

Type of pipe and its coating for pipe 10 inch and smaller shall be as shown on the plans.

Bell and spigot ends with rubber gaskets, flanges, mechanical couplings, or field-welded joints may be used, as conditions require to join the pipe.

All field welds shall conform to Section 509 and shall have linings and coatings replaced equal to the original coating. Wire brushing shall be used where necessary to clean the pipe.

Where cement mortar lining is used with welded joints or bell and spigot ends with rubber gaskets, the joint cut back shall be mortared after the pipe has been laid. This cement mortar lining and application shall conform to AWWA Standard C 205.

On buried pipe coated with a tape coating system conforming to AWWA Standard C 214, the field joints shall be cleaned, primed, and wrapped with two thicknesses of 35-mil cold applied elastomeric joint tape conforming to AWWA Standard C 209, Type 11.

Damage to the pipe lining or coating due to the Contractor's operation shall be repaired at the Contractor's expense.

**716.03 Galvanized Pipe.** Galvanized pipe and fittings shall conform to the requirements of ASTM A53.

**716.04 Copper Pipe.** Copper pipe shall conform to the requirements of ASTM B88, Type "K" and shall be annealed. Pipe shall be supplied with solder type fittings.

**716.05 Plastic Pipe.** Polyethylene pipe (PE) shall conform to the requirements of ASTM D2104 when size, type, and schedule or series are designated or ASTM D2239 when size and pressure ratings are designated. Polyvinyl Chloride pipe (PVC) shall conform to the requirements of ASTM D1785 when size and schedule are designated or ASTM D2241 when size and pressure ratings are designated.

All plastic pipe used as water pipe must bear the National Sanitation Foundation (NSF) seal of approval.

#### **716.06 (unused)**

**716.07 Valves and Valve Boxes.** Valves shall be designed to exceed the required working pressure of the water line but shall not be less than the values herein.

##### (a) *Gate Valves.*

1. General. Valves shall have non-rising stems, unless otherwise specified, with inside screw and shall open to the left or counterclockwise. Valves shall be equipped with double O-ring stem seals conforming to AWWA C500. All valves shall have the manufacturer's names, catalog number and working pressure molded or stamped thereon. Valves shall be painted as specified in AWWA C500, Section 27, and shall be furnished complete with all accessories. Ends of valve shall fit the pipe or fitting to which attached (push-on, mechanical, bell-and-spigot or flanged).

Gate valves shall be for buried service, however, they shall be protected against freezing above the frost line.

2. Valves Smaller than 3 Inch. Valves shall be of the wedge-disc type with non-rising stem, screw ends and bronze body. Metal composition of the body, center-piece and other cast parts shall be cast bronze meeting the requirements of ASTM B62. All packing shall have each ring cut to fit, with staggered joints. Continuous (spiraled) packing shall not be used. Valves shall be provided with handwheels and stuffing box glands. Unless otherwise specified, valves shall be for 200-pound water service.
3. Valves 3 Inch and Larger. Valves 3 inch and larger shall conform to AWWA C500, except that they may be furnished with 2-inch square operating nuts or hand-wheels.

Bypasses, when required, shall conform to the details shown on the plans or established.

The intended position of the valve in the water line (either horizontal or vertical) shall be as shown on the plans.

- (b) *Other Valves.* Butterfly valves, globe valves, air relief valves, check valves, tapping valve and sleeve and other appurtenances shall be as shown on the plans.
- (c) *Valve Boxes.* Unless otherwise specified or shown on the plans, valve boxes shall be of the adjustable screw type, complete with drop cover.