

PART 1 - GENERAL

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| <u>1.1 REFERENCES</u>                          | .1 | American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME)<br>.1 ANSI/ASME B1.20.1-1983(R2006), Pipe Threads, General Purpose (Inch).<br>.2 ANSI/ASME B16.18-2001, Cast Copper Alloy Solder Joint Pressure Fittings.   |
|  | .2 | ASTM International<br>.1 ASTM A 276-08, Standard Specification for Stainless Steel Bars and Shapes.<br>.2 ASTM B 62-02, Standard Specification for Composition Bronze or Ounce Metal Castings.<br>.3 ASTM B 283-08a, Standard Specification for Copper and Copper Alloy Die Forgings (Hot-Pressed).<br>.4 ASTM B 505/B 505M-08a, Standard Specification for Copper-Base Alloy Continuous Castings. |
|  | .3 | Canada Green Building Council (CaGBC)<br>.1 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.  |
|  | .4 | Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS)<br>.1 MSS-SP-25-1998, Standard Marking System for Valves, Fittings, Flanges and Unions.<br>.2 MSS-SP-80-2008, Bronze Gate Globe, Angle and Check Valves.<br>.3 MSS-SP-110-1996, Ball Valves, Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.   |
| <u>1.2 ACTION AND INFORMATIONAL SUBMITTALS</u> | .1 | Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.   |
|  | .2 | Product Data:<br>.1 Provide manufacturer's printed product literature and data sheets for equipment and systems and include product characteristics,   |

1.2 ACTION AND  
INFORMATIONAL  
SUBMITTALS  
(Cont'd)

- .2 Product Data: (Cont'd)
  - .1 (Cont'd)  
performance criteria, physical size, finish and limitations.
  - .2 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 02 81 01 - Hazardous Materials.
- .3 Shop Drawings:
  - .1 Submit drawings stamped and signed by professional engineer registered or licensed in the Province of Newfoundland and Labrador, Canada.
  - .2 Submit data for valves specified in this Section.
- .4 Sustainable Design Submittals:
  - .1 LEED Canada-NC-2009 Submittals: in accordance with Section 01 35 21 - LEED Requirements.

1.3 CLOSEOUT  
SUBMITTALS  
                    

- .1 Provide maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.4 MAINTENANCE  
MATERIAL SUBMITTALS  
                    

- .1 Extra Materials/Spare Parts:
  - .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.
  - .2 Tools:
    - .1 Furnish special tools for maintenance of systems and equipment.
    - .2 Include following:
      - .1 Lubricant gun for expansion joints.

1.5 DELIVERY,  
STORAGE AND  
HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements:
  - .1 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.
- .3 Packaging Waste Management: remove for reuse or return of pallets, crates, padding, banding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Sustainable Requirements:
  - .1 Use least toxic sealants, adhesives, sealers and finishes necessary to comply with the requirements of the project.
- .2 Valves:
  - .1 Except for specialty valves, to be single manufacturer.
  - .2 Products to have CRN registration numbers.
- .3 End Connections:
  - .1 Connection into adjacent piping/tubing:
    - .1 Steel pipe systems: screwed ends to ANSI/ASME B1.20.1.
- .4 Lockshield Keys:
  - .1 Where lockshield valves are specified, provide 10 keys of each size: malleable iron cadmium plated.
- .5 Gate Valves:
  - .1 Requirements common to gate valves, unless specified otherwise:
    - .1 Standard specification: MSS SP-80.

2.1 MATERIALS  
(Cont'd)

- .5 Gate Valves: (Cont'd)
  - .1 (Cont'd)
    - .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: non-asbestos.
    - .6 Handwheel: non-ferrous.
    - .7 Handwheel Nut: bronze to ASTM B 62.
  - .2 NPS 2 and under, rising stem, split wedge disc, Class 125:
    - .1 Body: with long disc guides, screwed bonnet.
    - .2 Disc: split wedge, bronze to ASTM B 283, loosely secured to stem.
    - .3 Operator: handwheel.
- .6 Check Valves:
  - .1 Requirements common to 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:
    - .1 Body: Y-pattern with integral seat at 45 degrees, screw-in cap with hex head.
    - .2 Disc and seat: renewable rotating disc, two-piece hinge disc construction; seat: regrindable.
  - .3 NPS 2 and under, swing type, composition disc, Class 200:
    - .1 Body: Y-pattern with integral seat at 45 degrees, screw-in cap with hex head.
    - .2 Disc: renewable rotating disc of number 6 composition to suit service conditions, bronze two-piece hinge disc construction.
- .7 Ball Valves:
  - .1 NPS 2 and under:
    - .1 Body and cap: cast high tensile bronze to ASTM B 62.
    - .2 Pressure rating: Class 125.

2.1 MATERIALS  
(Cont'd)

- .7 Ball Valves: (Cont'd)
  - .1 NPS 2 and under: (Cont'd)
    - .3 Connections: screwed ends to ANSI B1.20.1 and with hexagonal shoulders and solder ends to ANSI.
    - .4 Stem: tamperproof ball drive.
    - .5 Stem packing nut: external to body.
    - .6 Ball and seat: replaceable stainless steel solid ball and Teflon seats.
    - .7 Stem seal: TFE with external packing nut.
    - .8 Operator: removable lever handle.

PART 3 - EXECUTION

3.1 INSTALLATION

- .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.

3.2 CLEANING

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.