



SECTION 08560

SERIES 1500 VINYL PATIO DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Patio Doors

1.2 RELATED SECTIONS

- A. Section 05450: Cold Formed Metal Framing.
- B. Section 06100: Rough Carpentry.
- C. Section 06200: Finish Carpentry.
- D. Section 07460: Siding.
- E. Section 07920: Joint Sealants.

1.3 REFERENCES

- A. ANSI/AAMA/NWDA 101/I.S.2; 97 and current A-440-05 - Voluntary Specification for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors with revisions contained in "reprinting" of 12/99.
- B. AAMA 902 - Voluntary Specification for Sash Balances.
- C. ASTM E 283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.
- D. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
- E. ASTM E 2190 - Standard Specification for the Classification of the Durability of Sealed Insulating Glass Units.
- F. NFRC 100/200 – Procedure for Determining Fenestration Product U-Factors and Solar Heat Gain.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Submit the following documents for each type of window.
 - 1. Manufacturer's technical data, product descriptions and installation guides.
 - 2. Elevation for each style window specified indicating its size, glazing type, muntin type and design.
 - 3. Manufacturer's head, jamb and sill details for each window type specified.
- C. Verification Samples: Provide operating units of each style window specified.



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1. Verification samples may be operating scaled-down mock-ups of actual-size units.
2. Operating hardware such as balances, sash locks and weather-stripping.
3. Verification samples will be returned to manufacturer's representative at project closeout.

- D. Test Reports: Submit certified independent testing agency reports indicating window units meet or exceed specified performance requirements.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum ten (10) years producing vinyl (PVC) windows.
- B. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size.
- C. Provide window units independently tested and found to be in compliance with ANSI/AAMA/NWDA 101/I.S.2-97 and current A440-05 performance standards listed above.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. Finish areas designated by Architect.
 2. Do not proceed with remaining work until workmanship and color are approved by Architect.
 3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver windows to project site in undamaged condition; handle windows to prevent damage to components and to finishes.
- B. Store products in manufacturer's unopened packaging, out of direct sunlight or high temperature locations, until ready for installation.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

- A. Submit manufacturer's standard warranty against defects in workmanship and materials.
1. Limited Lifetime Limited Transferable warranty on extruded solid vinyl member and component parts. Insulated glass is warranted against material obstruction of transparency resulting from film formation or dust collection on the interior glass surfaces for a period of twenty (20) years. Consult warranty for complete details.
 2. The warranty period for commercial project work such as apartments, housing authorities and other buildings not used by individual homeowners is 10 years, covering all vinyl, glass and component parts. Consult warranty for complete details.



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PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Crystal Window & Door Systems located at: 31-10 Whitestone Expressway, Flushing, NY 11354; Tel: 718.961.7300; Fax: 718.460.4594; Email: marketing@crystalwindows.com ; Web: www.crystalwindows.com
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.
- D. Substitutions must be submitted to Architect two weeks prior to bid opening.

2.2 PATIO DOOR - CRYSTAL SERIES 1500

- A. Performance:
 - 1. Structural Rating: R-PG35 (DP 35) - Test Size: 71 inches x 79 inches in accordance with ANSI/AAMA/NWDA 101/I.S.2 /A440-08.
 - 2. Air Test Performance Requirements:
 - a. Air infiltration maximum 0.30 cfm per square foot at 1.6 psf pressure differential when tested in accordance with ASTM E283 for sliding sealed products.
 - 3. Water Test Performance Requirements:
 - a. No uncontrolled water leakage at 5.43 psf static pressure differential when tested in accordance with ASTM E331 and ASTM E547.
 - 4. Forced Entry: Grade 10 in accordance with ASTM F 588.
 - 5. Thermal Transmittance: The following values are in accordance with NFRC 100 and NFRC 200.
 - a. With Low-E / Argon: U-Factor - 0.30
 - b. With SB70 & Duralite: U-Factor - 0.28
- B. Operation: One panel of the two-panel unit shall be movable. Operating panel shall glide on tandem metal adjustable wheels. Stationary panel shall be inserted head, jamb and sill, Panels shall have a positive interlock at the meeting stiles when in the closed position.
- C. Materials: All vinyl extrusions shall be rigid 100% virgin PVC. Frame profiles shall have a main wall thickness of 0.085", & have sixteen tubular hollows for strength and thermal efficiency. Sash profiles rails shall have a main wall thickness of 0.080", & have four tubular hollows for strength and thermal efficiency.
- D. Frame construction: Frame shall have an integral pre-punched nailing fin along the perimeter. All corners shall be mitered and fusion welded. Metal door-sliding track & foot board. Frame depth shall be 4-5/8".
- E. Sash construction: All sash corners shall be mitered and fusion welded. There shall be integral interlock at the meeting rail. Metal reinforcement bars shall be installed in meeting rails.
- F. Glazing: Both sashes shall utilize 1.0" thick insulating glass consisting of two sheets of 1/8" thick clear tempered-proof glass and a desiccant filled metal spacer system

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(intercept insulating unit). A butyl sealant shall be extruded around the entire perimeter of the spacer to achieve a seal. Movable sash shall be interior glazed, & fixed sash shall be exterior glazed, back bedded with silicone, and utilize dual durometer snap-in glazing beads.

- G. Screen construction: Screen shall cover the movable panel(s) area. The screen frame shall be aluminum extrusion with all corners keyed. The screen frame shall be fitted with 18" x 16" charcoal fiberglass mesh screen cloth or aluminum screen wire held-in-place with a flexible spline. Metal screen door-sliding track.
- H. Hardware: Movable panel of standard product shall have an attractive cast locking handle/mortise lock set at one of its stiles by two color matched screws. Two adjustable steel tandem rollers shall be recessed into the bottom rail of movable panel.
- I. Weatherstripping: High-density woven pile (double seal) shall be used in combination with continuous polyethylene rigid seal, & one Q-Lon seal between meeting stiles to minimize air infiltration.
- J. Finish: Shall be solid vinyl in off white, beige or two tone colors.
- K. Options: Grids- Colonial, Georgian, Applied, Prairie (Flat) and Diamond aluminum in-glass grids in off white, beige or two tone colors are available. Handle with key lock, foot lock and brass handle with key-lock are optional. Glazing- duralite spacer glass units, Low-E tempered glass with argon filled can be used.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Contractor must verify rough opening size is of sufficient size to receive window unit and complies with manufacturer's requirements for opening clearances.
- B. Confirm that sill plate is level.
- C. Architect must be notified of unacceptable conditions before proceeding with installation.

3.2 INSTALLATION

3.3 Contractor must install window unit in accordance with manufacturer's printed instructions.

- A. Apply sealant around perimeter of window unit between nail fin and exterior sheathing of wall.
- B. Install window unit level and plumb. Center window unit in opening and secure window unit by nailing through nail fin and screw through jambs as indicated in manufacturer's instructions.
- C. Flash window in accordance with AAMA's "Standard Practice for Installation of Windows with a Mounting Flange in Stud Frame Construction".
- D. Insulate between window frame and rough opening with suitable insulation.

3.4 ADJUSTING

- A. Installer must adjust units for smooth operation without binding or racking.

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B. Installer must adjust sash locks and screens for smooth operation.

3.5 CLEANING

A. Clean soiled surfaces and glass prior to substantial completion.

3.6 PROTECTION

A. Protect window unit from damage until substantial completion. Repair or replace damaged units.

END OF SECTION