

Material Specification – 38

Resilient Seated Insertion Valves

1. GENERAL

Resilient seated insertion valves shall be designed and manufactured in accordance with AWWA C515, as applicable, with the following additional requirements or exceptions.

2. SERVICE

Valves shall be suitable for frequent operation and for long periods of inactivity. Valves shall operate with flows in either direction and shall provide zero leakage past the seat; minimum working pressure for all sizes shall be 250 psi. Components shall be suitable for exposure to chloraminated water. Use of these valves on AC pipe is prohibited.

3. SIZES

This Specification covers resilient seated insertion valves in 4-inch through 12-inch nominal diameters.

4. VALVE DESCRIPTION

Valves shall be iron body, resilient seated insertion valves with non-rising stems. Construction of the resilient wedge shall comply with AWWA C515 requirements. If the resilient seats are bonded to the gates, the gates shall be completely encapsulated with the material, except for guide tabs or slots. Valve bodies shall be designed to allow for the lifting of the valves by the bonnet flange, gland flanges, or other appurtenances.

Valves shall be supplied with 2-inch square wrench nuts. Valves shall open clockwise.

5. INSTALLATION

Valves shall be installed with the stem positioned vertically in buried horizontal water lines without gearing, bypasses, rollers, or tracks. Valve bonnet shall be installed below frost line. Valve installation shall result in full host pipe coupon removal by Manufacturer certified installers in accordance with the Manufacturers installation manuals.

6. VALVE STEMS AND SEAT

Valve stems shall be made of bronze in accordance with ASTM B 763, Copper Alloy No. C99500; stainless steel in accordance with ASTM A 276, Type 304, Type 316, or AISI 420; or copper alloy in accordance with ASTM B 98, Copper Alloy No. C66100/H02. The stem seal shall consist of three O-rings.

Valve seat shall be synthetic rubber, Buna-N or EPDM. Valves installed in the recycled water system shall have EPDM seats.

7. BOLTING MATERIAL

The bonnet gland bolts and nuts shall be in accordance with ASTM F 593, Type 304 stainless steel or electro-plated with zinc or cadmium. The hot-dip galvanized process is not acceptable.

8. END CONNECTIONS

Mechanical joint components shall be in accordance with AWWA C111 with tee-head bolts and hexagon nuts fabricated from a high-strength, low alloy steel known in the industry as Cor-Ten, Usalloy, or Durabolt.

Accessories for the mechanical joint shall consist of the gasket, gland, and fasteners and shall be furnished and packaged separately from valves. Each package shall be labeled in a manner that provides for proper identification and the number of units listed per package or bundle.

9. SPLIT RESTRAINT DEVICES

Split restraint devices shall consist of multiple gripping wedges incorporated into a follower gland meeting AWWA C110.

Mechanical joint restraint shall be in accordance with AWWA C600. Set screw pressure point type restraint hardware is not permitted.

10. TESTING

Chemical and modularity tests shall be performed with three test bars poured per production shift per UL and ASTM A536. Testing for tensile, yield and elongation shall be done in accordance with ASTM E8.

Each valve, after shop assembly, shall be operated and hydrostatic tested in accordance with AWWA C515.

11. COATINGS

Ferrous surfaces, except machined or bearing surfaces, shall be prepared in accordance with SSPC SP10. These surfaces shall then be coated with liquid epoxy in two or more uniform coats or with fusion-bonded epoxy to a minimum DFT of 10-mils in accordance with AWWA C550. Machined flange faces shall be shop-coated with a rust-preventive compound; they shall not be painted or coated with the same coating as the body.

12. QUALITY CONTROL

The Manufacturer shall submit a written statement that the inspection and all specified tests have been completed and that results comply with the requirements of these Standards. Components in contact with potable water shall be certified to comply with NSF/ANSI 61, and a copy of the NSF/ANSI 61 certification shall be provided to Denver Water, if requested.

13. APPROVED MANUFACTURERS

Manufacturers	AWWA C515	Size (Inch)
TEAM Industrial Services	X	4 to 12

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