For use in the Denver Water service area

Materials Specification – 8
for
TAPPING VALVES – MECHANICAL JOINT TYPE

1. GENERAL

Tapping valves shall be designed and manufactured in accordance with AWWA C509 or 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 be capable of operating satisfactorily with flows in either direction; the operating pressure for all sizes shall be 200 psi. Components shall be suitable for exposure to chloraminated water.

3. VALVE DESCRIPTION

Valves shall be iron body, resilient seated gate valves with non-rising stems. If the resilient seats are bonded to the gates, the gates shall be completely encapsulated with the material except for guide tabs or slots.

4. INSTALLATION

Valves shall be installed with the stem positioned vertically in buried horizontal water lines without gearing, bypasses, rollers, or tracks.

5. VALVE STEMS

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.

Valves shall be furnished with 2-inch square wrench nuts. The stem seal shall consist of two O-rings. Valves shall open clockwise.

6. 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.

7. END CONNECTIONS

A. **Flanges:** Flanges shall be sized and drilled in accordance with ANSI B16.1, Class 125. Flanges shall be machined to a flat surface with a serrated finish in accordance with AWWA C207.

B. **Mechanical Joint:** 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.

8. SEAT RING SIZE

The body of the valve and the seat opening shall be sized large enough to accommodate the following sizes of shell cutters:

Tapping Valve Nominal Diameter (Inches)	Shell Cutter Diameter (Inches)
4	3 7/8 ±1/32
6	5 13/16 ±1/32
8	7 7/8 ±1/32
10	9 3/4 ±1/32
12	11 7/8 ±1/32

9. TESTING

Each valve, after shop assembly, shall be operated and hydrostatically tested in accordance with AWWA C509 or AWWA C515.

10. COATING

Valves shall have a fusion-bonded epoxy coating in accordance with AWWA C509 or AWWA C515 with a minimum DFT of 10 mil. 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.

11. CERTIFICATION

The manufacturer shall furnish a sworn statement that the inspection and all specified tests have been completed and that results comply with the requirements of these Standards. A copy of the Certification, including compliance with NSF/ANSI 61, shall be provided to Denver Water.

12. ACCEPTABLE MANUFACTURERS

American AVK
American Flow Control, Series 2500 RW
Clow
Kennedy
Mueller
United States Pipe and Foundry Company

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