

Repairing an old or damaged water tank

INTRODUCTION

This BUSH TECH will look at some of the ways an old or damaged water tank can be repaired.

Water tanks are one of the longest lasting parts of a water supply. The job of the water tank is to hold water from a water source (bore, river, roof etc.) and allow it to be used at another time. It also needs to keep out animals, dirt and insects so that water stays clean and safe to drink.

As tanks get old some parts can wear out or get damaged. This means that tanks can start leaking or things can start getting in. Some people prefer to replace tanks when this happens but for many others this isn't possible — new tanks can be expensive and difficult to transport.

TANK MATERIALS

Fixing a leaking tank first requires you to know what type of material your tank is made from. There are four main types of materials used for tanks:

- » Metal (Galvanised Iron/Colourbond steel)
- » Fibreglass
- » Plastic (Polyethylene)
- » Concrete or ferrocement

The most common type of water tank used in remote communities is the plastic poly tank. Poly tanks are relatively cheap and easy to transport. They also last for a long time if kept in good condition and are not damaged.

More modern metal tanks have a plastic coating on the inside. These coatings are to prevent the tank from rusting and to keep water that is touching the tank walls safe for drinking.

ROOFS

The roof of a tank has a few functions. It keeps the sun off the water, stopping evaporation and algae growth. It should also stop animals and insects from getting inside. If the roof of a tank isn't sealed up well and animals get into the water, the water may not be safe to drink. Roofs on older tanks don't always seal well.

Tanks with corrugated iron or steel roofs can let in insects and animals through the gaps where the corrugation are. It is important to make sure that these gaps are well sealed.

Hardware stores often stock (or can order) foam inserts or strips that seal the gap between the roof and the wall. These are also used for roofs of houses or sheds. The strips seal the gap and have raised bits that fit in the corrugations to seal the tank well.

In some cases a roof may be too damaged to be sealed up. Depending on the cost of replacement, a new roof may be fitted to the tank. Tank roofs can be constructed by tank manufacturers or contractors in the appropriate material (ie. concrete for a ferrocement tank or steel for a metal tank).

FIXING LEAKING TANKS



Some types of leaks can be repaired with a chemical sealant or plastic welding. Pictured above, a crack in a tank is being plastic welded with an appropriate plastic welding rod after first being stabilised.

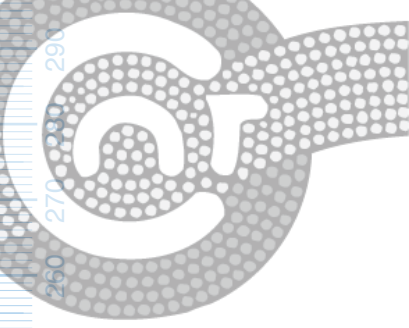
How a leak is repaired will depend on where it is, what caused it and what material the tank is made from. A first step is to identify what has caused the leak. A leak may be caused because of corrosion, movement of the tank or damage from a vehicle or other object.

Corrosion may occur because of the type of water tank you have and its age, your location (coastal areas), or because of the quality of the water source. If the tank is still in good condition you could consider using a liner.

If the tank has shifted on its base the floor or wall of the tank could crack. Tanks need a firm and stable layer of material (ideally concrete) underneath them. In some cases the tank base may need to be re laid.

Cracks in the walls of tanks can grow because of stresses placed on the tank wall if the tank moves or as it fills up and empties. The break in the skin of the tank will need to be stabilised by drilling a small hole at each end of the stressed line that causes the crack

In poly tanks, if there is a small leak on a side wall, the tank may be able to be repaired using plastic welding. An experienced person with the right equipment can make repairs using a plastic welding rod and heat gun. Plastic welding requires the right tools and experience to identify what can be fixed and how to make the repairs.



Chemical sealants can also be used to seal cracks in water tanks. The type of chemical sealant to use depends on the type of tank material and what the water is used for. If the water in the tank is used for drinking, make sure that the right product is used so that the water is still safe to drink. Chemical sealants should only be used for small leaks.

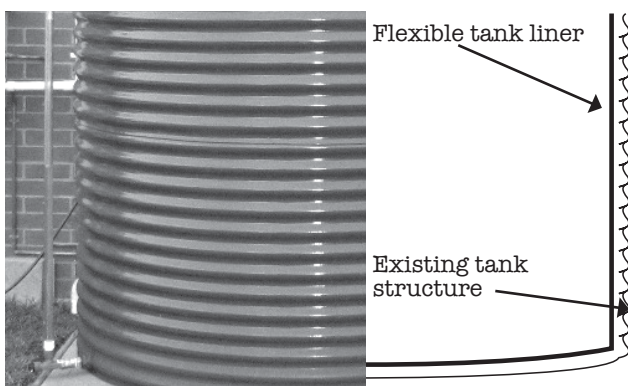
Patches can be applied to tanks in combination with sealants or plastic welding. Patches should be applied to both sides of the tank wall and well secured, using the same material as the tank if possible.

Fibreglass tanks can be repaired by laying new fibreglass and applying resin over the break in the tank wall. Only certain types of resin are approved for contact with drinking water so make sure only the right resin for the job is used.

TANK LINERS

Tank liners are used to hold water inside a tank structure. They are made of flexible plastic or rubber type material. The tank liner fits inside a tank and holds water inside it. The tank provides the mechanical support for the liner, and the liner holds the water.

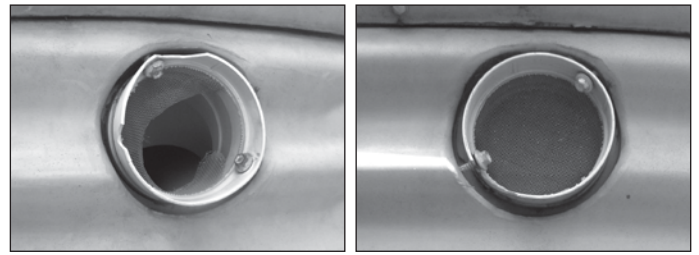
Tank liners can be purchased to suit most shapes and sizes of tanks. Many types of metal tanks already have tank liners. Tank liners can fail and allow leaks to occur. If the tank liner dries out it can also become brittle and is more likely to fail. Tanks that don't need a liner when new but start leaking can be made water tight by using a liner if the leak isn't able to be repaired and the tank is still in good condition.



Flexible liners can be fitted to tanks to stop them leaking where they are still structurally sound. In other cases, a leak may be caused by the failure of a previously fitted liner to a non-water tight tank.

INSECT, ANIMAL AND LIGHT BARRIERS

Apart from holes in walls and roof, there are many places in water tanks that can let in contamination from insects and animals, potentially making people sick. Inlets, overflows and tank lids should all prevent living things from getting into the water tank.



Gaps in the roof, inlets, overflows and lids can let in pests that can pollute the water or let mosquitoes breed. All gaps in the tank should be covered or filled, and broken covers replaced.

Inlets for rainwater tanks should be piped directly from the first flush device or have a mesh screen that keeps out leaves, bugs and animals. Overflows from tanks often allow creatures to climb up in to the water. Overflows should be drained away from the base of the tank and have a solid mesh screen over them to stop things from getting in. Tank lids should be kept fitted and not have any gaps between the lid and the roof of the tank. Especially when the water is used for drinking, light should be kept from entering the tank where possible so that algae cannot grow inside.

CLEANING WATER TANKS

Depending on the water source, leaves, salts and dirt can build up on the base and walls of a water tank. The easiest way to prevent the build up is to flush out the water tank every six months or so to clear it out. In some cases algae or salts can attach to the walls and floor of the tank and cannot be removed by just flushing the tank. In this case a high-pressure water hose can be used to spray clean the surfaces of the tank. This may require an external contractor and if they need to go inside the tank they will need to have approval for working in confined spaces.

IS IT WORTH IT?

There are costs for carrying all types of repairs and depending on what your tanks needs doing, replacement of the tank may be a cheaper option. Factors that will influence the cost of repairs include the type of damage, tank material, ease of transport, your ability to carry out repairs or the cost of getting a skilled person to do the work. If a tank is monitored often and kept in good condition it can be a very long-lived part of your water supply.