



SECTION 07 71 23

ROOF EDGE DRAINAGE SYSTEMS

STEEL ROOF GUTTERS AND DOWNSPOUTS

PART 1 – GENERAL

1.01 WORK INCLUDED

- A. This section specifies the requirements necessary to furnish and install roof gutters, downspouts and accessories as shown in the construction documents.

1.02 RELATED WORK

- A. This section shall be used in conjunction with the contract documents in order to establish the total requirements for the rain drainage system:
1. Division 7 section included in the project specifications.
 2. The contract.
 3. Architectural drawings.
 4. Manufacturer's installation guide.
- B. CAUTION! Use of this section without referencing and including all of the above listed items may result in failure to execute basic requirements.

1.03 CONSTRUCTION STANDARDS

- A. All work and materials shall conform to the following in addition to all contract documents.
1. Federal, State and local building codes.
 2. International Construction Code.
 3. ASTM A924 / A924M - 13 Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
 4. ASTM A370 Test Methods and Definitions for Mechanical Testing of Steel Products
 5. ASTM A568/A568M Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements
 6. ASTM A635/A635M Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Alloy, Carbon, Structural, High-Strength Low-Alloy, and High-Strength Low-Alloy with Improved Formability, General Requirements
 7. ASTM A941 Terminology Relating to Steel, Stainless Steel, Related Alloys, and Ferroalloys
 8. ASTM E18 Test Methods for Rockwell Hardness of Metallic Materials
 9. ES-1 Wind Test for Metal Products Qualification ANSI/SPRI
 10. SMACNA's "Architectural Sheet Metal Manual"



1.04 DELIVERY, STORAGE AND HANDLING

- A. All material shall be covered and protected during transit in order to protect all coated finishes.
- B. All material shall be delivered to the work site including shipping documents and packing list showing manufacturer.
- C. All material shall be stored on work site on elevated platform and protected from damage to coated finishes.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Single source manufacturer for all rain drainage products including but not limited to gutters, downspouts, hangers, gutter connectors, end caps, downspouts brackets, gutter supports and all other accessories not listed.

2.02 MATERIALS

- A. All gutters shall have a half round profile.
- B. Gutters will have uniform sections of 10' or 18'.
- C. Downspouts shall be a maximum of 10'.
- D. Downspouts shall be round in shape and connect via 2" male-to-2" female friction. NOTE! Do not perforate downspout or connectors or elbow with screws, excluding ribbed elbow at foot of downspout.
- E. Additional accessories may be required for rain harvest systems, consult with manufacturer for assistance.

2.03 ACCESSORIES

- A. Gutter manufacturer shall provide all accessories, hangers, brackets and snow supports to match color and finish required.

2.04 FABRICATION

- A. All gutters shall be minimum .6mm thickness for all 5" and 6" and .7mm for 7.5" gutters.
- B. The gutter shall have a rolled front bead of not less than .67 mm for 5" and 6" gutters and .87" for 7.5" gutters.
- C. All downspouts shall have a minimum thickness of .6mm.
- D. All hangers shall be 5mm in thickness and minimum 25mm wide for 5" and 6" and 5mm thick and 30mm wide for 7.5" gutters with a profile to match gutter.
- E. All gutters, downspouts and accessories shall be constructed from steel sheet containing a layer of G-90 galvanization, a passivation layer, a primer coating and a top coating on both sides.
- F. Gutter connectors shall have a factory installed watertight EPDM seal allowing for thermal movement of the gutter.
- G. End caps for 5" and 6" gutters shall have a factory installed watertight EPDM seal and attach using friction.
- H. Inside and outside corner miters will be stamped out of a single piece of metal with finish and profile compatible with the gutter.



- I. Manufacturer's gutter hanger's type shall be chosen from by the Architect.
- J. All downspouts and elbows shall be seamed.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. All areas of rain drainage system installation shall be examined for any conditions that may be detrimental to proper installation.
- B. Start of installation means acceptance of existing conditions.

3.02 INSTALLATION

- A. Refer to manufacturer's Installation Guide for proper installation methods.
- B. Gutters shall be installed in maximum lengths as possible.
- C. Gutters shall have slope to downspout of 1" per 32' of run.
- D. Downspouts shall be installed plum and in accordance to SMACNA's "Architectural Sheet Metal Manual".
- E. All gutters and downspouts shall be cut with hacksaw.
- F. CAUTION! FLAME OR HIGH SPEED GRINDERS SHALL NOT BE PERMITTED OR USED TO CUT METAL.
- G. Connections and fittings shall be snug and water tight.

3.03 CLEANUP

- A. All packing material and debris shall be removed and / or recycled.
- B. Any damage to gutters or downspouts shall be repaired, including touch up paint to small scratches to finish coat.

3.04 PROTECTION

- A. The installer shall be responsible for protecting materials and work before and during the installation process.
- B. Upon completion of installation the general contractor shall be responsible for protecting the work from damage during the remaining construction.

END OF SECTION