

# Suitable Applications For Duracrete Underground Water Tanks 25,000 Litre (5500 Gallons)

Duracrete Underground Tanks are suitable for buried applications with 300mm of cover. N.B. Load carrying capacity will reduce if depth of cover is increased.

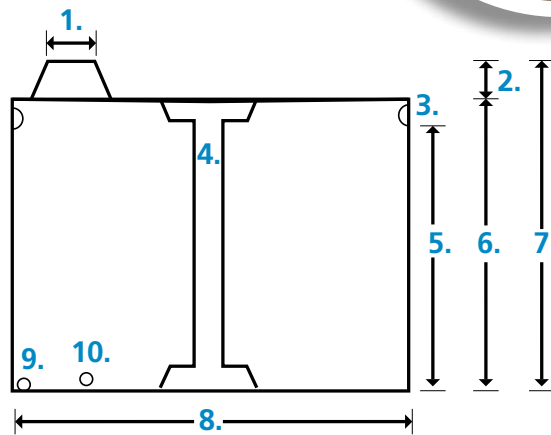
The roof is designed for light vehicle loading less than 2500kg.

\*Please note the manhole riser and lid are not designed for vehicles.



Examples of completed installations

- 9.760 Tonne Weight
- 65mm Wall Thickness
- 100mm Floor Thickness
- 80 MPA Concrete Strength



1. Hatch Opening	600mm
2. Typical Ground Cover	300mm
<i>Load carrying capacity will reduce if depth of cover is increased.</i>	
3. Overflow/inlet, 4 positions	110mm
4. Support Column (Diameter)	150mm
5. Water Level Height	2.40m
6. Total Wall Height	2.65m
7. Overall Height	2.95m
8. Outside Diameter	3.70m
9. Drain BSP	50mm
10. Outlet BSP	40mm

Light Vehicle Loading Roof Only (<2500kg gross weight)

\*Please note the manhole riser and lid are not designed for vehicles



Weight of soil 1800 kg/m<sup>3</sup>

300mm typical topsoil cover

Ground water level

Backfill with rock free material

Duracrete recommends using an Authorised Installer for site preparation & installation of tanks to safeguard your tank warranty.



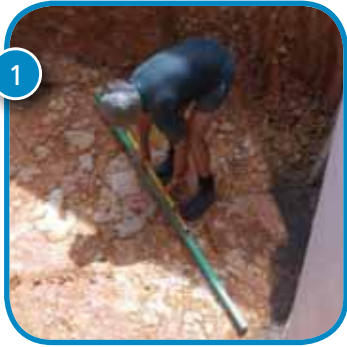
**Bowers & Son Ltd**  
Concrete Manufacturers

1852 Alexandra Street, Te Awamutu 3800  
PHONE: 07 871 5209 • FAX: 07 871 5249  
EMAIL: sales@bowersconcrete.co.nz

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## INSTALLATION STEPS:



- 1 Level the ground which will form the base for your tank. The base needs to be level in all directions.



- 2 The excavated hole should be square. The final size should be 4m x 4m x 3.125m deep. This allows for placement of 100mm compacted hard fill and 75mm granular fines on base of excavation, plus the overall height of tank which is 2950mm



- 3 Add hard fill and compact with a compactor. Compact to a depth of 100mm thick.



- 4 Add 7mm Granular Fines as bedding material - this should be 75mm thick and be levelled in all directions with a straight edge and level. The base fines (cushion course) and base course, should be back-filled and contained around the base of the tank, (or higher where appropriate), to ensure all site preparation material stays firmly in place.

## SITE PREPARATION:

The site loading of a full 25,000 litre water tank is in excess of 30 tonnes. This extreme loading requires particular care to distribute the load evenly across the site. Foundations must be 'good ground' in accordance with NZS 3604.

The site for your tank must be free of all solid objects (rocks, tree stumps, roots, etc) and be flat, level and firmly compacted and consistent across the tank base to allow the tank to sit evenly. A tolerance of 15mm is permitted over the entire site. This can be achieved by using a level and straight edge, laser level or similar method.

75mm layer of 7mm granular fines "PAP 7", Scoria Fines or similar is suitable.



100mm layer of hard fill - compacted "Blue Brown 40" or similar is suitable.

4m square base, levelled in all directions "Good Ground" in accordance with NZS 3604.

Aggregates are available from quarries throughout NZ

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## IMPORTANT NOTES:

1. Duracrete underground tanks with Central Support are designed to exceed Load Class A as specified in AS3996 Standard for Access Covers and Grates. "Note: Loaded contractors vans will probably exceed this weight.
2. It is important to pipe the overflow away from the tank base to prevent undermining of the site.
3. The size of the site needed will depend on the width of the water tank. Contact us for these details.
4. Suitable site access is the responsibility of the purchaser.  
Check that there are no overhead wires, branches, buildings, gate posts or other obstacles blocking access to the loaded delivery truck. Our truck driver will take every care not to damage property but will not be responsible for damage caused due to restricted access.
5. Make sure the ground is firm enough to take the weight of a loaded truck. If you have any doubts raise them with us before delivery.
6. Make sure there are no holes, drains or septic tanks etc that the truck could fall into when delivering your tank.
7. If you intend backfilling, partially burying your tank you should inform us of this when placing your order. The tank can then be manufactured to take the additional stresses placed on it.
8. Buried Applications - Any tanks installed 800mm below ground require a specific design to avoid potential hydraulic uplift of the tank. Please refer to engineer for specific design criteria.
9. On the day of installation of underground tanks - it is critical that the tanks are filled with water to prevent floatation from occurring. The tanks should remain full until connected to the water catchment.

## WARRANTY:

All Duracrete Products are warranted to be free of defects caused by poor workmanship or non-compliance with industry standards, for a period of 10 years from the date of purchase. This warranty is offered only to the original purchaser.

### Conditions of Warranty:

1. Duracrete Products accepts no liability for damage caused due to improper site preparation and incorrect site situations that are outside our requirements and recommendations.
2. Liability of Duracrete Products is limited to the repair, or if necessary, replacement of the concrete tank concerned. The decision to repair or replace the tank lies exclusively with Duracrete Products.
3. Preparation of the tank site is the responsibility of the purchaser or their agent, unless Duracrete agrees to undertake the work in writing.
4. This warranty does not cover:
  - Damage caused after delivery resulting from poor or inadequate site preparations.
  - Moving the tank from its original location.
  - Undermining of the ground supporting the tank in any way.
  - Normal wear and tear.
  - Negligent and accidental damage.
  - Failure resulting from natural causes (earthquakes, flooding etc.)
  - Repairs carried out by unauthorised persons.
  - Use of a tank for purposes other than for which it was originally intended.

If you have any further queries regarding your site, delivery of your tank, or require further information on concrete water storage tanks, please feel free to contact us.



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## PRODUCT RANGE

### WATER TANKS:

9100, 15,000, 18,000 & 25,000 Litre

Standard conical roof tank for semi buried or above ground use.  
Flat Roof tanks for fully buried applications. Other uses include retention & attenuation tanks.

**EFFLUENT TANKS / SUMPS:** 15,000L, 18,000L & 25,000L

**ECOSTREAM CONES:** Concentrate solids & maximize pump efficiency.

**STONE TRAPS:** STANDARD – 3500L, 2.2m max. bucket width.  
MEGA - 6500L, 2.7m max. bucket width.

**FLOOD WASH TANKS:** 25,000L NEW Admix Design for improved durability

## WATER TREATMENT

**SEPTIC TANKS:** 3300L & 4500L - Single or double chambers.

**PUMP CHAMBER:** 1100 & 1700L

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Both Septic tanks & Pump chambers can be fitted with pumps.

**DURACRETE CLEAN STREAM:** Advanced Water Treatment system. Single tank, small foot print, low power consumption, 1500L /Day.

## TANK ACCESSORIES FACTORY FITTED

**JOB :** Ball float water level indicator – visual only.

**WIRELESS :** Wireless water level indicator with in-home monitor screen.

**RAIN-CATCHER:** Basket filter – filters water entering the tank.

**SUBMERSIBLE:** Water pump - quiet & efficient ready to run.

## HELPFUL FACTS & FIGURES

Average Waikato region rainfall = 1250mm/year (1.25m/year)

For every 10mm of rain falling on to 100m<sup>2</sup> roof catchment area = 1000L

Typical 4 bedroom home - 2 adults & 2 children.

Floor area = 200m<sup>2</sup>, Roof Catchment = 250m<sup>2</sup>.

Potential rainwater harvest / year = 250m<sup>2</sup> x 1.25m = 300m<sup>3</sup> or 300,000L.

Water usage 1 Person = 160-200L/Day, 4 People = 19,200–24,000L/Month.

We recommend two 25,000L tanks (50,000L) to harvest rain water in wetter months & to store water in drier months this being about 2 months storage.

**DURACRETE** Concrete water tanks are excellent water storage vessels being both cool and dark helping to prevent algae growth whilst maintaining water quality.

Rainwater is naturally acidic pH~6.0.

Guidelines: pH<7.0 = Acidic , pH7.0 = Neutral, , pH>7.0 = Alkaline.

New concrete water tanks are alkaline due to cement containing lime.

These alkaline conditions help to offset the negative effects of acidic rainwater harvested from roof catchments. Acidic water is corrosive to metallic piping, pumps and storage containers also causing staining.



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