
Part 1 General

1.1 RELATED SECTIONS

- .1 Section 22 05 00 - Common Work Results for Plumbing.
- .2 Section 23 11 13 - Facility Fuel Oil Piping.
- .3 Section 26 05 00 - Common Work Results for Electrical.

1.2 REFERENCES

- .1 American National Standards Institute (ANSI).
 - .1 ANSI/NFPA-329-99, Handling Underground Releases of Flammable and Combustible Liquids.
 - .2 ANSI/API 650-2000, Welded Steel Tanks for Oil Storage.
- .2 American Petroleum Institute (API).
 - .1 API RP 651-1997, Cathodic Protection of Aboveground Petroleum Storage Tanks.
 - .2 API STD 653-R01, Tank Inspection, Repair, Alteration, and Reconstruction.
- .3 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM C618-01, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
- .4 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.
- .5 Department of Justice Canada (Jus).
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .6 Canadian Standards Association (CSA)/CSA International.
 - .1 CAN/CSA-B139-00, Installation Code for Oil Burning Equipment.
 - .2 CAN/CSA-C282, Emergency Electrical Power Supply for Buildings.
- .7 The Master Painters Institute (MPI).
 - .1 Architectural Painting Specification Manual - September 2002.
- .8 Transport Canada (TC).
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .9 Underwriters Laboratories of Canada (ULC).
 - .1 ULC/ORD-C58.9-97, Secondary Containment Liners for Underground and Aboveground Tanks.

- .2 ULC/ORD-C58.12-92, Leak Detection Devices (Volumetric Type) for Underground Storage Tanks.
- .3 ULC/ORD-C58.14-92, Leak Detection Devices (Nonvolumetric Type) for Underground Storage Tanks.
- .4 ULC/ORD-C58.15-92, Overfill Protection Devices for Underground Tanks.
- .5 ULC/ORD-C107.4-92, Ducted Flexible Underground Piping Systems for Flammable and Combustible Liquids.
- .6 ULC/ORD-C107.7-93, Glass-Fibre Reinforced Plastic Pipe and Fittings.
- .7 ULC/ORD-C107.19-92, Secondary Containment of Underground Piping.
- .8 ULC/ORD-C142.23-91, Aboveground Waste Oil Tanks.
- .9 ULC-S601-2000, Aboveground Horizontal Shop Fabricated Steel Tanks.
- .10 CAN/ULC-S602-92, Aboveground Steel Tanks for Fuel Oil and Lubricating Oil.
- .11 CAN/ULC-S603.1-92, Galvanic Corrosion Protection Systems for Steel Underground Tanks.
- .12 ULC-S652-93, Tank Assemblies for Collection of Used Oil.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Indicate details of construction, installation, and appurtenances.
- .3 Shop drawings to detail and indicate following as applicable to project requirements. Submit manufacturers 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 Size, material and location of manholes.
 - .8 Size, materials and locations of railings, stairs, ladders, and walkways.
 - .9 Finishes.
 - .10 Electronic accessories: provide details and manufacturers product data.
 - .11 Identification, name, address, and phone numbers of corrosion expert where applicable. Note: Grading drawings to be stamped by licenced corrosion expert.
 - .12 Piping, valves and fittings: type, materials, sizes, piping connection details, valve shut-off type, and location, cathodic protection system complete with stamp of corrosion expert indicating that design complies with Standards, Federal and Provincial regulations.
 - .13 Spill containment: provide description of methods and show sizes, materials and locations for collecting spills at connection point between storage tank system and delivery truck, rail car, or vessel.

- .14 Anchors: description, material, size, and locations.
- .15 Concrete: type, composition, and strength.
- .16 Size and location of site pads.
- .17 Level gauging: type and locations, include:
 - .1 Reporting systems, types of reports and report frequency.
 - .2 Maximum number of tanks to be monitored.
 - .3 Number of probes required and sizes.
 - .4 Provide details and manufacturer's product data.
- .18 Ancillary devices: provide details and manufacturer's product data.
- .19 Grounding and bonding: provide details of design, type, materials and locations.
- .20 Corrosion protection: provide details of design, type, materials and locations.
- .21 Containment system for spills, overfills and storm runoff water: provide details, materials used, and locations.
- .4 Provide maintenance data for tank appurtenances for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.4 HEALTH AND SAFETY

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Separate for reuse and recycling and place in designated containers steel, metal, and plastic waste in accordance with Waste Management Plan.
- .5 Place materials defined as hazardous or toxic in designated containers.
- .6 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .7 Clearly label location of salvaged material's storage areas and provide barriers and security devices.
- .8 Ensure emptied containers are sealed and stored safely.
- .9 Divert unused metal materials from landfill to an approved metal recycling facility.
- .10 Divert unused concrete materials from landfill to an approved local recycling facility.

- .11 Dispose of unused paint or coating material at an approved official hazardous material collections site.
- .12 Do not dispose unused paint material must into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.
- .13 Fold up metal banding, flatten, and place in designated area for recycling.

1.6 ACCEPTABLE PRODUCTS AND MATERIALS

- .1 Where a particular brand name is stipulated, see Instructions to Bidders for procedure for requesting approval of substitute materials and products.

Part 2 Products

2.1 DOUBLE WALL STEEL TANK

- .1 Tank of 2,275 L capacity, dimensions as indicated, double wall with vacuum detection.
- .2 Horizontal Tanks: ULC-S601, complete with one external coat of red oxide primer to MPI #23.
- .3 Tanks inside buildings: CAN/ULC-S602.
- .4 Finishes:
 - .1 Exterior of tank: a sandblasted surface preparation to reach a SSPC-SP6 epoxy paint finish, 5 to 7 mm thick;
- .5 Acceptable Products:
 - .1 Granby;
 - .2 Replacement materials or products: approved by addendum according to Instructions to bidders.

2.2 PIPING, VALVES, AND FITTINGS

- .1 In accordance with Section 23 11 13 - Facility Fuel Oil Piping.
- .2 Piping located below product level equipped with either manual or automatic shut-off at storage tank.
- .3 Provide means for collecting spills at connection point between storage tank system and delivery truck, rail car, or vessel.

2.3 GROUNDING AND BONDING

- .1 To Section 26 05 00 - Common Work Results - Electrical.

Part 3 Execution

3.1 INSTALLATION

- .1 Install tanks in accordance with CAN/CSA-B139 and National Fire Code of Canada and manufacturer's recommendations.
- .2 Position tanks using lifting lugs and hooks, and where necessary use spreader bars. Do not use chains in contact with tank walls.
- .3 Provide certification of installation to Departmental Representative.

3.2 FIELD QUALITY CONTROL

- .1 Test tanks for leaks to requirements of CAN/CSA-B139 and in presence of Departmental Representative.

3.3 TOUCH-UP

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

3.4 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.

END OF SECTION