

1 General

1.1 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CSA B51, Boiler, Pressure Vessel, and Pressure Piping Code.
 - .2 CAN/CSA-C309, Performance Requirements for Glass-Lined Storage Tanks for Household Hot Water Service.

1.2 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Indicate:
 - .1 Equipment, including connections, fittings, control assemblies, rated capacities, operating characteristics, electrical characteristics, furnished specialties and accessories, wiring diagrams and ancillaries, identifying factory and field assembled.
 - .1 Water heater,
 - .2 Pressure and temperature relief valves.
 - .3 Thermometers.
 - .4 Pressure gauges.
 - .5 Vacuum breakers.
 - .6 Expansion tanks.
 - .7 Aquastat / thermostat controller.

1.3 CLOSEOUT SUBMITTALS

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

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 19 - Waste Management and Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper packaging material in appropriate on-site for recycling in accordance with Waste Management Plan.
- .4 Divert unused metal and wiring materials from landfill to metal recycling facility approved by Departmental Representative.

1.5 WARRANTY

- .1 The Contractor shall provide a 12-month warranty for the domestic water heaters, as specified in this section.

2 Products

2.1 INDIRECT DHW HEATER

- .1 DHW heater:
 - .1 General: Indirect heater shall heat water from external hydronic heating source as indicated. Where applicable, provide ASME tag as required by authority having jurisdiction.
 - .2 Capacity: as indicated.
 - .3 Heat exchanger: tank-in-tank design c/w corrugated stainless steel inner liner tank and steel outer tanks. Inlet and outlet headers to include drain valves and thermowells.
 - .4 Cathodic protection: magnesium anodes, number and size to provide for 20
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- years protection of tank material.
- .5 Thermal insulation: HCFC free.
- .6 Extended warranty: 15 years. Provide certificate.

2.2 TRIM AND INSTRUMENTATION

- .1 Drain valve: NPS 1 (DN 25) with hose end.
- .2 Thermometer to Section 23 05 19.13 - Thermometers and Pressure Gauges - Piping Systems.
- .3 Pressure gauge to Section 23 05 19.13 - Thermometers and Pressure Gauges - Piping Systems.
- .4 ASME rated temperature and pressure relief valve sized for full capacity of heater, having discharge terminating over floor drain and visible to operators.
- .5 Supply anchor bolts and templates for installation by other Divisions.
- .6 Magnesium anodes adequate for 20 years of operation and located for easy replacement.
- .7 Wall brackets for wall mounted heaters shall be factory-fabricated steel capable of supporting water heater and water, where indicated.

2.3 DOMESTIC HOT WATER EXPANSION TANKS

- .1 A steel pressure rated tank constructed with welded joints and factory installed butyl rubber diaphragm shall be installed as scheduled. The air precharge shall be set to minimum system operating pressure at tank.
- .2 The tappings shall be factory fabricated steel, welded to the tank and include ASME B1.20.1 pipe thread.
- .3 The interior finish shall comply with NSF 61 and NSF 372 for barrier materials for potable water tank linings and the liner shall extend into and through the tank fittings and outlets.
- .4 The air charging valve shall be factory installed.

2.4 TANK TYPE ELECTRIC WATER HEATER

- .1 Volume and Power Input requirements per Schedule on drawings.
- .2 Glass Lined tank with removable anode rod.
- .3 Tank Mounted thermostat with adjustable dial between 40°C to 60°C, concealed within removable cover.
- .4 Single point electrical connection box.
- .5 MNPT connections for DCW/DHW.
- .6 Integrated T&P relief valve.
- .7 Fully insulated tank - preferably spray-foamed at factory.
- .8 Protective sheet metal jacket with affixed top and bottom plate endcaps.
- .9 Low point drain with 45-degree angle gate valve and standard hose connection threading.

3 Execution

3.1 INSTALLATION

- .1 Install in accordance with manufacturer's recommendations and authority having jurisdiction.
- .2 Provide structural steel for horizontal mounted tanks.
- .3 Provide insulation between tank and supports.

3.2 PERFORMANCE VERIFICATION

- .1 Contractor to verify that the DWH tanks respond to calls for temperature, and can reach

- desired temperatures.
- .2 Verify that hot water generation is within the stated range for this specification, and compliant with manufacturers guidelines.
 - .3 Verify that hot water thermostat cuts out generation at the cut out temperature setpoint.
 - .4 Verify that the T&P relief valves are functional.
 - .5 Test and backflow preventers in the system.

END OF SECTION
