

**Part 1            General**

**1.1            REFERENCES**

- .1 American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME)
  - .1 ASME B1.20.1-1983 (R2006), Pipe Threads, General Purpose (Inch).
- .2 ASTM International Inc.
  - .1 ASTM B62-02, Standard Specification for Composition Bronze or Ounce Metal Castings.
  - .1 ASTM B505/B505M-08a, Standard Specification for Copper-Base Alloy Continuous Castings.
- .3 Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS)
  - .1 MSS-SP-80-2008, Bronze Gate Globe, Angle and Check Valves.

**1.2            ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit product data in accordance with Section 21 05 01 - Common Work Results - Mechanical for valves specified in this section.

**1.3            EXTRA MATERIALS**

- .1 Furnish following spare parts:
  - .1 Valve seats: one for every 10 valves each size, minimum 1.
  - .2 Discs: one for every 10 valves, each size, minimum 1.
  - .3 Stem packing: one for every 10 valves, each size, minimum 1.
  - .4 Valve handles: 2 of each size.
  - .5 Gaskets for flanges: one for every 10 flanged joints.

**Part 2            Products**

**2.1            GENERAL**

- .1 Except for specialty valves, to be single manufacturer.
- .2 All products to have CRN registration numbers.

**2.2            END CONNECTIONS**

- .1 Connection into adjacent piping/tubing:
  - .1 Steel pipe systems: Screwed ends.
  - .2 Copper tube systems: Solder ends.

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**2.3 LOCKSHIELD KEYS**

- .1 Where lockshield valves are specified, provide 5 keys of each size: malleable iron cadmium plated.

**2.4 GATE VALVES**

- .1 Requirements common to all gate valves, unless specified otherwise:
  - .1 Standard specification: MSS SP-80.
  - .2 Bonnet: union with hexagonal shoulders.
  - .3 Connections: screwed with hexagonal shoulders.
  - .4 Inspection and pressure testing: to MSS SP-80. Tests to be hydrostatic.
  - .5 Packing: high grade non-asbestos packing.
  - .6 Handwheel: non-ferrous.
  - .7 Handwheel Nut: bronze to ASTM B62.
- .2 NPS 2 and under, rising stem, solid wedge disc, Class 125:
  - .1 Body: with long disc guides, screwed bonnet.
  - .2 Operator: Handwheel.

**2.5 GLOBE VALVES**

- .1 Requirements common to all globe valves, unless specified otherwise:
  - .1 Standard specification: MSS SP-80.
  - .2 Bonnet: union with hexagonal shoulders.
  - .3 Connections: screwed with hexagonal shoulders.
  - .4 Pressure testing: to MSS SP-80. Tests to be hydrostatic.
  - .5 Stuffing box: threaded to bonnet with gland follower, packing nut, high grade non-asbestos packing.
  - .6 Handwheel: non-ferrous.
  - .7 Handwheel Nut: bronze to ASTM B62.
- .2 NPS 2 and under, composition disc, Class125:
  - .1 Body and bonnet: screwed bonnet.
  - .2 Disc and seat: renewable rotating disc composition to suit service conditions, regrindable bronze seat, loosely secured to bronze stem to ASTM B505.
  - .3 Operator: Handwheel.
- .3 Angle valve, NPS 2 and under, composition disc, rising stem Class 150:
  - .1 Body and bonnet: union bonnet.
  - .2 Disc and seat: renewable rotating PTFE disc in slip-on easily removable disc holder having integral guides, regrindable bronze seat, loosely secured to stem.
  - .3 Operator: Handwheel.

**2.6 CHECK VALVES**

- .1 Requirements common to all check valves, unless specified otherwise:
  - .1 Standard specification: MSS SP-80.
  - .2 Connections: screwed with hexagonal shoulders.
- .2 NPS 2 and under, swing type, bronze disc, Class 125:
  - .1 Body: Y-pattern with integral seat at 45°, screw-in cap with hex head.
  - .2 Disc and seat: renewable rotating disc, two-piece hinge disc construction; seat: regrindable.

**2.7 BALL VALVES**

- .1 NPS 2 and under:
  - .1 Body and cap: cast high tensile bronze to ASTM B62.
  - .2 Connections: Screwed ends to ANSI B1.20.1 and with hexagonal shoulders.
  - .3 Stem: tamperproof ball drive.
  - .4 Stem packing nut: external to body.
  - .5 Ball and seat: replaceable hard chrome solid ball and Teflon seats.
  - .6 Stem seal: TFE with external packing nut.
  - .7 Operator: removable lever handle.

**Part 3 Execution**

**3.1 INSTALLATION OF VALVES**

- .1 Install rising stem valves in upright position with stem above horizontal.
- .2 Remove internal parts before soldering.
- .3 Install valves with unions at each piece of equipment arranged to allow servicing, maintenance, and equipment removal.

**END OF SECTION**