

INSTALLATION AND MAINTENANCE GUIDELINES FOR ATMOSPHERIC ABOVEGROUND TANKS FOR FLAMMABLE LIQUIDS ON SUPPORTS

MODELS: •OBROUND AND CYLINDRICAL UL142 TANKS



Manufactured by :



1020 André-Liné Granby, Québec, Canada
J2J 1J9 Telephone: 450-378-2334
Fax: 450-378-5202
E-mail: service@granbytanks.com
Website: <http://www.granbytanks.com>



1. Scope

These instructions apply to stationary installations of obround or cylindrical UL-142 tanks manufactured by Granby Steel Tanks. These tanks are designed to contain stable flammable and combustible liquids at atmospheric pressure (as classified by NFPA 30) with a specific gravity not exceeding that of water. Here are examples of fluids that can be stored in a UL 142 tank: Fuel oil, Diesel fuel, Gasoline, Lubricating oils, Kerosene, Toluene, Xylene, Methanol, Turpentine...

Since these tanks are used in a broad range of applications, this document does not cover detailed but only general installation instructions. For specific details and regulations, you must refer to the appropriate codes and local regulations.

- For all installations, you can refer to NFPA 30.
- If the tank is used to supply **Oil-Burning Equipment**, you can refer to NFPA 31.
- If the tank is installed on a farm or an isolated site, you can refer to NFPA 395.
- If the tank is used in **Motor Fuel Dispensing Facilities, Marine Refuelling and Repair Garages**, you can refer to NFPA 30A and NFPA 30.
- If the tank is used to supply **Stationary Combustion Engines or Gas Turbines**, you can refer to NFPA 37 and NFPA 30.

2. Tank Inspection

Inspect the tank immediately upon reception. Minor dents and scratches may be acceptable and repaired on site. If damages affect the integrity and performance of the tank, please contact your distributor.

3. Tank Handling

This is a stationary tank. Do not use this tank to transport any product or move the tank unless it is empty. Never drag or drop the tank.

4. Tank Installation

The installation of the tank must be performed by a certified and qualified technician recognized by the authorities having jurisdiction. It is assumed that the installer possesses the skills, the tools and the appropriate documentation (codes and regulations) to install the tank in proper and safe manner.

Condensation can form in the tank during its storage period. During winter months, before its installation, the tank must reside in a warm environment (above freezing level) for a period long enough to melt all the ice that might be present inside. Water must then be drained out of the tank prior to the installation.

4.1. Foundations and Anchoring

The tank shall rest on a foundation of concrete, masonry, piling or steel. This foundation has to be designed to minimize the uneven settling of the tank and to minimize the corrosion of the components resting on the foundation. The site should have all organic materials such as sod or bark removed and the soil must be mechanically compacted. A well-drained sub grade should then be utilized to provide appropriate drainage.

Clearances below the tank shall prevent any part of the tank, except for its base, to be in contact with the soil or foundation.

Where a tank is located in an area subjected to flooding, measures shall be taken to prevent the empty tank from floating in water levels established as maximum flood levels.

4.2. Tank Legs for Obround Tanks

Our obround tanks are provided with four threaded leg supports. Tanks legs shall be 1¼" black iron pipes threaded on one end. Leg sizes shall be 11" at the outlet end and 12" at the opposite end. This gives a slope of ¼" per foot of tank length and provides enough room for the shutoff valve and filter installation. Tank legs shall be vertically straightened to level to support evenly the weight of the tank filled with fuel (2200 lb. ±).

The installer must verify that a minimum slope of ¼" by foot toward the fuel outlet is respected. This is a critical point of the installation and failure to comply with it will render the tank warranty NULL and VOID.

4.3. Location of Tank

The tank shall be located at a safe distance from property lines, public ways, important buildings and adjacent tanks. Refer to applicable codes and local authorities.

4.4. Tank Piping

Before beginning the piping or the installation of accessories, remove shipping caps from each flange.

4.4.1. Tank Vent

Each tank shall be adequately vented to prevent the build-up of pressure or vacuum inside the tank when filling, emptying or when subjected to atmospheric temperature changes. The vent shall be at least as large as the largest filling or withdrawal connection and in no case be at smaller than 1 ¼" nominal inside diameter.

Note: the type of vent required varies depending on the type of liquid contained in the tank. Refer to applicable codes.

4.4.2. Tank Emergency Vent

Each tank shall be equipped with a listed emergency vent device. This device must have a venting capacity at least equal to the value specified in the following table. This value is also specified and on the tank next to the emergency vent opening.

Tank Model	Primary Tank Vent Capacity (cubic feet per second)	Secondary Tank Vent Capacity (cubic feet per second)
137 gal. (obround)	31 600	
230 gal. and 275 gal. (obround)	52 700	
330 gal. (obround)	63 200	
300 gal. 38" dia. x 60" long (cylindrical)	52 700	
300 gal. 38" dia. x 70" long (D/W cylindrical)	52 700	63200
500 gal. 50" dia. x 60" long (cylindrical)	73 700	
500 gal. 50" dia. x 70" long (D/W cylindrical)	73 700	84200
500 gal. 46" dia. x 72" long (cylindrical)	84 200	
1000 gal. 50" dia. x 120" long (cylindrical)	126 000	
1000 gal. 50" dia. x 129" long (D/W cylindrical)	126 000	147000

Piping to or from approved emergency vent devices shall be sized to provide emergency venting flows that limit back pressure to less than 2.5 PSIG within the tank.

Tanks containing *Class IIIB* type fluids (transmission oils, lubricating oils, power steering fluids) or tanks supplying Oil-Burning equipment that are not in the diked area or drainage path of tanks storing *Class I* or *Class II* fluids do not need to meet these emergency venting requirements (see NFAP30 for details).

4.4.3. Openings Below Liquid Level

Each opening below liquid level through which liquid does not normally flow shall be plugged with a liquid tight closure.

4.4.4. Openings Above Liquid Level

All openings that remain unused after completion of the installation shall be properly sealed with a liquid tight metal threaded pipe plug.

5. Testing

These tanks must pass the appropriate test below at job site before being put in service.

Warning: Over pressurization may cause tank to fail.

5.1. Testing Single Wall Tanks

Apply internal air pressure of not less than 3 PSIG or more than 5 PSIG and soap all seams and welded areas.

5.2. Testing Double Wall Tanks

Testing the Primary tank

5.2.1. Make sure the secondary tank opening is free of any obstruction and is properly vented to atmosphere.

5.2.2. Pressurize inner tank to at least 3 PSIG and to no more than 5 PSIG.

5.2.3. Make sure all primary tank openings are properly sealed with a soapy solution.

5.2.4. Cut air supply to the inner tank but keep it pressurized for an hour.

5.2.5. If a steady pressure drop is noticed, it may mean a leak in the primary tank.

Testing the Secondary Tank

5.2.6. Pressurize inner tank to at least 3 PSIG and to no more than 5 PSIG.

5.2.7. Pressurize outer tank to at least 3 PSIG and to no more than 5 PSIG.

5.2.8. Apply a soapy solution to tank exterior surfaces welds and seams.

5.2.9. Relieve pressure from outer tank then relieve pressure from inner tank.

6. Inspection of the Tank After its First Filling

The installer MUST make sure, at the first filling of the tank that no unforeseen damage has occurred during handling, transportation, installation and connection. Such damage could ultimately result in a leak. THE ONLY WAY TO MAKE SURE THAT THE INSTALLATION IS TIGHT IS TO BE IN ATTENDANCE THE FIRST TIME THE TANK IS FILLED COMPLETELY WITH OIL. The installer or a person delegated by him can perform that function. The installer or oil company representative shall visually inspect all seams and fittings for leakage after the first complete filling.

7. Transfer of Product

Most premature failures of steel oil tanks are caused by water and sludge that may accumulate at the bottom of the tank. If you choose to transfer the product from the old tank to the new one, you must insure that the transferred product is free of contaminants, sludge and water.

8. Oil Tank Management (Maintenance)

- Each tank shall be inspected and maintained to ensure compliance with the requirements of the codes regulating it.
- The tank and all tank accessories shall be maintained to ensure that they function as intended.
- If a tank is found to be leaking, it shall be emptied of its content immediately and be replaced.
- The tank should be inspected at least once a year for presence of water. If found, water should be removed immediately.
- All openings on the tank (ex: gauging) shall be closed when not in use.
- If liquid is found in the interstitial space of a double wall tank, replace it.
- If foundation is not stable or tank is likely to topple; take action to correct the situation immediately.