

1 General

1.1 RELATED SECTIONS

- .1 Section 21 05 01 – Common Work Results – Mechanical.
- .2 Section 23 05 05 – Installation of Pipework.
- .3 Section 23 05 53 – Mechanical Identification.

1.2 REFERENCES

- .1 American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME):
 - .1 ANSI/ASME B1.20.1, Pipe Threads, General Purpose (Inch).
 - .2 ANSI/ASME B16.18, Cast Copper Alloy Solder Joint Pressure Fittings.
- .2 ASTM International:
 - .1 ASTM A276, Standard Specification for Stainless Steel Bars and Shapes.
 - .2 ASTM B62, Standard Specification for Composition Bronze or Ounce Metal Castings.
 - .3 ASTM B283, Standard Specification for Copper and Copper Alloy Die Forgings (Hot-Pressed).
 - .4 ASTM B505/B505M, Standard Specification for Copper-Base Alloy Continuous Castings.
- .3 Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS):
 - .1 MSS-SP-25, Standard Marking System for Valves, Fittings, Flanges and Unions.
 - .2 MSS-SP-80, Bronze Gate Globe, Angle and Check Valves.
 - .3 MSS-SP-110, Ball Valves, Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.

1.3 SUBMITTALS

- .1 Provide Shop Drawing and Maintenance Manual submittals in accordance with Section 01 33 00 - Submittal Procedures and Section 21 05 01 – Common Work Results - Mechanical.

2 Products

2.1 MATERIALS

- .1 Valves - General:
 - .1 Except for specialty valves, all valves shall be from a single manufacturer.
 - .2 Products to have CRN registration numbers.
 - .3 Where valves are installed in piping to be insulated provide extended stems to ensure operator is outside insulation.
 - .4 Lead-free (LF), which means wetted surfaces - max. 0.25% lead by weighted average) construction. LF to be cast into the valve body.

- .5 Seats rated for minimum temperature of 135 deg C.
- .6 Valves rated for a minimum working pressure of 860 kPa, unless otherwise noted.

- .2 End connections:
 - .1 Connection into adjacent piping/tubing:
 - .1 Copper pipe systems: screwed ends to ANSI/ASME B1.20.1.

- .3 Ball Valves (Bronze; Lead-Free):
 - .1 NPS 2 and under:
 - .1 ¼ Turn, Full Port design.
 - .2 Body and cap: cast high tensile bronze to ASTM B62.
 - .3 Pressure rating: 4.1 MPa CWP.
 - .4 Connections: screwed ends to ANSI B1.20.1 and with hexagonal shoulders solder ends to ANSI.
 - .5 SS Stem: tamperproof ball drive.
 - .6 Stem packing nut: external to body.
 - .7 Ball and seat: replaceable stainless steel solid ball and Teflon seats.
 - .8 Stem seal: TFE with external packing nut.
 - .9 Operator: removable lever handle.
 - .19 Acceptable Materials: Apollo, Model 77CLF-140; Crane, Jenkins, Nibco, Kitz, Victaulic, Milwaukee Valve Company.

- .4 Check Valves (Bronze; Lead-Free):
 - .1 Requirements common to check valves, unless specified otherwise.
 - .2 Standard specification: MSS SP-80.
 - .3 Connections: screwed with hexagonal shoulders.
 - .4 NPS 2 and under: swing type, bronze disc, Class 125.
 - .5 Body: Y-pattern with integral seat at 45 degrees, screw-in cap with hex head.
 - .6 Disc and seat: renewable rotating disc, two-piece hinge disc construction; seat: regrindable.
 - .7 Acceptable Materials: Apollo, Model 161TLF; Crane, Jenkins, Nibco, Kitz, Victaulic, Milwaukee Valve Company.

3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage, and installation instructions, and datasheets.

3.2 INSTALLATION

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

END OF SECTION