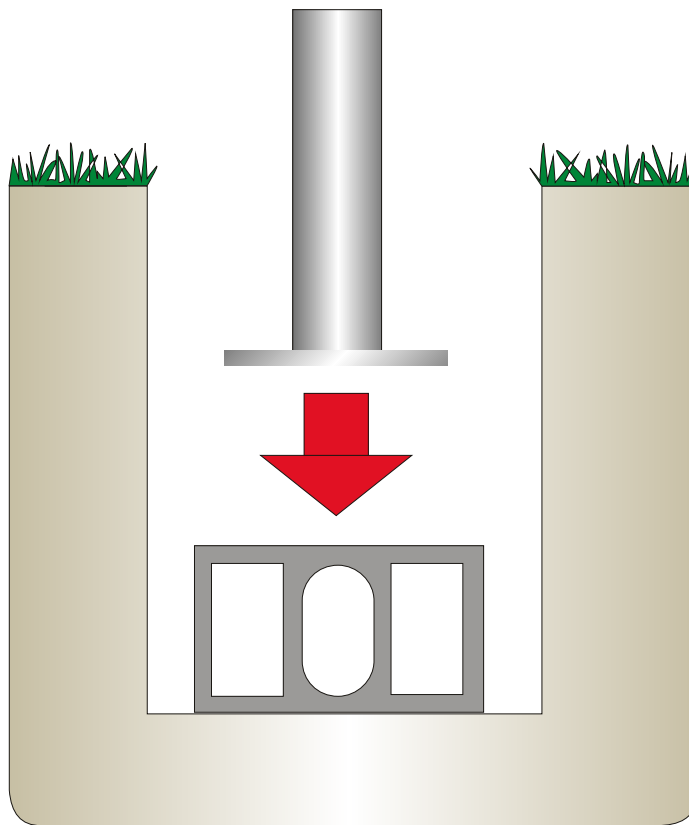


# Installation Guide

## Direct Imbedment



4487 B Ashton Rd  
Sarasota FL 34233  
941.925.3000



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www.floridasunshade.com

**Premier Manufacturer of Shade Structures**  **Promoting Sun Safety & Cool Comfort**

## Safety First

For your safety, Apollo Sunguard recommends that you read and comply with all safety instructions.

- Hard hats should be worn at all times.
- Safety goggles must be worn at all times when operating electrical power tools.
- Secure all ladders and work platforms; make sure they are stable at all times.
- When drilling, point drill away from the body or other persons in case of drill breakage, etc.
- Ensure all electrical equipment used is properly grounded.
- During installation, steel posts and beams should be secured to prevent from tipping, deflection or falling.

## Cautions

**Warning:** *While installing the fabric cover watch for the following...*

Hip beam fabric mounting rings at the top of hip beams.

**Do not** pull fabric cover at sharp angles.

If fabric cover binds, **do not** continue to force pull.

Watch for anything else that might damage the fabric cover.

**Do not** attempt to install fabric cover when the air temperature is below 50°F. Cold temperatures stiffens the fabric making it hard to fit.

**Do not** attempt to install fabric cover when the air temperature is above 85°F. Hotter temperatures can cause the fabric to contract making the fabric hard to fit.

**Do not** attempt to install fabric cover when high wind conditions, rain, or extreme weather conditions are expected.

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***For further product information or any queries on installations, please contact Sunguard Shade Structures Corp.***

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## Introduction

Welcome to the Standard Direct Imbedment Installation Guide. This guide is based on an installation of Sunguard's show unit at the Florida House in Sarasota, Florida. Although it is a standard rectangle with only four (4) columns, many of the procedures relate to all standard units.

## Are You Prepared?

Have your site inspected for underground utilities, irrigation systems, soil condition and overhead power line restrictions.

## Tools Required

- Shade units over 1,000 sq. ft. (for example: a 30x34) may require a small crane (400 lbs. capacity minimum for lifting hips & ridge beam).
- Electric drill
- $\frac{3}{8}$ " diameter drill bit (steel)
- $\frac{1}{2}$ " diameter drill bit (steel)
- Extension cords
- Transit
- Crow Bar
- Two (2) Shovels
- One (1) 8' Ladder
- One (1) 10' Ladder
- (40' long x  $\frac{1}{2}$ " diameter) Braided Nylon Rope (2 lengths)
- Locking Pliers
- Rubber Mallet
- Two (2) Come-Alongs
- Metal lubricant spray oil
- Paintable (clear) silicone sealant with caulk gun.

## Before You Begin

- Confirm unit size for site location.
- Check packaging for damage.
- Confirm Packing List contents. (Report errors/shortages immediately. Call 1.800.319.1010)
- Read installation guide provided with your unit.

**Important:** When more than one structure is being constructed at the same site, correctly identify each structure with its corresponding layout.

## Safety First

For your safety, Sunguard Shade Structures recommends that you read and comply with all safety instructions.

- Hard hats should be worn at all times.
- Safety goggles must be worn at all times when operating electrical power tools.
- Secure all ladders and work platforms; make sure they are stable at all times.
- When drilling, point drill away from the body or other persons in case of drill breakage, etc.
- Ensure all electrical equipment used is properly grounded.
- During installation, steel posts and beams should be secured to prevent from tipping, deflection or falling.

# Packing List Notes & Items Supplied by Apollo

Check packing list and verify that the shade unit is complete with the correct assembly part packages. Each package is labelled for a specific size shade unit.

All other structural members are shipped bubble wrapped and labelled according to size of structure.

## Triangular Units

- 3 columns
- 3 Hip Beams
- Crosspiece
- Ridge Inserts
- Fabric Cover (cut to units specifications)
- 1 Tension Cable
- Bolts equal to number of columns in unit ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- Washers equal to number of bolts ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- Nuts equal to number of bolts ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- U-bolts (D-Shackles)
- One (1) can touch up spray paint
- Blueprints/Engineering Plans (custom units only)

## Hexagonal Units

- 6 columns
- 6 Hip Beams
- Crosspiece
- Ridge Inserts
- Fabric Cover (cut to units specifications)
- 1 Tension Cable
- Bolts equal to number of columns in unit ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- Washers equal to number of bolts ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- Nuts equal to number of bolts ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- U-bolts (D-Shackles)
- One (1) can touch up spray paint
- Blueprints/Engineering Plans (custom units only)

## Square Units

- 4 columns (unless otherwise specified)
- 4 Hip Beams
- Crosspiece
- Ridge Beam or an X-piece Ridge Insert for the Hip Beams.
- Fabric Cover (cut to units specifications)
- 1 Tension Cable
- Bolts equal to number of columns in unit ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- Washers equal to number of bolts ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- Nuts equal to number of bolts ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- U-bolts (D-Shackles)
- One (1) can touch up spray paint
- Blueprints/Engineering Plans (custom units only)

## Octagonal Units

- 8 columns
- 8 Hip Beams
- Crosspiece
- Ridge Inserts
- Fabric Cover (cut to units specifications)
- 1 Tension Cable
- Bolts equal to number of columns in unit ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- Washers equal to number of bolts ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- Nuts equal to number of bolts ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- U-bolts (D-Shackles)
- One (1) can touch up spray paint
- Blueprints/Engineering Plans (custom units only)

## Rectangular Units

- 4 columns (unless otherwise specified)
- 4 Hip Beams
- Crosspiece
- Ridge Beam assembly with Ridge Insert for Hip Beams
- Fabric Cover (cut to units specifications)
- 1 Tension Cable
- Bolts equal to number of columns in unit ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- Washers equal to number of bolts ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- Nuts equal to number of bolts ( $\frac{1}{2}$ " or  $\frac{5}{8}$ " diameter)
- U-bolts (D-Shackles)
- One (1) can touch up spray paint
- Blueprints/Engineering Plans (custom units only)

# Site Preparation

## Step 1: Footings Preparation

- Confirm precise location of unit.
- Ensure that your site is clear.



- Review footing details†.
- Locate footing positions & mark.
- Layout of your unit at the site.



***A final inspection of the site is recommended.***

- Check footing details† for the correct depth, width & length.
- Dig footings.



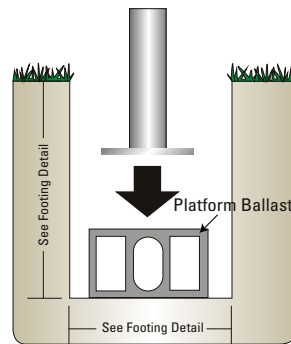
- Check all footings & make depth adjustments for the grade of your site.



**Review footing layout in back of guide. Measure columns for centerline & diagonal. These need to correspond with footing layout details.**

## Step 2: Setting the Posts

- Set each column on the platform ballast in the bottom of the footing.



For example, a six inch (6") platform ballast can be provided by using a standard six inch (6") concrete block.

- Before setting the footings in concrete, check all column heights for correct level above and below grade.



**Columns must be:**

**Plumb**

**Level**

**Square**

**This is critical for proper installation of your Sunguard.**

***Remember that the depth or height of the footing may vary depending upon the grade of your installation site.***

# Site Preparation

## Step 3: Pouring the Footings

- Support the columns to maintain a plumb, level & square setting.



- Surface should be gently sloped by troweling all around to allow water to drain away from the column base.



## Step 4: Site Housekeeping

- You may bring each footing back to original grade.



- Clean concrete splatters & residue from the columns & footings.

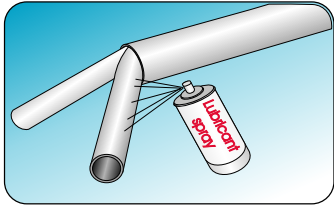


*Allow concrete to cure 24-48 hours* before proceeding with the construction of the structure.



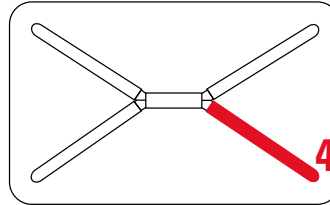
# Erecting the Steel Frame

## Step 1: Attaching Hip Beams

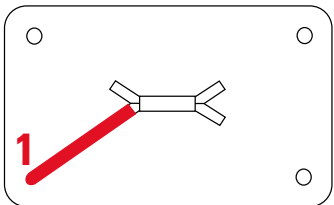


- Lubricate each ridge beam insert liberally with silicone lubricant spray.

## Step 1: Attaching Hip Beams



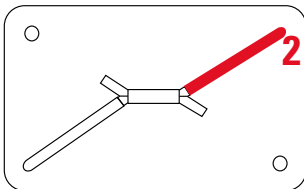
- Attach the final hip beam...



In the following diagram four (4) hip beams are shown being attached to the ridge beam in the correct attaching sequence.

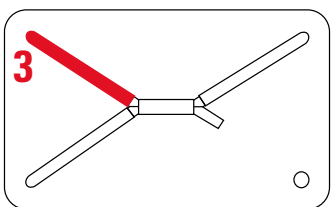
- Slide on the first hip beam...

## Step 2: Lifting Device



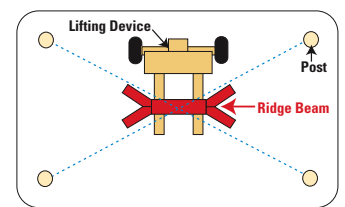
- Attach the diagonally opposite hip beam...

- Use a cherry picker for units over 1,000 sq. ft. to assemble & raise the ridge & hip beams up to installation height.



- Attach the third hip beam...

- Place ridge beam (the center support) on lifting device, make sure the ridge beam is centrally located within the site, & raise the ridge beam to a comfortable working height to attach hip beams.



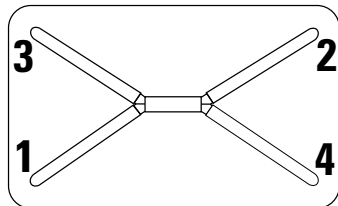


# Erecting the Steel Frame

## Step 3: Attaching to Posts

## Step 4: Securing the Structure

- Raise the assembled ridge & hip beams up to the connection height with the columns.
- Before mounting hip beams onto columns, be sure to spray silicone lubricant on the *tenon* (last 4" of column) at the top of each column.
- Mount the first hip beam onto the column and use rubber mallet to help seat hip beam if necessary.
- Make sure hip beams are fully seated.
- Attach the hip beams to columns in the same sequence that the hip beams were attached to the ridge beam.
- After completing the assembly, slowly lower the lifting device to ensure hip beams remain seated on columns.



- Drill the hip beams for bolting to the columns.
- Each hip beam has two (2)  $\frac{3}{8}$ " pilot holes.
- Use a  $\frac{1}{4}$ " drill bit to drill through each pilot hole into the tenon (top of post).
- Drill the bolt holes (through the pilot holes) using the recommended drill bit size.

**Warning:** Always wear safety glasses and drill away from yourself!

**Note:** Ridge beam may not fully seat until the fabric cover has been installed, this is normal!

**Warning:** Do not stand under the ridge and hip beams while they are being raised. Wear your hard hat at all times.

- Apply a thin bead of silicone sealant to the inner face of the bolt head & slide the bolt through the mounting holes.
- Apply another bead of silicone sealant at the exit point.
- Apply washer & nut.
- Hand tighten washer and nut to fit (*but do not over-tighten*).
- Repeat the drilling & bolting procedures for each hip beam on your unit.

# Erecting the Steel Frame

## Step 4: Securing the Structure

- Apply silicone sealant to the hip beam joints & ridge beam joints.



### *Note:*

- Ridge beam may not fully seat until the fabric cover has been installed.
- You may need to seal the ridge beam joints again after the fabric cover is fitted.
- Use spacers to keep fabric off ridge beams while sealant sets.

# Installing the Fabric Cover

## Step 1: Setting Up the Cover



- Carry the fabric cover to the installation site!

**Warning:** Do not drag the fabric cover, it will damage the material.

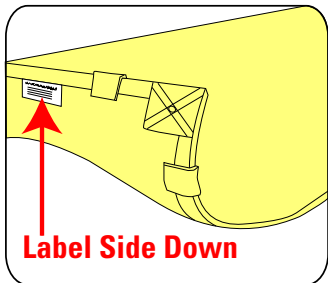


- Throw one of the pulling ropes over the highest point of the steel frame.

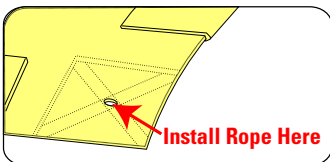
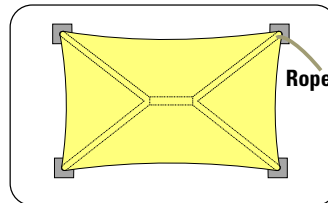
- Carefully pull the fabric cover onto the frame.

- When the fabric cover is loosely draped over the steel frame, temporarily tie-off the pulling ropes to their corresponding columns.

- *Do not fit the fabric mounting eyelets onto the hip beam mounting rings, yet.*



- Unfold the fabric cover, on the ground, with *label side down!*



- Thread your pulling ropes through the pulling eyelets on the fabric cover corner.

## Cautions

**Warning:** While installing the fabric cover watch for the following...

Hip beam fabric mounting rings at the top of hip beams.

**Do not** pull fabric cover at sharp angles.

If fabric cover binds, **do not** continue to force pull.

Watch for anything else that might damage the fabric cover.

**Do not** attempt to install fabric cover when the air temperature is below 50°F. Cold temperatures stiffens the fabric making it hard to fit.

**Do not** attempt to install fabric cover when the air temperature is above 85°F. Hotter temperatures can cause the fabric to contract, making the fabric hard to fit.

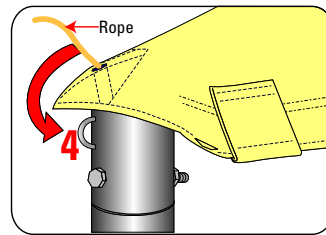
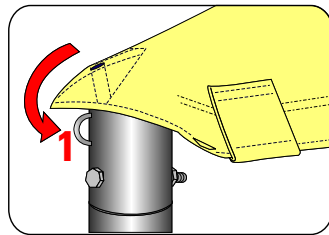
**Do not** attempt to install fabric cover when high wind conditions, rain, or extreme weather conditions are expected.

# Installing the Fabric Cover

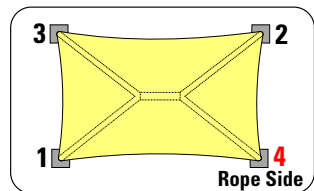
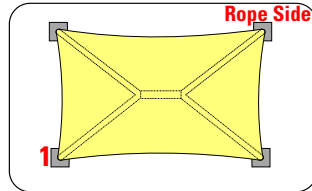
## Step 2: Fitting the Cover

In the following diagram, four (4) fabric mounting eyelets will be located and attached onto their respective hip beam mounting rings.

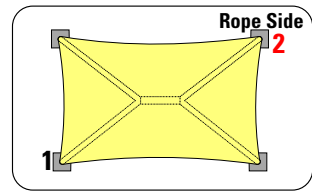
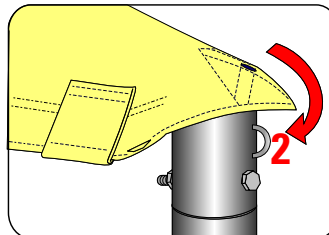
- Locate an eyelet diagonally opposite one of the tied-off pulling ropes.
- Attach fabric eyelet to mounting ring (1).



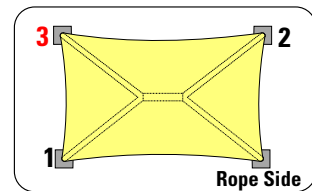
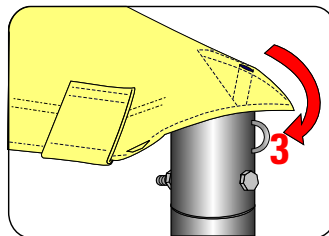
- Move to fabric eyelet (4), (with a pulling rope).
- Follow instructions on next page.



- At opposite ring (2), ease on the second fabric eyelet.
- Use the pulling rope to help tension the cover & pull the fabric eyelet onto its hip beam mounting ring.



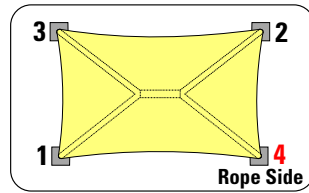
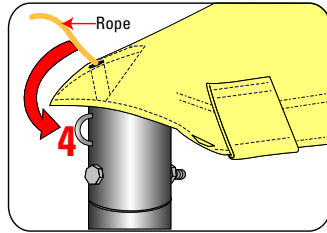
- Locate fabric eyelet (3), attach fabric eyelet to mounting ring.



# Installing the Fabric Cover

## Step 2: Fitting the Cover

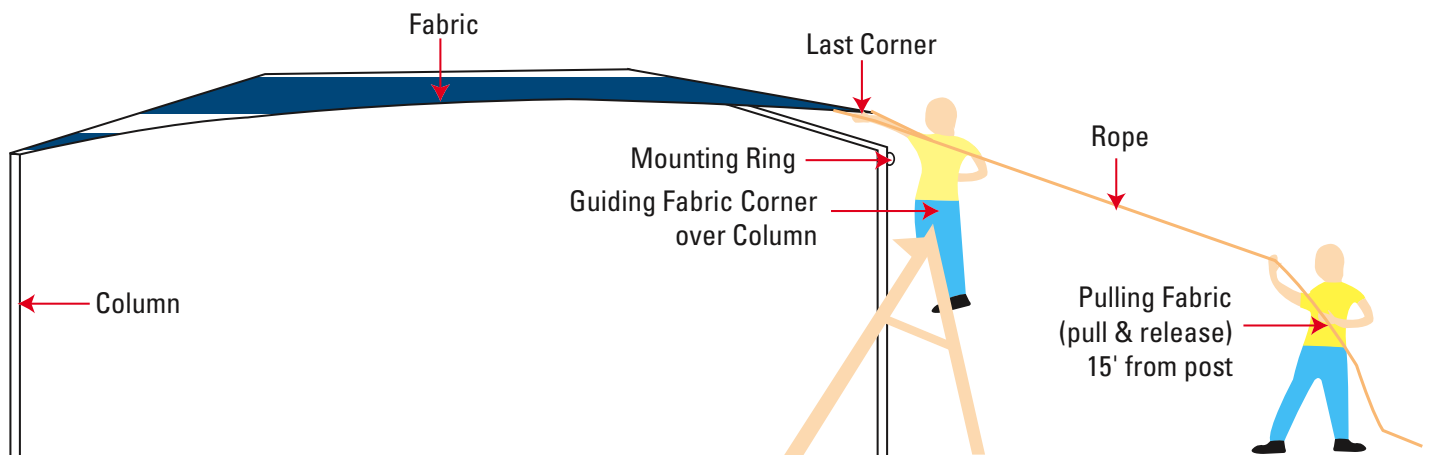
- The last fabric eyelet requires the most fitting tension (particularly on units with six (6) or more columns).
- To make this last corner easier, have one (1) person pull the rope from about 10'-15' out from the column. A second person should be on a ladder and as the fabric is *gently* stretched with a rocking motion, guide the fabric hole over & onto the mounting ring.
- Remove pulling ropes.



**Hint:** Pull tautly then release, pull tautly then release again. Doing this allows the fabric to

**Note:** Do not install in temperatures under 50°F or over 85°F.

Though it may seem difficult to insert, it is not because the fabric is short, it is because the design is for a snug, tight roof line.

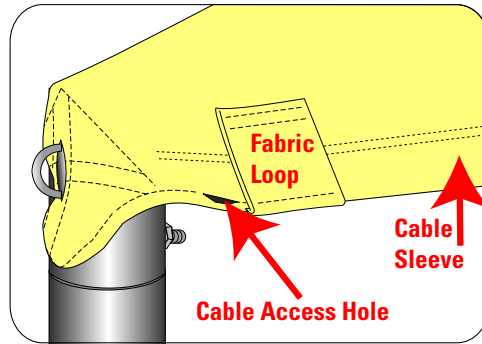


**Warning:** Do not force pull with one (1) continuous motion otherwise the cover may be damaged!

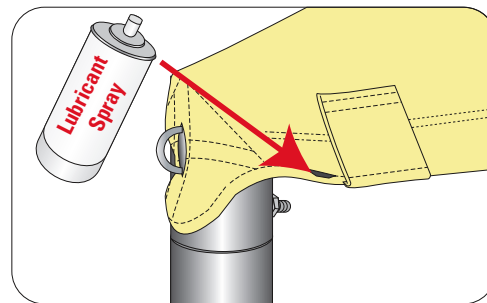
# Installing the Fabric Cover

## Step 3: Fitting the Tension Cable

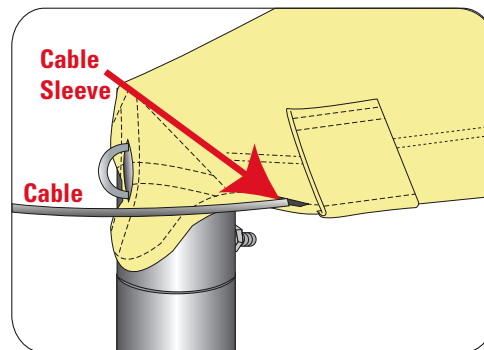
Fabric covers are made with cable sleeves located along the outer edge of each side of the fabric cover. At the end of each cable sleeve is a cable access hole, protected by a fabric loop.



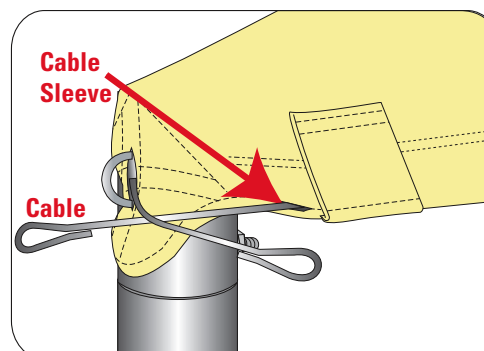
- Spray each cable sleeve access hole with a thin film of silicone lubricant.
- Spray the tension cable end, to help feed the cable through the sleeve.



- Thread one end of the cable into a sleeve access hole. This will become your starting column.



- Feed the cable along the edge of the cover, threading through mounting rings.
- Check the cable feed to ensure that binding during threading does not occur.

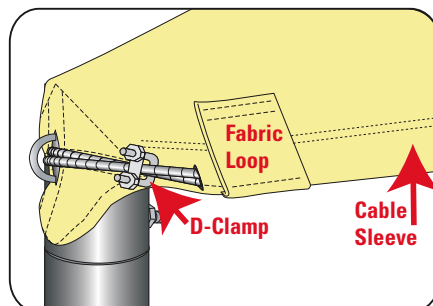
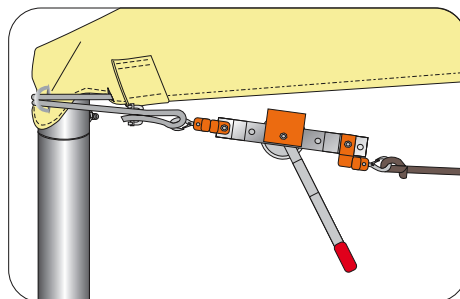
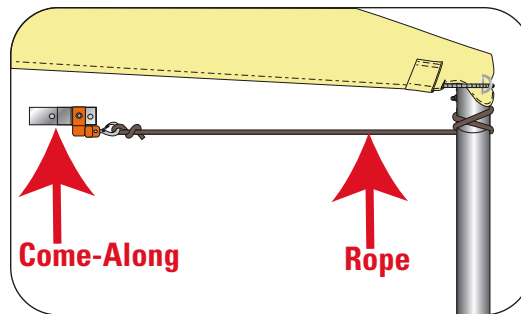
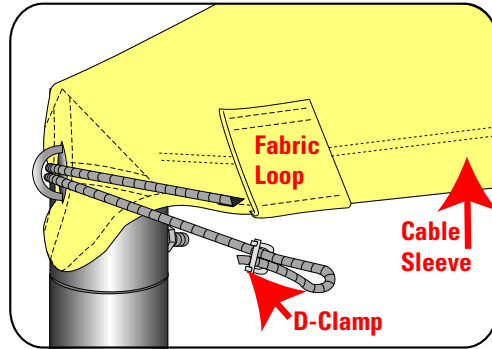


Fabric tension cable threading is complete when the leading cable end returns to the first (starting) column.

# Installing the Fabric Cover

## Step 4: Tensioning the Cable

- Check that the exposed cable ends are an even length.
- Re-adjust the cable if necessary.
- Check that the cables are correctly seated at each column before continuing.
- Make sure the cable has been threaded through the mounting rings on each column.
- Attach rope to column.
- Attach rope to end of come-along.
- Loop the ends of cable A & B using D-clamps (provided).
- Attach come-along to cable loops.
- Tension come-along.
- Make sure cable is being tensioned all around the structure.
- Tighten until taugt, not tensioned. Over tensioning will bow the columns inward.



*The correct tension is achieved when the fabric cable at the center of any edge can be deflected downward by approximately 6” (inches) – using finger*

*pressure only!*

- Clamp cables A & B together with D-clamps.
  - Release come-along & remove the loops on the cable ends.
  - Tuck the cable neatly away into fabric sleeve.
- Warning:** Do not cut the cable ends, otherwise it may not be possible to remove or re-tension the fabric cable in the future, without ordering a replacement cable!

**Note:** Tensioning should be checked & adjusted 3-6 months after installation.



## Completed Inspection



- Before leaving an installation, inspect the structure to see that it complies with all installation procedures & has no damage.
- Complete any house-keeping—please dispose of all packing materials.

***Congratulations!*** By following the recommended installation procedures, you have completed another successful Sunguard Shade Structure installation.

# Cover Removal & Maintenance of Shade Structures

## Cover Removal

Standard Units are *not* designed for snow loads; therefore, you must remove the covers before the winter season begins.

The seams in Sunguards are designed as a fail-safe to burst when wind loads exceed 75 mph. If high winds are forecast in excess of 75 mph, please remove the cover.

To ensure the maximum years of enjoyment guaranteed by Sunguard's Warranty, please take 20-30 minutes to complete the following before the winter season begins...

**Manpower Needed:** Depending upon the size of the unit, usually one (1) person can remove the cover.

**Example:** a 20'x20' cover will weigh 10 pounds.

***If there is already snow on the cover, please try to push off as much as possible before removing!***

***DO NOT WALK ON COVER!***

**Step 1:** Unscrew the cable clamps which will release the tension from the cables.

**Step 2:** Remove cable, straightening as you go.

**Step 3:** Slip corner fabric hole off of mounting ring (start at one (1) corner) and remove cover.

**Step 4:** Fold for storage until danger of snow passes.

An example of what happens when a cover is not removed before the snow season.



## Cleaning

Sunguard Shade Structures suggests cleaning any soot or grit from the cover at least once a year to help maintain its vibrant color. If you live in a snow area, you could schedule your cleaning around the same time as you take off the cover for winter storage.

Cleaning may be done with a mild liquid dish washing type detergent and a broom (if the cover is already removed from the unit); or a hose system used for washing external windows. Hose down and let dry before folding to prevent mildew.

## Steel Maintenance

Sunguard Shade Structures suggests cleaning the steel of your unit at least once a year, ideally during cover removal or re-installation.

Cleaning may be done with a mild dish liquid and a sponge.

Check for any areas that may need a touch up of paint. Touch up paint is included with your unit in a matching color, silver if your unit is galvanized. Replacement cans of touch up paint for **Black**, **white** and **silver** (galvanized) units can be purchased at your local hardware store. **For all other powder coat colors**, please call us at **1-800-319-1010**.