

**SECTION 07600**  
**FLASHING AND SHEET METAL**

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish and install all sheet metal flashings, copings, counterflashings, trim components, and similar flashing and sheet metal work required for roofing and related work, complete as indicated on Drawings and specified herein.

1.02 RELATED WORK

- A. CONCRETE UNIT MASONRY: Section 04810.
- B. METAL FABRICATIONS: Section 05500.
- C. ROUGH CARPENTRY: Section 06100.
- D. TPO ROOFING SYSTEM: Section 07540.

1.03 QUALITY ASSURANCE

- A. Approved Products: As applicable, products used herein shall comply with requirements of the Florida Product Approval System as required by Florida Statute 553.842 and Florida Administrative Code 9B-72.
- B. Installer's Qualifications: Flashing and sheet metal work shall be fabricated by a qualified sheet metal fabricator with at least five (5) years documented experience in installations of a similar nature.
- C. Performance Criteria: Comply with the following:
  - 1. Wind Uplift Resistance: Installation and fastening of all sheet metal work shall comply with Factory Mutual Global (FMG) 1-120 wind uplift requirements in FMG Loss Prevention Data Sheet 1-28, "Wind Loads to Roof Systems and Roof Deck Securement," and with the Florida Building Code 2004 Edition wind resistance/wind loading requirements. (130 MPH zone)
  - 2. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated. (Architect's reference 5<sup>th</sup> Edition w/ Addendum No.1 October 31, 1997)

1.04 SUBMITTALS

- A. Product Data: Submit complete product data for each type of product specified. Include details of construction relative to materials, dimensions of individual components, profiles, finishes, and installation instructions.
- B. Shop Drawings: Submit complete shop drawings for all flashing and sheet metal work, indicating fabrication, assembly, and attachment details, size of all members, fastenings, supports and anchors, patterns, clearances, and all necessary connections to work of other trades.

- C. Installer's Qualifications: Submit documented evidence of installer's qualifications.
- D. Warranty: Submit specimen copy of specified warranty.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.
- B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

#### 1.06 COORDINATION

- A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

#### 1.07 WARRANTY

- A. Provide separate and or inclusive roofing warranty, a 2-year installer's Warranty and 20 year No Dollar Limit manufacturer's warranty with Windstorm Rider to 90 MPH. The Warranty is to cover materials and workmanship with no cost to the Owner for materials and labor.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

Copings and flashings are to be either Pre-Finished Galvanized Sheet Steel, Pre-Finished Aluminum or Stainless Steel which meet the following minimum standards:

- A. Galvanized (Hot-Dipped) Steel Sheet: Comply with the following:
  - 1. Material: ASTM A 653, G 90, commercial quality, for hot-dip galvanized steel sheet, mill phosphatized where indicated for paint finish. Provide minimum 0.050-inch (18 gauge) material thickness.
  - 2. Finish: Provide fluoropolymer 2-coat thermocured coating system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605.
    - a. Color as selected by Architect from manufacturer's standard color line.
    - b. Products, Resin Manufacturers: Provide fluoropolymer coating systems containing one of the following resins:
      - (1) "Hylar 5000"; Ausimont USA, Inc.
      - (2) "Kynar 500"; Atofina Chemicals, Inc.

- B. 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 0.063 inch (14 gauge).
  2. Finish: Provide manufacturer's standard fluoropolymer 2-coat thermocured coating system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605.
    - a. Color as selected by Architect from manufacturer's standard color line.
    - b. Products, Resin Manufacturers: Provide fluoropolymer coating systems containing one of the following resins:
      - (1) "Hylar 5000"; Ausimont USA, Inc.
      - (2) "Kynar 500"; Atofina Chemicals, Inc.
- C. Stainless Steel: Alloy and temper recommended by 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 Sheet:, with a minimum thickness of 0.0375 inch (20 gauge).
  2. Finish: Provide manufacturer's standard fluoropolymer 2-coat thermocured coating system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605.  
Finish may be omitted where flashing is not exposed to view from street level.
    - a. Color as selected by Architect from manufacturer's standard color line.
    - b. Products, Resin Manufacturers: Provide fluoropolymer coating systems containing one of the following resins:
      - (1) "Hylar 5000"; Ausimont USA, Inc.
      - (2) "Kynar 500"; Atofina Chemicals, Inc.

## 2.03 FABRICATION, GENERAL

- A. General: Shop-fabricate work to greatest extent possible, with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work.
- B. Form work to fit substrates. Comply with material manufacturer instruction and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
- C. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated. Conceal fasteners on all copings.
- D. Fabricate cleats and attachment devices from same material and thickness as accessory being

anchored or from compatible, noncorrosive metal.

- E. Provide shop welded interior and exterior corners for all flashings. Folded, riveted, and sealed corners are not acceptable.
- F. Provide mitered, shop welded interior and exterior corners at parapet cap. Folded, riveted, and sealed corners are not acceptable.
- G. All parapet caps are to be constructed with butt joints with concealed back up plate. Similar to SMACNA Figure 2-5C (ref Architect's Manual noted above).
- H. Pre-engineered pre-manufactured systems are acceptable. Submit manufacturer's literature and details for approval.

### PART 3 - EXECUTION

#### 3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of work. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.02 INSTALLATION

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by applying a rubberized-asphalt underlayment to each contact surface, or by EPDM sheet separation.
- C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
- D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams.
- E. Install sheet metal flashing and trim true to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet material.
  - 1. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
- F. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints. See 2.03 above.
- G. Fasteners: Use stainless steel fasteners of sizes that will penetrate substrate not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
- H. Seal joints with elastomeric sealant as required for watertight construction. Embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. Prepare joints and apply sealants to comply with requirements in Section 07900 – JOINT SEALANTS.

- I. Collector Heads and Downspouts: Install collector heads and downspouts according to SMACNA recommendations (reference Architectural Sheet Metal Manual 5<sup>th</sup> addition with Addendum 1, Oct 31, 1997) and as indicated. Provide conductor head per figure 1-25F and scupper per figure 1-26A. Scupper to be sized and follow limitations as set forth on page 1.56. Provide minimum 16 ga. galvanized steel with Kynar 500 or Hylar 5000 finish to match copings or as otherwise directed by Architect. Coordinate installation of roof perimeter flashing and trim with installation of collector heads and downspouts.

### 3.03 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain a clean condition during construction.
- B. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07600