

**SECTION 23 21 15
BRONZE BALL VALVES**

PART 1 – GENERAL

1.1 DESCRIPTION:

- A. Bronze Ball Valves up to 2 inches, for steam and marine (water).

1.2 RELATED WORK:

- A. SECTION 23 21 13.....HYDRONIC PIPING

1.3 SUBMITTALS:

- A. Per SECTION 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES, submit for VA written approval:

Manufacturer's Literature and Data for ball valves showing:

1. Body design.
2. Blow-out proof stem.
3. Working pressures and temperatures.
4. Ball.
5. Seats.
6. End connections.
7. Materials of construction.

1.4 DEFINITIONS:

- A. FNPT: Female National Pipe Thread
- B. MPTFE: Modified Poly-Tetra-Fluoro-Ethylene
- C. MSS: Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.
- D. PSI: Pounds per Square Inch
- E. PTFE: Poly-Tetra-Fluoro-Ethylene
- F. RPTFE Reinforced Poly-Tetra-Fluoro-Ethylene
- G. WOG: Water, Oil, Gas (Working Pressure)
- H. WSP: Working Steam Pressure

1.5 APPLICABLE PUBLICATIONS:

- A. Publications listed below form a part of this specification to the extent referenced.
- B. Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS):
 - SP-72-99 Ball Valves With Flanged or Butt Welding For General Purpose
 - SP-110-96 Ball Valve Threaded, Socket Welding, Solder Joint, Grooved and Flared Ends

PART 2 - PRODUCTS

2.1 BRONZE BALL VALVES FOR STEAM SERVICE:

- A. Bronze Ball Valve with Steam Trim.
- B. Max Pressure:
 - 1. 600 psi WOG.
 - 2. 250 psi WSP.
- C. Temperature Range:
 - 1. -20 Degrees to 500 Degrees Fahrenheit.
- D. Shall meet MSS-SP-110.
- E. Two-Piece, Standard-Port Industrial Valve.
- F. MPTFE Seats.
- G. Ball: Stainless Steel Ball with vented ball slot to relieve thermal expansion in valve body cavity.
- H. Stem:
 - 1. Blow-Out-Proof Stem.
 - 2. MPTFE Stem Packing. (Asbestos packing is prohibited.)
 - 3. Adjustable Packing Gland.
- I. Stainless Steel Lever and nut.
- J. FNPT connections.
- K. Uses: Commercial and industrial applications using high-pressure water, oil and gas, as well as low-pressure steam.

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- L. (Brand name or equal.) One manufacturer that can meet the above specification is Apollo Valves, as manufactured by Conbraco Industries, Inc.

2.2 BRONZE BALL VALVES FOR MARINE (WATER) SERVICE:

- A. Marine (Water) Bronze Ball Valve.
- B. Max Pressure:
 - 1. 150 psi WOG.
- C. Temperature Range:
 - 1. 0 Degrees to 450 Degrees Fahrenheit.
- D. Shall meet WW-V-35C, Type: II
 - 1. Federal Specification WW-V-35C was cancelled June 30, 1998. It has been determined that MSS-72 and MSS-110 are suitable replacements.
- E. Two-Piece, Standard-Port Industrial Valve.
- F. PTFE Body.
- G. RPTFE Seats.
- H. Ball: Chrome-Plated Ball.
- I. Stem:
 - 1. Blow-Out-Proof Stem.
 - 2. RPTFE Stem and Packing. (Asbestos packing is prohibited.)
 - 3. Adjustable Packing Gland.
- J. Stainless Steel Lever and nut.
- K. FNPT connections.
- L. Uses: Commercial and industrial applications using water.
- M. (Brand name or equal.) One manufacturer that can meet the above specifications is Apollo Valves as manufactured by Conbraco Industries, Inc.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine valve interior for cleanliness, freedom from debris, and corrosion. Remove special packing materials used to prevent movement during shipping.
- B. Operate valves in positions from fully open to fully closed. Examine guides and seats made accessible by such operations.
- C. Examine threads on valve and mating pipe for cleanliness.

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D. Do not repair defective valves; replace with new.

3.2 INSTALLATION

- A. General: Comply with industry standard and the following:
 - 1. Install valves with stem in horizontal position whenever possible. All valves shall be easily accessible. Install valve in each water or steam connection to fixture.
 - 2. Install union and shut-off valve on pressure piping at connections to equipment.

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