

**TAPPING SLEEVES, VALVES AND VALVE BOXES ON WATER LINES****630.1 DESCRIPTION:**

The installation of all tapping sleeves, valves and valve boxes shall conform to this specification and standard details, except as otherwise required on the plans or as modified in the special provisions.

**630.2 GENERAL:**

For valves 12 inches and smaller, the Contractor shall furnish the manufacturer's standard data and catalogues for gate valves, tapping valves, tapping sleeves, curb stop valves, butterfly valves and any castings.

For valves larger than 12 inches, the Contractor shall furnish shop drawings and technical data required for evaluating and approval of each type of valve, tapping sleeve and valve and butterfly valve. This information shall include complete details, dimensions, weights, diameter of stems, alloy for all valve parts, and any information that may be required to assemble, install, operate and maintain the valve.

The name of the manufacturer, the year of manufacture, the size of the valve, model number and rated working pressure, shall be cast on the body of each valve.

The Contracting Agency may test 10 percent of each type and size of valve furnished. Failure of any of the valves tested to meet these specifications shall be deemed sufficient cause to reject the entire lot delivered.

The internal working parts of valves of the same make, type, and size, shall be interchangeable.

**630.3 GATE VALVES:**

**630.3.1 General:** All valves shall conform to the latest revisions of AWWA standards supplemented as follows: Valves shall be of the non-rising stem type and shall be counter-clockwise opening (left-hand).

The valve shall be furnished with either low zinc stems conforming to ASTM B98 or ASTM B763 or stainless steel (SAE 304, 316, or 431 grade) conforming to either ASTM A276, ASTM A473, ASTM A582, or ASTM A742.

Unless otherwise noted, valves shall have a 2 inch square operating nut.

All valves, 2 inch through 54 inch, shall have a working pressure of 250 psi and be in conformance with AWWA C-515 or AWWA C-509. Valves 2 inch through 16 inch shall also meet the requirements for a UL listing and Factory Mutual Standards 11.20 and 11.30 for gate valves.

Bronze for all interior parts of valves shall contain no more than 6 percent zinc if made from cast bronze, or must conform to Copper Development Association #67600 if made from bar stock material.

All interior and exterior ferrous surfaces exposed to fluid flow shall be epoxy coated to a minimum dry film thickness of 6 mils. Epoxy coatings shall be factory applied by an electrostatic or thermosetting process in accordance with the manufacturer's printed instructions. The epoxy materials used shall be 100% powder epoxy or liquid epoxy that conforms to the requirements of AWWA C-550 and NSF/ANSI Standard 61.

Any epoxy coating that is chipped or damaged shall be repaired using the manufacturers recommended procedure and epoxy system.

Bypass valves are required only when specified. Bypass size shall be per manufacturer's recommendation.

Valves in air release and vacuum relief lines shall be flanged or threaded as shown on the plans.

Valves in fire hydrant lines shall have a flanged joint end on the side towards the main and a restraint or mechanical joint end

on the side towards the hydrant.

Gate valves 2 inch through 54 inch shall be resilient wedge style and may be furnished with flange ends, mechanical joint ends, or mechanical joint x flange end.

### **630.3.2 Specific Valve Size Requirements**

#### **(A) Valves 2 inches through 20 inches:**

Valves shall be iron body resilient wedge gate valves in accordance with the latest revision of AWWA C-509 or AWWA C-515.

The valve shall be designed to work equally well with pressure on either side of the gate. The valve shall be equipped with o-ring packing.

Gearing and bypass not required unless specified.

#### **(B) Valves 24 inches and larger:**

Valves shall be resilient wedge gate valves in accordance with AWWA C-515.

Valves shall have spur gearing unless the bury is too shallow, in this case bevel gearing is acceptable.

Bypass valves are required only when specified.

### **630.4 TAPPING SLEEVES AND VALVES:**