

SECTION 10 22 39

FOLDING GLASS PARTITIONS

SECTION 10 22 43

SLIDING GLASS PARTITIONS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes furnishing and installing a sliding-folding, acoustically rated, slim-framed wood panel system that includes:

1. Cross-grained wood framed profile.
2. Threshold.
3. Wood framed panels.
4. Sliding-folding and locking hardware.
5. Sound gasketing.
6. Multipurpose frame insert.
7. Panel Catch.
8. Glass and glazing.
9. 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 06 20 00, Finish Carpentry.
4. Section 07 27 00, Air Barriers: Building paper and building wrap.
5. Section 07 90 00, Joint Protection.
6. Section 08 42 23, Glass Entrance Swing Doors.
7. Section 08 43 33, Thermal Insulated Wood Framed Folding Glass Storefront: NanaWall NW Wood 540.
8. Section 09 22 16, Non-Structural Metal Framing: Metal framing R.O. and reinforcement.

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 205-15, In-Plant Testing Guidelines for Manufacturers and Independent Laboratories.
   b. AAMA 502, Voluntary Specification for Field Testing of Newly Installed Fenestration Products.

c. AAMA 611, Voluntary Specification for Anodized Architectural Aluminum.
d. AAMA 920-11, Specification for Operating Cycle Performance of Side-Hinged Door System.
e. AAMA 1304, Voluntary Specification of Forced Entry Resistance of Side-Hinged Door Systems.
f. AAMA/WDMA/CSA 101/I.S.2/A440-17, 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 E90-09, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
   d. ASTM E413-16, Classification for Rating Sound Insulation.
   e. ASTM E1332, Standard Classification for Rating Outdoor-Indoor Sound Attenuation.
   f. ASTM E2068-00 (2016), Standard Test Method for Determination of Operating Force of Sliding Windows and Doors.
   g. ASTM E987-88 (2017), Standard Test Methods for Deglazing Force of Fenestration Products.
   h. ASTM F842, Standard Test Methods for Measuring the Forced Entry Resistance of Sliding Door Assemblies, Excluding Glazing Impact.
4. Construction Products Directive (CPD), a legal mandate of the European Commission; http://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/construction-products/index_en.htm
   a. CE Mark; http://ec.europa.eu/growth/single-market/ce-marking/index_en.htm
5. CPSC. Consumer Product Safety Commission; www.cpsc.gov
   a. CPSC 16CFR-1201, Safety Standard for Architectural Glazing Materials
6. CSA Group (Canadian Standards Association); www.csagroup.org/global/en/home
   a. CSA A440S1, The Canadian supplement to North American (NAFS) standards.
7. DIN. "Deutsches Institut für Normung" (German institute for standardization); www.en-standard.eu/din-standards
   a. DIN EN 1090, Manufacturing qualification for welding of supporting building components.
   b. DIN EN ISO 717-1, Acoustics – Rating of sound insulation in buildings and building elements.
   c. DIN EN ISO 9001, 2015 quality management system registration.
   d. DIN EN ISO 10140-1, 2, 4 & 5, Airborne sound measurement.
   e. DIN EN ISO 12400, Windows and pedestrian doors – Mechanical durability – Requirements and classification.
   f. DIN EN ISO 14001, 2015 environmental management system registration.

8. EN Standards - Construction Materials and Building (European Standards); www.en-standard.eu/din-standards
    a. CSN EN 1191, Windows and Pedestrian Doors - Mechanical Durability.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate Folding Glass Partition system and framing R.O.

B. Pre-installation 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 Folding Glass Partition 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. Product Drawings: Indicate Folding Glass Partition 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.

D. Certificates: Submit CE Mark certificate.

E. Installation, 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. 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 Folding Glass Partition.

        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
        4). IEQ Credit 9 (LEED for Schools - IEQc9): Enhanced Acoustical Performance
2. **LEED v4 for Interior Design and Construction** (ID&C) Credits. Complete online LEED forms and submit other required materials as follows:
    a. Energy and Atmosphere (EA) Credits:
        1). EA Credit 2 (EAc2): Optimize Energy Performance
    b. Materials and Resources (MR) Credits:

NOTE: MR Credit 1 below can apply to reusing salvaged Folding Glass Partition.

        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
   3). EQ Credit 9 (EQc9): Acoustic Performance
      i. Submit calculations or measurements for occupant spaces to meet sound transmission class ratings between adjacent spaces and reverberation time requirements within a room.

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, MRc6, IEQc2, IEQc8.1, IEQc8.2, IEQc9
2. **LEED v4** (ID&C). Submit information and documentation to complete LEED™ Worksheet Templates for the following credits:
   a. EAc2, MRc1, EQc7, EQc8, EQc9

1.05 QUALITY ASSURANCE

A. Regulatory Requirements: Folding Glass Partition to be CE Mark certified.

NOTE: The CE mark serves as verification that the product conforms with the essential requirements of the Construction Products Directive (CPD), a legal mandate of the European Commission. CE certified windows and doors provide building professionals with a uniform set of technical standards to evaluate and specify product performance with added assurance that NanaWall products are safe and fit for purpose.

B. Manufacturer Qualifications: Manufacturer capable of providing complete, precision built, engineered, pre-fitted units with thirty five (35) years' experience in the sale of folding-sliding door systems for large openings in the North American market.
   1. Manufacturer to have DIN EN ISO 9001: 2015 quality management system registration.
   2. Manufacturer to have DIN EN ISO 14001: 2015 environmental management system registration.

C. 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.

D. Single Source Responsibility: Furnish Folding Glass Partition 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. Condition wood components to average prevailing relative humidity before installation. Do not subject wood components to extreme nor rapid changes in heat or humidity.
   3. Do not use forced heat to dry out building.

4. Store flat in a well-ventilated area out of direct sunlight 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 product drawings submittal.

1.08 WARRANTY

A. Manufacturer Warranty: Provide Folding Glass Partition 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: Ten (10) years
      1). Exception: Five (5) years if NOT installed by manufacturer's specific system approved or certified trained installer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis-of-Design Product by Manufacturer: **Generation 4 Folding Glass Walls by NanaWall NW Acoustical 545** (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)
   b. Document 00 63 25, Substitution Request Form (During Construction)

2.02 PERFORMANCE / DESIGN CRITERIA

A. Performance Criteria: **Surface Mounted Flush Sill and Flush Sill – Inward Opening**

1. Air Infiltration (ASTM E283):
   a. 0.11 cfm/ft^2 (0.6 L/s/m^2) at a static air pressure difference of 1.57 psf (75 Pa)
   b. 0.25 cfm/ft^2 (1.28 L/s/m^2) at a static air pressure difference of 6.24 psf (300 Pa)
   c. Canadian Air Infiltration/Exfiltration Level: A2

B. Performance Criteria: **Surface Mounted Flush Sill and Flush Sill – Outward Opening**

1. Air Infiltration (ASTM E283):
   a. 0.13 cfm/ft^2 (0.66 L/s/m^2) at a static air pressure difference of 1.57 psf (75 Pa)
   b. 0.28 cfm/ft^2 (1.50 L/s/m^2) at a static air pressure difference of 6.24 psf (300 Pa)
   c. Canadian Air Infiltration/Exfiltration Level: A2

C. Performance Criteria:

1. Acoustic Performance STC (Rw)

NOTE: Acoustical system STC and Rw ratings per ASTM E413 and DIN EN ISO 717-1 are from testing of full panel systems by an independent and accredited acoustical laboratory in accordance with DIN EN ISO 10140-1, 2, 4 & 5 test procedure and in general accordance with ASTM E90-09. A complete and unedited written test report is available upon request.

See manufacturer's latest published data regarding performance.

a. [System STC (Rw) 42 (42) and OITC 37 with head track recessed and 1-9/16 inch (40 mm) double IGU, 10 mm + 8 mm STC 48 enhanced laminated glass]

b. [System STC (Rw) 37 (37) and OITC 32 with 1-1/8 inch (28 mm) double IGU, 6 mm enhanced laminated + 6 mm tempered STC 39 glass]

c. [System STC (Rw) 33 (33) and OITC 27 with 1-1/8 inch (28 mm) double IGU, 4 mm + 4 mm STC 32 tempered glass]

NOTE: Acoustical system STC (Rw) ratings below are engineer-calculated interpolations based on the full panel systems testing with surface mounted flush sill and flush sill. Calculations of system STC (Rw) from other glazing STC is available on request.

d. [System STC (Rw) 41 (41) and 1-1/2 inch (38 mm) double IGU, 6 mm + 8 mm STC 44 enhanced laminated glass]

e. [System STC (Rw) 39 (39) and 1-7/16 inch (36 mm) double IGU, 6 mm + 6 mm STC 42 laminated glass]

f. [System STC (Rw) 37 (37) with 1/2 inch (12 mm) STC 39 enhanced laminated glass]

g. [System STC (Rw) 34 (34) with 1/4-inch (6 mm) STC 35 laminated glass]

h. [System STC (Rw) 31 (31) with 1/4-inch (6 mm) STC 31 tempered glass]

2. Swing Panel - Operation / Cycling Performance (AAMA 920): 500,000 cycles

3. System - Life Cycle Performance (DIN EN 1191/12400): 20,000 cycles

4. Operating Force (ASTM E2068):

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

b. Folding Panel:

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

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

NOTE: Forced entry testing results are only applicable for the test unit type of locking. See manufacturer's latest published data regarding performance.

5. Forced Entry (AAMA 1304, DIN EN 1191): Pass

6. Forced Entry Resistance (ASTM F842, AAMA 1304, CAWM 300): Meets Grade 40: +F2

D. LEED Characteristics:

1. **LEED 2009 (v3)**

a. MRc1.2: *NanaWall* interior glass wall systems, not demolished in a renovation project, are reused in the same location.

b. MRc2: *NanaWall* cardboard shipping crates are made of 60% recycled material and are 100% recyclable.

c. MRc3: *NanaWall's* components easily disassemble and reassemble to "*Use* as *salvaged... or reused materials*."

d. IEQc2: *NanaWall* systems provide natural ventilation in the open position, assisting in the 90% required natural ventilation of occupied spaces of ASHRAE 62.1.

e. EQc8.1: *NanaWall* glass wall assembly borrowed light brings daylight deeper into the floor plate.

f. EQc8.2: *NanaWall* glass wall assemblies provide direct outdoor lines of sight.

g. IEQc9: (LEED for Schools): For gasketed *NanaWall* glass wall assemblies with glass units STC testing of up to 41 Db.

2. **LEED v4 for Interior Design and Construction (ID&C)**

a. EAc2: *NanaWall* systems using designed double IGU and thermally/ acoustically 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.

e. EQc9: *NanaWall* glass wall assemblies can contribute with system acoustic ratings of up to a 41-dB reduction.

E. Design Criteria:

1. Sizes and Configurations: As indicated by the Drawings for selected number and size of panels, location of swing and folding 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. Mounting Type: Floor supported with upper guide track

4. Panel Configuration:

a. [Straight]

b. [90° angle turn]

5. Stack Storage Configuration:

a. [Inswing type and stack storage inside jamb]

b. [Outswing type and stack storage outside jamb]

6. Panel Type: Hinged

a. [With Entry/Egress panel hinged to side jamb.]

b. [Without Entry/Egress panel hinged to side jamb.]

7. Panel Pairing Configuration: See drawings

a. [Bi-folding panels hinged to side jamb]

b. [Bi-folding panels unhinged FourFold or SixFold panel sets]

NOTE: Sizes and Configurations: https://www.nanawall.com/resources/nw-acoustical-545/configurations/standard

See manufacturer drawings for selected custom dimensions within maximum frame sizes possible as indicated in manufacturer's literature. The maximum sizes possible are based on weight of glazing selected.

See drawings for selected number of panels and configuration.

2.03 MATERIALS

A. Wood Framed Folding Glass Description: Nominal frame stile width of 5-11/16 inches (144 mm) between folding panels, floor track supported system. Manufacturer's standard quadruple laminated solid single-species wood panel profiles and wood clad thermally broken head track and side jambs with dimensions as shown on Drawings.

NOTE: Market availability of quadruple laminated cross-grained wood may differ by wood species.

1. Panels and Frame:
   a. Panels:
      1). Wood: quadruple laminated cross-grained solid premium wood beams with mortise and tenon, glued and pinned corners.
      2). 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.

      3). [Multiple lites with horizontal mullion(s) at height(s) indicated from the bottom of the panel.]
      4). [Single lite with simulated divided lites in pattern as shown on Drawings.]
      5). Panel Size (W x H): As indicated.

NOTE: Maximum unit heights are dependent on the weight of glazing.

      6). Rail Depth: 3-3/8 inch (86 mm)
      7). Top Rail and Stile Width: 3-1/4 inch (82 mm)
      8). Bottom Rail Width:
         i. [3-1/4 inch (82 mm)]
         ii. [Manufacturer’s standard kickplate of 10 inches (254 mm)]
   b. Frame:
      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.

NOTE: Frame fasteners, attachment points, and screw heads should be concealed by multipurpose frame insert for enhanced aesthetics.

      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 +/- 3/16″ (5 mm). Frame finish to match panel finish.
      4). Frame Depth: 3-3/8 inch (86 mm)
      5). Head Track Width:
         i. [2-13/16 inch (72 mm) standard]
         ii. [3-7/8 inch (99 mm) anti-tilt feature for unhinged FourFold and SixFold panel set configurations]
      6). Side Jamb Width: 2 inches (51 mm)
      7). Sill Type:
         i. [Surface mounted flush sill - ADA complaint]
         ii. [Flush sill - ADA compliant with high heel protector insert]
      8). Sill Finish:
         i. [Clear anodized]
         ii. [Black anodized]

2. Aluminum Extrusion: Black anodized aluminum inside of top track and side jambs
   a. Alloy: AlMgSi0.5; 6063-T5 (F-22 - European standard)
   b. Thickness: 0.078 inch (2.0 mm) nominal
   c. Acoustic Break: 1-1/4 inch (32 mm) wide
3. Wood:

NOTE: For interior application wood options, contact NanaWall. European Oak available with an upcharge.

   a. Species
      1). [Sapeli Mahogany]
      2). [European Pine]
      3). [Meranti]
      4). [Western Hemlock]
      5). [Red Grandis]
      6). [European Oak]
   b. Wood Finish: Provide factory water-based, open pore [**clear sanding sealer for stain**] [**base coat applied for paint**] with one additional clear coat; See Section 09 90 00 for field finish.

B. Glass and Glazing:
1. Safety Glazing: In compliance with ASTM C1036, ASTM C1048, ANSI Z97.1 and CPSC 16CFR 1201.

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

2. Manufacturer's [**tempered**] [**laminated**] glass lites in [**single**] [**double**] insulated glazing units, dry glazed with glass stops on the inside.

NOTE: Select and edit glass type(s) to meet building code, acoustic, security, translucency, and other project requirements with other glass available from manufacturer.

Contact NanaWall for the availability of other commercial glass types.

Glass pocket can accommodate glass from 1/4 inch (6 mm) monolithic to 1-7/8 inch (48 mm) double insulated glass.

For laminated glass, check with NanaWall the availability of Vanceva White Collection and other color interlayers.

   a. Insulated Glass Unit (IGU) Lites:
      1). 1-1/12 inch (38 mm) double IGU, 6 mm + 8 mm STC 44 enhanced laminated glass to achieve unit STC of 41.
      2). [1-7/16 inch (36 mm) double IGU, 6 mm + 6 mm STC 42 laminated glass to achieve unit of STC of 39.]
   b. IGU Fill: Air filled
   c. Glass Spacers: Manufacturer's standard [**gray**] [**black**] finish.
   d. Single Glass:
      1). 1/2-inch (12 mm) STC 39 enhanced laminated glass to achieve unit STC of 37
      2). [1/4-inch (6 mm) STC 35 laminated glass to achieve unit STC of 34]
      3). [1/4-inch (6 mm) STC 31 tempered glass to achieve unit STC of 31]

e. Glass Lite Type:

1). Standard reduced iron (Light Transmission (VLT) 89%)

NOTE: Item below requires an upcharge.

2). [Low iron (Light Transmission (VLT) 91%)]

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

C. Locking Hardware and Handles:

NOTE: Locking is independently tested for acoustical performance and forced entry.

1. Main Entry Panel(s) for Models WITH a [**Pair of**] Swing Panel: Provide manufacturer's standard lever handles on the inside and outside, a lockset with lockable latch, multi-point locking with a dead bolt and rods at the top and bottom on primary panel only.
   a. Locking: Standard European profile cylinder
   b. Rods to be concealed and not edge mounted.
   c. After turn of key or thumb turn, depression of handles withdraws latch.
   d. Lifting of handles engages rods and turn of key or thumb turn engages deadbolt and operates lock.
   e. Lever handle - finish:
      1). Brushed satin stainless steel
      2). [Black titanium stainless steel]
   f. Secondary Swing Panel: Provide concealed two-point, edge locking.
      1). Locking rods with standard end caps at the top and bottom. Rods to have a stroke of 15/16 inch (24 mm)

NOTE: Acoustical performance value will not apply for locking device below.

2. Main Entry Panel (s) for Models WITH a [**Pair of**] Swing Panel: Provide 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.
   a. Locking: Key/Key European profile cylinder

NOTE: With the option below, the main entry panel is operable from inside only and there is no latch.

3. Main Entry Panel: Provide manufacturer's standard flat handle on inside only with concealed two-point locking hardware operated by 180° turn of handle.

NOTE: Locking is independently tested for acoustical performance and forced entry.

4. Pairs of Folding Panels: Provide manufacturer's flat handles and concealed two-point locking hardware operated by 180° turn of handle between each pair. Face applied flush bolt locking NOT acceptable.
   a. Flat Handle - Finish:
      1). Brushed satin stainless steel
      2). [Black titanium stainless steel]
5. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel or as otherwise indicated.
6. Locking rods with standard end caps at the top and bottom. Rods to have a stroke of 15/16 inch (24 mm).
7. Additional profile cylinders to be [**Keyed alike.**] [**Keyed differently.**]
8. Panel Catch: panel catch to hold swing panel to adjacent folding panel to prevent incorrect operation when moving the panel.

D. Sliding-Folding Hardware: Provide manufacturer's standard combination sliding and folding hardware with top and bottom tracks and threshold. All bottom rollers to be with sealed, self-lubricating, double ball bearing multi-rollers. Surface mounted hinges and bottom rollers NOT acceptable.

1. 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.

NOTE: Weight of panels borne by the bottom of the guide channel in the sill is NOT acceptable. Wheels riding on aluminum surfaces NOT acceptable.

2. Vertical wheels with Gothic arch feature to ride on top of stainless-steel guide track covers over the full length of the sill track.
3. 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.
4. Hinges and Rollers: [**Clear**] [**Black**] 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. Double ball bearing stainless wheels rollers match hinge finish.
5. 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.
   a. Pull Handle – Finish:
      1). [Silver stainless steel]
      2). [Black titanium stainless steel]

E. 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.

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

F. Fasteners: Installation plates for connecting frame components made of stainless steel with sealing cushion to avoid thermal connectivity.

2.04 FABRICATION

A. Folding Glass Wall: Use solid, quad-layer, cross grained wood for panels, connected to hinges, sliding, and folding hardware, locking hardware and handles, threshold and track, 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. Wood frame and panel components to be sealed with a clear sand sealer or primer.

2.05 ACCESSORIES

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

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. Examine surfaces of openings and verify dimensions; verify rough openings are level, plumb, and square with no unevenness, bowing, or bumps on the floor; and other conditions as required by the manufacturer for readiness to receive Work.
    b. Verify structural integrity of the header for deflection with live and dead loads limited to 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 requirement of 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 Folding Glass Partition system in accordance with the Drawings, approved submittals, manufacturer’s recommendations, and installation instructions, and as follows:

1. Properly seal around opening perimeter to reduce sound infiltration from surroundings.
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. Wood Finishing: Field finish wood under Section 09 90 00, Painting and Coating; seal and finish promptly after installation and prior to exposure.
4. Install panels, handles, lockset, gasketing, 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 Folding Glass Partition 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 Folding Glass Partition installation against damage from construction activities.

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

END OF SECTION