SECTION 10530 – PREFABRICATED ALUMINUM CANOPIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Prefabricated aluminum canopies with internal drainage capabilities.

1.3 PERFORMANCE REQUIREMENTS

A. General: Provide prefabricated aluminum canopies that comply with performance requirements specified as determined by testing manufacturers’ standard assemblies similar to those indicated for this Project, by a qualified testing and inspecting agency.

B. Structural Performance: Provide prefabricated aluminum canopies capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated on the structural drawings.

C. Thermal Movements: Provide prefabricated aluminum canopies that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

1.4 SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of prefabricated aluminum canopies and associated accessories.

B. Shop Drawings: Submit shop drawings for fabrication and erection of prefabricated aluminum canopies and accessories. Include plans, elevations and details of sections and connections to adjoining work. Indicate materials, finishes, fasteners, joinery and other information to determine compliance with specified requirements. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer, registered in the State of Florida.
responsible for their preparation. Submit design calculations confirming the prefabricated aluminum canopies meet or exceed all structural requirements of the authorities having jurisdiction.

C. Warranties: Special warranties specified in this Section.

D. Qualification Data: For Installer, manufacturer, professional engineer.

1.5 QUALITY ASSURANCE


B. Structural Performance: Provide prefabricated aluminum canopy systems capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
   1. Design Loads: As indicated on Drawings.
   2. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer registered in the State of Florida.

C. Field Measurements: Verify size, location and placement of prefabricated aluminum canopies prior to fabrication.

D. Installer Qualifications: An experienced erector who has specialized in erecting and installing work similar in material, design, and extent to that indicated for this Project and who is acceptable to manufacturer.

E. Shop Assembly: Coordinate field measurements and shop drawings with fabrication and shop assembly to minimize field adjustments, mechanical attachment and field assembly of units. Pre-assemble units in ship to greatest extent possible and disassemble as necessary for shipping and handling limitations. Clearly mark units for re-assembly and coordinated installation.

F. Warranties: Manufacturer's standard one (1) year warranty.

G. Source Limitations: Obtain each type of prefabricated aluminum canopies through one source from a single manufacturer.

H. Product Options: Drawings indicate size, profiles, and dimensional requirements of prefabricated aluminum canopies are based on the specific system indicated.
   1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, sheets, prefabricated aluminum canopies components, and other manufactured items so as not to be damaged or deformed. Package prefabricated aluminum canopy components for protection during transportation and handling.
B. Unload, store, and erect prefabricated aluminum canopy components in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack prefabricated aluminum canopy components horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store components to ensure dryness, with positive slope for drainage of water. Do not store components in contact with other materials that might cause staining, denting, or other surface damage.

D. Protect strippable protective covering on metal prefabricated aluminum canopy components from exposure to sunlight and high humidity, except to extent necessary for period of prefabricated aluminum canopy installation.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify locations of structural members and wall opening dimensions by field measurements before prefabricated aluminum canopies fabrication and indicate measurements on Shop Drawings.

1.8 COORDINATION

A. Coordinate metal prefabricated aluminum canopies with structural supports and other adjoining work to provide a secure and noncorrosive installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:

1. Basis-of-Design Products: The design for each prefabricated walkway covers specified is based on the product specified. Subject to compliance with requirements, provide either the named product or a comparable product by another manufacturer.

2.2 PREFABRICATED ALUMINUM CANOPY DESIGN

A. Protective cover shall be all welded extruded aluminum system complete with internal drainage. Non-welded systems are not acceptable.

2.3 PREFABRICATED ALUMINUM CANOPY MATERIALS

A. Aluminum Members: All sections shall be extruded aluminum 6063 alloy, heat treated to T-6 temper.

B. Fasteners: Fasteners shall be aluminum, 18-8 stainless steel or 300 series stainless steel.
C. Protective coating: Aluminum columns embedded in concrete shall be protected by clear acrylic.

D. Grout: Grout shall be 2000 p.s.i. compressive strength, 1 part Portland cement and 3 parts masonry sand. Add water to produce pouring consistency.

E. Gaskets: Gaskets shall be dry seal santoprene pressure type.

F. Aluminum Extrusions: Extruded Aluminum Alloy 6063-T6:
   1. Surface: Smooth, flat finish.
   2. Exposed Finishes: Apply the following coil coating, as specified below.

G. High-Performance Organic Finish (2-Coat Fluoropolymer): AA-C12C40R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: conversion coating; Organic Coating: manufacturer's standard 2-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
   1. Color and Gloss: As selected by Architect from manufacturer's full range.

2.4 PREFABRICATED ALUMINUM CANOPY CONSTRUCTION

A. General: Provide factory-formed internally draining prefabricated aluminum canopies of design, materials, sizes, depth, arrangement, and metal thickness as indicated and as required for optimum performance with respect to strength; durability; and uniform appearance. Include supports, anchorages, and accessories required for complete assembly.

B. Basis-of-Design Product: as manufactured by Dittmer Architectural Aluminum, 1006 Shepard Road, Winter Springs, Florida, 32708, phone 800-822-1755 or a comparable product.
   a. Exterior Finish: As selected by Architect from manufacturer's full range.

2.5 PREFABRICATED ALUMINUM CANOPY COMPONENTS

A. Columns: Columns shall be radius-cornered tubular extrusion of size shown on drawings with cutout and internal diverter for drainage where indicated. Circular downspout opening in column not acceptable.

B. Beams: Beams shall be open-top tubular extrusion of size and shape shown on drawings, top edges thickened for strength and designed to receive deck members in self-flashing manner. Structural ties shall be installed in tops of all beams.

C. Deck: Deck shall be extruded self-flashing sections interlocking into a composite unit. Closures at deck ends shall be welded plates.

D. Fascia: Fascia shall be manufacturer's standard shape. Size as indicated on drawings.
2.6 FABRICATION

A. General: Fabricate and finish prefabricated aluminum canopy accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.

1. Form panel lines, breaks, and angles to be sharp and true, with surfaces free from warp and buckle.

B. Bent Construction: Beams and columns shall be factory welded with neatly mitered corners into one-piece rigid bents. All welds shall be smooth and uniform using an inert gas shielded arc. Suitable edge preparation shall be performed to assure 100% penetration. Grind welds only where interfering with adjoining structure to allow for flush connection. Field welding is not permitted. Rigid mechanical joints shall be used when shipping limitations prohibit the shipment of fully welded bents.

C. Deck Construction: Deck shall be manufactured of extruded modules that interlock in a self-flashing manner. Interlocking joints shall be positively fastened at 8" O.C. creating a monolithic structural unit capable of developing the full strength of the sections. The fastenings must have minimum shear strength of 350 pounds each. Deck shall be assembled with sufficient camber to offset dead load deflection.

2.7 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, supports, and other conditions affecting performance of work.

1. Examine column sleeves and anchor bolts and other prefabricated aluminum canopy support components to verify that they have been installed within alignment tolerances required by prefabricated aluminum canopy manufacturer.

2. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.
3.2 PREPARATION

A. Erection shall be performed after all concrete, masonry, and roofing work in the vicinity is completed and cleaned.

B. Clean substrates of substances harmful to insulation, including removing projections capable of interfering with attachment.

C. Install flashings and other sheet metal to comply with requirements specified in Division 7 Section “Sheet Metal Flashing and Trim.”

3.3 PREFABRICATED ALUMINUM CANOPY INSTALLATION, GENERAL

A. General: Install prefabricated aluminum canopies in orientation, sizes, and locations indicated on Drawings and in full compliance with manufacturer’s instructions. Install extrusions perpendicular to vertical supports, unless otherwise indicated. Anchor prefabricated aluminum canopies and other components of the work securely in place, with provisions for thermal and structural movement.

1. Field cutting of prefabricated aluminum canopy components by torch is not permitted.
2. Anchor prefabricated aluminum canopies to building substructure as indicated.
3. Cut and trim component parts during erection only with the approval of the manufacturer or fabricator, and in accordance with their recommendations. Restore finish completely. Remove and replace members where cutting and trimming has impaired the strength or appearance of the assemblies as directed.
4. Do not erect warped, bowed, deformed or otherwise damaged or defaced members. Remove and replace any members damaged in the erection process as directed.
5. Locate and space fastenings in uniform vertical and horizontal alignment.
6. Install flashing and trim as prefabricated aluminum canopy work proceeds.

B. Column Sleeves: Column sleeves (Styrofoam blockouts) or anchor bolts (if required) shall be furnished by Canopy manufacturer and installed by the General Contractor.

C. Erection: Protective cover shall be erected true to line, level and plumb. Aluminum columns embedded in concrete shall be protected by clear acrylic. Downspout columns shall be filled with grout to the discharge level to prevent standing water. Non-draining columns shall have weep holes installed at top of concrete to remove condensation.

3.4 ERECTION TOLERANCES

A. Erection Tolerances: Variation from level: +/- 1/4” maximum in any column to column space or 20'-0” runs, non-cumulative.

3.5 FIELD QUALITY CONTROL

A. Remove and replace applications of prefabricated aluminum canopies where inspections indicate that they do not comply with specified requirements.
3.6 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as prefabricated aluminum canopies are installed, unless otherwise indicated in manufacturer's written installation instructions. Upon completion of prefabricated aluminum canopy installation, clean finished surfaces as recommended by prefabricated aluminum canopy manufacturer. Maintain in a clean condition during construction.

B. Replace prefabricated aluminum canopy components that have been damaged or have deteriorated beyond successful repair.

END OF SECTION 10530