

SECTION 07713

MANUFACTURED STAINLESS STEEL ROOF SPECIALTIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Factory-manufactured stainless steel wall flashing and expansion joints.
- B. Factory-manufactured stainless steel gutters and downspouts.
- C. Factory-manufactured miscellaneous sheet stainless steel trim and accessories.

1.2 RELATED SECTIONS

- A. Section 04810 - Unit Masonry Assemblies: Stainless steel flashings embedded in masonry.
- B. Section 06100 - Rough Carpentry: Treated wood sills for fastening stainless steel roof accessories.
- C. Section 07411 - Stainless Steel Roof Panels.
- D. Section ____ - ____: Roofing flashing and trim installed integral with roofing membrane.
- E. Section 07613 - Sheet Stainless Steel Roofing.
- F. Section 07623 - Sheet Stainless Steel Flashing: Shop and field formed stainless steel roofing accessories and trim.
- G. Section 07900 - Joint Sealers.
- H. Section ____ - ____: Mechanical equipment installed integral with manufactured stainless steel roofing accessories.

1.3 REFERENCES

- A. ASTM A 240/A 240M - Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Steel Plate, Sheet, and Strip for Pressure Vessels.
- B. ASTM A 308 - Standard Specification for Sheet, Terne (Lead-Tin Alloy) Coated by the Hot-Dip Process.

- C. SSIUS - Designer Handbook Series; Specialty Steel Industry of the United States (SSIUS).
 - 1. Stainless Steel for Roofing, Flashings, Copings.
 - 2. Design Guidelines for the Selection and Use of Stainless Steel.
 - 3. Specifications for Stainless Steel.
 - 4. Stainless Steel Fabrication.
 - 5. Stainless Steel Fasteners—A Systematic Approach to Their Selection.
 - 6. Finishes for Stainless Steel.
 - 7. Stainless Steel Architectural Facts.

- D. SMACNA - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors National Association, Inc.; fifth edition, 1993.

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: 12 inch square samples of specified sheet materials to be exposed as finished surfaces.

- D. Samples: 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. Provide layouts at 1/4 inch scale and details at 3 inch scale.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A firm with 5 years of successful experience with installation of stainless steel roofing accessories similar in type and scope to project requirements.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Stainless Steel Sheet: ASTM A 240/A 240M, Type 304, fully annealed, dead soft temper.
 - 1. Thickness: 0.015 inch, 28 gauge, unless otherwise indicated.
 - 2. Thickness: 0.018 inch, 26 gauge, unless otherwise indicated.
 - 3. Thickness: 0.021 inch, 25 gauge, unless otherwise indicated.
 - 4. Thickness: As indicated on drawings.
 - 5. Finish: No.2D (dull) mill rolled sheet finish.
 - 6. Finish: _____.
 - 7. Finish: As selected by Architect from roofing manufacturer's standards.

- B. Stainless Steel Sheet: Terne-coated stainless steel sheet, complying with ASTM A 308, Type 304, fully annealed, dead soft temper.
 - 1. Coating: Coat both sides of stainless steel sheet with terne alloy (80-20 lead/tin) in accordance with sheet metal manufacturer's standard nominal coating weight.
 - 2. Base Metal Thickness: 0.015 inch, 28 gauge, unless otherwise indicated.
 - 3. Base Metal Thickness: 0.018 inch, 26 gauge, unless otherwise indicated.
 - 4. Base Metal Thickness: 0.021 inch, 25 gauge, unless otherwise indicated.
 - 5. Base Metal Thickness: As indicated on drawings.
 - 6. Finish: Manufacturer's standard.

- C. Solder: Minimum 50-50 tin/lead solder for unexposed joints; minimum 80-20 tin/lead solder for color match at exposed joints. Use only phosphoric acid based flux for soldering stainless steel.

- D. Fasteners: Same metal as flashing/sheet stainless steel metal, Type 300 series, as recommended by sheet manufacturer.

- E. Metal Accessories: Stainless steel clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, non-corrosive, size and gauge as required for performance.

- F. Bituminous Coating: SSPC-Paint 12, solvent-type bituminous mastic, nominally free of sulfur, compounded for 15 mil dry film thickness per coat except as otherwise indicated; inert-type non-corrosive compound, nominally free of sulfur components and other deleterious impurities.
- G. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.
- H. Elastomeric Sealant: Type recommended for components being sealed and complying with requirements for joint sealants as specified in Section 07900.
- I. Epoxy Seam Sealer: 2-part non-corrosive metal seam cementing compound, recommended by sealant manufacturer for non-moving joints including riveted joints.

2.2 ACCESSORY MATERIALS

- A. Insulation: Rigid or semi-rigid board of glass fiber of thicknesses indicated.
- B. Wood Nailers: Pressure treated softwood lumber as specified in Section 06100.
- C. Elastic Expansion Joints: Factory-fabricated units of size and profile indicated, with elastic sheet flashing forming the primary joint membrane in a supported bellows arrangement designed to be secured 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.
 - 1. Type: Plain sheet or encapsulated stainless steel flanged edges, for embedment in other construction or nailing to substrates, 4 inches minimum flange width.
 - 2. Type: Stainless steel flanged edges, 3 to 4 inches wide, formed to profiles as indicated to fit curbs and designed for nailing to curb substrate. Provide thickness as indicated and in accordance with manufacturer's standards and recommendations.
 - 3. Looped Bellows Width: 5 to 6 inches, exclusive of flanges.
 - 4. Complete with prefabricated corner units, intersection units and splicing materials.
 - 5. Manufacturers: Provide products that comply with project requirements and are made by one of the following:

- a. _____.
- b. _____.
- c. _____.

- D. Gutter Guards: Stainless steel mesh or fabricated units, hinged for cleaning, with selvaged edges and non-corrosive fasteners. Select materials for compatibility with gutters and downspouts.
- E. Conductor-Head Guards: Bee-hive type stainless steel mesh or fabricated units, removable for cleaning, with selvaged edges and non-corrosive fasteners. Select materials for compatibility with gutters and downspouts.
- F. Roofing Cement: ASTM D 2822, asphaltic.

2.3 METAL FABRICATION

- A. Provide materials of standard factory fabrication to greatest extent possible.
- B. Conform to dimensions and profiles indicated. Comply with details shown and with applicable requirements of SMACNA Architectural Sheet Metal Manual and other recognized industry practices.
- C. Fabricate for waterproof and weather-resistant performance, with expansion provisions for running work, sufficient to permanently prevent leakage, damage, or deterioration of the work.
- D. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet stainless steel work without excessive oil-canning, buckling, and avoidable tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
- E. Seams: Fabricate non-moving seams in sheet stainless steel with flat-lock seams. Tin edges to be seamed, form seams, and solder. Rivet joints for additional strength where required.
- F. Hooked-Type Joints: 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 joint.

- G. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form stainless steel to provide for proper installation of elastomeric sealant, in compliance with SMACNA standard details.
- H. Separations: Provide for separation of metal from different metal types and corrosive substrates by coating concealed surfaces at locations of contact with bituminous coating or other permanent separation as recommended by manufacturer or fabricator.

PART 3 EXECUTION

3.1 PREPARATION

- A. Coordinate work of this section with adjoining work for proper sequencing of each installation to ensure best possible weather resistance and durability of work and protection of materials and finishes.

3.2 INSTALLATION

- A. Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations and with SMACNA Architectural Sheet Metal Manual.
 - 1. Anchor units of work securely in place by methods indicated, providing for thermal expansion of 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. Galvanic Action Protection: Isolate different metal types from each other to prevent galvanic action.
- C. Underlayment: Where units are to be installed directly on cementitious or wood substrates, install a slip sheet of over a course of roofing felt.
- D. Soldering: Tin uncoated stainless steel surfaces for a width of 1-1/2 inches at edges, using solder recommended for stainless steel work. Exception: Where surfaces are

terne-coated stainless steel, do not tin edges, but wire brush terne coating before soldering.

- E. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.
- F. Install elastic expansion joints in accordance with manufacturer's recommendations.
 - 1. Where required, provide for movement at joints by forming loops or bellows in width of flashing.
 - 2. Locate cover or filler strips at joints to facilitate complete drainage of water from flashing.
 - 3. Seam adjacent flashing sheets with adhesive, seal and anchor edges in accordance with manufacturer's recommendations.
 - 4. Nail flanges of expansion joint units to curb nailers, at maximum spacing of 6 inches on center.
 - 5. Fabricate seams at joints between units with minimum 3 inch overlap, to form a continuous, waterproof system.
- G. Install continuous gutter guards on gutters and conductor-head guards at conductor heads.

3.3 CLEANING AND PROTECTION

- A. Clean exposed stainless steel surfaces, removing substances that might cause staining, corrosion, or deterioration of finishes or that would interfere with uniform oxidation and weathering.
- B. Protect stainless steel roof specialties during construction to ensure that work will be without damage or deterioration other than natural weathering at time of Substantial Completion.

END OF SECTION