

Concrete versus Steel tanks 101

Concrete:

The majority of new tanks these days are made from concrete.

Concrete will have a longer maintenance free cycle, PROVIDING the build quality is well designed, supervised and all internal pipework and fittings are epoxy coated and differential metal issues are eliminated from the design. Plenty of pre-planning needs to be factored in – a detailed HAZOP process needs to be implemented.

‘Fit for purpose’ needs to be considered when selecting a tank construction material.

There was a poor concrete tank outcome a few years back - a very large concrete tank was built to store raw water. It is pumped full overnight and then completely emptied during the day, before the cycle is repeated. The stress of the constant cycling caused serious leakage issues to the sealing joints - a fully welded steel tank would have withstood the cycling pressures far better.

Steel:

Steel tanks come in several types - steel plate construction which is fully welded onsite versus lighter weight, lower cost panel type tanks, which are bolted together and sealed with either a mastic type material or an internal fabric liner. Welded steel tanks will not leak, it is easier to cut in additional pipework at a later date, but they have to be coated every 25 years or so to maintain water quality and structural integrity. Steel tanks will also withstand water levels cycling up and down significantly, better than a concrete tank. The downsides are not many serious tank builders are working with welded steel these days, so it will be more expensive for a good quality outcome.

DO NOT consider any of the steel bolted panel types with liners, for a long-term outcome - they have a history of significant leakage issues that everyone seems to overlook!!