



UNITED
INSTALLATION PROCEDURE FOR
POLYETHYLENE SEPTIC TANKS

UNITED SEPTIC TANK INSTALLATION

WARNINGS AND PRECAUTIONS

A) When carrying out any of the operations, comply with **Law Decree 81/2008** and subsequent amendments governing safety at permanent or temporary construction sites.

B) **On arrival of the goods, carefully** check the material to make sure it corresponds to the order and the project data. Any defects and/or damage due to transport must be reported immediately. Contact the company directly by telephone, fax or e-mail.

C) Check that the modular tank is provided with all the **standard documentation** (technical data sheets, installation instructions, etc....). Inform the company of any missing items. A copy will be sent immediately.

D) Make sure that the gaskets, pipes and all the various parts other than in polyethylene are **suitable** for the liquid to be contained.

E) Use **suitable** lifting and handling equipment that complies with current safety standards.

F) **Avoid** impacts and contact with sharp-edged objects that could compromise the integrity of the product.

G) Only handle the tanks when they are **completely empty** using the lifting eyes provided. **NEVER** lift the tanks by the inlet or outlet pipes (See para. **"Handling"**)

H) For the choice of backfill material and compaction methods, refer to European Standards **UNI-ENV 1046** and **UNI-EN 1610**.

I) During the installation works, mark the boundary of the working area with **suitable warning signs**.

WARNINGS

A) **It is absolutely forbidden** to install underground tanks above ground.

B) **It is severely prohibited** to use the tank for storing industrial waste or liquids.

C) Underground tanks are **NOT suitable and must NOT be used** for storing diesel fuel

IMPORTANT:

Non compliance with the installation instructions will immediately render the tank guarantee null and void.

HANDLING

A) Use transport and/or lifting equipment **adequate for the load** when handling the material.

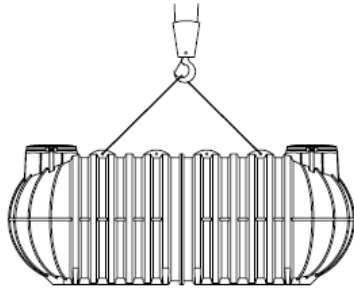
B) During transport, avoid **harsh movements** that could compromise the integrity of the tank.

C) Only lift the tank if it is **completely empty**. **NEVER** stand under a raised load.

D) When lifting, use **cables or straps** suitable for the load to be supported and in perfect condition. Hook the cables or straps onto the **lifting eyes** present on the upper part of the modular tanks. To prevent the load from becoming unbalanced, place the lifting cables **symmetrical** as reported below, respecting the lifting angle which must **NEVER be less than 45°** (Fig.1).

Underground installation instructions

HANDLING



IT 15000

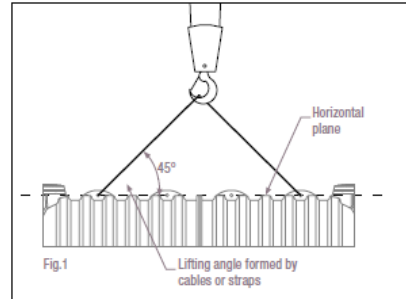
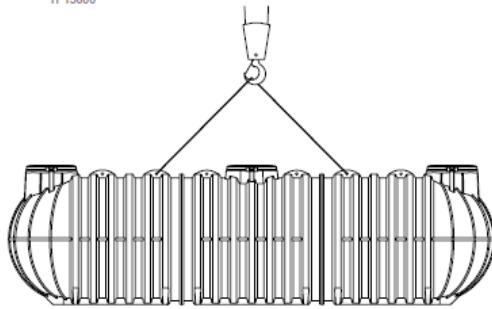
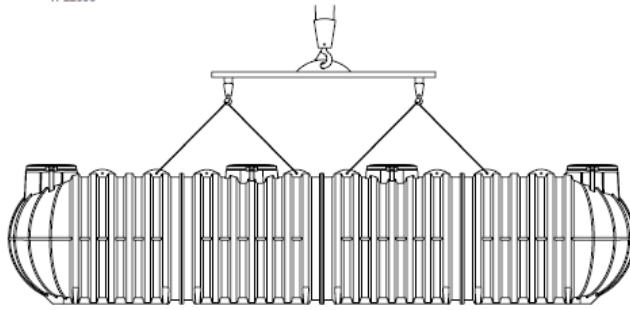


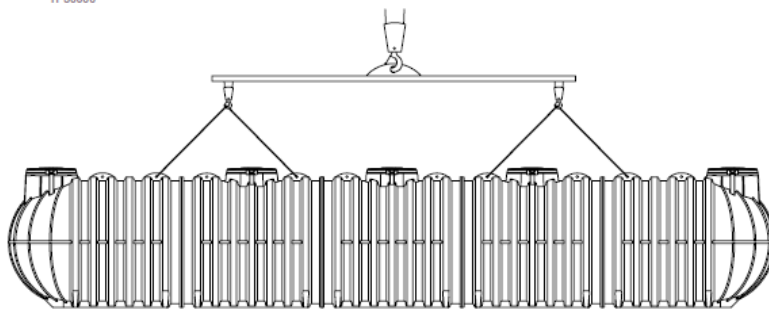
Fig.1



IT 22000



IT 30000



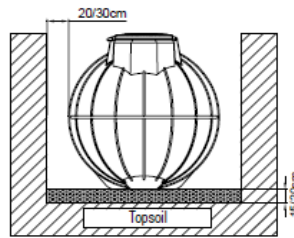
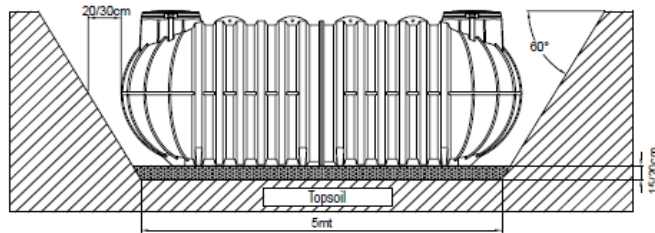
IT 36000

Underground installation instructions

N.B. The best location for the tank is specified by the **qualified technician** according to his own **technical evaluation**. These installation instructions provide the guidelines to follow during installation.

1. EXCAVATION

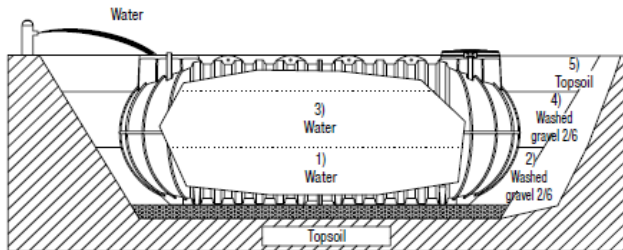
1.1 Excavate a hole of suitable dimensions with a flat bottom, leaving a space of at least **20/30 cm** around the tank. In the case of heavy ground (e.g.: clayey subsoil and/or groundwater, the distance must be at least 50 cm. Spread a 15/20 cm deep layer of 2/6 washed gravel on the bottom of the excavation to allow the tank to rest on a uniform and level base. **Excavated material must not be used as backfill.** The excavation must be a minimum of 1 m from any structures.



2. BACKFILL AND FILLING

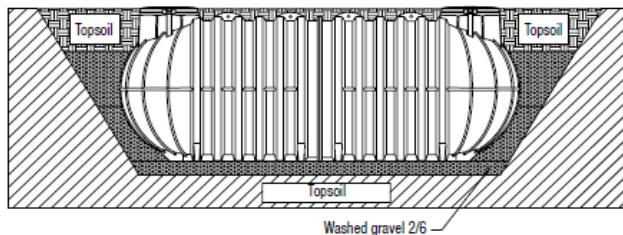
2.1 Place the **totally empty** tank on a bed of washed 2/6 gravel spread at the bottom of the excavation, gradually fill the tank with water and at the same time backfill with washed 2/6 gravel. Continue with successive layers of 15/20cm, filling the tank and then backfilling with gravel. **Fill the tank to 3/4 of its capacity and backfill the last 40 cm with topsoil (NOT excavated material).** To prevent excessive pressure on the tank, **NEVER** use backfill material with sharp edges.

N.B. For installation in more severe conditions (groundwater, clays soils or in sloping ground), refer to chapter 3 "Exceptional Installations".



2.2 After the tank has been filled and the excavation suitably backfilled, gradually cover with **topsoil (NOT excavated material)** to a depth of **30/40cm**, leaving the inspection covers exposed. In this way, the area concerned is suitable for pedestrian traffic, while the transit of motor vehicles within 2m of the excavation is **prohibited**.

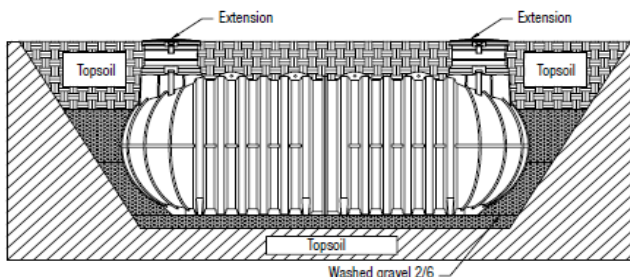
N.B. To render the site trafficable by motor vehicles, refer to chapter 4 "Trafficability".



Underground installation instructions

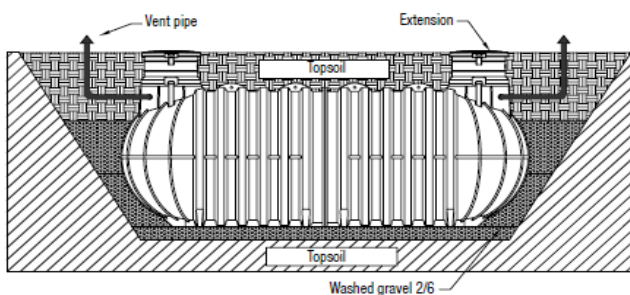
2.3 EXTENSION INSTALLATION

If the tank is installed at a depth of **40cm** and the site is to remain open to pedestrian traffic, it is advisable to install the **UNITED PE extension** directly on the inspection holes. In the case where the tank is installed **deeper than that previously indicated**, which constitutes an unfavourable condition and not recommended, adhere scrupulously to the instructions reported in **chapter 4 "Trafficability"**. The technician responsible for the installation will follow the instructions reported in the two paragraphs according to the installation depth.



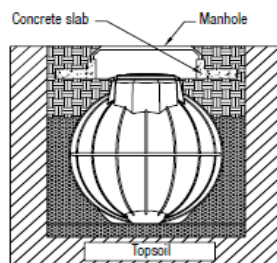
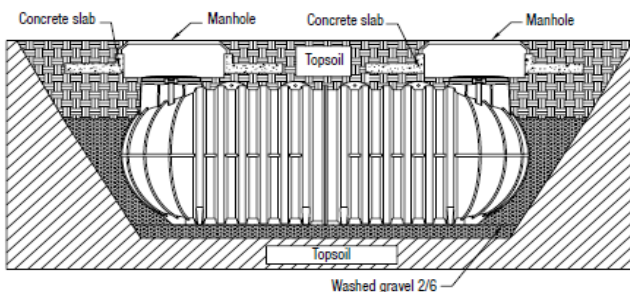
2.4 PUMP INSTALLATION

When installing a pump, internally or externally, **ALWAYS** install an **open-air vent**, then make sure that the vent is free and correctly sized to prevent the formation of a vacuum and deformation of the tank when the pump is running. After connecting the vent, make the connections and check them. The pipes indicated on the drawing for venting the pump **are not included** in the supply.



2.5 MANHOLES INSTALLATION

The installation of manholes or covers of weight **exceeding 50kg** must always be solid with the concrete slab, suitably designed for the load to support and exerting a uniformly distributed load over the tank. The slab, therefore, must **NOT** be constructed directly on the tank but must rest on the surrounding ground. Avoid constructions in brickwork which could compromise maintenance and/or eventual replacement of the tank itself.

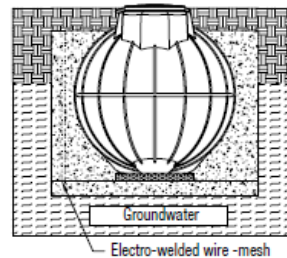
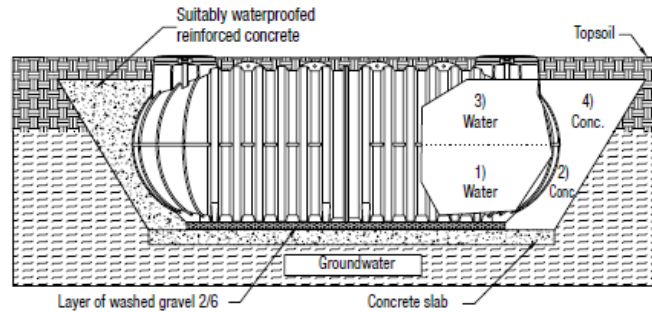


Underground installation instructions

3. EXCEPTIONAL INSTALLATIONS

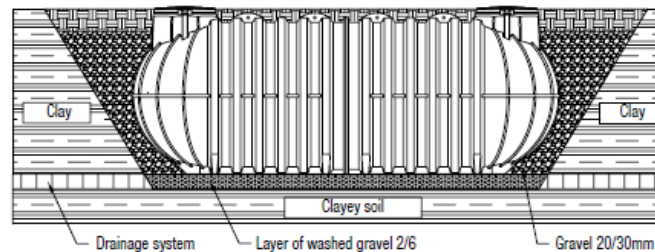
3.1 INSTALLATION IN ZONES WITH GROUNDWATER

Installation in the presence of **groundwater is not recommended** as it represents one of the riskiest conditions for a storage tank. In this case, it is advisable to obtain a **geotechnical report** from a specialist. From the report, the installation technician will be able to define the expected pressure from the groundwater and design the backfill material and slab accordingly. In particular, he will design the backfill to have the necessary capacity for resisting the high lateral forces. The resistance capacity can be increased by inserting an electro-welded wire mesh. Construct the **concrete slab** at the bottom of the excavation, then spread a 10 cm thick **layer of 2/6 washed gravel** over the top to fill in the voids between the corrugations in the base of the tank. The tank filling and backfilling operations must always be carried out progressively. It is advisable, therefore, to half fill the tank and at the same time backfill with concrete and allow it to stand for **24/36 hours** [points 1-2]. Then complete the tank filling and the backfill [points 3-4].



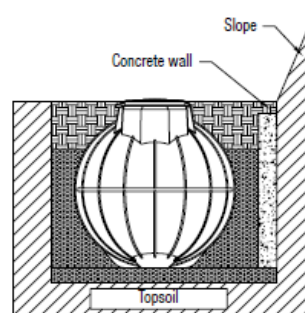
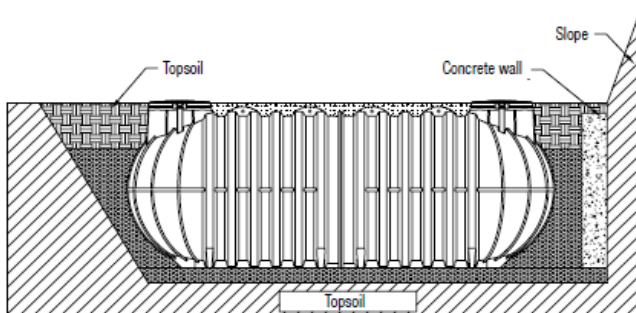
3.2 INSTALLATION IN ZONES WITH CLAYEY SOIL

Installing an underground storage tank in areas with **clay subsoil** represents another **unfavourable condition**. A **geotechnical report** prepared by a specialist is advisable in this case also. From the report, the installation technician will be able to define the expected ground pressure (**high in the case of clayey soil**) and design the backfill accordingly. In particular, the bottom of the excavation must be covered by a bed of 2/6 washed gravel and the sides of the tank backfilled with gravel (diameter **20/30 mm**) to aid drainage. For tank filling and backfilling, see para. 2.1. A **drainage system** must also be provided at the bottom of the excavation.



3.3 INSTALLATION NEAR TO SLOPING GROUND

When the tank is to be installed near to a **slope** or on sloping ground, the tank must be protected by a **reinforced concrete retaining wall** appropriately designed by a specialist, in order to balance the lateral thrust of the ground and to protect the area from possible infiltration. For tank filling and backfilling, see para. 2.1.

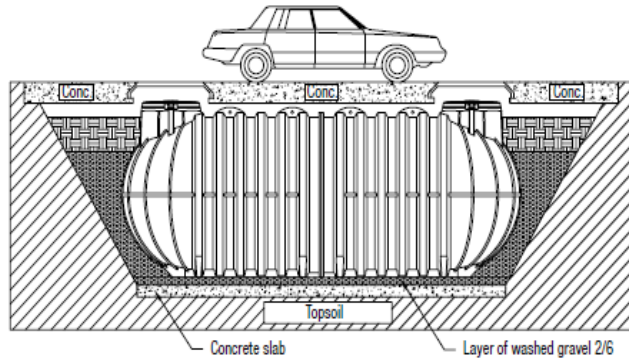


Underground installation instructions

4. TRAFFICABILITY

4.1 LIGHT TRAFFIC - CLASS B125-EN124/95 - MAX 12,5 TONS.

To render the site suitable for the transit of light vehicles, a **self-supporting reinforced concrete slab**, designed in relation to the load, must be constructed. The perimeter of the slab must be larger than the tank excavation to prevent the weight of the slab from bearing on the tank itself. It is also advisable to construct a 15/20 cm thick **concrete slab** at the bottom of the excavation. A 10 cm thick layer of sand must be spread over the top to fill in the voids between the corrugations in the base of the tank. The self-supporting reinforced concrete top slab and the bottom concrete slab must be designed by a **qualified professional**. The tank filling and backfilling operations must always be carried out progressively as previously specified (See para. 2.1).



4.2 HEAVY TRAFFIC - CLASS D400-EN124/95 - MAX 40 TONS

To render the site suitable for the transit of heavy vehicles, a **reinforced concrete containment structure cast on-site** with a suitable **concrete cover slab** must be provided. The perimeter of the slab must be larger than the excavation in order to distribute the load on the containment walls and not on the tank itself. Then spread a 10 cm thick layer of 2/6 gravel at the bottom of the containment structure to fill in the voids between the corrugations in the base of the tank. The containment structure and top slab must be designed by a **qualified professional** in relation to the expected loads. The tank filling and backfilling operations must always be carried out progressively as specified in para. 2.1

