Sierra Stained Glass Studios

Domes

PATENTED, U.S. PATENT OFFICE, Patent No. 5,130,915

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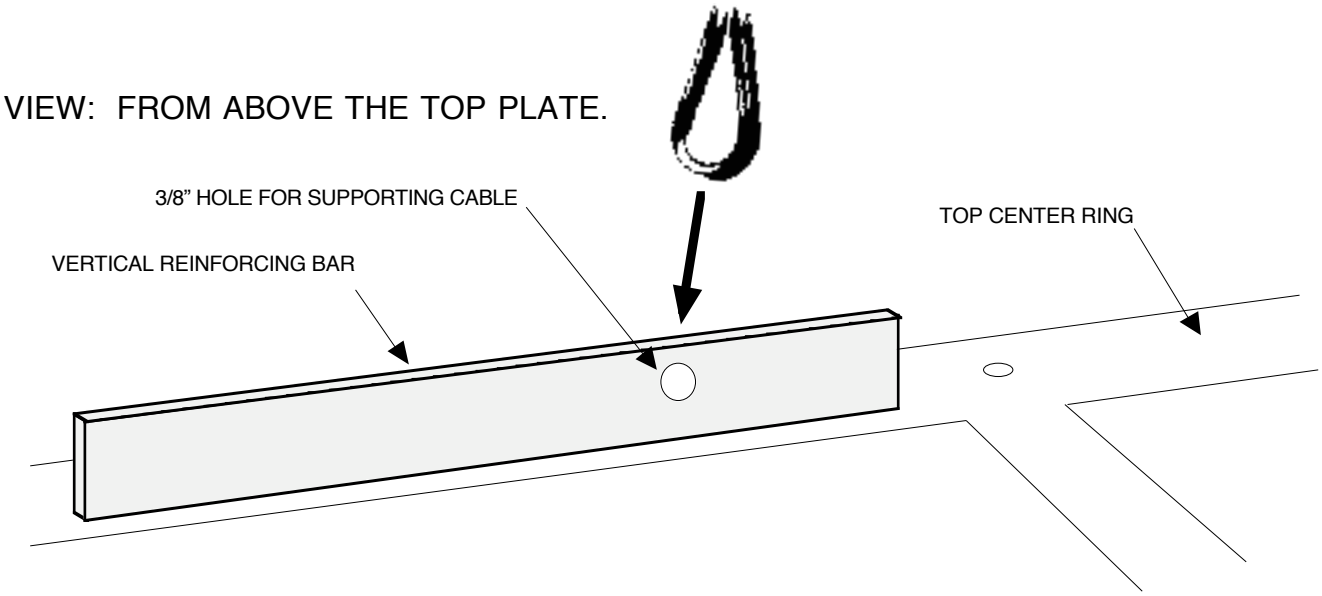
www.sierradomes.com The Dome™ is our 4' octagonal frame; SupraDomes™ are larger frames, 5' - 12' (12-, 16-, or 24-sided)

Use of THIMBLES for Wire Cable Support of Elongated Dome's TopPlate

Your dome may require cables to support the top center ring. Without these cable supports, the top center ring would sag in the center of long elongated frames -- the cables prevent this. Use 1/16" or 5/64" steel cable. (*See page 2 of this PDF file.*)

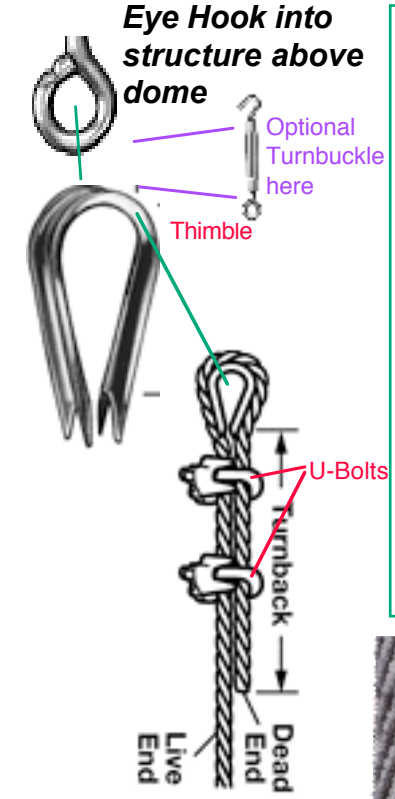
Insert a thimble through each 3/8" hole in the top plate's vertical reinforcing bar (or at specified locations for your frame) for the cables. Loop the cable through the hole so the thimble is between the top of the hole and the cable. (The thimble prevents chafing of the cable that could be caused over time by common vibrations.) Secure the cables so they can't come loose. (You may need to obtain some cable tie-off clamps.)



Be sure the elevation of the entire top center ring (Top Plate) is suspended evenly by the cables. If not, adjust the length of each cable until it is even on all sides.

The cables should be attached BEFORE INSTALLING GLASS PANELS.

Typical Cable Systems - Supporting Dome Frames over 10' diameters



Dome frames over 10' in diameter and elongated domes longer than 10' are not self-supporting. They require cables for stabilization of center top ring. Shown here is typical cable system to stabilize the frame. Relatively thin wire cable is needed. For example, each arm in a 12' dome is supporting just 25 - 30 lbs. Hence, 1/16" steel cable is used. For humid climates, we recommend the stainless steel parts shown below. For dry climates where corrosion is not a problem, galvanized steel can be used. Optionally, turnbuckles can be used for fine adjustments. If using turnbuckles, use at top eye hook into structure, not at frame's loop to prevent hook from jumping out of loop if frame bumped.

We provide only the Thimbles and the welded loop on each arm.

You need to provide the remaining parts shown here for a 24-side round dome frame. All these parts can be purchased from McMaster-Carr. Their catalog numbers are shown in blue, along with quantity you will need. *For elongated frames, quantities will differ*. Length of cable depends on your site's dimensions.

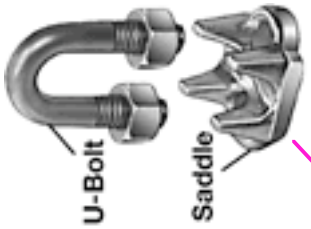
You can order online: www.mcmaster.com
(Prices shown are as of January 2008)

IF in PDF file, you can CLICK to go to web. Then search for part numbers shown below.

1/16" Type 304 Stainless Steel Wire Rope 1x7 Strand
500 lb. Breaking Strength
3458T11 300 ft. @ 0.14 = **$42.00**

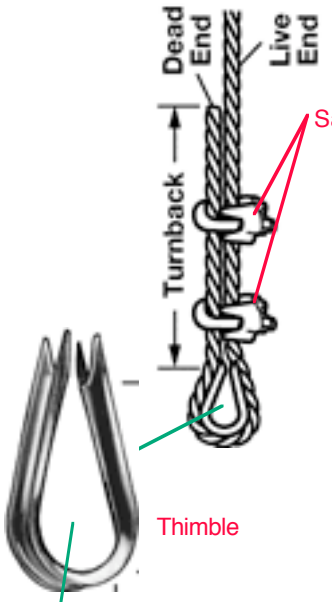
-or-

1/16" Galvanized Steel Multipurpose Strand Rope 1x19 Strand
500 lb. Breaking Strength
3498T61 300 ft. @ 0.11 = **$33.00**



Cast Wire Rope Clips *(Not for Lifting)*
Galvanized Malleable Iron
For Rope Diameter: 1/16" with Rope Turnback of 4-3/4",
2 required for each loop (see diagram)
tightened with 3 ft-lbs of Torque
30325T23 96 @ 0.23 = **$22.08**

For humid climates where corrosion may be a problem, you may want to paint the glavanized wire rope clips after installation for added long-term corrosion resistance.



About Wire Rope Clip Installation

Wire rope clips must be installed correctly to obtain maximum holding power. The clip size should equal the wire rope diameter. The wire rope diameter also determines the number of clips required, the amount of wire rope turnback on which to apply the clips, and the torque needed to properly tighten the nuts. Wire rope clips are not rated with work loads; the work load limit is determined by the wire rope.

To install **single saddle clips** , position the saddle on the "live" or long end of rope, and the U-bolt on the "dead" or short end of the rope.

Light Duty Thimbles (provided)
For Wire Rope Diameters: 3/64", 1/16", 5/64", 3/32"
8914T22 5 (pkg. of 10) @ 3.13 = **$15.65** (Stainless Steel) -or-
8914T12 5 (pkg. of 10) @ 1.93 = **$ 9.80** (Zinc-Plated Steel)

LOOP welded on dome frame's arm (provided)

NOTE FOR ELONGATED FRAMES: The cables may instead to connected to the top center ring. See assembly instructions for your elongated frame.

OPTIONAL: Turnbuckle - Closed Aluminum Body with Zinc-Plated Steel End Fittings
Work Load = 90 lbs. # 30125T4 24 @ 1.50 = **$36.00**

Use at top eye hook into structure, not at frame's loop