

SECTION 07610 - SHEET METAL ROOFING-ALUMINUM

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data, Shop Drawings, and color Samples.
- B. Comply with SMACNA's "Architectural Sheet Metal Manual" unless otherwise indicated.
- C. Roof system shall meet minimum wind uplift resistance as noted on Structural Drawings.
- D. Quality Assurance: Utilize an installer having demonstrated a minimum of 5 years experience on projects of similar size and complexity.
- E. Alternate Manufacturers and Substitutions to Basis of Design: As approved by the Architect only. The contractor shall submit all information necessary for full analysis by the Architect including but not limited to manufacturers' product data, warranty information and samples. Partial submittals shall not be accepted.

PART 2 - PRODUCTS

2.1 ROOFING SHEET METALS

- A. Aluminum Sheet: Fabricated from aluminum sheet complying with ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 0.040 inch thick
 - 1. **Basis of Design Product: PAC-CLAD, Petersen Roofing, "Tite-Loc Plus". Panels shall be 2" high, 12" wide, with mechanically sealed, standing seam system.**
 - a. Contact: 102 Northpoint Pkwy Ext Bldg 1, Suite 100, Acworth, GA 30102
Telephone: (800) 272-4482 Fax: (770) 420-2533; website: www.pac-clad.com.
 - 2. Finish: Manufacturer's standard fluoropolymer 2-coat system with topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2604.
 - a. Color: As per Architect selection from Manufacturers standard palette.

2.2 ACCESSORIES.

- A. **Underlayment Basis of Design: Grace-Ice and water Shield HT (www.graceconstruction.com).**
- B. Slip Sheet: Rosin-sized building paper, 5 lb/100 sq. ft. (As needed)
- C. Metal Accessories: The contractor shall provide **all** materials required to complete a weather tight roofing system as per the construction documents including (but not limited to) clips,

flashings, ridge closure strips, trim, copings, fascias, gutters, downspouts and louvers. All exposed accessories shall match the sheet metal roofing panels in finish and material type.

2.3 FABRICATION

- A. Fabricate sheet metal roofing to comply with details shown and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of installation indicated.
 - 1. Standing-Seam Roofing: Form 12" wide, standing-seam pans with finished seam height of 2 inches.

2.4 PERFORMANCE

- A. General Performance: Metal roof panels shall comply with performance requirements without failure due to defective manufacture, fabrication, installation or other defects in construction.
- B. Roof System shall be designed to meet or exceed all Florida Building Code (ch. 16) requirements for components and cladding and shall have Florida Product Approval. Refer to drawings for design criteria and pressures.
- C. Panels to meet:
 - 1. Water Penetration: When tested per ASTM E-283/1680 and ASTM E-331/1646 there shall be no uncontrolled water penetration or air infiltration through the panel joints.
 - 2. Designed in accordance with UL standard 580, Uplift Resistance of Roof Assemblies.
 - 3. ASTM E-1592 Tested and approved (Air Infiltration).
 - 4. UL 2218 - Impact Resistance rated.
- D. Panel shall display a flame spread classification of a Class 1 when tested in accordance with ASTM E-84-87.

2.5 MANUFACTURER'S WARRANTY:

- A. Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents. Provide warranties as follows:
 - 1. **Warranty Period: 20 Years from date of Substantial Completion**
 - 2. Weathertight Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace standing seam metal roof panel assemblies that fail to remain weathertight, including leaks, within specified warranty period.
 - 3. Finish warranty: Manufacturer's standard form in which manufacturer agrees to repair finish or replace standing seam metal roof panels that show evidence of deterioration of factory-applied finish within specified warranty period.
 - a. Exposed Panels Finish - deterioration includes the following:
 - 1) Color fading more than 5 hunter units when tested according to ASTM D 2244
 - 2) Chalking in excess of a No. 8 rating when tested according to ASTM D 4214
 - 3) Cracking, checking, peeling or failure of the paint to adhere to a bare metal.

4. Applicator shall furnish written warranty for a one (1) year period from date of substantial completion of building covering repairs required to maintain roof and flashings in watertight condition.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with the following:

1. SMACNA Architectural Sheet Metal Manual.
2. NRCA Roofing and Waterproofing Manual and Handbook of Accepted Roofing Knowledge.
3. Manufacturer's Construction Details Handbook.
4. AISC Steel Construction Manual.
5. AISI Cold Formed Steel Design Manual.

B. Install underlayment on roof sheathing under sheet metal roofing unless otherwise recommended by metal roofing manufacturer.

1. Underlayment shall be laid in horizontal layers with joints lapped toward the eaves a minimum of 6", and well secured along laps and at ends as necessary to properly hold the felt in place. All underlayment shall be preserved unbroken and whole.
2. Underlayment shall lap all hips and ridges at least 12" to form double thickness and shall be lapped 6" over the metal of any valley and shall be installed as required by the Standing Seam Panel Manufacturer to attain the desired 20 Year Weathertight Warranty.
3. Apply slip sheet over underlayment before installing metal roofing (As Needed).

C. Anchor roofing securely in place, with provisions for thermal and structural movement. Install with concealed fasteners unless otherwise indicated.

D. Separate dissimilar metals with a bituminous coating or polymer-modified, bituminous sheet underlayment.

E. Coat unpainted back side of aluminum roofing with bituminous coating where it will contact treated wood, ferrous metal, or cementitious construction.

F. Install work with lines and corners of exposed units true and accurate. Form exposed faces flat and free of buckles, excessive waves, and avoidable tool marks, considering temper and reflectivity of metal. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant. Fold back sheet metal to form a hem on concealed side of exposed edges unless otherwise indicated.

1. Install cleats to hold sheet metal panels in position. Attach each cleat with two fasteners to prevent rotation.
2. Fasten cleats not more than 12 inches on center for entire length of seam. Bend tabs over fasteners.

G. Seal joints as shown and as required for weathertight construction. Provide low-slope transverse seams using cleats where backup of moisture may occur.

H. Make no face penetrations or perforations in metal panels by fasteners except as indicated or with specific approval by Architect.

- I. Install all panels continuous from ridge to eaves with no horizontal end laps.
- J. End lap all flashing and trim at least 3" (76 mm).
- K. Exercise care during installation to avoid damage or scratching of the panels.
 - 1. Avoid walking on metal roof panels after installation is completed.
- L. Coordinate sizes and locations of roof curbs, equipment supports and roof penetrations with actual equipment provided.
- M. Coordinate metal roof panels with rain drainage work, flashing, trim and construction of decks, parapet walls and other adjoining work to provide a leak proof, secure and noncorrosive installation.

END OF SECTION