

**SECTION 07620**  
**SHEET METAL FLASHING AND TRIM**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section includes the following:
  - 1. Metal flashing.
  - 2. Self-adhering flashing.
  - 3. Formed roof-drainage sheet metal fabrications.

**1.2 PERFORMANCE REQUIREMENTS**

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.
- B. Wind Loads: In accordance with the Florida Building Code.
  - 1. Design Wind Speed: As shown on the Structural documents.
- C. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- D. SPRI Wind Design Standard: Manufacture and install copings and roof edge flashings tested according to SPRI ES-1 and capable of resisting the following design pressure:
- E. Engineering Responsibility: Prepare engineering data for flashing systems, including Shop Drawings, based on testing and engineering analysis of units in assemblies similar to those indicated for this Project as prepared by a professional engineer registered in the state of Florida.
- F. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.
- G. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  - 1. Temperature Change: Ambient conditions for material surfaces.

**1.3 SUBMITTALS**

- A. Product Data: Include manufacturer's material and finish data, installation instructions, and general recommendations for each specified flashing material and fabricated product.

- B. Shop Drawings: Of each item specified showing layout, profiles, methods of joining, and anchorage details.
- C. Certification: Submit test certification stating that edge metal comply with ANSI/SPRI ES-1 to resist design wind loads.
- D. Samples: Of sheet metal flashing, trim, and accessory items, in the specified finish. Where finish involves normal color and texture variations, include Sample sets composed of 2 or more units showing the full range of variations expected.
  - 1. 8-inch- square Samples of specified sheet materials to be exposed as finished surfaces.
  - 2. 12-inch- long Samples of factory-fabricated products exposed as finished Work. Provide complete with specified factory finish.
- E. Sample Warranty: For warranty indicated.

#### 1.4 QUALITY ASSURANCE

- A. Quality Control Standard: Sheet Metal & Air Conditioning Contractor's National Association (SMACNA), latest edition, and the Building Code.

#### 1.5 PROJECT CONDITIONS

- A. Coordinate Work of this Section with interfacing and adjoining Work for proper sequencing of each installation. Ensure best possible weather resistance, durability of Work, and protection of materials and finishes.

#### 1.6 WARRANTY

- A. Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Finish Warranty Period: 20 years following the date of Final Acceptance.

### PART 2 - PRODUCTS

#### 2.1 METALS

- A. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated and with not less than the strength and durability of alloy and temper designated below:
  - 1. Factory-Painted Aluminum Sheet: ASTM B 209, 3003-H14, with a minimum thickness of 0.040 inch, unless otherwise indicated.
  - 2. Extruded Aluminum: ASTM B 221, alloy 6063-T52, with a minimum thickness of 0.080 inch for primary legs of extrusions that are anodized, unless otherwise indicated.

## 2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Underlayment: Self-adhering, high-temperature resistant sheet 30 to 40 mils thick minimum, consisting of slip-resisting, polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
  - 1. Thermal Stability: Stable after testing at 240 deg F; ASTM D 1970.
  - 2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F; ASTM D 1970.
- B. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.
- C. Elastomeric Sealant: Generic type recommended by sheet metal manufacturer and fabricator of components being sealed and complying with requirements for joint sealants as specified in Section 07920, "Joint Sealants", of this Technical Special Provision
- D. Tape Sealant: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape in width required for applications indicated.
- E. Self-Adhering Flashing/ Weather Barrier: Butyl based, self-adhering membrane integrally bonded to polyethylene sheeting, formed into uniform flexible sheets of not less than 40 mils thick.
- F. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of Work, matching or compatible with material being installed; noncorrosive; size and thickness required for performance.

## 2.3 FABRICATION, GENERAL

- A. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.
- B. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- C. Form exposed sheet metal Work that is without oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.
- D. Seams: Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.

- E. Expansion Provisions: Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- F. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
- G. Separate metal from noncompatible metal or corrosive substrates with self-adhering flashing material.
- H. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
- I. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.
  - 1. Size: As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

#### 2.4 SHEET METAL FABRICATIONS

- A. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.
- B. Roof Edge Flashing: Fabricate in minimum 96-inch- long, but not exceeding 12-foot- long sections. Furnish with 6-inch- wide, joint cover plates. Shop fabricate interior and exterior corners.
  - 1. Fabricate from the Following Materials:
    - a. Aluminum: Minimum 0.050 inch thick.
- C. Exposed Trim and Fasciae: Fabricate from the following material, unless otherwise indicated:
  - 1. Aluminum: 0.050 inch thick, minimum.
- D. Coping Covers: Fabricate from the following material:
  - 1. Aluminum: 0.040 inch thick, minimum.
- E. Base Flashing: Fabricate from the following material:
  - 1. Aluminum: 0.040 inch thick, minimum.

## 2.5 ROOF-DRAINAGE SHEET METAL FABRICATIONS

- A. Hanging Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in continuous lengths. Furnish flat-stock gutter brackets and gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard but with thickness not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters. Shop fabricate interior and exterior corners.
  - 1. Material: Aluminum.
  - 2. Thickness: As required for installations indicated.
  - 3. Profiles: As indicated.
  - 4. Accessories: Wire-ball downspout strainer.
  
- B. Downspouts: Fabricate downspouts to dimensions indicated, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors. Shop fabricate elbows.
  - 1. Downspout Profile: As indicated.
  - 2. Fabricate from the following material:
    - a. Aluminum: Minimum 0.040 inch thick.

## 2.6 ALUMINUM FINISHES

- A. General: Comply with Aluminum Association's (AA) "Designation System for Aluminum Finishes" for finish designations and application recommendations.
  
- B. High-Performance Organic Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  - 1. Fluoropolymer 2-Coat System: 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; complying with AAMA 2604.
    - a. Color: To be selected by the Engineer from manufacturer's full line.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions under which sheet metal flashing and trim are to be installed and verify that Work may properly commence. Do not proceed with installation until unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. General: Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Anchor units of Work securely in place by methods indicated, providing for thermal expansion of metal units; conceal 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 weatherproof.
  - 1. Install exposed sheet metal Work that is without oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
  - 2. Sheet metal work shall not buckle, rattle, leak or loosen, and shall remain watertight.
- B. Expansion Provisions: Provide for thermal expansion of exposed sheet metal Work. Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- C. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards. Fill joint with sealant and form metal to completely conceal sealant.
  - 1. Use joint adhesive for nonmoving joints specified not to be soldered.
- D. Seams: Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
- E. Separations: Separate metal from noncompatible metal or corrosive substrates using self-adhering flashing material.
- F. Counterflashings: Coordinate installation of counterflashings with installation of assemblies to be protected by counterflashing. Install counterflashings in reglets or receivers. Secure in a waterproof manner by means of snap-in installation and sealant, lead wedges and sealant, interlocking folded seam, or blind rivets and sealant. Lap counterflashing joints a minimum of 2 inches and bed with sealant.
- G. Equipment Support Flashing: Coordinate equipment support flashing installation with roofing and equipment installation. Seal flashing to equipment support member.

### 3.3 ROOF-DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

- B. Hanging Gutters: Join sections with riveted and soldered joints or joints sealed with sealant. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.
  - 1. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart. Install expansion-joint caps.
- C. Downspouts: Join sections with 1-1/2-inch telescoping joints.
  - 1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches o.c.
  - 2. Terminate downspouts as indicated.

### 3.4 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated.

### 3.5 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.
- B. Provide final protection and maintain conditions that ensure sheet metal flashing and trim Work during construction is without damage or deterioration other than natural weathering at the time of Certificate of Occupancy.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.

END OF SECTION 07620