

CST

**THE GLOBAL LEADER IN STORAGE
AND COVERS SOLUTIONS**



GALVANISED WATER STORAGE TANKS

Fire Sprinkler | Potable Water | Irrigation

CST INDUSTRIES (UK) LTD

CST Industries (UK) LTD is a wholly owned subsidiary of CST Industries Inc., the world's largest manufacturer of engineered above ground bolted steel sectional storage tanks and silos for liquid and dry bulk applications. With over 250,000 tanks worldwide and our ISO 9001 accreditation, CST Industries (UK) LTD ensures consistent quality and service for the design, manufacture and installation of liquid storage tanks.

CST Industries (UK) LTD specialises in the design and manufacture of cylindrical and VersaTank galvanised steel bolted storage tanks. These tanks are primarily used for storing water in the fire sprinkler, potable water and irrigation markets.

The tanks are assembled on site by overlapping and bolting galvanised steel panels. Tanks are sealed using either mastic or a synthetic rubber membrane liner in conjunction with a roof cover to provide a reliable and low maintenance solution for water storage.



GALVANISED STEEL

Storage tanks manufactured from galvanised steel offer many benefits over other steel corrosion protection systems. Unlike other protective coatings that rely solely on steel panel preparation to obtain adequate adhesion, galvanising produces a coating that is bonded metallurgically to the steel.

- Economical solution
- Provides a tough and abrasion resistant coating
- Self healing and long lasting

Evolution of CST

1890's



1940's



1960's



1970's



1990's



2000's



CYLINDRICAL TANKS

Standard cylindrical designed tanks consist of galvanised steel sheets 2.5m long x 1.25m high with thickness varying dependent upon tank size. Tank diameters range from 3.1m to 31.0m with height dependent upon diameter providing capacities from 9m³ to over 4000m³.

- Manufactured from mill galvanised steel in accordance with BS EN 10204 or steel in accordance with BS EN 10025 which is subsequently hot dip galvanised to BS EN 1460: 1999 standard.
- Sheets are assembled on site using a lap joint and galvanised silo bolts. The tank shell is fixed to the concrete foundation using a pre-rolled galvanised angle, clamps and parabolts with a similar stiffening angle fixed to the top of the tank shell.
- The tank is supplied with a roof cover, a galvanised access ladder and platform and inlet and outlet connections. Insulated walls and roof cover are also available where the risk of a consistently low temperature would cause a problem. Ancillaries such as ball valve, heater, contents gauge etc. can also be supplied.

Potable Water Storage

Cylindrical tanks are compatible for the storage of drinking water by utilizing a Butyl rubber membrane liner that is approved by the Water Regulations Advisory Scheme (WRAS) in accordance with BS 6920.



VERSATANK

VersaTank offers design versatility enabling sprinkler water storage tanks to be installed where traditional cylindrical designs cannot easily be accommodated. The corrugated galvanised sheets provide flexibility in design and ensure application in even the most demanding space restrictions. Almost any shape can be designed around obstructions like building support columns. Whether the location is in a cramped basement or in an external restricted site, VersaTank can provide a solution for fire sprinkler water storage.



VersaTank is manufactured from corrugated 3mm hot dipped galvanised steel sheets 2.5m high x 1.0m long conforming to BS EN ISO 1461:1999. Heights up to 3.0m are available.

The tank shell is fixed to the concrete foundation using galvanised angles, clamps and parabolts. Similar stiffening angles are fixed to the top of the tank shell with knee bracing internal supports on every vertical seam.

Corrugated sheets are fixed together on site using a lap joint and galvanised silo bolts. Tanks are sealed using a high pressure curing mastic around the joints and bolt holes in combination with a 150mm seal pour of concrete.

VersaTank is supplied with a galvanised corrugated low profile roof cover that is plastic coated on the external side. A galvanised access ladder and platform, inlet and outlet connections and other ancillaries such as ball valve, heater, contents gauge are included as required.



CONSTRUCTION

CST Industries (U.K.) LTD employs its own fully trained construction personnel. Depending on situation, CST can also offer certified and approved construction crews and/or supervision services for local construction crews. Tank jacking equipment is also available.

CST Industries (U.K.) LTD is a safecontractor approved company (certificate number TN3828).

FIRE SPRINKLER APPROVAL

- UK Loss Prevention Certification Board - LPCB



- Factory Mutual - FM



- Designs in accordance with the requirements of NFPA22, TUV and VdS can also be supplied.

For further information on capacities and design options refer to tank data sheets.

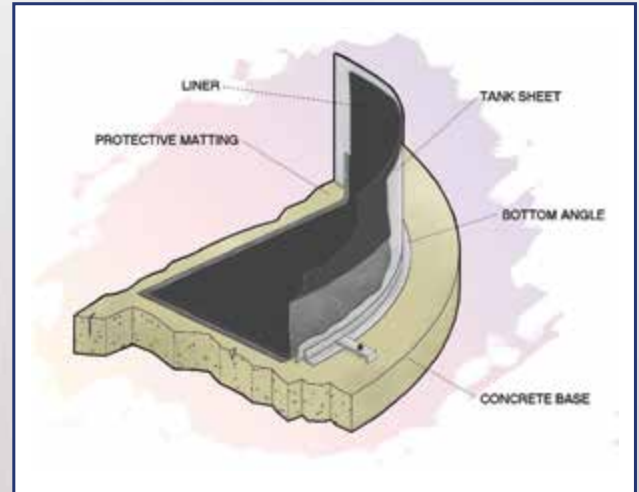
LINERS

Cylindrical galvanised tanks can be sealed using liners manufactured from either EPDM or BUTYL synthetic membranes to create a completely waterproof seal. Both EPDM and BUTYL have outstanding aging, environmental and weather-resistant properties. Strength and elasticity remains virtually unchanged over many years, without shrinking, hardening or cracking.

Liners are bolted to the top angle of the tank through re-enforced eyelets. Additional protection during installation and use is obtained from Polyester geotextile matting on the tank floor and protective tape on all interior tank sheet edges.

- BUTYL rubber liners have received approval from the UK Water Regulations Advisory Scheme (WRAS), in accordance with BS6920, for use in storage of potable water.

For further information on use and installation refer to liner data sheets.



TROUGH DECK ROOFS

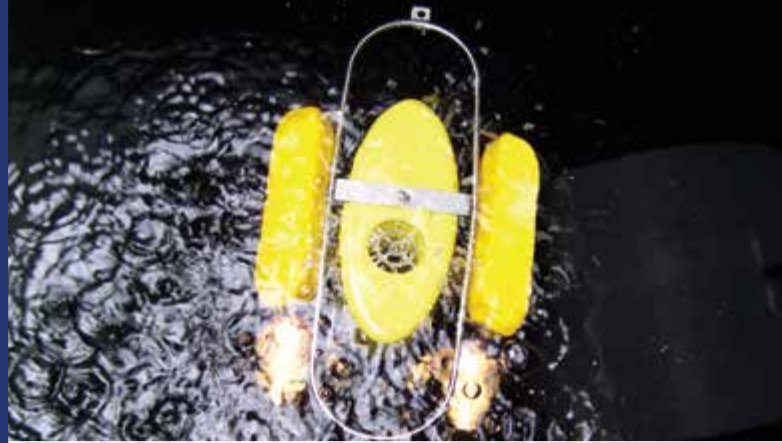
The Trough Deck roof is a versatile and economical solution for covering water storage tanks. It is designed and packaged to be quickly installed using conventional construction tools. Designs up to 20m in diameter are self-supporting depending on roof load. This allows the roof to be installed at a low level, minimizing the need for working at height. For very large diameters and/or high roof loadings, column supports are utilized.

- Galvanised purlins/beams secured to brackets bolted to the tank shell are used to support roof deck and provide a 2 degree (nominal) roof slope.
- Flashing is screwed to the perimeter of the tank shell and roof to provide an aesthetically pleasing finish.
- The roof cover is made from corrugated 200 micron leather grain plastisol sheets on a hot dipped galvanised substrate with a grey primer reverse and is secured to the purlins. The gauge and grade of galvanised used is 0.5 mm. The RWA6 profile dimensions are available upon request.
- For potable water storage, all internal galvanised purlins/beams/columns are coated with an approved epoxy painting system to ensure compliance with statutory requirements.
- Access hatches, vents etc. are easily accommodated to meet specific requirements. Roof loadings of 0.75 and 1.8kN/m² are available as standard in both non-insulated and insulated designs.





ROV inspection equipment



ROV entry via top hatch



Corrosion discovered on tank panel



Replacement tanks

TANK INSPECTION, MAINTENANCE AND REFURBISHMENT SERVICES

CST Industries (U.K.) LTD operates a dedicated service division focusing on inspections, maintenance and refurbishment and replacement (if necessary).

As with all engineered products, storage tanks require occasional inspection to determine if any maintenance is required. To maximise the life of your tank and prevent service failures, professional tank inspections are essential to determine the tank's condition. Inspections can detect signs of corrosion and potential component failure along with any non-compliance to current legislation.

CST Industries (U.K.) LTD inspectors are fully trained and qualified to perform inspections and maintenance while the tanks are either in or out of service to suit your operational needs.

INSPECTION WITHOUT DRAINING

CST Industries (U.K.) LTD owns and operates a state of the art remotely operated underwater vehicle (ROV) to perform internal water tank inspections while the tank remains in service.

The ROV provides high resolution inspection footage which is incorporated into a DVD and detailed report.

The advantages of an ROV inspection are that the tank does not need to be taken out of service, insurance premiums are not affected, future maintenance can be aimed accordingly and the cost is significantly cheaper than a drain-down inspection.



ROV navigating around the tank



ROV inspecting ancillary items



Undertaking a UTM inspection



UTM results given in microns

ULTRASONIC THICKNESS MEASUREMENT

In addition to internal inspections, CST Industries (U.K.) LTD also offers a “corrosion health check” utilising an ultrasonic thickness measuring device (UTM).

A UTM meter provides data on tank panel thickness from an external inspection. It allows a comparison to be made to the original panel thickness. It is especially useful with lined tanks to inspect any corrosion that may have occurred due to leakage or condensation between the walls and liner. When coupled with an ROV inspection, a UTM inspection completes the data required to allow an informed decision to be made on further action.

INSPECTION REPORTS

All inspections are supported by a detailed written and photographic report with DVD footage and panel thickness readings (where applicable). Recommendations for any repairs or corrective actions are reported alongside any compliance issues with current legislation.

VULCAN TANK

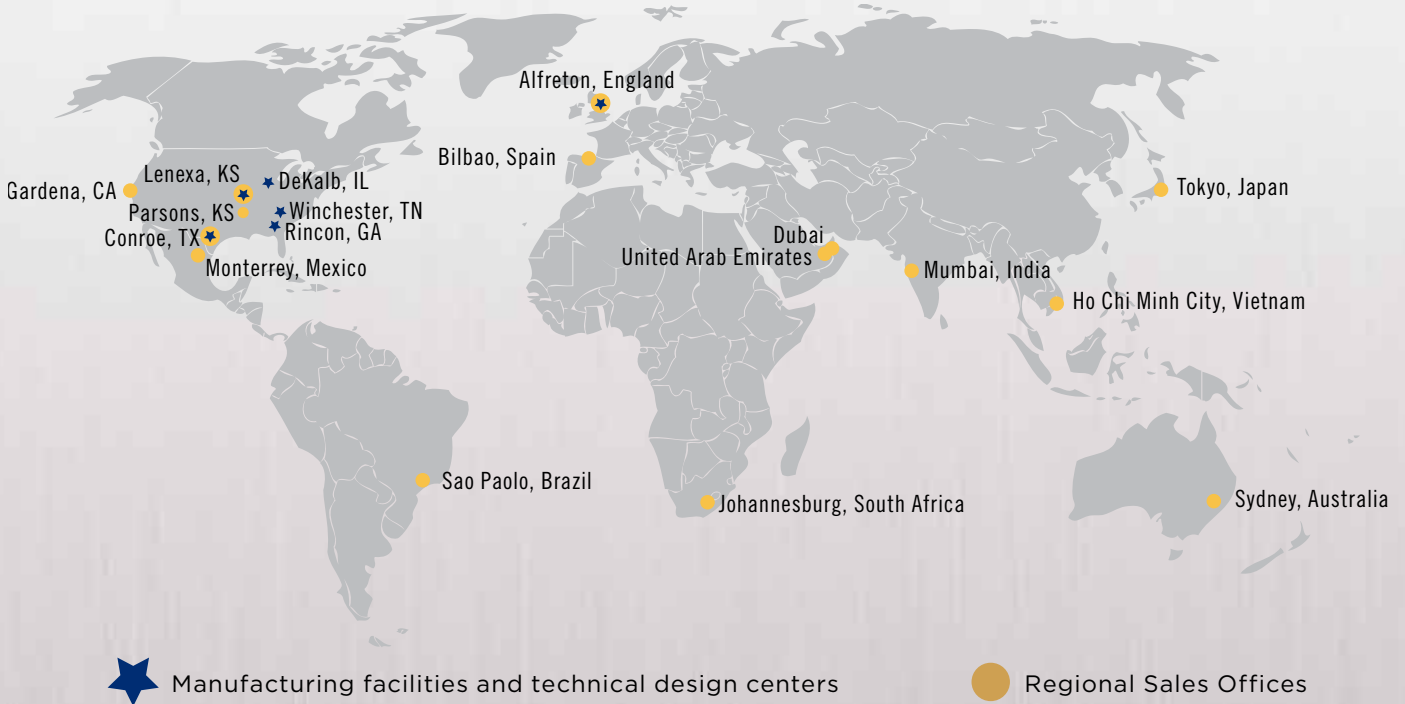


VULCAN SERVICE



WORLDWIDE AVAILABILITY

CST Global Manufacturing and Offices



With multiple offices around the world, CST is poised to provide the best and most timely customer service regardless of the project location.



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