

SECTION 10 73 16.13
METAL CANOPIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Freestanding metal canopies.

1.02 RELATED REQUIREMENTS

- A. Section 03 30 00 - Cast-in-Place Concrete: Concrete footings.

1.03 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2017a.
- B. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- D. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.
- E. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2021a.
- F. ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel; 2021, with Editorial Revision.
- G. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- H. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
- I. ASTM E2950 - Standard Specification for Metal Canopy Systems; 2014 (Reapproved 2020).
- J. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs; 2022.
- K. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2019, with Editorial Revision (2020).

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit product data sheets, including material descriptions and finishes, and preparation instructions and recommendations.
- C. Shop Drawings: Prior to commencement of fabrication, submit detailed shop drawings, showing profiles, sections of components, finishes, and fastening details.
- D. Design Data: Submit comprehensive structural analysis of design for the specified loads. Stamp and sign calculations by professional engineer.

1.05 QUALITY ASSURANCE

- A. Designer Qualifications: Perform design under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.
 - 1. Comply with applicable code for submission of design calculations as required for acquiring permits.

- B. Manufacturer Qualifications: Company specializing in the manufacture of products similar to those required for this project.
- C. Erector Qualifications: Company specializing in performing the work of this section.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site ready for erection.
- B. Package using methods that prevent damage during shipping and storage on site.
- C. Store materials under cover and elevated above grade.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Metal Canopies: Correct defective work within a two year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Metal Canopies:
 - 1. Austin Mohawk, Inc: www.austinmohawk.com.
 - 2. Duo-Gard: www.duo-gard.com.
 - 3. Mapes Canopies, LLC: mapescanopies.com.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 METAL CANOPIES

- A. Shop Fabricated Steel Canopy
 - 1. Pre-engineered steel system complying with ASTM E2950.
- B. Shop Fabricated Aluminum Canopy
- C. Configuration: Layout and dimensions, column layout, canopy clearance, fascia profile, and roof covering design as indicated on drawings.
 - 1. Installation: Freestanding.
 - 2. Column Anchorage: Column baseplates installed with anchor bolts or expansion anchors into concrete footing, slab, or pier.
 - 3. Structural Framing System: Steel.
 - 4. Covering Material: Aluminum.
 - 5. Drainage Concept: Water collected in decking conducted into perimeter drain beams and discharged through columns.
- D. Performance Requirements:
 - 1. Design and fabricate metal canopy system to resist wind, snow, live, and seismic loads without failure, damage, or permanent deflection in accordance with ASCE 7:

2.03 COMPONENTS

- A. Structural Steel Framing:
 - 1. Columns: ASTM A500/A500M, Grade B, round or rectangular tubing, sized to suit project design load requirements.
 - 2. Base and Top Plates: ASTM A36/A36M, with pre-drilled bolt holes.
 - 3. Beams: Wide flange, ASTM A572/A572M, Grade 50.
 - 4. Other Structural Steel Members: ASTM A36/A36M.
- B. Structural Aluminum Framing: Alloy and temper 6063-T6.
- C. Covering:
 - 1. Aluminum Decking:
 - a. Interlocking extruded aluminum decking modules.
 - 1) Extruded Decking: ASTM B221 (ASTM B221M), Alloy and temper 6005-T5, 6061-T6, or 6063-T6.

- D. Fascia: Same material as structural framework, 8 inches (203 mm) high.
- E. Anchor Bolts: ASTM A307 or ASTM A572/A572M, formed with bent shank, assembled with template for casting into concrete.
 - 1. Minimum exposed thread of 7 inches (178 mm) above footing and 23 inch (584 mm) minimum embedment.
 - 2. Provide nuts and washers as required for column leveling and plumbing.
- F. Concrete Footings: Refer to Section 03 30 00 for additional requirements.

2.04 SHOP FABRICATION

- A. Provide a complete system ready for erection at project site.
- B. Shop fabricate to the greatest extent possible; disassemble if necessary for shipping.
- C. Fabricate connections for bolt, nut, and washer connectors; Pre-welded or factory-welded connections are not acceptable.

2.05 FINISHES

- A. Aluminum Framing and Decking:
 - 1. Superior Performing Organic Coatings: AAMA 2605, multiple coats, thermally cured, polyvinylidene fluoride system.
 - 2. Color: As indicated on the drawings.

2.06 ACCESSORIES

- A. Structural Bolts: ASTM F3125/F3125M, Grade A325, minimum 3/4 inch (19 mm) diameter.
- B. Trim, Closure Pieces, and Flashings: Same material, thickness and finish as sheet metal decking; factory-fabricated to required profiles.
- C. Fasteners, Non-Structural: ASTM F593 stainless steel.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates and site area for conditions that might prevent satisfactory installation.
- B. Verify that foundation, electrical utilities, and placed anchors are in correct position.
- C. Do not proceed with installation until all conditions are satisfactory.

3.02 INSTALLATION - FRAMING

- A. Provide for erection and wind loads. Provide temporary bracing to maintain structure plumb and in alignment until completion of erection and installation.
- B. Set column base plates with non-shrink grout to achieve full plate bearing.
- C. Fasten columns to anchor bolts.
- D. Do not field cut or alter structural members without approval.
- E. After erection, prime welds, abrasions, and surfaces not shop primed.

3.03 INSTALLATION - CANOPY COVERING

- A. Install in accordance with manufacturer's instructions.
- B. Fasten metal decking to metal support members, aligned level and plumb.
- C. Install fascia panels, trim, and flashing.
- D. Separate dissimilar metals using concealed bituminous paint.
- E. Touch-up damaged finish coating using material provided by manufacturer to match original coating.

END OF SECTION

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