

SECTION 02480 – POTABLE WATER VALVE MATERIALS

(Follow all instructions and make all edits with “Track Changes” turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Replace Section 02480 of the Standard Specifications except for the Section number and title with the following:

Description

02480.00 Scope - This Section includes the requirements for gate valves, butterfly valves, valve boxes, valve stem extensions, tapping sleeve and valve assemblies, check valves, combination air release/air vacuum valves, and backflow prevention devices for potable water systems.

Materials

02480.10 General - Furnish valves with operating nuts or hand wheels as specified or shown. Furnish a standard 2-inch operating nut. Ensure all Materials in contact with potable water conform to ANSI/NSF Standard 61, Drinking Water System Components - Health Effects, or equivalent. When indicated, coat all interior and exterior ferrous surfaces of valves with a protective epoxy coating meeting the requirements of AWWA C550.

02480.20 Gate Valves:

(a) Minimum Pressure - Furnish gate valves that meet the requirements of AWWA C500, AWWA C509, or AWWA C515. The minimum design working pressure is 200 psi for pipe 2 inches to 12 inches in diameter, and 150 psi for pipe 14 inches to 16 inches in diameter.

(b) Arrangement - For 16-inch diameter pipe, arrange gate valves for operation with gear case in the horizontal position. Equip valves with bypasses and gate valves of the sizes adopted in the AWWA Standards. Equip bypass gate valves with standard 2-inch operating nuts.

(c) Valves - Furnish gate valves that are resilient seat, non-rising stem type, open counterclockwise, and are equipped with an O-ring stuffing box.

02480.22 Butterfly Valves:

(a) Seats and Seals - Furnish butterfly valves that are rubber seated and meet the requirements of AWWA C504, Class 150B. Furnish shaft seals that are standard O-ring seals, designed for replacement under line pressure.

(b) Valve Operators - Furnish valve operators of the traveling nut or worm gear type and that are sealed, gasketed, and permanently lubricated for buried service. Construct valve operators to the standard of the valve manufacturer to withstand all anticipated operating torques, and design to resist submergence in groundwater.

(c) Valves - Furnish butterfly valves that are resilient seat, open counterclockwise, and are equipped with an O ring stuffing box.

02480.25 Valve Boxes - Install valve boxes on all buried valves. Furnish boxes that are cast iron, two-piece, slip type standard design, with a base corresponding to the size of the valve. Cast the word "WATER" in the cover.

02480.26 Valve Stem Extensions - Furnish a valve stem extension on valves with an operating nut more than 3 feet below grade to raise the operating nut to within 3 feet of the ground surface. Ensure valve stem extensions have a 2-inch square operating nut and self-centering rockplate support.

02480.30 Tapping Sleeve and Valve Assemblies:

(a) Valve Assemblies - Furnish tapping valves with flanged inlet end connections with the outlet ends conforming to dimensions in the AWWA Standards for mechanical joint connections or flange connections, except that the outside of the end connection has a large flange for attaching a drilling machine. Ensure the seat opening of the valve permits a diameter cut no less than 1/2 inch smaller than the valve size. Valves specifically designed for tapping meeting the requirements of AWWA C500, and valves meeting the requirements of AWWA C509, are allowed. Furnish tapping valves of the same type as other valves on the Project.

(b) Sleeves - Furnish tapping sleeves that are cast iron, ductile iron, stainless steel, epoxy coated steel or other approved Material.

02480.40 Check Valves - Furnish check valves meeting the following:

(a) Swing Check Valve - Furnish swing check valves meeting the requirements of AWWA C508, with rubber seat materials mating with metal seating surfaces. Furnish valves with a design working pressure of 175 psi for check valves with diameters of 12 inches and smaller, and 150 psi for check valves with diameters of 14 inches and 16 inches. Furnish non-assisted check valves unless otherwise indicated.

(b) Spring-Loaded Plug or Disc Check Valves - Furnish spring-loaded plug or disc check valves that are bronze mounted with bronze, cast or ductile iron body, bronze plug or disc, stainless steel spring, and resilient seating suitable for potable water service. Furnish drop-tight sealing valves and plugs or discs that are easily replaceable. The minimum design working pressure of the valves is 150 psi.

02480.60 Combination Air Release/Air Vacuum Valves - Furnish combination air release/air vacuum valves that meet the requirements of AWWA C512. The minimum design working pressure of the valve body is 300 psi. Furnish a cast iron body and cover according to ASTM A48, Class 30. Furnish stainless steel floats according to ASTM A240 and designed to withstand 1,000 psi. Furnish Buna-N rubber seats. Furnish internal parts that are stainless steel or bronze.

02480.70 Backflow Prevention Devices - Furnish backflow prevention devices that are capable of withstanding a minimum design working pressure of 150 psi, and meet the following:

(a) Reduced Pressure Backflow Prevention Assembly - Furnish reduced pressure backflow prevention assemblies consisting of a mechanical, independently operating, hydraulically dependent relief valve located between two independently operating, spring loaded check valves that are located between two tightly closing resilient seated shutoff valves, with four resilient seated test cocks, all meeting the requirements of AWWA C511 and the Oregon State Health Division.

(b) Double Detector Check Valve Backflow Prevention Assembly - Furnish double detector check valve backflow prevention assemblies consisting of two spring loaded, independently operating check valves, located between two tightly closing resilient seated shutoff valves, with four resilient seated test cocks, all meeting the requirements of AWWA C510 and the Oregon State Health Division.

02480.80 Acceptance - Valves and appurtenances are accepted according to 00165.35 and this Section.