

**DIAMOND 9000 SERIES
PICTURE WINDOW
MODEL 9200 SPECIFICATION**

TO FINISH SPECIFICATION: 1. Read then delete comments in *stars*. 2. Add or delete options in (parentheses). 3. Replace preceding standards with options in [brackets] or delete options in [brackets]. 4. Revise paragraph numbers and/or letters, as necessary.

SECTION 08520 ALUMINUM WINDOWS (Heavy Commercial)

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Material: aluminum windows and related components as on the drawings and specified in this section.
- B. Installation: all labor, materials, tools, equipment, and services needed to furnish and install aluminum windows.
- C. Glass and glazing.

(1.02 PRODUCTS FURNISHED BUT NOT INSTALLED)

Enter description, e.g., extra glass units to be supplied and stored for the future

(1.03 PRODUCTS INSTALLED BUT NOT FURNISHED)

Enter description, e.g., louver supplied by others to be installed in new window

1.04 RELATED SECTIONS - Section 07900 - Sealants

1.05 REFERENCES

- A. AAMA - American Architectural Manufacturers Association
 - 1. AAMA/NWWDA 101/I.S.2-97 "Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors"
 - 2. AAMA 502-02 "Voluntary Specification for Field Testing of Windows and Sliding Glass Doors"
 - 3. AAMA 611-98 "Voluntary Specification for Anodized Architectural Aluminum"
 - 4. AAMA 800-92 "Voluntary Specifications and Test Methods for Sealants"
 - 5. AAMA 910-93 "Voluntary 'Life Cycle' Specifications and Test Methods for Architectural Grade Windows and Sliding Glass Doors"

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6. AAMA 1503-98 "Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections"
 7. AAMA 2603-02 "Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels"
 8. AAMA 2604-02 "Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels"
 9. AAMA 2605-02 "Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels"
 10. AAMA CW-10-97 "Care and Handling of Architectural Aluminum from Shop to Site"
- B. ASTM - American Society for Testing and Materials
1. ASTM E 283-99 "Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors"
 2. ASTM E 330-97 "Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference"
 3. ASTM E 331-00 "Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference"
 4. ASTM E 774-00 "Specification for Sealed Insulating Glass Units"

1.06 SYSTEM DESCRIPTION

- A. AAMA Designation: F-HC-40.
- B. Windows: 2" frame depth; extruded aluminum with integral structural polyurethane thermal break in the frame members; equal-leg [\[flange\]](#) frame; finish factory-applied; frames factory-assembled.
- C. Configuration: fixed; glazing beads on interior.
- D. Glazing: exterior tape; silicone toe bead; 1" insulating glass; silicone heel bead; EPDM gasket; interior aluminum glazing bead; glass description in paragraph 2.04; factory-glazed.

1.07 PERFORMANCE REQUIREMENTS

- A. Conformance to F-AW60 specifications in AAMA/NWWDA 101/I.S.2-97 when tests are performed on the prescribed 5'0" x 8'0" minimum test size with the following test results:

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1. Air Infiltration: maximum .01 cfm/square foot when tested per ASTM E 283-99 at a static air pressure difference of 6.24 psf.
 2. Water Penetration: no uncontrolled water leakage when tested per ASTM E 331-00 at a static air pressure difference of 12 psf.
 3. Uniform Deflection: no more than L/175 when tested per ASTM E 330-97 at a static air pressure difference of 60 psf.
 4. Uniform Structural Load: no glass breakage or permanent damage to fasteners, and maximum .2% permanent deformation of the span of any frame member when tested per ASTM E 330-97 at a static air pressure difference of 60 psf.
- B. Thermal testing per AAMA 1503-98, at the prescribed 4'0" x 6'0" test size glazed with 1" insulating glass made with 1/8" clear, 1/8" hard coat low E, and argon gas, with the following test results:
1. Condensation Resistance Factor: minimum 50 frame and 54 glass CRF.
 2. Thermal Transmittance: maximum .50 BTU/HR/SQ.FT/F U value.

1.08 SUBMITTALS

- A. Shop drawings: elevations, floor plans, or window location chart; typical window elevations; scaled details of composite members and components not in manufacturer's data; and glazing details for factory-glazed units.
- B. Product data: manufacturer's specifications, test reports from an AAMA-accredited laboratory, and standard details verifying conformance with specifications.
- C. Samples: one sample of each specified finish for aluminum and other samples as requested by the architect.

1.09 QUALITY ASSURANCE

- A. Submit for prebid approval ten days prior to bid opening a sample window representing the bid window except for color and valid test reports from an AAMA-accredited laboratory conforming to test results in Paragraph 1.07.
- B. Acceptance will be by addendum only as no verbal approvals will be allowed.
- C. Submit bid on prequalified products in prebid written addendum. Bidder must identify manufacturer and model of product on which the bid is based.
- D. Furnish a valid AAMA "Notice of Product Certification" indicating that the windows for the project conform to AAMA/NWWDA 101/I.S.2-97.

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- E. Furnish visible, permanent IGCC certification labels for the CBA rating level on double insulating glass units.
- F. Manufacturer's warranties:
1. Windows: warrant for one year against defects in material or workmanship under normal use.
 2. Insulating glass units: warrant seal for five years **Contact DIAMOND WINDOW for other time frames** against visual obstruction from film formation or moisture collection between internal glass surfaces, excluding that caused by glass breakage or abuse.
 3. Paint finish: PPG...

Enter the following for an AAMA 2605 70% fluoropolymer paint finish

...Duronar™ organic finish conforming to AAMA 2605-02: warrant for fifteen years against chipping, peeling, cracking, chalking, or fading.

Or enter the following for an AAMA 2604 50% fluoropolymer paint finish

...Acrynar FX™ organic finish conforming to AAMA 2604-02: warrant for ten years against chipping, peeling, cracking, chalking, or fading.

Or enter the following for an AAMA 2603 acrylic paint finish

...Duracron™ organic finish conforming to AAMA 2603-02: warrant for five years against chipping, peeling, or cracking.

(G. Project Survey: **Contact DIAMOND WINDOW to register before project bid date* by installer and manufacturer's representatives; one year after date of completion; to recommend maintenance procedures.*)

1.10 DELIVERY, STORAGE, AND HANDLING - Handle and protect windows and accessories in accordance with AAMA CW-10-97 until project completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. DIAMOND WINDOW 9200 Fixed Thermal Aluminum Window
- B. Other acceptable manufacturers who have demonstrated a successful history of manufacturing for **Enter number** years equivalent products:
1. **Enter appropriate information as required**

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2. **Enter appropriate information as required**

2.02 MATERIALS - Aluminum extrusions: produced from commercial quality 6063-T5 alloy; free from defects impairing strength and durability.

2.03 FABRICATION

- A. Frame: joined with two stainless steel screws per corner.
- B. Frame joints: factory-sealed with sealant conforming to AAMA 800-92.

2.04 DOUBLE INSULATING GLASS UNITS

A. Performance

- 1. Dual-seal durability: conformance to ASTM E 774-00; visible, permanent IGCC certification label for CBA rating level.

(2. Other: **Enter U value, etc., information as required**)

B. Exterior glass lite

- 1. Thickness: 1/8" [3/16"] [1/4"].
- 2. Tint: clear [bronze] [gray].
- 3. Type: annealed [tempered] [laminated **Enter interlayer and lite descriptions**].

(4. Coating: solar-reflective.)

C. Interior glass lite

- 1. Thickness: 1/8" [3/16"] [1/4"].
- 2. Tint: clear [pattern #62 obscure].
- 3. Type: annealed [tempered] [laminated **Enter interlayer and lite descriptions**].

(4. Coating: hard coat low E on #3 surface.)

[2.04 TRIPLE INSULATING GLASS UNITS]

A. Performance: **Enter U value, etc., information as required**

B. Exterior glass lite

- 1. Thickness: 1/8" [3/16"].

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2. Tint: clear [bronze] [gray].
 3. Type: annealed [tempered].
- C. Internal film: Heat Mirror™ #SC75.
- D. Interior glass lite
1. Thickness: 1/8" [3/16"].
 2. Tint: clear [pattern #62 obscure].
 3. Type: annealed [tempered].

2.05 FINISH ON ALUMINUM EXTRUSIONS

- A. Application: on clean extrusions free from serious surface blemishes or scratches; on exposed surfaces visible when the installed product's operating sash are closed.

Enter the following for an AAMA 2605 70% fluoropolymer paint finish

- B. Coating: PPG Duranar™ with resin containing 70% fluoropolymer; thermosetting; alternative finishes will not be acceptable.
- C. Quality standard: conforming to AAMA 2605-02, including 10 years Florida exposure and 4000 hours humidity tests.
- D. Pretreatment: five-stage; zinc chromate conversion coating.
- E. Application: electrostatic spray and oven bake by approved applicator.
- F. Coating quantity: minimum one primer coat and one color coat.
- G. Dry film thickness: minimum 1.2 mils on exposed surfaces, except inside corners and channels.
- H. Color: chosen from manufacturer's standards.

(I. Additional different interior finish and color: subject to manufacturer's approval.)

Or enter the following for an AAMA 2604 50% fluoropolymer paint finish

- B. Coating: PPG Acrynar FX™ with resin containing 50% fluoropolymer; thermosetting; alternative finishes will not be acceptable.
- C. Quality standard: conforming to AAMA 2604-02, including 5 years Florida exposure and 3000 hours humidity tests.

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- D. Pretreatment: five-stage; zinc chromate conversion coating.
- E. Application: electrostatic spray and oven bake by approved applicator.
- F. Coating quantity: minimum one primer coat and one color coat.
- G. Dry film thickness: minimum 1.4 mils on exposed surfaces, except inside corners and channels.
- H. Color: chosen from manufacturer's standards.

(I. Additional different interior finish and color: subject to manufacturer's approval.)

Or enter the following for an AAMA 2603 acrylic paint finish

- B. Coating: PPG Duracron™ with acrylic resin; thermosetting.
- C. Quality standard: conforming to AAMA 2603-02, including 1 year Florida exposure and 1500 hours humidity tests.
- D. Pretreatment: five-stage; zinc chromate conversion coating.
- E. Application: electrostatic spray and oven bake by approved applicator.
- F. Coating quantity: one color coat.
- G. Dry film thickness: minimum .8 mils on exposed surfaces, except inside corners and channels.
- H. Color: chosen from manufacturer's standards.

Or enter the following for an AAMA 611 clear anodize finish

- B. Coating: clear anodize.
- C. Quality standard: conforming to AAMA 611-98.
- D. Thickness: AAM10C22A41 Class I - .7 mils #215 [AAM10C22A31 Class II - .4 mils #204].

Or enter the following for an AAMA 611 color anodize finish

- B. Coating: color anodize.
- C. Quality standard: conforming to AAMA 611-98.
- D. Thickness: AAM10C22A44 Class I - .7 mils.

- E. Color: #313 dark bronze [#311 light bronze] [#312 medium bronze] [#315 black].

(2.06 INSTALLATION ACCESSORIES)

- A. Material: extruded aluminum; nominal .062” wall; with exposed surfaces finished to match window color and finish performance; concealed fasteners; required weatherseals; designed for unrestricted expansion and contraction.
- B. Exterior: (wrap around panning;) (preset panning;) (two-piece mullion cover;) (two-piece head and jamb receptor with thermal break;) (subsill with thermal break and end dams;) (sill cover;) (slip-on expanders).
- C. Interior: (two-piece snap trim;) (stool cover).
- D. Mullions: with thermal break; (stack;) (offset stack;) (three-piece).

PART 3 - EXECUTION

3.01 PREPARATION - Prepare openings to be in tolerance, plumb, level, provide for secure anchoring, and in accordance with approved shop drawings.

3.02 INSTALLATION

- A. Install windows in accordance with manufacturer's recommendations and approved shop drawings with skilled craftspeople who have demonstrated a successful history of installing windows for **Enter number** years.
- B. Provide required support and securely fasten and set windows plumb, square, and level without twist or bow.
- C. Apply sealant per sealant manufacturer's recommendations at joints, wipe off excess, and leave exposed sealant surfaces clean and smooth.

(3.03 FIELD TESTING)

- A. Test installed units in conformance with AAMA 502-02 minimum requirements for air and water infiltration with the window manufacturer, contractor, and owner present.
- B. Select test units as directed by the owner's representative and use an AAMA-accredited laboratory provided by the owner or contractor.

3.04 ADJUSTING AND CLEANING - Adjust windows as necessary for weathertightness, and leave windows clean and free of construction debris.

END OF SECTION