

SECTION 10 71 14 - METAL SUN SHADES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Modular, shop-fabricated, metal sun shades to mount on exterior building walls.
- B. Related sections:
 - 1. Section 04 20 00 - Unit Masonry.
 - 2. Section 051200 – Structural Steel

1.2 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM A36 – Carbon Structural Steel.
 - 2. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
 - 3. ASTM A526 - Sheet Steel, Zinc-Coated (Galvanized) by the Hot-Dip Process, Commercial Quality.
 - 4. ASTM A792 - Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 - 5. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus.
 - 6. ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
 - 7. ASTM B221 – Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
 - 5. ASTM D822 - Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
 - 9. ASTM D2794 – Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
 - 10. ASTM D3363 - Film Hardness by Pencil Test.

1.3 SUBMITTALS

- A. Provide in accordance with Section 01 33 00 - Submittal Procedures:
 - 1. Product data for sun shade components and finish.
 - 2. Shop drawings showing layout, dimensions, spacing of components, and anchorage and installation details.

3. Calculations for support system.
4. Sample: 24 by 24 inches minimum size sample of sun shade panel illustrating design, fabrication workmanship, and selected color coating.
5. Copy of warranty specified in Paragraph 1.5 for review by Architect.

1.4 QUALITY ASSURANCE

- A. Design structural support framing components for sun shades under direct supervision of professional structural engineer.
- B. Installer qualifications: Approved by manufacturer for installation of sun shade system.

1.5 WARRANTY

- A. Provide in accordance with Section 01 77 00 - Closeout Procedures:
 1. 20-year warranty for factory finish against cracking, peeling, and blistering under normal use.

PART 2 - PRODUCTS

- 2.1 Aluminum sun Screen basis of design – subject to compliance with requirement provide product indicated on drawing or approved equivalent.

2.2 MATERIALS

- A. Steel bar stock: ASTM A36.
- B. Steel tubing: ASTM A500, Grade B.
- C. Steel sheet: ASTM A526 galvanized or ASTM A792 Galvalume.
- D. Extruded aluminum: ASTM B221, Alloy 6063, Temper T-6.
- E. Sheet aluminum: ASTM B209, Alloy 6063, Temper T-6.

2.3 SUN SHADE SYSTEM

- A. Type: Aluminum sun shades consisting of modular framed panels with louver infill and outriggers for mounting on exterior wall surfaces.
- B. Sun shade panel: Modular panel with perimeter frame.
 1. As indicated on Drawings and approved shop drawings.
 2. Panel infill: Inclined, flanged louvers welded to cross bars.
 - a. Direct visual screening: 80 percent.
- C. Support system: Provide outriggers or other means for support of sun shade panel fabricated from same material as panel. System shall be designed to resist applicable dead, live, wind, and seismic loads.

1. Type: Straight projecting outriggers.
 2. Size: As required to provide sufficient structural support of panels.
- D. Fasteners: Stainless steel bolts, studs, and other types of size and spacing as recommended by manufacturer for specific condition and detailed on approved shop drawings.

2.4 FACTORY FINISH

- A. Sun shade panels, outriggers, and other components shall receive electrostatically applied colored polyester powder coating heat cured to chemically bond finish to metal substrate.
1. Minimum hardness measured in accordance with ASTM D3363: 2H.
 2. Direct impact resistance tested in accordance with ASTM D2794: Withstand 160 inch-pounds.
 3. Salt spray resistance tested in accordance with ASTM B117: No undercutting, rusting, or blistering after 500 hours in 5 percent salt spray at 95 degrees F and 95 percent relative humidity and after 1000 hours less than [3/16 inch] [5 mm] undercutting.
 4. Weatherability tested in accordance with ASTM D822: No film failure and 88 percent gloss retention after 1 year exposure in South Florida with test panels tilted at 45 degrees.
- B. Color: Selected by Architect from manufacturer's standard range.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prior to fabrication, field verify required dimensions.
- B. Coordinate sun shade installation with provision of exterior wall system to ensure proper structural support is provided, attachment of sun shades is compatible with substrate, and weathertightness of exterior envelop is maintained.

3.2 INSTALLATION

- A. Install sun shades in accordance with manufacturer's installation instructions and approved shop drawings.
- B. Insulate dissimilar metals to prevent electrolysis with bituminous paint or non-absorptive gasket to prevent contact.
- C. Allow for thermal expansion and contraction of metal components.
- D. Install shade panels plumb, level, free from distortion, and aligned with building elements and adjacent shade panels.
- E. Do not install bent, bowed, or otherwise damaged panels. Remove damaged components from site and replace.

- F. Attach shade panels to outriggers with appropriate fasteners for secure, permanent installation.
- G. After installation, touch-up damaged finish with paint supplied by manufacturer and matching original coating.

END OF SECTION 107114