



Ph 1300783344

# Versatile Rectangular Underground Concrete Tank. Recommended Install Guidelines

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## Introduction

Congratulations on your purchase of the Versatile rectangular structural tank.

Your Versatile Tank is constructed of durable robust materials so it will provide you with a water storage solution for many years. So that you get the most out of your rectangular underground tank, it is important to ensure that it is installed correctly.

Ensure that your plumber or builder receives a copy of these instructions and a copy of your local government approval (where applicable) before he or she commences any work.

The Versatile Tank Company recommends that the water from your tank is only used as directed by your local water authority.

**You must carefully read and follow these instructions as the Versatile Tank warranty on this tank maybe voided if not installed to manufacturer's instructions.**

The Versatile Tank designed especially for underground, applications, is guaranteed against faulty workmanship and materials for a period of 20 years.

The warranty is void if the tank is not installed as per the manufacturer's instructions

The Versatile Tank may be installed for either:

- Light or medium residential ( AS1170.1.2002 table 3.1) or Industrial, commercial purposes

The Versatile Tanks is capable of bearing loads up to 500 kilograms per square meter or 5KPA. If a heavier overhead load is required over the tanks engineering specifications for increasing load is available

Please choose the installation process appropriate for your proposed application. If in doubt, please call us or speak to your qualified engineer.

The Versatile Tank is modular in design, allowing for multiple tanks to be installed together providing additional rainwater storage capacity. If you are installing multiple tanks, please ensure you follow the additional instructions relating to the installation of multiple tanks.

- ***Before commencing work, you should complete the following checks:***
- Check with your local municipal council and water authority to determine if any:
- Permits maybe required for the installation or use of this tank;
- Minimum set back distances from buildings and boundary fences apply;
- Additional backflow prevention products are required to be added to mains supplied water.
- Ensure the proposed tank location complies with loadings specified in AS1170.1.2002 Table 3.1 (either Light Residential or Medium Residential, commercial or industrial).
- Ensure there is adequate access for the heavy equipment required for the installation. Access of greater than 2.5 metres is recommended but you should check this distance with the excavator and concrete suppliers.

- Check the location of services both underground and overhead (electricity, gas, sewer, telephone, mains water and stormwater). You should be able to obtain plans of these services from your local authorities.
- Check that a downpipe can be suitably diverted to the proposed tank
- Check that the tank is not to be installed in a low region that is prone to flooding, pooling of stormwater or tidal activity. (Alternative installations will need to be followed for this type of activity)
- Your tank has been thoroughly inspected prior to leaving the manufacturing plant.
- Seek specialist geotechnical advice for any potentially complex site installation issues.
- You will require a crane onsite to unload tanks off the truck. It would be advisable to ask your chosen crane company to visit the site to determine access, overhead powerlines, and size of crane required as it all depends on your site.
- Check that the weather conditions are appropriate to commence installation. You should not install if:
  - Rain is forecast for that day.
  - Forecast temperature is greater than 32 degrees Celsius.
- You will require a pump system to pump the water from your tank. If the tank water is to be used in toilets, washing machines or high-pressure applications, a pressure pump with a working pressure of above 300kpa is recommended. You should speak with a pump manufacturer for the most suitable pump for your particular application. You should purchase your pump prior to commencing the installation. Note that a licensed electrical contractor may be required for some installations.
- You will need to have stabilised backfill ordered and available for the installation of the tank. The slurry used for this installation must be a 10:1 slurry mix. The volume required for the installation is dependent on the excavation
- **(A Guideline only)** If excavated hole for a 22500 litre tank is neat you will require approx. 5.6 cubic metres of slurry and approx. 2.6 cube for 6700 litre tank. No need to shovel the slurry aim the chute of the concrete truck straight into the hole ensure the slurry works its way around the base of the tank in all the excavated voids and up the tank walls.
- You will need to have approximately 100mm deep of washed sand or crusher dust available for placement at the base of the excavation hole prior to lowering the tank into the hole. Ensure the sand or crusher dust is quite level at base of hole.
- You should ensure that you have a safe and secure worksite prior to commencing the installation:
  - Undertake a site risk assessment and prepare a safe work method and plan.
  - Barricade the site and install safety signs.
  - Comply with all relevant OH&S/environmental regulations and Codes of Practice, including issues such as risk assessment, supervision, safety signs, barricades, excavation and shoring, dewatering, safe excavation clearance from structures/services, and use of lifting & handling.

- Cranes must be operated by certified operators and a dogman may be required.
- Tanks are to be lifted with a certified engineered rated spreader bar to ensure the chains do not damage the lid of the tank. Tank weighs 11.8ton. (The calculation of crane lifting accessories needs to be added when calculating the lift ie, weight of spreader bar, crane lifting gear, chains etc)
- All lifting gear including D shackles must be safe and certified to the relevant standards.
- Advise the chosen crane company that the tanks require 4 x 5 ton swift lift clutches. All tanks regardless of size have 4 x 5 ton swift lift pins installed into the walls of the tanks.
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- **Installation**

- Excavation cut out for
  - (a) 22500 litre
    - *If using lid as a slab* 2.7m deep x 2.7m wide x 4.7m long
    - *If burying tank to max depth and riser required (300mm high)* 3.0 m deep x 2.7m wide x 4.7m long, this includes 100mm sand bed
  - (b) 6700 litre
    - *If using lid as a slab* 2.2m deep x 2.1m wide x 2.3m wide
    - *If burying to max depth and 200mm riser required* 2.4m deep x 2.1m wide x 2.3m wide, this includes 100mm sand bed.

**D**o not over excavate. Only dig the required cut out. Ideally a clean cut hole is best for installation of tank.

1. Clear all debris and obstructions from around the site.
2. Prepare excavator and concrete truck access.
3. Mark the rectangular excavation area as per the dimensions above.
4. Ensure that the tank will be positioned so that the riser – used for access and connection to services - is in the most convenient location.
- 6. Ensure that all minimum setback distances from buildings and boundary fences etc are achieved. You should consult a suitably qualified engineer if any nearby structure footings are to be underpinned , submit our tank specifications to your engineer .

## Excavation:

1. Ensure that the necessary barricades are in place to ensure unauthorised persons cannot get close to the excavation area.
2. Do not commence excavation if rain is forecast for that day.
3. Ensure the soil is removed to a safe distance away from the excavation hole and activity.
4. Ensure the hole is square (i.e. the sides are at 90 degrees to each other) and has a level base.
5. Angle the batter according to the soil conditions to ensure stability.
6. Ensure the base of the hole is smooth by removing any protruding objects, such as stone or rock, which may damage the tank.
7. Check for any evidence of soil contamination that may be hazardous and/or adversely affect the tank installation.

**Important Note: The Versatile Tank 22500 litre weighs close to 12 ton. The 6700 litre tank weights close to 4 ton.** It is essential that the lifting equipment you use to install the tank must have a Safe Working Load that exceeds the sum of the tank weight plus the weight of the lifting gear. Remove any water from the excavation prior to tank installation.

1. Safely lift the tank with 4x 5 ton certified swift lift lugs using the pins moulded into the tank using only safe, certified lifting equipment and a spreader bar to avoid chains damaging the tank lid.
2. Lift and slowly lower the tank into hole using suitable lifting equipment.
3. Centre the tank in the hole, ensuring the following minimum distances:
4. A minimum 150mm gap between the battered wall and the tank wall.
5. Backfill the tank with 10:1 slurry mix using the Shute from concrete truck and aim it directly into the hole slowly, work the slurry around the base of the tank ensuring it fills all excavation voids. This assists in preventing surface water from working its way around tank. It assists in preventing uplift of tank.

**Please Note - Tanks should never be pumped dry in extreme wet conditions**

### *Installation Instructions* – Multiple Tanks

With Versatile Tanks modular design, it is possible to join multiple tanks together to provide additional water storage capacity.

1. Two or more tanks may be linked at installation through a tank boss being installed at time of order, sleeves placed into tank or plumber can create a neat hole at base of tank on site to interlink the tanks.
2. Discuss your multiple tank installation with The Versatile Tank staff at time of order we can make the tank to suit your needs. Fittings can be placed into the tank to suit your site requirements.
4. When installing multiple tanks, you must note the following points:

- a. Ensure a gap of approx 150mm between the tanks, this enables you to get the swift lift clutches off the tank.
- b. Multiple tanks must always be installed at the same level – i.e. the base must be level under both tanks.

## Frequently Asked Questions

**What is the tank made from?** 40mpa vibrated concrete , 500mpa steel reo as per AS4100, deformed bars, polypropylene fibres

**How much does the tank weigh?** 22500 litre 12ton – 6700 litre 4 ton.(These are not exact weights as all scales are different however weight advised is over not under)

**How big is the tank?** 6700 litre – 1.8m wide x 2.0m wide x 2.1m high 22500 litre – 2.4m wide x 2.6m high x 4.4m long.

**How deep does the excavation need to be?** This will depend on whether you are using the lid as a slab or tank is being buried - give us a call and we can assist with your requirements.

**Where can the tank be installed?** Beneath lawns, gardens, driveways, under garages, sheds, use as retaining walls, use lid as a patio Tanks can be partially buried or fully buried..

**Where can I use the water from the Versatile Tank?** Flushing toilets, clothes washing, car washing and garden irrigation, fill up pools.

**Do I need water filters?** Water filters are useful for removing fine particles and any discolouration from the rainwater in your tank.

**Does the tank need to be regularly cleaned?** The Versatile Tank may need to be periodically cleaned and this will depend on many local factors. Please consult a professional tank cleaner if your tank requires cleaner.