

SECTION 08 41 26

ALL-GLASS ENTRANCES AND STOREFRONTS

SECTION 08 32 26

SLIDING ALL-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 sliding-pivot, all-glass, entrance door and window-wall storefront system that includes:
1. Aluminum top and bottom channel
 2. Threshold
 3. Panels, sliding-swinging
 4. Sliding-pivot and locking hardware
 5. Weatherstripping
 6. Glass and glazing
 7. Insect screen
 8. 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 41 26, Sliding Glass Storefronts: NanaWall HSW45
 7. Section 08 42 00, Entrances: Light commercial swing door.
 8. Section 08 43 29, Sliding Glass Storefronts: NanaWall LS160
 9. Section 09 22 16, Non-Structural Metal Framing: Metal framing R.O. and reinforcement.
 10. Section 10 22 43, Sliding Glass Partitions: NanaWall LS160
 11. Section 10 22 43, Sliding Glass Partitions: NanaWall HSW45
 12. Section 10 22 43, All Glass Sliding Partitions: NanaWall SL25

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 2604, Voluntary Specifications, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
- 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 E330, Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 - d. ASTM E413, Classification for Rating Sound Insulation
 - e. ASTM E1332, Standard Classification for Rating Outdoor-Indoor Sound Attenuation
- 4. CPSC. Consumer Product Safety Commission; www.cpsc.gov
 - a. CPSC 16CFR-1201, Safety Standard for Architectural Glazing Materials
- 5. DIN. "Deutsches Institut für Normung" (German institute for standardization); www.en-standard.eu/din-standards | EN Standards - Construction Materials and Building (European Standards); www.en-standard.eu/din-standards
 - a. DIN EN 1627, Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Requirements and classification
 - b. DIN EN 1630, Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance to manual burglary attempts

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate All-Glass Entrance and 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 All-Glass Entrance and Storefront system. Show performance test results and details of construction relative to materials, dimensions of individual components, profiles and colors.
- C. Shop Drawings: Indicate All-Glass Entrance and 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.
- 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®](http://www.usgbc.org)): 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. 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 All Glass Entrance and Storefront.

- 4). MR Credit 3: Materials Reuse - 5% (MRc3.1) or 10% (MRc3.2)
- b. 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. Materials and Resources (MR) Credits:

NOTE: MR Credit 1 below can apply to reusing salvaged All Glass Entrance and Storefront.

- 1). MR Credit 1 (MRc1): Building Life-Cycle Impact Reduction; Option 3 - Building and Material Reuse
 - b. 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. 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. 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 sliding-pivot glass partition/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 All-Glass Entrance and 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.) and threshold depressions to receive sill. Mark field measurements on shop drawing submittal.

1.08 WARRANTY

- A. Manufacturer Warranty: Provide All-Glass Entrance and Storefront 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 SL25** 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: 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.

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

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): **Standard Sill**
 1. Structural Loading (ASTM E330) with 1/2 inch (12 mm) Tempered Glazing:
 - a. Load Structure: At 1.5 times design wind pressure with no glass breakage or permanent damage to fasteners or storefront components.

- 1). Reinforced Locking at Turn Panel and Top and Bottom Latches:
 - a). Design Pressure Positive: 40 psf (1900 Pa)
 - b). Design Pressure Negative: 45 psf (2150 Pa)
- 2). Standard Locking at Turn Panel and Top and Bottom Latches:
 - a). Design Pressure Positive: 25 psf (1190 Pa)
 - b). Design Pressure Negative: 45 psf (2150 Pa)
2. Water Penetration (ASTM E331) Water Spray Test for 15 Minutes at the Rate of 5 gal./f2/h (3.4 L/m2/min.):
 - a. 3.1 fluid oz. (0.091 L) at 0 psf (0 Pa); (0.03% of total water sprayed)
 - b. 14.6 fluid oz. (0.43 L) at 1.57 psf (75 Pa); (0.16% of total water sprayed)
 - c. 144 fluid oz. (4.26 L) at 6.24 psf (300 Pa); (1.55% of total water sprayed)

NOTE: SL25 acoustic performance testing yielded results of STC 17 using 5/16 inch (8 mm) tempered glass. The SL25 system can provide additional acoustic reduction when used in conjunction with another wall, partition or window system.

B. LEED Characteristics:

1. **LEED 2009** (v3)

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

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

- a. MRc1: *NanaWall* can be easily disassembled for salvage and reuse.
- b. EQc7: *NanaWall* glass wall assembly borrowed light brings daylight deeper into the floor plate.
- c. 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, layout of head, jamb and sill, and location of tracks and stacking bays.
2. Unit Operation: Slide and pivot
3. Configuration:
 - a. [**Straight**]
 - b. [**Segmented angled curve**]
 - c. [**Full circle**]
 - d. [**90° angle turn**]
 - e. [**180° angle turn**]

f. [**with open corners**]

- | | |
|---------------------------------|---|
| 4. Stack Storage Configuration: | Stack at 90° against jamb wall |
| 5. Max. Panels per Stack: | 12 |
| 6. Max. Gap Between Panels: | 1/8 inch (3 mm) |
| 7. Mounting Type: | Top-hung |
| 8. Track: | Single track at head with adjustable compensating channel and floor |

2.03 MATERIALS

- A. Sliding-Pivot All-Glass Entrance and Storefront System Description: Head, jamb, height compensating profile above head jamb, side jambs, sill, sliding panels, and swing panels with dimensions as shown on Drawings. System without height compensating profile for installation not acceptable.

- | | |
|---------------------------------|---|
| 1. Sliding and Turn Panels: | Standard single glass lite with extruded aluminum top and bottom rails. |
| 2. Max. Panel Width x Height: | 2'-7" x 9'-0" (0.8 x 2.75 m) |
| 3. Top and Bottom Rail: | |
| a. Rail Size - Standard Sill: | 1-1/16 x 1-7/8 inch (27 x 48 mm) |
| b. Rail Size - Recessed Sill: | 1-1/16 x 1-11/16 inch (27 x 43 mm) |
| c. Rail Size - XXL: | 1-1/4 x 2-13/16 inch (31 x 72 mm) |
| d. Swing Door Bottom Rail Size: | 1-1/4 x 9-13/16 inch (31 x 250 mm) |
| 4. Swing Door - Bottom Rail: | 10 inch (254 mm) high |
| 5. Aluminum Extrusion: | AlMgSi0.5 alloy, 6063-T5 (F-22 - European standard) |
| a. Thickness: | 0.059 inch (1.5 mm) nominal |
| 6. Aluminum Finish: | |

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

- | | |
|--|--|
| a. Anodized (AAMA 611): | |
| 1). [Clear] | |
| 2). [Dark Bronze] | |
| 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. | |
| 2. Manufacturer's standard [tempered] [and] [laminated] heat soak tested glass. | |
| 3. Glass and Glazing: | |
| a. Glass Lites: | Single |

NOTE: Glass thickness to be determined on height of unit and design wind load requirements. Edit to meet project requirements with other glass available from manufacturer, including glass with other total thickness.

- b. Glass Thickness:
 - 1). [**1/4 inch (6 mm)**]
 - 2). [**5/16 inch (8 mm)**]
 - 3). [**3/8 inch (10 mm)**]
 - 4). [**1/2 inch (12 mm)**]
- c. Glass Lite Type: **< insert glass type >**
 - 1). Standard

NOTE: Items below are options and may require an upcharge.
Contact NanaWall for availability of many other commercial glass and glazing types.

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

NOTE: Choose Paragraph C. (Turn Panels) or E. (Swing Door) below, deleting that not selected and edit to project requirements.

C. Locking Hardware on Turn Panel:

NOTE: Select paragraph 1. or 2. below, editing to suit project requirements and deleting that not selected.

- 1. Provide manufacturer's standard patented (US Patent No. 6,618,994) spring tensioned cable and concealed top and bottom latches made of high density plastic operated by
 - a. [**pull of cable on the inside only for an inswing unit.**]
 - b. [**the turn of a knob on the inside only for an outswing unit.**]
 - c. [**turn of knobs located on both sides.**]

NOTE: Option c. above will not prevent unauthorized entry from the outside and access from the outside will not be available if reinforced special locking is engaged.

- 1). [**Provide reinforced special locking.**]
- 2. Provide a center latch engaging into a strike plate mounted on the adjacent sliding panel operated by level handles on both sides and lockable with key cylinders from either side.

NOTE: Key operation from the inside will not meet egress requirements and testing results will not apply with this option.
Turn Panel is not meant to be used as a regularly used swing panel, and is not burglar resistant.

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

- 1. For each sliding panel, provide two (2) wheeled unidirectional sliding panel carriers with running surface of glass fiber reinforced polyamide.
- 2. Each Carrier Minimum Carrying Capacity:
 - a. [**80 lbs. (36 kg) for Standard SL25 Panel.**]
 - b. [**143 lbs. (65 kg) for SL25XXL Panel.**]

E. Light Commercial Swing Door: **Furnished by Section 08 42 00.**

- 1. Hardware: **Provide standard hardware as follows:**
 - a. Door Closer: **Floor Mounted Geze TS 500 NV (www.geze.com)**
 - b. Key Cylinder Lock: **Bottom rail mounted; for cylinder core see Section 08 71 00.**

- c. Push-Pull Handles: Gray anodized aluminum
- F. Sill - Extruded Aluminum: [**Standard**] [**Flush Sill (Recessed)**]
 - 1. Finish:
 - a. [**Clear anodized finish.**]
 - b. [**Bronze anodized finish.**]

NOTE: Powder coat finish below is available with "Standard" sills.
[Edit to project requirements.](#)

- c. [**Powder coat finish to match panels.**]
 - G. Weatherstripping: ATPK and brush seals between panels and between panel and frame.
 - H. Fasteners: Stainless steel machine screws
- 2.04 FABRICATION
- A. Extruded aluminum frame, panel profiles, sliding and pivot hardware, locking hardware, glass and glazing and weather stripping components needed to construct an opening slide and pivot all-glass door and window wall. Factory pre-assemble and ship all components with installation instructions.
 - 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 matching fixed windows, transoms, tilt-turn windows, folding or French 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**]
 - a. [**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. [**RN 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.

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

- 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. General: Install All-Glass Entrance and 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, weatherstripping, screens 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 All-Glass Entrance and 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 All-Glass Entrance and 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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