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## **PART 1 - GENERAL**

### **1.1 RELATED REQUIREMENTS**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 61 00 - Common Product Requirements.
- .3 Section 01 74 11 - Cleaning.
- .4 Section 23 05 00 - Common Work Results for Mechanical.

### **1.2 REFERENCE**

- .1 Furthermore, Work will be done in accordance with any other code or norm having jurisdiction, as per the latest edition, notably including, but not limited to:
  - .1 Canadian General Standards Board (CGSB).
    - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.

### **1.3 SUBMITTALS**

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

### **1.4 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver, store, and handle in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.
- .3 Construction/Demolition Waste Management and Disposal: Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## **PART 2 - PRODUCTS**

- .1 Not Used.
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## **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 CONNECTIONS TO EQUIPMENT**

- .1 In accordance with manufacturer's instructions unless otherwise indicated.
- .2 Use valves and either unions or flanges for isolation and ease of maintenance and assembly.
- .3 Use double swing joints when equipment mounted on vibration isolation and when piping subject to movement.

### **3.3 CLEARANCES**

- .1 Provide clearance around systems, equipment and components for observation of operation, inspection, servicing, and maintenance, and as recommended by manufacturer.
- .2 Provide space for disassembly, removal of equipment and components (whichever is greater) without interrupting operation of other system, equipment, and components of network. Fitted out space has to be of dimensions as indicated on drawings or as recommended by manufacturer, the most raised value must be retained.

### **3.4 PIPEWORK INSTALLATION**

- .1 Installed piping as recommended in CSA B139 Standard.
  - .2 Screwed fittings jointed with Teflon tape.
  - .3 Protect openings against entry of foreign material.
  - .4 Install to isolate equipment and allow removal without interrupting operation of other equipment or systems.
  - .5 Assemble piping using fittings manufactured to ANSI Standards.
  - .6 Install exposed piping, equipment, rectangular cleanouts, and similar items parallel or perpendicular to building lines.
  - .7 Install concealed pipework to minimize furring space, to maximize headroom, and to conserve space.
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- .8 Slope piping, except where indicated, in direction of flow for positive drainage and venting.
- .9 Install, except where indicated, to permit separate thermal insulation of each pipe.
- .10 Group piping wherever possible or as indicated.
- .11 Ream pipes, remove scale, and other foreign material inside out before assembly. Clean also when Work is completed.
- .12 Use eccentric reducers at pipe size changes to ensure positive drainage and venting.
- .13 Provide for thermal expansion as indicated.
- .14 Valves.
  - .1 Install in accessible locations.
  - .2 Remove interior parts before soldering.
  - .3 Install with stems above horizontal position or vertical upward, unless otherwise indicated.
  - .4 Valves accessible for maintenance without removing adjacent piping.
  - .5 Use gate or ball valves at branch take-offs for isolating purposes, except where specified.

### 3.5 SLEEVES

- .1 General: Install where pipes pass through masonry, concrete structures, fire rated assemblies and elsewhere, as indicated.
- .2 Material: Schedule 40 black steel pipe, stainless steel 304 for floor of cooking and prep areas.
- .3 Construction: Foundation walls and where sleeves extend above finished floors to have annular fins continuously welded on at mid-point.
- .4 Sizes: 6 mm minimum clearance between sleeve and uninsulated pipe or between sleeve and insulation.
- .5 Installation.
  - .1 Concrete, masonry walls, concrete floors on grade: Terminate flush with finished surface.
  - .2 Other floors: Terminate 25 mm above finished floor.

- .3 Before installation, paint exposed exterior surfaces with heavy application of zinc-rich paint to CAN/CGSB-1.181 Standard.
- .6 Sealing.
  - .1 Foundation walls and below grade floors: Fire retardant, waterproof non-hardening mastic.
  - .2 Elsewhere: Provide space for firestopping. Maintain required fire rating integrity.
  - .3 Sleeves installed for future use: Fill with lime plaster or other easily removable filler.
  - .4 Ensure no contact between copper pipe or tube and sleeve.

### **3.6 FLUSHING OUT OF PIPING SYSTEMS**

- .1 Before start-up, clean interior of piping systems in accordance with requirements of Section 01 74 11 - Cleaning supplemented, as specified in Division 23.
- .2 Preparatory to acceptance, clean and refurbish equipment and leave in operating condition, including replacement of filters in piping systems.

### **3.7 PRESSURE TESTING OF EQUIPMENT AND PIPEWORK**

- .1 Advise Departmental Representative 48 hours minimum prior to performance of pressure tests.
- .2 Pipework: Test as specified in relevant of Division 23.
- .3 Maintain specified test pressure without loss for 4 hours minimum unless specified for longer period of time in relevant of Division 23.
- .4 Prior to tests, isolate equipment and other parts which are not designed to withstand test pressure or media.
- .5 Conduct tests in presence of Departmental Representative.
- .6 Pay costs for repairs or replacement, retesting, and making good. Departmental Representative to determine whether repair or replacement is appropriate.
- .7 Insulate or conceal work only after approval and certification of tests by Departmental Representative.

### **3.8 EXISTING SYSTEMS**

- .1 Connect into existing piping systems at times approved by Departmental Representative.
- .2 Request written approval 10 days minimum prior to commencement of Work.
- .3 Be responsible for damage to existing plant by this Work.
- .4 Ensure daily clean-up of existing areas.

### **3.9 CLEANING**

- .1 Clean in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**

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