

**PART 1 - GENERAL**

**1.01 DESCRIPTION**

- A. Work Included: Furnish and install metal flashing and sheet metal work specified.

**1.02 RELATED DOCUMENTS**

- A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 01 of the Specifications.

**1.03 SUBMITTALS AND SUBSTITUTIONS**

- A. In accordance with Section 01 3000.
- B. Substitutions will not be considered prior to the award of the General Contract.

**1.04 QUALITY ASSURANCE**

- A. Job Supervision: Applicator of work in this Section to furnish competent, qualified foreman present and in charge at all times work is performed.
- B. Applicable Standard: Refer to the latest edition of the "Architectural Sheet Metal Manual" of the Sheet Metal and Air Conditioning Contractors National Association, Inc. Use as applicable standard for method and quality of work under this Section where not specifically otherwise shown on Contract Drawings. Manufacturer to provide trained metal craftsmen to supervise installation.

**1.05 WARRANTY**

- A. Provide manufacturer's guarantee for exterior color finish for a period of 20 years against blistering, peeling, cracking, flaking, checking, chipping and excessive color change and chalking. Color change not to exceed 5 N.B.S. units (per ASTM D-2244.64T) and chalking not less than rating of 8 per ASTM D-659.
- B. Guaranty: Guaranty sheet metal work installed under this Section against leakage or defects for 2 years after substantial completion date. Make good at Contractor expense leakage or defects occurring within this period.

## **PART 2 - PRODUCTS**

### **2.01 SHEET METAL**

- A. Galvalume Sheet Steel: Aluminum-zinc alloy coating AZ50, meeting ASTM A792. Keep Galvalume dry during transit, in storage, and at work site.
  - 1. Finish to be Kynar 500 based polyvinylidene fluoride (PVDF) coating, 70% resin formulation in custom color(s) to be selected by Architect.
    - a. Primer is applied to 0.20 - 0.30 mils D.F.T. (Dry Film Thickness) and the topcoat at 1.0 - 1.2 mils D.F.T
- B. Gauge of Metal:
  - 1. Metal components of a roof assembly: 24 gauge (USS .025") minimum
  - 2. Scuppers, guttering, downspouts and splash pans: 22 gauge (USS .0312") minimum. Gutter straps to be 18 gage.
  - 3. Miscellaneous Flashing: 26 gauge minimum

### **2.02 GUTTER SYSTEM**

- A. Provide accessories for complete installation including end pieces, caps, elbows, outlet tubes, and basket type strainers.
- B. Manufactured in maximum lengths possible, tapered and notched to provide a 1" telescoping lap joint. Seal watertight, and secure with 1/8" rivets, or join sections with flat locked soldered seams.
- C. Space gutter hangers and braces not more than 36" apart and secure with screws, bolts or approved clips. Brackets to be of compatible material to gutter, with matching finish and color.
- D. Slope gutter 1" in 20 feet to down spout to avoid ponding.
- E. Make leaders (downspouts) with 1-1/2" telescoped joints or full length without joints. Set leaders plumb, clear of walls. Secure with straps not over 6 feet apart and space so one is near top and another near bottom.

### **2.03 ACCESSORIES**

- A. Fasteners: All metal counter flashing and parapet cap flashing shall be attached with galvanized or cadmium plated screws with neoprene washers. Nails, screws and rivets used at other locations are to be the appropriate type for the purpose as described in the latest edition of the SMACNA Design Manual.
- B. Solder for Lead: ASTM B 32, 50% tin and 50% lead used with rosin flux.

- C. Roofing Cement: F.S. SS-C-153, Type I, Class A (summer grade) or Class B (winter grade) as applicable.
- D. Bitumastic Coating: F.S. TT-C-494, MIL-C-18480, or SSPC - Paint 12, cold applied solvent type bitumastic coating for application in dry film thickness of 15 mils per coat.

## **2.04 FABRICATION**

- A. Fabricate metal flashings, counterflashing, trim and related items to comply with profiles and sizes required. Fabricate to comply with the latest edition of the SMACNA "Architectural Sheet Metal Manual", metal manufacturer's recommendations, and recognized industry practices.
- B. For continuous running work, fabricate with expansion joints in flashings, spaced sufficiently close to prevent flashing damage and failure in resistance to water penetration. Form flashing to fit substrate in each application.
- C. Where sheet metal is required and no material or gauge is indicated on the Drawings, furnish and install highest quality and gauge commensurate with the referenced applicable standard, (SMACNA Manual, latest edition).

## **2.06 OTHER MATERIALS**

- A. Provide materials, not specifically described but required for complete and proper installation of flashing and sheet metal, of new materials, first quality of their respective kinds, and subject to approval of Architect.

## **PART 3 - EXECUTION**

### **3.01 SURFACE CONDITIONS**

- A. Inspection: Prior to work of this Section, carefully inspect installed work of other trades and verify work is complete to point where this installation may properly commence.
- B. Discrepancies: Do not proceed with sheet metal installation in areas of discrepancy until discrepancies are resolved.

### **3.02 WORKMANSHIP**

- A. General: Form sheet metal accurately to dimensions and shapes required, watertight and weathertight, with angles and broken surfaces true, sharp, and in straight lines. Where intercepting other members, cope to an accurate fit and solder securely. Produce flat surfaces free from waves and buckles.

- B. Expansion: Allow a 3/8"-1/2" gap in coping caps between each section. Use 3-1/2" wide prefinished 24 gage cover plate over joints.
1. Set cover plates in visible bead of polyurethane sealant between the cap and cover plate. Wipe joints of excessive sealant.
  2. Attach cover plate at the front and back with hex head cadmium screws with neoprene washers, installed in the gap between the metal cap sections.
  3. Do not exceed maximum length of 10'-0" for cap, fascia and flashing sections. Furnish with factory formed slots or enlarged holes for fasteners.
- C. Paint metal in contact with mortar, concrete, and masonry materials with an alkali-resistant coating. Use heavy-bodied bituminous paint or approved equal.

### **3.03 MISCELLANEOUS FLASHING**

- A. General:
1. Where exposed portions are used as a counter-flashings, lap base flashings at least four inches and use thickness of metal as specified for exposed locations.
  2. Exposed edge of flashing may be formed as a receiver for two piece counter flashing.
  3. Terminate exterior edge beyond face of wall approximately 1/4-inch with drip edge where not part of counter flashing.
  4. Turn back edge up 1/4-inch unless noted otherwise where flashing terminates in mortar joint or hollow masonry unit joint.
  5. Terminate interior raised edge in masonry backup unit approximately 2 inches into unit unless shown otherwise.
  6. Under copings terminate both edges beyond face of wall approximately 1/4-inch with drip edge.
  7. Lap end joints not less than four inches. Seal laps with sealant.
  8. Where dowels, reinforcing bars and fastening devices penetrate flashing, seal penetration with sealing compound.
  9. Coordinate with other work to set in a bed of mortar above and below flashing so that total thickness of the two layers of mortar and flashing are same as regular mortar joint.
  10. Where ends of flashing terminate turn ends up 1 inch and fold corners to form dam extending to wall face in vertical mortar or veneer joint.
  11. Turn flashing up not less than 8 inches between masonry wythes or behind exterior veneer.

### **3.04 SOLDERING**

- A. General:
1. Thoroughly clean and tin joint materials prior to soldering.
  2. Perform soldering slowly with well heated copper in order to heat seams thoroughly and to completely fill them with solder.
  3. Make exposed soldering neat, full flowing, and smooth. Do not use solder where dependence upon its strength is a factor.

- B.      Cleaning: After soldering, thoroughly wash acid flux with soda solution.

**END OF SECTION**