

SECTION 07620 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes sheet metal flashing and trim in the following categories:
 - 1. Roof-drainage systems.
 - 2. Exposed trim and fasciae.
 - 3. Copings.
 - 4. Metal flashing.
 - 5. Reglets.
 - 6. Overhead-piping safety pans.
 - 7. Soffit vent.

1.3 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.
- B. Fabricate and install flashings at roof edges to comply with recommendations of FM Loss Prevention Data Sheet 1-49 for the following wind zone:
 - 1. Wind Zone 1: Wind pressures of 21 to 30 psf.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experience Installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

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.

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. Anodized Aluminum Sheet: ASTM B 209, 5005-H14, with a minimum thickness of 0.030 inch.
- B. Galvanized Steel Sheet: ASTM A 526, G 90, commercial quality, or ASTM A 527, G 90, lock-forming quality, hot-dip galvanized steel sheet with 0.20 percent copper, mill phosphatized where indicated for painting; not less than 0.0396 inch thick, unless otherwise indicated.

2.2 REGLETS

- A. General: Units of type, material, and profile indicated, formed to provide secure interlocking of separate reglet and counterflashing pieces and compatible with flashing indicated.
- B. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
- C. Stucco Type: Provide with upturned fastening flange and extension leg of length to match thickness of applied finish materials.
- D. Flexible Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
- E. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of the counterflashing lower edge.
 - 1. Material: Galvanized steel, 0.0217 inch thick.
- F. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Fry Reglet Corporation.
 - 2. Hickman: W.P. Hickman Co.
 - 3. Keystone Flashing Company.

2.3 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Solder: ASTM B 32, Grade Sn50, used with rosin flux.

- 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. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.
- D. 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 Division 7 Section "Joint Sealants."
- E. Epoxy Seam Sealer: 2-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior and interior nonmoving joints, sealants as specified in Division 7 Section "Join Sealants".
- F. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.
- G. 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.
- H. Gutter Screen: 1/4-inch hardware cloth installed in sheet metal frames. Fabricate screen and frame of same basic material as gutters and downspouts.
- I. Coping Joints: Contractor shall have the option of providing one of the following profiles:
 - 1. Joints with overlapping, matching metal cap adhered to base coping with non-staining, one-part, neutral curing, ultra low-modulus silicone sealant complying with ASTM C920 and equal to "890" as manufactured by Pecora Corporation.
 - 2. Joints with overlapping, non-staining, low-modulus, extruded silicone compound in matte texture and matching coping color, equal to "Sil-Span" as manufactured by Pecora Corporation. Width shall be manufacturer's standard sufficient enough for adhesive attachment to base coping with compatible non-staining, one-part, low-modulus, neutral curing, high performance silicone sealant, complying with ASTM C920 and equal to "864" by Pecora.

2.4 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 excessive 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 sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- E. Seams: Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
- F. 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).
- G. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
- H. Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by manufacturer.
- I. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
- J. 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.

2.5 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-Drain Flashing: Fabricate from the following material:
 - 1. Lead: 4.0 lb/sq. ft., hard tempered.
- C. Scuppers: Fabricate from the following material:
 - 1. Aluminum: 0.0320 inch thick.
- D. Exposed Trim, and Fasciae: Fabricate from the following material:
 - 1. Aluminum: 0.030 inch thick.

- E. Soffit Vent: Where indicated and as profiled on Drawings, provide 3-inch wide perforated soffit vent form the following material:
 - 1. Galvanized Steel: 0.0276-inch thick.
- F. Copings: Fabricate from the following material:
 - 1. Aluminum: 0.030 inch thick.
- G. Base Flashing: Fabricate from the following material:
 - 1. Galvanized Steel: 0.0276 inch thick.
- H. Counterflashing: Fabricate from the following material:
 - 1. Galvanized Steel: 0.0217 inch thick.
- I. Flashing Receivers: Fabricate from the following material:
 - 1. Galvanized Steel: 0.0217 inch thick.
- J. Drip Edges: Fabricate from the following material:
 - 1. Aluminum: 0.0320 inch thick.
- K. Eave Flashing: Fabricate from the following material:
 - 1. Aluminum: 0.0320 inch thick.
 - 2. Stainless Steel: 0.0156 inch thick.
 - 3. Terne-Coated Stainless Steel: 0.015 inch thick.
 - 4. Galvanized Steel: 0.0217 inch thick.
 - 5. Aluminum-Zinc Alloy-Coated Steel: 0.0217 inch thick.
 - 6. Coil-Coated Galvanized Steel: 0.0217 inch thick.
- L. Equipment Support Flashing: Fabricate from the following material:
 - 1. Galvanized Steel: 0.0276 inch thick.
- M. Roof-Penetration Flashing: Fabricate from the following material:
 - 1. Galvanized Steel: 0.0276 inch thick.
- N. Overhead-Piping Safety Pans: Fabricate from the following material:
 - 1. Galvanized Steel: 0.0396 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. Class I, Color Anodic Finish: AA-C22A42/A44 (Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 606.1 or AAMA 608.1.
 - 1. Color: To match exterior finish and insulation system (EFIS).

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.
- B. Install exposed sheet metal Work that is without excessive 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.
- C. Roof-Edge Flashings: Secure metal flashings at roof edges according to FM Loss Prevention Data Sheet 1-49 for specified wind zone.
- D. 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).
- E. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-temper edges of sheets to be soldered to a width of 1-1/2 inches, except where pre-tinned surface would show in finished Work.
 - 1. Do not solder the following metals:
 - a. Aluminum.

2. Pretinning is not required for the following metals:
 - a. Lead.
 3. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
- F. 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.
- G. Sealant and Coping Compound: Install in accordance with manufacturer's written instructions and recommendations for conditions encountered.
- H. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- I. Seams: Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
- J. Separations: Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with asphalt mastic or other permanent separation as recommended by manufacturer.
1. Underlayment: Where installing stainless steel or aluminum directly on cementitious or wood substrates, install a slip sheet of red-rosin paper and a course of polyethylene underlayment.
 2. Bed flanges of Work in a thick coat of roofing cement where required for waterproof performance.
- K. Install reglets to receive counterflashing according to the following requirements:
1. Where reglets are shown in concrete, furnish reglets for installation under Division 3 Section "Cast-in-Place Concrete."
 2. Where reglets are shown in masonry, furnish reglets for installation under Division 4 Section "Unit Masonry."
- L. 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.
- M. Roof-Drainage System: Install drainage items fabricated from sheet metal, with straps, adhesives, and anchors recommended by SMACNA's Manual or the item manufacturer, to drain roof in the most efficient manner. Coordinate roof-drain flashing installation with roof-drainage system installation. Coordinate flashing and sheet metal items for steep-sloped roofs with roofing installation.

- N. Overhead-Piping Safety Pans: Suspend pans from pipe and install drain line to plumbing waste or drain line.
- O. Equipment Support Flashing: Coordinate equipment support flashing installation with roofing and equipment installation. Weld or seal flashing to equipment support member.
- P. Roof-Penetration Flashing: Coordinate roof-penetration flashing installation with roofing and installation of items penetrating roof. Install flashing as follows:
 - 1. Turn lead flashing down inside vent piping, being careful not to block vent piping with flashing.
 - 2. Seal and clamp flashing to pipes penetrating roof, other than lead flashing on vent piping.
- Q. Splash Pans: Install where downspouts discharge on low-sloped roofs, unless otherwise shown. Set in roof cement or sealant compatible with roofing membrane.

3.3 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 Substantial Completion.

END OF SECTION 07620