

SPECIFICATIONS - DETAILED PROVISIONS
Section 15103 - Butterfly Valves

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**SECTION 15103
BUTTERFLY VALVES**

PART 1 - GENERAL

1.01 REQUIREMENT

Butterfly valves for buried water system service. Under this specification the Contractor shall be required to furnish, deliver, and unload within the time specified in the Special Conditions, the butterfly valves as specified on the bidding sheets and hereinafter described in these specifications.

1.02 VALVE MANUFACTURER

The name of the manufacturer of the valves to be furnished by the bidder shall be stated on the bidding sheets. Inasmuch as valves require an in-service review over an extended period of time for evaluation by the District for acceptance, it is necessary that proposed valves other than those specified must be submitted for evaluation well in advance of the bid opening, for acceptance prior to the award of the contract. Generally, the specified 35-day period following issuance of the Acceptance-of-Proposal will not result in approval of alternate valves.

1.03 GUARANTEE

The Contractor shall guarantee all materials and workmanship of items furnished under these specifications to be free from defects for a period of one (1) year after final completion and acceptance of the entire contract work. The Contractor shall, at his own expense, repair or replace all defective materials or workmanship supplied by him found to be deficient with respect to any provisions of this specification.

PART 2 - PRODUCT

2.01 VALVES

Butterfly valves shall conform to the latest revision of AWWA Standard C-504 for rubber-seated butterfly valves, subject to the following requirements: Valves shall be of Class 150B, shall have 125-lb. American Standard flanges and, unless otherwise shown, shall be short-bodied. Shaft seals shall be rubber "O"-ring, and journal packing shall be rubber or split-V type packing.

All valves shall be new and of current manufacture and shall be per EMWD Acceptance list.

2.02 VALVE ENDS

Shall be as specified on the bidding sheet; either flanged both ends, hub-end both ends, or one flanged end and one hub-end, as required, conforming to the following specifications:

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- A. Flanged End. Flanged ends shall be designed for the water pressure as specified in AWWA C-504 and drilled to the American Standard for 125# Cast Iron Flanges, and flange face shall not be raised. Flange face shall have standard machine finish.
- B. Hub-End. Hub-ends shall be designed for the water pressure as specified in AWWA C-504 and shall be "Ring-tite" or approved equal.

2.03 OPERATORS

The valve shall be provided with a totally enclosed buried service operator designed for the full working pressure across the disc and conforming to the requirements of the above-referenced AWWA Standard. Valves shall be installed with the shaft in a horizontal position. The operators shall be side-mounted, equipped with a 2" operating nut and have a raised boss at the input shaft to accommodate a 5" pipe. The operating torque rating shall conform to Table I of the above referenced AWWA Standard for the pressure classification specified, and shall be designed in accordance with the requirements of AWWA C-504-80 Appendix. Operator input torque ratings shall fully comply with the above referenced AWWA Standard. Operation shall be clockwise to close, counterclockwise to open. The minimum number of turns to close valve shall have a minimum of two (2) turns per diameter inch and a maximum of five (5) turns per diameter inch of valve size.

Valve operator shall be oriented with respect to pipeline intersection in accordance with standard drawing No. B-577.

2.04 TESTS

Each valve body shall be tested by the manufacturer under a test pressure equal to twice its design water working pressure, and shall be shop-operated three (3) times in accordance with the requirements of AWWA Standard C-504.

- C. BUTTERFLY VALVES LARGER THAN 12-INCHES
Butterfly Valve Testing. Butterfly valves with size greater than 12 inches shall be hydrostatically tested per AWWA C504 in both directions. This test shall be conducted within 50 miles of the District office and shall be performed in the presence of the District. No valve shall be installed until this testing has been completed and approved by the District.

Each valve shall be tested as detailed in the District Standard Specifications and as specified below:

1. Visually inspect each valve and its actuator for compliance with the submittal.
2. Visually inspect each valve for obvious damage or substandard construction.
3. The testing medium shall be water. Under no circumstances is air to be used as the test medium.

4. Each valve is to be tested at its rated pressure.
5. Both sides of each valve are to be tested.
6. The test duration on each side of the valve is 5 minutes. A passing test is one where there is no visible leakage and no decrease on the initial test pressure.
7. A valve which fails the pressure test shall be either repaired or replaced. Repaired valves shall be retested. Replacement valves shall be tested using this procedure.
8. Valves shall only be repaired by personnel authorized by the valve manufacturer to do the necessary repairs. Unless they have been authorized by the valve manufacturer, supplier or contractor shall not be permitted to perform repairs.

2.05 COATINGS

- A. All valves shall have internal and external ferrous parts epoxy coated. Wetted surfaces shall have an 8 mil minimum (dry film) thickness, unless otherwise specified. The epoxy shall be approved for potable water, and shall conform to AWWA C-550.
- B. All coated surfaces shall be visually and electrically examined for defects. The coating shall be holiday free as determined by a low voltage wet sponge test per AWWA C-550.

END OF SECTION 15103

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