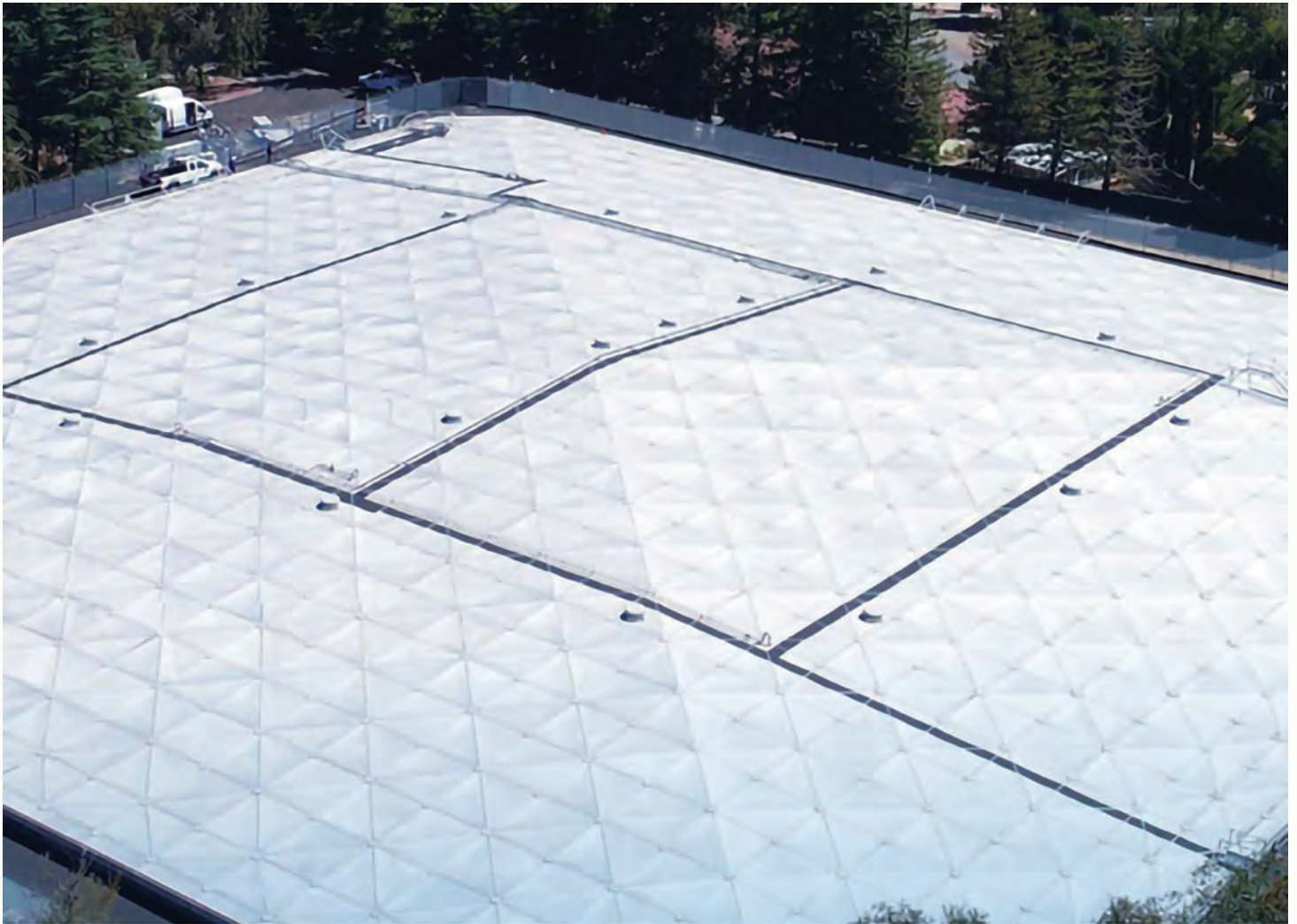


CST[®]

Custom Aluminum Covers

For All Water and Wastewater Applications



Aluminum Domes • Odor Control Covers • Reservoir Covers



> Aluminum Cover Solutions



The Worldwide Leaders in Custom Aluminum Covers

CST Industries, has supplied over 40,000 covers in more than 125 countries worldwide. CST is recognized for its innovative clear-span aluminum covers for wastewater process and water storage tanks that help control odorous emissions and prevent water intrusion.

CST's aluminum domes and flat panel covers provide the strength, durability, odor control and protection characteristics unavailable in steel, plastic, fabric or any other materials of construction.

CST's Competitive Advantage:

- Quality Reputation - Unparalleled reputation for quality products and customer service.
- Unmatched Experience - 130+ years of combined experience in the design, fabrication and installation of aluminum cover systems.
- In-House Manufacturing - CST operates its own manufacturing facility, located in Conroe, Texas and Stralsund, Germany to provide fabrication flexibility and ensure on-time deliveries.
- 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.



All-Aluminum Flush Batten Dome Roof



The flush batten OptiDome® is a next generation aluminum geodesic dome from CST. Its new, innovative and optimized design has features that result in a simple and unequalled new choice to fulfill customer needs.

- Structural Design
- Batten Seal Technology
- Aesthetics

Combining premium features and incorporating the engineering experience and heritage of OptiDome sets a new standard in engineered aluminum cover technology.

Structural Design

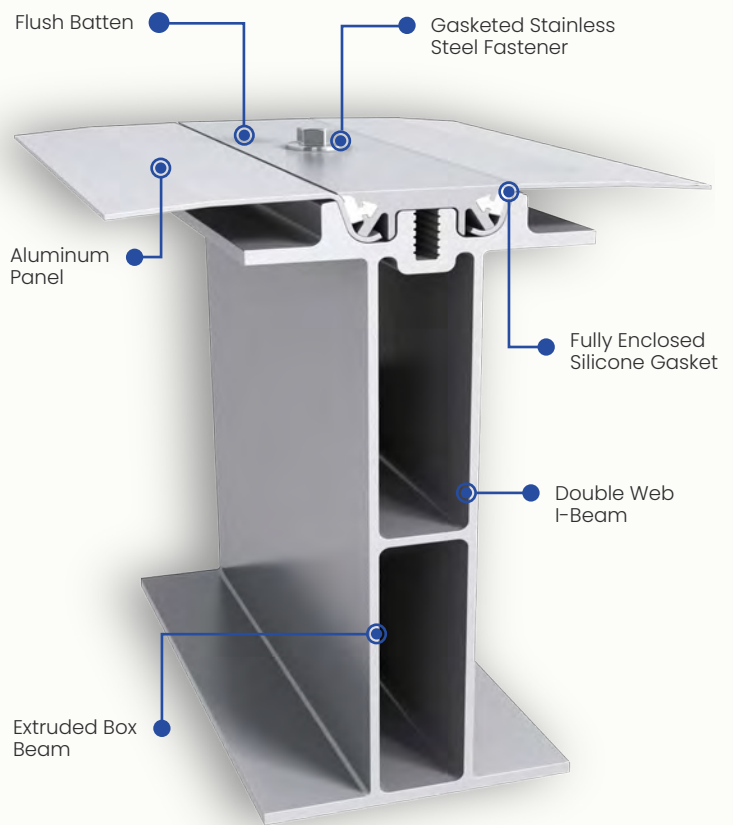
CST's advantage OptiDome design efficiently complies with torsional buckling requirements which have been adopted by Eurocode, 2020 Aluminum Design Manual, and International Building Code 2021. The Double Web I-Beam, combined with aluminum's excellent strength-to-weight ratio, provides reliable performance under the most stringent environmental conditions including heavy snow loads and high wind speeds.

OptiDome is designed to meet the latest design codes including: Eurocode, Aluminum Association's Aluminum Design Manual, IBC 2021, AWWA D108 and API 650G. The unique properties of OptiDome 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 of 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 system is made from recycled aluminum.

Every CST aluminum cover is custom designed to meet the specific requirements of each project and engineered for any snow, wind, seismic, or suspended load capacity, as well as span-to-rise ratio.

OptiDome Batten Seal Technology

At the core of OptiDome is its superior batten seal technology. This system increases water shedding and eliminates ponding, even on a low profile design, while providing a water-tight cover solution.

Featuring an enclosed gasket design, the batten protects against ultra-violet exposure and sealant degradation. Since battens are flush with dome panels, it eliminates ponding. they are easy to install and require less sealant than typical geodesic domes.

OptiDome Batten Seal Technology

- Gasketed stainless steel fasteners
- Flush batten bar
- Protection from UV and sealant degradation
- Eliminates ponding
- Easy to install

Aesthetics

Efficient in Design.

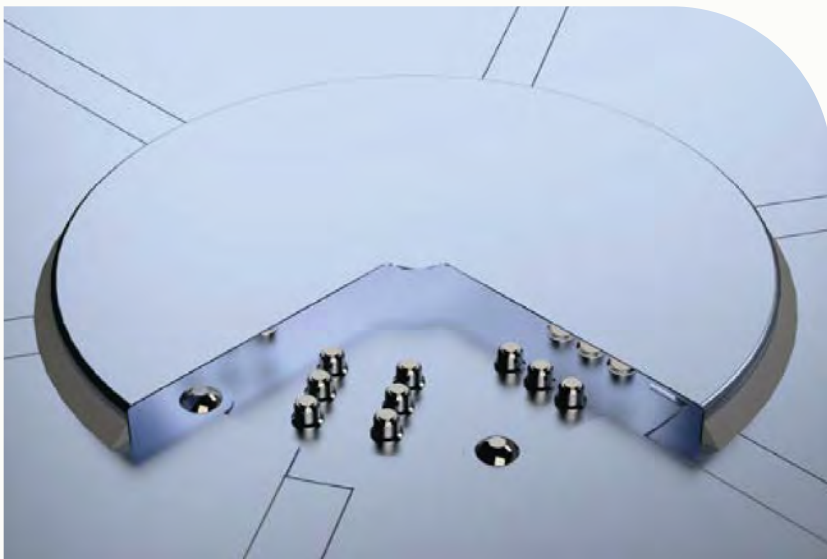
Distinctive in Appearance.

Unsurpassed in Quality and Value.

CST has combined proven dome design with modern engineering and materials to produce a flush batten aluminum geodesic dome that offers significant economic advantages.

In addition to the optimized design and superior seal technology, the OptiDome has a smooth, sleek appearance. OptiDome utilizes proven, water-tight technology and customers get the most functional, longest lasting dome solution in the industry.

Gusset Cover without Bolt



Non-Welded Shoe Assemblies

Steel Tank Options

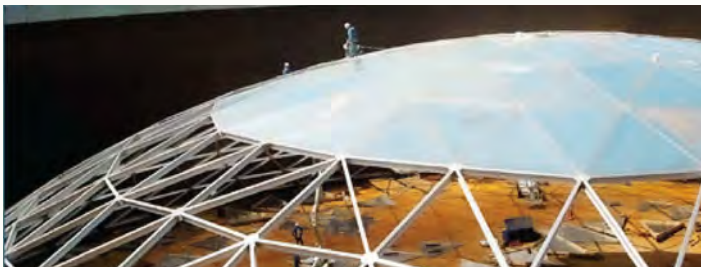


Concrete Tank Options



Dome Construction

With the tightest manufacturing tolerances in the industry, CST's OptiDome 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 Installation

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 Installation

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.

OptiDome Installations



↑ Port Arthur Water Treatment Plant
Port Arthur, TX - 202°



↑ Forbes Hill Reservoir
San Rafael, CA - 151' x 203'



↑ National Weather Company
Markka, Saudi Arabia - 361' Diameter



↑ Forbes Hill Reservoir
San Rafael, CA - 151' x 203'



↑ Fayetteville Utilities
Fayetteville, TN - 42' Diameter



↑ Golden State Water Company
Huntington, CA - 60' Diameter

All-Aluminum Flush Batten Dome Roof

As legislation addressing public concerns about water quality evolves, more water storage facilities are required to cover finished water reservoirs.

CST offers innovative aluminum roof systems that provide cost-effective, long-term solutions for reservoir coverage. Our experienced engineering team specializes in custom designs for both new constructions and retrofits, effectively addressing the unique challenges of large and complex reservoir systems. CST Optidome is NSF 61 approved.

Utilizing advanced geodesic dome engineering principles and high-quality aluminum components, our covers are lightweight, durable, and corrosion-resistant. These solutions are specifically engineered to meet the diverse requirements of various reservoir systems, ensuring optimal performance and longevity.

For examples of our successful installations and innovative solutions, please refer to the next page.



Reservoir Installations



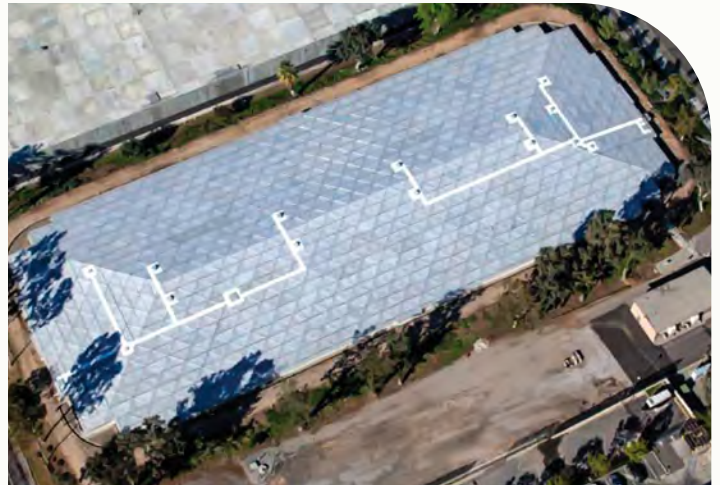
↑ Alderwood Water & Wastewater District
Lynwood, WA - 375' Diameter



↑ City of San Diego Water District
Rancho Bernardo, CA - 250' x 320'



↑ Carpinteria Valley Water District
Carpinteria, CA - 340' x 340'



↑ Linden Reservoir
Riverside, CA - 200' x 500'



↑ Laguna Beach Water District
Laguna Beach, CA - 162' x 262'



↑ Almaden Valley Reservoir
San Jose, CA - 294' x 300'

Odor Control Flat Panel Covers

Municipal wastewater treatment facilities everywhere face many new challenges. Among them are the need to conform to a growing list of tough environmental regulations, and the need to do so while maintaining tight control of operating costs.

At CST, we design innovative clear-span aluminum cover systems that help wastewater facility owners and operators meet environmental and fiscal challenges.

Solutions from CST are fast becoming the preferred choice to cover clarifier tanks, aeration basins and other process basins of all sizes and shapes. Aluminum is vapor-compatible with everything from sewage to most process chemicals and treatment processes. For example, hydrogen sulfides and mercaptans don't attack aluminum. In short, its corrosion resistance makes it the ideal material for most municipal wastewater applications. That's why CST specializes in all-aluminum structures.



CONSERVATEK[®]
BY **CST**

Panel Designs

CST's 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 retrofitted 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 has multiple design configurations to choose from depending on your application.

Formed Flat Panel Covers

CST's formed flat panel covers design is available in clear-spans up to 30 feet (9.14 m) and custom designed to meet your project's specific functional and design loading requirements. By using high-quality aluminum panels and structural members, CST ensures ultra-low maintenance for the life of the cover.



↑ Winnipeg, CAN
↑ (2) 52' Diameter

Extruded Flat Panel Covers

CST's extruded flat panel covers design is available in clear-spans up to 16 feet (4.88 m) and custom designed to meet your project's specific functional and design loading requirements. The all-aluminum design, aluminum structural members and specified extrusions ensures quality, durability and longevity. The extruded aluminum panels offer an integral non-skid, low deflection walking surface.



↑ San Marcos, CA
↑ (2) 30' x 165'

Design Options

For large clear-spans with minimal horizontal forces, CST's extruded and formed panel covers are engineered with a truss supported design. Hence, no foundation reinforcement is normally required.

Where clear-spans are not a requirement, CST's column-supported products provide economical solutions. Contact us for more information.



↑ Charlotte, NC
↑ (2) 50', (2) 130', (4) 131', and (2) 137' Diameter

Extruded Flat Covers Design

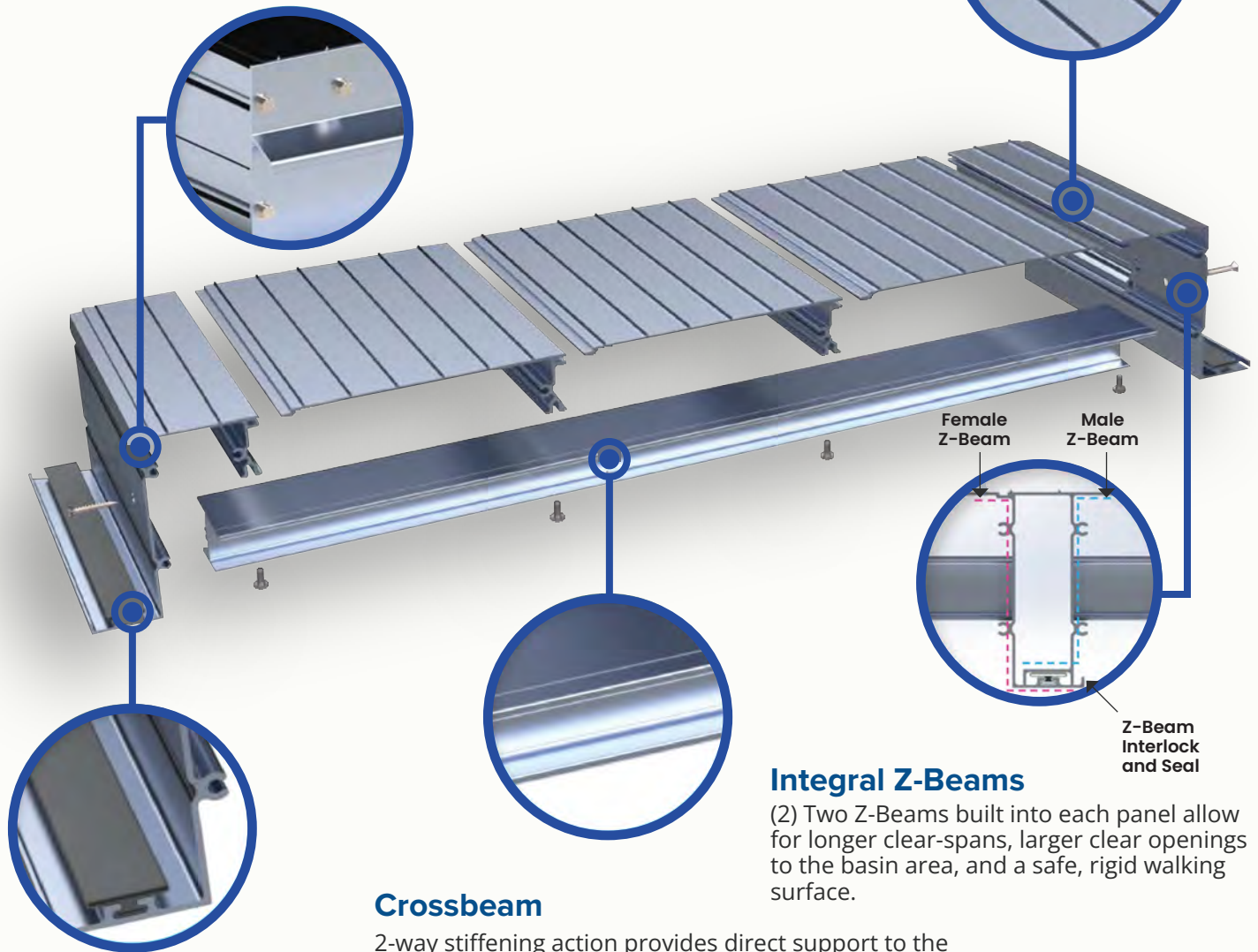
Structural Fasteners

CST utilizes gasketed stainless steel fasteners to provide extra security for water-tight connections and corrosion prevention.

Modular Planks

CST modular planks are a sub-member that accommodates a variety of panel widths and provides an integral slip-resistant walking surface, resulting in a safe structure with more basin access and stability for the operator.

CST panels arrive on site 100% shop assembled and ready to install without the need for additional field assembly, saving time and money.



Crossbeam

2-way stiffening action provides direct support to the planks, ensuring a more robust design and rigid walking surface.

Neoprene Bulb Gasket

Neoprene provides excellent compatibility and resistance to H₂S, a typical wastewater by-product. CST's bulb design promotes a water-tight seal inside the interlock areas between every panel, and at every panel endcap.

Integral Z-Beams

(2) Two Z-Beams built into each panel allow for longer clear-spans, larger clear openings to the basin area, and a safe, rigid walking surface.

Flat Panel Cover Installations



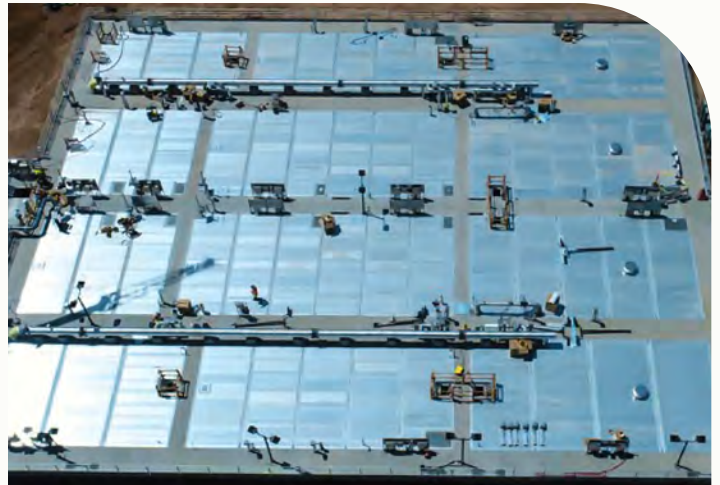
↑ Beckton Sewage Treatment Works
United Kingdom - Approx. 600,000 sq. ft.



↑ Encina Wastewater Authority
Carlsbad, CA - (8) 35' x 300'



↑ Howdon Wastewater Treatment Works
United Kingdom - Approx. 136,000 sq. ft.



↑ Greenfield Water Reclamation Plant
Gilbert, AZ - 240' x 297'



↑ Brick Township, NJ
(6) 106' Diameter



↑ Manchester, NH
(3) 130' Diameter

Product Selection

CST's aluminum covers are suitable for a wide variety of water and wastewater applications. To help determine what cover is right for your application, please refer to the accompanying table.

	Optidome	Optidome Low-Pro-File	Reservoir Covers	Formed Flat Panel Covers	Extruded Flat Panel Covers
Resistant to corrosion from water/wastewater processes	✓	✓	✓	✓	✓
Suitable for odor control applications	✓	✓		✓	✓
Easily customized to accommodate penetrations or appurtenances	✓	✓	✓	✓	✓
Watertight enclosure	✓	✓	✓		
Substantially airtight, low profile				✓	✓
Energy saver, reduced air volume for reduced air handling costs		✓	✓	✓	✓
Equipment above cover to reduce confined space entry		✓		✓	✓
Headroom for access beneath cover	✓				
Maintenance friendly with easy to remove panels				✓	✓
Heavy duty (low-deflection, integral non-skid) surface					✓

Extruded flat panel covers are recommended for applications where heavy foot traffic and frequent access to center equipment is required.

Services

CST's aluminum domes, reservoirs and flat covers are the most robust, rigid, structurally sound and competitively priced aluminum covers made for both the water and wastewater markets. CST offers the longest clear-spans in the industry due to CST's modular unitized beam and plank structure in combination with beams or trusses supporting spans well over 250 feet (76.2 m).

CST aluminum domes and specialty covers are substantially air and water-tight, visually appealing, chemically resistant, energy saving, maintenance friendly, and easy to install. CST aluminum covers can be used to replace various cover types, fiberglass, checker-plate metal, and bent sheet metal covers. Whether the application requires domes, extruded or formed panels, circular or rectangular basins, self-supported or structurally supported, odor control or weather protection, we have the right engineered solution to match each application. Get all this from one turnkey manufacturer - CST.

Who We Are

We are a solution provider for all your water and wastewater storage and cover needs. We design, fabricate, install and provide service long after the sale. Our qualified Service Technicians inspect, maintain, repair and train. All CST products are USA manufactured in ISO9001 certified facilities while using LEAN manufacturing.



Wastewater Treatment Plant
Halton Region Ontario, CAN
(10) 140' Diameter Aluminum
Domes

Worldwide Availability



CST offers a variety of repairs, modification and turnkey services for liquid, dry bulk, and welded storage tanks. CST services also include ROV Water Inspection and Visual & Ultrasonic Testing.



Certifications and Capabilities:

- ISO 9001:2015
- All Facilities EPA Compliant
- AWWA D108
- API650
- NSF 61 Approved

Call 815-756-1551 or visit aquastore.com to find an authorized dealer near you.

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