

**DIAMOND 8000 SERIES  
HC SLIDER (GTWY) WINDOW  
MODEL 8301 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 (Commercial)**

**PART 1 - GENERAL**

1.01 SECTION INCLUDES

- A. Material: aluminum windows as on the drawings and specified in this section.
- B. Installation: labor, tools, and material needed to install aluminum windows.
- C. Glass and glazing.

(1.02 PRODUCTS FURNISHED BUT NOT INSTALLED)

*\*Enter description, e.g., extra sash 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/WDMA/CSA 101/I.S.2/A440-05 "Standard/Specification for windows, doors, and unit skylights"
  - 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 701-00 "Voluntary Specification for Pile Weatherstripping"
  - 5. AAMA 800-92 "Voluntary Specifications and Test Methods for Sealants"

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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 547-00 "Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential"
4. ASTM E 774-00 "Specification for Sealed Insulating Glass Units"

1.06 SYSTEM DESCRIPTION

- A. AAMA Designation: HS-HC40
- B. Windows: 3-1/4" frame depth; extruded aluminum with integral structural polyurethane thermal break in the frame and sash members; equal-leg [flange] [prime] frame; finish factory-applied; frames and sash factory-assembled.
- C. Configuration: horizontal sliding; single slide *\*enter configuration\** [XO], [OX], [OXO], [with top integral transom], [with bottom integral transom].
- D. Glazing: acrylic backbedding sealant; 7/8" insulating glass; flexible PVC bulb threaded into aluminum bead with color to match window; *\*enter either (white) or (black)\** rigid PVC bead]; glass description in paragraph 2.04; factory-glazed.

## 1.07 PERFORMANCE REQUIREMENTS

- A. Conformance to HS-HC40 specifications in AAMA/WDMA/CSA 101/I.S.2/A440-05 when tests are performed on the prescribed 99" X79" minimum test size with the following test results:
1. Air Infiltration: maximum .10 cfm/square foot when tested per ASTM E 283-99 at a static air pressure difference of 6.2 psf.
  2. Water Penetration: no uncontrolled water leakage when tested per ASTM E 547-00 at a static air pressure difference of 7.52 psf.
  3. Uniform Structural: window to be operable, and maximum .3% permanent deformation per member when tested per AAMA/WDMA/CSA 101/I.S.2/A440-05 at a static air pressure difference of 60 psf and deflection no greater than L/175 at 40psf
- B. Thermal testing per AAMA 1503-98, at the prescribed 4'0" x 6'0" test size glazed with 3/4" insulating glass made with 1/8" clear and 1/8" hard coat low E lites and argon gas, with the following test results:
1. Condensation Resistance Factor: minimum 54 frame and 59 glass CRF.
  2. Thermal Transmittance: maximum .48 BTU/HR/SQ.FT/F U value.

## 1.08 SUBMITTALS

- A. Shop drawings: window location chart; typical window elevations; details of assemblies, hardware, and glazing details for factory-glazed units.
- B. Product data: manufacturer's specifications and test reports from an AAMA-accredited laboratory.
- C. Samples: each specified finish for aluminum; other samples as requested.

## 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.
- 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\**

...Duramar™ 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

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- A. DIAMOND WINDOW 8301 Horizontal Sliding 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\**
  - 2. *\*Enter appropriate information as required\**

## 2.02 MATERIALS

- A. Aluminum extrusions: produced from commercial quality 6063-T5 alloy; free from defects impairing strength and durability.
- B. Hardware: two nylon wheel housings per sash with one ball bearing plated steel wheel per housing; wheel height adjustable by moving wheel from one wheel housing slot to the other; wheel housings mounted in fabricated slots in the bottom rail of each operating sash; one black zinc sweep lock on meeting stile; *(one aluminum automatic lock mounted on full height pull stile to engage frame jamb lip when sash is closed;)* anti-takeout bumper mounted in frame head to prevent sash removal unless sash is in full open position.
- C. Weatherstrip: secured in extruded ports; double rows on sash perimeters: rigid PVC weatherseal in one side of the horizontal sash rails, and pile conforming to AAMA 701-00 with polypropylene center fin in remaining locations.

*\*For optional screens, enter either “D. Insect screens” or “D. Protection screens”\**

*(D. Insect screens: half; held within master frame with four interior-mounted swivel clips; 5/16" x 3/4" x .019" \*enter either (white) or (bronze)\* roll formed [extruded with color to match window] tubular aluminum frame; corners mitered and gusset reinforced; 18 x 16 dark fiberglass [aluminum] mesh secured with PVC spline.)*

*(D. Protection screens: full; held by a top full-width aluminum hinge and two bottom automatic slide latches released from interior; extruded .078" tubular aluminum frame with same finish as window: 1-1/16" x 1-11/16" rails, 1-1/16" x 1-3/8" stiles, 1-1/16" x 2-1/4" mid-height brace bar; corners fastened with tamper-resistant screws; *\*Enter color and material for woven wire mesh or perforated sheet metal\** secured with interior pressure plates fastened with screws concealed with aluminum cover plates.)*

## 2.03 FABRICATION

- A. Frame: head and sill coped and fastened to jambs with two stainless steel screws per frame corner; corners factory-sealed with die cut 1/8" foam gaskets and sealant conforming to AAMA 800-92.

- B. Water control: one-piece tubular frame sloped sill with separate and offset weep slots; exterior weep covers with flaps to allow water to drain by gravity and resist wind-driven water.
- C. Sash: tubular vertical sash stiles coped and fastened to horizontal sash rail with a joint secured with two stainless steel screw per sash corner.
- D. Sash design: mechanical meeting stile interlock with one contact point; sash removed by lifting sash and swinging sash bottom to interior..

#### 2.04 DOUBLE INSULATING GLASS UNITS

##### A. Performance

- 1. 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

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1. Thickness: 1/8" [3/16"].
  2. Tint: clear [bronze] [gray].
  3. Type: annealed [tempered].
- C. Internal film: Southwall 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; on exposed surfaces visible when 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\**

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- 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.
- 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;) (sill cover;) (slip-on expanders).
- C. Interior: (two-piece snap trim;) (stool cover).
- D. Mullions: with thermal break; (stack;).

### **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.

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- 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 smooth and weathertight operation, and leave windows clean and free of construction debris.

END OF SECTION