

## **SECTION 08520 ALUMINUM WINDOWS**

Series 700 SERIES SH-HC50 Grade Tilt Single Hung Windows

### **PART 1 GENERAL**

#### **1.01 Work Included**

- A. Furnish and install aluminum architectural windows complete with hardware and related components as shown on drawings and specified in this section.
- B. All windows shall be STERGIS Series 700 SERIES SH-HC50 Tilt Single Hung. Other manufacturers requesting approval to bid their product as an equal must submit the following information fifteen days prior to close of bidding.
  - 1. A sample window (size and configuration) as per requirements of architect.
  - 2. Test reports documenting compliance with requirements of Section 1.05.
- C. Glass and Glazing
  - 1. All units shall be factory glazed.
- D. Single Source Requirement
  - 1. All products listed in Section 1.02 shall be by the same manufacturer.

#### **1.02 Related Work**

- A. *Section 08400 - Entrances and Storefronts*
- B. *Section 08480 - Balanced Door Assemblies*
- C. *Section 08640 - Glazed Patio Doors*
- D. *Section 08652 - Replacement Windows*
- E. *Section 08900 - Glazed Curtain Walls*
- F. *Section 08960 - Slope Glazing Systems*

#### **1.03 Items Furnished But Not Installed**

#### **1.04 Items Installed But Not Furnished**

#### **1.05 Testing and Performance Requirements**

- A. Test Units
  - 1. Air, water, and structural test unit shall conform to requirements set forth in AAMA/NWWDA 101/I.S.2 - 97 for HC grade.
- B. Test Procedures and Performances
  - 1. Windows shall conform to all AAMA/NWWDA 101/I.S.2 - 97 SH-HC45 performance grade requirements. In addition, the following specific performance requirements shall be met.
  - 2. Air Infiltration Test
    - a. With window sash closed and locked, test unit in accordance with ASTM E 283 at a static air pressure difference of 1.57 psf for HC grade.
    - b. Air infiltration shall not exceed .10 cfm per foot of perimeter crack length for HC grade.
  - 3. Water Resistance Test
    - a. With window sash closed and locked, test unit in accordance with ASTM E 331/ASTM E 547 at a static air pressure difference of 7.5 psf for HC grade.
    - b. There shall be no uncontrolled water leakage.
  - 4. Uniform Load Structural Test
    - a. With window sash closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference of 67.5 psf positive pressure and 67.5 psf negative pressure.

## Series SA700 SH-HC50 Grade Tilt Single Hung Windows

- b. At conclusion of test there shall be no glass breakage, permanent damage to fasteners, hardware parts, support arms or actuating mechanisms, nor any other damage which would cause the window to be inoperable.
- 5. Uniform Load Deflection Test
  - a. With ventilators closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference of 50 psf positive and negative pressure.
  - b. No member shall deflect over L/175 of its span.

### 1.06 Quality Assurance

- A. Provide test reports from AAMA accredited laboratories certifying the performance as specified in 1.05.
- B. Test reports shall be accompanied by a letter of product certification from the National Accreditation and Management Institute stating that the tested window meets or exceeds the referenced criteria for the appropriate AAMA/NWWDA 101/I.S. 2 - 97 for HC grade window type.

### 1.07 References

### 1.08 Submittals

- A. Contractor shall submit shop drawings, finish samples, test reports, and warranties.
  - 1. Samples of materials as may be requested without cost to owner, i.e., metal, glass, fasteners, anchors, frame sections, mullion section, corner section, etc.

### 1.09 Delivery, Storage, and Handling

### 1.10 Warranties

- A. Total Window System
  - 1. The responsible contractor shall assume full responsibility and warrant for one year the satisfactory performance of the total window installation which includes that of the windows, hardware, glass (including insulated units), glazing, anchorage and setting system, sealing, flashing, etc., as it relates to air, water, and structural adequacy as called for in the specifications and approved shop drawings.
  - 2. Any deficiencies due to such elements not meeting the specifications shall be corrected by the responsible contractor at his expense during the warranty period.

## PART 2 PRODUCTS

### 2.01 Materials

- A. Aluminum
  - 1. Extruded aluminum shall be 6063-T5 or T6 alloy and tempered.
- B. Hardware
  - 1. An extruded aluminum spring catch shall be provided at the sill of the lower sash.
- C. Balances
  - 1. Balances shall be tested in accordance with AAMA 902, "Voluntary Specification for Sash Balances".
  - 2. Balances shall meet all minimum Class 1 requirements with a minimum .70 Manually Applied Force ratio (MAF).
  - 3. Compliance to 902 Class 1 and Manually Applied Force ratio.
  - 4. Balances shall be of appropriate size and capacity to hold sash in position in accordance with AAMA 101-88, Section 2.2.3.3.2, and AAMA 902, Section 8.1.

- D. Weather Strip
  - 1. All primary weather strip shall be FIN-SEAL or equal.
- E. Glass

**STERGIS recommends that the window manufacturer furnish and factory glaze the glass as specified by the architect. For this reason it is desirable that Glass and Glazing be made part of this Section.**

- 1. Insulated glass shall be 1 inch thick overall as manufactured by STERGIS Window Products consisting of ( 3/16" ) exterior, ( 5/8" ) air spacer, and ( 3/16" ) interior.

- F. Thermal Barrier
  - 1. Barrier material shall be poured-in-place, two part polyurethane. A nonstructural thermal barrier is unacceptable.

## **2.02 Fabrication**

- A. General
  - 1. All aluminum main frame extrusions shall have a minimum wall thickness of .062". Frame sill members shall have a minimum wall thickness of .075".
  - 2. Mechanical fasteners, welded components and hardware items shall not bridge thermal barriers.
  - 3. Depth of frame shall not be less than 3 1/4".
- B. Frame
  - 1. Frame components shall be mechanically fastened.
- C. Sash
  - 1. All sash extrusions shall have a minimum wall thickness of .062".
  - 2. All horizontal sash extrusions shall be tubular.
  - 3. Corner connections shall be mechanically fastened.
  - 4. Top and bottom sash shall tilt in for cleaning.
  - 5. Tamper proof tilt latches shall be provided for both sash.

**Applicable only for windows requiring screens.**

- D. Screens
  - 1. *Screen frames shall be extruded aluminum.*
  - 2. *Screen shall be mounted in integral frame screen track.*
  - 2. *Screen mounting holes drilled in the window frame are unacceptable.*
  - 3. *Screen mesh shall be (enter aluminum or fiberglass).*
- E. Glazing
  - 1. Units shall be bead glazed with a snap-in aluminum extruded glazing bead and Tremco Poly-Weg EPDM gasket on the interior of the glass. The exterior of the glass shall be set in Tremco butyl glazing tape.
  - 2. Corners of glazing leg shall be toe sealed with a bead of silicone backbed compound.
- F. Finish
  - 1. Organic
    - a. Finish all exposed areas of aluminum windows and components with Duracron baked enamel conforming to AAMA 2603-98 finish specification. Color shall be dark bronze.

## **PART 3 EXECUTION**

### **3.01 Inspection**

- A. Job Conditions

## Series SA700 SH-HC50 Grade Tilt Single Hung Windows

1. Verify that openings are dimensionally within allowable tolerances, plumb, level, clean, provide a solid anchoring surface and are in accordance with approved shop drawings.

### **3.02 Installation**

- A. Use only skilled tradesmen with work done in accordance with approved shop drawings and specifications.
- B. Plumb and align window faces in a single plane for each wall plane and erect windows and materials square and true. Adequately anchor to maintain positions permanently when subjected to normal thermal movement, specified building movement, and specified wind loads.
- C. Adjust windows for proper operation after installation.
- D. Furnish and apply sealants to provide a weather tight installation at all joints and intersections and at opening perimeters. Wipe off excess material and leave all exposed surfaces and joints clean and smooth.

### **3.03 Adjusting and Cleaning**

- A. After completion of window installation, windows shall be inspected, adjusted, put into working order and left clean, free of labels, dirt, etc. Protection from this point shall be the responsibility of the general contractor.