SECTION 07 41 16
METAL PANEL SOFFITS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes: Formed metal soffit panels.

1.02 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal soffit panel assemblies capable of withstanding the effects the following loads and stresses within limits and under conditions indicated, based on testing according to ASTM E 1592:
   1. Design Wind Loads: Uniform pressure of 20 lbf/sq. ft. acting inward or outward.
   2. Deflection Limits: Metal soffit panel assemblies shall withstand wind loads with horizontal deflections no greater than 1/240 of the span.

1.03 SUBMITTALS

A. Product Data: For metal soffit panels and other soffit system components.

B. Shop Drawings: Show fabrication and installation layouts of metal soffit panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details. Show locations of perforated panels and calculate open area as a percentage of the total panel area.

C. Samples: For each type of exposed finish required.

D. Maintenance data.

E. Warranties: Samples of special warranties.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

1.05 WARRANTY

A. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal soffit panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
   1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 PANEL MATERIALS

A. Aluminum Sheet: Coil-coated sheet, ASTM B 209, alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.

B. Panel Sealants: Provide tapes or liquid-applied, non-hardening sealant as standard with manufacturer for panel type. Generally, furnish butyl-rubber based sealants for concealed applications and silicone-based sealants conforming to ASTM C 920 for exposed applications.

2.02 MISCELLANEOUS METAL FRAMING

A. Miscellaneous Metal Framing, General: ASTM C 645, cold-formed metallic-coated steel sheet, ASTM A 653/A 653M, G90 galvanized or coating with equivalent corrosion resistance unless otherwise indicated.

B. Zee Clips: 0.0359-inch nominal thickness.

C. Cold-Rolled Furring Channels: Minimum 1/2-inch-wide flange.
1. Nominal Thickness: As required to meet performance requirements but not less than 0.064 inch.
2. Depth: As indicated on Drawings.
3. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with 0.040-inch nominal thickness.
4. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.

2.03 MISCELLANEOUS MATERIALS

A. Panel Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads. Provide exposed fasteners with heads matching color of metal soffit panels by means of plastic caps or factory-applied coating. Provide EPDM, PVC, or neoprene sealing washers.

2.04 METAL SOFFIT PANELS

A. Panels: Provide factory-formed metal soffit panels designed to be installed by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners in side laps. Include accessories required for weathertight installation.
1. Basis-of-Design: Subject to compliance with requirements, provide Fabral; Posi-Lok or comparable product by one of the following:
   a. Firestone Metal Products/Una-Clad.
   b. Metal Sales Manufacturing Corporation.
   c. Petersen Aluminum Corporation.
2. Material: Aluminum sheet, 0.032 inch thick; smooth surface.
3. Exposed Finish: Sheet metal coil coated with AAMA 2605, 2-coat fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat.
   a. Color: As selected by Architect from manufacturer's full range.

4. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.
5. Profile: V groove.
6. Perforations: 25 percent of panel area shall be open area. Furnish perforated panels in quantity required to provide the specified open area. Rest of panels unperforated.
7. Panel Coverage: As shown on Drawings.

2.05 ACCESSORIES

A. Trim: Provide flashing and trim as required to seal against weather and to provide finished appearance. Fabricated flashing and trim from same material as panels, and finish to match.

2.06 FABRICATION

A. General: Fabricate and finish metal wall panels and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of item indicated.

PART 3 - EXECUTION

3.01 PREPARATION

A. Miscellaneous Framing: Install runners, furring, and other miscellaneous panel support and leveling members and anchorages according to ASTM C 754 and metal panel manufacturer's written recommendations.

B. Install furring members to which panels will be clipped perpendicular to the direction in which the panels will run.

3.02 METAL SOFFIT PANEL INSTALLATION

A. General: Install metal soffit panels in accordance with manufacturer's printed installation instructions and approved shop Drawings. Fasten panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.

B. Zee Clips: Provide zee clips of size indicated or, if not indicated, as required to act as standoff from subgirts for thickness of insulation indicated. Attach to subgirts with fasteners.

C. Panels: Install metal soffit panels full width or depth of soffits, with layout as shown on Drawings. Install panels perpendicular to furring.
1. Install with concealed clips and fasteners.
2. Flash and seal with weather closures at perimeter of soffit where panels butt a different material, and at perimeter of all openings.

3. Apply a continuous ribbon of sealant tape to weather-side surface of fastenings on end laps; on side laps of nesting-type panels; on side laps of corrugated nesting-type, ribbed, or fluted panels; and elsewhere as needed to make panels weathertight.
4. At panel splices, nest panels with minimum 6-inch end lap, sealed with butyl-rubber sealant and fastened together by interlocking clamping plates.

3.03 ACCESSORY INSTALLATION

A. General: Install accessories and trim with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

3.04 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal soffit panels are installed. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Keep panels clean during the rest of the construction period.

END OF SECTION 07 41 16