



Hynds Elite Water Tank

R:33 October 2008

PRECAST CONCRETE

APPLICATIONS

- Reliable storage of cool, clear and safe drinking water.

UNIQUE BENEFITS

- Strong.
- Durable.
- Will not burn or rust.
- Long and virtually maintenance free service life.

INTRODUCTION

Hynds concrete water tanks provide reliable storage of cool, clear and safe drinking water in rural areas.

Hynds tanks are strong and durable and will never burn or rust and are much less susceptible to damage caused by wind, vandalism, or vermin. Hynds tanks offer a long and virtually maintenance free service life.

TANK CAPACITIES & TYPES

The tank capacity is 5,000 gallons (22,700 litres).

Standard tanks are designed to be either free standing above the ground or partially buried to within 300mm of shoulder.

Fully buried (flat top) tanks are designed to be buried with a maximum of 300mm of earth cover.

FEATURES

Hynds concrete water tanks offer the following features:

- Low maintenance and long life.
- High strength.
- Cool water storage.
- Reduces the chance of algae growth.
- Stock and fire resistant.
- Less susceptible to theft or vandalism.

CONNECTIONS

Inlet Connections (Top)

- 2x 90mm

Outlet Connection Options

- 1x 32mm or 1x 50mm or Both
- 2x 32mm
- Other configurations can be arranged please ask at one of our sales centres.



Hynds Pipe Systems are members of the NZ Concrete Tank Manufacturers Association.



AREA(S) OF PRODUCT AVAILABILITY:



Product available in
CAPITAL REGION ONLY

HYNDS BRANCHES

TECHNICAL SERVICES DEPARTMENT:

Ph: 09 274 0316 Fax: 09 274 8393
techservice@hynds.co.nz
0800 WE PIPE (93 7473)

NORTHERN REGION

Whangarei	09 438 7305
Warkworth	09 425 9837
Albany	09 415 9259
Avondale	09 820 0122
Penrose	09 579 5605
Manukau	09 273 3053
Pukekohe	09 237 1274

CENTRAL REGION

Hamilton	07 847 3193
Tauranga	07 575 5791
Rotorua	07 346 0454
Te Kuiti	07 878 8326
Taupo	07 378 9915

CAPITAL REGION

Hastings	06 879 8989
New Plymouth	06 759 8157
Palmerston North	06 357 2638
Masterton	06 370 0700
Kapiti	04 297 0689
Petone	04 568 0933
Kaiwharawhara	04 472 4172

SOUTH ISLAND REGION

Nelson	03 543 8330
Amberley	03 314 8455
Christchurch	03 344 3500
Oamaru	03 434 3062
Cromwell	03 445 4760
Winton (Southland)	03 236 6044

Disclaimer: Users of the Hynds products and/or information within this document must make their own assessment for suitability for their particular circumstances. Product dimensions and specifications may vary according to factory of manufacture or changes due to product improvements. No warranty is neither expressed nor implied nor statutory is made by Hynds in this document unless expressly stated in any sale and purchase agreement entered into between Hynds and the user.

WHY CONCRETE IS BETTER

THEY MAKE A SIGNIFICANT IMPACT ON WATER QUALITY

New Zealand rainwater has a low PH on average about 5.4¹. This water is acidic. Rainwater is naturally acidic due to the dissolution of carbon dioxide in the atmosphere, forming carbonic acid in the rain.

Left in its natural state rain water will remain acidic in the storage tank. (PH below 7 is acidic, PH 7.0 is neutral and PH greater than 7.0 is alkaline).

Storage of rainwater in "Concrete" tanks will raise the PH levels. Surveys have shown that concrete tanks have a median PH 7.5, where other tanks (i.e. PE, steel and Fibreglass) had a median PH of 5.9.²

The raising of the PH occurs naturally by the alkaline cement particles (containing CaCO₃) mixing with the water³ in the concrete tank.

WHAT ARE THE ADVANTAGES OF HIGHER PH WATER

There are numerous studies undertaken overseas by Doctors and Health professionals that show benefits from higher PH drinking water. Alkaline water which is also referred to as "Ionised" water, has shown to improve allergies, skin disease, abdominal complaints and many more ailments⁴.

GREATER INSULATION

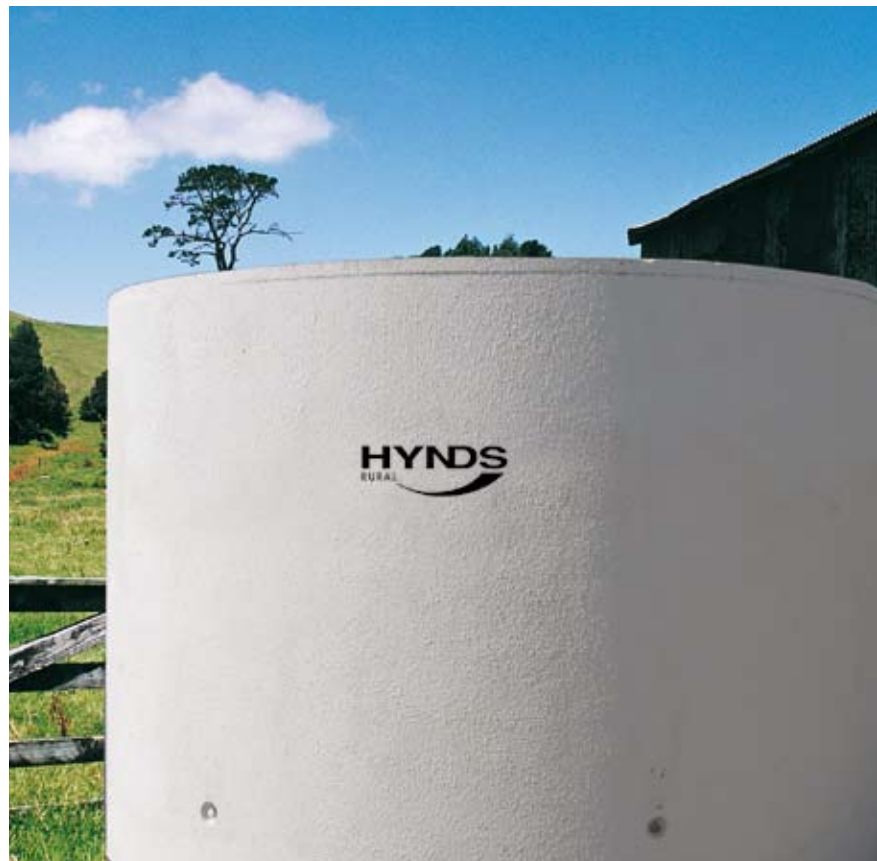
Concrete tanks that are above ground and more so for those buried provide greater insulation from heat and light and therefore the water temperature is maintained at a more constant temperature. Direct sunlight and increase in water temperature can increase the growth of bacteria and algae in water storage tanks.

CONCRETE TANKS CAN BE BURIED

Concrete tanks can be either fully or partially buried which increase the aesthetics of the site.

DAMAGE TO PLUMBING SYSTEM

Acidic water may dissolve domestic copper piping and over time could cause pinhole leaks in the plumbing system.⁵ Acidic water may also cause leaching of the copper into the water supply and this deposits itself on the bathroom fittings causing a green or greenish blue stain.⁶



PRECAST VERSUS PLASTER

WHAT ARE THE DIFFERENCES?

Hynds Elite Water Tanks are manufactured using a purpose made steel mould that ensures consistent tolerances and identical wall thickness for every tank made.

Plaster Tanks are formed using traditional timber framing to form the mould and the wall thickness is determined solely by the operator hand applying the plastering to form the tank shell. The ability of the individual plasterer has a significant impact on the quality of the final product.

Hynds Elite Water Tanks are manufactured using high strength concrete produced in a Certified Batching plant to NZS 3104. This ensures consistent quality and strength of the concrete.

Plaster Tanks have the plaster mixed at the tank manufacturer's site and is generally undertaken in a small portable concrete mixer. The consistency of the plaster mix is at the mercy of the operator.

Hynds Elite Water Tanks use reinforcing mesh manufactured to AS/NZS 4671.

Plaster Tank manufacturers use varying forms of reinforcing and this can vary from mesh manufactured to the above standard to those using basic "Chicken Wire" mesh. The strength of the tank is directly related to the type and quantity of reinforcing used in the tank manufacturing process.

1 Kingett Mitchell & Associates: Preliminary examination of the nature of urban runoff in New Zealand: August 2001.

2 Kingett Mitchell & Associates : House Roof Runoff: Is it as clean as we think: 2nd South Pacific Stormwater conference 2001.

3 Quek, U & Foster (1993); and Thomas & Greene (1993) Rainwater quality from different catchments.

4 Best Water: www.waterionizer.org/Articles & Research

5 Journal AWWA, August 2001, Vol 93, pp 82-91 and www.toolbase.org.

6 Macomber, Patricia: Guidelines on Rainwater Catchment Systems.

PRECAST CONCRETE

Figure 1: Dimensions of water tanks.

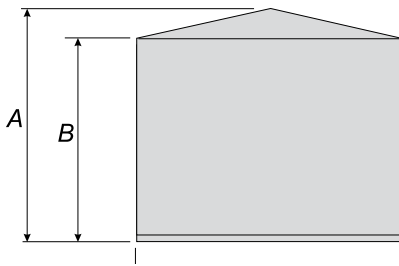


Figure 2: Dimensions of water tank plan view.

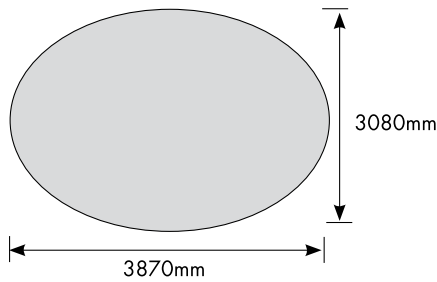


Figure 3: Installation of tank.

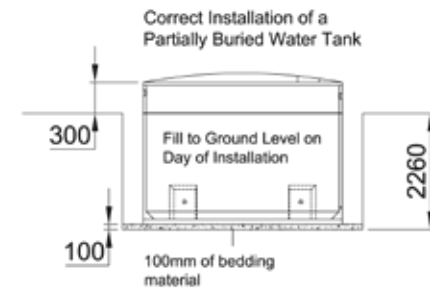
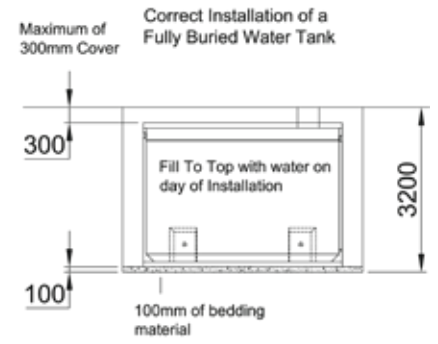
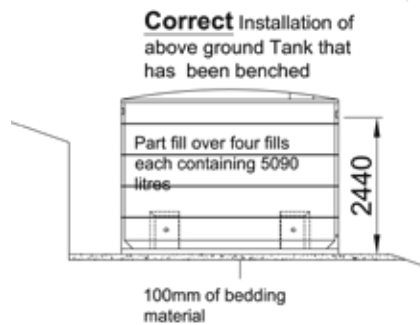
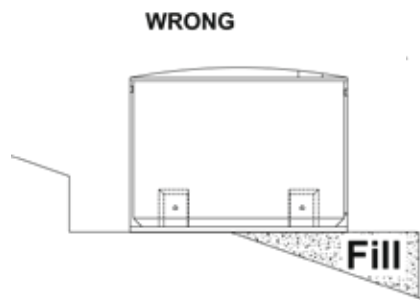
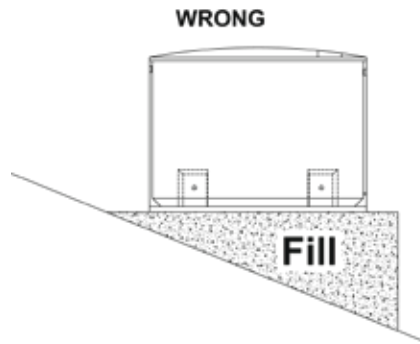


Table 1: Hynds Elite Water Tank

Product Code	Description	Capacity	A	B	Weight
WT5000ELT	Elite Oval Water Tank	5000 Gallon/ 22700 Litres	2940mm	2790mm	8.5 Tonne
WT5000ELTFT	Flat Top Elite Oval Water Tank	5000 Gallon/ 22700 Litres	-	2790mm	9.5 Tonne

Table 2: Water Tank Accessories

Product Code	Description
RHCONTV090	Marley Vacuum Kit for Concrete Tanks
RHCI	Marley Calmed Inlet
RHFO	Marley Floating Outtake
WATERLEVEL	Water Level Indicator
WATERLEVEL	Water Level Indicator Ext
RHMG	Marley Mechanical Water Gauge

INSTALLATION GUIDELINES

Figure 4: Site clearance requirements.



SITE ACCESS

- Access to the site must have adequate width clearance to allow the truck unrestricted entry to the site.
- Weight of truck and tank can be up to 22 tonnes.
- The site must be level and free from any obstructions such as large rocks. The site foundation must be completely solid so as to disperse the truck weight evenly.
- Room for the truck Hiab stabilising arms must also be allowed for on site. The arms extend 2.5m either side of the truck.
- The site must also be clear of overhead wires. All overhead wires must be a minimum of 4m from the Hiab hook at all times.
- For partially buried tanks the centre of the tank cannot be further than 5m from the position of the truck rear wheels. Allowance must be for excavation batters in this measurement.
- For fully buried tanks the centre of the tank cannot be further than 4m from the position of the truck rear wheels. Allowance must be made for excavation batters in this measurement. The excavated hole must be stable and safe before off loading of the Tank can commence.
- Tanks cannot be placed higher than the truck deck height or 1200mm.
- If placement of the tanks is outside these measurements the tanks will require special onsite craneage for placement which is at the cost of the purchaser.

Note: Should the delivery contractor experience conditions outside the above or others that delay the off loading of the tanks the client will be charged on an hourly rate for the cost of these delays.

SITE PREPARATION

The Hynds Elite Water Tank must be installed on solid ground capable of taking the weight of the tank and water contents (31.5 tonnes).

The material forming the tank foundations must have a safe bearing capacity of 100kpa (Normal house foundations).

Under no circumstances can any part of the tank be installed on fill material.

INSTALLATION

Tanks must always be placed on a bed of compacted sand or fine aggregate of a similar grade, screeded level to a minimum thickness of 50mm to a maximum of 150mm. The base should be approximately 1m greater in diameter than the tank. This will ensure a consistent transferring of the tank weight to the ground.

Multiple tanks to have at least 500mm distance between them.

CONNECTIONS

Buried tanks should not be backfilled until the water tightness of all connections is tested.

It is recommended that all tank outlets be fitted with a shut off valve as close as practical to the tank.

It is recommend that your tank has an overflow outlet and this is piped well clear of the tank foundations.

PARTIALLY BURIED TANKS

For partially buried tanks the area surrounding the tank must be free draining. Tanks must also not be installed such that only one side of the Tank is restraining the backfilled earth. In these

situations draincoil and drainage metal must be placed directly next to the tank to ensure no hydrostatic pressure builds up against the tank wall.

An empty Elite tank will float if the local groundwater rises over 900mm from the bottom of the tank.

A standard tank can be set in the ground to within 300mm of the top of the tank wall.

BURIED TANKS

If a tank is to be fully buried a 'Flat Top' tank is required. These have a flat roof and a support pillar in the centre of the tank. Flat Top water tanks can only be buried to a maximum depth of 300mm below ground level or a maximum overburden loading of 10kpa.

Other than the earth cover, buried water tanks **cannot** be driven on, or take any external loading, live or static within a distance of 3.2m to the nearest edge of the tank.

Care must also be taken in high groundwater area that Hydrostatic pressure does not lift the tank.

TANK FILLING

A new above ground water tank should never be filled completely to the top in one step, this can cause stress cracks.

The recommended procedure is:

- Fill approximately one quarter.
- Leave for two days.
- Fill another quarter.
- Leave for another two days.
- Continue process until tank is filled.

This allows the reinforcing in the tank walls to expand gradually.

Partially and buried tanks can be filled in one step to the same level as the outer back fill.

ACKNOWLEDGEMENT

I the undersigned declare that I have read and understand that the Hynds Water Tanks that I have purchased must be installed in the manner explained in this brochure.

CUSTOMER NAME

SIGNATURE

DATE