

## INSTALLATION INSTRUCTIONS FOR UNDERGROUND CONCRETE TANKS

Proper installation of the tank is absolutely critical for maintaining structural integrity, watertightness, and long term service. 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. Failure to follow these installation instructions will void the warranty and may result in tank failure. It is important that read, understand and follow the instructions below.

The presence of a Flemington Precast representative at the job site does not relieve the contractor of his responsibility to follow the published installation procedure. Any change(s) from the published installation procedure must be approved by Flemington Precast in writing prior to installation.

### Site Conditions

The installation site must be safely accessible to large, heavy trucks weighing up to 80,000 pounds. 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 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 thickness of pea gravel, gravel (not to exceed 3/4"), 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

Prior to placement in the excavation, confirm the tank's orientation. 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.

### Handling & Lifting Devices

Use ONLY those lifting devices approved by FPS. Delivery by FPS includes setting the tank(s) when the hole is prepared and able to be accessed safely. Verify lifting apparatus such as slings, lift bars, chains and hooks for capacity, and ensure an adequate safety factor for lifting and handling products. The capacity of commercial lifting devices must be marked on the devices. All lifting devices and apparatus should meet OSHA requirements documented in "Code of Federal Regulations" Title 29 Part 1926. Other applicable codes and standards are ANSI A10.9 and ASTM C857, C890 and C913. A factor of safety of at least 4 is recommended for lifting devices. Manufacturers of standard lifting devices should provide test data to allow selection of appropriate loading. A factor of safety of at least 5 is recommended for lifting apparatus, such as chains, slings, spreader beams, hooks and shackles. The buyer's lifting devices must be inspected and approved, at the time of delivery, if the tank(s) will not be set into the hole at the time of delivery.

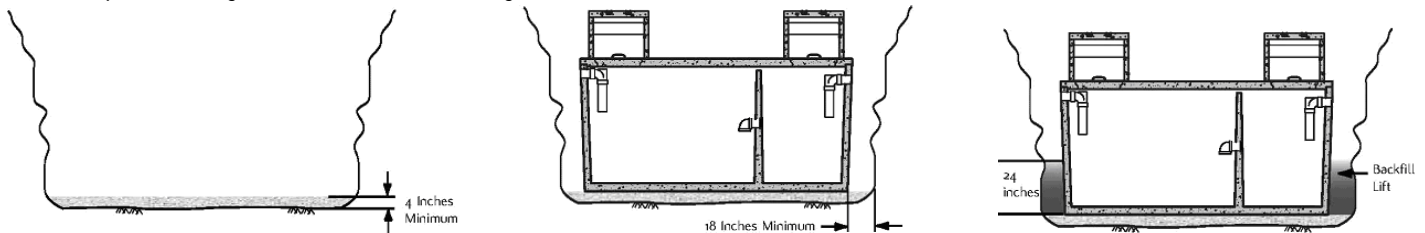
### Joint Seals

For multi-piece tanks, we only use high-quality preformed joint sealants from Concrete Sealants. Surfaces should be clean. Lay the sealant strips end to end with only a slight overlap of about 1/4" - 3/8". During the time of installation, ambient temperatures below 50° F sometimes affect the compressibility of the sealant. 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 sealed 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 thick. Backfill should be free of any large stones (greater than 3 inches in diameter) or other debris.

### Basic Principles of Bedding, Tank Placement, and Backfilling



### LIMITED WARRANTY

1. The structural integrity of each underground concrete tank when installed in accordance with manufacturer's instructions is warranted to the original purchaser against defective materials and workmanship for a period of one year from the date of purchase. Should a defect appear within the warranty period, purchaser must inform Flemington Precast & Supply (FPS) within fifteen (15) days. FPS will repair or replace the unit, value not to exceed the original purchase price. FPS's liability excludes the removal and/or install of the unit.
2. The warranty in paragraph 1 is exclusive. Except for those specifically written and executed, there are no other warranties in respect to the unit(s), including no warranties of merchantability or of fitness for a particular purpose. The warranty does not extend to incidental, consequential, special or indirect damages. FPS shall not be liable for penalties or liquidation damages, including loss of production and profits, labor and materials, overhead costs, or other loss or expense incurred by buyer. Specifically, excluded from the warranty coverage are damage to the unit(s) due to ordinary wear and tear, alterations, accident, misuse, abuse, or neglect; the unit(s) being subject to stresses greater than those prescribed in the installation instructions; the placement by buyer of improper materials against the tank bottom, top, or side walls; or any other event not caused by FPS.

Furthermore, in no circumstance shall FPS be responsible for any loss or damage to the buyer, the unit(s) or any third party resulting from our delivery or placement of unit(s). Buyer shall be solely responsible for ensuring that placement of the unit(s) or system is completed in accordance with all applicable laws, codes, rules and regulations.

3. No representative of FPS has the authority to change this warranty in any manner whatsoever, or to extend the warranty. This warranty does not apply to any party other than the original buyer.

### Acknowledgement

I, \_\_\_\_\_ have read the limited warranty and installation instructions. The unit(s) is/are accepted under these conditions for sale.

Name of Buyer's Representative- Please Print

Signature \_\_\_\_\_ Date \_\_\_\_\_