

## Airfoil Sunshades

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Suggested Specifications | Sections: 10 70 80; 05 58 00; 08 900; 10 53 00

### Part 1 – General

#### 1.01 Summary

- 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 sections include:
  - 1. Division 5 Metal Fabrication.

#### 1.02 Submittals

- A. Product Data
  - 1. Submit specifications, data, and installation instructions from the manufacturer of the sunshades.
- B. Shop Drawings
  - 1. Include elevations, sections, and specific details for each sunshade.
  - 2. Show anchorage details and connections for all component parts.
  - 3. Include signed and sealed structural calculations.
- C. Samples
  - 1. Submit one sample minimum 24" long of each material to be utilized at each sunshade with appropriate finish.
- D. Submit color chips for approval.
- E. Warranty
  - 1. Provide written warranty to the owner that all products will be free of defective materials or workmanship for a period of one year from date of installation.

#### 1.03 Quality Assurance

- A. Subcontract the work to a single firm that has had not less than ten years' experience in the design and manufacturing of work similar to that shown and required. For quality and delivery control, sunshade system must be purchased from a single source manufacturer. Sub-contracting of sunshade assembly is not acceptable.
- B. Performance
  - 1. Design sunshades to accommodate local requirements for snow and wind loading. Provide engineering calculations to support design. Calculations to be by a registered engineer licensed in the state the project is located. Analysis to include all components of sunshade including but not limited to deflection of blades, outriggers and fascia. Deflection to be limited to L/120, 3/4", or as required by code.
- C. Professional Engineer Requirements: Drawings and structural calculations to be signed and sealed by a professional engineer licensed to practice in the project state.

- D. Warranty: Provide written warranty to the owner that all products will be free of defective materials or workmanship for a period of one year from date of installation.

#### 1.04 Delivery, Storage and Handling

- A. Delivery: At the time of delivery all materials shall be visually inspected for damage. Any damaged boxes, crates, louver sections, etc. shall be noted on the receiving ticket and immediately reported to the shipping company and the material manufacturer.
- B. Storage:
  - 1. Material may be stored flat on end or on its side.
  - 2. Material may be stored either indoors or outdoors.
  - 3. If stored outdoors the material must be raised sufficiently off the ground to prevent it being flooded.
  - 4. If stored outdoors the material must be covered with a weatherproof flame-resistant sheeting or tarpaulin.
- C. Handling: Material shall be handled in accordance with sound material handling practices and in such a way as to minimize racking

## PART 2 PRODUCTS

### 2.01 Manufacturers

A. Basis of Design – manufactured by Construction Specialties subject to compliance with requirements listed. The louvers and related materials herein specified and indicated on the drawings shall be manufactured by: Construction Specialties, 3 Werner Way, Lebanon, NJ 08833. Tel: 800.233.8493. Email: [cet@c-sgroup.com](mailto:cet@c-sgroup.com). No substitutions.

B. Drawings and specifications are based on manufacturer's literature from Construction Specialties, Inc. drawings and specifications unless otherwise indicated. Other manufacturers must be approved equal by Architect/Owner.

### 2.02 Materials

- A. Aluminum Extrusions: ASTM B211, Alloy 6063-T5, 6063-T6 or 6061-T6.
- B. Fasteners: Fasteners to be aluminum or stainless steel. Provide types, gauges and lengths engineered to suit installation conditions by manufacturer or supplier. All fasteners to the structure are to be designed by a Professional Engineer licensed to practice in the project state and supplied by the manufacturer
- C. 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 lead expansion bolt devices for drill in place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

### 2.03 Fabrication, General

- A. Provide CS fixed sunshades and accessories materials, sizes, depths, arrangements, and material thickness to be 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.

## 2.04 Sunshade Models

### A. CS Horizontal Airfoil Lux Sunshade System.

- 1. Blade end caps shall be 1/4" custom profile flat aluminum plate members with front edge cut to match blade profile exactly with, 1/4" projection. Single end plates required at the ends of each sunshade run.
- 2. Sunshade supplier will provide extruded bird-mouth castings with stainless steel mounting hardware and back plate for securing sunshades to pre-cast walls.
- 3. 8" Airfoil Lux LED. Airfoil Lux nosing to be White PMMA Polycarbonate. Nosing will be UV resistant to fading. Integral LED must meet requirements listed within this specification. Airfoil Lux to be provided with a maximum 10' of wiring. Additional wiring into the building, transformers, and connection of electrical supply to the building is the responsibility of the electrical contractor. Reference: Electrical Specification for wiring and transformer requirements.
- 4. Integral LED strip to be waterproof RGB.
- 5. Integral LED lights to have a life span of 50,000 hours and produce 213 LM/ft. LED is UL Rated

## 2.05 Finishes *[Specifier note: select one below and delete others]*

- A. General: Comply with NAAMM "Metal Finishes Manual" for finish designations and application recommendations, except as otherwise indicated. Apply finishes in factory. Protect finishes on exposed surfaces prior to shipment. Remove scratches and blemishes from exposed surfaces that will be visible after completing finishing process. Provide color as indicated or, if not otherwise indicated, as selected by architect.
- B. 100% Fluoropolymer Resin **Powder Coat** System complying with AAMA-2605-5 standards for gloss and color retention. Finish thickness to be 1.5 to 3.0 mils.
  - 1. Finish to allow zero VOCs to be emitted into facility of application or at job site.
  - 2. Finish to adhere to a 4H Hardness rating.
  - 3. Furnish manufacturer's twenty (20) year warranty for finish for gloss and color retention

OR

### B. Wood Grain Powder Coat Finish:

- 1. Pretreatment: E-CLPS Chrome Free five stage aluminum pretreatment system. Complies with AAMA 2604 Superior Performance Standard and meets EPA, OSHA, State and Local environmental requirements and contains no chromates, cyanides, or other heavy metals.

Waste treatment is usually a simple pH neutralization and disposal to the sanitary sewer.

2. Allow zero VOC's to be emitted into facility of application or at job site.
3. Bonded Sublimated Film Finishes: Wood finish use a polyurethane powder coat with ink-based wood grain patterns sublimated into the base powder effectively tattooing the powder. The combined effect creates all the aesthetic aspects of real wood while offering the same environmental advantages of powder coated finishes.
4. Custom color to be selected from one of (11) CS standard wood grain finish patterns.
5. Includes manufacturers 10-year warranty.

#### B. Three Coat Fluorocarbon Coating

1. Sunshades to be finished with a minimum 1.4 mil (0.035mm) thick full strength 70% resin, 3 coat Fluoropolymer system.
2. All aluminum shall be thoroughly cleaned, etched, and given a chromated conversion pre-treatment before application of the Kynar/Hylar coating. The coating shall consist of a primer, a high **Metallic** color coat and a clear PVF2 topcoat. It shall receive a bake cycle of 17 minutes at 450°F. All finishing procedures shall be one continuous operation in the plant of the manufacturer.
3. Manufacturer to furnish an extended 20 limited warranty for the Kynar/Hylar coating. This limited warranty shall begin on the date of material shipment.

OR

#### B. Two Coat Fluorocarbon Coating

1. Sunshades to be finished with a minimum 1.0 mil (0.025mm) thick full strength 70% resin, 2 coat Fluoropolymer system.
2. All aluminum shall be thoroughly cleaned, etched, and given a chromated conversion pre-treatment before application of the **MICA II** coating. The coating shall consist of a primer and a pearlescent pigmented PFV2 topcoat. It shall receive a bake cycle of 17 minutes at 450°F. All finishing procedures shall be one continuous operation in the plant of the manufacturer.
3. Manufacturer to furnish an extended 20 limited warranty for the Kynar/Hylar coating. This limited warranty shall begin on the date of material shipment.

## PART 3 EXECUTION

**3.01 Examination:** Examine openings to receive the work. Do not proceed until any unsatisfactory conditions have been corrected.

### 3.02 Installation

- 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 sunshades to the building substructure as indicated on architectural drawings.
- D. Erection Tolerances:
  - 1. Maximum variation from plane or location shown on the approved shop drawings: 1/8" per 12 feet of length, but not exceeding 1/2" in any total building length or portion thereof (non-cumulative).
  - 2. Maximum offset from true alignment between two members abutting end to end, edge-to-edge in line or separated by less than 3": 1/16" (shop or field joints). This limiting condition shall prevail under both load and no-load conditions.
- E. Cut and trim component parts during erection only with the approval of the manufacturer or fabricator, and in accordance with his recommendations. Restore finish completely. Remove and replace members where cutting and trimming has impaired the strength or appearance of the assembly.
- 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.

### 3.03 Protection

- A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

### 3.04 Adjusting and cleaning

- A. Immediately clean exposed surfaces of the louvers to remove fingerprints and dirt accumulation during the installation process. Do not let soiling remain until the final cleaning.
- B. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to the material finishes. Thoroughly rinse surfaces and dry.
- C. Restore louvers and accessory components damaged during installation and construction so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by the Architect, remove damaged materials, and replace with new materials.
  - 1. Touch up minor abrasions in finishes with a compatible air-dried coating that matches the color and gloss of the factory applied coating.

End of Section