

SECTION 33 12 16.13**BUTTERFLY VALVES****PART 1: GENERAL**

1.01 SCOPE

Furnish and install all butterfly valves shown on the Drawings and/or the Contract Documents.

1.02 SUBMITTALS

Submit shop drawings and manufacturer's literature to the AW Project Manager for approval in accordance with Specification Section 01 33 00.

PART 2: PRODUCTS

2.01 VALVES

- A. Furnish and install rubber-seated butterfly valves as shown on the Drawings. Butterfly valves shall conform to Class 150B of AWWA Standard C504 and this Specification. If working pressure is greater than 150 psi, the butterfly valve shall conform to Class 250B of AWWA Standard C504. All valves furnished shall open left (CCW) in accordance with AW's standard.
- B. Valve bodies shall be ductile iron with mechanical joint ends for buried valves. Mechanical joint ends shall conform to AWWA Standard C111. All valve materials shall meet the requirements of NSF 61. For exposed or above ground valves, use flanged ends.
- C. Valve shafts shall consist of one-piece units extending through the discs of 18-8 stainless steel Type 303 or 304. Shaft diameter shall be in accordance with Table 3 of AWWA Standard C504.
 - 1. Valve discs shall be Ni-Resist, Type 1, or cast iron with stainless steel edges.
 - 2. Valve seats shall be hycar or natural rubber mounted in the valve body.
 - 3. Valve bearings shall be nylon or Teflon.
- D. The valve interior and exterior shall be epoxy coated at the factory by the valve manufacturer in accordance with AWWA Standard C550 (6-8 mil average, 4 mil minimum).

- E. All elastomers used in the butterfly valves must be suitable for service in the following water conditions:
 - 1. Chlorine concentration up to 12 mg/L
 - 2. Chloramine concentrations up to 6 mg/L
 - 3. Ozone concentrations up to 2.0 mg/L (AWWA Standard says 0.5 ppm)
 - 4. pH range of 4-11
- F. Manual buried operators, if provided, shall be either worm gear or traveling nut type and shall be furnished with 2-inch AWWA nuts and extension shafts. Input required at nuts to produce specified output torque shall be less than 150 ft.-lbs. Operators shall be designed to withstand an input at the nut of 300 ft.-lb. without damage to any operator components.
- G. Exposed manual operators shall be same as for buried valves, except valve shall have operating hand wheel in lieu of AWWA nut.

PART 3: EXECUTION

3.01 SETTING VALVES

- A. Install the valves in strict accordance with the requirements of Specification Section 33 11 00 and Contract Drawings. All butterfly valves shall be restrained.
- B. All butterfly valves (buried or exposed) shall be installed with the stem horizontal.

3.02 PROTECTION

- A. After field installation of the valve all external bolts except the operating nut shall receive a layer of tape coating or approved rubberized-bitumen based spray-on undercoating applied before backfill. For buried valves, the entire valve shall be encased in polyethylene prior to backfill. The polyethylene encasement shall be installed up to the operating nut leaving the operating nut exposed and free to be operated.

END OF SECTION 33 12 16.13