100-PERCENT PORT ECCENTRIC PLUG VALVES

1. SCOPE
   1.1. This specification covers the design, manufacture, and testing of eccentric plug valves from 2 inch (50 mm) through 72 inch (1800 mm) under service pressure of up to 175 psig (1200 kPa).
   1.2. Plug valves shall be resilient seated and of the quarter turn, non-lubricated, eccentric type.
2. GOVERNING STANDARDS
   2.1. All eccentric plug 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 C517.
   2.2. When requested, manufacturer shall provide an Affidavit of Proof of Design Testing in accordance with AWWA C517.
3. CONNECTIONS
   3.1. Flanged valves shall conform to all standards of ANSI B16.1, Class 125.
   3.2. 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 plug valves, except buried or submerged valves, shall be equipped with a type 304 or 316 stainless steel tag identifying body, plug, 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. Port areas of valves in relation to pipe areas shall not be less than 100%
   5.2. Valves shall be equipped with a min. 0.125", 95% nickel seat, directly bonded to a machined finished surface on valve body. Plated or removable seats are not acceptable.
   5.3. Valve shall be equipped with a set of V-type stem packing with an adjustable gland. Valve stem packing shall be replaceable without removing the cover or bonnet of the valve.
   5.4. Radial shaft bushings shall be supplied in the upper and lower bearing journals. Thrust bearings shall be supplied between the plug and body in both the upper and lower journal areas.
   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) 52111. There shall be sufficient clearance to directly mount standardized operators with easily accessible fasteners.
6. MATERIALS
   6.1. The valve body, cover, and bonnet if equipped shall be constructed of ASTM A536 Ductile Iron.
   6.2. The plug shall be constructed of ASTM A536 Ductile Iron and shall be one piece. The resilient plug encapsulation shall conform to ASTM D429 testing.
   6.3. Radial and thrust bearings shall be made of permanently lubricated RTFE or Bronze.
   6.4. All submerged coatings shall conform to AWWA C550, be holiday free, and have a minimum total dry film thickness of 10 mils.
   6.5. All uncovered, submerged, or buried valves shall have type 304 or 316 stainless steel hardware. All others shall have zinc plated carbon steel hardware unless specified.
7. OPERATORS
   7.1. All manually operated valves 4 inch and larger shall be equipped with a worm gear actuator with position indicator.
   7.2. All actuators shall be permanently sealed and suitable for buried service.
   7.3. All 2 inch square operating nuts, exposed hardware and shafts shall be made of corrosion resistant stainless steel.
   7.4. All actuators equipped with handwheels shall have a maximum rim pull of 50lbs.
8. MANUFACTURER
   8.1. Eccentric plug valves shall be VSI Series AWWAC517 as manufactured by Valve Solutions, Inc., Alpharetta, GA USA or approved equal.
   8.2. All valves shall be warranted by manufacturer for a minimum of 12 months.