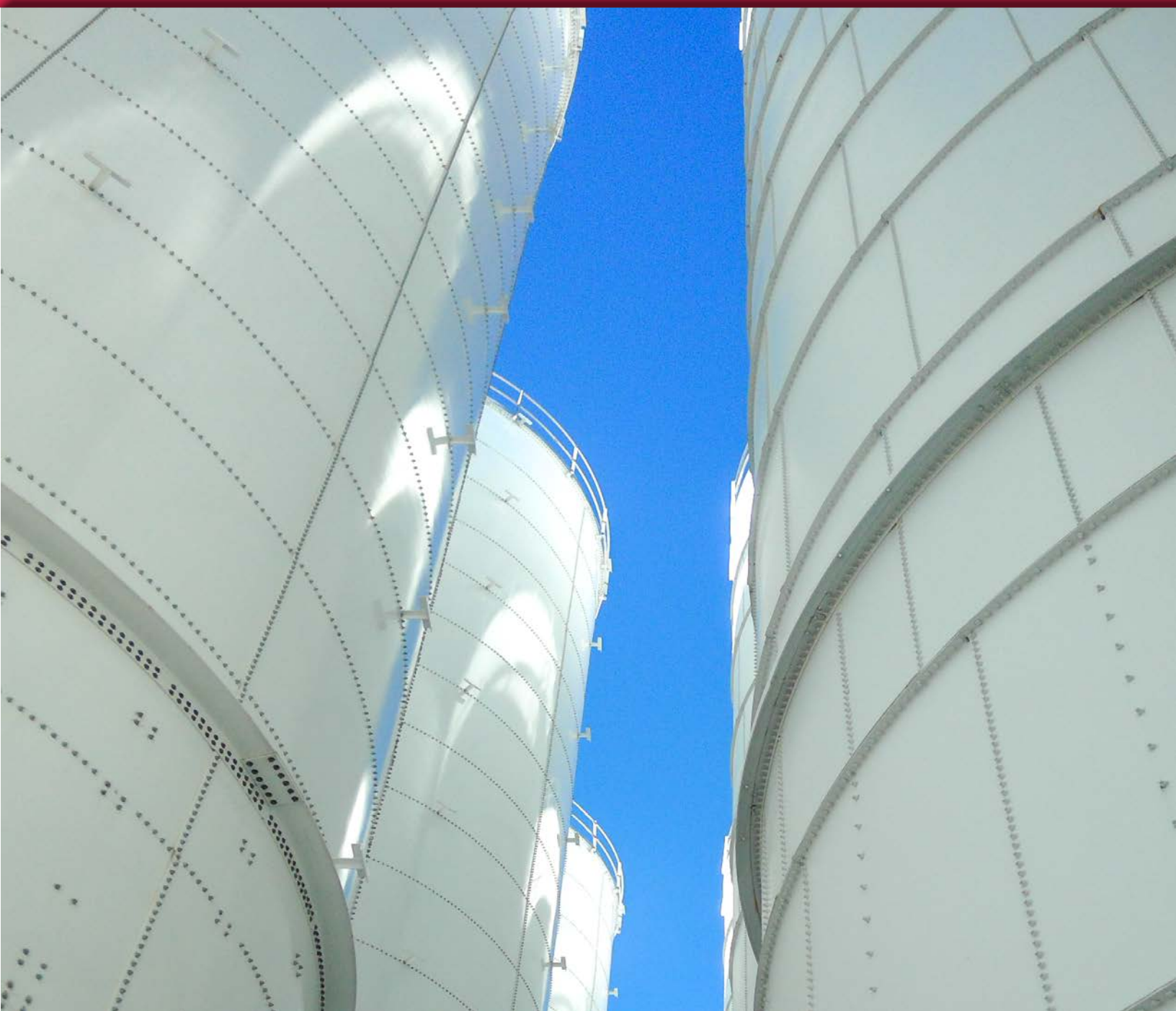


TecTank^{FP}

Dry Bulk Brochure and Specifiers Guide

CST
STORAGE



A LEGACY OF MAKING HISTORY

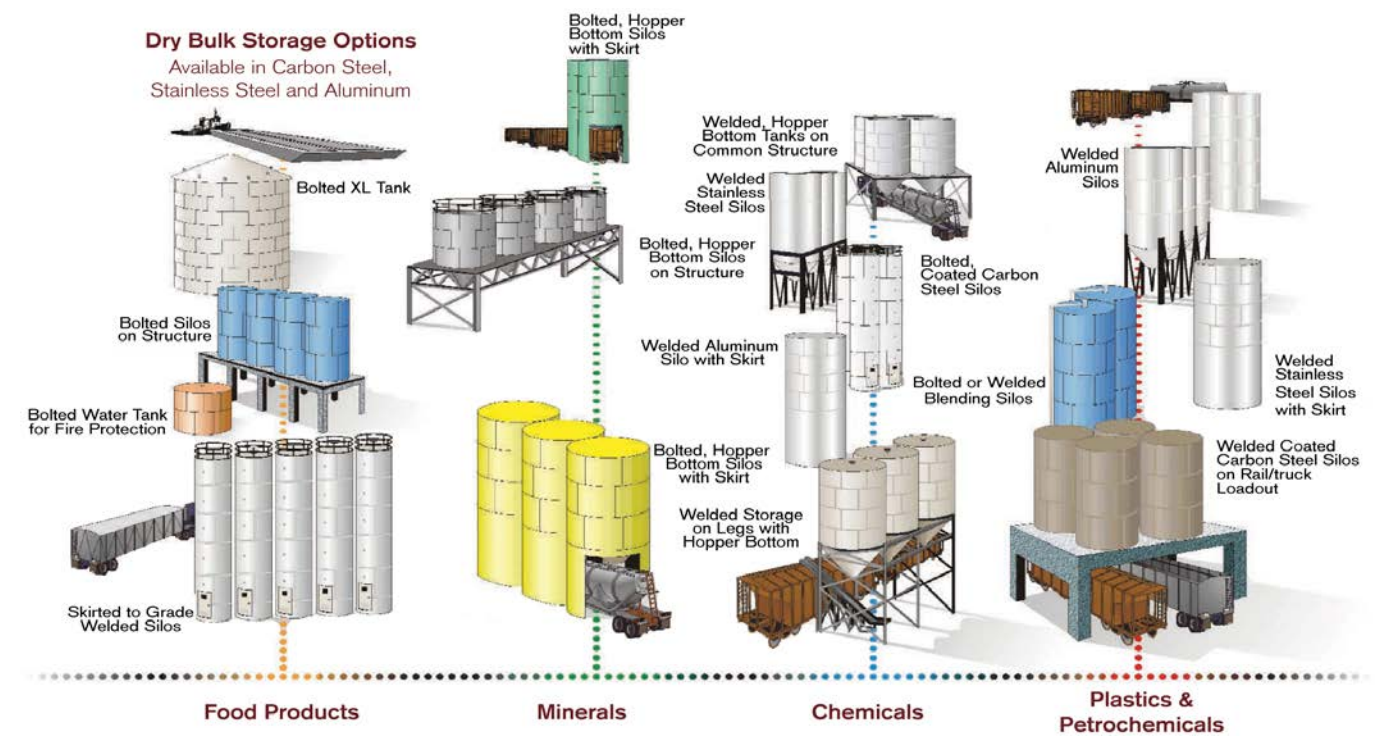
CST has a long and storied history of turning raw steel into the finest storage tanks available. Derived from the heritage of Columbian TecTank®, Peabody TecTank, A.O. Smith Harvestore® and Columbian Steel Tank, CST continues to grow, innovate and provide premium engineered storage systems exact for each application.

Today, CST offers TecTank FP. The best design features in tank construction were brought together to create this optimally developed bolted jack-built silo that is ideal for all industrial applications.



ENGINEERING CAPABILITIES & DESIGN STANDARDS

Exceptional design capabilities have given CST a reputation as the most innovative storage manufacturer in the world. We have designed silos with drive-through skirts for railcar loadout and tanks with unique hoppers. We've even designed tanks with office space under the hopper bottom. Each of these projects began with requests for creative solutions to specific problems. CST will build a silo that meets your individual requirements.



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

Testing services are also available for other materials.

CST pioneered jacking tanks, dating back to the 1940s on grain bins and silos for the agriculture market. The jacking system utilized on the new TecTank FP is the first-ever jacking system Roof Load Tested and PE stamped.

Today, CST has installed over 350,000 tanks in 125 countries, performing in thousands of applications worldwide. CST has a reported EMR rate of .71 (*well below industry standard*), making CST one of the safest storage tank companies in the world.

Factors such as capacity, seismic conditions, specific gravity and wind loading vary widely from one application to the next. The draftsmen and licensed professional engineers in our Engineering and Design Department give individual consideration to every silo. With our staff and consultants, drawings can be supplied with the P.E. seal from any state.

- CST currently has 17 Professional Engineers on staff with certifications in 48 states
- NFPA 68, Standard on Explosion Protection by Deflagration Venting, committee members
- NFPA 69, Standard on Explosion Prevention Systems, committee members
- ASME SBS, Structures for Bulk Solids, committee members

DRY BULK BOLTED TANKS

TecTank FP tanks and silos offer an optimized bolt pattern design for fast, easier on-site construction by CST's own construction crews. TecTank FP tanks and components are designed and fabricated for each specific application.

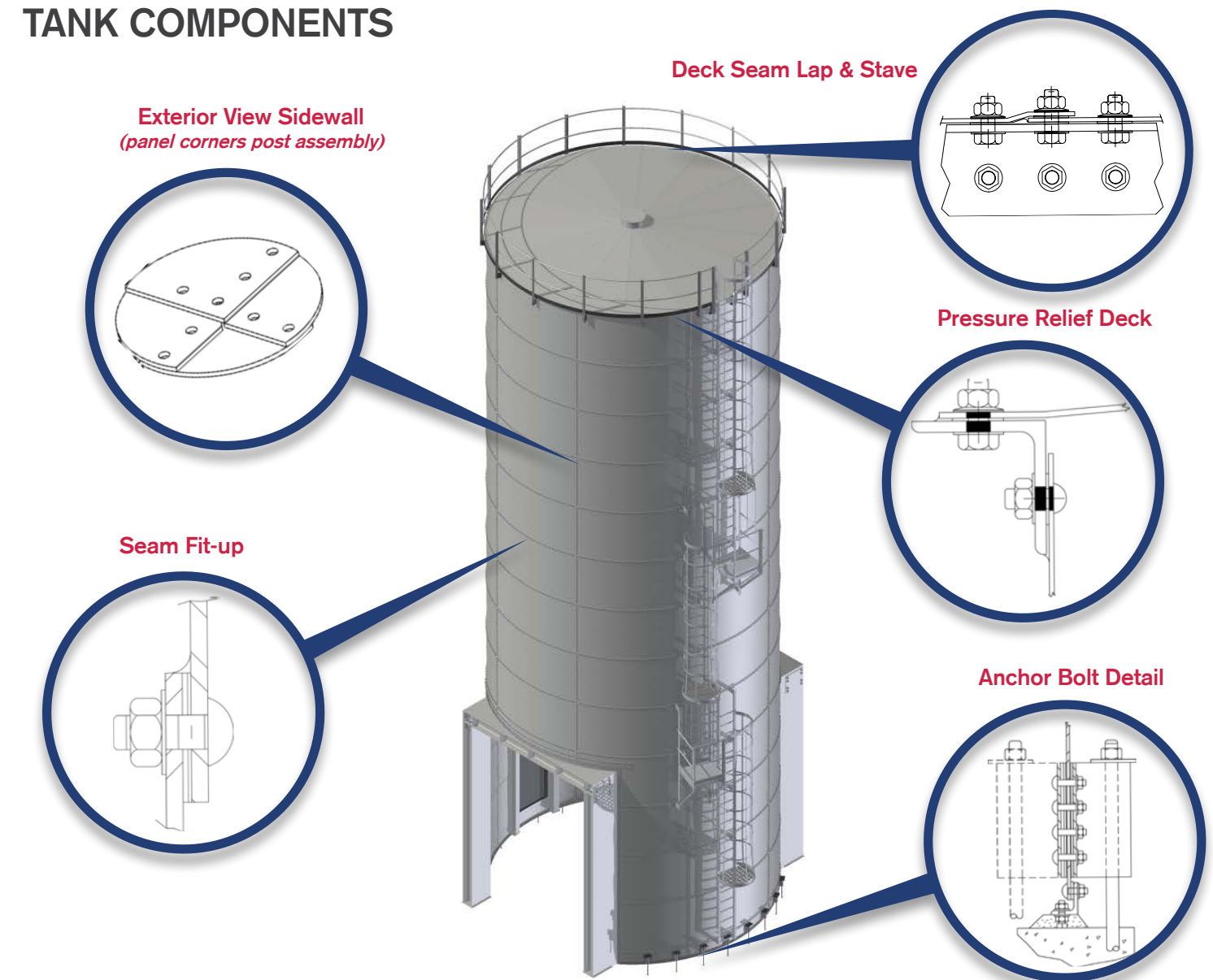
CST's bolted tank systems are constructed and put into operation faster than any other tank system in the market. Come rain, snow or shine, CST tank systems can be successfully built in any sort of weather, unlike its field-welded counterparts.

- 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
- Easily constructed in remote locations
- No on-site welding skills, confined space permits or fit-up delays
- Reduced need for heavy equipment on construction site
- 1/2 the building crew of traditional field-welded tanks
- Minimum laydown area required to reduce footprint required for erection

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

TANK COMPONENTS



TecTank FP Features & Benefits

Faster Construction

- Faster engineering time with straight panels
- Optimized design reduces time & fit-up issues
- 20% faster than chime
- 30% faster than welded

Optimized Design Features

- Available in 2.1" or 4.2" wide horizontal bolt spacing based on design requirements
- Reduced hardware required
- Reduced penetration points
- Industry leading gasket
- Improved structural integrity

Engineering Benefits

- Built with gaskets or sealant
- Versatility of assembly
- Allows for greater steel thickness & larger taller tanks & capacities vs. chime
- Reduces need for vertical & wind stiffeners, saving engineering time
- Reduces interferences on non-standard models & custom options

World-Class Coating

- TRICO BOND EP® 5 mil thickness
- TRICO BOND EP® with acrylic urethane for safe UV resistant exterior protection
- CST OptiBond™ proprietary coating process utilized on every sheet
- Factory coated ensures best quality
- 3rd party test shows best abrasion resistance smooth material flow

Heavy Duty Jacking System

- Proof load tested & PE stamped by 3rd party (only one in the industry)
- Reduced crane/hoist time
- Simplified construction process
- Largest % of work can be performed on ground
- Jacks are set up & down only once
- Sheets can be 1/2" thick requiring less structural columns needed in design

Preconfigured Models Available

- 50% lead time improvement vs. non-preconfigured chime models
- Available in (4) standard sizes:
 - 600T – 9,858 cu.ft.
 - 2000T – 40,489 cu. ft.
 - 3000T – 62,591 cu. ft.
 - 5000T – 103,468 cu.ft.
- Lead time within 10 weeks of order





TecTank FP



Chime



Welded

TANK COMPARISON

Design Features

Panel Design

CST TecTank FP

Flat Panel 105.462" wide x 55" tall premium grade cold rolled steel, convex-shaped/cut tapered panel.

CST Chime Tank

Chime panel 56" - 58" x 96" tall with 2" external top and bottom flange, each ring is a stiffener.

CST Factory Welded Tank

Full welded construction, from 6' to 15' diameter and 85' in single piece. Larger heights available with splice. 15' x 161' largest to date.

Seam Between Panels

Industry leading leak free Tec-Seal® gasket available in EPDM or Viton (temps to 450°F).

Compression seal formed between chimes with EPDM/Viton gasket.

Robotic, sub-arch welds produce exceptionally consistent "smooth/not flush" horizontal seams.

Panel Coating Interior

TRICO BOND®, 5-7 mil Precision-applied powder coating.

TRICO BOND®, 5-7 mil Precision-applied powder coating.

2.5 to 5 mil FDA Epoxy standard coating 5.0 mil AR-Lon 6101-Upgraded for abrasion resistance. (Special coatings available)

Panel Coating Exterior

TRICO BOND®, 5-7 mil Precision-applied powder coating. Urethane safe and UV resistant. Unlimited color options.

TRICO BOND®, 5-7 mil Precision-applied powder coating. Urethane safe and UV resistant. Unlimited color options.

2-3 mil Hi-Performance Urethane for topcoat for color & UV resistance. 2-8 mil Inorganic Zinc coatings, including a Hi-Temp option.

Operating Temperatures

TRICO BOND EP® up to 200°F
Inorganic Zinc up to 350°F
Hi-Temp – Inorganic Zinc to 750°F
TRICO BOND SD™ up to 275°F

TRICO BOND EP® up to 200°F
Inorganic Zinc up to 350°F
Hi-Temp – Inorganic Zinc to 750°F
TRICO BOND SD™ up to 275°F

Standard coating up to 200°F
Inorganic Zinc up to 750°F

Field Installation

18,000 lb. hydraulic actuated, synchronized jack system with load certifications.

3rd party, Safety PE Stamped Scaffold System.

Delivered in one-piece on specialized equipment, ready for lift and place on prepared foundation (by others).

Modularity

Faster installation. Future changes to tank height will require additional assembly and specialized equipment.

Fast installation. Chime panel offers the BEST expansion adaptability by adding capacity without full disassembly.

Fastest installation. Not readily expanded without field cutting and welding. Unit cost is less than bolted, so economically sound to add QTY. Higher shipping costs.

Maintenance

Normally scheduled PM inspections by site maintenance group or CST provided maintenance.

Internal Ledge

Horizontal & vertical bolt heads are in product zone, but secured flush to panel. Gap remaining from meeting of flanged points is minimal & compressed under load.

Non-horizontal bolts inside the product zone. No internal ledge for product hang-up.

No ledges. Welds ground smooth not flush. Hygroscopic material storage may request welds to be ground to 150 grit.

Licensed Professional Engineering Staff

17 PE's on staff that are capable of stamping in all states, territories and provinces. Includes voting member of NFPA-68 & 69, NFPA-22. Committee chair for (bolted, atmospheric-grade Dry Bulk Storage standards) AWWA-Bolted Composite RTF, ASME-SBS. Assisted with API-12B and other AWWA standards.

Age of Company & “Years of Experience”

Established 1893. 6000+ years combined experience across 750+ employees. (More than next two competitors combined)

Field Construction

CST employed, safety – certified (OSHA 40 hr and MSHA-48A/48B)

CST Employed or exclusive Subcontract crews using 3rd party safety certified & PE Stamped scaffold design. *Most experienced crews

Typically by others - Ask your CST manufacturer's representative for recommendations.

Plate Thickness

Up to 1/2" thick. Available in Carbon Steel and 304/316 grades of Stainless Steel.

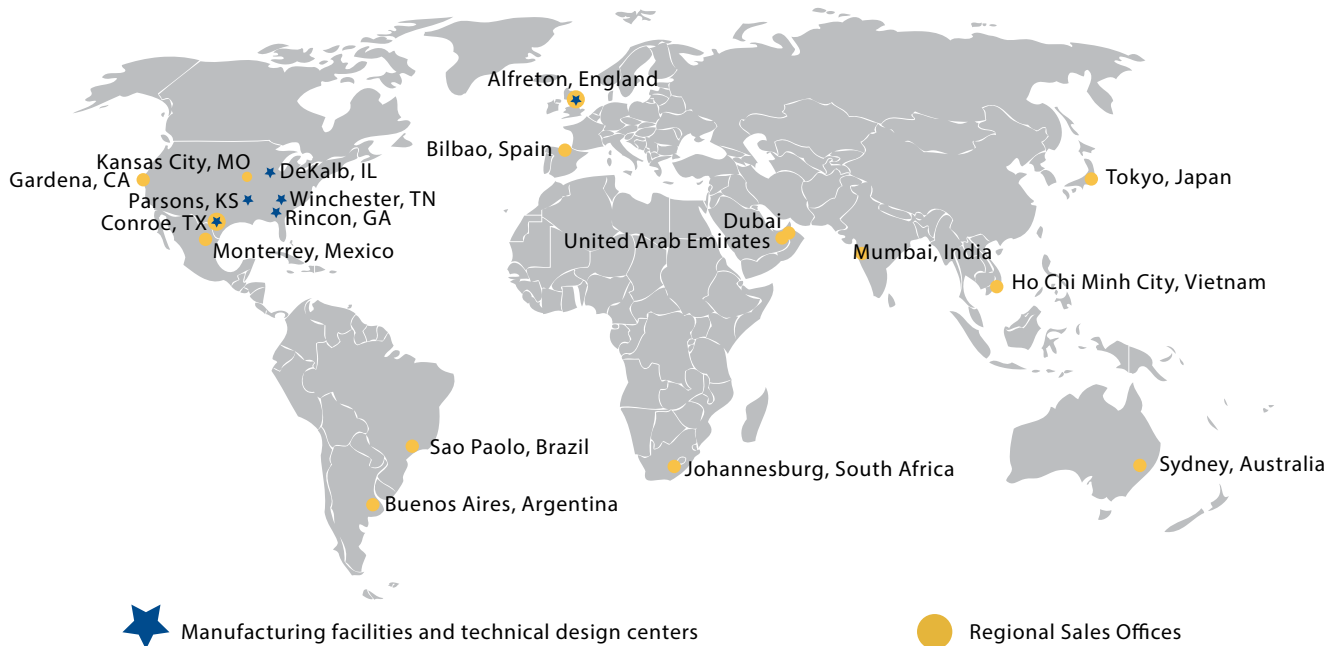
Up to 5/16" thick. Available in Carbon Steel and 304/316 grades of Stainless Steel.

Up to 1/2" thick. Available in Carbon Steel, Aluminum and 304/316 grades of Stainless steel.

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: 2008
- API ISO/TS 29001: 2007
- API 12-B
- API Monogram 12F-0069
- UL 142 & ULC S601
- CSA Standard W 47.1 & W59
- Canadian Welding Bureau Certification (CWB)
- Certified Welding Inspectors (CWI) at Every Facility
- FM Certified Product Line and Facility in Parsons
- All Facilities EPA Compliant
- NFPA-68/69
- FM Approved



Go to **www.cstindustries.com** for more information on CST products and services.

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