

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 21 05 01 – Common Work Results for Mechanical.

1.2 REFERENCES

- .1 American Society of Mechanical Engineers (ASME)
 - 1. ASME B16.1-10, Grey Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
- .2 ASTM International Inc.
 - .1 ASTM A49-2012, Standard Specification for Heat Treated Carbon Steel Joint Bars, Microalloyed Joint Bars, and Forged Carbon Steel Compromise Joint Bars
 - .2 ASTM A126-04(2014), Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
 - .3 ASTM A536-84(2014), Standard Specification for Ductile Iron Castings.
 - .4 ASTM B61-08(2013), Standard Specification for Steam or Valve Bronze Castings.
 - .5 ASTM B62-09, Standard Specification for Composition Bronze or Ounce Metal Castings.
 - .6 ASTM B85/B85M-10, Standard Specification for Aluminum-Alloy Die Castings.
 - .7 ASTM B209-14, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- .3 Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS)
 - .1 MSS SP-61-2013, Pressure Testing of Valves.
 - .2 MSS SP-70-2011, Grey Iron Gate Valves, Flanged and Threaded Ends.
 - .3 MSS SP-71-2011, Grey Iron Swing Check Valves, Flanged and Threaded Ends.
 - .4 MSS SP-82-1992, Valve Pressure Testing Methods.
 - .5 MSS SP-85-2011, Cast Iron Globe and Angle Valves, Flanged and Threaded Ends.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 00 10 – General Instructions.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and datasheets for valves and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit maintenance data for incorporation into manual specified in Section 01 00 10 – General Instructions.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Delivery and Acceptance Requirements:
 - .1 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.
- .2 Packaging Waste Management: remove for reuse and return of pallets, crates, paddling and packaging materials in accordance with Section 01 00 10 – General Instructions.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- .1 Extra Materials/Spare Parts:
- .2 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.
- .3 Tools:
 - .1 Furnish special tools for maintenance of systems and equipment

Part 2 Products**2.1 MATERIAL**

- .1 Valves:
 - .1 Except for specialty valves, to be of single manufacturer.
- .2 Standard specifications:
 - .1 Check valves: MSS SP-71.
- .3 Requirements common to valves, unless specified otherwise:
 - .1 Body, bonnet: cast iron to ASTM B209 Class B.
 - .2 Connections: flanged ends plain face.
 - .3 Inspection and pressure testing: to MSS SP-82.
 - .4 Bonnet gasket: non-asbestos.
 - .5 Stem: to have precision machined Acme or 60° V threads, top screwed for hand-wheel nut.
 - .6 Stuffing box: non-galling two-piece ball-jointed packing gland, gland bolts and nuts.
 - .7 Gland packing: non-asbestos.
 - .8 Handwheel: die-cast aluminum alloy to ASTM B85/B85M or malleable iron to ASTM A49. Nut of bronze to ASTM B62.
 - .9 Identification tag: with catalogue number, size, other pertinent data.
- .4 All products to have CRN registration numbers.

2.2 CHECK VALVES

- .1 Swing check valves, Class 125:
 - .1 Body and bolted cover: with tapped and plugged opening on each side for hinge pin. Grooved or flanged ends: plain faced with smooth finish.
 - .1 Up to NPS 16: cast iron to ASTM A126 Class B.
 - .2 NPS 18 and over: cast iron to ASTM A126 Class C.
 - .2 Ratings:
 - .1 NPS 2 1/2 - 12: 860 kPa steam; 1.4 MPa CWP.
 - .2 NPS 14 - 16: 860 kPa steam; 1.03 MPa CWP.
 - .3 NPS 18 and over: 1.03 MPa CWP.
 - .3 Disc: rotating for extended life.
 - .1 Up to NPS 6: stainless steel type 316.
 - .2 NPS 8 and over: bronze-faced cast iron.
 - .4 Seat rings: renewable bronze to ASTM B62 screwed into body.
 - .5 Hinge pin, bushings: stainless steel.
 - .6 Disc: A126 Class B, secured to stem, rotating for extended life.
 - .7 Seat: cast iron, integral with body.
 - .8 Hinge pin: exelloy; bushings: malleable iron.
 - .9 Identification tag: fastened to cover.
 - .10 Hinge: stainless steel.

Part 3 Execution**3.1 INSTALLATION**

- .1 Install rising stem valves in upright position with stem above horizontal.

3.2 CLEANING

- .1 Clean in accordance with Section 01 00 10 – General Instructions.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 00 10 – General Instructions.

END OF SECTION