

SECTION 08 43 29

SLIDING GLASS STOREFRONTS

SECTION 08 32 13

SLIDING ALUMINUM-FRAMED GLASS DOORS

NOTE: Modify footers to align when using this section name and number.

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes furnishing and installing a single track, sliding thermally broken aluminum framed glass door, wall or storefront panel system that includes:
 - 1. Aluminum frame
 - 2. Tracks
 - 3. Threshold
 - 4. Sliding panels
 - 5. Swing panels
 - 6. Stacking bays
 - 7. Sliding-swinging and locking hardware
 - 8. Weatherstripping
 - 9. Glass and glazing
 - 10. Insect screens
 - 11. Accessories as required for a complete working installation.
- B. Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, Specification Sections, apply to this Section.
 - 2. Section 06 10 00, Rough Carpentry: Wood framing R.O. and blocking.
 - 3. Section 07 27 00, Air Barriers: Building wrap
 - 4. Section 07 62 00, Sheet Metal Flashing and Trim: Flashing and other sheet metal work.
 - 5. Section 07 90 00, Joint Protection
 - 6. Section 08 42 23, Glass Entrance Swing Doors
 - 7. Section 08 43 29, Sliding Glass Storefronts: NanaWall LS160
 - 8. Section 08 51 13, Aluminum Windows: NanaWall SL68, tilt-turn, casement window,
 - 9. Section 09 22 16, Non-Structural Metal Framing: Metal framing R.O. and reinforcement.
 - 10. Section 10 22 43, Sliding Glass Partitions: NanaWall HSW60
 - 11. Section 10 22 43, Sliding Glass Partitions: NanaWall LS160

1.02 REFERENCES

- A. Reference Standards in accordance with Division 01 and current editions from the following:
 - 1. AAMA. American Architectural Manufacturers Association; www.aamanet.org
 - a. AAMA 503, Voluntary Specification for Field Testing of Newly Installed Storefronts,

Curtain Walls, and Sloped Glazing Systems

- b. AAMA 611, Voluntary Specification for Anodized Architectural Aluminum
 - c. AAMA 920, Operation / Cycling Performance
 - d. AAMA 2604, Voluntary Specifications, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
 - e. AAMA/WDMA/CSA 101/I.S.2/A440, NAFS, North American Fenestration Standard - Specification for Windows, Doors and Skylights
2. ANSI. American National Standards Institute; www.ansi.org
 - a. ANSI Z97.1, Safety Performance Specifications and Methods of Test for Safety Glazing Material Used In Buildings
 3. ASTM. ASTM International; www.astm.org
 - a. ASTM C1036, Standard Specification for Flat Glass
 - b. ASTM C1048, Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass
 - c. ASTM E283, Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 - d. ASTM E330, Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 - e. ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
 - f. ASTM E413, Classification for Rating Sound Insulation
 - g. ASTM E547, Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential.
 - h. ASTM E1332, Standard Classification for Rating Outdoor-Indoor Sound Attenuation
 - i. ASTM F842, Standard Test Methods for Measuring the Forced Entry Resistance of Sliding Door Assemblies, Excluding Glazing Impact
 4. CPSC. Consumer Product Safety Commission; www.cpsc.gov
 - a. CPSC 16CFR-1201, Safety Standard for Architectural Glazing Materials.
 5. CSA Group (Canadian Standards Association); www.csagroup.org/global/en/home
 - a. CSA A440S1 - The Canadian supplement to North American (NAFS) standards
 6. DIN. "Deutsches Institut für Normung" (German institute for standardization); www.en-standard.eu/din-standards
 - a. DIN 52210-3, Testing of acoustics in buildings - Airborne and impact sound insulation - Laboratory measurements of sound insulation of building elements and field measurements between rooms
 - b. DIN 52210-4, Tests In Building Acoustics - Airborne And Impact Sound
 7. Energy Star, U.S. Environmental Protection Agency (EPA) Program; www.energystar.gov
 8. FL. Florida Building Commission - Product Approval; https://floridabuilding.org/pr/pr_app_srch.aspx
 9. NFRC. National Fenestration Rating Council; www.nfrc.org
 - a. NFRC 100, Procedure for Determining Fenestration Product U-factors
 - b. NFRC 200, Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence
 - c. NFRC 400, Procedure for Determining Fenestration Product Air Leakage
 - d. NFRC 500, Procedure for Determining Fenestration Product Condensation Resistance Rating Values

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate Sliding Glass Storefront system and framing R.O.
- B. Preinstallation Meetings: See Section 01 30 00.

1.04 SUBMITTALS

- A. For Contractor submittal procedures see Section 01 30 00.
- B. Product Data: Submit manufacturer's printed product literature for each Sliding Glass Storefront system to be incorporated into the Work. Show performance test results and details of construction relative to materials, dimensions of individual components, profiles and colors.
- C. Shop Drawings: Indicate Sliding Glass Storefront system component sizes, dimensions and framing R.O., configuration, sliding and swing panels, direction of swing, stacking layout, typical head jamb, side jambs and sill details, type of glazing material, handle height and field measurements.

NOTE: Add "Delegated-Design Submittal" Paragraph below if design services have been delegated to Contractor. Option is an example only.

- D. **Delegated-Design Submittal:** For structural performance of Folding Glass Storefront system, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

- D. Manufacturers' Instructions: Submit manufacturer's installation instructions.
- E. Operation and Maintenance Data: Submit Owner's Manual from manufacturer. Identify with project name, location and completion date, and type and size of unit installed.

NOTE: Delete the following Article if LEED is not applicable; edit to meet project LEED requirements.

- F. Sustainable Design Submittals (USGBC [LEED®](#)): Refer to Section 01 81 15, LEED Design Requirements.
 - 1. **LEED 2009** (v3) Credits. Complete online LEED forms and submit other required materials as follows:
 - a. Energy and Atmosphere (EA) Credits:
 - 1). EA Credit 1 (EA1): Optimize Energy Performance: System
 - b. Materials and Resources (MR) Credits:
 - 1). MR Credit 1.1 (MRc1.1): Building Reuse - Maintain Existing Exterior Walls, Floors and Roof
 - 2). MR Credit 1.2 (MRc1.2): Building Reuse - Maintain Existing Interior Nonstructural Elements
 - 3). MR Credit 2 (MRc2): Construction Waste Management

NOTE: MR Credit 3 below can apply to reusing salvaged Sliding Glass Storefront.

- 4). MR Credit 3: Materials Reuse - 5% (MRc3.1) or 10% (MRc3.2)
- c. Indoor Environmental Quality (EQ) Credits:
 - 1). IEQ Credit 2 (IEQc2): Increased Ventilation - Case 2 - Naturally Ventilated Spaces
 - 2). IEQ Credit 8.1 (IEQc8.1): Daylight & Views - Daylight 75% of Spaces
 - 3). IEQ Credit 8.2 (IEQc8.2): Daylight & Views - Views for 90% of Spaces
- 2. **LEED v4 for Building Design and Construction (BD&C)** Credits. Complete online LEED forms and submit other required materials as follows:
 - a. Energy and Atmosphere (EA) Credits:
 - 1). EA Credit 2 (EA2): Optimize Energy Performance
 - b. Materials and Resources (MR) Credits:

NOTE: MR Credit 1 below can apply to reusing salvaged Sliding Glass Storefront.

- 1). MR Credit 1 (MRc1): Building Life-Cycle Impact Reduction; Option 3 - Building and Material Reuse
- c. Indoor Environmental Quality (EQ) Credits:
 - 1). EQ Credit 7 (EQc7): Daylight
 - 2). EQ Credit 8 (EQc8): Quality Views
- G. LEED Closeout Documentation:

NOTE: Edit below to meet project LEED requirements.

1. **LEED 2009** (v3). Submit completed LEED™ submittal Worksheet Templates for the following credits:
 - a. EAc1, MRc1.1, MRc1.2, MRc2, MRc3, IEQc2, IEQc8.1, IEQc8.2
2. **LEED v4 (BD&C)**. Submit information and documentation to complete LEED™ Worksheet Templates for the following credits:
 - a. EAc2, MRc1, EQc7, EQc8

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer capable of providing complete, precision built, engineered, pre-fitted units with a minimum twenty-five (25) years' experience in the sale of folding-sliding door systems for large openings in the North American market.
 1. Manufacturer to have ISO 9001: 2008 quality management system registration.
 2. Manufacturer to have ISO 14001: 2005 environmental management system registration.
- B. Installer Qualifications: Installer experienced in the installation of manufacturer's products or other similar products for large openings. Installer to provide reference list of at least three (3) projects of similar scale and complexity successfully completed in the last three (3) years.
 1. Installer to be trained and certified by manufacturer.
- C. Single Source Responsibility: Furnish Sliding Glass Storefront system materials from one manufacturer for entire Project.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's instructions and recommendations, Section 01 60 00 requirements, and as follows:
 1. Deliver materials to job site in sealed, unopened cartons or crates.
 - a. Upon receipt, inspect the shipment to ensure it is complete, in good condition and meets project requirements.
 2. Store material under cover in a clean and dry location, protecting units against weather and defacement or damage from construction activities, especially to the edges of panels.

1.07 FIELD CONDITIONS

- A. Field Measurements: Contractor to field verify dimensions of rough openings (R.O.), stack storage area [, **floor bolt socket locations**] [**and threshold depressions to receive sill.**] Mark field measurements on shop drawing submittal.

1.08 WARRANTY

- A. Manufacturer Warranty: Provide Sliding Glass Storefront system manufacturer's standard limited warranty as per manufacturer's published warranty document in force at time of purchase, subject to change, against defects in materials and workmanship.
 1. Warranty Period beginning with the earliest of 120 days from Date of Delivery or Date of Substantial Completion:
 - a. Rollers and Glass Seal Failure: Ten (10) years
 - b. All Other Components Except Screens: Ten (10) years

- 1). Exception: Five (5) years if NOT installed by manufacturer's certified trained installer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis-of-Design Product by Manufacturer: **NanaWall HSW60** by **NANA WALL SYSTEMS, INC.** (www.nanawall.com)

NANA WALL SYSTEMS, INC.

100 Meadow Creek Drive, Corte Madera, CA 94925

Toll Free (800) 873-5673

Telephone: (415) 383-3148

Fax: (415) 383-0312

Email: info@nanawall.com

1. Substitution Procedures: See Section 01 20 00; Submit completed and signed:
 - a. Document 00 43 25, Substitution Request Form (During Procurement), or
 - b. Document 00 63 25, Substitution Request Form (During Construction).

2.02 PERFORMANCE / DESIGN CRITERIA

NOTE: Add "Delegated-Design" Paragraph below if Contractor is required to assume responsibility for design.

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00, Quality Requirements, to design the Folding Glass Storefront system according to the following performance requirements:

1. (Insert project specific performance / design requirements here.)

NOTE: Specify Low Profile Saddle Sills for resistance against wind driven rain.

Flush Sills and Surface Mounted Interior Sills have NO rating against wind driven rain.

Floor Sockets without a Sill do NOT have a water rating.

Weeps are to be drilled in the field by the installer to manufacturer's requirements.

Air infiltration and water penetration testing results are only applicable if the unit matches the tested panel and unit size, direction of opening and type of sill.

Structural load testing results are only applicable for the test unit size and type of locking and rods.

Comparative analysis charts published by manufacturer shows which panel sizes, if any, meets the structural loading design pressures specifically required for the project. Check for limitations on the use of these charts in the jurisdiction of the project.

Forced entry testing results are only applicable for the test unit type of locking.

Check for requirements in the jurisdiction of the project.

See manufacturer's latest published data regarding performance.

It is expected that the installed system's performance would be not more than 2/3rds of the following certified laboratory test data in accordance with AAMA 503.

- A. Performance Criteria (Lab Tested): **Low Profile Saddle Sill**
 1. Air Infiltration (ASTM E283):
 - a. 0.3 cfm/ft² (1.5 L/s/m²) at a static air pressure difference of 1.57 psf (75 Pa)
 2. Water Penetration (ASTM E331, ASTM E547):
 - a. No uncontrolled water leakage at a static test pressure in:

- | | | |
|-----|---|-------------------------|
| 1). | Units with Weepholes from Middle Channel: | 2.92 psf (140 Pa) |
| 2). | Units with Weepholes from Inner Channel: | 6.0 psf (290 Pa) |
| 3. | Structural Loading (ASTM E330): | Pass |
| a. | Load Structure: At 1.5 times design wind pressure with no glass breakage or permanent damage to fasteners or storefront components. | |
| 1). | Design Pressure Positive: | 45 psf (2160 Pa) |
| 2). | Design Pressure Negative: | 45 psf (2160 Pa) |
| 4. | Forced Entry (ASTM F842): | Meets Type A - Grade 40 |
| 5. | Florida Product Approval - Wind Loading (Units with panel sizes up to 3'-7" inch (1.07 m) wide x 10'-0" inch (3.05 m) high) subject to manufacturer size chart: | FL 17751.1 |

NOTE: HSW60 Inswing and outswing systems are approved by the State of Florida.

FL 17751.1 weblink is:

https://floridabuilding.org/pr/pr_app_dtl.aspx?param=wGEVXQwtDqs%2b23mL8Hoa5jrPL2OdubdL3zU5biMQiZXZastl7HgQ%3d%3d

- | | | |
|-----|--|----------------|
| 6. | Swing Panel - Operation / Cycling Performance (AAMA 920): | 500,000 cycles |
| 7. | Sliding Glass Storefront Units tested to AAMA/WDMA/CSA 101/I.S.2/A440. | |
| 9. | Thermal Performance (U-factor): | NFRC 100 rated |
| 10. | Solar Heat Gain Coefficient (SHGC) + Visible Light Transmission (VT): | NFRC 200 rated |
| 11. | Air Leakage: | NFRC 400 rated |
| 12. | Condensation Resistance Factor (CRF): | NFRC 500 rated |

NOTE: The NFRC 100, 200, 400 and 500 ratings of the HSW60 Sliding Glass Storefront System meet **Prescriptive Method** requirements for U-factor, SHGC, Air Leakage and CRF of *California Title 24, Chapter 3, Building Envelope Requirements*.

For the listing of Nana Wall product NFRC testing reports go to the following website <http://search.nfrc.org/search/searchdefault.aspx>; click on **Door** (Find Ratings for Door Products); click on the **Search by Manufacturer** button; click **Manufacturers**, scroll down to and click on **Nana Wall Systems, Inc.**, and click on the **Find Products** button.

- | | | |
|-----|------------------|--------------------|
| 13. | EPA Energy Star: | Meets requirements |
|-----|------------------|--------------------|

NOTE: **Energy Star** values for DOORS with > 50% glass can be achieved through the use of specific glass units meeting the following requirements:

Northern & North-Central Region:	≤ 0.30 U-factor	0.40 SHGC
South-Central & Southern Region:	≤ 0.30 U-factor	0.25 SHGC

Energy Star values for WINDOWS can be achieved through the use of specific glass units meeting the following requirements (U-factor in accordance with NFRC 100 and SHGC in accordance with NFRC 200):

Northern Region (as of 1/1/2016):	≤ 0.27 U-factor	Any SHGC
Northern Region*:	≤ 0.28 U-factor	≥ 0.32 SHGC
Northern Region*:	≤ 0.29 U-factor	≥ 0.37 SHGC
Northern Region*:	≤ 0.30 U-factor	≥ 0.42 SHGC
North-Central Region:	≤ 0.30 U-factor	0.40 SHGC
South-Central Region:	≤ 0.30 U-factor	0.25 SHGC
Southern Region:	≤ 0.40 U-factor	0.25 SHGC

* For Windows with NFRC certified U-factor and SHGC ratings that meet or exceed the listed equivalent energy performance criteria as of 1/1/2016.

Energy Star Air Leakage Rating Requirements (ASTM E283 in accordance with NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440-11):

Window, Sliding Door, or Skylight: $\leq 0.3 \text{ cfm/ft}^2$ (1.54 L/s/m²)

Swinging Door: $\leq 0.5 \text{ cfm/ft}^2$ (2.56 L/s/m²)

B. LEED Characteristics:

1. **LEED 2009** (v3)

- a. EAc1: *NanaWall* systems using low U-Value designed double or triple IGU and thermally broken frames can provide significant energy performance.
- b. MRc1.1: *NanaWall* exterior glass wall systems, not demolished in a renovation project, are reused in the same location.
- c. MRc1.2: *NanaWall* interior glass wall systems, not demolished in a renovation project, are reused in the same location.
- d. MRc2: *NanaWall* cardboard shipping crates are made of 60% recycled material and are 100% recyclable.
- e. MRc3: *NanaWall's* components easily disassemble and reassemble to "*Use as salvaged... or reused materials.*"
- f. IEQc2: *NanaWall* systems provide natural ventilation in the open position, assisting in the 90% required natural ventilation of occupied spaces of ASHRAE 62.1.
- g. EQc8.1: *NanaWall* glass wall assembly borrowed light brings daylight deeper into the floor plate.
- h. EQc8.2: *NanaWall* glass wall assemblies provide direct outdoor lines of sight.

2. **LEED v4 for Building Design and Construction (BD&C)**

- a. EAc2: *NanaWall* systems using low U-Value designed double or triple IGU and thermally broken frames can provide significant energy performance.
- b. MRc1: *NanaWall* can be easily disassembled for salvage and reuse.
- c. EQc7: *NanaWall* glass wall assembly borrowed light brings daylight deeper into the floor plate.
- d. EQc8: *NanaWall* glass wall assemblies provide direct outdoor lines of sight.

C. Design Criteria:

1. Sizes and Configurations: As indicated by the drawings for selected number and size of panels, location of swing panels, and location of tracks and stacking bays.
2. Unit Operation: Adjustable sliding and swing hardware with top and bottom tracks;
3. Panel Configuration:
 - a. [**Straight**]
 - b. [**Segmented curve**]
 - c. [**90° angle turn/ open corner**]
 - d. [**135° angle turn**]
 - e. [**Window/ door combination**].

NOTE: Sizes and Configurations: <http://www.nanawall.com/products/hsw60/options>

See manufacturer drawings for selected custom dimensions within maximum frame sizes possible as indicated in manufacturer's literature.

See drawings for selected number of panels and configuration.

4. Stack Storage Configuration:

- a. [**Remote pocket**]

- b. [**Jamb wall**]
 - c. [**Behind swing door**]
 - d. [**Straight wall**]
 - e. [**Jamb wall pocket(s)**]
5. Mounting Type: Top hung
6. Panel Type: Multiple unattached
- a. [**with Entry/Egress panel hinged to side jamb.**]
 - b. [**with Entry/Egress panel convertible to sliding panel.**]

2.03 MATERIALS

- A. Sliding Glass Storefront Description: Standard top-hung, single-track, interlocking aluminum-framed sliding glass storefront system that can be pocketed when open and have a swing door hinged off a side jamb or within a sliding panel. Manufacturer's standard frame and panel profiles, with head track, stacking bays, side jambs, sliding panels, and swing panels with dimensions as shown on Drawings.

1. Provide clear anodized aluminum head track with aluminum covers on both sides that match aluminum profile finish.
2. Panels:
 - a. Single lite.

NOTE: Single lite above is standard; other options below may require an upcharge.
Refer to manufacturer's size chart for glass panel sizes requiring the use of horizontal mullions.

- b. [**Multiple lites with horizontal mullion(s) at height(s) indicated from the bottom of the panel.**]
 - c. [**Single lite with simulated divided lites in pattern indicated.**]
3. Panel Size (W x H): As indicated.

NOTE: Maximum W x H panel sizes up to 10'-0" by 3'-3" (3.05 m by 1 m).
Panels over 8'-4" high require an intermediate horizontal mullion.

4. Head Rail Width x Depth: 4-5/16 x 2-5/16 inch (110 x 59 mm)
5. Jamb Rail Width x Depth: 5-1/4 x 2-5/16 inch (134 x 59 mm)
6. Bottom Rail Width:
 - a. 2-3/8 inch (60 mm)
 - b. [**Manufacturer's standard kickplate with height indicated.**]

NOTE: Indicate kickplate height. Select height between 6 and 12 inches (152 and 305 mm) high.

7. Aluminum Extrusion: AIMgSi0.5 alloy, 6063-T5 (F-22 - European standard)
 - a. Thickness: 0.078 inch (2.0 mm) nominal
8. Aluminum Finish (including head track covers):

NOTE: Select finish type below, edit to requirements and delete items not used.

- a. Anodized (AAMA 611): Clear
- b. Powder Coat (AAMA 2604):
 - 1). Color as chosen from manufacturer's powder coating finish chart from
 - a). [**manufacturer's standard selection of 50 colors - matte.**]
 - b). [**manufacturer's full RAL selection.**]
 - i. [**High Gloss**]

- ii. [**Matte**]
- c). [**custom finish.**]

B. Glass and Glazing:

- 1. Safety Glazing: In compliance with ANSI Z97.1 and CPSC 16CFR 1201.

NOTE: For storefront units requiring acoustic performance keep the following paragraph. Edit to suit project conditions.

- a. Glass Acoustical Performance (DIN 52210-3,4): Rw (STC)

NOTE: Acoustical system STC ratings below are engineer-calculated conversions of European tests for the full panel system per ASTM E413 and ASTM E1332.

- 1). [**31-32 (32); 15/16 inch (24 mm) double IGU, air filled, 2x 4mm tempered glass**]
- 2). [**41-43 (41-43); 1-9/16 inch (40 mm) double IGU, air filled, 8mm laminated and 8mm tempered glass**]

NOTE: Acoustical ratings listed below are for the **glass only** and not full panel system. Based on actual testing of STC 32 and STC 45 glass with the HSW60 system, the unit STC will most likely be within 2 dB of the glass STC rating when the frame is added.

- 3). [**28; 1/4 inch (6 mm) single, tempered safety glass**]
- 4). [**35; 1/4 inch (6 mm) single, laminated glass**]
- 5). [**41-43; 15/16 inch (24 mm) double IGU, air filled, double-laminated glass**]

NOTE: Unlike wet glazing, NanaWall's standard dry glazing method helps reduce instances of seal failure.

- 2. Manufacturer's [**tempered**] [**and**] [**laminated**] glass lites, dry glazed with glass stops on the inside.

NOTE: Select and edit glass type(s) to meet building code, wind-load design, acoustic, bullet resistant and/or security, and other project requirements with other glass available from manufacturer.

Anti-fall glazing available where required.

IGU glazing is capable of meeting 2010 Energy Star requirements of a U-factor ≤ 0.32 and SHGC ≤ 0.30 for all climate zones.

Custom layouts with horizontal mullions, simulated divided lites, inserts, and high bottom rails are possible.

Contact NanaWall for availability of other commercial glass types.

- a. Glass Lite / Insulated Glass Unit (IGU):
 - 1). [**Single:** **1/4 inch (6 mm) thick.**]
 - 2). [**Double IGU:**
 - a). **15/16 inch (24 mm) thick.**]
 - b). **1-9/16 inch (40 mm) thick.**]
 - 3). [**Triple IGU:** **1-7/16 inch (36 mm) thick.**]

NOTE: Subparagraphs below are options for Double and Triple IGU items above.

- a). IGU Fill: **< insert IGU fill >**
 - i. [**Low-E**]
 - ii. [**Argon filled**]
 - iii. [**Air filled**]
- b). Glass Spacers: Manufacturer's standard [**gray**] [**dark bronze**] finish;

[**without**] [**with**] capillary tubes.

- b. Glass Lite Type: < **insert glass type** >
- 1). Standard

NOTE: Items below are options and may require an upcharge.

- 2). [**Low iron**]
- 3). [**Solar bronze**]
- 4). [**Solar gray**]
- 5). [**Ornilux bird safe**]

C. Locking Hardware and Handles:

NOTE: Select one of the below Main Entry Panel paragraphs WITH or WITHOUT Swing Panels, deleting all others. Edit to suit project requirements.

1. Main Entry Panel(s) for Models WITH Swing Panel(s): Provide manufacturer's standard lever handles on the inside and outside, and a standard lockset with a lockable latch and multi-point locking with a dead bolt and rods at the top and bottom.
 - a. Rods to be concealed and not edge mounted.
 - b. After turn of key or thumbturn, depression of handles withdraws latch.
 - c. Lifting of handles engages rods and turn of key or thumb turn engages deadbolt and operates lock.
 - d. Lever Handles - Finish:
 - 1). Brushed satin stainless steel

NOTE: Handle above is standard; other options below may require an upcharge.
ADA handle only available in "Brushed satin stainless steel."

- 2). [**Titanium black stainless steel**]
- 3). [**Oil rubbed bronze solid brass**]
- 4). [**Satin nickel solid brass**]
- 5). [**White solid brass**]
- e. Locking:
 - 1). Standard profile cylinder
 - 2). Adapter for Small Format Interchangeable Core (SFIC)
2. Main Entry Panel(s) for Models WITH Swing Panel(s): Provide manufacturer's push-pull handles with separate lockset and dead bolt.

NOTE: Option above is recommended with a door closer.

- a. Push-pull handles in a brushed stainless steel finish and stainless steel flat handles in a [**brushed satin finish.**] [**titanium black finish.**]
3. Main Entry Panel(s) for Models WITH Swing Panel(s): No hardware or locking provided by manufacturer; Field installed panic device by Section 08 71 00.

NOTE: Using panic device hardware by others invalidates manufacturer's design wind-load pressure test.

4. Sliding Panel to be Opened First for Models WITHOUT a Swing Panel: Provide manufacturer's standard L-shaped handle on the inside, flat handle on the outside and lock set with profile cylinder. Operation of lockset is by turn of key from the outside and with a thumbturn from the inside with a two point locking hardware operated by 180° turn of the handle.
 - a. L-Shaped Handles - Finish:

- 1). Brushed satin stainless steel

NOTE: Handle above is standard; other options below may require an upcharge.

- 2). [**Titanium black stainless steel**]

5. Sliding Panel to be Opened First for Models WITHOUT a Swing Panel: Provide manufacturer's standard flat handle on the inside and on the outside and a lockset with a profile cylinder. Operation of lock set is by turn of key from the outside and from the inside with a two-point locking hardware operated by 180° turn of the handle.

NOTE: Key operation from the inside above may not meet egress requirements.

6. Main Entry Panel for Models WITHOUT Swing Panel: Provide manufacturer's standard flat handle on inside only with concealed two-point locking hardware operated by 180° turn of handle.

NOTE: Note that with the option above, the main entry panel is operable from inside only and that there is no latch.

7. Secondary Panels: Provide manufacturer's [**standard flat handles**] [**removable custodial handles**] and concealed one or two point locking hardware operated by 180° turn of handle. Face applied flush bolt locking not acceptable.

NOTE: Flat handles above are standard with removable custodial handles an option that may require an upcharge.

- a. Flat Handle - Finish:

- 1). Brushed satin stainless steel

NOTE: Handle above is standard; other options below may require an upcharge.

- 2). [**Titanium black stainless steel**]

- 3). [**Aluminum with powder coat finish and color to match frame.**]

NOTE: Finishes to match are closest matches available by the manufacturer. Review for acceptability.

8. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel or as otherwise indicated.
9. Aluminum locking rods with standard fiberglass reinforced polyamide end caps at the bottom (and top on certain panels). Rods to have a stroke of 15/16 inch (24 mm).
10. Additional profile cylinders to be [**keyed alike.**] [**keyed differently.**]
11. Incorporated Swing Panel: Provide crank handle stored in flap on panel stile to convert sliding panel to a swing panel and vice versa.
 - a. Conversion Box located on upper arm of top rail to be polyamide in silver gray finish.

NOTE: If swing door to frame fixing hardware for operation of the incorporated door is above 7'-0" (2.13 m), provide with an integrated pole for single person operation.

Operation above 7'-0" (2.13 m) should be easy to complete and not require additional mean to reach the fixing/locking mechanism other than the provided pole.

12. Swing Door Attachment: Geared positive attachment only to affix swing door to the frame for incorporated swing doors for ease of operation and rigid security.
13. Pinch Resistance: Provide rounded extrusions on pivot side of incorporated swing panels.

D. Sliding-Swinging Hardware: Provide manufacturer's standard hardware.

1. For each sliding panel, provide two (2) two-three wheeled, sintered bronze (oil impregnated) unidirectional sliding panel carriers with a one wheeled, polyamide guide rollers that are attached to the panels with stainless steel rods.
 - a. Maximum carrying capacity of two carriers on a panel to be 330 lbs (150 kgs).
 - b. Provide on all four corners of sliding panels and incorporated swing panels, thermally

broken, die cast zinc multifunctional corner fittings with carrier connectors, male and female locking receptacles, hinges and hinge pins as required.

- c. Finish: Powder coated, closest match to finish of frame and panels.

NOTE: Corner connectors are only available in powder-coated finishes. If anodized panel and frame finishes are selected, there may be aesthetic issues.

- d. Provide on the pivot side corner of the upper arm of the top rail of the incorporated swing panel a circular cover in polyamide with a silver gray finish.

- e. Adjustment: Provide system capable of specified amount of adjustments without removing panels from tracks.

NOTE: Select from the following Sill types, edit to suit and delete those not meeting project requirements.

2. Sill Type: < insert sill type >

a. [**Standard flush sill (thermally broken)**]

b. [**Low profile saddle sill (thermally broken)**]

c. [**No sill, floor sockets without a floor track**]

d. [**Surface mounted interior sill**]

e. Finish: Aluminum with a [**clear**] [**dark bronze**] anodized finish.

- E. Weatherstripping: Manufacturer's double layer EPDM between panels and EPDM 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.

NOTE: The manufacturer's weatherstripping is determined at the factory by the direction of swing, the panel configuration, the type of locking and the type of sill.

- F. Fasteners: Stainless steel machine screws for connecting frame components.

2.04 FABRICATION

- A. Extruded aluminum frame and panel profiles, corner connectors and hinges, sliding hardware, locking hardware and handles, glass and glazing and weatherstripping components to construct sliding glass wall with stacking bays.

1. Each unit factory pre-assembled and shipped with all 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.

2.05 ACCESSORIES

- A. Provide sidelights, transoms, corner posts, or single or double doors as indicated.

NOTE: Screen ONE is 'non-pleated' while Screen Classic is 'pleated.'
Select 'ONE' or 'Classic,' deleting option not chosen.

- B. Insect Screen Panels: Fully retractable non-pleated screen made of ultra-strong, UV resistant fiberglass mesh housed in a single cartridge riding on a single track.

1. Basis of Design Product by Manufacturer: **Screen ONE** or an Architect acceptable equivalent subject to project requirements.
2. Finish - Aluminum Top Track, Side Jambs and Vertical Struts:
 - a. White powder coated
 - b. [**Clear anodized**]
 - c. [**Black powder coated**]
 - d. [**Classic bronze powder coated**]

NOTE: Above options are standard. Check with NanaWall regarding other available finishes, which may require an upcharge.

- C. Insect Screen Panels: A series of top-hung collapsible pleated UV resistant fiberglass mesh screen panels riding on a single narrow ADA compliant 1/4 inch (5 mm) floor track. Each 4 inch (10 cm) wide vertical cassette can expand to 3'-3" (1 m) wide.
1. Basis of Design Product by Manufacturer: **Screen Classic** or an Architect acceptable equivalent subject to project requirements.
 2. Finish - Aluminum Top Track, Side Jambs and Vertical Struts:
 - a. White powder coated
 - b. [**Clear anodized**]
 - c. [**Dark bronze anodized**]

NOTE: Above options are standard. Check with NanaWall regarding powder coated and other available finishes, which may require an upcharge.

- d. [**Powder coated with color as selected by architect.**]
3. Screen Track Stacking: [**Within opening**] [**Extended beyond opening**]

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examination and Acceptance of Conditions per Section 01 70 00 and as follows:
1. Carefully examine rough openings with Installer present, for compliance with requirements affecting Work performance.
 - a. Verify that field measurements, substrates, tolerances, levelness, plumbness, cleanliness and other conditions are as required by the manufacturer, and ready to receive Work.
 - b. Verify the structural integrity of the header for deflection with live and dead loads limited to the lesser of L/720 of the span or 1/4 inch (6 mm). Provide structural support for lateral loads, and both wind load and eccentric load when the panels are stacked open.
 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. General: Install Sliding Glass Storefront system in accordance with the Drawings, approved submittals, manufacturers' recommendations and installation instructions, and as follows:
1. Properly flash, waterproof and seal around opening perimeter.
 2. Securely attach anchorage devices to rigidly fit frame 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, lock set, screens, weatherstripping and other accessories in accordance with manufacturer's recommendations and instructions.

3.03 FIELD QUALITY CONTROL

- A. Field Tests and Inspections per Section 01 40 00 of the following:
1. Verify the Sliding Glass Storefront system operates and functions properly. Adjust hardware for proper operation.
- B. Non-Conforming Work: Repair or replace non-conforming work as directed by the Architect; see General and Supplementary Conditions, and Division 01, General Requirements.

3.04 CLEANING AND PROTECTION

- A. Keep units closed and protect Sliding Glass Storefront installation against damage from

construction activities.

- B. Remove protective coatings and use manufacturer recommended methods to clean exposed surfaces.

END OF SECTION

DISCLAIMER:

Nana Wall Systems, Inc. takes no responsibility for product selection or application, including, but not limited to, compliance with building codes, safety codes, laws, or fitness for a particular purpose. This guide specification is not intended to be verbatim as a project specification without appropriate modifications for the specific use intended and the particular requirements of a specific construction project.

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