

SECTION 15057 – COPPER TUBING, BRASS AND BRONZE PIPE FITTINGS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section includes materials and installation of copper, brass, and bronze pipe, fittings and appurtenances.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. The Work of the following Sections applies to the Work of this Section. Work of other Sections of the Specification, not referenced below, shall also apply to the extent required for proper performance of this Work.
 - 1. Section 01001 – Standard Drawings, Standard Specifications and Approved Materials List
 - 2. Section 01300 – Record Drawings and Submittals
 - 3. City of Oceanside Water, Wastewater, Recycled Water and Design Construction Manual (Water Utilities Manual) Approved Materials List

1.3 CONTRACTOR SUBMITTALS

- A. The CONTRACTOR shall submit manufacturer's data on materials furnished by the AGENCY in accordance with the requirements in the standard specifications, and as indicated in the individual sections.
- B. The CONTRACTOR shall submit information containing the following:
 - 1. Manufacturer's product data.
 - 2. Manufacturer's installation instructions.
 - 3. Manufacturer's certification of compliance.

PART 2 - MATERIALS

2.1 APPROVED MANUFACTURERS

- A. All materials shall be the appropriate model number specified in the AGENCY Specifications, as specified in the City of Oceanside Water, Wastewater, and Recycled Water Design and Construction Manual (Oceanside Water Utilities Manual), latest edition, as manufactured by the companies listed herein, or approved equal.
- B. Copper Tubing shall be in accordance with the Water Utilities Manual.

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- C. Service Saddles shall be in accordance with the Water Utilities Manual.
- D. Corporation Stops shall be in accordance with the Water Utilities Manual.
- E. Angle Meter Stops shall be in accordance with the Water Utilities Manual.
- F. Customer Valves shall be in accordance with the Water Utilities Manual.
- G. Insulating Pipe Bushings, Unions, or Couplings shall be in accordance with the Water Utilities Manual.
- H. Brass Fittings shall be in accordance with the Water Utilities Manual and conform to California AB1953 low-lead law.
- I. Fire Hydrants
 - 1. See Oceanside Standard Drawing W-1 and the Water Utilities Manual.

PART 3 – EXECUTION

3.1 COPPER TUBING AND FITTINGS

- A. Cut tubing square and remove burrs. Clean both the inside and outside of fitting and pipe ends with steel wool and muriatic acid before soldering. Prevent annealing of fittings and tubing when making connections. Do not miter joints for elbows or notch straight runs of pipe for trees.
- B. Bends in soft copper tubing shall be long sweep. Shape bends with shaping tools. Form bends without flattening, buckling, or thinning the tubing wall at any point.
- C. Brazing procedures shall be in accordance with Articles XII and XIII, Section IX, of the ASME Boiler and Pressure Vessel Code. Silver solder shall be used. Solderers shall comply with ANSI B31.3, paragraph 328.
- D. Buried piping shall be installed with some slack to provide flexibility in the event of a load due to settlement, expansion or contraction. A minimum cover of 36 inches below the finished street grade shall be adhered to. The tubing is to be bedded and covered with sand or select material as determined by the AGENCY Representative.
- E. All domestic water services shall be 1-inch minimum size copper tubing. End connections shall be flared type.
- F. All 1-1/2-inch and 2-inch size services shall be installed with straight lengths of hard copper water tube Type K in accordance with the Water Utilities Manual. Solder fittings are acceptable on only the corporation stop and angle meter stop. All couplings and adapters shall be silver soldered.

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- G. All copper services shall be encased in one layer Polywrap-C (6-mil) as manufactured by Northtown products and encased with a minimum of 6” neutral sand or approved equivalent material by the Water Utilities Department.

3.2 SERVICE SADDLE

- A. The service saddle shall be no closer than 18 inches to a valve, coupling, joint, or fitting unless it is at the end of the main. The installation of a service saddle on any machined section of Asbestos Concrete Pipe will not be permitted.
- B. The surface of the pipe shall be filed to remove all loose material and to provide a hard, clean surface before placing the service saddle.
- C. The service saddle shall be tightened firmly to ensure a tight seal; however, care shall be used to prevent damage or distortion of either the corporation stop or service saddle by over tightening. A torque wrench shall be used per manufacturer’s recommendation to avoid damage.
- D. The tap into the pipe shall be made in accordance with the pipe manufacturer’s recommendation and the standard specifications.

3.3 INSTALLING FLANGE BOLTS AND NUTS

- A. Lubricate bolt threads with graphite and oil prior to installation.
- B. Set flanged pipe with the flange bolt holes straddling the pipe horizontal and vertical centerlines.

3.4 INSULATING BUSHING AND UNIONS

- A. Pipe or fittings made of nonferrous metal shall be isolated from ferrous metals by nylon insulating pipe bushings, unions, or couplings.

****END OF SECTION****