

SECTION 07712

MANUFACTURED COPPER ROOF SPECIALTIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Factory manufactured curbset wall flashing and expansion joints.
- B. Factory manufactured gutters and downspouts (rain drainage).
- C. Factory manufactured miscellaneous sheet copper trim and accessories.

1.2 RELATED SECTIONS

- A. Section 04810 - Unit Masonry Assemblies: Integral masonry flashings.
- B. Section 06100 - Rough Carpentry: Treated wood sills for fastening copper roof accessories.
- C. Section _____ - _____: Roofing flashing and trim installed integral with roofing membrane.
- D. Section 07612 - Sheet Copper Roofing.
- E. Section 07622 - Copper Flashing and Trim: Shop and field formed copper roofing accessories and trim.
- F. Section 07900 - Joint Sealers.
- G. Section _____ - _____: Mechanical equipment installed integral with premanufactured copper roofing accessories.

1.3 REFERENCES

- A. ASTM B 32 - Standard Specification for Solder Metal.
- B. ASTM B 101 - Standard Specification for Lead-Coated Copper Sheet and Strip for Building Construction.
- C. ASTM B 370 - Standard Specification for Copper Sheet and Strip for Building Construction.

- D. ASTM D 2822 - Standard Specification for Asphalt Roof Cement.
- E. CDA 4115-1929 - Copper in Architecture - Handbook; Copper Development Association (CDA).

1.4 SUBMITTALS

- A. Submit in accordance with Section 01300.
- B. Product Data: Manufacturer's technical product data, installation instructions and general recommendations for each specified sheet material and fabricated product.
- C. Samples: 6 or 12-inch-square samples of specified sheet materials to be exposed as finished surfaces.
- D. Samples: 6 or 12-inch-long samples of factory-fabricated products exposed as finished work. Provide complete with specified factory finish.
- E. Shop Drawings: Show layout, profiles, methods of joining, and anchorage details, including major trim, gutters, downspouts, and expansion joint systems.
 - 1. Provide layouts at 1/4 inch scale and details at 3 inch scale.

1.5 QUALITY ASSURANCE

- A. Installer: A firm with 3 years of successful experience with installation of copper roofing accessories similar in type and scope to project requirements.
- B. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Copper: ASTM B 370; temper H00 (cold-rolled) except where temper 060 is required for forming; 16 oz. (0.0216-inch thick) except as otherwise indicated.
 - 1. Provide lead coating per ASTM B 101 on exposed copper surfaces.

- B. Insulation: Manufacturer's standard rigid or semi-rigid board of glass fiber of thicknesses indicated.
- C. Wood Nailers: Pressure treated softwood lumber as specified in Section 06100.
- D. Solder: Provide 50 - 50 tin/lead solder (ASTM B 32), with rosin flux.
- E. Fasteners: Same metal as flashing/sheet metal or other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.
- F. Bituminous Coating: SSPC - Paint 12, solvent-type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.
- G. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, non-drying, nonmigrating sealant.
- H. Elastomeric Sealant: Generic type recommended by manufacturer of copper and fabricator of components being sealed and complying with requirements for joint sealants as specified in Section 07900 - Joint Sealers.
- I. Epoxy Seam Sealer: 2-part noncorrosive metal seam cementing compound, recommended by copper manufacturer for nonmoving joints including riveted joints.
- J. Sheet Copper Accessories: Sheet copper clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gauge as required for proper performance.
- K. Gutter and Conductor-Head Guards: 20-gauge bronze mesh or fabricated units, with selvaged edges and noncorrosive fasteners. Select materials for compatibility with gutters and downspouts.
- L. Roofing Cement: ASTM D 2822, asphaltic.

2.2 FABRICATED UNITS

- A. Metal Fabrication: Provide materials of standard factory fabrication to greatest extent possible. Comply with details shown and with applicable requirements of CDA

"Copper in Architecture Handbook" 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. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet copper work without excessive oil-canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.

- B. Seams: Fabricate nonmoving seams in sheet copper with flat-lock seams. Tin edges to be seamed, form seams, and solder. Rivet joints for additional strength where required.
- C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- D. Sealant Joints: Where movable, nonexpansion type joints are indicated or required for proper performance of work, form copper to provide for proper installation of elastomeric sealant, in compliance with CDA standard details.
- E. Separations: Provide for separation of metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.

2.3 ELASTIC EXPANSION JOINTS

- A. General: Provide factory-fabricated units of size and profile indicated, complete with prefabricated corner units, intersection units and splicing materials. Provide complete with elastic sheet flashing forming the primary joint membrane in a supported "bellows" arrangement designed for securement to both sides of expansion joints. Underside of bellows insulated with adhesive applied, flexible, closed-cell rubber or plastic not less than 3/8-inch thick.

- B. Type: Plain sheet or encapsulated copper flanged edges, for embedment in other construction or nailing to substrates, 4 inches minimum flange width.
- C. Type: Copper flanged edges, 3 to 4 inches wide, formed to profiles as indicated to fit curbs and designed for nailing to curb substrate. Provide 16 oz. copper flanges.
- D. Looped Bellows Width: 5 to 6 inches, exclusive of flanges.
- E. Manufacturers: Provide products that comply with project requirements and are made by one of the following:
 - 1. Afco Products, Inc.
 - 2. Celotex Corporation
 - 3. International Permalite/Roofing Components Group.
 - 4. Manville/Roofing Systems Division.
 - 5. Phoenix Building Products, Inc.
 - 6. York Manufacturing, Inc.

PART 3 EXECUTION

3.1 INSTALLATION

- A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations and with CDA "Copper in Architecture Handbook."
 - 1. Anchor units of work securely in place by methods indicated, providing for thermal expansion of copper units; conceal fasteners where possible, and set units true to line and level as indicated.
 - 2. Install work with laps, joints and seams that will be permanently watertight and weatherproof.
- B. Underlayment: Where units are to be installed directly on cementitious or wood substrates, install a slip sheet of red rosin paper on a course of asphalt saturated felt.
- C. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.
- D. Nail flanges of expansion joint units to curb nailers, at maximum spacing of 6" o.c. Fabricate seams at joints between units with minimum 3" overlap, to form a continuous, waterproof system.

- E. Anchor expansion joint units in manner indicated, complying with manufacturer's instructions. Provide not less than four-inch embedment or elastic sheets in bituminous membranes, with hot bitumen or with roofing cement. Cover with composition stripping as specified for membrane work.
- F. Install continuous gutter guards on gutters, arranged as hinged units to swing open for cleaning gutters. Install "beehive"-type strainer-guard at conductor heads, removable for cleaning downspouts.

3.2 CLEANING AND PROTECTION

- A. Clean exposed copper surfaces, removing substances that might cause corrosion of copper or deterioration of finishes.
- B. Protection: Advise Contractor of required procedures for surveillance and protection of flashings and sheet copper work during construction to ensure that work will be without damage or deterioration other than natural weathering at time of Substantial Completion.

END OF SECTION