

# CST

# COVERS

WORLD CLASS ALUMINUM STRUCTURES





**CST**  
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CST Covers is the worldwide leader in the design, manufacture and construction of custom aluminum covers and structures for architectural, environmental, municipal, petrochemical and other industrial applications. CST Covers was created by merging the proud traditions of Temcor and Conservatek, the two leading aluminum structure companies in the world.



CST has supplied over 16,000 Covers in more than 90 countries. Our structural product offering includes multiple, high-strength aluminum design solutions including

- Aluminum Domes
- Vaults
- Extruded Flat Covers
- Formed Flat Panel Covers
- Reservoir Covers
- Truss Supported Covers
- Space Frames
- Anaerobic Digester Covers
- Custom Products – specialized designs for customers unique vertical and overhead applications

#### CST's Competitive Advantage:

- **Quality Reputation**—Unparalleled reputation for quality products and service.
- **Unmatched Experience**—Temcor and Conservatek have 80+ years of combined experience in the design, fabrication and installation of aluminum cover systems.
- **In-House Manufacturing**—CST owns and operates not one, but two manufacturing facilities. This increased manufacturing capacity helps to provide fabrication flexibility and ensure on-time deliveries.
- **Increased Coverage**—With multiple offices across the country, CST is poised to provide the best and most timely customer service regardless of the location of the project.
- **Quality Control**—All CST facilities are ISO 9001 certified.
- **Aluminum Advantage**—All CST structures are all-aluminum construction providing benefits unsurpassed by other materials used in the industry.

# WHY ALUMINUM?

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The unique properties of aluminum make it far superior to other materials and alloys used for covers due to its:

- **Corrosion Resistance**—Aluminum is inherently corrosion resistant compared to other materials. It will last the lifetime of the structure and will not need to be painted or repainted for protection from the elements.
- **Low Lifetime Maintenance Cost**—With no need to maintain a protective finish to prevent corrosion over time, there are little-to-no maintenance costs associated with an aluminum dome.
- **Clear-Span Capability**—Aluminum's lightweight characteristics allow for larger clear-span cover capability than structures utilizing steel, concrete and other materials.
- **Fast & Low-Cost Construction**—Creative design and lightweight components provide for installation in 1/3 the time it takes to install other cover systems. Less time, labor and equipment needs combine for a low total cost of installation.
- **Design Flexibility**—Aluminum's excellent strength-to-weight ratios and creative component designs yield covers and structures that cannot be achieved with other materials.
- **Aluminum is a "Green Material"**—Not only are aluminum cover systems recyclable after their service life, but more than 50% of the aluminum used in the cover systems is made from recycled aluminum.



# ALUMINUM DOMES

CST designs innovative clear-span aluminum domes for storage that help operators achieve regulatory compliance and bring new levels of cost efficiency to storage facilities.

CST Aluminum Domes are used in a variety of applications including:

- Municipal Water
- Petrochemical Terminals
- Architectural Structures
- Municipal Wastewater
- Bulk Storage Facilities

**Design Capabilities**—CST domes have been designed for snow loads of 300 pounds (74.84kg) per square foot and wind loads of more than 175 mph. Our unique panel design is specifically engineered to support loads as much as 500 pounds (226.8kg) applied to any one square foot. CST's professional engineers can design domes in excess of 1000 feet (304.8m).

**Strength and Versatility**—In most cases, the clear-span design and integral tension ring eliminate the need for roof columns and extensive reinforcement of tank walls. The triangulated space truss system of wide-flange extrusions and skinned triangular panels make it flexible enough for any operational need. Panels can be removed at will and the entire dome can be removed when required. Features such as doors, vents, hatches, skylight panels and a wide range of accessories important to the water and wastewater, industrial, bulk storage and architectural industries are easily accommodated.

**Protecting Resources and the Environment**—CST domes are water tight, and can be built vapor tight where vapor recovery or other operational needs are required. In fact, CST's low profile design will further reduce vapor space and the all-aluminum construction is completely resistant to hydrogen sulfide, chlorine and other corrosive vapors.

**Benefits of All-Aluminum**—CST products always feature all-aluminum construction. They are lightweight, corrosion resistant and maintenance free, which translates to longer life and lower lifecycle costs.

**Single Source Advantage**—CST takes responsibility for the complete process from design to fabrication to installation. CST field construction crews are licensed in every state where required. Construction consultants are available on international and domestic projects.

**Project Types**—CST's Aluminum Domes are ideal for both new construction or retrofit projects.

## CONSTRUCTION

CST Aluminum Domes can be constructed in a variety of methods. The most common are outside-in, used mainly with jack-constructed storage tanks and inside-out, where the dome is constructed from the center outwards and is lifted into place. Certain specialty covers are constructed with proprietary jacking and crane systems specifically designed for fast, easy and safe construction of your aluminum dome.



### INSIDE-OUT COVER CONSTRUCTION

1. Inner frames and panels are constructed and raised by a pole crane.
2. Remaining frames and panels are constructed outward until dome is complete.



### OUTSIDE-IN COVER CONSTRUCTION

1. Outside frames and panels are constructed directly on the walls of the structure.
2. Frames and panels are constructed inward until dome is complete.

# FLAT COVERS

Our innovative clear span aluminum flat cover roof systems can help wastewater and other facilities control odors and provide a safe working environment for operators. They are built to withstand harsh, humid treatment plant environments. CST's flat cover roof systems require little to no maintenance and can be easily designed with an array of appurtenances that allow them to interface—not interfere—with plant equipment and operations. They can be manufactured in a wide variety of shapes and sizes without compromising their precise fit and performance.

Our flat panel covers are designed to be self-supported (clear span) or supported with beams and trusses. CST Covers has multiple design configurations to choose from depending on your application.

Benefits include:

- **Air Tight**—Great for odor control.
- **Corrosion Resistant**—All-aluminum structure is corrosion resistant, maximizing product lifecycle.
- **Structurally Safe**—Constructed with a slip resistant surface for personnel safety.
- **Low Profile Design**—Less air volume to be contained and treated.
- **Removable Panels**—Interlocking male-to-female joints between panels allow for easy removal of any or all panels with no special tools needed.
- **Lightweight**—No heavy machinery necessary to remove panels.
- **Ease of Installation**—Easily constructed of lightweight material.
- **Truss or Beam Supported Flat Covers**—Available for larger spans.

## EXTRUDED FLAT PANEL COVERS and FORMED FLAT PANEL COVERS

Our extruded panel cover design is available in clear spans up to 18 feet (4.57m) and custom designed to meet your project's specific functional and design loading requirements. All-aluminum design constructed of 6061-T6 and 6063-T6 aluminum structural members and 6063-T6 sheets ensures quality, durability and longevity.

Our formed panel cover design is available in clear spans up to 30 feet (9.14m) and custom designed to meet your project's specific functional and design loading requirements. By using quality 5052-H32 aluminum panels and 6061-T6 structural members along with the proper sealant and gaskets, CST Covers ensures ultra-low maintenance for the life of the cover.



## TRUSS SUPPORTED FORMED PANEL FLAT COVERS

Truss-supported roofs offer the advantage of large clear-spans with minimal horizontal forces. Hence, no foundation reinforcement is normally required. Where clear-spans are not a requirement, CST's column-supported products provide economical solutions.

### Flat Cover Features

Feature	Extruded Cover	Formed Cover
Removable	●	●
Gasketed panels	●	●
Reduced air volume	●	●
Slip resistance	●	●
Low deflection	●	●
Lifting handles	●	●

# PETROCHEMICAL COVERS

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CST designs clear-span aluminum covers for storage tanks that help operators achieve regulatory compliance and bring new levels of cost efficiency to storage facility operations.

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By employing geodesic dome engineering principles and lightweight aluminum materials, CST produces tank covers whose superior strength and design flexibility can be instrumental in meeting the increased regulatory demands of petroleum and chemical storage industries.

- All-Aluminum Structures
- Ideal for New Construction or Retrofit Projects
- Reduces Emissions
- Eliminates Rain Water in Stored Product
- Reduces Risk of Fire
- Ease of Installation
- No Welding/Hot Work
- Virtually Maintenance Free
- Compatible With All Stored Products
- Light Weight Design

By helping control hazardous vapor emissions and preventing water intrusion, CST covers provide environmental efficacy, protect stored product and reduce remediation costs associated with treatment of contaminated “bottom water.”

Environmental regulations governing petroleum and chemical storage are on the rise. Finding cost-effective ways to address these regulations is a top priority for storage tank facility operators everywhere.

CST covers are competitively priced, require almost no maintenance and last longer than other storage tank covering systems. CST covers can be erected quickly, usually with no interruption of tank operation.



# BULK STORAGE COVERS

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CST custom aluminum covers can be designed to meet the demands of almost any bulk storage application. Aluminum is the ideal material to handle applications where the entire structure is exposed to the elements.

CST aluminum covers are custom designed around a bulk storage facility's specific clearance requirements, stockpile configuration and bulk handling equipment. Structurally efficient and lightweight, they minimize foundation costs and provide dependable protection from the elements while remaining virtually maintenance free.

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CST Covers' geodesic aluminum longitudinal structures, or vaults (for linear stockpiles) and domes (for circular stockpiles) are the preferred cover solution for protecting large volumes of bulk materials.

CST Covers' aluminum vaults and domes provide lightweight, corrosion-resistant, low-maintenance bulk material covers to:

- Eliminate fugitive particulate emissions
- Comply with clean air requirements worldwide
- Manage dust
- Protect stored material from degradation by the elements

Although aluminum is naturally resistant to corrosion, CST Covers' alloy selection optimizes the corrosion resistance and strength properties of the structures, resulting in covers ideal for harsh industrial applications or salt-laden environments such as port facilities.

## ALUMINUM DOMES

CST aluminum domes can meet your exact functional and dimensional needs with sizes up to 320 meters in diameter. They can be designed to enable installation of stacker/reclaimers, allow conveyor/truck entries and be used for storage of most dry bulk material.

The unique space truss design and highly engineered components combine to make CST aluminum domes the ideal solution for challenging environmental enclosure and bulk storage problems. Whether it's keeping the elements out or getting the largest amount of bulk in the smallest amount of space, this solution has proven itself time and again.



## VAULT COVER

CST custom aluminum vaults can be designed to meet the demands of almost any bulk storage application. Aluminum is the ideal material to handle outdoor applications where the entire structure is exposed to the elements. CST vaults are designed to accommodate many different reclaimer system used in bulk storage facilities.



CST's experience in building geodesic dome structures and custom space frames give us the ideal background to provide the right vault cover solution for your needs.



# RESERVOIR COVERS

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For more than 75 years, CST Covers has been providing custom engineered aluminum cover solutions in the potable water market. Our unique “strut and panel” system can be designed to accommodate virtually any reservoir size and shape. The covers can also be designed to be truss supported or internally supported by columns.

Our experienced engineers will design an aluminum reservoir cover that will meet your specific project requirements. Our aluminum cover system provides a maintenance free, long lasting (minimum 50 year design life), secure, and environmentally friendly fixed cover to protect valuable potable water.

Large water basins and reservoirs are a particularly difficult challenge to cover effectively to meet surface water regulations. CST aluminum specialty covers have been effectively designed to cover some of the largest rectangular water reservoirs as well as non-standard shapes. You don't need a new reservoir, you just need the right cover solution.

Whether you have an existing cover that needs replaced, or need a new cover for your reservoir, CST has the right solution for you. Our roof systems employ geodesic dome engineering principles and aluminum components to construct lightweight reservoir covers of all sizes and shapes. **Ideal for new construction or retrofits**, they require little modification of the existing tank. Perhaps most importantly, our covers are inherently corrosion resistant and offer strength and durability unmatched by steel, wood, concrete, plastic or other alternatives.



# ANAEROBIC DIGESTER COVERS

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Maintenance repairs to keep steel digester covers operating as designed can be very high. The operating efficiency of digesters with defective roofs is often seriously compromised. CST all-aluminum fixed roofs offer a proven long-term solution to digester roof applications. Aluminum has successfully resisted the corrosive effects of hydrogen sulfide gas and other vapors found in wastewater treatment plants. Because of the all-aluminum structure, the CST Anaerobic Digester Cover will not rust, rot, spall or be subject to solar degradation. Low maintenance, no painting required, and faster installation time makes the CST Cover an economical solution for our customers.

CST registered professional engineers will design a fixed roof for many applications such as:

- Anaerobic Digester Covers
- Large Scale Odor/Vapor Containment
- Cladding and Insulation for Egg Digesters



# ARCHITECTURAL APPLICATIONS

CST Covers offers unique options for architectural applications. Advancements in lightweight, high-strength aluminum allow for a wide variety of configurations and cover options. Proprietary systems allow for novel 2D and 3D space frame solutions while proven dome and truss systems have long been the global standard for large cover applications. CST has the ability to bring architects' and engineers' cover concepts to reality through products, engineering, precision manufacturing and a reputation for durability and service.

CST's high-strength aluminum signature solutions include spaceframes, domes, environmental enclosures, canopies, large-span and specialty lightweight structures designed with corrosion resistant material for unique eco-friendly applications. Markets served:

## Arts & Science



## Leisure & Gaming



## Social Service



## Transportation



## Signature & Custom



# 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,<sup>®</sup> Harvestore,<sup>®</sup> HydroTec,<sup>®</sup> BulkTec,<sup>®</sup> PetroTec,<sup>®</sup> Columbian TecTank, Vulcan, 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.



## Evolution of CST

1890's

**COLUMBIAN**  
STEEL TANK COMPANY

1940's

**Smith**  
CORPORATION  
**HARVESTORE**

1960's

**TEMCOR**  
**WEAVER**  
RECLAIMER SYSTEMS  
**AQUASTORE**  
Tanks & Domes

1970's

**CONSERVATEK**  
**Peabody TecTank**  
**VULCAN TANK**

1990's

**COLUMBIAN**  
TecTank  
ENGINEERED STORAGE  
PRODUCTS COMPANY

2000's

**CST**  
STORAGE  
**CST**  
COVERS  
**CST**

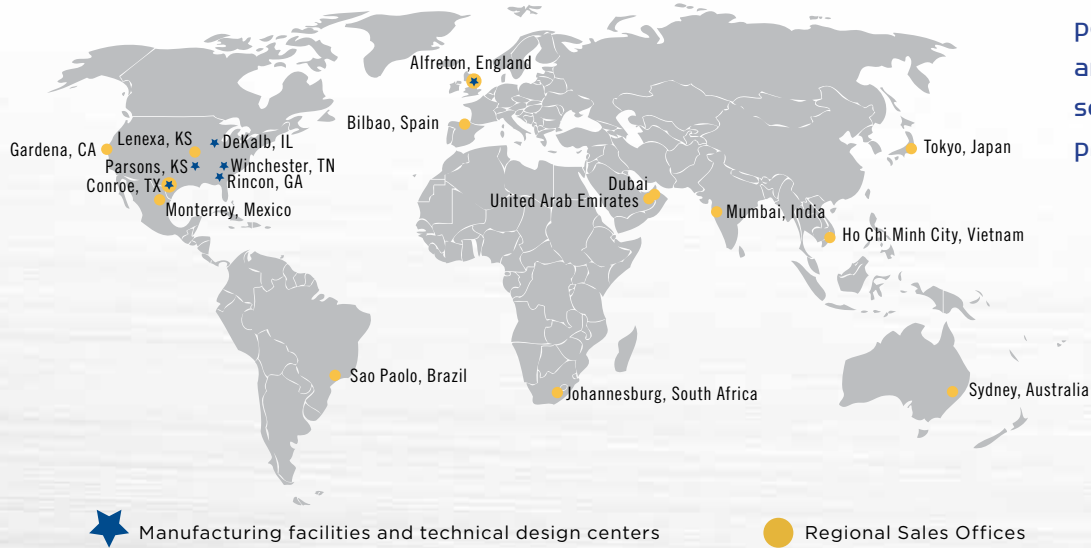
CST Covers maintains manufacturing facilities and technical design centers in Gardena, California; Conroe, Texas; and Rincon, Georgia. The company is headquartered out of the Conroe, TX location.



# 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.



### CST Covers Headquarters

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Go to [www.cstcovers.com](http://www.cstcovers.com)

for information on sales service offices.



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