

**SECTION 07 62 00**

**FLASHING AND SHEET METAL**

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. Work Included: Provide all flashing and sheet metal required to prevent penetration of water through exterior shell of the building complete, in place, as shown on the Drawings, specified herein and required for a complete and proper installation. Sheet metal work not specifically required under other Sections but indicated on the Drawings, shall be furnished and installed under this Section, except as otherwise specified herein. Work to be provided includes, but is not necessarily limited to:

1. Flashings and counterflashings
2. Vents & penetrations
3. Gutters and Downspouts

B. Related Sections:

1. Section 06 10 10 - Rough Carpentry.
2. Section 06 20 00 - Finish Carpentry.
3. Section 07 92 10 - Joint Sealers.

1.02 REFERENCE SPECIFICATIONS:

- A. Sheet Metal and Air Conditioning Contractors National Association (SMACNA): Architectural Sheet Metal Manual, current edition, for general specifications, materials and workmanship not otherwise shown on the Drawings or specified herein.
- B. American Society for Testing and Materials (ASTM) Publications
- C. NRCA (National Roofing Contractor's Association) "Roofing and Waterproofing Manual"

1.03 COOPERATION WITH OTHER TRADES:

- A. Carefully coordinate work of this Section with that of all other trades to insure that the work will be carried out in an orderly and complete fashion.

1.04 QUALITY ASSURANCE:

- A. Standards: Comply with standards specified in this Section as listed in Section 01 45 00.
- B. Qualifications of Manufacturers: Products used in the work of this section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.
- C. Qualifications of Workers: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.05 SUBMITTALS:

- A. General: Comply with provisions of Section 01 33 00. Submit the following:
  - 1. Complete materials list of all items proposed to be furnished and installed under this Section.
  - 2. Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements.
  - 3. Complete sheet metal shop drawings, including large scale profiles of all sheet metal work.

1.06 PRODUCT HANDLING:

- A. Deliver all materials included in this Section to the job site, and store in a manner that will prevent damage or deformation. Use all means necessary to protect materials of this Section before, during, and after installation and to protect installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the District.

1.07 GUARANTEE:

- A. In addition to the one (1) year general guarantee for the entire contract, furnish to the District a written guarantee that the flashing installation shall be watertight and free of defects in materials and workmanship for a period of five (5) years after the date of Notice of Completion. In addition, flashings associated with roofing shall be further guaranteed for a period equal to the roofing warranty specified.

1.08 COOPERATION WITH OTHER TRADES:

- A. Carefully coordinate work of this Section with that of all other trades to insure that the work will be carried out in an orderly and complete fashion.
- B. Attend a mandatory pre-construction product compatibility and installation coordination meeting with trade contractors listed in Related Sections.

PART 2 - PRODUCTS

2.01 DESIGN:

- A. Standard commercial items may be used for flashing, trim, and reglets, provided all such items meet or exceed the quality standards specified herein.
- B. Quality Standards: In addition to complying with all pertinent codes and regulations, comply with all pertinent recommendations contained in "Architectural Sheet Metal Manual", current edition, of the Sheet Metal and Air Conditioning Contractors National Association.

2.02 MATERIALS AND GAUGES:

- A. Where sheet metal is required, and no material or gauge is indicated on the Drawings, provide the normal quality and gauge commensurate with the referenced standards. In no case shall sheet metal be less than 20 gauge.
  - B. Copper: Copper shall not be used for fascias, gutters, gravel stops and similar sheet metal items.
  - C. Galvanized Steel:
    - 1. Sheet Stock: Conform to ASTM A 525, designation G90, galvanized .2% copper bearing steel sheet, 24 gauge minimum thickness, unless otherwise noted. Scuppers to be 22 gauge minimum thickness.
    - 2. Zinc Coating: All galvanized sheets shall have a zinc coating applied by hot-dip process to all surfaces. Zinc coating shall weigh not less than 1-1/4 oz. per sq. ft. nor more than 1-1/2 oz. per sq. ft. of surfaces covered and shall conform with ASTM A 93.
  - D. Stainless Steel Sheets:
    - 1. ASTM A167 or A176, type best suited for purpose. Use 0.0375 inch (20 gauge), Type 302 or 304, unless otherwise noted.
    - 2. Finish: To be selected by architect
    - 3. Finger prints are not acceptable at exposed locations; install with cotton gloves
  - E. Self-Adhered Flashing: see Section 07 65 26 – Membrane Waterproofing and Section 07 52 00 – Modified Bitumen Roofing.
  - F. Preformed Flashing: Preformed EPDM flashing boots for use at roofing penetrations.
- 2.04 FASTENINGS:
- A. Copper bearing steel; tinned finish for rivets; galvanized non-corrosive finish for other items (screws, nails, bolts, washers, etc.).
  - B. 300 series alloy stainless steel (with stainless steel / EPDM washers) at exposed fastener locations.
  - C. Provide neoprene washers integral with fastener at locations exposed to weather.
- 2.05 EXPANSION SHIELDS:
- A. Commercial standard, wedge anchor type requiring drilled holes. Lead and plastic are not acceptable.
- 2.06 FELTS:
- A. ASTM D, Type 1 (perforated), Class A (15 pound).
- 2.07 FLUX:
- A. Raw muriatic acid.

2.08 SOLDER:

- A. ASTM B 32.

2.09 BLACK PLASTIC CEMENT:

- A. ASTM D 4586, Type I, asbestos free.

2.10 GALVANIZED TOUCH-UP:

- A. "Galvicon" by Galvicon Corp., or
- B. "Drygalv" by Anchor Brand Co., or
- C. "Tot-Rust" (with aluminum color added by Wilbur & Williams Co.

2.11 VENTS:

- A. All vents to be manufactured to design shown for the intended use. Provide bee-proof insect screens for all vents.

2.12 BITUMINOUS COATING:

- A. Solvent-type Bituminous Mastic, free of sulfur, 15 mil dry film thickness per coat.

2.13 BLACK PLASTIC CEMENT:

- A. ASTM D4586, Type 1 (Asbestos free).

2.14 ADHESIVES SEALANTS:

- A. Use only as recommended by Manufacturer.

2.15 SPRING LOCK FLASHING SYSTEM:

- A. 18 gauge stainless steel two piece system consisting of stucco screed with preformed continuous edge and a preformed flashing piece that engages the stucco screed in a "snaplock" condition.

2.16 OTHER MATERIALS:

- A. All other materials, not specifically described but required for a complete and proper installation of the work of this Section, shall be new, first quality of their respective kinds, and as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 GENERAL:

- A. Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

1. Coordinate work of this Section with related trades. Sheet metal in conjunction with roofing shall be made an integral part of the roofing assembly. When applicable, roof flashing and other related sheet metal roof items shall be in place prior to application of roofing.
2. Furnish all reglets and other accessories required to be built-in by other trades.

3.02 QUALITY OF WORK:

- A. Form all sheet metal accurately and to the dimensions and shapes required, finishing all molded and broken surfaces with true, sharp, and straight lines and angles. Cope intersecting members to an accurate fit, soldering securely. Unless otherwise specifically permitted by the Architect, turn all exposed edges back 1/2". Fabricate all items in maximum lengths, hold all joints to a minimum, and use soldered joints except where expansion joints are required or otherwise indicated. Finish water and weather tight throughout.
- B. Expansion: Form, fabricate, and install all sheet metal so as to adequately provide for expansion and contraction in the finished Work.
- C. Weatherproofing: Finish watertight and weathertight where so required. Make all lock seams work flat and true to line, sweating full of solder. Make all locks seams and laps seams, when soldered, at least 1/2" wide. Where lap seams are not soldered, lap underlayment member according to pitch but in no case less than 4" in full bed of black plastic cement. Make flat and lap seams in direction of flow of water or wind driven moisture.
- D. Flashing and counter-flashing shall be lapped 3" on the ends and shall have clip locks spaced minimum 24" O. C.
- E. Joints: Join parts with rivets or sheet metal screws where necessary for strength or stiffness. Provide suitable watertight expansion joints for all runs of more than 26 feet, except where closer spacing is indicated on the Drawings or required for proper installation.
- F. Where metals will be in contact with dissimilar materials, galvanic action and other deterioration shall be prevented by painting contacting surfaces with a heavy-bodied bituminous paint or placing a nonabsorbent tape or gasket or a noncorrosive caulking compound between contacting surfaces, as the case may require.
- G. Touch-up all galvanized surfaces which have been damaged by welding, soldering, or other means, with vinyl wash pretreatment followed by one coat of galvanizing touch-up.

3.03 EMBEDMENT:

- A. Embed all metal in connection with roofs in a solid bed of mastic, using materials and methods described in these Specifications or other materials and methods approved in advance by the Architect.

3.04 SOLDERING:

- A. Thoroughly clean and tin all joint materials prior to soldering. Perform all soldering slowly with a well heated copper in order to heat the seams thoroughly and to completely fill them with solder. Perform all soldering with a heavy soldering copper of blunt design, properly tinned for use. Make all exposed soldering on finished surfaces neat, full, flowing, and smooth. Solder all corners.
- B. Actively cooperate with other trades in arranging and installing sheet metal work to properly receive and engage work installed by them and do all soldering and caulking of joints so formed as may be necessary or required to insure water and weathertight conditions.
- C. Cleaning: After soldering, thoroughly wash acid flux with a soda solution.

3.05 FLASHING:

- A. Roof edge flashings shall extend over the top edge and lap the wall or fascia and shall not be terminated short of the roof edge.
- B. Flashing determined by the Architect or the District inspector to be defective in either materials or workmanship shall be repaired or replaced at no cost to the District.

3.06 TESTS:

- A. Upon request of the Architect, demonstrate by hose or standing water that all flashing and sheet metal is completely watertight. The flashing Subcontractor and the Architect shall jointly inspect the flashing installation to substantiate the guarantee, and shall be joined by the roofing Sub-contractor for flashing associated with roofing work.

3.07 CLEANING UP:

- A. Upon completion of work, remove excess debris, material, equipment, apparatus, tools and the like. Leave premises clean, neat and orderly.
- B. Brush and clean exposed galvanized metal to remain unpainted.
- C. Protect flashing from construction damage and overspray of adjacent finish materials until notice of completion.

**END OF SECTION -- 07 62 00**