

**SECTION 07 62 00**  
**SHEET METAL FLASHING AND TRIM**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Factory fabricated perimeter metal, shop fabricated sheet metal items, including flashings, counterflashings, gutters, downspouts, and other items indicated on the drawings.
- B. Precast concrete splash pads.

**1.02 RELATED SECTIONS**

- A. Section 06 10 00 – Rough Carpentry.
- B. Section 07 41 10 – Preformed Metal Roof Panels.

**1.03 REFERENCE STANDARDS**

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; American Architectural Manufacturers Association; current edition.
- B. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; current edition.
- C. ASTM B 209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; current edition.
- D. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association; current edition.
- E. FM P7825 - Approval Guide; Factory Mutual Research Corporation; current edition.
- F. FM DS 1-49 - Perimeter Flashing; Factory Mutual Research Corporation; current edition.
- G. FM DS 1-28 - Design Wind Loads; Factory Mutual Research Corporation; current edition.
- H. NRCA ML104 - The NRCA Roofing and Waterproofing Manual; National Roofing Contractors Association; current edition.
- I. ANSI/SPRI/FM 4435/ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems; current edition.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details. Include the latest edition of prefabricated metal component manufacturer/supplier's installer's guide for factory fabricated metal perimeter systems.
- C. Samples: Submit two samples in size illustrating metal finish color.
- D. Sample copy of the roofing system manufacturer's inclusion addendum offering coverage of the factory fabricated metal perimeter systems.

**1.05 QUALITY ASSURANCE**

- A. Perform work in accordance with Metal Manufacturer's requirements as well as SMACNA Architectural Sheet Metal Manual requirements and standard details, except as otherwise indicated.
- B. Submit a letter from the roofing membrane manufacturer confirming that the factory fabricated metal accessory systems furnished for the project are supplied or manufactured by the roofing/waterproofing membrane manufacturer.
  - 1. Agency Approvals: The proposed prefabricated metal component shall conform to the following requirements.
    - a. Provide Factory Mutual Approval for Class Windstorm Classification for Roof Perimeter Fascia Systems for wind uplift pressures.

- b. The roof perimeter metal systems shall be certified through third party verification by the manufacturer/supplier to meet performance design criteria according to the most recent edition of ANSI/SPRI/FM 4435/ES-1: Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.
- C. Manufacturer Requirements: Ensure that the prefabricated metal component manufacturer/supplier provides direct trained personnel to attend necessary job meetings, perform periodic inspections as necessary, and conducts a final inspection upon successful completion of the project.
- D. Deliver materials in the manufacturer's original packaging.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.
- C. Deliver materials in the manufacturer's original packaging.

#### **1.07 WARRANTY**

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Special Warranty: See Section 07 41 10 - Preformed Metal Roof Panels.

### **PART 2 PRODUCTS**

#### **2.01 PREFABRICATED METAL SYSTEMS**

- A. Prefabricated Metal Coping System: Metal Coping components shall be factory fabricated according to the requirements of the roofing membrane manufacturer. The metal coping system with profile indicated on drawings and shall consist of the following components:
  - 1. Factory formed anchor/cleat plates fabricated from 16 gauge, G90 galvanized steel.
  - 2. Factory formed gutter/splice plates fabricated from 0.032" aluminum with EPDM sealing gaskets.
  - 3. A factory formed coping cap fabricated from minimum 24 gauge galvanized steel having a coated Kynar™ finish.
  - 4. Factory formed welded miters and end caps.
  - 5. Approved and supplied by the roofing membrane manufacturer.
- B. Prefabricated Raised Roof Edge: Prefabricated roof edge components shall be factory formed according to the requirements of the membrane manufacturer. The roof edge system with profile indicated on drawings and shall consist of the following components:
  - 1. A factory formed cant dam with pre-punched nail holes, fabricated from 24 gauge, G90 galvanized steel, having a height of 2 inches above roof level, secured using galvanized roofing nails.
  - 2. A factory formed retainer cleat with pre-punched nail holes, fabricated from 20 gauge, G90 galvanized steel, secured using galvanized roofing nails.
  - 3. A factory formed exterior fascia, fabricated from minimum 24 gauge galvanized steel, coated Kynar™ finish.
  - 4. Factory formed concealed splice plates, welded miters and end caps.
  - 5. Factory formed leveling angles for accurate cant dam installation.
  - 6. Factory formed welded sump pans and spillout scuppers.
  - 7. Approved and supplied by the roofing membrane manufacturer.
- C. Prefabricated Fascia Extender: Prefabricated fascia extender components shall be factory formed according to the requirements of the membrane manufacturer. The fascia extender stop system with profile indicated on drawings and shall consist of the following components:
  - 1. A factory formed retainer cleat with pre-punched nail holes fabricated from 24 gauge, G90 galvanized steel, secured using galvanized roofing nails.

2. A factory formed exterior fascia extender with pre-punched nailing holes, secured using galvanized roofing nails. Fabricated from minimum 24 gauge galvanized steel coated Kynar™ finish.
3. Factory formed concealed splice plates and formed welded miters.
4. Approved and supplied by the roofing manufacturer

## **2.02 GUTTER, DOWNSPOUT AND SCUPPER FABRICATION**

- A. Fabricate gutters to cross section indicated, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- long sections. Furnish flat-stock gutter spacers and gutter brackets fabricated from same metal as gutters, of size recommended by NRCA and SMACNA but not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters. Fabricate rectangular downspouts complete with mitered elbows. Furnish with metal hangers, from same material as downspouts, and anchors. Scuppers, Gutter and Downspouts are to meet requirements of SMACNA (ASMM), Architectural Sheet Metal Manuals and NRCA, Architectural Sheet Metal Manual. Gutter system to meet requirements of ANSI/SPRI GT-1 stand for gutter systems.
- B. Gutters and Downspouts: Size and profile indicated, material shall be prefinished aluminum with minimum thickness, as indicated above but not less than .060. Color to be selected by AE.
- C. Accessories: Profiled to suit gutters and downspouts.
  1. Anchorage Devices: In accordance with SMACNA requirements.
  2. Gutter Straps: Provide gauge/thickness and spacing in accordance with SMACNA and of ANSI/SPRI GT-1 requirements. Maximum spacing shall not be greater than 6 ft.
- D. Splash Pads: At grade, provide precast concrete type, of size and profiles indicated; minimum 3000 psi at 28 days, with minimum 5 percent air entrainment. At roof level, provide aluminum type, of size and profiles indicated; minimum .040 in thickness.
- E. Seal metal joints.

## **2.03 COUNTERFLASHING AND EXPOSED SHEET METAL ITEMS**

- A. Counterflashing: Provide 2 piece, prefinished, 24 gauge galvanized steel flashing unless noted otherwise. Color to be selected by AE. Counterflashing to meet requirements of SMACNA (ASMM), Architectural Sheet Metal Manuals and NRCA, Architectural Sheet Metal Manual.
- B. Exposed Sheet Metal Items: Metal must be of same gauge and finishes as adjacent trim.

## **2.04 ACCESSORIES**

- A. Fasteners: Galvanized steel, with soft neoprene washers.
- B. Underlayment: Polyethylene, 6 mils.
- C. Slip Sheet: Rosin sized building paper.
- D. Primer: Zinc chromate type.
- E. Protective Backing Paint: Zinc molybdate alkyd.
- F. Sealant: Type as specified in Section 07 92 00.
- G. Plastic Cement: ASTM D 4586, Type I.

## **2.05 FABRICATION**

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest possible lengths.
- C. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- D. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.

- F. Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.
- G. Fabricate flashings to allow toe to extend 2 inches over roofing gravel. Return and brake edges.
- H. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
  - 1. Thickness: As recommended by SMACNA's "Architectural Sheet Metal Manual" for application but not less than thickness of metal being secured.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

#### **3.02 PREPARATION**

- A. Install starter and edge strips, and cleats before starting installation.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

#### **3.03 INSTALLATION**

- A. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
- B. Apply plastic cement compound between metal flashings and membrane flashings.
- C. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- D. Seal metal joints watertight.
- E. Secure gutters and downspouts in place using concealed fasteners.
- F. Slope gutters 1/4 inch per foot minimum.
- G. Set splash pads under downspouts.
- H. Perimeter Nailers: Perimeter nailers shall be flat and level to the building perimeter edge. The front edge of the nailer must be flush with the outside face or wall of the building. Anchor all perimeter nailers in strict accordance with the guidelines set forth in FM Global Property Loss Prevention Data Sheet FM 1-49 and FM 1-28.
- I. Curbs for Expansion Joint Components: Curbs must be straight, level, and properly anchored to the building structural deck. Any curbs, which are improperly installed or anchored, must be corrected prior to installation of the expansion joint systems.
- J. Flashing Membrane Installation: Ensure that all roofing/waterproofing flashing treatments used in conjunction with factory fabricated metal components are installed according to the roofing/waterproofing membrane manufacturer's specifications, current technical guide, and details prior to installation of the factory fabricated metal component.
- K. Surface Cleaning: Sweep or vacuum all surfaces to receive the metal components, removing all loose aggregate, soil, and foreign substances prior to installation of the factory fabricated metal components.
- L. Install metal components in accordance with the roofing/waterproofing manufacturer's instructions and SMACNA (ASMM), Architectural Sheet Metal Manuals and NRCA, Architectural Sheet Metal Manual.

#### **3.04 PREFABRICATED METAL COMPONENT INSTALLATION**

- A. Install metal components in accordance with the roofing/waterproofing manufacturer's instructions and the following requirements.

B. Prefabricated Metal Coping Installation

1. Set anchor cleats at corners and/or ends. Position all cleats in strict accordance with the factory coping system manufacturer's installation instructions and code approval requirements, pulling each cleat snugly against the exterior face of the building.
2. Place corner support clips at all corners to support the cap. Set the coping system manufacturer's support clip away from the corner approximately 1/2 inch and fasten in accordance with the coping system manufacturer's installation instructions.
3. Install guttered splices centered on the anchor cleats with drip edge portion on the outside of the cleat.
4. Beginning again at the corners and/or ends, hook the outside leg of the coping cap over the outside face of the cleats first. Rotate the cap over the top of the wall pressing lightly, but firmly, on the top of the cap until the inside leg fully locks over the roof side of the anchor cleats. Allow a 1/8 inch gap between coping sections for thermal movement. Increase the gap to 1/4 inch when installing in temperatures below 40°F. Isolate continuous runs of coping into manageable zones to control thermal movement by securing every fifth section of coping cap to an anchor cleat in accordance with the coping system manufacturer's installation instructions.

C. Prefabricated Raised Roof Edge

1. Beginning at the corners, install the factory fabricated cant dam over the base ply of roof membrane, securing it to the perimeter nailer in accordance with the raised roof edge system manufacturer's installation instructions.
2. After completion of the installation of the roofing/waterproofing flashing membrane plies over the cant dam, Place the retainer cleat over the finished flashing membrane firmly, without forcing. The retainer cleat shall be level and the nailing slots shall align centered with the nailer underneath the membrane/cant dam assembly. Fasten the retaining cleat in accordance with the raised roof edge system manufacturer's installation instructions.
3. Beginning again at the corners, install the exterior fascia by setting it onto the retainer cleat and firmly pushing down until the fascia snaps over the front and back of the retainer cleat. Slide a concealed joint splice plate halfway into the fascia to allow the next section to fit halfway over the joint splice plate as well. Allow a 1/8 inch gap between raised roof edge sections for thermal movement. Increase the gap to 1/4 inch when installing in temperature below 40°F.

D. Prefabricated Fascia Extender

1. Anchor the continuous galvanized clip to the wall surface fastened at 12 inches on center.
2. Hook the drip edge of the fascia extender over the continuous clip. Use joint splice plates behind adjoining sections of fascia extender. Fasten the top flange of the fascia extender at 12 inches on center. Allow a 1/8 inch gap between raised roof edge sections for thermal movement. Increase the gap to 1/4 inch when installing in temperature below 40°F.

E. Prefabricated Roof Edge

1. Beginning at the corners, install the factory fabricated cant dam over the base ply of roof membrane, securing it to the perimeter nailer in accordance with the raised roof edge system manufacturer's installation instructions.
2. After completion of the installation of the roofing/waterproofing flashing membrane plies over the cant dam, Place the retainer cleat over the finished flashing membrane firmly, without forcing. The retainer cleat shall be level and the nailing slots shall align centered with the nailer underneath the membrane/cant dam assembly. Fasten the retaining cleat in accordance with the raised roof edge system manufacturer's installation instructions.
3. Beginning again at the corners, install the exterior fascia by setting it onto the retainer cleat and firmly pushing down until the fascia snaps over the front and back of the retainer cleat. Slide a concealed joint splice plate halfway into the fascia to allow the next section to fit halfway over the joint splice plate as well. Allow a 1/8 inch gap between raised roof edge sections for thermal movement. Increase the gap to 1/4 inch when installing in temperature below 40°F.

- F. Gutter System: Install gutters to meet SMACNA and manufacturer's requirements as well as ANSI/SPRI GT-1.
- G. Counterflashing
  - 1. Fabricate two piece counterflashing to meet requirements of SMACNA (ASMM), Architectural Sheet Metal Manuals and NRCA, Architectural Sheet Metal Manual and roofing manufacturer's written requirements.
  - 2. Install counterflashing to provide watertight termination at leading edge of roofing material.
  - 3. Install counterflashing to allow for thermal movement.
  - 4. Joint Sealants: Apply joint sealants in accordance with manufacturer's instructions

**END OF SECTION**