

3-42 INCH BUTTERFLY VALVE, BONDED BODY SEAL



BUTTERFLY VALVES 3-24 INCH BONDED SEAL IN BODY DESIGN

VSI AWWA C504

DATE

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1. SCOPE
 - 1.1. This specification covers the design, manufacture, and testing of cast butterfly valves 3 inch (75 mm) to 42 inch (1050mm) under service pressure of up to 250 psig (1725 kPa).
 - 1.2. Butterfly valves shall be resilient seated and of the quarter turn, concentric, bonded seal in body type.
2. GOVERNING STANDARDS
 - 2.1. All butterfly valves shall be in full conformance with the design, manufacturing, and testing standards set forth by the American Water Works Association (AWWA) in Standard ANSI/AWWA C504.
 - 2.2. When requested, manufacturer shall provide an Affidavit of Proof of Design Testing in accordance with AWWA C504.
3. CONNECTIONS
 - 3.1. Flanged valves shall conform to all standards of ANSI B16.1, Class 125 or Class 250.
 - 3.2. Flanged valves' lay length shall conform to AWWA C504 Table 1, Short Body.
 - 3.3. Mechanical joint valves shall conform to all standards of ANSI/AWWA C111/A21.11.
4. MARKINGS
 - 4.1. Each valve shall be marked with the manufacturer's name, valve size, body material, and pressure rating cast into the body of the valve. Lettering shall be a minimum of 1/2 inch tall and project 1/10 inch from body.
 - 4.2. All butterfly valves, except buried or submerged valves, shall be equipped with a type 304 or 316 stainless steel tag identifying body, disc, resilient seat, and stem material in addition to manufacturer's name, pressure rating, size, date of manufacturer, and date of testing.
5. DESIGN
 - 5.1. Valves shall be equipped with either a seat directly bonded to a machined finished surface on valve disc or an entirely corrosion resistant disc with machined seat. Plated or removable seats are not acceptable.
 - 5.2. Valve shall have a permanently installed seal bonded to the body of the valve. The seal-to-body bond shall comply with ASTM D429 pull test.
 - 5.3. Valve shall be equipped with a set of V-type stem packing. Valve stem packing shall be replaceable without removing the valve from the line and be adjustable by means of shims.
 - 5.4. Radial shaft bushings shall be supplied in the upper and lower bearing journals.
 - 5.5. The valves shall be equipped with a mounting area for operators conforming to Manufacturers Standard Society (MMS) 101 or International Organization of Standardization (ISO) 5211. There shall be sufficient clearance to directly mount standardized operators with easily accessible fasteners.
 - 5.6. Stem diameter shall be the preferred dimension stated in ISO 5211 Table 4.
 - 5.7. Drive keys shall comply with ISO R773, unless specifically stated otherwise. Preferred tolerance is D10. Tolerance of Js9 is acceptable for motor operated valves.
 - 5.8. Valves shall provide a bubble-tight shutoff bi-directionally at rated working pressure.
6. MATERIALS
 - 6.1. The valve body and bonnet if equipped shall be constructed of ASTM A536 Ductile Iron.
 - 6.2. The valve disc shall be either ASTM A536 Ductile Iron or ASTM A351 Stainless Steel
 - 6.3. For valves with iron discs the seat shall be applied to the disc in the form of a minimum of 95% nickel, type 316 stainless steel, or stellite. For valves with Stainless Steel discs the seat shall be machined into the disc edge.
 - 6.4. The valve seal shall be made from resilient NBR, EPDM, or FPM as specified.
 - 6.5. Radial bearings shall be made of permanently lubricated RTFE or lead free Bronze.
 - 6.6. All submerged coatings shall conform to AWWA C550, be holiday free, and have a minimum total dry film thickness of 10 mils.
 - 6.7. All wetted hardware should be of corrosion resistant type 304 or 316 stainless steel as specified.
 - 6.8. All uncovered, submerged, or buried valves shall have type 304 or 316 stainless steel exterior hardware. All others shall have zinc plated carbon steel hardware unless specified.
7. OPERATORS
 - 7.1. All manually operated valves 8 inches and larger shall be equipped with a worm gear actuator with position indicator. Operator should be designed to hold the valve in any intermediate position without creeping or fluttering.
 - 7.2. All actuators shall be permanently sealed and suitable for buried service.
 - 7.3. All exposed hardware shall be made of stainless steel.
 - 7.4. All actuators equipped with handwheels shall have a maximum rim pull of 50 lbs plus 5%.
8. MANUFACTURER
 - 8.1. Concentric butterfly valves shall be VSI Series BFI as manufactured by Valve Solutions, Inc., Alpharetta, GA USA.
 - 8.2. All valves shall be warranted by manufacturer for a minimum of 12 months.