

SECTION 07711 - GUTTERS AND DOWNSPOUTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Galvanized steel gutters and downspouts, with expansion joints.
 - 2. Conductor heads.
- B. Related Requirements:
 - 1. Section 07620 - Sheet Metal Flashings and Trim.
 - 2. Section 07900 - Joint Sealers.
 - 3. Section 09900 - Paints and Coatings: Field painting of metal surfaces.

1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.
- B. ASTM International (ASTM):
 - 1. ASTM A123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - 2. ASTM A283 - Low and Intermediate Tensile Strength Carbon Steel Plates.
 - 3. ASTM A653 - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- C. Sheet Metal and Air Conditioning Contractors National Association (SMACNA):
 - 1. Architectural Sheet Metal Manual.
- D. Steel Structures Painting Council (SSPC):
 - 1. SSPC - Paint 12 - Cold-Applied Asphalt Mastic (Extra Thick Film).

1.3 QUALITY ASSURANCE

- A. Nominal sizing of components for rainfall intensity determined by a storm occurrence of 1 in 5 years shall be as indicated on Drawings.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Stack preformed materials to prevent twisting, bending, or abrasion, and to aid ventilation. Slope to drain.
- B. Prevent contact with materials during storage which may cause discoloration, staining, or damage.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Galvanized Steel Sheet: ASTM A 653 Structural Quality, Grade 33, G90 zinc coating.
- B. Galvanized Steel Plate: ASTM A 283, Grade A; hot-dipped galvanized G90 coating complying with ASTM A 123.

2.2 COMPONENTS

- A. Hanging Gutters: Fabricate to cross section indicated, complete with end peices, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch long sections. Furnish flat-stock gutter spacers and gutter brackets fabricated from same metal as gutters, of size recommended by SMACNA but not less than twice the gutter thickness. Fabricate expansion joints, expansion joint covers, and gutter accessories from same metal as gutters. SMACNA rectangular profile, Figure 1-2, Style D, gage as follows:
 - 1. 8"x 8" or larger: 22 gage.
 - 2. Smaller than 8" x 8": 24 gage.
- B. Downspouts: 22 gauge, size as indicated on Drawings. Fabricate downspouts complete with mitered elbows. Furnish with metal hangers, from same material as downspouts, and anchors.
 - 1. SMACNA rectangular fully enclosed profile, Figure 1-32B.
- C. Conductor Head: SMACNA Figure 1-25F.

2.3 ACCESSORIES

- A. Gutter Brackets: Galvanized steel plate, 3/16 inch thick by 2 inches wide bent plate.
- B. Gutter Spacer Clip: Galvanized steel sheet, gage to match gutter.
- C. Gutter Strap: Galvanized steel sheet, size and spacing as shown on Drawings.
- D. Downspout/Gutter Connections: SMACNA rectangular profile, Figure 1-33B, Detail 1, gage to match gutter.
- E. Downspout Straps: Galvanized steel sheet; 20 gage, SMACNA Figure 1-35G.
- F. Bituminous Coating: SSPC - Paint 12, solvent-type bituminous mastic, nominally free of sulfur, compounded for 15 mil dry film thickness per coat.
- G. Sealant: Specified in Section 07900.
- H. Splash Blocks: Precast concrete units, minimum 3000 psi at 28 days, with 5 percent air entrainment, size and profile to suit application.

2.4 FABRICATION

- A. Field measure site conditions prior to fabricating work.
- B. Form gutters and downspouts of size indicated on Drawings.
- C. Fabricate in accordance with SMACNA details unless otherwise shown.
- D. Provide gutter spacers at spacing shown. Fasten to front and back of gutter.
- E. Form sections square, true, and accurate in size, in maximum possible lengths and free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.
- F. Hem exposed edges of metal.
- G. Field Finishing: Field paint gutter, downspouts, and accessories surfaces exposed to view from ground surface. Paint in accordance with Section 09900.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces are ready to receive work and conditions are acceptable.
- B. Verify surfaces behind gutters and downspouts are painted prior to installation. Gutters, downspouts, and conductor heads shall not be in place while surfaces behind such items are being painted.
- C. Beginning of installation indicates acceptance of existing conditions and substrate.

3.2 INSTALLATION

- A. Install gutters, brackets, and accessories in accordance with SMACNA Figure 1-12. Match existing installation.
 - 1. Gutter Brackets: Space alternately with gutter spacers at 36 inches on center.
 - a. Attachment to Masonry: Anchor to masonry bond beam with (2) 1/2" diameter expansion bolts. Space anchor bolts minimum of 3 inches apart.
 - b. Attachment to Steel: Weld to steel tube section with 3/16 inch by 2 inches fillet weld, both sides of bracket. Begin weld at top of bracket.
- B. Install downspouts in accordance with SMACNA Figure 1-35A, space straps at 48 inches on center.
- C. Provide lap type gutter expansion joint in accordance with SMACNA Figure 1-6. Locate joints at a maximum spacing of 40 feet with at least one expansion joints in each segment of gutter between ends and/or downspouts.
- D. Apply bituminous coating on surfaces in contact with dissimilar materials including the following:
 - 1. Dissimilar metals as defined in SMACNA Appendix A-3 and backside of conductor heads, gutters and downspouts.
 - 2. Preservative treated wood.
- E. Lap gutter joints 2 inches, set laps in bead of sealant, and rivet at 1 inch on center.
- F. Install conductor heads and downspouts after application of exterior wall coating. Locate top of conductor head 1" below primary scupper opening to permit drainage.
- G. Install strainers as required.

END OF SECTION