

## **PART 1 - GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 23 05 05 - Installation of Pipework.
- .2 Section 23 05 17 - Pipe Welding.

### **1.2 CODES AND REFERENCE STANDARDS**

- .1 Unless otherwise indicated, all of the works will be done in accordance with the in force edition of the "Code de construction du Québec".
  - .2 Furthermore, the works will be done in accordance to any other code or standard having jurisdiction, notably including, but not limited to:
    - .1 ANSI/ASME B16.3, Malleable-Iron Threaded Fittings, Classes 150 and 300;
    - .2 ANSI/ASME B16.4, Gray Iron Threaded Fittings, Classes 125 and 250;
    - .3 ANSI B16.18, Cast Copper Alloy Solder Joint Pressure Fittings;
    - .4 CAN/CSA B158.1, Cast Brass Solder Joints Drainage, Waste, and Vent Fittings;
    - .5 ASTM B32, Specification for Solder Metal;
    - .6 ASTM A53, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated, Welded and Seamless;
    - .7 ASTM B306, Specification for Copper Drainage Tube (DWV);
    - .8 ASTM C564, Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings;
    - .9 ASTM C1277, Standard Specification for Shielded Coupling Joining Hubless Cast Iron Soil Pipe and Fitting;
    - .10 CAN/CSA B70, Cast Iron Soil Pipe, Fittings, and Means of Joining;
    - .11 CAN/CSA B125, Plumbing Fittings;
    - .12 CAN/CSA B602, Mechanical Couplings for Drain, Waste, and Vent Pipe and Sewer Pipe;
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- .13 CAN/ULC S102, Surface Burning Characteristics of Building Materials and Assemblies;
- .14 CAN/ULC S102.2, Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies;
- .15 NPC, National Plumbing Code;
- .16 MSS-SP-67, Butterfly Valves;
- .17 MSS-SP-70, Cast Iron Gate Valves, Flanged and Threaded Ends;
- .18 MSS-SP-71, Cast Iron Swing Check Valves, Flanged and Threaded Ends;
- .19 MSS-SP-80, Bronze Gate, Globe, Angle and Check Valves;
- .20 ISO 9000, Quality Management System;
- .21 ISO 14001, Environmental Management System;
- .22 UPC-IAPMO, Uniform Plumbing Code.

### **1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Architectural Specifications.
- .2 Submit required specifications sheets and manufacturer documentation regarding adhesives. Specifications sheets must show products characteristics, performances criteria, dimensions, limits, and finishes.

### **1.4 QUALITY CONTROL**

- .1 An ISO 9000 Quality Control Certificate for gray cast iron parts must be provided on demand.
  - .2 An ISO 14001 Environmental Control Certificate for gray cast iron parts must be provided on demand.
  - .3 Ferrous matters used for gray cast iron parts production to be installed must be subject to a radiation detection test, complying with CSA B70, article 4.1.1 Standard. Documentation must be provided on demand, according with this article.
  - .4 The manufacturer of previous parts must have all certificates and approvals, in order to know its exact origin and the links between product and certificate.
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- .5 All assembled parts, such as gray cast iron piping and fittings must come from the same manufacturer to ease the responsibility and warranty.
- .6 All products and materials to be installed, such as stainless steel sheath couplings (MJ joint), must come from the same manufacturer to ease the responsibility and warranty.

## **1.5 MAINTENANCE SHEETS**

- .1 Supply the maintenance sheets required and add them to the "Exploitation and Maintenance Manual".
- .2 The maintenance files must contain or indicate the following:
  - .1 A description of the appliances, including the manufacturer's name, the type, model, year of manufacture and the power, supply or output.
  - .2 The pertinent details regarding the exploitation, servicing and maintenance.
  - .3 A list of recommended spare parts.

## **PART 2 - PRODUCTS**

### **2.1 COPPER PIPES AND CONNECTED FITTINGS**

- .1 The drainage pipes for sanitary water, sump pumps, storm water and ventilation, of a nominal diameter less than NPS 3, made to be installed above ground, as well as the connected fittings, will be of DWV type and in accordance with the ASTM B306 Standard.
  - .1 Fittings.
    - .1 Fittings in cast brass: in accordance with CAN/CSA-B125 and CAN/CSA B158.1 Standards.
    - .2 Fittings in forged copper: in accordance with the CAN/CSA-B125 Standard.
  - .2 Soft solder: Lead/tin 50/50, in accordance with the ASTM B32 Standard, of 50A type.

### **2.2 GUIDES**

- .1 Guides: Anvil (Grinnel), Fig. 256-H, galvanized steel for operation at 500°C (932°F).
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- .2 See table on drawings for description.
- .3 Acceptable Products: Anvil (Grinnell), Fig 256-H.

## **2.3 ANCHORAGES**

- .1 Anchorages: Galvanized steel structure, with expansion bolts and accessories. Anchorages must support expansion joint force without visible displacements.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- .1 Unless otherwise indicated, install the piping and elements in accordance with the requirements of the National Plumbing Code and of the local competent authorities.
- .2 Install the above ground piping parallel to the walls and ceilings and near them, to reduce as less as possible the effective space of rooms. Respect the slope and levels indicated.
- .3 Carry out tests in accordance with National Plumbing Code and local authorities having jurisdiction.

### **3.2 TESTS**

- .1 Every opening and piping outlet of the entire installation must be perfectly sealed as well as the sanitary waste and rain water drainage installations, including upward vents, connections, horizontal drains and main ducts. Piping must be filled with water up to the highest level for at least 2 hours. If it is not possible to test the whole installation at once, it can be divided in sections, individually tested as described before. However, water level in column must be at least 3 m (10 ft) over the tested section.
- .2 Piping must be tested up to the roof.
- .3 Tests must comply with the National Plumbing Code and be carried out in presence of the plumbing inspector or the Departmental Representative.

### **3.3 PERFORMANCE VERIFICATION**

- .1 Cleanouts.
    - .1 Ensure accessibility and that inspection cover is correctly located.
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- .2 Open, cover with linseed oil and re-seal, airtight.
- .3 Verify that cleanout rods can probe as far as the next cleanout, at least.
- .2 Test to ensure traps are fully and permanently primed.
- .3 Ensure that sanitary fixtures are properly anchored, connected to system and effectively vented.
- .4 Affix applicable label (storm, sanitary, vent, pump discharge, etc.) c/w directional arrows at every floor or 4.5 m (15 ft) (whichever is less).

**END OF SECTION**