

**SECTION 22 05 23**  
**GENERAL-DUTY VALVES FOR PLUMBING PIPING**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. This section describes the requirements for general-duty valves for engine-radiator loop water and service water.

**1.2 RELATED WORK**

- A. Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.

**1.3 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, and SAMPLES.
- B. Manufacturer's Literature and Data:
1. Valves.

**1.4 APPLICABLE PUBLICATIONS**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):A536-84(R 2004)  
Standard Specification for Ductile Iron Castings
- C. International Code Council (ICC)  
IPC-06 (R 2007).....International Plumbing Code
- D. Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS):  
SP-25-98.....Standard Marking System for Valves, Fittings,  
Flanges and UnionsSP-67-02a (R 2004) Butterfly  
Valve of the Single flange Type (Lug Wafer)

**1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Valves shall be prepared 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. Valves shall be prepared for storage as follows:
1. Maintain valve end protection.
  2. Store valves indoors and maintain at higher than ambient dew point temperature.

## **PART 2 - PRODUCTS**

### **2.1 VALVES**

- A. Asbestos packing and gaskets are prohibited.
- B. Bronze valves shall be made with dezincification resistant materials.  
Bronze valves made with copper alloy (brass) containing more than 15 percent zinc shall not be permitted.
- C. Radiator shut-off:
  - 1. Generator to radiator piping, 3 and 6 inches: Butterfly valves shall have an iron body with EPDM seal and aluminum bronze disc, rated to 275F. The butterfly valve shall meet MSS SP-67, type I standard. The butterfly valve shall have a SWP rating of 1380 kPa (200 psig). The valve design shall be lug type suitable for bidirectional dead-end service at rated pressure. The body material shall meet ASTM A 536, ductile iron.
  - 2. Natural gas piping: See Section 33 51 00, NATURAL GAS DISTRIBUTION.
  - 3. Hose bibb drain for coolant piping: Cast or wrought copper alloy, single faucet with replaceable monel seat, removable replacement unit containing all parts subject to wear, mounted to pipe with welded threadolet. Provide faucet with 19 mm (3/4 inch) hose coupling thread on spout. Provide screw-on cap attached to faucet with stainless chain. Four-arm handle on faucet shall be case, formed or drop forged copper alloy. Exposed metal parts, including exposed part under valve handle when in open position, shall have a bright finish. Freeze protection is not required.
- D. Service water shut-off:
  - 1. Yard Hydrant, non-freeze concealed: Cast or wrought copper alloy, ground hydrant faucet with "T" handle key. Provide faucet with 19 mm (3/4 inch) hose coupling thread on spout. "T" handle key shall be case, formed or drop forged copper alloy. Provide drain in valve housing to drain casing when hydrant is not in use. Install valve housing below frost line. Provide concrete enclosure box with cast iron lid. Enclosure shall be rated to withstand being driven on.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Valve interior shall be examined for cleanliness, freedom from foreign matter, and corrosion. Special packing materials shall be removed, such as blocks, used to prevent disc movement during shipping and handling.

- B. Valves shall be operated in positions from fully open to fully closed. Guides and seats shall be examined and made accessible by such operations.
- C. Threads on valve and mating pipe shall be examined for form and cleanliness.
- D. Mating flange faces shall be examined for conditions that might cause leakage. Bolting shall be checked for proper size, length, and material. Gaskets shall be verified for proper size and that its material composition is suitable for service and free from defects and damage.
- E. 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. Valves shall be located for easy access and shall be provide with separate support.
- C. Valves shall be installed in horizontal piping with stem at or above center of pipe
- D. Valves shall be installed in a position to allow full stem movement.

### **3.3 ADJUSTING**

- A. Valve packing shall be adjusted or replaced after piping systems have been tested and put into service but before final adjusting and balancing. Replace valves shall be replaced if persistent leaking occurs.

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