

Renovating for Improved Water Quality

Most renovations have focused on improving structural and safety issues and these have been driven by Aust Standards and industry regulations. At the completion of most upgrades, such as re-coating, new roofing and improved access systems, water quality can still remain compromised, due to a lack of understanding and no industry regulations (guidelines only) to ensure compliance.

Water quality renovations can be the simplest and cheapest improvement carried out to a storage tank, but effective outcomes are often hampered by an unwillingness to change existing layouts, because ..“it must have been done like this for a reason”! Engaging a local builder and telling him to “fix things” is not enough. All good outcomes must begin with a plan, based on experience gained from similar projects. Materials used should be long lasting and not rely solely on ‘no more gaps’ type silicone and ‘expanda foam’ fillers that will break down in a short period of time.

All work should pass the ‘bucket of water test’. Upon completion, water should be spread out over the areas that have been supposedly sealed off to check for ponding and leakage back into the tank. Only when the tank can be demonstrated as being 100% sealed off against external contaminants in all weather conditions, can good, reliable water quality be assured to the customers.



Entry Hatch upgrades



Entry hatch before



Entry hatch after



New entry hatch closed

Access hatches into storage tanks are the most common area where contaminants can enter into our drinking water.

Designed to provide access to maintenance personnel, they often fail to address the most basic issues of safety, let alone to protect against natural or deliberate contamination events. Older hatches are often too small, or are poorly positioned to allow good access or retrieval into and out of a confined space situation. Likewise, hatches that have addressed safety concerns are often the ones most at risk of allowing contaminants to enter the water supply. Ladders that have stiles extending out through the hatch cover, trip hazards reduced by removing the front sealing edge and covers that do not seal or secure the tank - all these are a significant risk to water quality. Entry hatch upgrades can be so simple and yet so important to protecting our water supplies that it is a wonder they have been neglected for so long. Is change such a difficult task to carry out? Is it because it requires some thinking to achieve the result, as opposed to simply picking up the phone and ordering an item of lesser importance because it is listed online or in a catalogue?

There are four simple things that can be done to improve entry hatches.

- 1. Cut off any protruding ladder stiles**
- 2. Install a sealed front edge**
- 3. Change sliding covers over to a hinged, overlapping type**
- 4. Improve the sealing capabilities around the hatch frame area**

Platform areas

Platform areas on tanks are a major contamination source.

Many are not sealed where the roof sheets join up against the platform frame, allowing roof water to drain directly into the tank during rain fall events. Platforms also attract bird activity due to safety rails and aerials mounted close by. Faecal contamination then accumulates and drains or blows into the stored water supply.

Several things can be done to reduce contamination potentials.

1. Platforms need to be 'tucked under' the roof sheets or have good upstream drainage fitted.
2. Kick rails can be lifted higher to reduce leaf debris blockages and subsequent back flow events.
3. Ponded areas can have an 'underdrain' system fitted that delivers accumulated water out through the wall area of the tank.
4. Hand rails can be simplified and aerials can be relocated to reduce the attraction to roosting birds.

Many platform designs were a compromise to the existing structure, when older tanks were roofed, so a complete re-design is the only effective method of overcoming the contamination issues. Good design is the cornerstone of this process and simply adding on 'bits and pieces' to existing poor designs will not solve the water security issues present on most of our tanks today.



Kick rail ponding



Before platform renovation



After platform renovation