

SECTION 220523.13 - BUTTERFLY VALVES FOR PLUMBING PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Iron, single-flange butterfly valves.
 - 2. Iron, grooved-end butterfly valves.

1.3 DEFINITIONS

- A. CWP: Cold working pressure.
- B. EPDM: Ethylene propylene-diene terpolymer rubber.
- C. NBR: Acrylonitrile-butadiene, Buna-N, or nitrile rubber.

1.4 RELATION TO OTHER WORK

- A. Refer to the section, "General Plumbing Provisions", for related requirements. Refer to other sections of Division 22 and to all other applicable portions of the Drawings and Specifications.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of valve.
 - 1. Certification that products comply with NSF 61 Annex G
 - 2. Submit manufacturer's data for review before any work is commenced.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Prepare valves for shipping as follows:
 - 1. Protect internal parts against rust and corrosion.
 - 2. Protect threads, flange faces, grooves, and weld ends.
 - 3. Set butterfly valves closed or slightly open.
- B. Use the following precautions during storage:
 - 1. Maintain valve end protection.

2. Store valves indoors and maintain at higher-than-ambient-dew-point temperature. If outdoor storage is necessary, store valves off the ground in watertight enclosures.
- C. Use sling to handle large valves; rig sling to avoid damage to exposed parts. Do not use handwheels or stems as lifting or rigging points.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR VALVES

- A. Source Limitations for Valves: Obtain each type of valve from single source from single manufacturer.
- B. ASME Compliance:
 1. ASME B16.1 for flanges on iron valves.
 2. ASME B16.5 for flanges on steel valves.
 3. ASME B16.10 and ASME B16.34 for ferrous valve dimensions and design criteria.
 4. ASME B31.9 for building service piping valves.
- C. AWWA Compliance: Comply with AWWA C606 for grooved-end connections.
- D. NSF Compliance: NSF 61 Annex G for valve materials for potable-water service.
- E. Valve Pressure-Temperature Ratings: Not less than indicated and as required for system pressures and temperatures.
- F. Valve Sizes: Same as upstream piping unless otherwise indicated.
- G. Valve Actuator Types:
 1. Gear Actuator: For valves NPS 8 and larger.
 2. Handlever: For valves NPS 6 and smaller.
 3. Chainwheel: Device for attachment to gear, handlever, or stem; of size and with chain for mounting height, according to "Valve Installation" Article.
- H. Valves in Insulated Piping: With 2-inch stem extensions.

2.2 IRON, SINGLE-FLANGE BUTTERFLY VALVES

- A. Iron, Single-Flange Butterfly Valves with Aluminum-Bronze Disc:
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Keystone.
 - b. Apollo Flow Controls; Conbraco Industries, Inc.
 - c. Demco
 - d. FNW; Ferguson Enterprises, Inc.
 - e. Milwaukee Valve Company.
 - f. NIBCO INC.
 - g. WATTS.

2. Description:
 - a. Standard: MSS SP-67, Type I.
 - b. CWP Rating: 200 psig
 - c. Body Design: Lug type; suitable for bidirectional dead-end service at rated pressure without use of downstream flange.
 - d. Body Material: ASTM A 126, cast iron or ASTM A 536, ductile iron.
 - e. Seat: NBR
 - f. Stem: One- or two-piece stainless steel.
 - g. Disc: Aluminum bronze.

B. Iron, Single-Flange Butterfly Valves with Ductile-Iron Disc:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Keystone.
 - b. Apollo Flow Controls; Conbraco Industries, Inc.
 - c. Demco
 - d. FNW; Ferguson Enterprises, Inc.
 - e. Milwaukee Valve Company.
 - f. NIBCO INC.
 - g. WATTS.
2. Description:
 - a. Standard: MSS SP-67, Type I.
 - b. Body Design: Lug type; suitable for bidirectional dead-end service at rated pressure without use of downstream flange.
 - c. Body Material: ASTM A 126, cast iron or ASTM A 536, ductile iron.
 - d. Stem: One- or two-piece stainless steel.
 - e. Disc: Nickel-plated ductile iron.

C. Iron, Single-Flange Butterfly Valves with Stainless-Steel Disc:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Keystone.
 - b. Apollo Flow Controls; Conbraco Industries, Inc.
 - c. Demco
 - d. FNW; Ferguson Enterprises, Inc.
 - e. Milwaukee Valve Company.
 - f. NIBCO INC.
 - g. WATTS.
2. Description:
 - a. Standard: MSS SP-67, Type I.
 - b. CWP Rating, NPS 12 and Smaller: 200 psig
 - c. Body Design: Lug type; suitable for bidirectional dead-end service at rated pressure without use of downstream flange.
 - d. Body Material: ASTM A 126, cast iron or ASTM A 536, ductile iron.
 - e. Seat: NBR
 - f. Stem: One- or two-piece stainless steel.

- g. Disc: Stainless steel.

2.3 DUCTILE-IRON, GROOVED-END BUTTERFLY VALVES

A. Ductile Iron, Grooved-End Butterfly Valves, 175 CWP:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Shurjoint Piping Products USA Inc.
 - b. Tyco Fire Products LP.
 - c. Victaulic Company.
 - d. Zurn Industries, LLC.
2. Description:
 - a. Standard: MSS SP-67, Type I.
 - b. CWP Rating: 175 psig.
 - c. Body Material: Coated, ductile iron.
 - d. Stem: Two-piece stainless steel.
 - e. Disc: Coated, ductile iron.
 - f. Seal: EPDM.

B. Ductile Iron, Grooved-End Butterfly Valves, 300 CWP:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Anvil International.
 - b. Mueller Steam Specialty; A WATTS Brand.
 - c. NIBCO INC.
 - d. Shurjoint Piping Products USA Inc.
 - e. Tyco Fire Products LP.
 - f. Victaulic Company.
2. Description:
 - a. Standard: MSS SP-67, Type I.
 - b. CWP Rating, NPS 8 and Smaller: 300 psig.
 - c. CWP Rating, NPS 10 and Larger: 200 psig.
 - d. Body Material: Coated, ductile iron.
 - e. Stem: Two-piece stainless steel.
 - f. Disc: Coated, ductile iron.
 - g. Seal: NBR

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine valve interior for cleanliness, freedom from foreign matter, and corrosion. Remove special packing materials, such as blocks, used to prevent disc movement during shipping and handling.

- B. Operate valves in positions from fully open to fully closed. Examine guides and seats made accessible by such operations.
- C. Examine mating flange faces for damage. Check bolting for proper size, length, and material. Verify that gasket is of proper size, that its material composition is suitable for service, and that it is free from defects and damage.
- D. Do not attempt to repair defective valves; replace with new valves.

3.2 VALVE INSTALLATION

- A. Install valves with unions or flanges at each piece of equipment arranged to allow service, maintenance, and equipment removal without system shutdown.
- B. Locate valves for easy access and provide separate support where necessary.
- C. Install valves in horizontal piping with stem at or above center of pipe.
- D. Install valves in position to allow full stem movement.
- E. Install valve tags. Comply with requirements in Section 220553 "Identification for Plumbing Piping and Equipment" for valve tags and schedules.

3.3 ADJUSTING

- A. Adjust or replace valve packing after piping systems have been tested and put into service but before final adjusting and balancing. Replace valves if persistent leaking occurs.

3.4 DOMESTIC HOT- AND COLD-WATER VALVE SCHEDULE

- A. Pipe NPS 2-1/2 and Larger:
 - 1. Iron, Single-Flange Butterfly Valves: 200 CWP, NBR seat, ductile-iron disc.
 - 2. Ductile-Iron, Grooved-End Butterfly Valves: 175 CWP.

END OF SECTION 220523.13