



Horizontal Tank Installation Guide

MAY 2011



WARNING

Observe all OH&S and Confined Space Requirements Prior to Entering the Tank or Excavation.
Installation Procedures must be in accordance with the instruction and guidance manual supplied with the equipment.
For detailed information, refer to the Engineers Department.

V-Tank General Installation Guide

V-Tank STORAGE SYSTEMS must be installed according to these instructions.

INTRODUCTION

Congratulations on your purchase of the V-Tank Storage System. With proper care and by following a few simple guidelines your system will give you many years of dependable service.

IMPORTANT

The following information must be read in conjunction with all local council, governing authorities and relevant standards for the requirements of installing this system.

Only qualified personal should install, operate and repair your V-Tank Storage System. Any wiring of pumps or similar electrical equipment should only be performed by a qualified electrician.

All specifications must be certified by the engineers/consultants and relative governing authorities before commencement of construction and installation.

The customer or installer is responsible for ensuring that the installation of this V-Tank Storage System is in compliance with any regulatory requirements of the planning authorities, building control, Environmental Agency, Water Board and/or European Standards.

If ground water is likely to be present within the excavation, make sure all details for the correct installation procedure are followed – If in doubt, contact the Engineers Department.

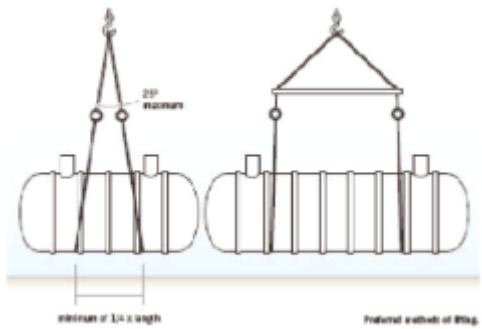
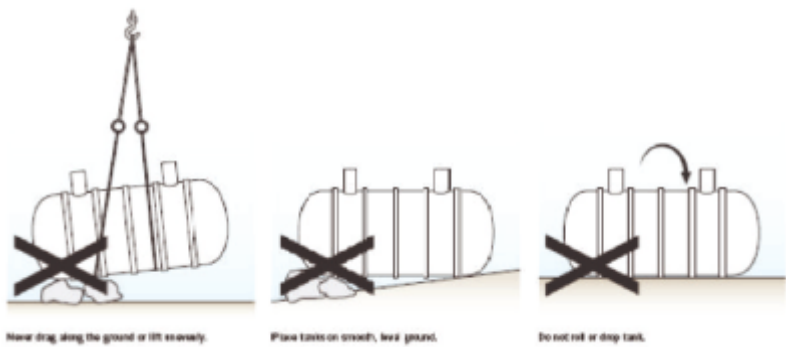


SAFETY PRECAUTIONS

- Ensure the installer is aware of all “Confined Spaces” and “OH&S” guidelines.
- Make sure that there is sufficient oxygen and there are no poisonous gases present.
- Check the explosion risk before welding or using electrical tools.
- Do not ignore health hazards and observe strict cleanliness.
- Ensure all lifting equipment is in good condition and meets the relevant standards for the purpose.
- In case of any contamination, please ensure all personnel who work on the system are vaccinated against diseases that can occur.
- Always keep a first aid kit within easy reach.

OFF-LOADING AND HANDLING

The contractor is responsible for the off-loading of the tank. The tank must be handled with care to prevent accidental damage from impact or contact with sharp objects.



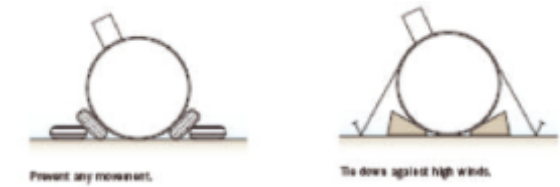
The tanks should be lifted using slings, not chains or wire ropes. For tanks longer than 5 metres, use a spreader bar or have the slings apart at least ¼ of the tank length. Do not drag the tank along the ground for any distance and avoid jarring or bumps. Do not lift with water in the tank.

SITE ACCESS AND CONDITIONS

It is the responsibility of the client or installer to ensure suitable access to good hard ground conditions that are safe and suitable for off loading the Aquaflo Storage System.

OVERSIZE LOADS

Where tanks are of such size that police or private escort is required, delivery times given are only estimates. In the event of a delay outside our control, if any extra charges arise, they will be forwarded to the contractor.



STORAGE

Set the tank on smooth level ground, free from bricks and/or sharp objects. Chock/tie down to prevent the tank moving during high winds.

PRIOR TO INSTALLATION

Determine the best location for your V-Tank Storage System and pump controls (If applicable). These recommendations indicate the requirements for installation in the typical site conditions. The installer should ensure that the requirements for their particular site conditions and anticipated loadings are met, taking Engineers advice where necessary.

Before installation of the V-Tank Storage System, check ground conditions and inlet pipe invert levels, as this will determine the tank depth and construction. Before digging, call the relevant authorities to locate any underground lines or cables. The installation of the V-Tank Storage System may require the prior approval of the local council.

Questions relating to this should be directed to a responsible officer of the local council and/or relevant authorities. V-Tank Storage Systems, regret they are not able to supply this information. Check tank for any damage that may have occurred during freight or handling. Be careful to avoid any “bruising”, as all damage must be repaired before installation, Refer to supplier.

Please tighten all fasteners and associated equipment before installation.

VENTING

V-Tank Storage Systems should be vented in accordance with the current applicable plumbing and drainage standards. In multiple chamber tanks, venting must not be combined into a common stack below a point where pollutants contained could be transferred to other chambers.

APPROVED BACKFILL SPECIFICATIONS

The granular backfill is for the entire tank excavation, terminating level with the top of the barrel of the tank, and the remaining backfill from top of tank barrel to ground level/underside of concrete slab may be the approved back fill, excavated material or selected clean backfill material.

It maybe necessary to line the excavation with Geofab (Filter Fabric) class A24 to separate the approved backfill from any unstable latent soil conditions – If unsure check with the Engineering Department.

The correct backfill medium is one of the critical factors in the successful installation of an in ground horizontal polyethylene V-Tank Storage System tank. We insist on backfill compliance prior to starting any installation works.

Confirm with your supplier in advance that your backfill will meet or exceed the following:



SPECIFICATIONS

Backfill shall be either gravel, crushed stone, crushed gravel, recycled material or sand, all sourced from a reputable quarry or recycling facility and should meet with a size grading as follows:

Gravel: A clean naturally rounded aggregate of a nominal size range of 19 mm to 5 mm minimum.
Crushed Stone or Crushed Gravel: Washed crushed stone or gravel of a nominal size range of 14 mm to 5 mm minimum.



INSTALLATION

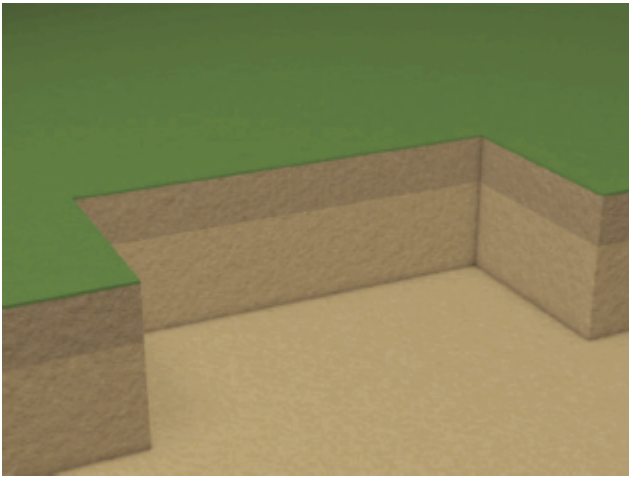
The correct appraisal of site conditions is essential before installation of the V-Tank Storage System. The installer must recognize that these systems when empty will float on approximately 50 mm of water. The upward thrust at the base of the tank, when fully immersed in water could exceed 69 000 KPA.

If there is any likelihood of water ingress to the ground where the tank is to be buried – Eg: Tidal conditions, saturated ground, during heavy rain and/or flooding or run-off water from other sources. Pay particular attention to the drainage of the tank excavation.

Where tanks are installed under adverse site conditions, the utmost care is required to prevent any chance of the tank being forced out of the ground by upward pressure of water. This can occur if the excavation base is not properly drained.

For installations where water table conditions are above the tank, it is recommended that the tank be held in the ground with either concrete or an anchoring system – See Engineers Department for more details and calculations.

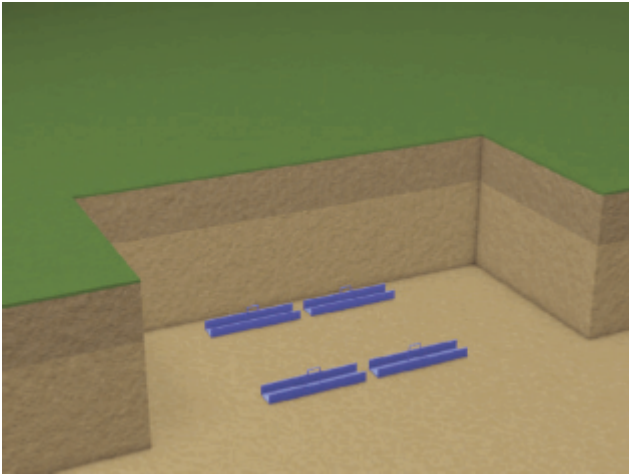
Where excavations width and/or depth are an issue, install shoring to meet the relevant National Standards. These notes should be read together with the following recommended installation details drawings shown in 12 Easy Steps.



STEP NO. 1

Excavate hole 200mm deeper than the required tank depth. Excavate minimum of 200mm in width and length to Aquaflo tank and suit site requirements and condition level base of excavation.

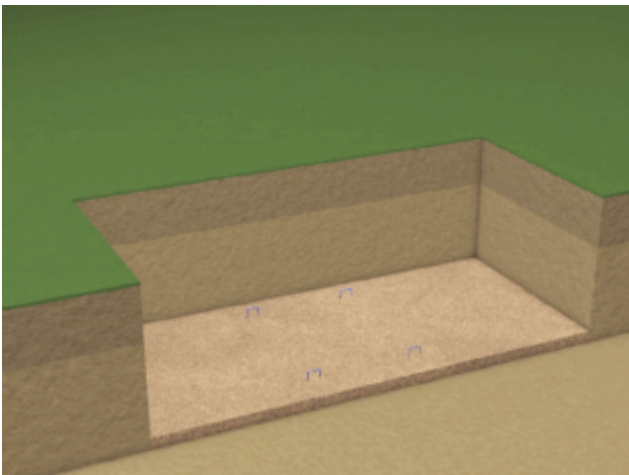
*Note all confined space and OH&S requirements before entering excavation.



STEP NO. 2

Place anchor bases (if required) into excavation - Evenly space anchor bases to suit tank dimensions and ribs.

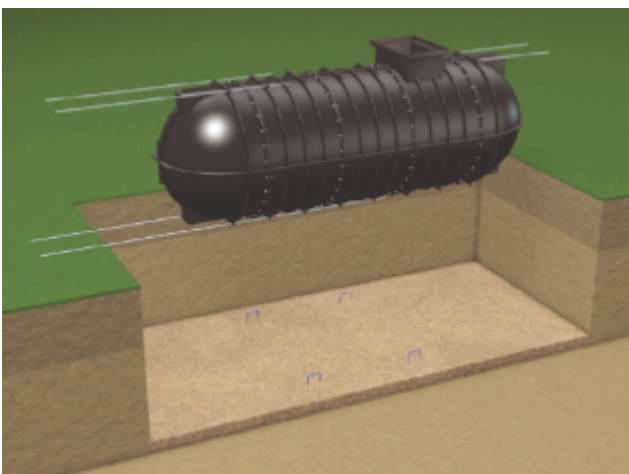
*Anchor kits are optional. For further information see engineers department.



STEP NO. 3

Back fill excavation base with 200mm of approved back fill and level.

*Note: Back-fill must be free draining (For more information see "Approved Backfill" specifications) and the excavation must be kept free of water.



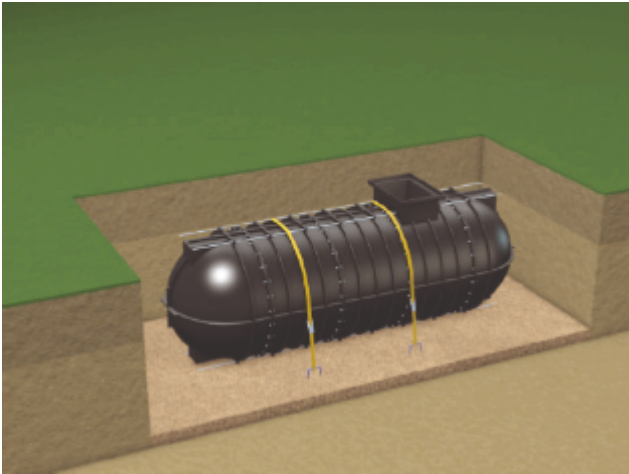
STEP NO. 4

Before lowering tank into the excavation, fit REO bars to all pre-drill locating holes. At the top, base and end of the tank, ensure all fasteners are tightened.



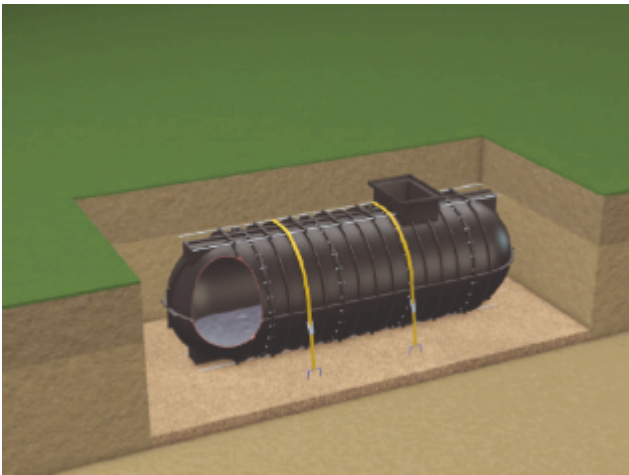
STEP NO. 5

Lower tank into excavation and set at the required level. Making sure no unsuitable material enter the excavation and the tank is kept level and balanced.



STEP NO. 6

Fit anchor tie down straps (if required) over the tank. All anchor straps must be tensioned, but not to cause tank deflection. *Seal off ratchet and strap hook with denso tape provided.



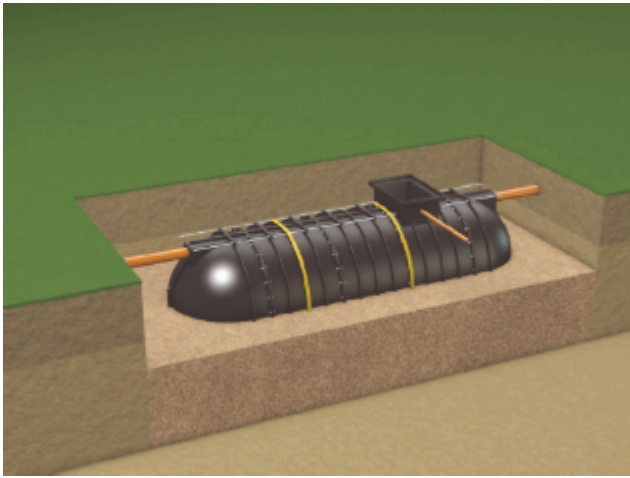
STEP NO. 7

Whether using anchors or not, it's advisable to put some water in all chambers of an equal level to a maximum depth of 300mm.



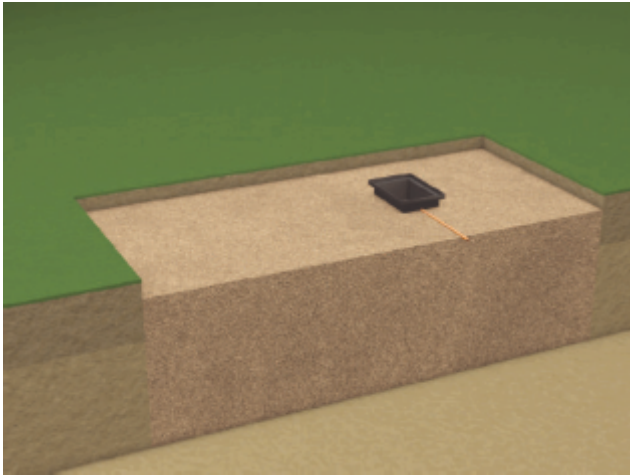
STEP NO. 8

Back fill to 100mm over center rib or half tank barrel with approved backfill - make sure that the backfill flows under the tank barrel and end domes and all voids are filled. Compact back fill as required.



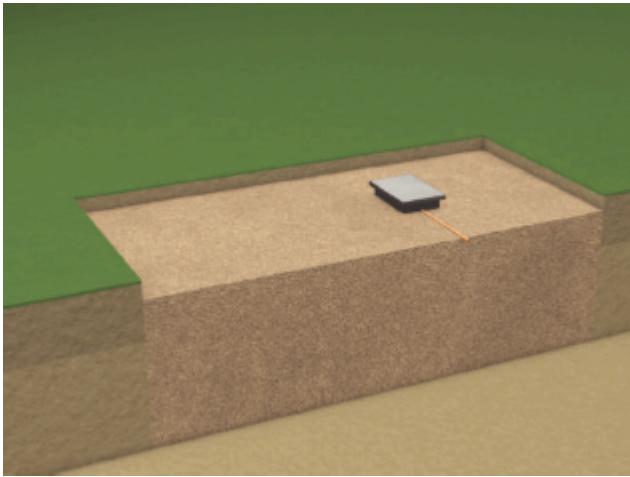
STEP NO. 9

Connect and seal all inlet, outlet, overflow vent and other connections as required. Fit and seal manhole riser (if required) to the required level. When fitting electrical conduits, ensure they are large enough for the required cabling and fit draw wire.



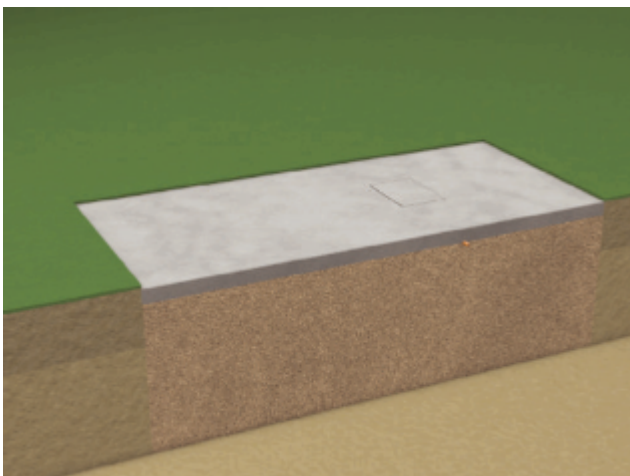
STEP NO. 10

Back fill to concrete slab level (if required) as required with approved back fill, compact and level. Keep excavation clear and clean from any unsuitable materials that may damage the tank.



STEP NO. 11

Fit manhole cover to the appropriate load rating or Class and to the manufacturers specifications.



STEP NO. 12

Pour and finish concrete slab to site conditions and loading - if required. Ensure tank is free from any debris or blockages. Top up tank with clean water.

Warranty



We warrant that our Separator and storage underground tanks, if installed strictly in accordance with the company's relevant installation procedure - having in mind particularly:- ground conditions, invert depth, water table depth in winter, external loading, type and quality of backfill material, will

1. meet our published specifications and will be free from material defects in materials and workmanship for a period of one year following date of original delivery.
2. not fail for a period of twenty-five years from date of original purchase due to external corrosion; and
3. not fail for a period of twenty-five years from date of original purchase due to internal corrosion provided the tank is solely used for:-

Rainwater storage
Potable water at ambient temperatures
Fuel/oil contaminated surface rainwater
Domestic sewage.

For other applications the life expectancy will be determined by the contents, the operating conditions and the polyethylene specification used.

Our liability under this warranty shall be limited to, at our option,

- (1) repair of the defective tank
- (2) delivery of a replacement tank to the original site or
- (3) refund of the original purchase price.

We shall not be liable for any labour or other installation costs, indirect or consequential loss, damage or other damages in connection with such tanks.

Accessory warranties do not extend beyond the warranty period by our suppliers. This applies to such items as access covers and frames, monitoring equipment, connections for emptying, pumping equipment or any accessories as defined in the company's official order acknowledgement/invoice.

The foregoing constitutes our exclusive obligation and we make no express or implied warranties, or any warranty of merchantability or fitness for any particular purpose whatsoever, except as stated above.

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