

# Caring for your Rainwater Supply

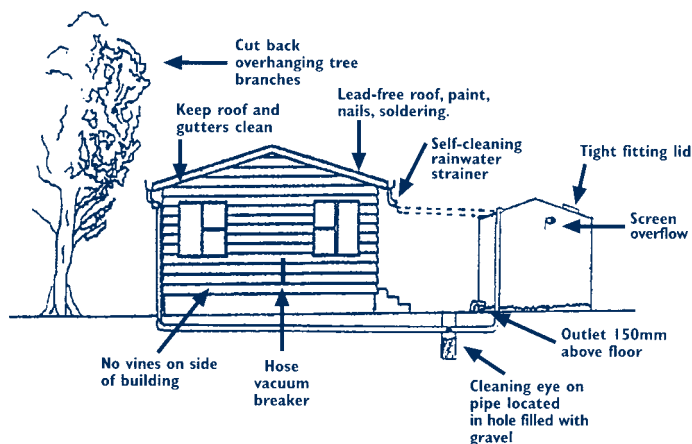


The Health Act 1956 and the New Zealand Building Code require every dwelling to be provided with wholesome water for human consumption, food preparation and washing.

This pamphlet provides information about the supply of safe drinking water to households on rainwater collection systems.

## Minimising contamination

The picture below shows how contamination from unwanted material can be minimised.



After a long dry spell, the first rain should be diverted to waste, as this will contain most of the bird droppings, dust and other contamination that has built up on the roof and the guttering. You can do this by disconnecting the downpipe from the inlet to the tank. It is also important to divert the first rainwater after painting, treating or cleaning the roof. There are simple diversion attachments available to do this for you, which you can get from your plumbing merchant.

Lead, chromium and cadmium are toxic to humans and you should avoid using any roof paints containing these metals. Modern roof paints are generally labelled as to their suitability for drawing off water supply, but if in doubt, check with a paint specialist or contact us.

Rainwater supplies can leach out metals from metallic pipes and therefore plastic pipes are recommended. Tanks should be constructed of concrete, plastic, fibreglass or galvanised iron, but be aware, some of these materials can affect the taste of your water.

## Maintenance and cleaning

The roof and spoutings should be cleaned by scrubbing every few months, and the water used flushed to waste by disconnecting the line feeding the tank. This clears the roof of dirt, animal droppings, paint breakdown products and other potentially harmful contaminants.

The tank should be emptied and all debris and sludge removed every one or two years. You can use a long handled broom to push all the sludge on the tank bottom out through the scour valve, or it can be removed by suction cleaning. The internal surfaces should be scrubbed thoroughly and the rinse water diverted to waste. Refill the tank and add 170 ml chlorine bleach to 1000 litres of water.

Underground pipes feeding water tanks should have a cleaning eye fitted, and the water trapped in the pipes should be drained every few months.

## Disinfection of storage tanks and pipe lines

Tanks and pipelines must be disinfected regularly to reduce any concentration of biological growth. You can use plain household bleach for this job.

A tank is always disinfected by volume. All tank dimensions should be in metres. Use the following calculations to measure your tank's volume:

- Square tank: Length x width x depth of water x 1000
- Round tank: 0.785 x diameter x diameter x depth of water x 1000

Select the amount of plain household chlorine bleach to be added and mix thoroughly.

- Routine (monthly) disinfection of clean water: 35 ml per 1000 litres.
- Routine (monthly) disinfection of reasonably clean water: 70 ml per 1000 litres.
- Non-routine (every two or three years) disinfection of tanks and pipes: 170 ml per 1000 litres.
- Superchlorination of tanks contaminated with a dead animal: 335 ml per 1000 litres. Remove the dead animal, and allow the water to settle for 24 hours before drawing from it. Boil water before drinking to remove the chlorine taste. Draining and cleaning the tank is a better option.

After you have mixed the bleach in the tank, water should be run through all your household lines so the newly disinfected water comes through the taps.

## Point of use filters

Some point-of-use home filters can remove substances from water. Some filters will only remove particulate matter, allowing soluble chemicals to pass through. Others such as activated carbon filters will remove some dissolved substances as well.

You need to use the right filter for the job and maintain it regularly for it to work effectively.

## Water quality and treatment

If you think your water supply may be contaminated, water testing can be carried out to identify the quality of the water. Contact us for advice on how to collect a water sample and where you can get it tested. Once the problem has been identified, a suitable treatment can be implemented.

This chart lists some of the more common contaminants, their possible sources, problems and various treatment options.

CONTAMINANT	SOURCE	PROBLEMS	TREATMENT
Bacteria	Bird and animal droppings on roof and gutterings	Diarrhoea, gastro-enteritis and other various waterbourne diseases	Ultraviolet radiation Chlorination Reverse osmosis Boiling
Carbon Dioxide	Atmosphere, decaying vegetation on roof and in gutterings	Unpleasant	Aeration Akodolit granules
Colour	Decaying vegetation on roof and in gutterings	Health problems at high concentrations	Activated Carbon Reverse osmosis
Copper	Plumbing materials	Bad taste and blue water colour at low concentrations	Aeration Calcium carbonate Marble Dolomite granules Seek Specialist advice
Lead	Plumbing materials and paintwork	Toxic to humans especially infants, young children and unborn babies	Aeration Calcium carbonate Marble Dolomite granules Seek Specialist advice
Protozean Cysts	Bird and animal droppings on roof and gutterings	Diarrhoea and other waterbourne diseases	Reverse osmosis Boiling Cartridge Filter
Taste and Odour	Algae in gutterings and spoutings	Unpleasant and can be toxic	Activated carbon Boiling Reverse osmosis
Viruses	Bird and animal droppings on roof and gutterings	Gastro-enteritis and other waterbourne diseases	Chlorination Reverse osmosis Boiling Ultraviolet radiation Ultra filtration