

MOUNTING INSTRUCTIONS

GENERAL



TUNETANKEN

Mounting instructions for Tunetanken products e.g., silos, scrubbers, tanks, pumping stations, separators, detention and retention basins, rainwater tunnels etc.

These are general mounting instructions.

Check if there is a mounting instructions manual made specifically for the delivered product. The instructions can also be found on our website or can be requisitioned from us.

Check also that operational instructions and maintenance instructions have been delivered with the product.

Please read the instructions thoroughly before mounting and operating the product.

1. Receiving the product

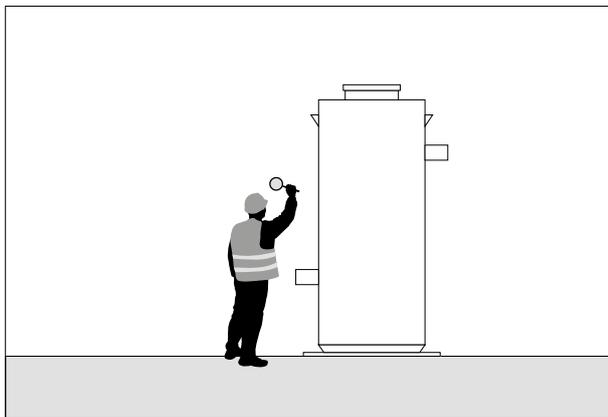


Fig. 1. Receiving the product

Check that the product/construction is the right one and that it meets the requirements of the product, such as dimensions, quantity, placement of fittings, equipment, reinforcements and paint etc.

Check that the product/construction is in perfect condition and is not missing any parts, look for transportation damages among other things. Errors, emissions and damages must be repaired before the product/construction is mounted.

Double-walled products/constructions equipped with vacuum leakage monitoring must be checked for vacuum, which then is compared with the vacuum data from the factory. With a discharge greater than 0,1 the supplier must be contacted.

The product/construction is, as a standard, **not** intended to withstand special conditions from e.g., groundwater pressure, traffic load, increased ground pressure and vibrations etc.

In case any of the above should occur, the product/construction can be delivered with custom-made specifications to withstand the special conditions.

When mounting the product/construction, the specific mounting instructions for the product/construction must always be followed. Make sure that you have received the correct mounting instructions. The mounting instructions will be available for download or can be requisitioned on our website. (See fig. 1).

2. Maintenance

When doing maintenance on the product, the specific maintenance instructions manual must always be followed. Make sure that you have received the correct maintenance instructions manual. The instructions will be available for download on our website or can be requisitioned on our website.

3. Cleaning

Cleaning and/or stripping/hygenisation of surfaces must be done before using the product. This is done to prevent hygienic issues and to remove dust and substances that can otherwise migrate.

For food contact materials/food approved products, the customer's own requirements for hygiene and cleaning must be followed.

4. Storage

Should the product/construction need to be stored before being mounted, the product/construction should be placed on robust consoles of wood, placed at a maximum distance of 1,500 mm or on a level surface, free from rocks and objects that could damage the tank.

The product/construction must be lowered carefully and must not be towed or rolled.

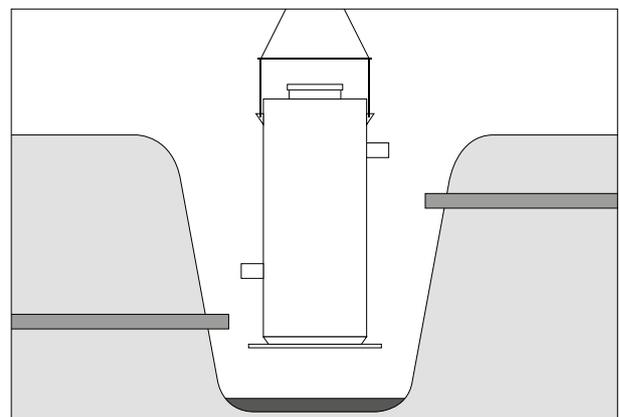


Fig. 2. Lifting and lowering with lifting lugs.

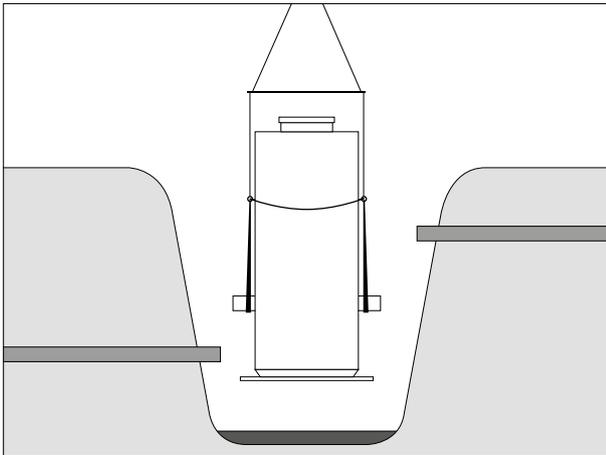


Fig. 3. Lifting and lowering with lifting straps or harnesses.

5. Lifting and lowering

The product/construction should **only** be lifted while empty.

If the product is mounted with lifting lugs, those should be used for lifting. (See fig. 2).

The product/construction is hoisted with lifting straps or bearings. (See. 3).

The product/construction is hoisted carefully. Avoid bumping it into surrounding obstacles. Pay special attention to nozzles, flanges and equipment. Any damage should be repaired before hoisting and/or mounting.

Make sure the product/construction is standing in a correct position (height, depth point, direction, horizontal and vertical).

To your advantage, the product should be held/stabilized until the mounting has been carried out.

UNDERGROUND PRODUCTS

6. Trenching

The product/construction must be placed and mounted so that it is accessible to inspection, service and possible emptying.

In case the product/construction is **not** reinforced against angle pressure or traffic load, the product/construction must be placed a minimum of 2,000 mm from any buildings, and a minimum of 2,500 mm from any traffic. This can be insured, by installing barrier boulders, fences or bollards. The trench must be at least 1,500 mm wider and 300 mm deeper than the external dimensions of the product/construction. On the bottom of the trench, there should be a least 300 mm of sand (without stones) that is compressed to a minimum 95% standard proctor (SP). (See fig. 4 og 5).

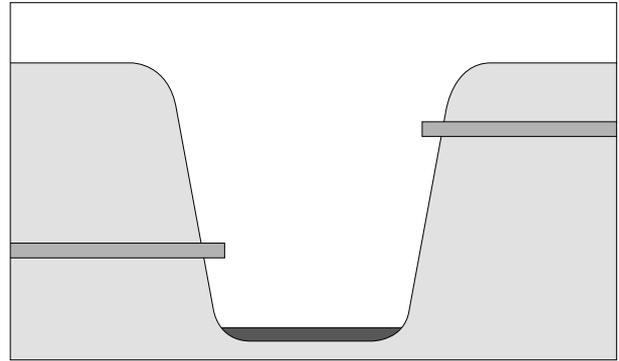


Fig. 4. Trenching.

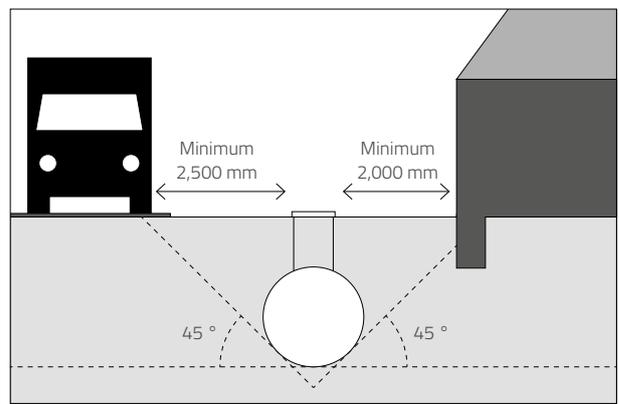


Fig. 5. Angular traction/traffic load.

7. Ground water pressure

The product/construction should **not** be subjected to ground water pressure unless the product is specially manufactured/reinforced to withstand the pressure.

If the product/construction is going to be placed in clay or silt soil, there is a great risk that the trench will be filled with surface water as water seeps very slowly through clay (water transmission capacity).

In this case, the product/construction must be reinforced to withstand ground water pressure (See fig. 6)

In case of doubt, an infiltration test should be performed.

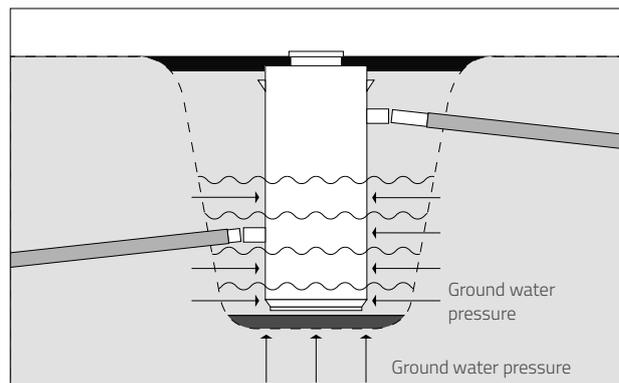


Fig. 6. Ground water pressure.

8. Buoyancy protection

Some products/constructions are delivered with buoyancy safety flanges that prevent the product/construction from being lifted up from the ground by the groundwater. The buoyancy protection secures against groundwater level to surface. There is no need for further measures against buoyancy unless special circumstances apply. (See fig. 7).

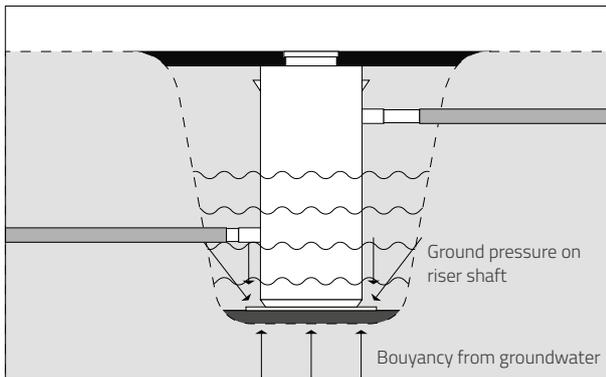


Fig. 7. Buoyancy protection.

9. Traffic load

The product/construction should **not** be exposed to traffic load, unless the product/construction is specially manufactured/reinforced for this. The product/construction must **not** be subjected to direct traffic load. Traffic load must be absorbed by the coating over the product/construction in the form of asphalt, paving stones, concrete etc.

The thickness of the coating should be at least 150 mm. In case no coating is established over the product/construction; traffic load must be kept at a distance of 2,500 mm. from the mounted product/construction. An alternative is to have the product/construction made with special reinforcements.

In case of traffic load, there should be filling (sand) on top of the product/construction which should amount to a minimum of 750 mm and maximum of the permitted filling height.

10. Ground pressure (trench depth)

The product/construction is as a standardized product/construction designed to withstand ground pressure with a load of maximum 1,000 mm. on top of the product/construction. If the product/construction is to be dug further down, it should be manufactured/reinforced to withstand a greater ground pressure.

11. Filling

Fill the product/construction up with water if possible. Measure or mark the water level. Any ground water lowering/loading, is stopped when the trench is filled to surface.

The trench is filled evenly surrounding product/construction with stone-free sand, which is compressed around the product after each quantity of 300 mm layer sand.

The filling is compressed at a minimum of 95% standard proctor (SP). The filling on top must be at a maximum of 1,000 mm unless the product/construction is specially reinforced to withstand increased ground pressure.

When compressing, the vibratory stamper must be held at a distance of at least 100 mm, so that damage to the product/construction is avoided. The top 300 mm of the trench should be filled with topsoil.

Empty the water out of the product/construction at the earliest after 12 hours. Before emptying, control that the water level is the same as when it was filled, to prevent unexpected leakage. (See fig. 8)

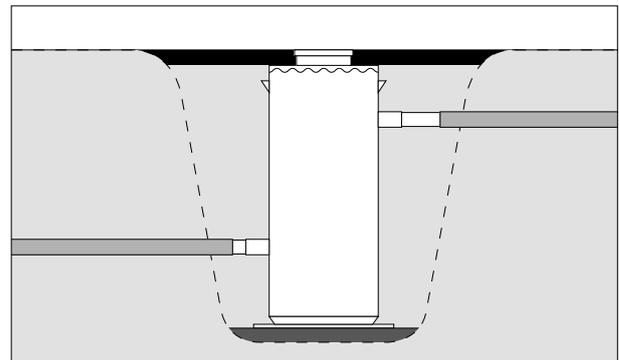


Fig. 8. Filling of water and filling of the trench.

ABOVE GROUND PRODUCT

12. Foundation

A new foundation is carried out in accordance with the calculation and drawing thereof, or the supplier's instructions. An existing foundation must be controlled for suitability with calculations and tests. Bolting must also be done in accordance with calculations and drawings or the supplier's instructions.

13. Anchoring

Some products/constructions are delivered with anchoring to ensure that the product does not move from its placement.

14. Vibrations and shakings

The product/construction should not be exposed to vibrations, shakings, cylindrical movements from for example vibration emptying, stirring, frequent emptying and filling, unless the product/construction is specially manufactured/reinforced for this purpose.

15. Weather and exposure conditions

The product/construction must not be subjected to greater loads from weather such as wind, sunlight, sandstorm, temperature, etc. than the product/construction is intended/manufactured for.