

## SECTION 10 71 13 (10705) - EXTERIOR SUN CONTROL DEVICES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Horizontal and or inclined fixed, extruded-aluminum sun control assemblies.
- B. Related Sections include the following:
  - 1. Division 5 Section "Structural Steel" for supporting structure.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide exterior sun control assemblies capable of withstanding the effects of loads and stresses from dead loads, live loads, snow loads, snow drift loads, wind loads, and normal thermal movement without evidencing permanent deformation of assembly or components including blades, frames, and supports; noise or metal fatigue caused by blade rattle or flutter; or permanent damage to fasteners and anchors. Assemblies shall comply with state and local codes.
  - 1. Dead Load: As required by applicable building code.
  - 2. Live Load: As required by applicable building code.
  - 3. Snow Load: As required by applicable building code.
  - 4. Snow Drift Load: As required by applicable building code.
  - 5. Wind Load: Uniform pressure (velocity pressure) of (Insert Design Criteria) lb./sq. ft. (Insert Design Criteria Pa), acting inward or outward.
  - 6. Thermal Movements: Provide assemblies that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, and other detrimental effects:
    - a. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

#### 1.4 SUBMITTALS

- A. Product Data: Manufacturer's technical and descriptive data on sun control components and assemblies.
- B. Shop Drawings: For exterior sun control assemblies and accessories. Include plans; elevations; sections; and details showing profiles, angles, and spacing of blades, frames and supports. Show unit dimensions related to supporting and adjoining structures and construction. Indicate anchorage details and locations.
- C. Structural Calculations: Submit a comprehensive analysis of design loads, including dead loads, live loads, snow loads, snow drift loads, wind loads and thermal movement. Design calculations shall

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identify the moment and shear forces transferred to the structure or supports through the installation connections.

- D Structural Calculations shall be stamped and signed by a professional engineer registered in jurisdiction where Project is located.
- E Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for units with factory-applied color finishes.
- F Samples for Verification: Of each type of metal finish required, prepared on samples of same thickness and material indicated for final work. Where finishes involve normal color and texture variations, include sample sets showing the full range of variations expected.
- G Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

### 1.5 QUALITY ASSURANCE

- A. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of kind indicated. Engineering services are defined as those performed for installations of sun controls that are similar to those indicated for this Project in material, design, and intent.
  - 1. Welding Standards: As follows:
    - a. Comply with AWS D1.2, "Structural Welding Code--Aluminum."
    - b. Comply with AWS D1.3, "Structural Welding Code--Sheet Steel."
    - c. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification. SMACNA Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" recommendations for fabrication, construction details, and installation procedures.

### 1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual supporting and adjoining construction by field measurements before fabrication; and indicate recorded measurements on final Shop Drawings. Coordinate construction to ensure that sun control assemblies fit properly to supporting and adjoining construction and coordinate schedule with construction progress to avoid delaying the work.
  - 1. Established Dimensions: Where field measurements cannot be made without delaying the work, verify dimensions and proceed with fabricating of sun control assemblies without field measurements. Coordinate construction to ensure that sun control assemblies correspond to established dimensions.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers:
  - 1. Perfection Architectural Systems, Inc.  
2310 Mercator Drive

## Perfection Architectural Systems, Inc.

Orlando, FL 32807  
800-238-7207  
Fax 407-671-8252  
www.perfectionarch.com

### 2.2 MATERIALS

- A. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), alloy 6063-T5 or T-52.
- B. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy 3003 or 5005 with temper as required for forming, or as otherwise recommended by metal producer for required finish.
- C. Aluminum Castings: ASTM B 26/B 26M, alloy 319.
- D. Stainless-Steel Sheet: ASTM A 666, Type 302 or 304.
- E. Fasteners: Of same basic metal and alloy as fastened metal or 300 series stainless steel, unless otherwise indicated. Do not use metals that are incompatible with joined materials.
  - 1. Use types and sizes to suit unit installation conditions.
  - 2. Use Phillips flat-head screws for exposed fasteners, unless otherwise indicated.
- F. Anchors and Inserts: Of type, size, and material required for loading and installation indicated. Use nonferrous metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as needed for corrosion resistance. Use toothed steel or expansion bolt devices for drilled-in-place anchors.
- G. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC-Paint 12 but containing no asbestos fibers, or cold-applied asphalt emulsion complying with ASTM D 1187.

### 2.3 FABRICATION, GENERAL

- A. Assemble sun control assemblies in factory to minimize field splicing and assembly. Disassemble units as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- B. Sun control assemblies shall be assembled entirely by mechanical fasteners or welding. Components shall be joined with a minimum of two fillet welds each one-inch (25.4 mm) long produced with the Pulsed Gas Metal Arc Welding (GMAW/MIG) process with minimum 0.125" (3.18 mm) throat.
- C. Maintain equal sun control blade spacing, including separation between blades and frames to produce uniform appearance.
- D. Include supports, anchorages, and accessories required for complete assembly.
- E. Join frame members to one another and to fixed sun control blades with mechanical joints concealed from view, unless size of sun control assembly makes concealed, bolted connections between frame members necessary.

### 2.4 HORIZONTAL and/or INCLINED FIXED, EXTRUDED-ALUMINUM SUN CONTROLS

- A. Horizontal and/or inclined, fixed, extruded-aluminum sun control assemblies complying with the following:

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1. Blade: Specify blade type, material and thickness, as indicated.
2. Outrigger: Specify outrigger type, material and thickness, as indicated.
3. Fascia: Specify fascia type, material and thickness, as indicated.

### 2.5 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish sun controls after assembly.

### 2.6 ALUMINUM FINISHES

1. Clear Anodized: AA-M-10C-22A-31, Architectural Class II, comply with AAMA 607.1.
  2. Bronze Anodized: AA-M-10C-22A-44, Architectural Class I, comply with AAMA 608.1.
  3. Thermo-Set Enamel: AA-C-12C-42R-1, comply with AAMA 603.
    - a. Color: As selected by architect from manufacturer's standard color range.
- \*\* NOTE TO SPECIFIER \*\* Delete subparagraph above or below as required for the project.
4. Fluoropolymer Coating: 70 percent PVDF resin based fluoropolymer, AA-C-12C-42R-1, custom color as selected by architect, comply with AAMA 605.
    - a. Two coat application.
- \*\* NOTE TO SPECIFIER \*\* Delete subparagraph above or below as required for the project.
- b. Three coat application.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Coordinate Installation Drawings, diagrams, templates, instructions, and directions for anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

### 3.2 INSTALLATION

- A. Locate and place sun control assemblies level, plumb, and at indicated alignment with adjacent work.
- B. Use concealed anchorages where possible. Provide stainless steel/neoprene washers fitted to screws where required to protect metal surfaces and to make a weather tight connection.
- C. Form closely fitted joints with exposed connections accurately located and secured.
- D. Repair finishes damaged by cutting, welding, soldering, and grinding. Restore finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory, make required alterations, and refinish entire unit or provide new units.

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- a. Protect galvanized and nonferrous-metal surfaces from corrosion or galvanic action by applying a heavy coating of bituminous paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.

3.3 CLEANING AND PROTECTING

- A. Clean exposed surfaces of sun control devices that are not protected by temporary covering to remove fingerprints and soil during construction period.
- B. Clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.
- C. Protect sun control assemblies from damage during construction. Use temporary protective coverings where needed and approved by the sun control manufacturer.
- D. Clean and touch up minor abrasions in finishes with air-dried coating that matches color and gloss of, and is compatible with, factory-applied finish coating.

END OF SECTION