

## SECTION 50

### PIPE MATERIAL FOR WATER MAINS AND SERVICE CONNECTIONS

#### 50.1 GENERAL

These specifications cover the pipe, fittings, and accessory items used for water distribution systems.

Pipe used in water distribution systems shall be either polyvinyl chloride (PVC), or ductile iron pipe (DIP).

The CONTRACTOR shall be responsible for all materials furnished and storage of same, until the date of substantial completion. He shall replace at his expense all materials found to be defective or damaged in handling or storage. The CONTRACTOR shall, if requested by the CITY, furnish certificates, affidavits of compliance, test reports, or samples for check analysis for any of the materials specified herein. All pipe delivered to project site for installation is subject to random testing for compliance with the designated specifications.

#### 50.2 PIPE INSPECTION AND TESTING

Requirements specified in section 40.5 shall apply.

#### 50.3 PVC PIPE

##### 50.3.1 PVC PIPE

All PVC pipe of nominal diameter four (4) through twelve (12) inches installed as part of the City of Mascotte Water System shall be AWWA standard C900 or DR 21. All PVC pipe of nominal diameter greater than twelve (12) inches shall be AWWA C900. All PVC pipe shall have a minimum working pressure rating of 150 psi.

##### 50.3.2 JOINTS

PVC pipe shall have integral bell push-on type joints conforming to ASTM D3139.

##### 50.3.3 FITTINGS

Fittings used with PVC pipe shall conform to section 50.4.

#### 50.4 DUCTILE IRON PIPE AND FITTINGS

#### 50. 4. 1            DUCTILE IRON PIPE

All ductile iron pipe of nominal diameter four (4) through fifty-four (54) inches shall conform to ANSI/AWWA A21.51/C151. A minimum of Class 50 pipe shall be supplied for all sizes of pipe unless specifically called out in the DRAWINGS, or required by the CITY.

#### 50. 4. 2            FITTINGS

Any fittings required shall be mechanical joint ductile iron or gray iron conforming to ANSI/AWWA A21.10/C110, 250 psi minimum pressure rating, or ductile iron compact fittings four (4) through twelve (12) inches in accordance with ANSI/AWWA A21.53/C153.

#### 50. 4. 3            JOINTS

Joints for ductile iron pipe and fitting joints shall be push-on or mechanical joints conforming to ANSE/AWWA A21.11/C111. Where called for in the plans, restrained or flanged joints shall be provided. Flanged joints shall conform to ANSI Standard B 16.1-125 LB. Restrained joints shall conform to Sections 34.3 and 34.4.

#### 50. 4. 4            COATINGS AND LININGS

Where ductile iron pipe and fittings are to be below ground or installed in a casing pipe the coating shall be a minimum 1.0 mil thick in accordance with ANSI/AWWA A21.51/C151. Where ductile iron pipe and fittings are to be installed above ground, pipe, fittings and valves shall be thoroughly cleaned and given one field coat (minimum 1.5 mils dry thickness) of rust inhibitor primer. Intermediate and finished field coats of Alkyd shall also be applied by the CONTRACTOR (minimum 1.5 mils dry thickness each coat). Primer and field coats shall be compatible and shall be applied in accordance with the manufacturers recommendations. (See approved manufacturers' list in appendix.) Final field coat shall be green for raw water and blue for finished water.

All ductile iron pipe and fittings shall have an interior protective lining of cement-mortar with a seal coat of asphaltic material in accordance with ANSI/AWWA A21.4/C104.

#### 50. 4. 5            POLYETHYLENE ENCASEMENT

The pipe shall be polyethylene encased (8 mil) where shown on the DRAWINGS or required by the CITY in accordance with ANSI/AWWA A21.51/C105.

### **50. 5   SERVICE PIPE, STOPS, FITTINGS, AND SERVICE SADDLES**

#### 50. 5. 1 SERVICE PIPE

All service lines shall be one (1) inch, one and one-half (1½) inches, or two (2) inches polyethylene tubing conforming to specifications in AWWA C800 and AWWA C901.

#### 50. 5. 2 CORPORATION STOPS

Corporation stops shall be one (1) inch, one and one-half (1½) inches, or two (2) inches brass, equipped with connections compatible with the polyethylene tubing and threaded in accordance with specifications in AWWA C800 and AWWA C901. Curb stops shall be sized to match the meter size and conform to the specifications in AWWA C800 and AWWA C901.

#### 50. 5. 3 FITTINGS

Fittings shall be brass, cast and machined in accordance with specifications in AWWA C800 and AWWA C901, with compatible polyethylene tubing connections.

#### 50. 5. 4 SERVICE SADDLES

A service saddle shall be used for all service line taps. Service saddles shall be double strap, anchored by a minimum four (4) bolt pattern on a ductile iron saddle body. Service saddles for PVC pipe shall have the double strap sized exactly to the pipe outside diameter. Sealing gaskets shall be BUNA-N rubber and straps shall be corrosion resistant alloy steel.

The CITY may require a stainless steel strap and fusion epoxy or nylon coated ductile iron body with stainless steel hardware in areas designated as corrosive.