

## CSI SECTION 10700 Specification for Aluminum Sunshades & Exterior Sun Control Devices

### SECTION 10700 - Exterior Sun Control Devices

#### **PART 1 - GENERAL**

##### **1.1 Description:**

- A. Provide fixed Custom Sunshades as shown on the drawings, as specified, and as needed for a complete and proper installation.
- B. The drawings show the extent of the work, the dimensioned profile and depth of the sunshade to be provided.
- C. Related work specified elsewhere:
  - 1. Metal Fabrication – 05500
  - 2. List specification sections that affect clip attachment to structure such as structural steel, cold formed metal framing, masonry etc.
  - 3. List specification sections that may affect timing of installation of shades such as any exterior finish, painting, insulation, masonry or veneer.

##### **1.2 Industry Standard:**

- A. Reference:
  - 1. National Association of Architectural Metal Manufacturers (NAAMM)
  - 2. American Architectural Manufacturers Association (AAMA)

##### **1.3 Qualifications:**

- A. Manufacturers:
  - 1. Standard: Basis of design type and quality for the work under this section.
    - a. Sunshades as manufactured by:  
H&H Enterprises, Inc.  
12520 Grant Drive #100 ,Thornton, CO, 80241  
303-429-4847 Fax: 303-429-0826  
<http://www.h-hmetals.com/sunshades.htm>  
[info@h-hmetals.com](mailto:info@h-hmetals.com)
  - 2. Acceptable Manufacturers: Subject to compliance with these specifications:

H&H Enterprises, Inc.  
12520 Grant Drive #100 ,Thornton, CO, 80241  
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<http://www.h-hmetals.com/sunshades.htm>  
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##### **1.2 Submittals:**

- A. Product Data: Submit specifications, technical and descriptive data, and installation instructions from the manufacturer of the sunshades.
- B. Shop Drawings:
  - 1. Submit shop drawings for the system for architects and engineers approval prior to commencement of any work or fabrication. Submit \_\_\_\_ sets of shop drawings for approval.
    - a. Engineer of record to verify and analyze sunshade clip attachment to structure for local code and loads such as dead, live, snow, wind, thermal movement, and any collateral loads (e.g. light fixtures or signage) that may be mounted to sunshade.
  - 2. Show anchorage, details and connections for all the component parts, including connection of mounting clip to structure and adjacent construction.
  - 3. Drawings shall include plans, sections, and specific details for each unit.
  - 4. Drawings shall detail appropriate materials, alloys, and finishes of all parts including installation hardware.
- C. Warranty: Provide written warranty to the owner that all screen products will be free of defective materials or workmanship for a period of one (1) year from date of installation.

- D. Structural Calculations: Submit analysis of shade connection to mounting bracket by a professional engineer considering design loads such as dead, live, snow, wind, thermal movement, and any collateral loads (e.g. light fixtures or signage) that may be mounted to sunshade.

### **1.3 Quality Assurance:**

- A. Single subcontract responsibility: Subcontract the work to a single firm that has had not less than five (5) years experience in the design and manufacturing of work similar to that is required.
- B. Manufacturer must show evidence of having wholly owned manufacturing facilities. Outsourcing to a subcontracted manufacturer for assembly is not acceptable.
- C. Manufacturer must operate, design, assemble, and finish their product in the United States of America as a "Made in America" product. All materials must be procured from sources inside the United States of America.

## **PART 2 - PRODUCTS**

### **2.1 Materials:**

- A. Aluminum Extrusion Blades: ASTM B211, Alloy 6063-T5.
- B. Aluminum Plate ASTM B211, Alloy 6061-T6.
- C. Fasteners: Fasteners shall be stainless steel. Provide types, gauges and lengths to suit unit installation conditions.
- D. Anchors and Inserts: Use non-Ferrous metal or hot dip galvanized anchors and inserts for installation and elsewhere as required for corrosion resistance. Use stainless steel or zinc galvanized expansion bolt devices for drill-in place anchors. Furnish inserts, as required, to be set into concrete or masonry work. Field weld clips

### **2.2 Fabrication, General:**

- A. Provide fixed Sunshades and accessories of design, material, sizes, depth, arrangement, and thickness as indicated or as required for optimal performance with respect to strength; durability; and uniform appearance.
- B. Include supports, anchorage, and accessories required for complete assembly, including all attachment clips and necessary hardware for attachment to structure.
- C. Manufacturer shall allow +/- 1/8" thermal expansion room at each shade to compensate for dissimilar movement between building structure and aluminum sunshade structure. This design shall be incorporated as to not induce self destructing loads onto either shade or building veneer.
- D. No blade fasteners shall be visible after installation of sections. Provide cover plates at each outrigger end to conceal fasteners. Only mounting hardware shall be visible after installation.

### **2.3 Sunshade Construction:**

- A. Components:
  - 1. All fascia & blades shall be 6063-T5 aluminum-extruded members.
    - a. Blade infill shall be custom designed with integral screw boss that is hidden from view visible after installation. Size and spacing is to be as shown on the architectural details. Blade infill shall be airfoils, rectangle or tubular sections.
    - b. Blades to be miter cut and fitted to outrigger plates at mitered corner conditions.
  - 2. Outrigger components shall be 6061-T6 aluminum plates.
    - a. Outriggers shall be tapered or shaped aluminum flat plates, screwed to aluminum extrusion blades via countersunk fastener holes. Connections of aluminum extrusions to outriggers should be flush with no protruding fasteners visible after installation. Outriggers are pre-drilled for mounting to the structural sunshade clip tab via stainless steel expansion slip connection to compensate for thermal expansion.
  - 3. Clip brackets shall be of carbon steel.

- a. Connection of sunshade to building shall be friction type with the ability to properly level the shade during installation.
  - 4. Outrigger cover plates shall be furnished of 6061-T6 aluminum plates at each end of sunshade run to cover extrusion fasteners.
- B. Assembly: Components to be shop assembled in large practical sections to allow for immediate installation. Sections indicated on shop drawings to be assembled and shipped as units with cover plates and support arms, if required, shipped loose.
- 1. Fasteners shall be bagged in groups clearly identifying bolt locations and bag contents for easy installation. Manufacturer to provide anti-seize compound for any field bolted stainless hardware to facilitate proper erection.

#### **2.4 Aluminum Finish For Shades:**

- A. General: Comply with NAAMM "Metal Finishes Manual" Chapter 1 NAMM-2604-05 for finish designations and application recommendations, except as otherwise indicated. Apply finishes in factory after product assembly. Remove scratches and blemishes from exposed surfaces, which will be visible after completing finishing process.
- B. Type: Factory applied super durable powder coating. Finish shall have enhanced resistance to fading, chalking, gloss retention that meets or exceeds AAMA 2604.
- C. Pretreatment:
  - 1. Manufacturer to pre-sand, sandblast, or timesave all surfaces to be painted in a linear direction.
  - 2. Applicator to pretreat the aluminum with solutions to remove organic and inorganic surface soils, remove residual oxides, followed by an optional chrome phosphate conversion coating – at minimum 30mg/ft<sup>2</sup> – to ensure adhesion of paint to the aluminum (AAMA 6.0).
- D. Application: One primer coat, one color coat, for a minimum of 1.2 mills of dry film thickness.
- E. Color: Provide color as indicated or, if not otherwise indicated, as selected by architect from standard colors.
  - a. Colors as chosen by architect from: (Also available are all RAL Colors)
    - 1) Roman Haas: Regal Ultra Series
    - 2) Tiger Drylac: Series 38
    - 3) Spraylat: Arc 2001
    - 4) Or approved equal
- F. Finish Warranty: Furnish manufacturer's twenty (20) year limited warranty against adhesion loss, and standard ten (10) year limited warranty against gloss retention.

#### **2.5 Steel Clip Finish:**

- A. General: Comply with NAAMM "Metal Finishes Manual" Chapter 4 for finish designations and application recommendations, except as otherwise indicated. Apply finishes in factory after product assembly. Remove scratches and blemishes from exposed surfaces, which will be visible after completing finishing process.
- B. Type: Factory applied super durable powder coating. Finish shall have enhanced resistance to fading, chalking, and loss of gloss that meets or exceeds AAMA 2604.
- C. Pretreatment:
  - 1. Manufacturer to degrease parts to remove any dirt, oils, or other debris.
  - 2. Applicator to pretreat with a chrome phosphate conversion coating – at minimum 30mg/ft<sup>2</sup> – to ensure proper adhesion to metal surface (AAMA 6.0).
- D. Application: One coat epoxy zinc rich primer, one color coat, for a minimum 1.2 mills of dry film thickness.
- E. Color: Provide color as indicated to match sunshade.
- F. Finish Warranty: Furnish manufacturer's twenty (20) year limited warranty against adhesion loss, and standard ten (10) year limited warranty against gloss retention.

### **PART 3 - EXECUTION**

#### **3.1 Material Inspection:**

- A. Examine crates and reconcile to a shipping manifest or packing slip. Verify all required components are present.

### **3.2 Field Dimensions / Site Inspection:**

- A. Prior to Clip Installation:
  - 1. Verify conditions: Examine areas where work is to be performed and identify any conditions that could be detrimental to proper or timely completion.
- B. Prior to Shade Installation:
  - 1. Contractor Shall field confirm openings widths and elevations as shown on shop drawings prior to fabrication of shade sections. Field dimensions of clip locations shall be verified prior to fabrication of sections.
- C. Installation of sections should not proceed until all conditions are satisfactory.

### **3.2 Installation / Erection:**

- A. Comply with manufacturer's instructions and recommendations for installation of the work.
- B. Verify dimensions of supporting structure at the site by accurate field measurements so that the work will be accurately designed, fabricated, and fitted to the structure.
- C. Anchor Sunscreen to building substructure as indicated on the sunshade shop drawings and verified by the engineer of record.
- D. Erection Tolerances:
  - 1. Clips or Mounting Brackets:
    - a. Elevation clip Variation from level: 1/8" maximum in any column to column space or 20'-0" runs, non-cumulative.
    - b. Offsets in projection of clips front leading edge 1/16"+/-.
    - c. Veneer or Wall construction tolerance around clip projection. 1/4"+ outward.
    - d. Clip Plumbness: 1/16" in 6"
    - e. Clip projection level: 1/16" in 12"
  - 2. Shade Sections:
    - a. Projection Level: 1/8" in 4'-0"
    - b. Horizontal Level: 1/8" max in any column to column space or in 20'-0" runs, non-cumulative.
    - c. Shade section to section variation 1/32" at adjoining sections.
- E. Cut and trim component parts during erection only with the written approval of H&H Enterprises, Inc., and in accordance with H&H's recommendations. Restore finish completely. Remove and replace members where cutting and trimming has impaired the strength or appearance of the assembly as directed by H&H Enterprises.
- F. Do not erect warped, bowed, deformed or otherwise damaged or defaced members. Remove and replace any members damaged in the erection process as directed.
- G. Set units level, plumb and true to line, with uniform joints.
- H. Erect sunshade sections after all adjacent painting, masonry (including chemical treatments), roofing, electrical, glazing, and other similar work is completed above and below the shade sections.

### **3.3 Cleaning:**

- A. Clean exterior sunshades surfaces to prevent buildup of dust and debris. Clean sunshades as outlined in AAMA 609/610-02. "*Cleaning and Maintenance Guide for Architecturally Finishes Aluminum*" or NAAM Metal Finishes Manual "Cleaning Procedures" 1-13/1-14

### **3.4 Protection:**

- A. Protect Sunshade materials after installation to prevent damage by other trades. Special attention shall be taken to ensure no equipment or personell stands on top of sunshade system, nor sunshade system is used to hang any type of tarp or similar barricade or signage other than the design intent. Schedule should dictate that sunshades are one of the last erected items to help mitigate damage to the shading system.

END OF SECTION 10700