

What to consider when constructing new tanks

New tank construction presents many challenges, but a lot of these challenges can be overcome early in the process – thus saving time and money once the tank is operational. We've outlined some of the most important things to think about to make sure your tank is safe, robust and performs to the levels required to maximise your investment.

What will the tank store?

Firstly, it is important to consider what the tank will have to store. Will it hold acid-based products? Will it hold crude oil? An alkaline solution? Could the contents be harmful to personal safety and the environment if they leaked out? The nature of the contents will determine which materials are most appropriate for manufacturing the tank and any additional protection required.

Where will the tank be located?

This might not seem important, but the tanks required to withstand the desert of the Middle East will not be the same as the ones required on the coast of Western Europe. Do you need to factor in humidity protection? Will it be exposed to saltwater from the sea? What temperatures will your tank be expected to handle? The answers to these questions will be important in deciding how you construct a new tank.

What should the tank be made of?

As well as the likely contents and location, this decision will also be impacted by the size of the tank and your budget. If you require your tank to be of any significant scale, carbon steel with an appropriate lining could be the most cost-effective option. If this is the most commercially sensible option for you, then it is important to choose a lining that will protect the tank and its contents.

Stainless steel can be a preferred construction material for holding acids and other highly corrosive chemicals/products because of its level of chemical resistance but it is potentially a high-cost option. In such cases, an internal tank lining may not be required.

Another option could be constructing the tank out of an acid-resistant plastic or a vinyl ester glass composite, but again this can be a relatively expensive option. In this instance, any coating would be carried out mainly for cosmetic reasons and usually on the external of the tank, but if the tank is to store acids, such as phosphoric acid, an internal acid wash is recommended. Failing to do this can lead to the vinyl ester oxidising and give off a pink tinge to the contents.

What sort of linings are available?

There is a wide range of linings available and it is important to choose one that can protect your product from contamination and also protect your tank from any corrosive contents.

Epoxy coatings, such as Tankguard SF, Tankguard Plus and Tankguard Storage, offer the widest chemical resistance as well as the best temperature resistance and can protect a huge range of stored products from water to alkaline solutions and biofuels to vegetable oils.

Zinc silicate linings, for example, Tankguard Zinc, give excellent resistance to alcohols and solvents and can be applied in a single coat.

Vinyl ester linings, such as Chemflake Special, are fast curing and provide excellent protection from aggressive chemicals as well as acids and biofuels.

Aside from the options outlined above, you could also consider a rubber tank lining or constructing the tank in stainless steel or GRP if the stored material is extremely aggressive. A word of warning, though: rubber linings can be challenging to apply and vulnerable to failure, and stainless steel and GRP comes at a relatively high cost.

The easiest way to mitigate risk is to speak to an expert. Jotun has years of experience supporting customers with these kinds of challenges.

Visit <https://www.jotun.com/tankfast> to find out how we can help you.

