Rainwater tanks

Even in urban areas where 'town water' is provided, rainwater tanks have enormous benefits. Hobart is Australia's second driest city (after Adelaide) with an average yearly rainfall of about 600mm. Australia is the driest populated continent (Antarctica is drier), yet we are among the highest per capita water users.

Household rainwater tanks provide additional supplies during water restriction periods, save money where water is metered, provide chlorine-free water for household and garden use, reduce the need for new dam construction and reduce the impacts of stormwater going through sewerage treatment works.

Calculating tank capacity requirement

The intended use, size of your roof and yearly rainfall will guide the size of tank you need.

Formula to calculate how much water your roof can collect:

Annual Supply L = Roof Area m2 x Annual Average Rainfall mm x 0.9

Tank suppliers can help calculate the tank size that will suit your situation.

Intended use	Tank capacity (litres)
Drinking water	500–1,000
Toilet flushing	1,500–2,000
Garden watering	2,000–4,000
Whole household	50,000–100,000

Tank sizes

Tanks come in a variety of shapes and sizes (not necessarily round) but below is a rough guide to the amount of space a tank will require.

Capacity (litres)	Diameter (metres)	Height (metres)
5,000	1.9	1.8
10,000	2.5	2
20,000	3.6	2.2
50,000	5.7	2.3
100,000	7.7	2.5

Tank materials

Concrete – strong and durable. Can be made on site for specific requirements. Can be used above or below ground. Heavy. Expensive.

Metal – galvanised iron or coated steel. Can be custom-made for different space requirements. Light, easy to transport. 'Colorbond' or 'Aquaplate' versions are recommended for drinking water tanks, not galvanised iron which contains zinc.

Polyethylene plastic – durable and light. Comes in a range of colours and shapes, eg narrow and rectangular (slimline) to fit alongside a fence or attach to the side of a house. Can also be used below ground.

Fibreglass – tolerates extreme temperatures and corrosion. Lightweight, available in a range of sizes and colours.

Installation

Tank installation will require a Council Plumbing Permit and a registered plumber to carry out the work. Tanks over 35,000 litres will need a Building Permit, as will tank stands over 1.2 metres in height.

Overflow (in heavy rain) must be connected to the stormwater system or a council-approved alternative system.

Locating rainwater tanks near hot water systems and plumbing will save energy and water.

Pumps

If the rainwater tank cannot be placed in an elevated position to allow gravity pressure, an electric pump will be needed.

Keeping rainwater clean

- Install a first flush water diverter which will wash dust, bird droppings and contaminants from the roof and divert this dirty water before allowing water to enter the tank.
- Keep gutters free of debris – install leaf guards.
- Keep gutters free of overhanging branches which drop leaves and give animals access to the roof.
- Roofs in industrial areas or near busy highways will contain contaminants and should not be used for drinking. (NB boiling will kill bacteria but won't remove heavy metals.)
- Rain collected from roofs with lead paint, galvanising, or lead flashing should also not be used for drinking.
- Drinking water should not be collected from the area of roof which has chimneys (smoke emissions) or overflow pipes from roof appliances (eg solar hot water heaters).
- Keep mosquitoes out by fitting screen filters over the intake opening. Ensure all fittings have no gaps.
- De-sludge the tank every three years to remove sediment from the bottom.
- Use water purifiers under the kitchen tap for extra filtration of drinking water.

Tank suppliers

There are many suppliers of different tank types. Check the Yellow Pages or do an internet search.

More information

- Sustainable Living Tasmania Environment Resource Library
- Consult your local council about regulations.