



CST

CST is the unrivaled global leader in storage tank and cover solutions. A dynamic combination of the world's leading coated steel tank and aluminum cover companies, CST is home to world class brands including Aquastore, Harvestore, HydroTec, PetroTec, Columbian TecTank, Temcor and Conservatek.

CST promises the complete package of people, products and technical expertise to fulfill customer needs. You can trust CST to deliver the right tank and cover recommendation for the right long lasting solution. Count on CST for a new level of excellence in storage tanks and covers.





Better able to
Design, Distribute,
Manufacture, Install
and Service Complete
Storage Solutions



CST Storage is the only company to offer a complete product line of advanced tank coatings. With all its technologies, engineering and capabilities, CST Storage is better positioned to efficiently provide customers with the right tank for the right application, no matter the coating − Vitrium™ glass-fused-to-steel or OptiBond™ epoxy coating system.

Complete Storage Solutions, featuring market-leading brands Aquastore, HydroTec and PetroTec, are backed by engineering professionals located in multiple centers of influence to provide project expertise. CST Storage brings the most experienced team of construction and field service personnel through our network of dealers and representatives to deliver successful installations from start to finish.

A Storage Legacy

The business roots for CST
Storage run deep - all the
way back to 1893 when
Columbian Steel Tank
Company was founded
in Kansas City, Missouri.
Columbian Steel Tank
Company introduced
bolted steel storage tanks
for the petroleum industry.
Columbian Steel Tank





Company influenced the widely utilized API-12B standard implemented in 1929. The API-12B standard is still featured in PetroTec* tanks today.

In 1936, A.O. Smith established a porcelain enameling process for glass-lined water heaters. A decade later they would begin to market glass-fused-to-steel bolted tanks to the agriculture market under the brand name Harvestore." Thirty years later they introduced Aquastore for liquid storage. Glass-fused-to-steel technology is the benchmark for long lasting tanks.

A combination of acquisitions and coated tank technology advancements have evolved into today's CST Storage. With a legacy of almost 120 years and over 250,000 tanks in 125 countries, no other company can match CST's brands, designs, manufacturing and construction experience.

WORLD CLASS COATING TECHNOLOGIES

CST proprietary glass frit materials and Trico Bond™ epoxy are of the highest quality and are backed by extensive R&D and field testing. Our world class engineering, factory controlled manufacturing, process controls and quality standards separate CST from the competition. The result is precise steel panel production teamed with optimized coating processes. CST has invested millions to completely modernize and automate fabrication lines in its ISO 9001 certified facilities. CST's state-of-the-art operations deliver the best coated steel tanks on the market.

VITRIUM™ GLASS-FUSED-TO-STEEL

Vitrium™ glass-fused-to-steel, featured in Aquastore® brand tanks, is the premium coating in the storage tank market. It is a single, strong, integrated glass and steel material fused together at 1,500° F in a controlled process furnace. The physical properties of Vitrium™ are specially suited for municipal and industrial liquid applications. The hard, inert barrier on both the white Vitrium™ interior and colored exterior tank surfaces guards against corrosion. Impermeable to liquids and vapors, it controls undercutting caused by corrosion and offers excellent impact and abrasion resistance.

Physical Properties Vitrium™ Glass-Fused-To-Steel Technologies



Vitrium™ technology combines the outstanding chemical and physical resistant properties of titanium dioxide-enhanced (TiO₂) glass with a highly engineered, ultra-fine glass bubble structure for durability and flexibility. Its glass-fused-to-steel coatings range from 7-15 mils/180-380 microns exterior and 10-18 mils/260-460 microns interior in thickness.

Glassing Process

A new, state-of-the-art porcelain enameling furnace was installed recently by CST. As the world's largest porcelain enameling furnace, it improves quality, saves energy, increases production and speeds delivery of glass-fused-to-steel products to customers. In all, five advanced temperature control zones regulate the coating process to produce high quality sheets every time.



Stage 1: Steel panels are prepared to specification



Stage 2: Panels are coated with Vitrium™ glass coating



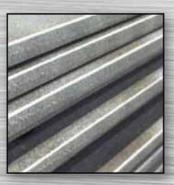
Stage 3: Glass coating and steel panels are fused together at 1500° F (815° C)



Stage 4: Every glass-fused-tosteel-sheet is high voltage dry tested to be holiday free before shipment and prepared for shipment

Edgecoat™

Edgecoat™ is a special process that involves thermally applying an additional protective layer of material to mechanically beveled sheet edges. Stringent plant quality control procedures ensure the Edgecoat™ remains in place throughout the life of the tank for optimal sheet edge protection.



THE CST OPTIBOND™ EPOXY COATING SYSTEM

CST utilizes premium epoxy coating technology that provides maximum corrosion resistance and long tank life. Our experience has led to continuous technology and process improvements that has resulted in the finest epoxy coating available in the storage tank industry. The OptiBond™ Epoxy Coating System is derived from years of in-field experience and performance data.

A Proprietary Process

CLEANING

Stage 1:

- · Parts are degreased and rinsed
- Precisely controlled hot air drying and pre-heating at an optimum temperature for a precision coating process

Stage 2:

- · Part surfaces are then blasted with engineered grit material
- Rugged 3-D surface topography is created for better powder coating acceptance and increased durability and long-term coating performance
- · A high velocity air curtain removes residual particulate





COATING

Stage 3:

- Parts are powder coated with our proprietary electrostatic booth with precise environmental controls
- Parts are cured at a controlled temperature to maximize the cross-link bonding of the epoxy particles

Stage 4:

- Uniquely engineered Polyurethane topcoat is applied for UV protection on exterior surfaces for extra durability and longevity
- Sheets are cured at controlled temperature to yield the final product

QUALITY CONTROL

Parts are subjected to a rigorous quality control inspection with a high voltage dry testing procedure. This will identify any defects, inclusions and thin areas in the coating and ensure all sheets are holiday free. No other company has a higher process and quality control standard than CST!



THE INDUSTRY'S LEADING BRANDS IN COATED STORAGE TANKS

CST Storage is home to the top glass-fused-to-steel and epoxy coated tank brands on the market. As the only company to manufacture all coating technologies, CST Storage is positioned to provide the best storage option for your needed application no matter what your technical, commercial or logistical needs and/or restrictions may be.

AQUESTORE®

AQUASTORE® - GLASS TANKS WITH A HEART OF STEEL

Aquastore® tanks are the premium choice for storage in the municipal and industrial water, wastewater and industrial liquid markets. Proven in the field for more than 30 years, no other tank lasts longer or has greater lifetime value than an Aquastore® tank. An Aquastore® is not painted so it NEVER NEEDS RE-PAINTING and requires minimal maintenance over its life cycle. The jack-built, top down construction design used by Aquastore® ensures a safe construction process and allows for easy expansion in the future. Aquastore® tanks can be designed for ground storage, composite elevated and standpipe applications.



Aquastore® Tank Applications

Water

- · Potable Water
- Raw Water Storage
- Flocculation
- Filtration
- Disinfection
- Fire Protection
- Brine
- Deionized Water

Wastewater

- Flow Equalization
- Primary & Secondary Sedimentation
- Aeration

- Tricking Filters
- Anaerobic & Aerobic Digestion
- Sludge Storage
- · Landfill Leachate
- · Storm Water Run-off
- Frac Water
- Disinfection
- Oxidation Ponds
- · Lime Slurries
- · Secondary Containment
- Digesters

Aquastore® Capacity Specifications

Standard diameters: 11' (3.3 m) to 243' (74m)

Standard designs:

ANSI/AWWA D103, ASCE-7, AISC, IBC, ISO 28765, NBCC, FM 4020/4021, NFPA Standard 22, NSF, British Standard 7543:2003. EN 1528

Standard tank capacities range:

20,000 gallons to over 6,000,000 gallons (75 m³ to 22,700 m³)

Lowest Tank Life Cycle Cost Over Time

Aquastore® glass-fused-to-steel tanks have been proven to offer the lowest overall Life Cycle Cost (LCC) in most liquid applications. HydroTec® and PetroTec® epoxy coated steel tanks feature the OptiBond™ epoxy coating system. This unique coating process ensures the lowest total life cycle cost for liquid storage among epoxy tanks. CST Storage is the only company that manufactures both these quality options for saving money.

The Life Cycle Costs of Aquastore®, HydroTec® and PetroTec® tanks are lower than that of field welded and painted tanks because they are factory coated under strict process controls. CST's longer lasting coatings offset any small initial cost difference resulting from the quality of the coating bond to the base steel, limited maintenance, faster construction time and/or higher residual value. The better you understand life cycle costs, the more likely you will choose CST Storage tanks. But don't just take our word for it. Consult with your local sales team member for tools, data, government documents and references to help you perform your own, unbiased LCC analysis.

HYDROTEC® AND PETROTEC® BRAND TANKS FEATURING THE OPTIBOND EPOXY COATING SYSTEM.



HydroTec® tanks deliver the highest quality at the lowest cost per gallon. CST has perfected HydroTec® tanks to be the most economical choice in municipal and industrial liquid storage without skimping on tank value and durability.



HydroTec® Tank Applications

Water

- Potable Water
- · Raw Water Storage
- Flocculation
- Filtration
- Disinfection
- · Distilled Water
- · Fire Protection · Deionized Water

Wastewater

- Flow Equalization
- · Primary & Secondary Sedimentation
- Aeration

- Tricking Filters
- · Anaerobic & Aerobic Digestion
- Sludge Storage
- Disinfection

- · Landfill Leachate
- · Storm Water Run-off
- Frac Water

Industrial Liquids and Chemicals

- Fertilizer
- Resins
- Insecticides
- Polymers
- Food Additives
- Asphalt

- · Glycols
- Lubricants
- · Lime & Carbonate Slurry
- · Secondary Containment
- · Edible Oils
- · Paints & Primers

- Detergents
- · Fuel Oils
- · Mining Fluids & Slurry
- Dyes & Pigments
- · Pulp & Paper Processing

HydroTec® Capacity Specifications

Standard diameters:

from 9' (2.8m) to 243' (74m)

Standard designs:

AWWA D103-09, ASCE-7, ANSI, AISC, API, IBC, ISO 28765, NFPA Standard 22, NSF

Standard tank capacities range:

from 4,000 to 6,000,000 US gallons (75 m3 to 22,712 m3)



CST originated its business in the oil industry back in 1893 by pioneering the use of bolted steel storage tanks for petroleum applications. Today, CST is the only certified and monogrammed API-12B tank manufacturer in the world. PetroTec® tanks are custom designed to meet the rigorous conditions associated with complex and volatile substances like petroleum.



PetroTec® Tank Applications

- Crude Storage
- Muds
- · Drilling Fluids
- · Completion Fluids
- Distillates
- · Diesel Fuel
- Frac Water
- Production Water
- Wastewater
- · Fire Water

PetroTec® Capacity Specifications

Standard diameters:

API-12B - 9' (2.7 m) to 200' (61 m); Flat Panel - 11' (3.4m) to 243' (74 m); Welded - 6' (1.8 m) to 15' (4.6 m)

Standard designs:

API-12B AISC API-12F

Standard tank capacities range:

35.7 to 142,857 barrels (5.7 m3 to 22,700 m3)

OTHER CST TANK TECHNOLOGIES

CST has extensive knowledge and experience in the design and manufacture of tanks made from alternate materials. Alternative materials include stainless steel and galvanized steel as well as hybrid designs utilizing coated and non-coated steel. Stainless steel tanks are available in a variety of grades. Galvanized tanks are an economical option and are suitable for many applications where corrosion resistance, product integrity and tank longevity are lower in importance.

Hybrid tank designs are suitable for storage or process applications where there is more than one environment or condition in the tank. For example, hybrid designs are used for anaerobic digester tanks. Vitrium™ glass-fused-to-steel or OptiBond™ epoxy coated steel provides excellent, long term protection in the base rings where liquid is contained. Stainless steel or glass-fused-to-steel is used for the upper rings and cover where highly corrosive vapor may be present.



All alternate material tanks are engineered and manufactured in ISO certified manufacturing facilities under the same stringent requirements and process controls as glass-fused-to-steel and epoxy coated tanks.

FACTORY WELDED TANKS

CST Storage factory welded tanks are designed and manufactured to meet your specific material and coating needs. These include API-12F certified welded tanks. They can be fabricated from OptiBond™ epoxy system factory-coated steel, aluminum, stainless or black steel at our ISO-Certified manufacturing facility. CST's special tank outfitting facilities can assemble all necessary equipment in and on the tank and can completely test the entire system before shipping throughout the world.

CST Storage factory welded standpipes are precision fabricated according to AWWA-D100 standards. The OptiBond™ epoxy coating system meets the AWWA-D102 coating standard and is NSF Standard 61 listed for potable water storage.



COMPONENT-IN-TANK DESIGNS

CST Storage also offers Component-In-Tank (CIT) solutions for factory welded tanks. Engineers can design welded tanks to support internal equipment for application needs.

Standardized manufacturing of CST Storage factory welded tanks ensure process consistency and enhanced product quality. And since all manufacturing is done at CST Storage facilities, any weather or environmental delays are eliminated.

A fully staffed, in-house engineering department is capable of designing a welded tank to meet the most demanding needs and request. Or, standard tank designs are available for quick delivery. No other company can match our ability to fully outfit a tank before it is shipped and provide any required service.



TANK CONSTRUCTION

Every CST Storage tank is factory engineered to customer specifications. Since all tank panels are manufactured in the factory and easily assembled, CST Storage tanks can be installed in many types of situations when field-welded steel and concrete applications cannot. CST Storage and its channel partners have dedicated, factory-trained crews who are experts in flat panel and chime panel construction. They have built thousands of tanks in almost every situation possible. A quality tank is not only coated sheets of steel, it is also the expertise applied during construction and the service that follows.

TANK DESIGNS

Flat Panel Bolted (Aquastore*, HydroTec* TS, PetroTec* TS)

- · Leading design for bolted steel tanks around the world
- · Manufactured, erected and in operation up to three times faster than field welded or concrete application
- · Designed to handle large volumes up to 6,000,000 gallons and beyond



Chime Panel Bolted (HydroTec® CS, PetroTec® CS)

- Economical
- · Features factory formed flanges at horizontal seams for added structural strength
- · Special gaskets and sealants create leak-proof joints
- CST has the only API-12B certified chime panel bolted tank design on the market

Factory Welded (HydroTec* Welded, PetroTec* Welded)

- · Available in sizes that are 6' to 15' in diameter
- · Shipped as one unit or multi-piece units
- · Can be specified with a variety of types of internal and/or external factory coatings
- Custom engineering and rapid fabrication



FLAT PANEL TANK CONSTRUCTION

Flat panel tanks are typically assembled from the top down by using a jacking system thus eliminating the need for cranes. These tanks are most often built by factory trained building crews who specialize in jacking system construction.

- First ring of panels and roof are safely constructed at ground level
- Tank is jacked up and successive rings are constructed
- 3. The final ring is constructed and tank is lowered onto foundation ring



CHIME PANEL TANK CONSTRUCTION

Chime panel tank assembly typically involves scaffolding methods. Special scaffolding mounts and assembly ladders increase construction efficiencies and safety.

- First ring of panels is constructed directly on the foundation
- Successive rings are constructed by craning panels on lower rings
- Cover is constructed using scaffolding on the ground or craned into place

INTEGRATED TANK COVERS

CST Storage is the only complete steel tank and aluminum cover manufacturer in North America. No other company can match CST Storage's 50 years of aluminum cover experience. The ability to deliver Complete Storage Solutions sets CST Storage apart. CST Storage can deliver the best cover option to fulfill storage system needs and requirements. These include aluminum domes, coated steel roofs and membrane covers.



ALUMINUM DOMES

Efficient in design, attractive in appearance and unsurpassed in quality and value, CST Storage aluminum domes are efficient and long lasting. The unique properties of aluminum make it far superior to other materials and alloys. These include corrosion resistance, low lifetime maintenance cost, clear-span capability, fast and low cost construction and design flexibility. CST cover systems are supported by engineering expertise that recognizes each dome system boasts its own unique characteristics. The result is cost-effective designs that allow for error-free fabrication and construction.

The unique patented geodesic design gives CST domes many advantages. Using proprietary variations of geodesic geometry, CST domes:

- ·Meet exacting load requirements by providing greater stiffness and strength
- •Can be designed for snow loads up to 350 pounds and windloads up to 175 mph
- ·Can support loads up to 500 pounds on any one square foot
- · Have high heat reflectivity and low emissivity
- ·Never rust, rot, spall or suffer from environmental degradation
- ·Use less material and labor
- •Can be constructed faster than other cover options, often in 1/3 the time
- •Can be designed to cover spans from 40 to more than 1,000 feet
- ·Feature a patented fully engaged, non-wiping seal design

STEEL AND MEMBRANE ROOFS

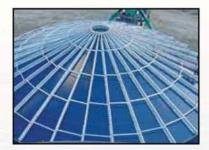
CST Storage offers a full line of steel and membrane roof options. Depending on the application, CST is your one stop source to fulfill almost any coated storage tank roof need whether it be rigid or flexible, steel or stainless, supported or free span. CST engineers have the expertise to design the best cover solution to fulfill application requirements, no matter how stringent.

STEEL ROOFS



Sloped Steel Roofs

A very common and economical roof design when no design pressure is required and under standard roof loads. It can be epoxy coated, stainless steel or other alloys as specified. Large diameters can use multiple column supports.



Externally Supported Roof (ESR)

The most common roof design in the industry with a smooth internal roof surface and no rafters. Used when moderate to high pressure or vacuum design limits are anticipated. It is also preferred when there are heavy load conditions expected from mixers and/or other ancillary equipment is installed in the cover.



Knuckle Roof

Knuckle roofs are an option for smaller diameter storage tanks.

They are best suited for lighter pressure and vacuum applications with minimal load bearing requirements.

They are fabricated with glass-fused-to-steel coating or stainless steel to provide excellent gas zone longevity.

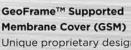
MEMBRANE COVERS



Single Membrane Covers

Designed to operate in applications with low gas pressures where there is not a design requirement for a fixed steel or aluminum cover.

Generally requires a pole and strap support system to keep membrane elevated above slurry.

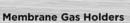


Unique proprietary design incorporates a geodesic aluminum strut support frame in lieu of post and straps provides a clear, obstruction-free cover. Used in single and dual membrane configurations with low-medium pressures.



Dual Membrane

Designed to operate in applications with low to moderate gas pressures where there is not a design requirement for a fixed steel or aluminum cover. Multiple layers and optional center support structures are utilized depending on design considerations.



Gas holders are commonly used in conjunction with other storage vessels to store and regulate gas from the process. The gas can then be regulated and delivered to a power generation process, compressor or flare.



APPLICATION SOLUTIONS

CST Storage delivers the right storage technology for any specific application. Whether Vitrium™ glass-fused-to-steel, OptiBond™ epoxy coating system or other material, CST Storage has the capability to manufacture, construct and service any application over its lifetime with unmatched expertise. Look to CST Storage for an ever-widening offering of Complete Storage Solutions.



Potable Water

- · Above ground storage tanks
- · Composite elevated storage tanks (CET)
- Standpipes
- · Easily designed for expandability
- · Desalination storage tanks and covers
- · Municipal and industrial applications
- · Short-term and long-term solutions



Wastewater

- Storage tanks for clarifiers, trickling filters, aeration, flow equalization and sludge
- · Sequencing batch reactor tanks (SBR)
- · Storm water retention storage
- · Short-term and long-term solutions
- · Rapid design, manufacture and construction



Industrial Liquid

- · Bolted steel storage tanks
- · Welded silos for wide variety of industrial liquids
- · Steel sloped decks and knuckle roofs
- · Aluminum domes and flat covers for all types of storage tanks
- Various coatings and materials available depending on the stored product



BioEnergy

- Complete line of storage tanks and covers for anaerobic digesters
- · Storage tanks and silos for biofuels
- · Storage silo and reclaimer systems for biomass handling
- · Dual membrane and steel tank biogas storage systems
- · Custom engineered to meet developer specifications
- Extensive types of process solutions

Frac Water

- Semi-portable modular design
- · Proven field performance
- · Long-term and short-term solutions
- · Rapid manufacturing and construction capabilities
- · Water, slurry and wastewater applications



Petroleum

- API storage tanks for exploration and production
- · Drilling fluids and liquid chemicals
- · Frac water storage, recycling and waste processing
- · Frac sand storage and processing
- Only API-12B monogrammed/certified tank manufacturer
- · API-12F welded tanks
- · Standard 400 bbl and 750 bbl designs

Power Generation

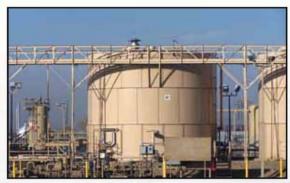
- · Demineralized water storage
- · FGD chemical process and storage tanks
- · Liquid fuel storage tanks and silos
- · Process water and wastewater handling
- · Vault covers for coal storage and other fuels
- Make up feed water
- · Cooling tower blow down

Leachate

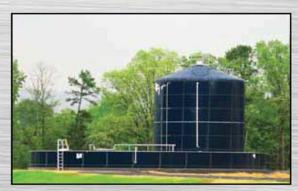
- Glass-fused-to-steel is proven leachate containment technology
- · Impermeable to liquid and vapors
- · Excellent impact and abrasion resistance
- Primary and secondary storage systems for complete protection
- · Easily designed for expandability
- · Short-term and long-term solutions

Fire Protection

- · Sprinkler system water storage
- · Industrial and commercial facilities
- · Combination potable and fire protection reservoirs
- · Cylindrical and rectangular storage solutions
- · NFPA and FM approved designs
- · Short-term and long-term solutions









STORAGE TANK OPTIONS

CST Storage can design and build storage tanks with all the options and accessories to match specifications. Our diverse experience in building all types of tanks for different applications helps us devise practical solutions to meet operational requirements. Ordering a tank with additional integrated accessories and services drastically reduces time and expense. This allows customer management to focus on more important aspects of the project.

FOUNDATION AND FLOOR DESIGNS

Foundation designs are done in-house and are customized to customer needs and storage application. CST Storage understands that different storage applications require different foundation and floor options. That is why CST offers choices for the customer depending on their needs. Customers can select floors from Coated Steel (Vitrium™ Glass or OptiBond™ Epoxy), or sealed and unsealed reinforced concrete.



Embedded Starter

Used for larger municipal and industrial applications and higher seismic applications.



Modified Starter

Combines Embedded Starter for large tank and higher seismic features.



Anchored to Slab Foundation

Tanks are anchored to slab with anchor bolts around perimeter.



Grade Band

Steel grade bands filled with crush rock or other compacted fill provide base for tank installation.



Curb Mount

Used for lower profile tanks, well suited for tower mounted storage tanks.



Coated Steel Floors

Glass-fused-to-steel and epoxy coated panels are bolted and sealed to cover floor surface.

ACCESSORIES



- affles Level Indicators
 - Mixer Supports
 - Nozzles
 - Platforms
 - Railings



- Roof Hatches
- Sidewall Manways
- Spiral Staircases
- Walkways



Cages

- Cathodic Protection
- Gravity Vents
- Launders

GLOBAL SOLUTIONS. LOCALLY DELIVERED.

As the global leader in storage and cover solutions, CST recognizes the need for local expertise and support. CST's broad channel partner network provides turnkey services – from specification and design to site preparation and foundation pouring to construction and maintenance – across North America. With over 20 years of experience on average in the industry, CST channel partners are positioned to match their knowledge of local requirements and customer specifications to the storage solution that best satisfies local needs.

CUSTOMER SERVICE SYNERGY

CST strives to create "Customer Service Synergy" by combining local expertise and value-added services provided by CST channel partners with the global reach and technical capabilities of CST Storage. Synergy comes from years of working together, refining processes and relentless devotion to continual product development and customer satisfaction. Both CST Storage and its channel partners take personal investment and pride to ensure our products and support are second to none. The mutual respect and commitment that exists allows for the combination of knowledge and skills to fulfill every customer need regardless if it is from the field or the factory.

CST channel partners are a single point of contact and own every challenge to see through customer needs to satisfactory completion – all with the support of CST Storage. As a member of the communities they serve, CST channel partners live with every project's outcome.

CHANNEL PARTNER SERVICES

A full range of customer services are available including:

- · Value Engineering Total Cost Analysis
- · Tank configuration and layout data
- · Budget prices material and erection
- Product engineering specifications
- · Design criteria assistance
- · Foundation loads and layouts
- Tank General Arrangement Layout Drawings
- · Firm prices material and construction
- · Tank construction scheduling
- · Approval drawings
- · Structural calculations
- Certified drawings
- Tank construction or supervision
- · Tank testing and commissioning
- Sectional tank inspection, repair & maintenance



North America Channel Partner Locations



Scan to find the Channel Partner serving your area.



WORLDWIDE AVAILABILITY

