

## **Typical Septic Tank Installation Instructions**

Proper installation of the tank is absolutely critical for maintaining structural integrity and watertightness. Many of the problems experienced with leakage can be attributed to incorrect installation procedures. In addition to damage to the tank, improper installation techniques could be a safety hazard.

### **Site Conditions**

The installation site must be accessible to a large trucks weighing up to 80,000 pounds (36,000 kg). The construction area should be free of trees, branches, overhead wires or parts of buildings that could interfere with the delivery and installation of the on-site wastewater tank. Most trucks will need to get within 3 to 8 feet (1 to 2.5 m) of the excavation to be unloaded.

### **Excavation**

Prior to excavation, identify and locate all buried utilities. Follow OSHA regulations governing excavation work at all times. Excavations should be sloped to comply with all construction safety requirements.

### **Bedding**

Proper use of bedding material is important to ensure a long service life of an on-site wastewater treatment system. Use imported bedding material as necessary to provide a uniform bearing surface. A good base should ensure that the tank would not be subjected to adverse settlement. Use a minimum of 4 inches (100 mm) thickness of sand or granular bed overlying a firm and uniform base unless otherwise specified. Tanks should not bear on large boulders or rock edges.

Sites with silty soils, high water tables or other “poor” bearing characteristics must have specially designed bedding and bearing surfaces. In the presence of high water tables, structures should be properly designed to resist floatation. Proper compaction of the underlying soils and bedding material is critical to eliminate later settlement, which can ultimately occur in all tank installations regardless of the tank material. Potential tank settlement is measurable, predictable and preventable.

Proper evaluation of the original soil, bedding materials, water table, backfill materials and potential soil-bearing stresses reduces the likelihood of later tank settlement. Set the tanks level to provide the proper elevation drop from the inlet to the outlet. Worker safety is of primary importance. If it is necessary to have a worker enter the excavation to check elevation or compact bedding materials, use proper excavation methods that will prevent the sidewalls from collapsing. Alternatively, trench boxes may also be used if necessary.

### **Tank Placement**

Confirm the tank’s orientation prior to placement in the excavation. Check the bedding material and ensure that inlet penetrations face the residence. After placement, check that the tank is level. The slope of the sewer line and tank elevation should meet local plumbing and building codes.

### **Joint Seals**

For two-piece tanks, use high-quality preformed joint seals. Surfaces should be clean. Ensure seals meet minimum compression and other installation requirements as prescribed by the seal manufacturer. Ambient temperatures below 50° F (10°C) sometimes affect the compressibility of the sealant during installation. Care must be taken to determine that tank sections installed on site have been properly sealed. Inspecting the joint area to determine that the tank sections have been properly seated helps prevent soil materials from entering the joint area during backfilling operation. Properly seal manholes and risers to prevent infiltration.

### **Backfilling**

Place backfill in uniform layers less than 24 inches (600 mm) thick. Backfill should be free of any large stones (greater than 3 inches [75 mm] in diameter) or other debris.

## Field Watertightness Testing

If required, watertightness testing of this product shall be by means of a vacuum (negative pressure). The procedure for field testing shall follow ASTM C1719, *Standard Test Method for Installed Precast Concrete Tanks and Accessories by the Negative Air Pressure (Vacuum) Test Prior to Backfill*.

This is not a routine test. The values recorded are applicable only to the tank being tested and at the time of testing. This test is intended only to demonstrate the sealing effectiveness of the installed system. Structural design of the tank is defined or demonstrated within the scope of other applicable specifications and test methods, including Specification C1227.

This test method covers procedures for testing precast concrete tanks (and installed accessories) used for on-site wastewater treatment, grease interception, grit/oil separation, water storage, or other applications requiring watertight construction and installation. This test method uses partial vacuum to demonstrate the integrity of the installed materials and the construction processes.

This test method is intended to be used to demonstrate the condition of the installed system (precast concrete tank and accessories) prior to backfill.

Testing of the system before backfill is necessary so as to preclude inadvertent structural overloading of the system components during the test.

The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

## Repairs

Repairs can be made to the precast concrete tank as necessary to meet the requirements of the installation using materials of similar characteristics. The precast concrete tank manufacturer shall be consulted for severe damage. Spalling and surface imperfections can be repaired using a non-shrink cementitious grout or similar material. Minor cracks and/or leaks detected during watertightness testing can be repaired with an elastomeric caulk as required.

### Installation Checklist:

- Septic tank bedding: minimum 4" of sand or granular bed overlying a firm and uniform base
- Septic tank placed in the correct orientation
- Septic tank elevation to inlet meets the plan
- Depth of bury of the tank is within the design parameters of the tank manufacturer
- Tank is level within the allowed tolerances
- Joint sealants (when field applied) are properly place into a continuous band.
- Joint sealants have achieved adequate compression before backfill
- When required, septic tank is tested for watertightness in accordance with ASTM C1719

Installers Signature: \_\_\_\_\_ Date: \_\_\_\_\_