

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

SECTION 07 61 10

PREFORMED ARCHITECTURAL METAL SOFFIT PANELS

PART 1: GENERAL

1.01 SECTION INCLUDES

- A. Preformed Architectural metal soffit, and ceiling panels.

1.02 CONDITIONS

- A. Work under this section shall be subject to the requirements of the Basic Requirements Section 01001 that are included as part of these Specifications.

1.03 SCOPE OF WORK

- A. General: This section pertains to the furnishing of all labor, materials, equipment, and services necessary to provide an exterior metal soffit as shown on the drawings and/or specified herein. The facing system shall be a single responsibility including weathertightness, sealants, and resistance to horizontal wind loads. Steel studs or plywood sheathing are not to be included as an integral part of the metal soffit system.
- B. Related Work Specified Elsewhere:
 - 1. Miscellaneous metal is included under Division 5.
 - 2. Plywood sheathing is included under Division 6.
 - 3. Shingle roofing is included under Division 7.
 - 4. Caulking and sealants is included under Division 7.
 - 5. Metal studs are included under Division 9.

1.04 REFERENCE STANDARDS, CURRENT OF:

- A. Aluminum Association – AA
 - 1. Specifications for Aluminum Sheet Metal Work in Building Construction.
 - 2. Specifications for Aluminum Structures.
 - 3. Standards and Data.
- B. American Iron & Steel Institute – AISI.
 - 1. Cold Formed Steel Design Manual.
- C. ASTM
 - 1. A446-Physical Qualities of Steel.
 - 2. A525-Aluminum Coated Steel.
 - 3. B209-Aluminum & Plate.

1.05 SUBMITTALS

- A. Shop drawings must be in scale large enough to clearly show all layers. Include dimensions of fabricated work, reference dimensions to the structure, type, size and spacing of fasteners, material thickness and finishes, plan layout with erection sequence and coordination required with other trades. Shop drawings must be reviewed and approved by the Architect prior to commencement of work.

- B. Submit with the drawings copies of specifications data on the panels, anchor clip, fasteners, material samples, or mock-ups required.
- C. Prior to completion, submit quality control data certifying the materials furnished for the project are the same as those tested.
- D. Submit color samples as indicated by the Architect for approval by Owner prior to ordering or installation.

1.06 GUARANTEES

- A. At substantial completion of the building or acceptance by Owner, submit panel manufacturer's 20-year warranty on finish durability.
- B. Subcontractor's 2-year guarantee on workmanship and leaks.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. ACCEPTABLE MANUFACTURERS:
 1. #150-12 (V-grooved Panel as shown on the architectural drawings) Panel by Merchant Evans, Inc. Burlington, New Jersey or approved equal as follows:
 2. MBCI Metal Roof and Wall Systems.
 3. Berridge Manufacturing Company, Houston Texas.
 4. ABC – Architectural Building Components, Houston, Texas.
 5. ENGLERT, INC., Perth Amboy, New Jersey.
 6. McElroy Manufacturing Co.
 7. PAC-CLAD Person Aluminum.
 8. Merchant and Evans, Co.
- B. Manufacturer shall have had a least ten years experience in Architectural Metal Manufacturing. Manufacturer shall demonstrate past experience with examples of projects of similar type and exposure.
- C. The installer shall be competent, experienced, and familiar with the principles of the SMACNA Architectural sheet Metal Manual. The installer shall have capacity for preparation of shop details and fabrication of all flashings not furnished by the panel manufacturer.
- D. Alternate products must be submitted in writing to the Architect at least seven (7) days prior to bid opening. Request shall include technical data on all characteristics of the proposed item and list all deviations from these specifications.

2.02 MATERIAL- PANELS AND SHEET

- A. Panels shall have 12-inch coverage with concealed anchors that resist wind loads. Panels shall be pre-finished, 3000 series aluminum per ASTM B 209, minimum thickness of material to be 0.040 with 20-year standard corrosion warranty.
- B. Flashing shall be the same material type and finish as wall panel, but the temper may be reduced to facilitate forming. Minimum thickness shall be as recommended by the manufacturer for the condition in which the panels are being applied and subject to wind forces that may affect the panel from bending.
- C. Finish shall be Kynar Fluorocarbon coating (20 year warranty). Color to be chosen by the Architect and Owner based upon submittal of the full range of colors available from the Manufacturer.
- D. Product Performance-Finish Shall Conform to the Following:
 1. Salt Spray Resistance:
 - a. Method: 5% Salt Fog per ASTM B-117-64 (Re-approved 1973). Duration: 1,000 hours of Hot Dipped Galvanized and Galvalume; 2,000 per hours for aluminum.
 - b. Results: Aluminum: Creepage on scribe to bare metal not more than 1/32"; field blisters, none. HDG/Galvalume: Creepage on scribe to bare metal not more than 3/16"; field blisters rating of few #8 per ASTM D-1654-74.
 2. Humidity Resistance:

- a. Method: 100% Relative Humidity per ASTM D-2247-68. Duration: 1,000 hours & 1,500 hours.
 - b. Results: No field blisters. No change in pencil hardness after 24 hours. No creep from scribe.
- 3. Accelerated Weathering
 - a. Method #1: Weatherometer operated per ASTM D-822-60. Duration 5,000 hours.
 - b. Chalk: Chalk shall have a rating of 8 to 10 (no chalk) per ASTM D-659-44 (Re-approved 1974.)
 - c. Color Change: No greater than 5 NBS units after removal of external deposits, as determined by ASTM D-224-68.
 - d. Gloss Retention: Shall retain a minimum of 70% of original gloss after removal of external deposits when measured at 60 as determined by ASTM D-523-67.
- 4. Formability:
 - a. Method: Scored T-Bend using impact wedge bend apparatus per ASTM D-3281-73.
 - b. Results: No cracking and no pick-off with Scotch 610 tape at 1-T Bend prior to fracture of base metal.
- 5. Direct and Reverse Impact Resistance:
 - a. Method: Impact Resistance per ASTM D2794-69 (NCCA No. 11-6 procedure).
 - b. Results: No pick-off with Scotch 610 tape at 1 ½ times metal gauge, using a Gardner Variable Impact Tester. 5/8" diameter ball, prior to fracture of base metal.

2.03 MATERIALS-ACCESSORY ITEMS

- A. Fasteners in supports and screws installed in clips shall be fully recessed so that no sharp edges come in contact with the wall material.
- B. Screws holding anchor clips to the structure shall be:
 - a. Into wood: Plated Steel or Stainless Steel.
 - b. Into Steel: Plated steel or stainless steel.
- C. Exposed fasteners shall be aluminum or stainless. For weathertightness, screws shall have separate washers with hot bonded neoprene faces, and pop rivets shall be set in wet sealant. Exposed fasteners shall be a minimum No. 14 size screw or 3/16 inch diameter rivet.
- D. Precut foam profile closures, when required by the manufacturer, shall be black closed cell foam meeting specified ASTM D1056 grade SPE-41 Black EPT. Field fabricated closures shall be foam PVC supported and protected from weathering by a metal channel matching the wall flashing.
- E. Sealant used with the siding shall be applied between surfaces during assembly with a minimum amount exposed on the completed installation.
 - a. Concealed sealant may be non-curing, non-skinning butyl, polyisobutylene or polybutane tape of sufficient thickness to make full contact with both surfaces.
 - b. Exposed sealant shall be curing type with excellent weather and sunlight resistance. Color shall be as selected by the Architect. Apply in accordance with the sealant manufacturer's recommendations.

2.04 FABRICATION

- A. Minimum inside bend radius of flashing shall be 3T, and all edges shall have an open hem for stiffness.
- B. Insofar as possible, attachment screws shall be eliminated in favor of concealed cleats or clips.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Storage and Handling: Protection shall be provided during fabrication, shipment, storage, and erection. During shipment, finished surfaces shall be protected from abrasion by a removable plastic film between area of contact. Job site storage shall be in a clean, dry area out of direct contact with the ground, under cover, or sloped for drainage, protected from abuse by traffic and from contamination by corrosive or staining material. Stored materials and unfinished work shall be secured against wind damage. Installed panels shall be protected from abuse by other trades. It shall be the responsibility of this contractor to provide walk boards in areas of heavy traffic and any other measures required to prevent damage by his own crews and notify the General Contractor of any necessity for protection from other trades.
- B. Before installation, this contractor shall verify that the structure is ready to receive his work. He shall check field dimensions and alignment of structural members to assure that the panels and flashing will be straight and true. The Architect shall be notified on unresolved conditions that may adversely affect the performance or appearance of the installed work, and work on the location will not proceed until approved by the Architect.
- C. All work shall be installed in accordance with approved shop details under direct supervision of an experienced sheet metal craftsman. Attachments and joints shall allow for expansion and contraction from temperature changes without distortion or elongation of fastener holes. Flashing shall be installed in strict accordance with the recommended practice in the AA, NRCA, and SMACNA architectural sheet metal manuals: without fasteners in end laps, and isolated from dissimilar materials.
- D. Completed work shall be plumb and true, free of scrapes and dents. Panel ribs shall be the module indicated in the contract drawings within the tolerance allowed by the actual construction dimensions. Excess sealant shall be removed and touch-up paint applied to any areas where paint scrapes occur. Any panels that are badly damaged and in the judgement of the Architect cannot be repaired shall be removed and replaced.

3.02 PERFORMANCE REQUIREMENTS

- A. Panel and flashing attachments shall be designed to accommodate the thermal expansion and contraction of the exterior material through a 140 degree F temperature change.
- B. Panels shall carry the uniform design loads stated herein with a maximum total panel deflection of $L/140$ as measured in the flat of the panel.
- C. Factors of safety on design loads to ultimate strength of fasteners shall be as stated in the industry standard for the material into which the fastener is driven.
 - a. Aluminum Association for Aluminum.
 - b. AISI for steel.
 - c. NFPA for wood.
 - d. APA for plywood.

END OF SECTION – 07611