

# CST STORAGE

GLOBAL DRY BULK STORAGE SOLUTIONS



# THE PREMIUM CHOICE FOR DRY BULK STORAGE



BulkTec® tank systems from CST Storage, formerly Columbian TecTank, offer experienced, fast and economical construction with a proven track record of storage success. With over 250,000 tanks in 125 countries performing in thousands of applications, no other company can match CST Storage's bulk tank design, manufacturing and construction experience.

BulkTec tanks are designed to meet your specific application; each is engineered and fabricated to successfully store all types of dry bulk materials including:

- Frac Sand
- Plastics and Petrochemicals
- Chemicals
- Fly Ash and Coal
- Food and Grain Products
- Cement
- Minerals and Aggregates
- Activated Carbon and Lime



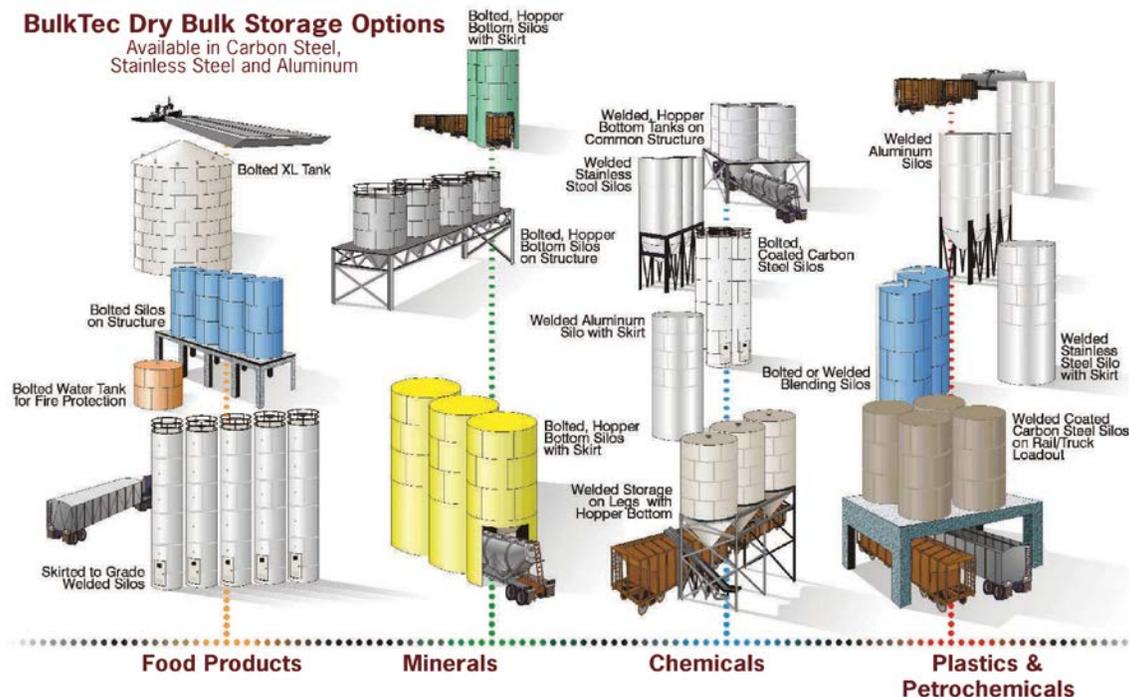
*Testing services are also available for other materials.*

BulkTec Specification Options			
HARDWARE AND STANDARD ACCESSORIES	MATERIAL OPTIONS	BOTTOM OPTIONS	ROOF OPTIONS
<ul style="list-style-type: none"> <li>• Hot-Dipped Galvanized Steel per ASTM #A-153</li> <li>• Galvanized Encapsulated Bolt Heads</li> <li>• OSHA/MSHA Approved Safety Ladders</li> <li>• Deck Filter Flanges</li> <li>• Level Indicator and Nozzle Openings</li> <li>• Manways</li> <li>• Pressure-Relief Devices</li> </ul>	<ul style="list-style-type: none"> <li>• Factory-Coated Carbon Steel</li> <li>• Stainless Steel</li> <li>• Aluminum</li> </ul>	<p><u>Bolted &amp; Welded</u></p> <ul style="list-style-type: none"> <li>• Skirt Support</li> <li>• Short Skirt on Structure by Others or by CST</li> <li>• Flat Bottom</li> </ul> <p><u>Welded Tank Only</u></p> <ul style="list-style-type: none"> <li>• Tank with Lug Supports</li> <li>• Tank with Legs Supports</li> <li>• Tank with Stub Leg Supports</li> </ul>	<ul style="list-style-type: none"> <li>• 1:12 Sloped Steel</li> <li>• Externally Supported Steel</li> <li>• 30° Slope Steel Roof</li> <li>• Aluminum Dome</li> <li>• 10 Degree</li> </ul>

BulkTec Capacity Specifications	
STANDARD SIZES	STANDARD HEIGHTS
<ul style="list-style-type: none"> <li>• <b>Smoothwall Bolted</b> from 9' (2.7m) Diameter to 47' (14m) Diameter with Hopper Bottoms; up to 200' (60m) without Hoppers</li> <li>• <b>Factory Welded</b> 6' (1.8m) Diameter to 15' (4.6m) Diameter</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Smoothwall Bolted</b> up to 200' Tall</li> <li>• <b>Factory Welded</b> up to 85' (26m) in One Piece, with Taller Tanks Available with Taller Tanks Available (approx. 150')</li> <li>• Configurations are Flexible with Specially Engineered Combinations of Heights and Diameters Available</li> </ul>

## BulkTec Dry Bulk Storage Options

Available in Carbon Steel, Stainless Steel and Aluminum



# COMPONENT INSTALLED TANKS™ (CIT)

CST offers the most comprehensive fabrication and installation facility in the industry. Adjacent to our Winchester, TN facility, CST boasts 8 pads for vertical installation of components, a 5,000 sq. ft. warehouse to store customer-supplied equipment, and room to expand both pads and warehouse volume. The close proximity of our assembly facility to our welded tank manufacturing plant and our technicians who specialize in tank component installation enable us to provide:

- High-Quality Component Installation and Fit-Up by Highly Skilled Plumbers and Electricians
- Time Savings in Delivery and Erection
- Cost Savings by Reducing the Need for Skilled Labor on Customer Site
- Custom Components Factory Installed in Shop-Welded Silos; Delivered Complete to Construction Site

Our installations include a wide variety of components:

- Electrical Conduit
- Pumps and Metering Devices
- Bin Activator and Motor Combinations
- Full Slaker and Slurry Systems
- Level Indicators
- Light Fixtures
- Heaters
- Knife Gates
- Vibratory Units
- Volumetric Feeders
- Piping and Valves
- Exhaust Fans
- Blowers, Fans and Bin Vents
- Bin Vent Filters
- Switches and Controls
- Control Panels
- Aeration Systems
- Skirt Insulation



(8) 160 sq. ft. pads adjacent to Winchester welded tank facility.

## Unsurpassed Quality, Exceptional Performance

CST operates ISO 9001 Certified facilities and employs only ASME-qualified welders, including Certified Welding Inspectors (CWI), CWB - Canadian Weld Bureau Certified to CSA W47.1 and W59. From engineering to in-shop fabrication to component installation, our focus is on providing products and workmanship that will lead to exceptional performance. CST's welded tanks are fabricated to domestic and international standards, and then shipped around the world.



# WELDED TANKS

CST's welded tanks are manufactured in our ISO Certified manufacturing facility with epoxy-coated steel, aluminum and stainless steel.

CST's reputation as the world leader in factory-coated tanks goes beyond just field-assembled tanks. CST Storage also manufactures factory-coated welded tanks using a high-performance and FDA Approved coating process to guarantee the best quality coatings for longer life and better life cycle costs. Unlike field-welded and painted tanks, CST welded tanks are fabricated in a modern, indoor, controlled environment.

CST's coatings feature a high solids epoxy with excellent resistance to corrosion and dramatically reduce life cycle maintenance costs. This makes our factory-applied coatings far superior to field-welded tanks as well as other shop-welded/field-bolted tank suppliers.

- In Addition to Factory-Coated Steel Tanks, CST Fabricates Tanks from Stainless Steel and Aluminum
- Tanks can be Constructed with Flat Bottoms, with Hopper Bottoms and with Elevated Structures
- Standard One-Piece Designs are Available up to 15' x 85' that can be Fabricated in a Matter of Weeks
- Custom and Multi-Piece Tanks can also be Designed and Fabricated in Larger Sizes up to 150'



(3) 12' x 48' Factory-welded and epoxy-coated tanks for plastic pellet storage.



(2) Factory-welded and buyer supplied equipment installed in Winchester, TN and shipped to Colorado, storing powder activated carbon.



photo courtesy of LECORP

Truck load-out system designed by LECORP, Paducah, KY for BGMU Water.



The longest factory-welded tank load transported over the road – 186' long, 185,000 lbs.

## Frac Sand

CST Tanks do not require in-field welding, painting or a large construction team. CST's BulkTec frac sand storage systems can be built up to three times faster than other tanks. This saves the end user in construction and lifecycle costs. All tank panels are fabricated and coated in the factory and shipped complete to the building site in a timely manner. CST designs, fabricates and installs above deck and interior located platforms for support and access of conveying and truck/rail loadout equipment. Storage capacity with hoppers can reach upward of 7,000 tons. Our modular panels allow us to fabricate and ship even our largest tanks faster than anyone in the industry. An example would be receiving an order for (12) 47' x 75' on October 31st and shipping all the tanks by end of year. This was 2.5 million pounds of steel to store 75,000 tons of various grades of sand. Experience, professionalism and efficiency make CST the best option for storing frac sand.

- Fast Construction with the Least Environmental Footprint
- Flexible Designs with Expandability Options through Dedicated, In-House Engineering Staff
- Truck-Through and Train-Through Silos Make Logistics Easy
- Bolted Panels and Welded Tanks Manufactured out of Carbon Steel, Stainless Steel or Aluminum

## Abrasion Resistance

BulkTec frac sand storage systems are engineered to withstand abrasive materials and provide the longest service of any tank. With decades of field-tested applications, BulkTec frac sand storage systems are built under the highest process control of any dry bulk storage tank on the market.

Each BulkTec application is cured with Trico Bond EP epoxy formulation.

- Each Tank Designed for Material Flow Efficiency and Reliability
  - Mass Flow or Funnel Designed Hoppers
  - Funnel Flow Designs
  - Expanded and Fluidized Flow Designs
- Flow Analysis Available to Improve Reliability and Productivity

CST designed antisegregation tubes in a funnel flow hopper reduce wear and material segregation via mass flow.

## Problems with Segregation?

CST has resources to test and design solutions to reduce or eliminate segregation in new or retrofit in existing tanks.



Standard 24' x 80' each storing 1,000 tons of frac sand.



21' x 56' - 500 ton truck loadout silos shown here in 6 & 8 pack configurations.



# DRY BULK BOLTED TANKS

BulkTec tanks and silos are available in several bolted joint designs for on-site construction by CST's own erection crews. BulkTec tanks and components are designed for your specific application. Each is engineered and fabricated to satisfy your specifications.

BulkTec bolted tank systems are constructed and put into operation faster than any other tank system in the market. Come rain, snow or shine, BulkTec tank systems can be successfully built in any sort of weather, unlike its field-welded counterparts.

- ISO Quality System Certified by Third Party Registrar
- Construction of Bolted Tanks Completed up to Three Times Faster than Field-Welded Designs
- Versatility for In-Field Modification and Expansion
- Factory-Applied Proprietary Powder Coating Lasts Longer Reducing Maintenance Costs
- Construction in Remote Locations
- No On-Site Welding Skills, Confined Space Permits or Fit-Up Delays
- Reduced Construction Site Heavy Equipment
- 1/2 the Building Crew of Traditional Field-Welded Tanks
- Minimum Laydown Area Required to Reduce Foot Print Required for Erection



Using our OSHA approved erection methods, CST tanks can be erected in all weather conditions.

Additional Custom Components May Include:

- Specialty Transitions, Pant-Leg and Chisel Bottoms
- Truck and Rail Drive Through
- Special Structural Steel Designs for Tank and Equipment Support
- Internal Blending Tube Systems
- Spiral Stairways
- Conveyor and Bucket Elevator Supports
- Interior Maintenance Platforms



(3) 38' x 128' bolted tanks being built for a transload facility each storing 5,000 tons of sand.



(2) 32' x 112' with dual capability to loadout both truck and rail.



# OPTIBOND™ COATING PROCESS WITH TRICO BOND® EP

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 Trico Bond EP® 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 which coating is best for your particular application.

CST Storage utilizes proprietary premium coating technology that provides maximum abrasion resistance and encourages smooth material flow. Our experience has led to continuous technology and process improvements that has resulted in the finest epoxy-coating available in the dry bulk tank industry. The OptiBond coating process is a next generation coating derived from years of in-field experience and performance data.

## Cleaning

Stage 1:

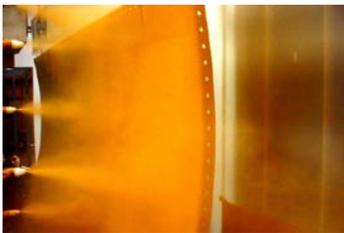
- ▼ Parts are Degreased and Rinsed
- ▼ Precisely Controlled Hot Air Drying and Pre-Heating at Optimum Temperature for a Precision Coating Process

Stage 2:

- ▼ Parts Surfaces are Blasted with Engineered Grit Material
- ▼ Rugged 3-D Surface Topography is Created for Better Powder Coating Acceptance, Increasing Durability and Long-Term Coating Performance
- ▼ A High-Velocity Air Curtain Removes Residual Particulate, Other Companies Skip this Step



Panel being washed and blasted.



Laser eye directed powder-coat spray nozzles.

## Coating

Stage 3:

- ▼ Parts are Powder Coated in our Proprietary Trico Bond EP Electrostatic Booth with Precise Environmental Controls
- ▼ Parts are Cured at 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 Yielding the Final Product



Tank panel being conveyed through 400 degree curing oven.

## Quality Control

CST is the ONLY bolted tank supplier that inspects 100% of our powder coated panels for holidays. CST uses 1100 volt holiday tester. Other companies only use random inspection with inferior testing equipment.



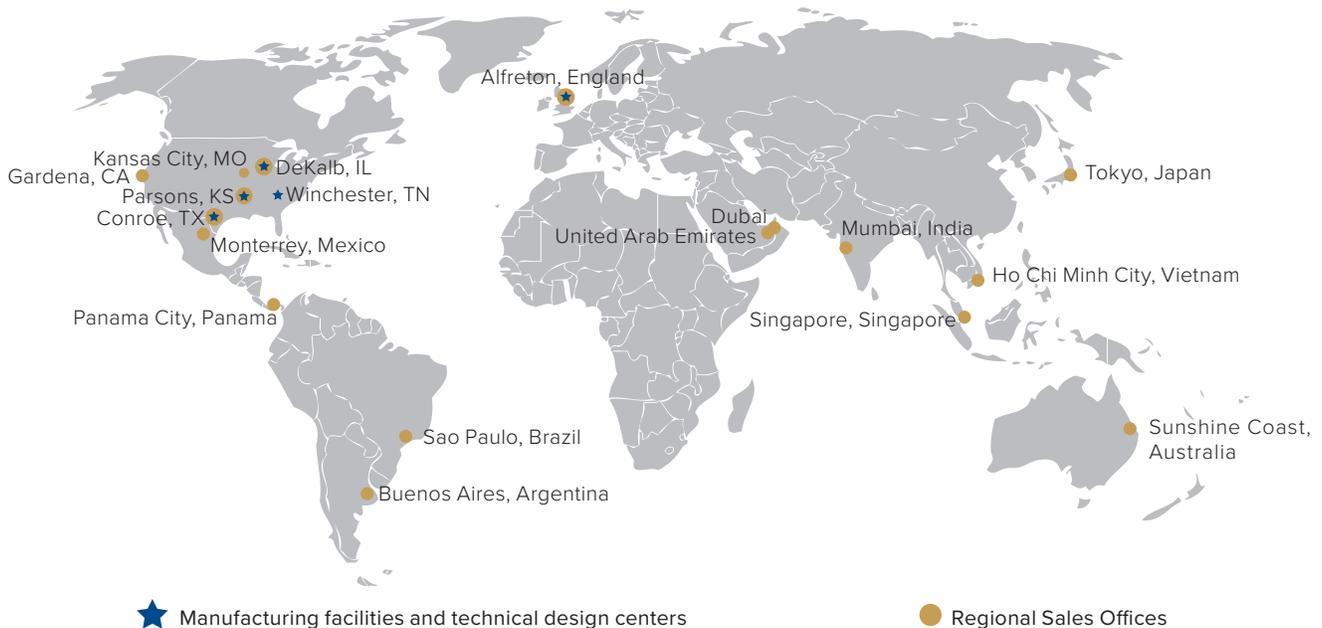
QC specialist running an 1100 volt holiday tester over 100% of coated tank panels.



**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 dry bulk storage needs.**

## Worldwide Availability

CST Global Manufacturing and Offices



### Certifications and Capabilities:

- ISO 9001: 2015
- API ISO/TS 29001: 2007
- API 12-B (Parsons Facility - License No. 12B-0004)
- UL 142 & ULC S601
- Certified Welding Inspectors (CWI)
- FM Certified Product Line (Parsons & DeKalb Facilities)
- All Facilities EPA Compliant
- NFPA-68/69
- FM Approved



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



903 E 104th Street | Suite 900  
Kansas City, MO 64131 USA  
Phone: +1 844-44-TANKS | Fax: +1 913-621-2145