

Part 1 General

1.1 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.181, Ready-Mixed Organic Zinc-Rich Coating.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA B139, Installation Code for Oil Burning Equipment.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and datasheets for piping and equipment and include product characteristics, performance criteria, physical size, finish and limitations.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Delivery and Acceptance Requirements:
 - .1 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.

Part 2 Products

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, maintenance and as recommended by manufacturer and CSA B139.
- .2 Provide space for disassembly, removal of equipment and components as recommended by manufacturer without interrupting operation of other system, equipment, components.

3.4 DRAINS

- .1 Install piping with grade in direction of flow except as indicated.
- .2 Install drain valve at low points in piping systems, at equipment and at section isolating valves.
- .3 Pipe each drain valve discharge separately to above floor drain.
 - .1 Discharge to be visible.
- .4 Drain valves: NPS 3/4 gate or globe valves unless indicated otherwise, with hose end male thread, cap and chain.

3.5 AIR VENTS

- .1 Install manual air vents.
- .2 Install isolating valve at each automatic air valve.
- .3 Install drain piping to approved location and terminate where discharge is visible.

3.6 DIELECTRIC COUPLINGS

- .1 General: compatible with system, to suit pressure rating of system.
- .2 Locations: where dissimilar metals are joined.
- .3 NPS 2 and under: isolating unions or bronze valves.

3.7 PIPEWORK INSTALLATION

- .1 Screwed fittings jointed with Teflon tape.
- .2 Protect openings against entry of foreign material.
- .3 Install to isolate equipment and allow removal without interrupting operation of other equipment or systems.
- .4 Assemble piping using fittings manufactured to ANSI standards.
- .5 Install exposed piping, equipment, rectangular cleanouts and similar items parallel or perpendicular to building lines.
- .6 Install concealed pipework to minimize furring space, maximize headroom, conserve space.

- .7 Install, except where indicated, to permit separate thermal insulation of each pipe.
- .8 Group piping wherever possible.
- .9 Ream pipes, remove scale and other foreign material before assembly.
- .10 Use eccentric reducers at pipe size changes to ensure positive drainage and venting.
- .11 Provide for thermal expansion as indicated.
- .12 Valves:
 - .1 Install in accessible locations.
 - .2 Remove interior parts before soldering.
 - .3 Install with stems above horizontal position unless indicated.
 - .4 Valves accessible for maintenance without removing adjacent piping.
 - .5 Install globe valves in bypass around control valves.
 - .6 Use ball valves at branch take-offs for isolating purposes except where specified.
- .13 Check Valves:
 - .1 Install silent check valves on discharge of pumps and in vertical pipes with downward flow and as indicated.
 - .2 Install swing check valves in horizontal lines on discharge of pumps and as indicated.

3.8 SLEEVES

- .1 General: install where pipes pass through masonry, concrete structures, fire rated assemblies, and as indicated.
- .2 Material: schedule 40 black steel pipe.

3.9 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 relevant mechanical sections.
- .2 Preparatory to acceptance, clean and refurbish equipment and leave in operating condition, including replacement of filters in piping systems.

3.10 PRESSURE TESTING OF EQUIPMENT AND PIPEWORK

- .1 Advise Departmental Representative 48 hours minimum prior to performance of pressure tests.
- .2 Pework: test as specified in relevant sections of heating, ventilating and air conditioning work.
- .3 Maintain specified test pressure without loss for 4 hours minimum unless specified for longer period of time in relevant mechanical sections.

- .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.

3.11 EXISTING SYSTEMS

- .1 Connect into existing piping systems at times approved by Departmental Representative.
- .2 Request written approval by Departmental Representative 10 days minimum, prior to commencement of work.
- .3 Be responsible for damage to existing plant by this work.

3.12 CLEANING

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION