



SECTION 08560
POLYVINYL CHLORIDE (PVC) WINDOWS
Viwinco Inc.
Series/Model: S-Series Patio Door (Aluminum Sill)

Part 1 – General

- 1) **APPLICABLE PUBLICATIONS:** The publications listed below form a part of this specification to the extent referenced. The publications are referred to in text by basic designation only.
 - a) Code of Federal Regulations (CFR)
 - i) 16 CFR 1201 Consumer Product Safety Commission. Safety Standard for Architectural Glazing Materials
 - b) American Architectural Manufacturers Association (AAMA), National Fenestration Rating Council (NFRC), American Society for Testing and Materials (ASTM)
 - i) North American Fenestration Standard/Specification for windows, doors, and skylights (AAMA/WDMA/CSA 101/I.S.2/A440)
 - (1) Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen (ASTM E 283)
 - (2) Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Differences (ASTM E 330)
 - (3) Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Cyclic Static Air Pressure Differences (ASTM E 547)
 - (4) Standard Specification for the Classification of the Durability of Sealed Insulating Glass Units (ASTM E 774)
 - (5) Standard Test Method for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact (ASTM F 588)
 - ii) Voluntary Specifications for Pile Weatherstripping and Replaceable Fenestration Weatherseals (AAMA 701/702)
 - iii) Voluntary Specification for Sash Balances (AAMA 902)
 - iv) Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections (AAMA 1503)
 - v) Procedure for Determining Fenestration Product U-Factors (NFRC 100)
 - vi) Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence (NFRC 200)
 - c) AAMA Certification Program for Vinyl Window Manufacturers
- 2) **SUBMITTALS** – Submit to contractor officer for approval
 - a) Certified Test Reports: Submit for air infiltration, water resistance, and uniform loading in accordance with the above referenced specification.
 - b) Catalog Data: Shall describe each type of door, hardware, fastener, accessory, operator, screen, and finish.
 - c) Certification of Compliance: Submit certificates that identical doors have been successfully tested and meet the requirements specified herein for air infiltration and water penetration.
 - d) Selection Samples: Select from Manufacturer’s full range of colors.
- 3) **DELIVERY AND STORAGE** – Deliver doors to project site in an undamaged condition. Use care in handling and hoisting during transportation and at the job site. Store doors and components out of contact with the ground, under cover, protected from weather, so as to prevent damage to the doors. Do not use unvented plastic or canvas shelters. Provide ¼” space between units to promote air circulation. Damaged doors shall be repaired to an “as new” condition or replaced as approved.
- 4) **PROTECTION:** Finished surfaces shall be protected during shipping and handling using manufacturers’ standard method.
- 5) **CERTIFICATION:** Door units shall be tested and certified for performance with the above referenced test methods. All door units shall be labeled certifying conformance with AAMA/WDMA/CSA



101/I.S.2/A440, NFRC 100, NFRC 200, and Energy Star, Program Requirements for Residential Windows, Doors and Skylights.

- 6) CERTIFIED FABRICATOR: Doors shall be fabricated by an AAMA Certified Fabricator.
- 7) WARRANTIES:
 - a) Doors shall be fully warranted against any defects in material or workmanship under normal use and service for a period of 20 years from date of acceptance on commercial projects and lifetime limited warranty to original homeowner on residential projects, 1 year factory labor included.
 - b) Insulated Glass Units shall be fully warranted against visual obstruction resulting from film formation or moisture collection between the interior glass surface, excluding breakage, for a period of 20 years from date of acceptance on commercial projects and lifetime warranty to original homeowner on residential projects, 1 year factory labor included.
 - c) Contractor shall provide a written service warranty that clearly spells out how requests for service shall be handled, by whom, under whose responsibility and shall include the time frame for handling these service requests. A labor warranty providing service on the doors shall cover a period of not less than 5 years, and shall be provided in writing. A copy of the product and labor warranty must accompany other applicable warranties and be presented with the bid.
- 8) PERFORMANCE REQUIREMENTS – General – Provide vinyl doors capable of complying with performance requirements indicated, based on testing manufacturer’s doors that are representative of those specified
 - a) Test for air infiltration shall be in accordance with AAMA/WDMA/CSA 101/I.S.2/A440. On a test, the air rate shall not be greater than 0.3 cfm per square foot of sash area.
 - b) Test for water infiltration shall be in accordance with AAMA/WDMA/CSA 101/I.S.2/A440. Test results for different door sizes appear below.
 - c) Uniform Load Structural Test, with the door closed and locked, shall be in accordance with AAMA/WDMA/CSA 101/I.S.2/A440. Test results for different door sizes appear below.

Type	Class	Performance Grade (PG)	Max. Structural Test Pressure ₁	Water Infiltration ₂	Air Infiltration ₃	Size Tested	Lites
SD	R	R50	75.24	7.52	0.12	96 x 96	2
SD	C	C50	75.24	7.52	0.12	96 x 96	2
SD	R	R50	75.24	7.52	0.12	144 x 96	3
SD	C	C50	75.24	7.52	0.12	144 x 96	3
SD	R	R45	67.71	7.52	0.12	144 x 82	4
SD	C	C45	67.71	7.52	0.12	144 x 82	4

₁Structural Test Pressure (psf) tested to at least 150% of DP rating

₂Water infiltration (psf) tested to at least 15% of DP rating

₃Air Infiltration units are cfm/ft²

- d) Test for Thermal Performance shall be in accordance with NFRC 100 and NFRC 200.
- e) Test for Condensation Resistance Factor (CRF) shall be in accordance with AMMA 1503.

Door Size	Thermal Package	Foam ₁	Grid Type	Total Window U-Value	Solar Heat Gain Coefficient	Visible Light Transmittance	Condensation Resistance Factor
All Sizes	30/30	No	None	0.33	0.27	0.50	52
	30/30	No	Both	0.33	0.24	0.44	52



PART 2 – Products

- 1) MANUFACTURER: Viwinco S-Series Patio Door as manufactured by Viwinco, Inc., located at 851 Hemlock Road, Morgantown, PA 19543-0499. Phone (610) 286-8884. www.viwinco.com
- 2) Materials – Doors shall conform to the requirements of specifications listed above. Provide doors of combinations, types and sizes indicated or specified.
 - a) Frame
 - i) Extruded PVC components, produced from commercial quality virgin PVC (unplasticised polyvinyl chloride), conforms to AAMA 303, Voluntary Specification for Rigid Poly (Vinyl Chloride) (PVC) Exterior Profiles, from sections in one piece, straight, true and smooth. Provide multi-chambered PVC extruded frame in accordance with the manufacturer’s standard practice. Make fusion welded frame joints strong enough to develop full strength of members, with an exterior wall thickness of .090”. Head and jamb members shall have an integral 1 ¼” nailing flange, accessory grooves, and an integral screen track. The jamb members shall be welded to the head of the frame and mechanically fastened to the sill.
 - ii) Sill - Exterior wall thickness is .090” sloped 2 degrees with a thermal break. An aluminum threshold shall be snapped into the sill where the operating panel is located. The operating panel shall ride in a channel with a monorail system with a stainless steel cover. The channel shall measure 1.519” tall with two points of contact of weather-strip silicone treated pile with a mylar center fin bonded to the back.
 - b) Sash –
 - i) Meeting rails shall have integral interlock with two contact points of pile weather-stripping provided. Sash shall have fusion welded miter corners with an external wall thickness of .080. Sash rails and stiles each measure 4 ½”. The sash stiles and lower rail shall be reinforced. All sashes shall have equal glass sight lines.
 - c) Glass – Factory glazed 1” insulating glass conforming to ASTM E 2190, Standard Specification for Insulating Glass Unit Performance and Evaluation. Sputter-coated Low –E double strength (3 mm)tempered glass with Ultra Intercept Stainless Steel Spacer and argon gas. Glazing shall be interior glazed against a bead of silicone, secured with PVC mitered glazing beads and designed to maintain a watertight seal between glass and sash frame.
 - d) Hardware –
 - i) Locking Devices: Interlock dual-point locking handle with an adjustable keeper.
 - ii) Adjustable Stainless Steel Rollers –
 - e) Screen –
 - i) Screen Frame: Provide same quality and color finish as the door units. Frames shall have extruded aluminum sections with reinforced corners. Hardware, attachment devices, and accessories shall be manufacturer’s standard and of same quality, material and finish as hardware of the door unit.
 - ii) Insect Screening: ASTM D 3656, Standard Specification for Insect Screening and Louver Cloth Woven from Vinyl Coated Glass Yarn, (plastic coated or impregnated fibrous glass yarn) of standard color as approved. BetterVue fabric, .009 by .011 diameters, 18 x 18 woven mesh count. Provides for 68-69% light transmission.
 - f) Caulking and Sealing: As specified or recommended by window manufacturer.
- 3) Fabrication
 - a) Weathering Surfaces: All frame members shall be multi-chambered PVC extrusions utilizing double wall design. Frame corners shall be fusion welded at the head and mechanically fastened at the sill. Sash members shall be multi-chambered PVC extrusions utilizing double wall design at all glazing locations. Horizontal sash members shall be mitered and fusion welded to vertical sash members.
 - b) Drips and Weep Holes: Provided as required to return water to the outside.
 - c) Glazing Thickness: Design glazed doors and rabbets suitable for glass thickness specified above.
 - d) Fasteners: All fasteners are to be stainless steel type, corrosion resistant. Use flathead, cross-recessed type, exposed head screws with standard threads on windows, trim, and accessories. Screw heads shall finish flush with adjoining surfaces. Self-tapping sheet metal screws are not



acceptable for material more than 1/16" in thickness. All sheet metal screw fasteners shall penetrate into a PVC screw boss, or screw raceway, or internal .062" wall thickness aluminum reinforcement to secure fastening and reduce pull out.

- e) Provisions for Glazing: Design sash for inside double-glazing and for securing glass with manufacturer's standard glazing systems. Provide glazing channels of adequate size and depth to receive and properly support the glass and glazing accessories.
- f) Factory Mulls: Factory Mulls: Factory mulls to be fully reinforced with 1"x 3" hollow aluminum extrusions fabricated with tab extensions to be secured to the rough opening.
- g) Accessories: Provide doors complete with necessary hardware, fastenings, clips, fins, anchors, glazing beads, and other appurtenances necessary for complete installation and proper operation.
- h) 2 ¼" Brick Mould Casing: Co-extruded flex-fin durometer weather-strip to provide a seal between the casing and the window frame without the use of surface applied caulking. The extrusion shall consist of multiple chambers with a 1-11/16" extruded nailing fin and ¾" by 5/8" integral J channel with an exterior wall thickness of .065". All welded joints shall be aesthetically cleaned of weld flash material. The nominal overall dimension of the brick mould casing is 2 ¼" by 1 7/8". Casing is factory-applied to nail fin of window frame in a bedding bead of sealant using self-tapping sheet metal screws approximately with 6" spacing. NOTE TO SPECIFIER: *Remove this section if not applicable.*
- i) 3 ½" Flat Casing: Co-extruded flex-fin durometer weather-strip to provide a seal between the casing and the window frame without the use of surface applied caulking. The extrusion shall consist of multiple chambers with a 1-11/16" extruded nailing fin and ¾" by 5/8" integral J channel with an exterior wall thickness of .065". All welded joints shall be aesthetically cleaned of weld flash material. The nominal overall dimension of the brick mould casing is 2-1/4" by 1-7/8". Casing is factory-applied to nail fin of window frame in a bedding bead of sealant using self-tapping sheet metal screws approximately with 6" spacing. NOTE TO SPECIFIER: *Remove this section if not applicable.*
- j) Sill Nose: Co-extruded flex fin durometer weather-strip to provide a seal between the casing and the window frame without the use of surface applied caulking. The extrusion shall consist of multiple chambers with a 1-11/16" extruded nailing fin and 5/8" by ¾" integral J channel. Exterior wall thickness shall be a minimum of .065". A color-matched end cap shall be installed at both ends.
- k) Brick Mould J Channel Extender: PVC extrusion simulates a brick mould profile with a minimum wall thickness of .060". Corners are mitered and sealed with silicone. Snaps into the exterior accessory groove of the main frame in the field. Extends basic J pocket in main frame by 1-3/8". NOTE TO SPECIFIER: *Remove this section if not applicable.*
- l) Basic J Channel Extender: PVC extrusion with a minimum wall thickness of .045". Snaps into the exterior accessory groove of the main frame. Extends basic J pocket in the main frame by ½". NOTE TO SPECIFIER: *Remove this section if not applicable.*
- m) J Pocket Filler: PVC extrusion with a minimum wall thickness of .055". Corners are mitered and sealed with silicone at the head and jambs. Snaps into the exterior accessory groove of the main frame. Conceals integral J pocket of the main frame to provide for a proper perimeter caulk joint for masonry, or field applied trim applications. NOTE TO SPECIFIER: *Remove this section if not applicable.*
- n) PVC Color Selection: Integral PVC color with UV inhibitors to reduce fading.
 - i) White PVC: NOTE TO SPECIFIER: *Remove this section if not applicable.*
 - ii) Tan PVC: NOTE TO SPECIFIER: *Remove this section if not applicable.*
 - iii) Clay PVC: NOTE TO SPECIFIER: NOTE TO SPECIFIER: *Remove this section if not applicable.*
- o) Interior / Exterior Color Selection: Laminating films in accordance with RAL 716/1 and EN 513-2 resist abrasion and weather. NOTE TO SPECIFIER: *Remove this section if not applicable.*
 - i) White PVC with Bronze Laminate Exterior: NOTE TO SPECIFIER: *Remove this section if not applicable.*



- ii) White PVC with Hunter Green Laminate Exterior: NOTE TO SPECIFIER: *Remove this section if not applicable.*
- iii) White PVC with Cocoa Brown Laminate Exterior: NOTE TO SPECIFIER: *Remove this section if not applicable.*
- iv) White PVC with Driftwood Laminate Exterior: NOTE TO SPECIFIER: *Remove this section if not applicable.*
- v) Cherry Laminate Interior with White PVC: NOTE TO SPECIFIER: *Remove this section if not applicable.*
- vi) Natural Oak Laminate Interior with White PVC: NOTE TO SPECIFIER: *Remove this section if not applicable.*
- vii) Dark Oak Laminate Interior with White PVC: NOTE TO SPECIFIER: *Remove this section if not applicable.*
- viii) Maple Laminate Interior with White PVC: NOTE TO SPECIFIER: *Remove this section if not applicable.*
- p) Jamb Extension: NOTE TO SPECIFIER: *Remove this section if not applicable.*
 - i) Cellular PVC finish to match window
 - ii) Cellular PVC Paintable/Stainable Finish
- q) Grill options to be verified by manufacturer. NOTE TO SPECIFIER: *Remove this section if not applicable.*
 - i) Grill Patterns: Refer to Drawings
 - ii) 5/8" Flat Internal Grids: NOTE TO SPECIFIER: *Remove this section if not applicable.*
 - iii) 11/16" Contour Internal Grids: NOTE TO SPECIFIER: *Remove this section if not applicable.*
 - iv) 3/4" SDL Grids - SDL (Simulated Divided Lites) NOTE TO SPECIFIER: *Remove this section if not applicable.*
- r) Weather-stripping: Provide for ventilating sections of all doors to insure a weather tight seal meeting the infiltration tests specified herein. Use easily replaceable factory applied weather-stripping of manufacturer's stock type, as specified above. For sliding surfaces, use silicone treated pile, with a mylar center fin bonded to a plastic-backing strip. Do not use neoprene or polyvinylchloride weather-stripping where they will be exposed to direct sunlight.
- s) Screens: Provide one insect screen for each operable ventilating unit. Design screens to fit closely around entire perimeter of each ventilator or opening, to be rewired, easily removable from outside of the building with no exposed fasteners. Provide all guides, stops, clips, bolts, and screws as necessary, for a secure and insect tight attachment to door.
- t) Screening: Install screening with weave parallel to frame and stretch sufficiently to present a smooth appearance. Conceal edges of screening in the spline channel.
- u) Screen Finish – Exposed surfaces of aluminum extrusions shall be thoroughly cleaned, primed and given a baked enamel finish in accordance with AAMA 603.8, Voluntary Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum, with total dry thickness not less than 0.8mil. The finish color shall match the vinyl window.

PART 3 – Execution

1) Examination

- a) Have installer verify that project conditions are acceptable before beginning installation of products; verify that rough openings are as indicated, and are correct sizes for clearance spaces specified in manufacturer's instructions.
- b) Correct unacceptable conditions before proceeding with installation.

2) Installation

- a) Method of Installation: Install in strict accordance with the door manufacturer's printed instructions and details, except as specified otherwise herein. Install doors without forcing into prepared door openings. Insulate perimeter of the door frame with acceptable approved insulation material, as recommended by door manufacturer. Set doors at proper elevation, location, and reveal; plumb, square, level, and in alignment; and brace, strut, and stay properly to prevent distortion and misalignment. Protect ventilators and operating parts against accumulation of dirt,



and building materials by keeping ventilators tightly closed and locked to frame. Bed screws in sill members, joints at mullions, contacts of door with sills, built in fins, and sub-frames in approved sealant. Install doors in a manner that will prevent entrance of water. Provide panning system flashed in sealant at doors where applicable.

- b) Anchors and Fasteners: Make ample provision for securing units to each other, and to adjoining construction.
 - c) Adjustments after Installation: After installation of doors adjust all ventilators and hardware to operate smoothly and to provide weather tight sealing when ventilators are closed and locked. Lubricate hardware operating parts as necessary.
 - d) Protection: Where surfaces are in contact with, or fastened to wood or dissimilar materials, the surface shall be protected from dissimilar materials as recommended by the manufacturer. Surfaces in contact with sealant after installation shall not be coated with any type of protective material.
- 3) Cleaning: Clean interior and exterior of door units of mortar, plaster, paint spattering spots, sealants, and other foreign matter to present a neat clean appearance and to prevent fouling of weather-stripping surfaces and weather-stripping, and to prevent interference with the operation of hardware. Replace with new doors all stained, discolored, or abraded door that cannot be restored to their original condition

END OF SECTION