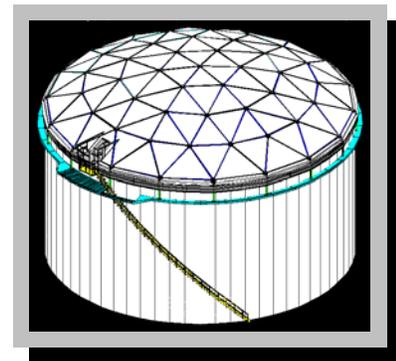




**OptiDome™ COVER OPERATION AND MAINTENANCE MANUAL**

**TABLE OF CONTENTS**



<b>Maintenance requirements</b> .....	2
<b>Scope</b> .....	3
<b>Maintenance</b> .....	3
Inspection .....	3
Sealant .....	3
<b>Operations</b> .....	3
Venting .....	3
Product .....	4
Center safety line support .....	4
Hatches and equipment removal openings .....	4
Skylights .....	4
Loadings .....	4
<b>Information</b> .....	4
<b>Spare part list</b> .....	4
<b>Silicone sealant application procedure</b> .....	5
<b>Project data</b> .....	7

**MAINTENANCE REQUIREMENTS**

	<b>Annual Inspection</b>
An inspection of the aluminum dome should be made before the peak load season (i.e., in the fall for the areas subject to winter snow loads, or before hurricane season in the coastal areas). Both the interior and the exterior should be checked for any damage due to vandalism, unauthorized modification, accidents or other unintended use. Specific items to check for would include torn or punctured sheet metal; cut, drilled, notched, or otherwise damaged struts or hubs; screws, nuts, or bolts removed or loosened; and loads or equipment other than those specified placed on or hung from the dome.	√
Anchor bolts should not be tightened against the top of the aluminum base plate. Approximately 1/16" gap should be maintained between the underside of the nut or bolt and the washers above the aluminum base plate.	√
Sealant may be repaired or replaced as required. Follow the manufacturer's recommendations for applying sealant. Use any silicone sealant suitable for this application. The sealant can be applied at outdoor temperatures as low as -20 degrees Fahrenheit (-29 degrees Celsius) provided only that the surfaces are dry and frost free. Excess sealant should be cleaned off while in an uncured state with a commercial solvent such as Xylene.	√
Acrylic skylights should be cleaned with a mild soap and water solution only (if required).	√
Gaskets at movable parts such as hatches should be checked for damage due to vandalism, accidents, or other unintended use.	√

## **SCOPE**

The OPTIDOME™ cover is a light weight aluminum roof that requires little or no maintenance over its lifetime. This manual is intended to provide operation instruction for appurtenances to the dome and a dome maintenance schedule.

## **MAINTENANCE**

### ***Inspection***

A yearly inspection of the dome should be made before the peak load season (i.e., in the fall for areas subject to winter snow loads, or before hurricane season in coastal areas). Both the interior and the exterior should be checked for any damage due to vandalism, unauthorized modification, accidents, or other unintended use. Specific items to check for would include torn or punctured sheet metal; cut, drilled, notched, or otherwise damaged struts or hubs; screws, nuts, or bolts removed or loosened; and loads or equipment other than those specified placed on or hung from the dome.

For OPTIDOME™ cover installations with sliding bearings, anchor bolts should not be tightened against the top of the base plate. Approximately 1/16" gap should be maintained between the underside of the nut or bolt and the washers above the aluminum base plate.

### ***Sealant***

Sealant may be repaired or replaced as required. Follow the manufacturer's recommendations for applying sealant. Use any silicone sealant suitable for this application.

The sealant can be applied directly from the plastic sealant cartridges; no mixing, heating, or refrigeration is required. The sealant can be applied at outdoor temperatures as low as -20 degrees Fahrenheit (-29 degrees Celsius), provided only that the surfaces are dry and frost free. Excess sealant should be cleaned off while in an uncured state with a commercial solvent such as Xylene.

## **OPERATIONS**

### ***Venting***

Where venting has been provided to avoid excessive differential pressure developing between the space enclosed by the dome and the ambient atmosphere, these vents must be kept free of obstructions (e.g., ice, snow, etc.) at all times.

### **Product**

No changes in the tank product or operating temperature should be made without first consulting CST Covers regarding the appropriateness of the aluminum roof for this application.

### **Center Safety line Support**

For these installations with a center safety line support, no more than 500 lbs. should be applied to the support.

### **Hatches and Equipment Removal Openings**

When opening an access hatch to enter through it, taking a sample through it, or using it as a ventilation opening, make sure the hold open arm is in the locked position by pushing on it until it is straight or it is bent slightly inward. To close the lid, pull the hold open arm forward and carefully close the lid onto the frame.

To remove the equipment opening cover, remove the 1/4" fasteners in the curb above the strut cap outlining the opening. To replace the cover, simply reverse this process.

### **Skylights**

Acrylic skylights should be cleaned with a mild soap and water solution only (as required).

### **Loadings**

Load on the dome panels should be limited to 250 lbs. over one square foot of area. Traffic should be confined to the strut caps as much as possible to avoid wear, such as smudging or marring of the panels.

### **INFORMATION**

Requests for information should be directed to the CST Covers Project Manager at (936)-539-1747. All requests for information must be accompanied by the CST Covers contract number, equipment location, and tank description. This information is summarized on Page 7 of this O&M Manual.

### **SPARE PARTS LIST**

None Required.

## **SILICONE SEALANT APPLICATION PROCEDURE**

Silicone sealant to conform with federal specifications:

TT-001543 A (COM-NBS)

TT-00230 C (COM-NBS)

Approved brand names:

Dow Corning 790

GE Silicone Construction 1200

GE Silpruf

GE Silglaze - N 2500 series

GE RTV 109

Silicone sealant is supplied as a ready-to-use, one part, sealant with a lightweight consistency. It provides excellent resistance to heat, cold, ultraviolet radiation, ozone, sunlight and rain. It has excellent adhesion to most common building materials, including mill finish aluminum. Silicone sealant cures spontaneously on exposure to moisture in the air.

DO NOT apply silicone sealant to unprepared wet surfaces. It should also not be applied to surfaces that will be painted, as painting over rubber is generally not successful. The paint film does not stretch with the extension of rubber, and the adhesion of paint to silicone sealant is not adequate. When silicone sealant is used in remedial work, all old sealant must be removed.

All surfaces to receive caulking must be clean, dry, frost free and free of contaminants that may interfere with adhesion. Metal surfaces should be cleaned by wiping a solvent saturated clean cloth over the surfaces to which the sealant will be applied. An oil-free solvent, such as Toluene or Xylene, should be used. Do not use alcohol's. A dry clean cloth should be used to remove the cleaning solvent from the surface. Do not allow the solvent to evaporate. Greases, protective films and coatings, dust, oil, water, surface dirt and rust are examples of contaminants which must be removed. Cleaning of all surfaces should be done on the same day in which the sealant is installed. CAUTION! SOLVENTS MAY BE FLAMMABLE AND/OR TOXIC, EXERCISE CARE WHEN USING. ALWAYS FOLLOW THE MANUFACTURER'S INSTRUCTIONS.

To apply sealant, cut the nozzle on the tube to the desired bead size. Push the sealant ahead of the nozzle, making sure that the sealant is in good contact with the sides of the joint, and maintaining a uniform bead. Apply each bead in a continuous operation. Since a thin bead of silicone sealant will accommodate more movement than a thick bead, it should be applied not thicker than 3/8" and no thinner than 1/8".

**SILICONE SEALANT APPLICATION PROCEDURE (continued)**

Tooling should be completed in one continuous stroke immediately after sealant application and before a skin forms. Using a tool with a concave profile, tool or strike the sealant with pressure to spread the material against the joint surfaces. Tooling forces sealant into contact with the sides of the joints, helps eliminate internal voids, and ensures a flat or concave shape to the exposed surface of the sealant.

This surface configuration helps insure that the sealant is of the proper depth to perform properly under stress of movement. DO NOT use solvent, oil, water, or soap and water solutions as tooling aids. Such wet tooling techniques may cause wetting of the unsealed surfaces ahead of the tool, and may also be incompatible with the sealant.

Although sealant manufacturers allow applications at temperatures significantly below zero degrees Fahrenheit (-18 degrees Celsius), maximum performance on non-porous surfaces (such as aluminum) is achieved when the sealant is applied above temperatures of 40 degrees Fahrenheit (4.5 degrees Celsius).

In those applications in which sealant is to be applied between surfaces which are to be mechanically joined, the preparation of each surface shall comply with the procedure described above. The sealant should be applied to one of the surfaces in the manner described above, and the mating surfaces then pressed together by the mechanical fasteners. Any excess sealant that may be squeezed out of the joint shall be properly tooled off.

Store the unopened sealant in a cool (below 80 degrees Fahrenheit / 26.5 degrees Celsius) dry area. For best results, use within twelve months of purchase.

***CAUTION: Contact with uncured sealant will cause eye irritation and may cause skin irritation. READ AND COMPLY WITH SEALANT MANUFACTURER'S PRINTED INSTRUCTIONS AND WARNINGS!***

**PROJECT DATA**

Reference	Number (X) xx'ø OPTIDOME™ Cover for Any type tank
Owner	City of _____
General Contractor/PO No.	Contractors/xxxxxx
Project No.	
Equipment Location	Anywhere WWTP
Equipment Manufacturer	CST Covers 498 Loop 336 East PO Box 1678 Conroe, TX 77305 Phone: 936-539-1747
CST Covers Contract No.	
Manufacturer's Representative	