

# CST

# STORAGE

GLOBAL OIL & GAS STORAGE SOLUTIONS





# FROM SEEP TO SHALE: A LEGACY IN OIL & GAS STORAGE SOLUTIONS

## The Premier Choice for Oil & Gas Storage

Since 1893 when oil was discovered just seeping up from the ground to the complex drilling methods through layers of shale, CST has been providing reliable, innovative storage solutions to the oil & gas markets. To meet the different evolving demands, CST has developed a portfolio of tank types and coatings all manufactured in ISO 9001:9015 Certified facilities.

Following our roots from Columbian Steel Tank Company, Peabody TecTank and Columbian TecTank, no other company matches CST's quality, innovation and worldwide support. **Trust the manufacturing and coating experts.**

### Evolution of CST

1890's



1960's



1970's



1990's



2000's



CST's factory-coated, bolted tanks can be constructed in 1/3 the time of field welded tanks without large amounts of power or highly skilled labor – even in remote locations. CST silos are relied upon from quarry to transload terminal to drill site providing cost effective frac sand storage. World-class durability, design variety and fast delivery to any building site in the world are qualities only an industry-leading company like CST can provide.



# API-12B CERTIFIED MANUFACTURER

## API History

In 1916, CST took the leadership role in developing a long-term solution for storing petroleum – a volatile, corrosive material. The ultimate result was a bolted, chime-panel tank design that API recognized in 1929. Since then, CST has manufactured over 100,000 certified tanks and was the first certified API-12B Monogrammed tank manufacturer (License Number 12B-0004, Parsons, KS facility).

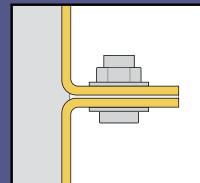
CST has invested in continuously improving upon the non-standard aspects of the API-12B design by factory-coating the panels and developing additional gasket materials. By combining the basic API-12B design with other innovative designs, CST can also provide expanded capacities and accommodate additional cover options.

CST continues its leadership role by participating on API-12B bolted tank Review Boards. This involvement ensures the standards stay viable and to evaluate proposed changes to meet future industry needs.



## API-12B Monogrammed Tanks

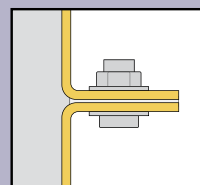
CST's gasketed, chime-panel tanks are built strictly to the API-12B standards that are audited by API inspectors to ensure compliance with the standard. CST is the only certified manufacturer of API-12B tanks in the world.



- 100-10,000 bbl
- 4,200-420,000 gal
- 15.9 - 1600m<sup>3</sup>

## API-12B Principle Tanks

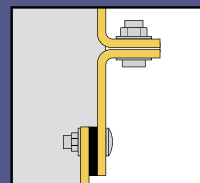
CST's gasketed, chime-panel tanks are built to the principles and design calculations used for API-12B tanks but available in additional sizes to accommodate larger capacity needs. API-12B Principle tanks are available with either flat deck roofs or aluminum domes.



- 10,000-30,000 bbl
- 420,000-1,260,000 gal
- 1590- 4,770 m<sup>3</sup>

## API-12B Hybrid Tanks

CST's gasketed tanks use a combination of chime panels for the top and bottom rings with notch panels for the other rings. This hybrid design allows for even greater capacities while easily accommodating either aluminum domes or flat deck roofs.



- 30,000-60,000 bbl
- 1,260,000-2,520,000 gal
- 4770-9,539 m<sup>3</sup>

## Capacities

# UPSTREAM EXPLORATION STORAGE SOLUTIONS

## Frac Sand



CST frac sand storage solutions are designed for optimal material flow and reliability. All tanks have smooth interior walls with no cracks or crevices that could suspend material flow.

- Unique factory-applied coating technology for maximum abrasion resistance
- Welded and bolted designs
- UV-inhibiting coating for longer life
- Mass flow, funnel flow, expanded and fluidized flow designs available
- Material flow analysis options improve reliability and productivity



## Frac Water



CST is the premier supplier of engineered frac water storage systems for process, flowback and mobile temporary storage applications. CST's simple, safe and fast construction methods combined with onsite support anywhere in the world is a major asset to the customer.

- Factory-applied epoxy and glass-fused-to-steel epoxy coatings
- Vertical expandability and relocation options
- No in-field welding or initial in-field coating
- All foundation, piping and other tank components from one company
- Flexible designs to meet needs that are grounded in approved standards
- Mobile temporary tanks feature pre-assembled, modular panels with an engineered liner attachment – No C-clamps

## Drilling Fluid & Mud Mixing



CST provides solutions for storing and mixing known drilling fluids on the front end, and storing potentially unknown, sophisticated waste muds on the back end. As the coatings expert, CST manufactures storage solutions that maintain their integrity against the most aggressive liquids for operational flexibility.

- Water-Based Muds (WBM)
- Synthetic-Based Muds (SBM)
- Oil-Based Muds (OBM)
- Low Toxicity Oil-Based Muds (LTOBM)



# MIDSTREAM & DOWNSTREAM STORAGE SOLUTIONS



## Crude Storage



CST's legacy began in crude oil storage, and was the first certified manufacturer of API-12B monogram bolted storage tanks. Modular tank system components fit together precisely and quickly without the field expense of welding crews and costly tools.

- 100 to 40,000 barrels
- All crude storage tanks are completely coated inside and out with the OptiBond™ Coating Process
- Excellent corrosion resistance and immersion performance
- All tank parts are packaged unassembled in compact kits, allowing economical shipping to any building site in the world
- Custom designs available to meet specific needs

## Process Liquids



CST manufactures storage systems for gasoline, diesel and other fuel, as well as on-site fire protection. Whether vertical or horizontal, CST has the above ground storage solution for all process fluids needs.

- Storage for fuel oil, jet fuel, kerosene, bitumen
- Designs available to accommodate variations in temperature, pressure and specific gravity
- Gaskets, coatings and hardware available to suit application
- UL approved manufacturer
- Customizable galvanized tank solutions are available
- Fire protection systems are certified for NFPA-22, FM, LPC, AWWA international standards



# COMPLETE STORAGE SOLUTIONS



## The Bolted Construction Advantage

Many oil and gas companies see significant advantages to building bolted tanks from an experienced manufacturer like CST. They know not all tanks are created equal, especially when it comes to overall cost savings, premier storage quality and global support. Small businesses and local shops that construct field welded tanks can only claim durable storage – CST can prove it. All CST bolted tanks are manufactured in ISO 9001:2015 Certified manufacturing facilities, factory-coated and are shipped ready to assemble and operate at any building site in the world. Other advantages include:

- Deliver functional tank in 1/3 the time of field welded options
- Flexibility and portability of modular design
- Factory applied coatings last longer reducing maintenance costs
- Construction in remote locations and in most weather conditions
- No on site welding skills, permits and delays
- Field safety; no excessive high work
- Reduced construction site heavy equipment
- 1/3 the building crew of traditional field welded tanks
- Little confined space work
- Minimum laydown required
- Product longevity and flexibility

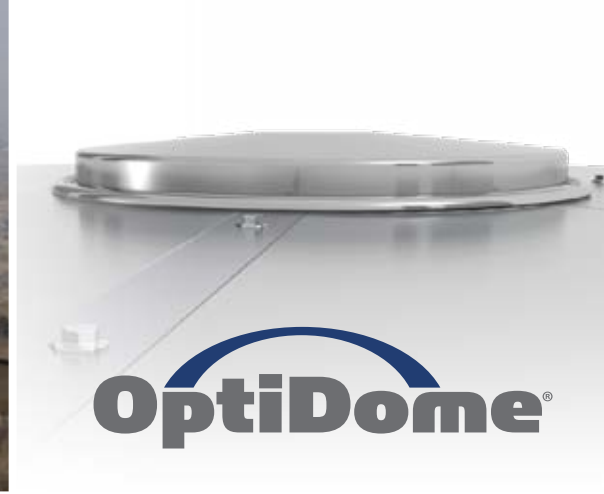
## The Coating Expert

Coating formulation, application process and application conditions are equally as important as selecting the right steel and coating components in order to deliver the world's best coating systems. From surface prep to coating robots to environmentally controlled chambers, CST's OptiBond™ and Vitrium™ coating process are state-of-the-art and unmatched in the industry. CST is the only company that manufactures all types of factory coated solutions, so we are the only company who knows first-hand what coating is best for your particular application.



OptiBond™  
Coating Process





## Aluminum Domes

CST combined the knowledge and experience of Temcor and Conservatek to form the leading manufacturer of aluminum domes, covers and structures – CST Covers. The next generation (patent pending) OptiDome<sup>®</sup> aluminum dome incorporates a flush batten design with double web I-Beams to meet API-650G, Eurocode, Aluminum Association and International Building Code standards. The OptiDome design uses gasketed stainless steel fasteners and there is no exposed sealant at the nodes.

CST's aluminum domes are available on new CST liquid storage tanks and can be retrofitted onto existing bolted and welded tanks even over floating roofs using three different methods to best suit each particular installation.

- Aluminum's excellent strength-to-weight ratio cannot be achieved with other materials
- Aluminum does not spall or degrade from UV light
- Installed in 1/3 the time of other cover systems
- Ultra-low maintenance with no recoating expenses
- Standard designs up to 700 ft (213 m) or more

## Steel Decks & Roofs

CST tanks and silos are available with a variety of standard and custom designed steel roofs and decks.

- **Flat Deck Roofs** – 1:12 factory-coated steel decks. Ideal for lower loads and spans, and applications where frequent access is desired.
- **Internal Floating Roofs** – Internal floating roofs only for use with bolted tanks.
- **Externally Supported Roofs** – Smooth internal wall roof ideal for heavy loads and larger diameters.



## Floors & Foundations

### Foundations Options

- Ring Beam
- Grade Band (crushed rock)
- Full Slab
- Custom

### Flooring Options

- Vitrium<sup>™</sup> and Epoxy Coated Steel
- Sealed and Unsealed Concrete
- 1:12 slope
- Cones and Sumps

# SAFETY IS OUR NUMBER ONE PRIORITY

The safety and health of all employees at CST and our customer's employees is the number one business priority. CST Industries' manufacturing facilities operate with a less than 1.0 NCCI Safety Rating, are ISO 9001 Certified and maintain a corporate mission for no lost-time accidents. All factory personnel and construction teams take a proactive approach to safety, demonstrating leadership and direction to ensure the safest possible working conditions.

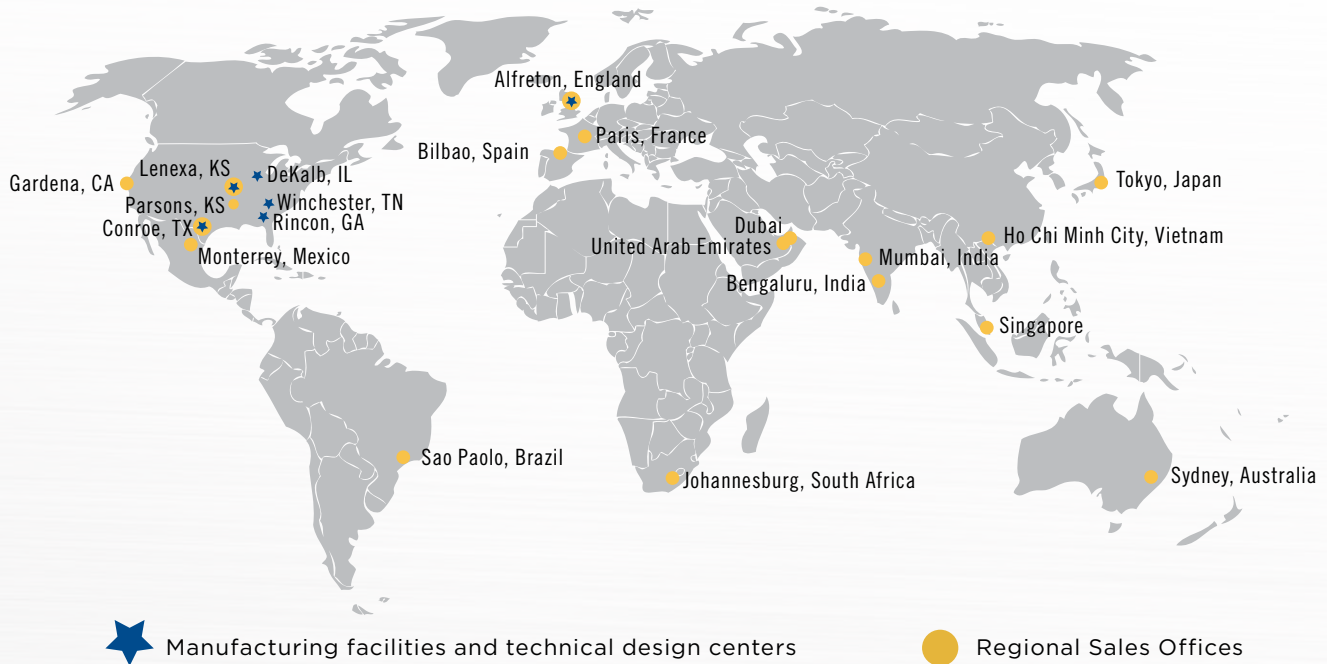
CST administers independent safety audits of procedures and building sites and specially designs construction equipment to enhance safety and setup.

- Each project meets local site safety regulations
- All employees are required to pass OSHA and other regional training procedures
- All employees are required to test for alcohol and substance abuse
- Team uniforms comply with local safety color requirements

**CST is committed to providing its customers with the highest engineered quality, best service, longest product life and greatest value for every storage solution we supply. Contact CST for all of your oil & gas storage needs.**

## Worldwide Availability

CST Global Manufacturing and Offices



Go to [www.cstindustries.com](http://www.cstindustries.com) for more information on CST products and services.



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