

**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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