

AWWA C509 AND C515 RESILIENT SEATED GATE VALVE AND RESILIENT SEATED TAPPING VALVE SPECIFICATION

1. SCOPE

1.01 This specification covers design, manufacture, and testing of 3-inch through 108-inch, Resilient Seated Gate Valves, and Resilient Seated Tapping Valves suitable for water or wastewater service as set forth in American Water Works Association (AWWA) Standard C509 or C515, most recent published version.

2. STANDARDS

- 2.01** Valves 3-inch through 54-inch shall have a minimum cold-water working pressure of 250psig. Valves larger than 54-inch cold-water pressure rating on application and as agreed between the manufacture and customer. Valves larger than 54-inch, where applicable, shall be manufactured in compliance with AWWA C515. Any size valve larger than those covered by the AWWA standard shall be manufactured in compliance with the standard, as applicable.
- 2.02** Valves shall be designed and manufactured in accordance with the AWWA C509 & C515, ANSI/NSF 61 and ANSI/NSF 372 Certified for use in drinking water, and UL and FM Listed for use in Fire Protection.
- 2.03** Valves shall be tested in accordance with Testing Section 5.1 AWWA C509 & C515.

3. CONNECTIONS

- 3.01** Valve end-connections shall be:
- A.** Flange end-connections in accordance with ANSI B16.1, Class 125, rated for 250psig, or ANSI B16.42, Class 250 rated for 350psig.
 - B.** Mechanical Joint - ANSI/AWWA C110/A21.10, ANSI/AWWA C111/A21.11, or ANSI/AWWA C153/21.53.
 - C.** Push On - ANSI/AWWA C111/A21.11.
 - D.** Or a combination with the flange connections.
- 3.02** Valves for Tapping, 3-inch through 48", shall be mechanical joints by tapping flange. 54" and larger, shall be flange by flange. The tapping valve shall have unobstructed waterway. The port area shall be large diameter to the permit entry of the full diameter tapping machine cutters. Valve end shall mate with the tapping sleeve and shall have an alignment lip to fit the recess in the tapping sleeve flange for proper alignment. The lip will be dimensioned in accordance with MSS SP-60.

4. DESIGN

- 4.01** Valve shall be non-rising stem (NRS) or outside screw and yoke (OS&Y) configurations, as specified.
- 4.02** Valve shall have full nominal port diameter; reduced port not acceptable; no venturi pattern.
- 4.03** Valve shall have a full-port, unobstructed, water way when in the full-open position.
- 4.04** Valve shall have synthetic rubber seating area on the wedge to allow for zero leakage at rated pressure.
- 4.05** Valves 3-inch through 48-inch shall have solid wedge, totally encapsulated in rubber. Valve 54-inch and larger shall have solid wedge with mechanically retained rubber seat.
- 4.06** Valves OS&Y must have multiple rings of packing and a stuffing box.
- 4.07** Valve shall permit repacking under line pressure.
- 4.08** Valve stem shall have one-piece integral thrust collar. Valve stems shall rotate freely in the valve bonnet recess.
- 4.09** Valve shall have triple elastomer o-ring seals.
- 4.10** Valve direction of open shall be counterclockwise, unless otherwise specified.
- 4.11** Valve 2-inch operating nut or handwheel shall have cast the word "OPEN" and an arrow indicating the direction to open.
- 4.12** Valves, 16-inch and larger, shall have a by-pass valve, when specified.

- 4.13** Valves, 30-inch and larger, shall be 3-piece body design; bonnet, body spacer, body.
- 4.14** Valves, 30-inch and larger, shall have rollers, tracks and scrapers on both sides of the body to allow for vertical or horizontal installation which maintains a smooth surface between the rubber seating area and the track, guiding the wedge through full travel of operation.
- 4.15** Valve, by-pass valves, integral to the valve body and shall be sized per AWWA C500, Section 4.4, Table 11 and shall be open left unless otherwise requested. By-pass valve shall be provided with a 2-inch operating nut or handwheel, as specified.
- 4.16** Valve castings shall be marked as required in the AWWA C509 or C515 Standards.

5. MATERIALS

- 5.01** Valve body, bonnet, wedge, 2-inch operating nut or handwheel shall be constructed of ductile iron, ASTM-A536 65-45-12.
- 5.02** Valve stem shall be Series 300 Stainless Steel, unless otherwise specified.
- 5.03** Valve body and bonnet bolting shall be Series 300 Stainless Steel, unless otherwise specified.
- 5.04** Valve elastomer gaskets and o-rings shall be constructed of EPDM, unless another elastomer is specified.
- 5.05** Valves, 30-inch and larger, shall have Series 300 Stainless Steel rollers and tracks with bronze scrapers on both sides.
- 5.06** Valve wedges, 3-inch through 48-inch, shall be fully encapsulated in EPDM elastomer, unless another elastomer is specified.
- 5.07** Valve wedges, 54-inch and larger, shall be EPDM elastomer, mechanically retained, unless another elastomer is specified.
- 5.08** Valves 54-inch and larger shall have full-port. Valves with reduced port shall not acceptable.

6. COATINGS

- 6.01** Valve internal and external coatings shall be NSF 61 and 372 Certified Fusion Bonded Epoxy or 2-Part Thermal Setting Liquid Epoxy.
- 6.02** Valve internal and external coatings shall be in accordance with AWWA C550.

7. MANUAL GEARING

- 7.01** Valves 18-inch and larger shall have bevel gearing or spur gearing depending on the application requirements. Bevel Gears or Spur Gears can be adapted to any size valve upon request.
- 7.02** Valve gear case fully enclosed, unless otherwise specified

8. OPTIONS

- 8.01** Extension Stems.
- 8.02** Position Indicators.
- 8.03** Valve Boxes.
- 8.04** Indicator Posts.
- 8.05** Electric Motor Operators.
- 8.06** Limit Switches.

9. MANUFACTURER

- 9.01** Valves shall be hydrostatically, and leak tested per AWWA C509 or C515. When requested, the manufacturer shall provide test certificates, dimensional drawings, parts list drawings, and operation and maintenance manuals.
- 9.02** Valves shall be Series 6000 as manufactured by J&S Valve, Inc. Huffman, TX, USA, or preapproved equal. (10062019 jb sb rl)