

PART 1 - GENERAL**1.1 RELATED REQUIREMENTS**

- .1 Section 23 05 05 - Installation of Pipework

1.2 REFERENCES

- .1 American Society of Mechanical Engineers International (ASME)
 - .1 ASME B16.15-2011, Cast Bronze Threaded Fittings, Classes 125 and 250.
 - .2 ASME B16.18-2012, Cast Copper Alloy Solder Joint Pressure Fittings.
 - .3 ASME B16.22-2012, Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.
 - .4 ASME B16.24-2011, Cast Copper Alloy Pipe Flanges and Flanged Fittings, Class 150, 300, 400, 600, 900, 1500 and 2500.
- .2 ASTM International Inc.
 - .1 ASTM A307-12, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
 - .2 ASTM B88M-05(2011), Standard Specification for Seamless Copper Water Tube (Metric).
- .3 American Water Works Association (AWWA)
 - .1 AWWA C111/A21.11-12, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
- .4 Canadian Standards Association (CSA International)
 - .1 CSA B242-05(2011), Groove and Shoulder Type Mechanical Pipe Couplings.
- .5 National Research Council (NRC)/Institute for Research in Construction
 - .1 NRCC NPCC-2010, National Plumbing Code of Canada 2010.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

PART 2 - PRODUCTS**2.1 PIPING**

- .1 Domestic hot, cold and recirculation systems, within building.
 - .1 Above ground: copper tube, hard drawn, type L: to ASTM B88M.

2.2 FITTINGS

- .1 Bronze pipe flanges and flanged fittings, Class 150: to ASME B16.24.
 - .2 Cast bronze threaded fittings, Class 125: to ASME B16.15.
 - .3 Cast copper, solder type: to ASME B16.18.
 - .4 Wrought copper and copper alloy, solder type: to ASME B16.22.
 - .5 NPS 2 and larger: ASME B16.18 or ASME B16.22 roll grooved to CSA B242.
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- .6 NPS 1 ½ and smaller : wrought copper to ASME B16.22 cast copper to ASME B16.18; with 301stainless steel internal components and EPDM seals. Suitable for operating pressure to 1380 kPa.

2.3 JOINTS

- .1 Rubber gaskets, latex-free 1.6 mm thick: to AWWA C111.
- .2 Bolts, nuts, hex head and washers: to ASTM A307, heavy series.
- .3 Solder: 95/5 tin copper alloy.
- .4 Teflon tape: for threaded joints.
- .5 Dielectric connections between dissimilar metals: dielectric fitting, complete with thermoplastic liner.

2.4 BALL VALVES

- .1 NPS 2 and under, screwed:
 - .1 Class 150.
 - .2 Bronze body, chrome plated brass ball, PTFE adjustable packing, brass gland and PTFE seat, steel lever handle.
- .2 NPS 2 and under, soldered:
 - .1 To ASME B16.18, Class 150.
 - .2 Bronze body, chrome plated brass ball, PTFE adjustable packing, brass gland and PTFE seat, steel lever handle, with NPT to copper adaptors.

PART 3 - EXECUTION

3.1 APPLICATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

- .1 Install in accordance with NPC and local authority having jurisdiction.
- .2 Install pipe work in accordance with Section 23 05 05 - Installation of Pipework, supplemented as specified herein.
- .3 Assemble piping using fittings manufactured to AMSE standards.
- .4 Install CWS piping below and away from HWS and HWC and other hot piping so as to maintain temperature of cold water as low as possible.
- .5 Connect to fixtures and equipment in accordance with manufacturer's written instructions unless otherwise indicated.
- .6 Isolate equipment, fixtures and branches with ball valves.

PART 1 - GENERAL**1.1 REFERENCES**

- .1 ASTM International Inc.
 - .1 ASTM B32-08, Standard Specification for Solder Metal.
 - .2 ASTM B306-13, Standard Specification for Copper Drainage Tube (DWV).
- .2 Canadian Standards Association (CSA International).
 - .1 CSA B67-1972 (R1996), Lead Service Pipe, Waste Pipe, Traps, Bends and Accessories.
 - .2 CAN/CSA B70.1-03 (R2013), Frames and Covers for Maintenance Holes and Catchbasins.
 - .3 CAN/CSA-B125.3-12, Plumbing Fittings.

PART 2 - PRODUCTS**2.1 COPPER TUBE AND FITTINGS**

- .1 Above ground sanitary, storm and vent Type DWV to: ASTM B306.
 - .1 Fittings.
 - .1 Cast brass: to CAN/CSA B125.3.
 - .2 Wrought copper: to CAN/CSA B125.3.
 - .2 Solder: lead free, tin-95:5, to ASTM B32.

2.2 CAST IRON PIPING AND FITTINGS

- .1 Above ground sanitary, storm and vent: to CAN/CSA B70.
 - .1 Joints:
 - .1 Hub and spigot:
 - .1 Caulking lead: to CSA B67.
 - .2 Mechanical joints:
 - .1 Neoprene or butyl rubber compression gaskets with stainless steel clamps.

PART 3 - EXECUTION**3.1 APPLICATION**

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

- .1 Install in accordance with National Plumbing Code and local authority having jurisdiction.