

SECTION 15103 – BUTTERFLY VALVES

PART 1 – GENERAL

1.1 DESCRIPTION

This section includes materials, testing, and installation of butterfly valves, actuators, and appurtenances.

Butterfly valves to be supplied and installed per ANSI/AWWA C504, unless noted otherwise below.

1.2 RELATED SECTIONS SPECIFIED ELSEWHERE

All related work specified elsewhere, or in other codes or standards, will be as last revised, unless a specific date of issuance is called out in opposition to later revision date(s).

Other sections of the technical specifications, not referenced below, shall also apply to the extent required for proper performance of this work.

A. Section 01300 – Submittals

B. Section 09900 – Painting and Coating

C. Section 15100 – Valves

1.3 APPROVED MANUFACTURERS AND MODELS

A. Butterfly valves shall be manufactured by Pratt Valve, per VWD Approved Material List, latest edition.

1.4 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

Except as otherwise indicated, the current editions of the following standards apply to the Work of this section:

ANSI/AWWA C504	Rubber-Seated Butterfly Valves
ANSI/AWWA C540	Power Actuating Devices for Valves and Slide Gates
ANSI/AWWA C550	Protective Epoxy Interior Coatings for Valves and Hydrants
API 598	Valve Inspection and Testing
API 6D	Specification for Pipeline Valves
API 607	Fire Test for Soft-Seated Quarter Turn Valves
API 609	Butterfly Valves: Double-Flanged, Lug and Wafer Type

1.5 SUBMITTALS

Prior to ordering or delivery of butterfly valves, submittals shall be submitted for review and approval by the District Engineer in accordance with the Standard Specifications.

1.6 FACTORY TESTING

A. Valves shall be facility tested in compliance with ANSI/AWWA C504.

B. Proof-of-design tests reports shall be submitted in compliance with ANSI/AWWA C504.

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PART 2 – PRODUCTS

2.1 BUTTERFLY VALVES (ANSI/AWWA)

A. General

1. Butterfly valves shall conform to ANSI/AWWA C504 - Rubber-Seated Butterfly Valves, subject to the following requirements. Valves shall be of the size and class indicated. Flanged valves shall have Class 250 flanges, complying with ASME/ANSI B16.1, and shall be short-bodied and leak-tight closing except as otherwise noted.
2. Shaft seals shall be designed for use with standard split-V type packing, or other acceptable seal.
3. Valve shafts shall be Type 316 stainless steel or carbon steel with Type 316 stainless-steel journals and static seals. Valve shafts shall be dual stub shafts or a one-piece shaft extending completely through the valve disc.
4. Materials of construction shall be as described below:

Component	Material	Specification
Body	Ductile Iron	ASTM A 126 Class B
Exposed Body Capscrews, and Bolts and Nuts	Stainless Steel	Type 316
Discs	Ductile Iron with a Stainless Steel edge	ASTM A 126 Class B/Type 316

5. The rubber seat shall be an integral part of the valve body. Rubber seats fastened to the disc by any means shall not be permitted.
 6. Discs shall be retained by stainless steel pins which extend through the full diameter of the shaft to withstand the specified line pressure up to valve rating and the torque required to operate the valve. Disc stops located in the flow stream are not allowed.
 7. The interior passage of butterfly valves shall not have any obstructions or stops. The seats shall be positively mounted in the body of the valve; cartridge-type seats which rely on a high coefficient of friction for retention shall not be acceptable. Valve disc shall rotate ninety degrees (90°) from the full open position to the tight shut position.
- B. Coatings: Ferrous surfaces of valves, four-inch (4") and larger, which will be in contact with water (exclusive of flange faces) shall be coated complying with the Standard Specifications and external surfaces fusion bonded and epoxy coated.
- C. Manual Operators:
1. Operators shall conform to ANSI/AWWA C540, subject to the following requirements. Unless otherwise indicated, all manually-operated butterfly valves shall be equipped with a hand wheel (exposed) or two-inch (2") square operating nut, 316 stainless steel with couplings extension stem wall and guide brackets and position indicator (buried or

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submerged). Valve key extensions shall be installed on all buried butterfly valves unless indicated otherwise in accordance with Owner Standards.

2. Valves, twelve-inches (12”) and larger, as well as all submerged and buried valves, shall be equipped with worm-gear operators, lubricated and sealed to prevent entry of dirt or water into the housing. Screw-type (traveling nut) operators will not be permitted for valves twelve-inches (12”) in diameter and larger. Operators shall require a minimum of 40 turns to rotate the disc from fully open to fully closed position.

D. Valve Testing

1. Butterfly valves shall be hydrostatically tested and coatings shall be holiday detected prior to shipment to the field. Testing shall be inspected at the supplier’s distribution site by the District’s representative. Contractor shall be responsible for District representative’s expenses, including travel, time, meals and overnight accommodations.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. All exposed butterfly valves shall be installed with a means of removing the complete valve assembly without dismantling the valve or operator.
- B. Butterfly valve installation shall be in accordance with the Standard Specifications.
- C. Butterfly valves shall be installed with the operators on the street centerline side of the pipeline.

****END OF SECTION****