

Maintenance and Installation Instructions for AGI's Contained EnviroTanks

Maintenance Schedule

- a) Weekly Procedures
Inspect tank sumps for fuel and remove any accumulated debris.(NFC 4.3.7.8)
- b) Monthly Procedures
Check that emergency vents open and close easily.
Check that all valves open and close properly.
Inspect all piping for signs of leakage and repair as necessary.
- c) Annual Procedures
Visually inspect tank, skid, stairs, platform and handrail for rust. Cracked welds and structural damage or deterioration. Repair as necessary.
(If the containment space can not be manually monitored a monitoring device must be installed. (NFC 4.3.7.7))

Site Considerations

Tanks used for flammable liquids at service stations shall be installed as follows:

- a) The individual tank capacity is not to exceed 50,000 litres and total site capacity is not to exceed 150,000 litres at retail service stations. (NFC 4.5.2.1)
- b) A contained tank must not exceed 50,000 litres without prior fire commissioner approval. (NFC 4.3.7.4.2)
- c) Tanks shall be installed:
 - 1) 3 meters from right-of-way
 - 2) 3 meters from any property line. (NFC 4.3.2.1)
 - 3) 3 meters from any buildings. (NFC 4.3.2.1)
 - 4) Distance between two storage tanks shall be a minimum of 1 m. (NFC 4.3.2.2.2)
- d) Installed in accordance with The National Fire Code 1990 article 4.3.2.1
- e) Access to the tank storage area must be restricted to authorized personnel only. Signs to this effect must be posted in a conspicuous place. Public access shall be restricted by suitable fencing or other means acceptable to the authority having jurisdiction.
- f) In residential areas the minimum distance for an aboveground tank to the property lines and buildings shall be 15 meters (50 ft).
- g) Installations are subject to the approval of the Provincial Environmental Department, the Municipal Government, the Fire Commissioners Branch and the Electrical Inspections Branch.
- h) Above ground tanks are permitted to have dispensing equipment attached directly to the tank following requirements prescribed in Section 4.5.3.2 of the NFC.

Collision Protection

Physical barriers shall be installed for the protection of the tank against impact from vehicular traffic. (NFC 4.5.2.1.3)

Acceptable means include:

- a) Bollards – Concrete filled 4' steel pipe minimum 100 mm (4") to top of post, post to be 750 mm (30") above grade and 900 mm (36") below grade, spaced 1,400 mm (55") apart and placed a minimum 1500 mm (59") from tank and associated equipment.
- b) Railing – Standard highway guard rails spaced 1,400 mm (55") apart and placed at least 1500 mm (59") from tank and associated equipment, bottom of guardrails 600 mm (24") above grade and firmly anchored.

The Bedding

Tank shall be installed on a level prepared bedding surface, designed to bear the gross weight of the tank filled with product. Examples of bedding preparation are as follows:

- a) Concrete pad
- b) Compact gravel

Bedded surface shall be sloped 1.75 cm: 1 m (2":120") toward end of unit which containment access is located

Venting

The service vent pipe on the tank assembly must be terminated at least 3.6 m (12 feet) above grade, at least 1.2 m (4 feet) above the top of the tank, away from any building and in such a position that fumes from the vent cannot enter or be drawn into any building through a window, door or other openings including air intakes, and 7.6 m (25 feet) away from any source of ignition, including vehicles. (NFC 4.3.5.2)

Above ground tanks storing flammable liquids require an emergency vent. AGI's emergency vent consists of a weighted lid that burps should the pressure build in the tank. Our emergency vents are often sealed shut with a ¾" piece of pipe for shipping. This pipe or tubing must be removed from the emergency vent bolt. The lid must be free to open.

The secondary containment must also be vented. (NFC 4.3.7.6)

Piping & Valves

All above ground piping must be air checked to 50 psi for two hours prior to use. Air check records must be retained for inspection. (NFC 4.4.6.2)

AGI air and dye tests its piping in the factory, but due to shipping vibrations it is necessary to retest the piping in the field before it is put into service.

All valves and piping must be tagged and labeled according to Canadian Petroleum Products Institute's standards. Either AGI or your fuel supplier can provide labels and tags. (NFC 4.4.4.1)

The NFC requires that steel valves be placed against the tank whenever the fitting is at the bottom of the tank. (NFC 4.3.6)

Shear valves are required below service station pumps or dispensers. (NFC 4.5.6.3)

The Discharge

Product discharge shall be equipped with protection against breakage by physical contact and equipped with automatic shut-off devices that prevent the drainage of product should breakage occur. Requirements depend upon local authority, either electrically operated Solenoid Valve or an Anti-Siphon Valve.

The Fill

There are three acceptable methods of filling above ground storage tanks.

- a) Top fill thru a 26-litre fill box.
- b) Remote top fill. The piping is remotod from the top of the tank to the side of the tank where it can be reached from the ground.

c) Bottom fill.

Overfill prevention is required to prevent the tank from being filled above 95%. Overfill prevention can take the form of either a mechanical overfill valve or a high level alarm. (NFC 4.3.1.8)

In Saskatchewan, if a storage tank is filled through a 26 litre fill box with an automatic nozzle overfill prevention is not required.

Electrical Requirements

All tanks shall be electrically grounded in accordance with the requirements of the Canadian Electrical Code. (See AGI's drawing for a recommended grounding method)

Fire Extinguishers

Service station dispensing islands require a minimum of two 10-BC fire extinguishers. (NFC 4.5.10.1)

Bulk storage plants require two 20-BC fire extinguishers. (NFC 4.6.5.1)

Miscellaneous

Hold down devices are required in certain locations. If you are in such a location contact AGI for the correct hold down method best suited to the tank design. (NFC 4.3.3.2)

The tank installer must ensure that all Federal, Provincial, and Local codes for fire and environmental regulations are met accordingly.

References

National Fire Code of Canada 1995 – NFC

Alberta Fire Code - AFC

Canadian Electrical Code Part 1 1998 - CEC