.

Exterior: Powder coat per AAMA 2604.

Color: Chosen from standard selection of 50 colors. Matte.

Color: Chosen from full RAL selection. Gloss

Exterior: Custom finish.

\*\* NOTE TO SPECIFIER \*\* Low profile saddle sills with UniverSill is not available for inswing stack storage configurations. Delete sill type and finish options not required.

* + - 1. Sill Type: Performance sill, thermally broken, with high heel protector insert.
			2. Sill Type: Low profile saddle sill, ADA compliant, thermally broken, with high heel protector insert.
			3. Sill Type: Low profile saddle sill with UniverSILL, thermally broken, with high heel protector insert.
			4. Sill Finish: Aluminum with clear anodized finish.
			5. Sill Finish: Aluminum with black anodized finish.

\*\* NOTE TO SPECIFIER \*\* Wind-load design, acoustic, and/or security, and other project requirements with other glass available from manufacturer. Glass thickness from 1-1/8 to 1-7/8 inches (28 to 48 mm) possible.

* + - 1. Custom layouts with horizontal mullions, simulated divided lites, inserts, and high bottom rails are possible. Contact NanaWall for availability of other commercial glass type.
			2. Glass and Glazing: Safety Glazing per ASTM C1036, ASTM C1048, ANSI Z97.1 and CPSC 16 CFR 1201 for NW Clad 740.
				1. Glazing Units: Dry glazed with glass stops on the inside.

\*\* NOTE TO SPECIFIER \*\* Delete glass lites options not required.

Glass Lites: Tempered.

Glass Lites: Laminated.

Glass Lites: Tempered and laminated.

Double IGU: 1-1/4 inch (32 mm), 6 mm + 6 mm or 15/16 inch (24 mm) 4 mm + 4 mm tempered glass depending on panel height.

Triple IGU: 1-9/16 inch (40 mm), 6 mm + 4 mm + 6 mm or 1-1/12 inch (36 mm) 4 mm + 4 mm + 4 mm tempered glass depending on panel height.

\*\* NOTE TO SPECIFIER \*\* Delete insulated glazing unit fill options not required.

* + - 1. Insulated Glazing Unit Fill: Air.
			2. Insulated Glazing Unit Fill: Argon.

\*\* NOTE TO SPECIFIER \*\* Low iron, solar bronze, and solar gray glass types are available upon request.

* + - 1. Glass Type: Reduced iron (Light Transmission VLT 89%).

\*\* NOTE TO SPECIFIER \*\* Delete glass spacers options not required.

* + - 1. Glass Spacers: Gray finish with capillary tube.
			2. Glass Spacers: Black finish with capillary tubes.
			3. Glass Spacers: Gray finish without capillary tubes.
			4. Glass Spacers: Black finish without capillary tubes.

\*\* NOTE TO SPECIFIER \*\* Delete insulated glass unit surfaces option not required.

* + - 1. Insulated Glass Unit Surfaces: Clear.
			2. Insulated Glass Unit Surfaces: Low- E coating on No. 2 surface of double IGU.
			3. Insulated Glass Unit Surfaces: Low-E coating on No. 2 and No. 4 surface of double IGU.
			4. Insulated Glass Unit Surfaces: Low-E coating on No. 2 and No. 5 surface of triple IGU.

\*\* NOTE TO SPECIFIER \*\* Alarmed Glazing by others is an option. Delete if not required.

* + - 1. Alarmed Glazing: Connection wiring to alarm system, position monitoring, locking detection, and notification systems such as glass-breakage sensors by others.

\*\* NOTE TO SPECIFIER \*\* The Main Entry Panel, a Pair of Folding Panels, and Sliding-Folding Hardware are required for the configuration to be complete. Delete article if not required.

* + - 1. Locking Hardware and Handle for Sliding-Folding Systems:

\*\* NOTE TO SPECIFIER \*\* Delete Main Entry Panel options and subsequent options not required.

* + - * 1. Main Entry Panels: Lockset with lockable latch, multi-point locking with deadbolt and rods at top and bottom on primary panels only.

Application: Single swing panel.

Application: Pair of swing panels.

Operation: After turn of key or thumb turn, depression of handles withdraws latch. Lifting of handles engages rods and turn of key or thumb turn engages deadbolt and operates lock.

Rods: Concealed, not edge mounted.

Lever Handles: Lever handles on inside and outside.

\*\* NOTE TO SPECIFIER \*\* Lever handle with return only available in "Brushed satin stainless steel." Other compatible lever handle styles and finishes are available with an upcharge from other suppliers.

Lever Handle Finish: Brushed satin stainless steel; standard.

Lever Handle Finish: Black titanium stainless steel; standard.

Locking: Standard European profile cylinder.

Secondary Swing Panel: Concealed two-point, edge locking.

\*\* NOTE TO SPECIFIER \*\* Other compatible lever handle styles and finishes are available from other suppliers.

* + - * 1. Main Entry Panels: Deadbolt lock(s) and push/pull handles on the inside and outside, with a key/key European profile cylinder, only recommended for end swing panel with door closer by others.
				2. Application: Single swing panel
				3. Application: Pair of swing panels
				4. Locking: Key/Key European profile cylinder
				5. Main Entry Panels: Flat handle on inside only with concealed two-point locking hardware operated by 180 degrees turn of handle for window units only; the main entry panel is operable from inside only and there is no latch.

\*\* NOTE TO SPECIFIER \*\* Structural test load results will not apply for locking devices by others.

* + - * 1. Pairs of Folding Panels: Handles and concealed two-point locking hardware operated by 180 degrees turn of handle between each pair. Face applied flush bolt locking NOT acceptable.

Handles: Manufacturer's flat handles.

\*\* NOTE TO SPECIFIER \*\* Delete flat handle finish option not required.

Flat Handle Finish: Brushed satin stainless steel.

Flat Handle Finish: Black titanium stainless steel.

* + - * 1. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel unless otherwise indicated on Drawings.
				2. Locking Rods: End caps top and bottom: Rod Stroke: 15/16 inch (24 mm).

\*\* NOTE TO SPECIFIER \*\* Delete additional profile cylinders option not required.

* + - * 1. Additional Profile Cylinders: Keyed alike.
				2. Additional Profile Cylinders: Keyed differently.
				3. Panel catch: Panel catch to hold swing panel to adjacent folding panel to prevent incorrect operation when moving the panel.
				4. Sliding-Folding Hardware: Combination with top and bottom tracks and threshold.

All bottom rollers to have sealed, self-lubricating, double ball bearing multi-rollers.

Surface mounted hinges and bottom rollers are not acceptable.

\*\* NOTE TO SPECIFIER \*\* Weight of panels borne by the bottom of the guide channel in the sill is not acceptable.

Bottom Rollers Carrying Capacity: 240 lb. (110 kg); bottom rollers are provided with two vertical stainless-steel wheels with double row of ball bearings and two horizontal polyamide wheels.

Vertical wheels with Gothic arch feature to ride on top of stainless-steel guide track covers over full length of sill track. Wheels on aluminum surfaces are not acceptable.

Upper guide rollers with two horizontal polyamide guiding wheels. For configurations with unhinged FourFold and SixFold panel sets that slide left or right, additional concealed, additional vertical tilt protection hardware.

Hinges and Rollers: Anodized aluminum with stainless steel security hinge pins and set-screws. Concealed panel alignment with a tight seal through the patented (Patent Number: US10711510B2) TwinX mechanism reinforced between panels for a tight seal. Double ball bearing stainless-steel wheel rollers match hinge finish.

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required.

Finish: Clear.

Finish: Black.

Spring-Loaded Pull Handle: For outswing units with larger panel sizes, a spring loaded-pull handle is supplied for ease of closing the system. The pull handle is located above the flat handle. When not in use, the handle lays flat against the adjacent panel and is supplied with bumpers to avoid metal to metal contact. Handles are stainless steel with the attachment to coordinate with the hinge hardware of the system.

Pull Handle Finish: Brushed satin stainless steel or black titanium stainless steel.

\*\* NOTE TO SPECIFIER \*\* The exact type of weather stripping and sound gasketing is determined at the factory based on direction of swing, panel configuration, type of locking, and sill.\*\* NOTE TO SPECIFIER \*\* The exact type of weather stripping and sound gasketing is determined at the factory based on direction of swing, panel configuration, type of locking, and sill.

* + - * 1. Weather Stripping and Sound Gasketing: Manufacturer's double layer EPDM between panels and EPDM gasket, Q-Ion gasket, or brush seal between panel and frame, or brush seals with a two-layer fiberglass reinforced polyamide fin attached at both inner and outer edge of bottom of door panels with a recessed sill or on frame for sealing between panels and between panel and frame.
				2. Fasteners: Installation plates for connecting frame components made of stainless steel with sealing cushion to avoid thermal connectivity.

\*\* NOTE TO SPECIFIER \*\* Delete insect screen if not required.

* + - * 1. Insect Screen by others: Fully retractable non-pleated screen. Strong polyester/PVC mesh housed in single cartridge riding on a single track.

Basis-of-Design Product by Manufacturer: S4 Screen & Shade System by Centor.

Centor which is located at 966-130 Corporate Boulevard, Aurora, IL 60502. Toll Free: (866) 255-0008; Telephone: (630) 957-1000; Fax: (630) 957-1001; Web: https://centor.com/us/

1. EXECUTION
	1. EXAMINATION AND PREPARATION
		1. Carefully examine rough openings with Installer present, for compliance with requirements affecting Work performance.
			1. Examine surfaces of openings and verify dimensions; verify rough openings are level, plumb, and square, with no unevenness, bowing, or bumps on floor and other conditions are required by the manufacturer for readiness to receive Work.

\*\* NOTE TO SPECIFIER \*\* Prior to installing NanaWall, it is recommended that all building dead loads be applied to header. Allow a reasonable amount of time for the dead load's effect on the header, only then can the building live load be used to meet requirements of L/720 or 1/4 inch (6 mm). If not, dead, and live loads need to be considered.

* + - 1. Verify structural integrity of header; maximum deflection with both live and dead loads is 1/4 inches (6 mm).
			2. Structural support for lateral loads, wind load, and eccentric load when panels are stacked open.
		1. Prepare openings using methods recommended by manufacturer for achieving the best result for the substrate under the project conditions.
			1. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
		2. Do not proceed with installation until substrates are prepared using methods recommended by manufacturer. Commencement of installation constitutes acceptance of conditions.
	1. INSTALLATION
		1. Install per Drawings, submittals, and manufacturer's installation instructions.
			1. Properly flash, seal, and waterproof around perimeter of opening.
			2. Attach anchorage devices in place, level, straight, plumb, and square. Install frame in proper elevation, plane, and location, and in proper alignment with other work.
			3. When lower track is designed to drain, provide connections to allow for drainage.
			4. Install panels, handles, lockset, screens, and other accessories in accordance with manufacturer's recommendations and instructions.
	2. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate in accordance with appropriate sections in Division 01.
		2. Verify system operates and functions properly. Adjust hardware for proper operation.
		3. Non-Conforming Work: Repair or replace non-conforming work as directed by the Architect; see General and Supplementary Conditions, and Division 01, General Requirements.

\*\* NOTE TO SPECIFIER \*\* Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, or construction. Delete if not required.

* 1. CLEANING AND PROTECTION
		1. Protect installed products until completion of project. Keep units closed and protect installation against damage from construction activities.
		2. Remove protective coatings. Use manufacturer recommended methods to clean surfaces.

END OF SECTION