

South Florida Fair Sunshade 2021 Mini Fair

Challenge:

Build a Sail Shade system that is:

1. Flexible
2. Installed and dismantled quickly
3. Scalable depending on venue.

Criteria:

1. Develop a robust design that will provide years of service
2. Modern, inviting, and ergonomic.

The Build:

Photo 1 shows the concrete bases that were poured onsite using a commercially provided 3000 psi Fibercrete mix from a cement truck.

If you are wondering what Fibercrete is check out this link

<http://buecherbox.com/2018/03/25/what-is-fibrecrete-and-why-you-should-use-it/>

Each Base consists of 1.5 yards of Fibercrete at a total weight of 4250 pounds and were poured into a custom build plywood mold made in our carpenter shop. Notice there are 4 – 4x4 treated wood beams attached to the underside to allow a lift truck to easily get under them.



(Photo 1)

Another Feature (shown in Photo 2) added during the forming process is the Metal Sleeve centered in the form that extends 12 inches above the concrete base. It is sized to accept a schedule 40 steel pipe which the poles are made of. The idea here is to be able to remove the bases from the poles for storage or conversion to a longer or shorter pole.

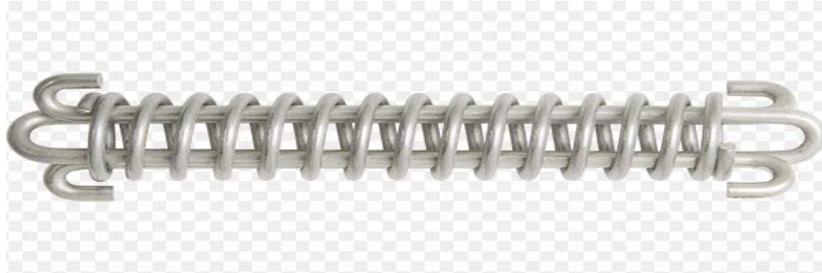


(Photo 2)

Photo 3 shows the 10- foot tall schedule 40 steel pipe that is used to support the sail shades. There are two 12" x 12" x ¼ inch thick steel plates welded to the schedule 40 pipe as shown to allow overlap or multi-level positioning of the sail shades when they are installed. Each plate has a ½ inch through hole in each corner to allow fastening hardware to attach the shades. Notice: the added string lighting as an afterthought.



We used 2 carabiner clips at each mounting location with a tension spring similar to Photo 4 to keep mild tension on the sail shades and prevent sagging.



(Photo 4)

Sail Shades come in many sizes and configurations, they also have a myriad of material weights and design criteria that can be very confusing. We chose a 20 x 20 right-angle triangular shade to maintain the symmetry we wanted. Below is a link to the vendor we used. Photo 5 shows the basic look of the shade.

<https://www.southmissiononline.com/product-p/20x20x28-right-triangle-shade.htm>

**20'x20'x28' Right Triangle Sun Sail
Shade - Available in 2 Colors**



(Photo 5)

Cost for (32 Bases with Posts and 40 Sail Shades)

Lumber and Plywood for Concrete Forms	\$2,228.90
Steel Pipe and Plate for Poles	\$10,314.18
Fibercrete	\$6,000.00
40 Sail Shades	\$4,000.00
Hardware / (Carabiners & Springs)	\$961.26
TOTAL	\$23,504.34

Basic Configurations for Poles and Shades shown below.

