

# **NORTH MARIN WATER DISTRICT**

## **STANDARD SPECIFICATIONS**

### **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. All brass and bronze fillings and components shall be NSF 61 certified.

##### **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
AWWA C800	-	Underground Service Line Valves and Fittings

##### **1.03 RELATED WORK SPECIFIED ELSEWHERE**

NMWD Standard Drawings  
NMWD Standard Specifications 01000, 02222, 02223, 09910, 13110, 15000, 15041, 15044, 15056, 15061 and 15064

##### **1.04 SERVICE LATERAL HOT TAP CONNECTIONS**

The District will perform all hot tap connections to existing pipelines in accordance with Section 15000.

##### **1.05 RECYCLED WATER IDENTIFICATION**

Copper Tubing, Brass, and Bronze Pipe Fittings for recycled water shall be identified with purple color coating, purple polyethylene sleeve, identification labels or signs in accordance with Section 15151.

## **1.06 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.

## **1.07 SACRIFICIAL ANODES FOR COPPER TUBING**

Sacrificial anodes shall be installed and connected to copper tubing per NMWD Standard Drawing No. 15 and where indicated on the Approved Plans in accordance with Section 13110.

## **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 one (1) inch diameter shall be soft; two (2) inch shall be soft for below ground installations and/or rigid for aboveground installations. Components shall be selected from the Approved Materials List in accordance with the 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. 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 selected from the Approved Materials List in accordance with the 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. For piping materials other than PVC, service and appurtenance connections shall be performed in accordance with the Approved Drawings.

### **2.04 BOLTS AND NUTS FOR FLANGES**

Bolts and nuts shall be in accordance with Section 15000 and the Approved Materials List.

### **2.05 WARNING/IDENTIFICATION TAPE**

Warning/Identification Tape materials shall be in accordance with Section 15000 and shall be selected from the Approved Materials List.

## **2.06 SACRIFICIAL ANODES FOR COPPER TUBING**

Sacrificial anodes shall be in accordance with Section 13110 and shall be selected from the Approved Materials List.

## **PART 3 EXECUTION**

### **3.01 COPPER TUBING AND FITTINGS**

- A. Trenching, bedding, backfilling and compacting shall be performed in accordance with Section 02223 and the Standard Drawings. Provide a minimum cover of thirty (30) inch 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 the Standard Drawings.
- E. Install warning/identification tape in accordance with Section 15000 and the Standard Drawings.
- F. Install sacrificial anodes per NMWD Standard Drawings and where indicated on the Approved Plans in accordance with Section 13110.

### **3.02 SERVICE SADDLES**

- A. Service saddles shall be located a minimum of twenty four (24) inch from any pipe joint or fittings.
- B. Service saddles for connections shall be located a minimum of twenty four (24) inch 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