

Rainwater Tanks - Buyers Guide!

In brief:

- ▶ Rainwater tanks are no longer just huge, round and ugly; they come in all shapes and sizes to suit the urban and suburban home.
- ▶ Watering the garden and washing the car with rainwater make sense and cuts your consumption of mains water. But bigger savings can be made if you connect the tank to your toilet, washing machine or hot water system.

Australia is the driest inhabited continent and predictions are that the future is likely to get hotter and drier. So it's all the more frightening that, per person, we're the biggest water consumers in the world.

But drinking water is scarce. Of all the water in the world, only 1% is fresh water available for use. So it's hard to justify that we waste so much of this precious resource on things that don't really require good drinking water. Garden irrigation and toilet flushing, for example, apparently guzzle up around half the water we consume.

Using rainwater for these things, or recycled greywater from our baths and laundries, would make much more sense.

Benefits

The potential benefits of installing a rainwater tank are plentiful, and you don't need to live in a wet or tropical area to reap them. South Australia, the country's driest state, has the highest rate of rainwater tank usage.



More than half the households there have one, and for more than a third it's their main source of drinking water.

With a rainwater tank, you'll:

- ▶ **Collect** most of the rain (around 80%) that falls onto the areas of your roof you have connected to gutters and downpipes into your tank. For example, if 10 mm of rain falls on to 100 m² of roof you'll 'harvest' about 800 L of rainwater. That's about as much as an average Sydney household of three would use in a day if they made no efforts to save water. If they did, they'd get their consumption down to around 500–600 L a day.
- ▶ Reduce your consumption of mains water and, in the long term, **cut your water bill**. Your water supplier may be able to give you an indication of the savings you can expect.
- ▶ **Lower your impact on the environment** by reducing your demand on mains water as well as the amount of stormwater runoff into rivers and oceans.
- ▶ **'Harvest' water that tastes better** and is generally less salty, which is better for appliances and plants.

Before You Start

If you're interested in installing a rainwater tank, contact Artesian Plumbing first to find out which rules and regulations apply in your local area that could affect your decision.

Artesian Plumbing will establish whether you need to submit a development or building application; or there may be restrictions on the tank's location, colour, height and labelling; or noise regulations for a pump may apply.

Artesian Plumbing will also establish whether you're entitled to any cash rebates or bill reductions.

Outdoor/Indoor/Drinking

Outdoor Use

Using the rainwater you collect for outdoor purposes only is the **easiest scenario**. Apart from the obligatory checks with your council and water supplier, you probably just need the tank supplier to install it and don't need a licensed plumber if there's no connection to the mains water supply. Your **water savings won't be huge**, but you will save the drinking water you used to pay for to water the garden, wash the car or top up the pool.

Indoor Use

Using the rainwater also for toilet-flushing, the washing machine or any other indoor use will increase your water savings substantially. But to do this, you need a licensed plumber to connect the tank to your mains water supply (so you can still wash a load if the tank is empty, for example) and the approval of the relevant authorities.

If you're allowed to connect your rainwater tank to the mains water supply, you're likely to need a backflow prevention device so your rainwater won't contaminate the mains supply if the water pressure changes suddenly and the water tries to flow backwards. Your water supplier may provide this free.



Drinking Water

Many water suppliers and health authorities in Australia recommend you don't drink the water you collect in a rainwater tank if you have access to mains water. But this is probably just to be on the safe side, because no authority can guarantee the quality of the rainwater you collect. You'll also be missing out on the benefits of fluoridated water if it's supplied in your area.

However, reports of illness associated with rainwater tanks are relatively infrequent, and public health studies in SA (the state with the highest rainwater usage rate) have also failed to identify a link. So it's up to you.

Rainwater is generally regarded as fit to drink if it smells, tastes and looks fine. In areas with heavy industry, smelters or heavy traffic, atmospheric pollutants could pose a problem, as could potential pollutants on your roof, such as chemicals from paint, bird droppings, dust and leaves.

Your roof

- ▶ Roofs made of galvanised iron, Colorbond, Zinalume, slate and clay/ceramic or concrete tiles are OK for collection of drinking water.
- ▶ Lead-based paint (if your roof was painted before 1970) and tar-based (bitumen) coatings should be avoided. If your roof was painted with acrylic paint avoid the first few runoffs, which can contain dissolved detergents and other chemicals.
- ▶ Make sure there's no chemically treated timber or lead flashing in roof catchments, and water shouldn't be collected from parts of the roof where there are flues from wood burners.

- ▶ While asbestos fibres are dangerous when inhaled, it's believed asbestos roofing sheets pose no risks for water collection, as long as the material is left undisturbed.

Tank Facts

Rainwater tanks come in a multitude of sizes, shapes, materials and colours. You can install one next to the house, on top or under it, on a stand, on the ground or below it. Installing a tank below ground is generally more expensive because of excavation costs, but the tank's out of sight.

- ▶ **Cover:** All tanks should have a tight-fitting cover so animals and children can't get access, water won't be lost through evaporation and light doesn't enter, which could promote the growth of algae.

- ▶ **Size:** The tank capacity you need depends on what you want to use it for, the size of your household and garden, your roof area and the annual rainfall in your region. Your water authority may be able to help you work out the size you need, or many sellers of rainwater tanks provide calculators on their websites.
Sydney Water recommends a minimum tank size of 5000 L in an urban environment, if you want to use the water for toilet-flushing, the washing machine and in the garden (but not for drinking water). Brisbane City Council estimates that a 3000 L tank connected to the hot water system, toilet and for outdoor use can result in 30-40% savings of mains water.



- ▶ **Type:** You can choose from round, rectangular (modular) and slimline tanks. Round ones come either upright or squat, which may fit well under decking or the like. Slimline tanks are

generally a bit smaller, but are popular with people who have limited space for a tank. There are also newer alternatives to the traditional shape — a few of these are noted below right.

- ▶ **Material:** Metal tanks are made from corrugated or flat rolled metal and can be galvanised or coated. They often come with a plastic inner lining (Aquaplate) that'll increase the life of the tank and protect the water quality. Polyethylene (poly) tanks are durable and because rust isn't an issue, tend to be recommended for people living near the ocean. Concrete tanks can be bought ready-made or custom-made on-site. Fibreglass tanks tend to be more expensive: they're rust and chemical-resistant and designed to withstand extreme temperatures. They're more suitable for above-ground installation, while all other types can also be installed below ground.
- ▶ **Location:** To reduce water loss through evaporation from inspection holes, don't put it where it'll be in the path of the hot midday sun.

Costs and extras

Tanks can cost as little as a few hundred dollars for a basic, small, freestanding model without pump and extras, to many thousands of dollars for a large, custom-built model with all the bells and whistles.

The costs vary depending on the size, material, finish and strength of the tank.

Further costs may include charges for delivery and installation; extra materials (such as pipes, fittings and taps); optional extras (such as a first-flush or backflow-prevention device); a pump (unless you can use gravity for water pressure); and a stand (unless you want to put it on the ground or below it, in which case you may need to factor in costs for special preparation or excavation), extra costs if you want to connect the tank to your mains water supply, and costs for any additional work that needs to be done to your roof and/or guttering.

And after all these expenses, you're ready to reap the benefits!

Building a new home?

Installing a rainwater tank out of the way under the house, at gutter level, or even one that's completely invisible inside your walls is easier when you're building a new home (or when doing major renovations) than when retrofitting a system.

This applies even more to a **greywater system**, which requires, as a minimum, connections to your bathroom and/or laundry plumbing and, depending on its complexity, some space outside.

So it makes sense to consider such environmental features when you're starting from scratch. In some areas you may even have to incorporate energy and water-efficient features in your building plans to comply with new legislative requirements.