STEM|CAN
Structural Tank Equipment & Maintenance (Canada) Limited
ISO 9001: Registered (10012564 QMI5)

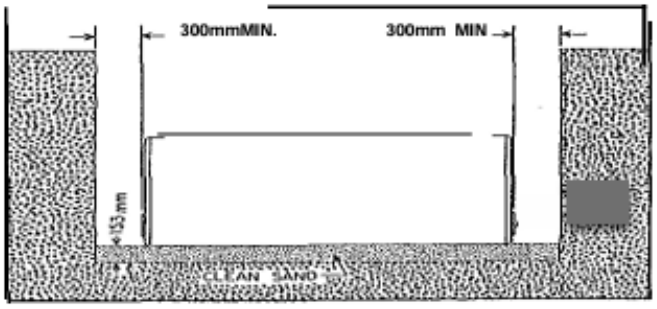
Structural Tank Equipment & Maintenance (Canada) Limited
69 Comstock Road
Scarborough, ON M1L 2G9
Phone: 416-757-6278 Toll Free 1-800-387-1400

INSTALLATION INSTRUCTION GUIDELINE FOR CAN/ULC S603 UNDERGROUND TANK

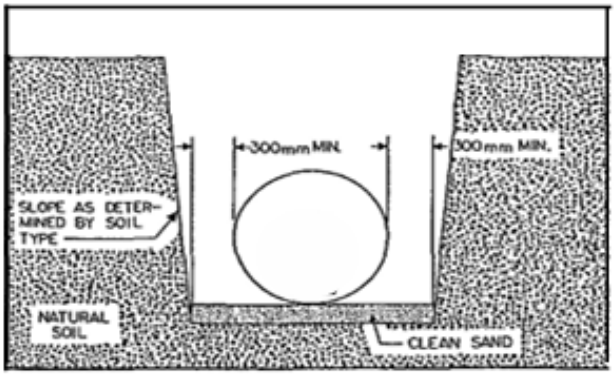
1. Installer shall consult with the authority having jurisdiction to ensure that the applicable Federal, Provincial and Local Codes are met Prior to Installation. Stored product must be compatible with the material of construction, including gaskets.

2. Excavation and Bedding

A) The excavation shall be free from any- hard and sharp material which may cause damage to the external tank coating.



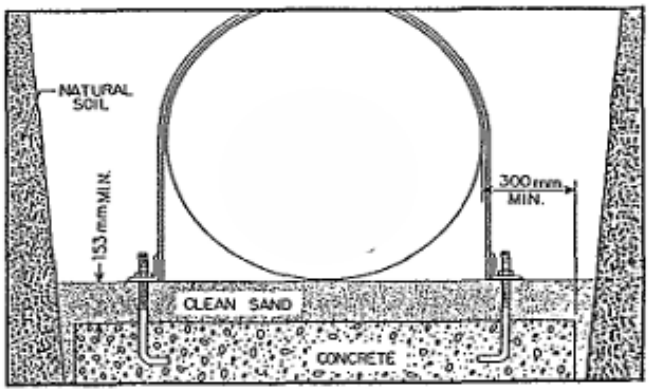
B) The excavation shall be deep enough to provide for the required depth of burial, and the bottom of excavation (covered by firm bedding) shall extend at least 300 mm horizontally beyond the perimeter (i.e. projected clearance between bottom of excavation walls and anodes, bottom of excavation walls and tanks, etc.) and 600 mm between the tanks.



Structural Tank Equipment & Maintenance (Canada) Limited
69 Comstock Road
Scarborough, ON M1L 2G9
Phone: 416-757-6278 Toll Free 1-800-387-1400

C) The bottom of the excavation shall be relatively smooth and shall be covered with clean sand (free of stones and cinders) or other material (acceptable to the authority having jurisdiction) as bedding to a depth of 153 mm suitably graded and levelled.

D) Where anchoring by means of a reinforced concrete slab is required the tank shall not be placed directly on the slab but shall be separated from the slab using a minimum of 153 mm of sand. The concrete slab shall extend at least 300 mm horizontally beyond the outline of the tank in all directions. The tank shall not be placed on any other hard or sharp material that can cause deformation of the tank.



E) Tank not subjected to traffic loads shall be installed that its top is at least 610 mm below grade level.

F) Tank subjected to traffic loads must have a cover depth of
a. 915 mm clean sand or
b. 762 mm clean sand plus 153 mm asphalt or
c. 458 mm clean sand plus 153 mm reinforced concrete or
d. 458 mm clean sand plus 204 mm unreinforced concrete

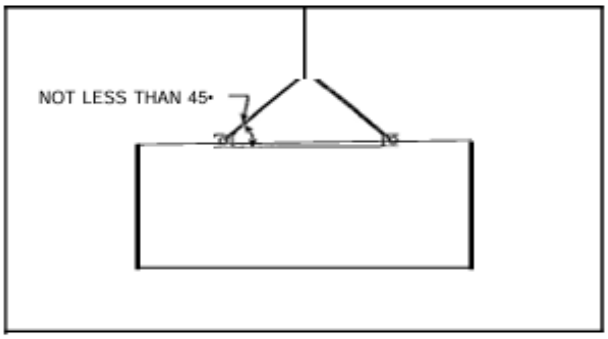
G) The backfilling of the excavation shall be completed including the cover over the tank, as required by the authority having jurisdiction.

H) Maximum burial depth one (1) meter or as per Rolark Equation.

3. Handling and Placing of Tank

A) The temporary plugs (including the red vent plug) and thread protectors installed by the ULC approved pipe sealant to internal bushing threads. Permanent metal plugs shall be installed at all unused openings.

Structural Tank Equipment & Maintenance (Canada) Limited
69 Comstock Road
Scarborough, ON M1L 2G9
Phone: 416-757-6278 Toll Free 1-800-387-1400

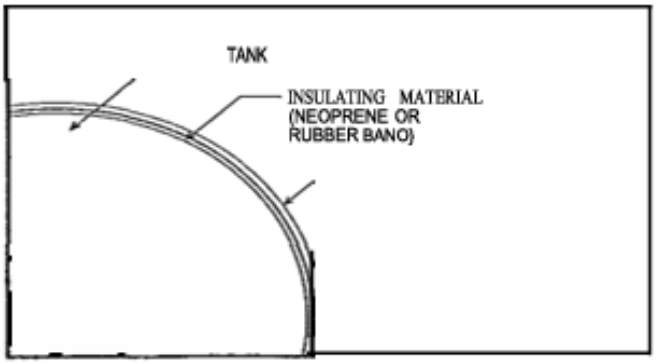


B) The isolating bushing shall not be removed from openings. Plugs used to temporarily seal the tank for the air test and later removed for piping installation shall not be over-tightened. Care shall be taken not to cross thread or damage the isolating bushings.

C) Before placing the tank in the excavation, all dirt clods and similar foreign matter shall be cleaned from the tank.

D) Equipment to lift the tank shall be of adequate size and capacity to lift and lower the tank without dragging or dropping and to ensure no damage to the tank.

E) Tanks shall be carefully lowered into the excavation by use of cables or chains of adequate length attached to the lifting lugs provided. A spreader bar should be used where necessary. Under no circumstances shall chains or slings be used around the tank shell.



F) Where high water is anticipated, the tank shall be anchored. Special care should be exercised when installing hold down straps to ensure that hold down straps are separated from the tank by 3 mm thick and 102 mm wide neoprene or rubber band.

Structural Tank Equipment & Maintenance (Canada) Limited
69 Comstock Road
Scarborough, ON M1L 2G9
Phone: 416-757-6278 Toll Free 1-800-387-1400

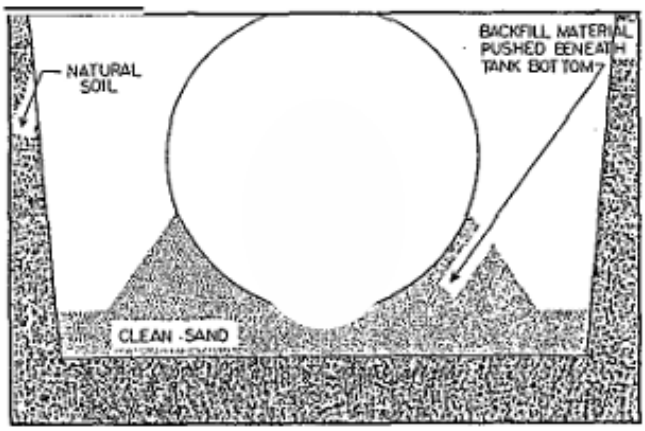
G) Water level should be maintained at the lowest practical level during and after installation. A system of well points and pumps is recommended.

H) After the tank has been positioned in the excavation, the tank coating shall be carefully inspected, any damaged portion shall be repaired.

4. Backfilling and Final Tests

A) The tank excavation shall be backfilled using the same material used for bedding.

B) At the beginning of backfilling, care must be taken to push backfill material completely beneath the tank bottom to provide support around the tank's bottom quadrant. The backfill shall be compacted in not greater than 305 mm layers to approximately 80% proctor density or better.



C) Prior to backfilling the top of tank, all openings shall be visually inspected to ensure that the isolating bushings remain in place. Where flanged openings have been used, the dielectric isolation shall be confirmed with a continuity tester.

D) Install piping using ULC approved pipe sealant, care shall be taken not to cross thread or damage the isolating bushings. Piping shall be pressure tested with air or hydrostatically in accordance with applicable codes and legislation prior to connecting to the tank.

Structural Tank Equipment & Maintenance (Canada) Limited
69 Comstock Road
Scarborough, ON M1L 2G9
Phone: 416-757-6278 Toll Free 1-800-387-1400

E) The tank and vent line shall each be subjected to a recorded 35 kPa pressure test with air or nitrogen for a minimum of two hours. Necessary safety precautions shall be taken during air testing and the tank shall not be left unattended during pressure testing. Isolate tank from piping when performing a pressure test. The pressure required shall be measured by an instrument calibrated in increments not greater than 0.69 kPa.

F) To ensure that the final connections are tight, the entire system shall be subjected to a fifteen minute 35 kPa test and the final connections shall be soap tested.

5. Venting

The primary tank is designed to operate at atmospheric pressure. The tank's venting system must be adequately sized to ensure that atmospheric pressure is always maintained, including during filling, and emptying of tank.

6. Tank Monitoring

For double wall vacuum monitored tank, the tank shall be inspected on a regular basis to confirm that at least 51 kPa. of vacuum is being maintained. If regular inspections cannot be conducted, a vacuum switch shall be installed to the vacuum monitoring assembly to indicate the loss of vacuum. The switch shall be connected to an alarm panel located in an area frequented daily by responsible personnel.