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Division of Colored Metal Products, Inc.

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SECTION 10 73 16

ALUMINUM CANOPY SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Design, fabrication, and installation of welded extruded aluminum canopy systems including:

1. Wall-mounted (cantilever) canopy systems
2. Overhead hanger rod supported canopy systems
3. Gutters, fascia, and internal drainage components
4. All structural supports and attachment hardware

1.02 RELATED SECTIONS

A. Section 03 30 00 - Cast-in-Place Concrete: Foundations, anchor placement, and blockouts.

B. Section 04 20 00 - Unit Masonry: Attachment to masonry walls.

C. Section 05 12 00 - Structural Steel Framing: Steel support framing where indicated.

D. Section 07 62 00 - Sheet Metal Flashing and Trim: Interface flashing.

E. Section 07 92 00 - Joint Sealants: Perimeter sealants.

1.03 REFERENCES

A. The Aluminum Association (AA):

1. Aluminum Design Manual, Current Edition

B. ASCE 7-22 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures

C. International Building Code (IBC) 2021

D. AWS D1.2/D1.2M - Structural Welding Code - Aluminum

E. ASTM Standards:

1. ASTM B221 - Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

2. ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate

F. AAMA Standards:

1. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum

2. AAMA 2604 - High Performance Organic Coatings on Aluminum Extrusions and Panels

3. AAMA 2605 - Superior Performing Organic Coatings on Aluminum Extrusions and Panels

1.04 SUBMITTALS

A. Product Data: Manufacturer's product information, specifications, and installation instructions for canopy components and accessories.

B. Shop Drawings: Include plan dimensions, elevations, and details. Show:

1. Layout and dimensions of canopy assemblies

2. Connection details to building structure

3. Anchorage and blocking locations

4. Expansion joint locations

C. Samples:

1. Selection: Manufacturer's standard range of colors for finishes selected.

2. Verification: 2-inch-square samples of each finish selected on the substrate specified.

D. Design Data: Design calculations bearing the seal of a Registered Professional Engineer, licensed in the state where the project is located.

E. Structural Certification: Provide Professional Engineer certification, sealed and signed by a licensed PE in the state where the project is located, certifying that the design meets or exceeds all applicable loadings (wind load, rain live load, dead load, snow load) for the specific project location in accordance with IBC 2021 and ASCE 7-22. Include reaction tables for Engineer of Record review.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Minimum 10 years documented experience in design, fabrication, and installation of architectural aluminum systems.

2. Manufacturer shall maintain engineering staff capable of producing project-specific designs and calculations.

3. Manufacturer shall operate its own fabrication facility with direct control over quality.

B. Installer Qualifications:

1. Installation shall be performed exclusively by manufacturer's trained installation crews.

2. Third-party installation is not acceptable.

3. Note: Alternative delivery arrangements may be available for programmatic accounts and special circumstances. Contact manufacturer.

C. Fabrication Standards:

1. All structural connections shall be welded in accordance with AWS D1.2.

2. Welding shall be performed in manufacturer's shop by AWS-certified welders.

3. Field welding is not permitted.

4. Minimum 100% weld penetration on all structural welds.

D. Field Measurements:

1. Take field measurements prior to preparation of shop drawings and fabrication to ensure proper fitting of work.

2. Contractor may provide field measurements during submittal stage in lieu of manufacturer field visit.

E. Pre-Installation Conference:

1. Conduct pre-installation conference with Architect, Contractor, and manufacturer's installer.

2. Review installation procedures, sequencing, and coordination with other trades.

1.06 COORDINATION

A. Coordinate work of this section with work of other sections including concrete, masonry, structural steel, waterproofing, and sealants.

B. Verify structural adequacy of supporting construction with Structural Engineer of Record prior to fabrication.

C. General Contractor Responsibilities:

1. Provide blocking in wall structure as indicated on approved shop drawings prior to installation (wall-hung systems).

2. Install foam blockouts per manufacturer's requirements (freestanding systems).

3. Pour concrete foundations to manufacturer's specifications.

4. Ensure protection of installed systems from other construction activities through Substantial Completion.

5. Foundation and footing design is not included in this section.

1.07 WARRANTY

A. Manufacturer's Warranty: Provide manufacturer's standard warranty covering structural integrity, water tightness, and workmanship for a minimum of one (1) year from date of Substantial Completion.

B. Finish Warranty:

1. AAMA 2605 (70% PVDF/Kynar 3-coat): 20-year warranty against chalk, fade, crack, or peel.

2. AAMA 2605 (70% PVDF/Kynar 2-coat): 10-year warranty against chalk, fade, crack, or peel.

3. AAMA 2604 (High-Performance Powder Coat): 5-year warranty against chalk, fade, crack, or peel.

4. AAMA 611 Class I Anodize (Clear): 10-year warranty against excessive pitting or coating failure.

5. AAMA 611 Class I Anodize (Color): 5-year warranty against excessive fading or coating failure.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original protective packaging with identification labels.

B. Store materials in clean, dry location protected from weather, moisture, and construction debris.

C. Handle materials to prevent damage to finishes and profiles.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: Jackson Williams, Division of Colored Metal Products, Inc., Shelby, North Carolina, Tel: (704) 482-7943.

B. Substitutions: Comparable products of other manufacturers will be considered under standard substitution procedures. Substitution requests must include documentation demonstrating compliance with all specification requirements including manufacturer qualifications.

2.02 MATERIALS

A. Aluminum Extrusions: ASTM B221, Alloy 6063-T6.

B. Aluminum Sheet and Plate: ASTM B209, Type 3003-H14 or 5052-H32.

C. Fasteners: 300 series stainless steel for exposed locations; aluminum or 18-8 stainless steel for concealed locations.

D. Gaskets: Dry seal santoprene pressure type, UV-resistant.

E. Aluminum Flashing: ASTM B209, Type 3003-H14, 0.040 inch minimum.

F. Gutter/Fascia Frame: Extruded aluminum, ASTM B221, Alloy 6063-T6.

1. Minimum size: 3" x 8" x 0.125" thick.

2. Available sizes: 6", 8", 10", 12" fascia depths.

3. Bullnose profile available.

G. Decking: Extruded aluminum interlocking panels, ASTM B221, Alloy 6063-T6.

1. Minimum size: 3" x 6" extruded panels.

2. Roll-form panels also available.

3. Crimped decking is not acceptable.

H. Support Tubes (Hanger Rod Systems): Extruded aluminum, ASTM B221, Alloy 6063-T6.

1. Minimum size: 2" x 2" x 0.125" thick.

I. Cantilever Arms: Extruded aluminum support arms concealed within fascia profile.

1. Maximum projection: 5 feet typical without additional engineering.

J. Hanger Rod Supports: Overhead suspension system.

1. 1/2" diameter threaded rod assembly with clevis hardware.

2. 3/4" overhead support brackets.

3. Large overhead support brackets for extended projections.

4. Maximum projection: 8 feet typical without additional engineering.

2.03 FABRICATION

A. Shop Assembly: Assemble components in shop to greatest extent possible to minimize field assembly.

B. Welding: In accordance with AWS D1.2. Make welds smooth and uniform using inert gas shielded arc. Perform suitable edge preparation to assure 100% penetration.

C. Gutter Frame Construction: Factory assemble gutter fascia frames to form a one-piece welded frame. Grind welds only where interfering with adjoining structure. Field welding is not permitted. Gutter frames constructed by mechanically fastening components together are not acceptable.

D. Deck Construction: Fabricate from extruded modules that interlock in a self-flashing manner. Positively fasten interlocking joints creating a monolithic structural unit capable of developing the full strength of the sections. Fastenings must have minimum shear strength of 350 pounds each.

E. Expansion Joints: Provide expansion joints to accommodate temperature changes of 120 degrees F. Provide expansion joints with no metal to metal contact.

2.04 FINISHES

A. Finish designations prefixed by AA comply with system established by the Aluminum Association for designating aluminum finishes.

B. Available Finishes:

1. Class II Clear Anodic Finish: AA-M12C22A31, complying with AAMA 611. Anodic coating 0.4 to 0.7 mils thick.

2. Class I Clear Anodic Finish: AA-M12C22A41, complying with AAMA 611. Anodic coating 0.7 mils or thicker.

3. Class I Color Anodic Finish: AA-M12C22A42/A44, complying with AAMA 611. Integrally colored or electrolytically deposited color coating 0.7 mils or thicker.

4. Baked-Enamel Finish: Complying with AAMA 2603. Minimum dry film thickness of 1.5 mils.

5. High-Performance Organic Coating (AAMA 2604): 50% PVDF resin-based coating system.

6. Fluoropolymer Coating (AAMA 2605): 70% PVDF (Kynar 500/Hylar 5000) resin-based coating, 2-coat or 3-coat system.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify building structure and supporting construction are ready for canopy installation.

B. Verify anchor and blocking locations match approved shop drawings.

C. Wall Attachment: Blocking in wall structure by General Contractor per approved shop drawings.

D. Report discrepancies to Architect and General Contractor before proceeding.

3.02 INSTALLATION

A. Install canopy systems in accordance with manufacturer's instructions and approved shop drawings.

B. Erect canopy true to line, level, and plumb.

C. Provide hairline miters and fitted joints.

D. Install with minimum slope to allow water flow to drainage points and eliminate ponding.

E. Seal perimeter of wall plates at building interface with compatible sealant.

3.03 CLEANING

A. Clean all canopy components promptly after installation using mild soap and water.

B. Remove construction debris and protective coverings.

C. Do not use abrasive cleaners or solvents that may damage finish.

3.04 PROTECTION

A. Protect materials during and after installation from damage by other trades.

B. Replace components damaged after installation.

END OF SECTION 10 73 16