

## Stainless Steel Water Tanks vs Poly Tanks

When looking for a [rainwater tank](#) for your property you will find many tanks on the market that are made from different materials. If you have investigated steel tanks in particular, then rainwater tanks fabricated from stainless steel is one that you've probably stumbled across.

This article aims to provide an analysis of Stainless steel tanks compared to poly water tanks. What is Stainless steel? How does it compare to poly water tanks? What are some important differences to be aware of? These are some questions that will be explored below.

### What is Stainless Steel?

Stainless steel (aka inox steel) is derived from the word "inoxidable". Unlike other steels, will not readily corrode, rust or stain from moisture. The main difference between stainless steel and carbon steel is a chemical element called chromium. Chromium provides a protective shell the neutralised oxygen seeping into the metal's surface and causing it to oxidise.

While stainless steel is said to be "stainless", in reality it can be stained and still corrodes. You have likely purchased a stainless steel product in the past, only to see it corrode and wonder how such is stainless. Stainless steel is weak against pit corrosion which happens when inferior steels like lead corrode on the surface. This can temporarily breaks the protective shell against oxygen, causing a "pit" to occur. Therefore it is important to keep any stainless steel products wiped down and clean to avoid rust and corrosive stains.

There are also different grades of stainless steel. Some provide much greater resistance against marine environments, while others will still corrode from the salty air and if placed in sea water. Nonetheless, the strength and durability of stainless steel makes it an often desirable yet expensive option. Due to its expense it is normally used in products where both the strength of steel and corrosion resistance are required. So we see stainless steel used in products like kitchen sinks, cooking vats or rainwater tanks.

### What are Poly Tanks?

[Poly water tanks](#) made in Australia today are often made to [withstand the Sun](#) and are safe to use for drinking water. To verify this is the case ensure that your tank is made from food-grade UV-stabilised polyethylene approved to Australian Standards for products used for drinking water (AS/NZS 4020).

Poly tanks are fabricated through a rotomoulding process where plastic resin is heated up, rotationally spun inside a cast and then cooled and allowed to set. Poly tanks are either rotomoulded:

1. as two pieces that are then joined together through a plastic welding process; or
2. as one piece without any side seams.

The Australian Standard for polyethylene tanks ([AS/NZS 4766](#)) requires that quality poly tanks be rotomoulded as one piece.

There are also other features this standard specifies when building a quality poly tank that will reliably store liquids under Earth's normal atmospheric conditions. If you are looking into a poly water tank, it is important to ensure your tank is certified to this standard ([AS/NZS 4766](#)) and that the manufacturer is also certified for a quality controlled manufacturing process such as [ISO 9001](#).

## Poly Tanks and Stainless Steel Compared

- **Price:** Stainless steel tanks are usually the most expensive tanks to buy – up to double to price of a poly tank depending upon seller, size and style.
- **Sizes:** Larger sized stainless steel tanks can be manufactured up to around 250,000 litres, whereas poly tanks are available up to around [50,000 litres](#) but can be joined together.
- **Styles:** Both tanks are available in [round](#) and [slimline](#) models. Stainless steel tanks can be found in different steel finishes, whereas poly tanks can be found in a wide range of colours. Poly tank models are also available for under decks, [underground](#) or even partially buried below the surface.
- **Strength:** Steel might be harder than plastic, but the strength of stainless steel tanks depend upon how well they are manufactured with the stainless steel sheets being joined together and attached to the base. Poly tanks are more impact resistant and hard objects like a hammer will literally bounce off, whereas steel tanks will become dented and require repair.
- **Corrosion Resistance:** Stainless steel while highly stain resistant, can still be stained and receive corrosion in the form of pitting. Depending upon the grade, stainless steel should be kept away from chlorine and salty sea water. Furthermore, corrosion can occur at the joints, rivets or screws with possible [dangerous repercussions on your water quality](#). Incorrect welding can also neutralise the protective element in the stainless steel allowing rust and corrosion to occur. Poly tanks that are [UV-stabilised](#) will withstand the Sun and plastic also obviously does not rust. So you have less to worry about with a poly tank.
- **Maintenance:** Care must be taken with stainless tanks by wiping and washing them down with fresh water. Poly tanks can be easily setup with a [self-cleaning system](#) that keeps your inner tank clean. To maintain similar quality water in a stainless steel tank can require a more expensive two-tank system.
- **Warranty:** Stainless steel tanks can come with a “material” warranty of 30 years, while the warranty on the actual manufacturing of the tank (stitched together) can be half of that or less. Poly tanks can be found in warranty up to around [25 years](#). Ensure you compare the warranties between the tanks you are deciding upon carefully.

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