



## SECTION 08 51 13.70

### ALUMINUM SINGLE HUNG AND SLIDING WINDOWS - PERFORMANCE LINE

Display hidden notes to specifier. (Don't know how? [Click Here](#))  
*Copyright 2019 - 2020 ARCAT, Inc. - All rights reserved*

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Aluminum single hung windows (Series 7610).
- B. Aluminum sliding windows (Series 7620).

##### 1.2 RELATED SECTIONS

- A. Section 06 10 00 - Rough Carpentry.
- B. Section 06 20 00 - Finish Carpentry.
- C. Section 07 90 00 - Joint Protection.
- D. Section 08 32 13 - Sliding Aluminum-Framed Glass Doors.
- E. Section 08 35 13.13 - Accordion Folding Doors.
- F. Section 08 44 16 - Glazed Bronze Curtain Walls.

##### 1.3 REFERENCES

- A. Aluminum Anodizers Council (AAC):
  - 1. AAC Class 1 -Anodized Architectural Aluminum Coatings.
- B. American Architectural Manufacturers Association (AAMA):
  - 1. AAMA/WDMA/CSA/101/I.S.2/A440 - North American Fenestration Standard/Specification for windows, doors, and skylights.
  - 2. AAMA 611.98 - Voluntary Specification for Anodized Architectural Aluminum.
  - 3. AAMA 2605 - Voluntary Specifications, Performance Requirements and Test Procedures for Pigmented for High Performance Organic Coatings on Aluminum Extrusions and Panels.
- C. American National Standards Institute (ANSI):
  - 1. ANSI Z97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings.
- D. ASTM International (ASTM):
  - 1. ASTM C1036 - Standard Specification for Flat Glass.

2. ASTM E283 - Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
  3. ASTM E330 - Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
  4. ASTM E547 - Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential.
  5. ASTM E774 - Standard Specification for the Classification of the Durability of Sealed Insulating Glass Units.
- E. Consumer Product Safety Commission (CPSC):
1. CPSC 16CFR-1201 - Safety Standard for Architectural Glazing Materials.
- F. National Fenestration Rating Council (NFRC):
1. NFRC 100 - Procedure for Determining Fenestration Product U-factors.
  2. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.

#### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
  2. Storage and handling requirements and recommendations.
  3. Installation methods.
- C. Shop Drawings: Show dimensions of aluminum windows, elevations, details of all window sections, anchorage and installation details, hardware, and interface with other products.
- D. Verification Samples: For each finished product specified, two samples, minimum size 6 inches (152 mm) square, representing actual product, color, and patterns.
- E. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- F. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic cleaning and maintenance of all components.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide aluminum windows by a single source manufacturer with at least 5 years documented experience.
- B. Installer Qualifications: Installer with documented experienced in the installation of manufacturer's aluminum window systems or similar products.
- C. 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, color, and sheen are approved by Architect.
  3. Remodel mock-up area as required to produce acceptable work.
- D. Pre-Installation Meetings: Conduct pre-installation meetings to verify project requirements, substrate conditions, construction documents, details and manufacturer's warranty requirements.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver products and materials in manufacturer's original, unopened, undamaged crating and pallets with identification labels intact.
- B. Storage and Protection: Protect stored products from damage. Store products upright in dry, well ventilated area out of direct sunlight, under cover, protected from weather, moisture and excessive dryness and construction activities.

#### 1.7 SEQUENCING

- A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

#### 1.8 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 recommended limits.

#### 1.9 WARRANTY

- A. Provide manufacturer's standard limited warranty against defects in workmanship and materials.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Western Window Systems, which is located at: 2200 E. Riverview Dr.; Phoenix, AZ 85034; ASD Toll Free Tel: 877-268-1300; Fax: 602-243-3119; Email: [request info \(bleizerowicz@westernws.com\)](mailto:bleizerowicz@westernws.com); Web: <https://www.wwscommercial.com>
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

#### 2.2 ALUMINUM SINGLE HUNG WINDOWS

- A. Basis of Design: Series 7610: Aluminum Single Hung Windows as manufactured by Western Window Systems.
  - 1. Aluminum single hung windows, thermally broken, fixed top sash, movable bottom sash, including frames, sills, and glazing to sizes indicated on the Drawings.
  - 2. Performance Requirements:
    - a. Air Infiltration Per ASTM E283: 0.29 cfm per sq ft (5.3 cu m per hr per sq m) at test pressure of 1.57 psf (75 Pa).
    - b. Water Infiltration Per ASTM E547: 9.8 psf (469.2 Pa).
    - c. Uniform Load Structural Per ASTM E330: 97.5 psf (4.67 kPa).
    - d. Uniform Load Design Pressure: 65 psf (3.11 kPa).
    - e. Overall Design Pressure Rating: DP65.
    - f. Certifications:
      - 1) AAMA/WDMA/CSA/101/I.S.2/A440-11.
      - 2) Performance Rating: CW-PG65

- 3) NFRC 100 for U-factor.
- 4) NFRC 200 for Solar Heat Gain Coefficient (SHGC).
3. Frames and Sills: Thermally broken. Extruded aluminum, 6063-T5.
  - a. Width: 72 inches (1829 mm) maximum.
  - b. Height: 120 inches (3048 mm) maximum.
  - c. Frame Depth: 5.875 inches (149 mm).
  - d. Vent Size: Custom heights up to half of window height.
  - e. Construction: Structural frame extruded shapes with sash members that are full-hollow (tubular) extrusions.
    - 1) Frame members fitted and mechanically joined at corners with stainless steel screws and sealed with high-grade silicone sealant.
    - 2) Sash members mitered, mechanically joined with crimped aluminum corner keys, and sealed with high-grade silicone sealant.
4. Weatherstripping: Bulb vinyl and closed cell foam tape.
5. Hardware: Stainless steel. Block and tackle-type balances.
6. Locking System: A positive-acting cam lock engages an integrated strike in the frame's center bar. Black finish only.
7. Glass: All glass to comply with safety glazing requirements of ANSI Z97.1 and CPSC 16CFR 1201.
  - a. Glazing: Argon Filled with LowE coating on No. 2 surface, from Cardinal Glass Industries.
    - 1) Glazing Type: LoE-270 all-climate coated glass.
    - 2) Glazing Type: LoE-366 high performance glass.
    - 3) Glazing Type: LoE-340 laminated, solar, and glare control glass.
    - 4) Glazing Type: As determined by the Architect.
    - 5) Glazing Type: \_\_\_\_\_.
    - 6) Enhanced Low-E Coating Used with Glazing Type Above: LoE-i89 enhanced winter performance glass.
    - 7) Overall Thickness: 1 inch (25 mm).
    - 8) Overall Thickness: As determined by the Architect.
    - 9) U-Factor: 0.35.
    - 10) U-Factor: As determined by the Architect.
    - 11) U-Factor: \_\_\_\_\_.
8. Aluminum Finish: Provide same finish on inside and outside.
  - a. Anodized Finish AAC - Class 1 Color: Satin.
    - 1) Per AAMA 611.98.
  - b. Anodized Finish AAC - Class 1 Color: Bronze.
    - 1) Per AAMA 611.98.
  - c. Paint Finish per AAMA - 2605 minimum.
    - 1) Color: Hillside bronze.
    - 2) Color: Bison beige.
    - 3) Color: Navajo white.
    - 4) Color: Briar.
    - 5) Color: Stonish beige.
    - 6) Color: Autumn night.
    - 7) Color: Warmtone.
    - 8) Color: Cinnamon toast.
    - 9) Color: Western white.
    - 10) Color: As determined by the Architect.
    - 11) Color: \_\_\_\_\_.
9. Screening: Extruded aluminum frames finished to match the window's frame color. Attached to window with an easy-to-use concealed ball catch system.
  - a. Mesh: 18 x 16 charcoal-colored vinyl-coated fiberglass mesh.

## 2.3 ALUMINUM SLIDING WINDOWS

- A. Basis of Design: Series 7620: Aluminum Sliding Windows as manufactured by Western Window Systems.
1. Aluminum sliding windows, with two sashes aligned horizontally, thermally broken, including frames, sills, and glazing to sizes indicated on the Drawings.
    - a. Sliding sashes: One.
  2. Performance Requirements:
    - a. Air Infiltration Per ASTM E 283: 0.14 cfm per sq ft(2.56 cu m per hr per sq m) at test pressure of 1.57 psf (75 kPa).
    - b. Water Infiltration Per ASTM E 547: 7.5 psf (359 Pa).
    - c. Uniform Load Structural Per ASTM E 330: 75 psf (3.59 kPa).
    - d. Uniform Load Design Pressure: 50 psf (2.39 kPa).
    - e. Overall Design Pressure Rating: PG50.
    - f. Certifications:
      - 1) AAMA/WDMA/CSA/101/I.S.2/A440-11.
      - 2) Performance Rating: CW-PG50
      - 3) NFRC 100 for U-factor.
      - 4) NFRC 200 for Solar Heat Gain Coefficient (SHGC).
  3. Frames and Sills: Thermally broken. Extruded aluminum, 6063-T5.
    - a. Double-Sash: Maximum area of 40 sq ft (3.7 sq m)
      - 1) Frame Height: 72 inches (1829 mm) maximum.
      - 2) Frame Width: 120 inches (3048 mm) maximum.
    - b. Triple-Sash: Maximum area of 50 sq ft (4.6 sq m)
      - 1) Frame Height: 72 inches (1829 mm) maximum.
      - 2) Frame Width: 120 inches (3048 mm) maximum.
    - c. Construction: Structural frame extruded shapes with sash members that are full-hollow (tubular) extrusions.
      - 1) Frame members fitted and mechanically joined at corners with stainless steel screws and sealed with high-grade silicone sealant.
      - 2) Sash members mitered, mechanically joined with crimped aluminum corner keys, and sealed with high-grade silicone sealant.
  4. Weatherstripping: Bulb vinyl and closed cell foam tape.
  5. Hardware: Stainless steel. Sliding panels are equipped with durable Celcon rollers mounted in nylon housings.
  6. Locking System: A positive-acting cam lock engages an integrated strike in the frame's center bar. Black finish only.
  7. Glass: All glass to comply with safety glazing requirements of ANSI Z97.1 and CPSC 16CFR 1201.
    - a. Glazing: Argon Filled with LowE coating on No. 2 surface, from Cardinal Glass Industries.
      - 1) Glazing Type: LoE-270 all-climate coated glass.
      - 2) Glazing Type: LoE-366 high performance glass.
      - 3) Glazing Type: LoE-340 laminated, solar, and glare control glass.
      - 4) Glazing Type: As determined by the Architect.
      - 5) Glazing Type: \_\_\_\_\_.
      - 6) Enhanced Low-E Coating Used with Glazing Type Above: LoE-i89 enhanced winter performance glass.
      - 7) Overall Thickness: 1 inch (25 mm).
      - 8) Overall Thickness: As determined by the Architect.
      - 9) U-Factor: 0.34.
      - 10) U-Factor: As determined by the Architect.
      - 11) U-Factor: \_\_\_\_\_.
  8. Aluminum Finish: Provide same finish on inside and outside.

- a. Anodized Finish AAC - Class 1 Color: Satin.
    - 1) Per AAMA 611.98.
  - b. Anodized Finish AAC - Class 1 Color: Bronze.
    - 1) Per AAMA 611.98.
  - c. Paint Finish per AAMA - 2605 minimum.
    - 1) Color: Hillside bronze.
    - 2) Color: Bison beige.
    - 3) Color: Navajo white.
    - 4) Color: Briar.
    - 5) Color: Stonish beige.
    - 6) Color: Autumn night.
    - 7) Color: Warmtone.
    - 8) Color: Cinnamon toast.
    - 9) Color: Western white.
    - 10) Color: As determined by the Architect.
    - 11) Color: \_\_\_\_\_.
9. Screening: Extruded aluminum frames finished to match the window's frame color. Attached to window with an easy-to-use concealed ball catch system.
- a. Mesh: 18 x 16 charcoal-colored vinyl-coated fiberglass mesh.

## PART 3 EXECUTION

### 3.1 EXAMINATION AND PREPARATION

- A. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
- B. Clean and prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Verify dimensions of openings fit net frame dimensions of window system. Verify openings are level, plumb, and square, with no unevenness.
- D. Verify that anchoring surface is in accordance with approved shop drawings.
- E. Commencement of installation constitutes acceptance of conditions.

### 3.2 INSTALLATION

- A. Install products in strict accordance with manufacturer's instructions, recommendations, and approved submittals.
- B. Flash and waterproof the perimeter of the opening and frame per manufacturer instructions.
- C. Securely fit frame, level, straight, plumb and square. Install frame in proper elevation, plane and location, and in proper alignment with other work.
- D. Thoroughly clean window frames, casings, and glass using materials and methods recommended by the window and glass manufacturer that do not cause defacement of work.

### 3.3 CERTIFICATION

- A. Provide written certification that all components have been successfully operated and will perform in accordance with the intent of this design.

### 3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION