

SECTION 08600
POLYVINYL CHLORIDE (PVC) WINDOWS
8371 Geometric-Picture Window

PART 1 – GENERAL

- 1.1.1 **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.
- 1.1.1 Federal Specifications (Fed. Spec.):
- DD-G-45-1D Glass, Float or Plate, Sheet
- 1.1.2 American Architectural Manufacturers Association (AAMA)
National Fenestration Rating Council (NFRC)
American Society for Testing and Materials (ASTM)
- AAMA 101 I.S.2-97 Voluntary Specification for Aluminum, PVC, and Wood Windows and Glass Doors
- Test method for rate of Air Leakage through Exterior windows, Curtain walls and doors (ASTM E283)
- Test method for Structural Performance of Exterior Windows, Curtain walls and doors (ASTM E330)
- Test method for Water Penetration of Exterior windows, Curtain walls and doors by Uniform Static Air Pressure Difference (ASTM E547)
- Specifications for Sealed Insulating Glass Units (ASTM E774)
- AAMA 1503-98 Voluntary test method for Condensation Resistance of Windows, Doors, and Glazed wall sections
- NFRC 100-97 Procedure for Determining Fenestration Product U-Factors
NFRC 200-97 Procedure for Determining Fenestration Product Solar Heat Gain Coefficients
- 1.1.3 AAMA Certification Program for Vinyl Window Manufacturers
- 1.2 **SUBMITTALS:** Submit to Contracting Officer for Approval.
- 1.2.1 **Certified Test Reports:** Submit for air infiltration, water resistance, and uniform loading in accordance with the above referenced specification.
- 1.2.2 **Catalog Data:** Shall describe each type of window, hardware, fastener, accessory, operator, screen, and finish. (as applicable)
- 1.2.3 **Certification of Compliance:** Submit certificates that equivalent windows have been successfully tested and meet the requirements specified herein for air infiltration and water penetration.
- 1.3 **DELIVERY AND STORAGE:** Deliver windows to project site in an undamaged condition. Use care in handling and hoisting during transportation and at the job site. Store windows and components out of contact with the ground, under cover, protected from weather, so as to prevent damage to the windows. Damaged windows shall be repaired to an “as new” condition or replaced as approved.
- 1.4 **PROTECTION:** Finished surfaces shall be protected during shipping and handling using manufacturers standard method.
- 1.5 **CERTIFICATION:** Window units shall be tested and certified for performance with the above referenced test methods. All window units shall be labeled certifying conformance with AAMA 101/I.S.2-97, NFRC 100-97, and Energy Star.

- 1.6 CERTIFIED FABRICATOR: Windows shall be fabricated by an AAMA Certified Fabricator.
- 1.7 WARRANTIES:
- 1.7.1 Windows 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 warranty to original homeowner on residential projects. 5 years factory labor included.
- 1.7.2 PVC finish shall be warranted against chipping, peeling, cracking, or blistering for a period of 20 years from date of acceptance.
- 1.7.3 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. 5 years factory labor included.
- 1.7.4 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 windows shall cover a period of not less than 10 years, and shall be provided in writing. A copy of the product and labor warranty must accompany other applicable warranties and be presented with bid.
- 1.8 PERFORMANCE REQUIREMENTS: Thermopane double Glazed Low E² insulating glass and argon gas fill may be optional.
- 1.8.1 Test for air infiltration shall be in accordance with AAMA 101/I.S.2-97. On a test, the air rate shall not be greater than 0.3 cfm per square foot of sash.
- 1.8.2 Test for water infiltration shall be in accordance with AAMA 101/I.S.2-97. Test results for different window sizes appear below.
- 1.8.3 Uniform Load Structural Test shall be in accordance with AAMA 101/I.S.2-97. Test results for different window sizes appear below.

Type	Rating (DP) ₁	Water Infl. ₂	Size Tested
F	C40	11.25	60 X 84
F	C45	11.25	72 X 60
F	R40	11.25	60 X 60

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

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

- 1.8.4 Test for Thermal Performance shall be in accordance with NFRC 100-97
- 1.8.5 Test for Condensation Resistance Factor (CRF) shall be in accordance with AAMA 1503-98

PART 2 – PRODUCTS

- 2.1 MANUFACTURER: Paradigm Geo-Picture Window as manufactured by Paradigm Window Solutions, 400 Riverside Industrial Parkway, Portland, ME 04103
- 2.2 MATERIALS: Windows shall conform to the requirements of specifications listed above. Provide windows of combinations, types and sizes indicated or specified.
- 2.2.1 Extruded PVC components produced from commercial quality virgin powder dry blend PVC (unplasticised polyvinyl chloride), conforms to AAMA 303 from sections in one piece, straight, true and smooth. Provide multi-chambered PVC extruded frames and sash in accordance with the manufacturers standard practice. Make fusion welded frame joints strong enough to develop full strength of members, with an external wall thickness of .070 “.

- 2.2.2 Glass and Glazing: Glass shall conform to DD-G-451 and not less than “B” quality. Window shall be in Factory glazed ¾” insulating glass conforming to ASTM-E-774 with TruSeal Swiggle seal spacer, manufactured by TruSeal Industries Inc., Cleveland, OH 44122. Glazing shall be integral glazing type system with architectural back bedded glazing tape and designed to maintain a watertight seal between glass and sash frame.
- 2.2.3 Caulking and Sealing: As specified or recommended by window manufacturer.

2.3 FABRICATION

- 2.3.1 Weathering Surfaces: All frame members shall be multi-chambered PVC extrusions utilizing double wall design without the need for reinforcement. Frame corners shall be fusion welded.
- 2.3.2 Drips and Weep Holes: Provided as required to return water to the outside.
- 2.3.3 Glazing Thickness: Design glazed windows and rabbets suitable for glass thickness specified above.
- 2.3.4 Provisions for Glazing: Design frame for outside 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.
- 2.3.5 Finishes: Exposed surfaces shall be factory finished. All windows for each building shall have same finish.
- 2.3.6 Finish: Exposed surfaces of aluminum extrusions shall be thoroughly cleaned, primed and given a baked enamel finish in accordance with AAMA 603.8 with total dry thickness not less than 0.8mil. The finish color shall match the vinyl window.

PART 3 – EXECUTION

3.1 INSTALLATION

- 3.1.1 Method of Installation: Install in strict accordance with the window manufacturer’s printed instructions And details, except as specified otherwise herein. Install windows without forcing into prepared window openings. Insulate perimeter of window frame with acceptable approved insulation material, as recommended by window manufacturer. Set windows at proper elevation, location, and reveal; plumb, square, level, and in alignment; and brace, strut, and stay properly to prevent distortion and misalignment. Bed screws in sill members, joints at mullions, contacts of windows with sills, built in fins, and sub-frames in approved sealant. Install windows in a manner that will prevent entrance of water. Provide sill angle flashed in sealant at windowsills.
- 3.1.2 Anchors and Fasteners: Make ample provision for securing units to each other, and to adjoining construction.
- 3.1.3 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.
- 3.2 CLEANING: Clean interior and exterior of window units of mortar, plaster, paint spattering spots, Sealants, and other foreign matter to present a neat clean appearance. Replace with new windows all stained, discolored, or abraded windows that can not be restored to their original condition.

END OF SECTION