

SECTION 07 62 00 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes sheet metal flashing and trim not provided with roofing systems in the following categories:
 - 1. Exposed trim.
 - 2. Metal flashings.
 - 3. Metal fascias.
 - 4. Metal fascia extenders.
 - 5. Drip edges.
 - 6. Gutters.
 - 7. Downspouts.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 06 Section "Miscellaneous Rough Carpentry" for blocking.
 - 2. Division 07 Roofing Sections for flashing and roofing accessories installed integral with roofing as part of roofing-system work.

1.2 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 2: Wind pressures of 31 to 45 psf (1.48 to 2.15 kPa).
- C. Low-slope membrane roof system metal edge securement, except gutters, shall be designed and installed for wind loads in accordance with Chapter 16 (IBC 2006) and tested for resistance in accordance with ANSI/SPRI ES-1, except the basic wind speed shall be determined from 1609 (IBC 2006).
 - 1. ANSI/SPRI test methods RE-1, RE-2, and RE-3 are acceptable for tested design details, but metal edge fabrications are not required to be certified and metal edge fabrications are not required to be so labeled.

1.3 SUBMITTALS

- A. Product Data including manufacturer's material and finish data, installation instructions, and general recommendations for each specified flashing material and fabricated product.
- B. Shop Drawings of each item specified showing layout, profiles, methods of joining, and anchorage details.
- C. Samples of sheet metal rain drainage, flashing, trim, and accessory items, in the specified finish. Where finish involves normal color and texture variations, include Sample sets composed of 2 or more units showing the full range of variations expected.
 - 1. 8-inch- (200-mm-) square Samples of specified sheet materials to be exposed as finished surfaces.
 - 2. 12-inch- (300-mm-) long Samples of factory-fabricated products exposed as finished Work. Provide complete with specified factory finish.

- D. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of roof consultants and owners, and other information specified.

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 to provide a leakproof and secure completed installation. Ensure best possible weather resistance, durability of Work, and protection of materials and finishes.

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. Coil-Coated Galvanized Steel Sheet: Zinc-coated, commercial-quality steel sheet conforming to ASTM A 755, G 90 (ASTM A 755M, Z 275) coating designation, coil coated with high-performance fluoropolymer coating as specified in "Coil-Coated Galvanized Steel Sheet Finish" Article; not less than 0.0239 inch (0.6070 mm), unless otherwise indicated.

2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of the counterflashing lower edge.
 - 1. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
 - 2. Thickness: As recommended by SMACNA's "Architectural Sheet Metal Manual" and FMG Loss Prevention Data Sheet 1-49 for application but not less than thickness of metal being secured.
- 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. Soldier for Copper: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead.
- D. Soldier for Lead-Coated Copper: ASTM B 32, Grade Sn60, 60 percent tin and 40 percent lead.
- E. Asphalt Mastic: SSPC-Paint 12, solvent-type asphalt mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil (0.4-mm) dry film thickness per coat.
- F. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.
- G. 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 07 53 23 "EPDM Membrane Roofing".
- H. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.
- I. Roofing Cement: ASTM D 4586, Type I, asbestos free, asphalt based except where

incompatible; defer to recommendations of manufacturer of roofing.

2.3 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.
 - 1. Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.

2.4 SHEET METAL FABRICATIONS

- A. General: Fabricate sheet metal items in thickness or weight needed to comply with SMACNA and performance requirements but not less than that listed below for each application and metal.
- B. Exposed Trim and Flashings: Fabricate from the following material:
 - 1. Coil-Coated Galvanized Steel: 0.0239 inch (0.6070 mm) thick, 24 gauge.
- C. Metal Fascias: Fabricate from the following material:
 - 1. Coil-Coated Galvanized Steel: 0.0239 inch (0.6070 mm) thick, 24 gauge.
- D. Metal Fascia Extenders: Fabricate from the following material:
 - 1. Coil-Coated Galvanized Steel: 0.0239 inch (0.6070 mm) thick, 24 gauge.
- E. Metal Drip Edges: Fabricate from the following material:
 - 1. Coil-Coated Galvanized Steel: 0.0239 inch (0.6070 mm) thick, 24 gauge.
- F. Gutters: Fabricate in minimum 96-inch- (2400-mm-) long sections. Fabricate from the following material, complete with end pieces, outlet tubes, and other special pieces as required:
 - 1. Coil-Coated Galvanized Steel: 0.0239 inch (0.6070 mm) thick, 24 gauge.
 - 2. Provide K-Style heavy duty hidden hangar bracket gutter supports (spacers) fabricated from .060 gauge heavy duty aluminum and spaced a maximum of 36" o.c.
 - 3. Gutter expansion joints shall be butt type with cover plate.
- G. Downspouts: Fabricate in 10-foot- (3-m-) long sections, complete with formed elbows and offsets. Fabricate from the following material:
 - 1. Coil-Coated Galvanized Steel: 0.0239 inch (0.6070 mm) thick, 24 gauge.
 - 2. Downspout straps shall be fabricated from same material as downspouts. Profile shall be SMACNA – Sixth Edition - Figure 1-35G.

2.5 COIL-COATED GALVANIZED STEEL SHEET FINISH

- A. High-Performance Organic Coating Finish: Apply the following system by coil-coating process on galvanized steel sheet as recommended by coating manufacturers and applicator.

1. Fluoropolymer 2-Coat Coating System: Manufacturer's standard 2-coat, thermocured 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 605.2.
 - a. Color and Gloss: As selected by Roof Consultant from manufacturer's full range of choices for color and gloss.
2. Coil-Coated Steel Sheet Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
 - a. Vincent/Brass (Colorklad)
 - b. Peterson Aluminum Corporation
 - c. Carlisle Engineered Metals
 - d. DuraClad (Tuff-Clad)
 - e. Copper Sales (Una-Clad)
 - f. Englert, Inc.
 - g. AEP Span
 - h. Dimensional Metals
 - i. Metal Roofing Systems.
3. Color to be selected by the Roof Consultant from manufacturer's standard colors.

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 rain drainage, 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 (3 m) with no joints allowed within 24 inches (610 mm) 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 (25 mm) deep, filled with mastic sealant (concealed within joints).
- E. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-edges of sheets to be soldered to a width of 1-1/2 inches (38 mm), except where pre-tinned surface would show in finished Work.
- 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. Use joint adhesive for nonmoving joints specified not to be soldered.

- G. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- H. 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. Bed flanges of Work in a thick coat of roofing cement where required for waterproof performance.
- I. 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 (50 mm) and bed with sealant.

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 07 62 00

