

SECTION 15057
COPPER TUBING, BRASS AND BRONZE PIPE FITTINGS

PART 1 - GENERAL

1.01 DESCRIPTION

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

1.02 REFERENCE STANDARDS

The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for.

ANSI B1.1	Unified Inch Screw Threads
ANSI B1.2	Gages and Gaging for Unified Inch Screw Threads
ANSI B1.20.1	Pipe Threads, General Purpose (Inch)
ANSI B16.24	Cast Copper Alloy Pipe Flanges and Flanged Fittings
ASTM A 307	Carbon Steel Bolts and Studs
ASTM B 43	Seamless Red Brass Pipe, Standard Sizes
ASTM B 62	Composition Bronze or Ounce Metal Castings
ASTM B 88	Seamless Copper Water Tube
ASTM B 88M	Seamless Copper Water Tube (Metric)
AWWA C800	Underground Service Line Valves and Fittings

1.03 RELATED WORK SPECIFIED ELSEWHERE

- A. VCMWD Standard Drawings
- B. VCMWD Standard Specifications 01000, 02221, 09900, 15000, 15041, 15044, 15056, 15061 and 15064

1.04 WARNING/IDENTIFICATION TAPE.

Warning/Identification Tape shall be used for all copper tubing, except that which is bored or jacked, in accordance with Section 15000.

PART 2 - MATERIALS

2.01 COPPER TUBING.

Copper tubing shall conform to the requirements of ASTM B 88 Type K seamless copper water tube. Copper tubing up to 1" diameter shall be soft; 2" may be soft or rigid. Components shall be in accordance with VCMWD Standard Drawings.

2.02 BRASS PIPE, NIPPLES, AND FITTINGS.

Threaded nipples, brass pipe and fittings shall conform to ASTM B 43, regular wall thickness. Threads shall conform to ANSI B1.20.1 and Polytetrafluoroethylene tape and dope applied to the threads prior to installation. Fittings shall be compression type.

2.03 BRONZE APPURTENANCES

A. Corporation stops, curb stops, meter and angle meter stops, meter flange adapters, and bronze-bodied service saddles shall be in accordance with VCMWD Standard Drawings.

B. Fittings shall be compression type.

C. All items specified herein shall be manufactured of bronze conforming to ASTM B 62.

D. Service saddles shall be the double strap type. Service saddles shall be used on all service and appurtenance connections on PVC piping and DIP piping. For piping materials other than PVC, service and appurtenance connections shall be performed in accordance with the Approved Drawings and VCMWD Standard Drawings.

2.04 BOLTS AND NUTS FOR FLANGES.

Bolts and nuts shall be in accordance with Section 15000.

2.05 WARNING/IDENTIFICATION TAPE.

Warning/Identification Tape materials shall be in accordance with Section 15000.

PART 3 - EXECUTION

3.01 COPPER TUBING AND FITTINGS

A. Trenching, bedding, backfilling and compacting shall be performed in accordance with Section 02221 and the Standard Drawings. Provide a minimum cover of 36" below finished street grade.

B. Cut tubing true and square and remove burrs.

C. 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.

D. Assemble copper tubing and fittings per the manufacturer's recommendation in accordance with VCMWD Standard Drawings.

E. All threads shall have Polytetrafluoroethylene tape and dope applied to the threads

prior to installation.

F. Install warning/identification tape in accordance with Section 15000 and VCMWD Standard Drawings.

3.02 SERVICE SADDLES

A. Service saddles shall be located a minimum of 24" from any pipe joint or fittings.

B. Service saddles for connections shall be located a minimum of 24" from other saddles. Additionally, multiple service saddles for connections that are installed on the same side of a single pipe length shall be alternately staggered between 10' and 30' to prevent a weak plane in the pipe.

C. The surface of the pipe shall be clean and all loose material shall be removed to provide a hard, clean surface.

D. The service saddle shall be tightened in accordance with the manufacturer's recommendations to ensure a tight seal, using care to prevent damage or distortion of the service saddle or corporation stop due to over-tightening.

E. The tap into the pipe shall be made in accordance with the pipe manufacturer's recommendation. Tapping tools and shell cutters with internal teeth or double slots that will retain the coupon shall be used.

3.03 DISINFECTION AND BACTERIOLOGICAL TESTING.

Disinfection, bacteriological testing, and flushing shall be performed in accordance with Section 15041.

3.04 HYDROSTATIC TESTING.

Field hydrostatic testing shall be performed in accordance with Section 15044.

END OF SECTION 15057