



Quality Manual

AquaTanks Tanks Water and Liquid Storage Tanks are prefabricated and rotary moulded tanks. The material thickness varies from 4.5 mm to 5.5 mm, depending on the volume and intended use of the tank.

Where appropriate, tanks are manufactured from UV stabilised and colour compounded food grade materials. Depending on the application (indoor or outdoor), the inside of the tanks are lined with an algae inhibiting black layer.

They are available in different liquid capacities as illustrated in Tables.

Tanks are generally green in colour but are also available in other colours and are supplied with the following standard fittings depending on the application:

- a 50 mm, 40 mm or 20 mm diameter connector at the bottom
- an inlet on top (side) with a 50 mm, 40 mm or 20 mm diameter fitting (female) and or
- a 50 mm or 32 mm diameter overflow and
- a 450 or 470 mm diameter lid on top of the tank which may also have a leaf trap.

General conditions

The following aspects need to be taken into consideration in relation to the installation and use of AmadibaTanks Water and Liquid Storage Tanks:

the local municipality needs to be contacted for rules, regulations and approval before purchasing of the tanks.

Annual checks are recommended in accordance with the manufacturer's specifications when the storage tank has been in use for a period of four to five years.

Table for Vertical Liquid Storage Tanks

Tank	Types	Diameter	Height	Lid Size	Inlet	Overflow	Outlet
500 Litre	Water and Liquid	800mm	1000mm	480mm	50/40 Reducer	50/40 Reducer	40mm water fitting
750 Litre	Water and Liquid	725mm	1850mm	480mm	50/40 Reducer	50/40 Reducer	40mm water fitting
1000 Litre	Water and Liquid	1100mm	1300mm	480mm	50/40 Reducer	50/40 Reducer	40mm water fitting
1500 Litre	Water and Liquid	1400mm	1350mm	480mm	50/40 Reducer	50/40 Reducer	40mm water fitting
2200 Litre	Water and Liquid	1420mm	1600mm	480mm	50/40 Reducer	50/40 Reducer	40mm water fitting
2500 Litre	Water and Liquid	1460mm	1600mm	480mm	50/40 Reducer	50/40 Reducer	40mm water fitting
4500 Litre	Water and Liquid	1800mm	2160mm	480mm	50/40 Reducer	50/40 Reducer	40mm water fitting
5000 Litre	Water and Liquid	1800mm	2300mm	480mm	50/40 Reducer	50/40 Reducer	40mm water fitting
10000 Litre	Water and Liquid			480mm	50/40 Reducer	50/40 Reducer	40mm water fitting

Manufacturing requirements

When utilizing polyethylene to design and manufacture containers for liquid substances, the following factors need to be taken into consideration:

- Container shape and design
- Pressure development during storage
- Changes of the material with time
- Extraction of additives from the polymer
- Exposure of the container to UV in addition to the chemical environment
- Compound effects on polyethylene from mixtures
- Changes in the polymer during processing
- Storage temperature
- Manufacturing process
- Effects of any additional additives incorporated prior to processing, e.g. pigments, which may be subdivided into:
 - plasticisation or swelling

- oxidation (chemisorption of oxygen into the polymer chain)
- stress-cracking (defined by **ASTM D883** as an internal or external crack in a plastic caused by tensile stresses less than its short-time mechanical strength. It is a standard terminology relating to the testing of plastics.

The requirements below highlight details of AquaTanks Water and Liquid Storage Tanks that require special attention during the manufacturing process:

The quality of all incoming materials must be adequately controlled and all records kept and maintained to demonstrate achievement of the required quality and effective operation of the certificate holder's quality management system
Adequate records must be kept of routine inspections and tests carried out to ascertain that the quality of all manufactured components are as specified.

Manufacturing process

Raw material is received mostly in pellet form from Sasol Polymers, a Division of Sasol (pty) Ltd and the colour compound from Lomotek and Rotoflow, for special colours. Sasol HR486 LLDPE Roto Moulding Grade with UV stabiliser is used. This is manufactured, supplied and technically supported by Sasol Polymers.

The LLDPE is converted into finished product by means of the rotational moulding process resulting in a one piece almost seam free and watertight tank.

The raw material is pre-weighed before being placed into the mould. Each product is made according to a designated and computer controlled recipe which determines oven-time, cooling time and rotation speed. Once filled with raw materials, the mould is placed in an oven for the designated process period while rotating at the designated ratio. It is then removed from the oven where it cools according to the designated cooling time. Once cooled to the appropriate temperature, the set product is then de-moulded. Once de-moulded, the product proceeds to the finishing department where the wall thicknesses and smoothness are checked.

Installation requirements

It is essential that the AquaTanks Water and Liquid Storage Tanks are installed as per the installation instructions in the installation manual which cover the basic requirements such as:

Outdoor Installation:

The tank should be located in a cool place (to keep the temperature of the water low, reduce evaporation and reduce damage to the tank material)

No tank should be fixed to the wall of a building unless certified by a practising structural engineer

All tanks should be placed on a structurally adequate base, it should be a level base which can bear the weight of the tanks when it is full.

The base should be free from sharp objects such as nails, bolts and unlevelled concrete stones.

If using the pumps to fill the tank then pumps must be located and operated so as not to cause offensive noise.

Any overhanging foliage needs to be removed to decrease leaf litter, bird and possum droppings and other animal contamination.

Location of existing downpipes.

Location of mains water supply.

Location of any easements and boundaries.

Space available.

Indoor Installation:

The tanks must place away from the high voltage installation and in a manner that does not restrict or hinder access.

In demarcated areas or in isolation from the rest of the structure by means of wall or bund. Adequate floor drainage is recommended.

On suitable strong raft platform which can bear the weight. Cautions should be taken where tanks are installed in multi-storey buildings that the structure can accommodate the intended weight. An engineer should always be consulted in these instances.

Installation procedure

AquaTanks Water and Liquid Storage Tanks should preferably be installed on raised platforms for ease of discharging. Tanks should carefully be placed on designated areas and rotating them so that the inlet and outlet are in their correct positions.

Rain water tanks should be placed in a manner to facilitate the connection of gutters and outlet/drainage taps.

Vertical tanks are supplied with tie down “hoops” located on the top periphery of the tank for ease of securing to the base platform. These hoops assist in securing the tanks in place, especially when the tanks are empty and are most likely to be displaced.

Two to three people can easily handle and install a 5000 litre tank and alternatively it can be lifted by mechanical means (viz, by crane or forklift) if the support structure exceeds 1,5 m high.

Storage

AquaTanks Water and Liquid Storage Tanks should be stored in a manner that does not compromise the structural integrity of the tanks and preferably standing as if installed. viz, on their bases in a vertical position.

Tanks should not be exposed to direct heat and non-UV protected tanks must be kept away from sunlight or alternatively covered with a 100% shade net or similar if prolonged exposure to direct sunlight is anticipated.

Handling

AquaTanks Water and Liquid Storage Tanks are manufactured to withstand normal handling during transportation and installation. To avoid unnecessary damage, care should be exercised in handling the tanks which should never be:

Dragged over an abrasive surface

Transported in a manner whereby a point load is exerted on the tank or it rests upon a sharp object

Over-tightened during transport to the extent that a visible deflection is noticed

Dropped when offloaded

Maintenance

AquaTanks Water and Liquid Storage Tanks requires a low maintenance system, not a No maintenance system. Maintaining the tank, catchment and distribution system will provide for better water quality. It is important to establish a general maintenance program to ensure the tank, its water quality and accessories will provide years of service. Simple, pre-scheduled clearing of debris and cleaning will keep the system in good condition. All accessories like First flush device and filter mesh screens etc are available on request.

For rainwater tanks the following items should be inspected:

Clogging and blockage of the first flush device.

Clogging and blockage of the tank inlet leaf/litter screen

Depth of sediment within the tank.

Inspections should be undertaken at the frequencies. The following maintenance activities should be undertaken:

First flush device to be cleaned out.

Leaves and debris to be removed from the inlet leaf/litter screen

Leaves and debris removed from roof gutters

Sediment and debris removed from rainwater tank floor.

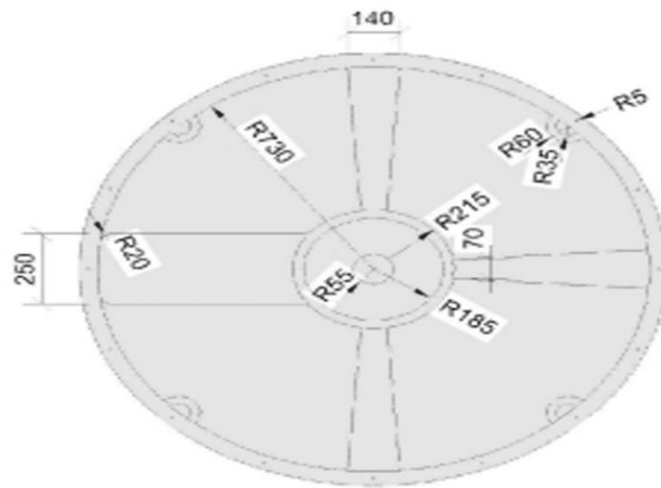
Adequate first flush systems and mesh screens on tanks inlets will reduce the amount of sediment and debris entering the tank, rendering cleaning only necessary approximately every 10 years.

AquaTanks offers a five years guarantee period on all their tanks and this is feasible if tanks are used for their intended purpose. It is the responsibility of the consumer to take all necessary precautions.

We are also a member of the **Association of Roto Moulders of Southern Africa (ARMSA)**

ARMSA is an associate of **Alliance of Rotational Moulding Organisations (ARMO)**

Figure 1: Plan & elevation - 2500Ltr Tank



(a) Plan

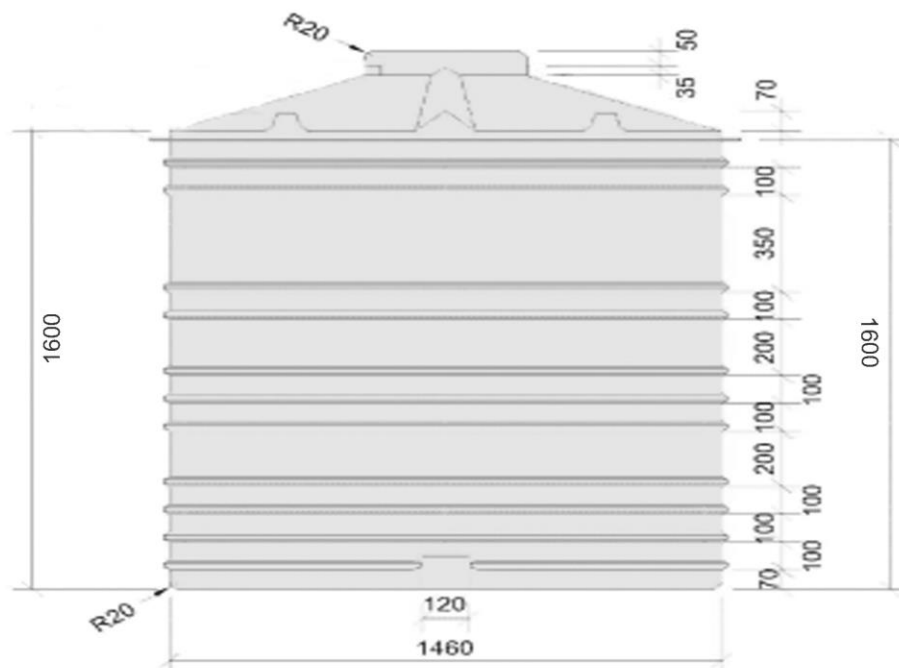


Figure 1: Plan & elevation 5000Ltr

