

Part 1 General**1.1 RELATED SECTIONS**

- .1 Section 01 00 10 – General Instructions.
- .2 Section 01 91 13 – General Commissioning (Cx) Requirements.
- .3 Section 23 11 13 - Facility Fuel-Oil Piping.

1.2 REFERENCES

- .1 Canadian Council of Ministers of the Environment (CCME).
 - .1 CCME-PN1326-2004, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.
- .2 Department of Justice Canada (Jus).
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .3 Canadian Standards Association (CSA)/CSA International.
 - .1 CAN/CSA-B139-09, Installation Code for Oil Burning Equipment.
- .4 National Research Council/Institute for Research in Construction.
 - .1 NRCC 38727, National Fire Code of Canada (NFC) -2005.
- .5 Transport Canada (TC).
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .6 National Fire Protection Association (NFPA)
 - .1 NFPA (Fire) 329, Recommended Practice for Handling Releases of Flammable and Combustible Liquids and Gases, 2010 Edition
- .7 Underwriters' Laboratories of Canada (ULC).
 - .1 CAN/ULC-S601-07, Standard for Shop Fabricated Steel Aboveground Steel Tanks for Flammable and Combustible Liquids.
 - .2 CAN/ULC-S602-07, Standard for Aboveground Steel Tanks for Fuel Oil and Lubricating Oil.
 - .3 CAN/ULC-S652-08, Standard for Tank Assemblies for the Collection, Storage and Removal of Used Oil

1.3 SUBMITTALS

- .1 Submit shop drawings in accordance with Section 01 00 10 – General Instructions.
- .2 Indicate details of construction, appurtenances, installation and leakage detection system.
- .3 Shop drawings to detail and indicate following as applicable to project requirements. Submit manufacturer's product data to supplement shop drawings.
 - .1 Size, materials and locations of ladders, ladder cages, catwalks and lifting lugs.

- .2 Tanks capacity.
 - .3 Size and location of fittings.
 - .4 Environmental compliance package accessories.
 - .5 Decals, type size and location.
 - .6 Accessories: provide details and manufacturers product data.
 - .7 Finishes.
 - .8 Electronic accessories: provide details and manufacturers product data.
 - .9 Anchors: description, material, size and locations.
 - .10 Corrosion protection: provide details of design, type, materials and locations.
 - .11 Field-erected AST overfill-protection systems: provide details of design, type, materials and locations.
- .4 Provide maintenance data for tank appurtenances and leakage detection system for incorporation into manual specified in Section 01 00 10 – General Instructions.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 00 10 – General Instructions.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal all packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Divert unused metal and wiring materials from landfill to metal recycling facility as approved by Departmental Representative.
- .5 Fold up metal banding, flatten and place in designated area for recycling.

Part 2 Products

2.1 TANKS: STEEL DOUBLE WALL

- .1 ULC approved and labelled.
- .2 Double wall construction (tank in tank) of 9000L.
- .3 Tanks inside buildings: CAN/ULC-S602, Standard for Aboveground Steel Tanks for Fuel Oil and Lubricating Oil.
- .4 Provide tank with digital controller to start and stop the fuel transfer pumps and level reading indication.
- .5 Outer tank:
 - .1 Heavy duty galvanized steel.
 - .2 Lock seamed, welded and re-galvanized.
 - .3 Factory pressure tested

- .6 Inner tank:
 - .1 Corrosion proof, high density polyethylene (HDPE).
 - .2 Surface modified plastic (SMP) barrier.
 - .3 One piece blow moulded construction.
 - .4 Factory pressure tested.
- .7 Base:
 - .1 Heavy duty galvanized steel.
- .8 Capacity :
 - .1 1892 L
- .9 Dimensions:
 - .1 2453 mm x 1275 mm x 813 mm (LxWxH) or sized to suit enclosure.
- .10 Connections:
 - .1 DT-01
 - .1 Fill: NPS 2
 - .2 Vent: NPS 3
 - .3 Emergency Vent: NPS 4
 - .4 Gauge: 2 x NPS ¾
 - .5 Generator Supply: NPS 1
 - .6 Generator Return: NPS 1 ¼
 - .7 Drain: NPS ½
 - .8 Additional ports: 3 x NPS 1½ plugged connections for future use.
 - .9 Provide overfill and spill containment system.
 - .1 Visual and audible alarm system for detecting fluid level and alert personnel to terminate flow to storage tank. System must be able to be manually reset by personnel once filling is completed.
- .11 Finishes:
 - .1 Exterior of tank: Complete with two (2) coats of Red Oxide Primer MPI #23.
 - .2 Interior of tank: SSPC-SP6 plus white epoxy
- .12 Environmental compliance package accessories:
 - .1 75 mm x 3 meter vent riser.
 - .2 100 mm Emergency Vent to atmosphere
 - .3 Gauge stick to suit depth of tank
 - .4 Float gauge.
 - .5 75 mm diameter vent cap.
 - .6 25mm diameter suction tube and double tap fitting.
- .13 Electronic accessories:
 - .1 Overfill warning.
 - .2 Leak detector.

2.2 PIPING, VALVES AND FITTINGS

- .1 Piping located below product level equipped with either manual or automatic shut-off at storage tank.

2.3 LEAK DETECTION SYSTEM

- .1 Tank level gauging and indicator.
 - .1 Gauge and gauge openings: protected against liquid overflow and possible liquid and vapour release.
 - .2 A level indication shall be installed in the room and easily accessible.
- .2 Provide a fully integrated automatic tank gauging and leak detection system that can interface with the main EMCS.
- .3 The leak detection system shall be a comprehensive tank-gauging and leak-detection system that can simultaneously monitor product levels and leaks. Intuitive displays shall operate on a simple menu system providing quick and easy navigation for all features.
- .4 Provide and install leak detectors in the annular space within the double wall tank. The leak detectors shall be solid state and discriminate between oil and water, display the leak with (2) LED's on its indicating transmitter, and send an appropriate alarm signal to the Tank Gauge. All leak detectors shall be intrinsically safe, have continuous electronic checking, fail safe to an alarm condition, and have indicating transmitters with view test mechanism to exercise the sensors and check the Tank Gauge response. Test systems that bypass the sensors or rely only on electronic simulation are unacceptable.

Part 3 Execution**3.1 INSTALLATION**

- .1 Install tank in accordance with CAN/CSA-B139, Installation Code for Oil Burning Equipment, National Fire Code of Canada, manufacturer's recommendations and CCME PN 1326, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products
- .2 Position tank using lifting lugs and hooks, and where necessary use spreader bars. Do not use chains in contact with tank walls.
- .3 Any subsequent fuel requirement shall be provided by the Departmental Representative.

3.2 TOUCH-UP

- .1 Where coating is damaged, touch-up with original coating material.

3.3 LEVEL GAUGE SYSTEM

- .1 Provide leak and vapour proof caulking at connections.
- .2 Shield capillary and tubing connections in heavy duty 50 mm polyethylene pipe.
- .3 Calibrate system.

- .4 Provide and install manual gauge level on temporary storage tank TT-01.

3.4 LEAK DETECTION SYSTEM

- .1 Install in accordance with manufacturer's recommendations.

END OF SECTION