



# Manufacturers Guide

## IMPORTANT INFORMATION WHEN USING DriZ

1. DriZ water resistant shade netting comes with a laminated UV protective coating, which must be installed with the coating facing downward or away from the sun's direct and damaging UV radiation wavelengths. This coating has limited abrasion and tear resistant properties. Care must be taken to protect the coating against abrasion, snagging or tearing during transportation, makeup and installation of covers.
2. The base fabric of DriZ is knitted using a special polyethylene material, more commonly known to the lay person as plastic. As DriZ is a knitted plastic product, it will, when exposed to heat, have a tendency to shrink nominally. Covers must therefore be correctly sized and not left unprotected in the sun or high heat areas before being installed.
3. All joins/seams and hems must be sealed to avoid water penetration and migration along the underside of the cover. If not sealed, water will penetrate and migrate from the highest point of the cover and start dripping at irregular intervals, giving the impression that the DriZ has lost its water resistant properties. (Photos 1 & 2)
4. All structures, steel, cables, attachment brackets and concrete bases must be of adequate strength and dimensions, as recommended by engineers qualified in this field.

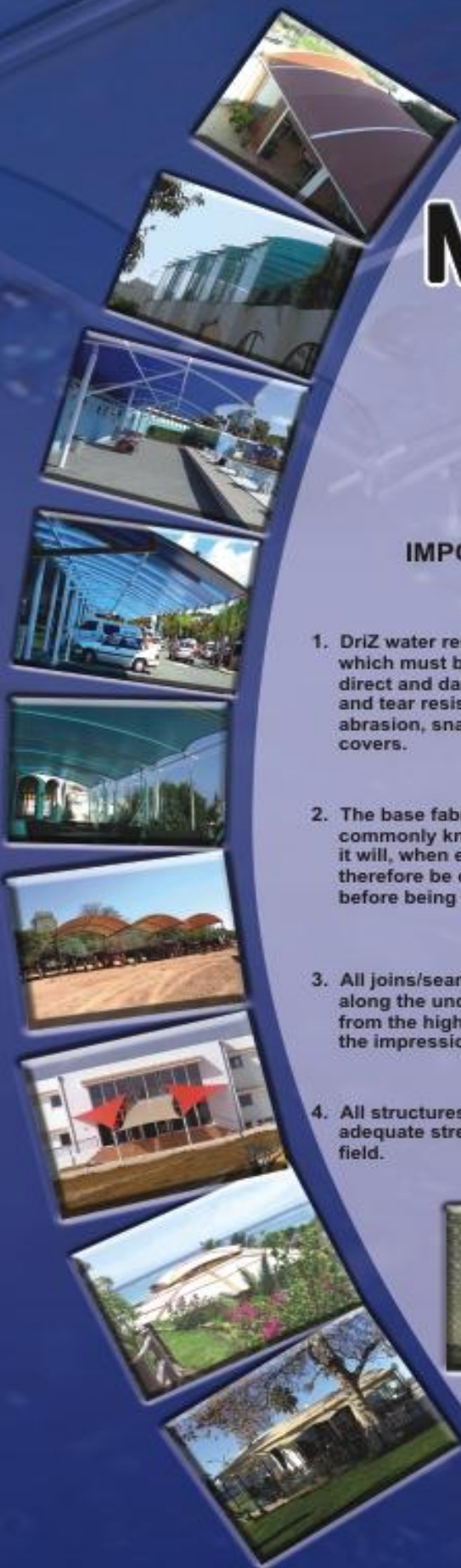


photo 1

Water migration from  
unsealed hem



photo 2



## STRUCTURES AND FRAMES

1. All covers made from DriZ must be fixed or supported evenly throughout the perimeter of the cover, maintaining a balanced and even spread of forces on the fabric, frame or structure. (photos 3, 4, 5 & 6)
2. Point loading on DriZ fabric must be avoided as this will distort the knitted shade netting pattern excessively, resulting in the coating being damaged where it has been fused onto the shade netting. (photo 7)



photo 3  
Rectangular tubing surround on car port



photo 4  
Securing method using flat bar rolled in DriZ



photo 5  
Secured by the lacing method

photo 6  
The recommended method of securing DriZ to a structure as in photo 4



photo 7

## SHADE SAILS

1. The steel surround cable must take-up the full load and tension of the shade sail, exerting even outward forces along the entire perimeter. Nylon, Polyester or Ski Rope are not to be used due to their excessive stretch.
2. Any of the following tensioning devices may be used provided that the sail is the correct size and the cables measure the correct length:
  - a. Dual tensioning buckle with continuous cable (photo 8 & 9);
  - b. Easy Slide A with continuous cable (photo 10 & 11);
  - c. Easy Slide B with continuous cable (photo 12 & 13);
  - d. D Ring with independent cables (photo 14).
  - e. Or approved equal



photo 8



photo 10



photo 12



photo 9



photo 11



photo 13

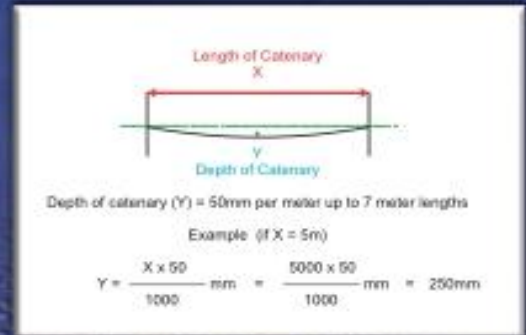


photo 14 (D-ring)

3. All shade sail covers measuring 5m x 5m and smaller must be installed at a gradient no less than 6° (1 in 10). Shade sails larger than this should be installed in accordance with the specifications laid down by a qualified engineer.
4. The sail must be tensioned properly so that there is no possibility of water accumulation on the sail. This could result in serious damage to the sail and structure.
6. Point loading on DriZ fabric must be avoided as this will distort the knitted shade netting pattern excessively, resulting in the coating being damaged where it has been fused onto the shade netting. (photo 7)

## DESIGN, FINISH AND INSTALLATION OF COVERS

1. The sail must be made to the size, allowing for the tensioners and turnbuckles between the sail corners and poles.
2. After the tensioners have been fixed or fitted to the shade sail corners, the final cable length can be determined.  
(See formula for determining the cable length for a shade sail and sketches 4 & 5 below)
3. The perimeter cable, whether it is a continuous cable or an independent cable, should follow the exact perimeter (outer edge) of the sail.
4. When the sail is tensioned, the outward tension of the cable inside the hem, will evenly take up the sag in the body of the sail.
5. Tensioning of the turnbuckles will take up the sag with no possibility of water accumulation on the shade sail cover.
6. Special care must be taken to ensure that the catenaries (perimeter radius) of the cover are of the correct dimensions. This will ensure that the ideal outward forces are exerted onto the perimeter of the cover. (sketch 1 provides a guideline for catenary sizing)
7. All corner reinforcing must be integrated within the hems of the covers and the exit point in the hems must be reinforced to avoid tearing or cutting of the fabric. (sketch 2)
8. The angle of departure of the cable out of the hems must not place excessive stress on the hems at the point of exit, yet applying sufficient outward force to prevent gathering or rippling of the fabric in the corners. It is recommended that the cable exit as close as possible to the corner. (photo 15)
9. Perimeter hems must allow for a selvedge of at least 5mm from the stitching on the underside of the covers to act as a water deflector. This allows the water to drip off the deflector thus preventing the migration of water on the underside of the cover. (sketch 3)
10. All seams must be properly sealed with a UV based sealant that does not blanch or a UV resistant adhesive tape on the coated side. When using an adhesive tape, it should preferably be applied a few days after installation.
11. Overlap joining is highly recommended ensuring that the overlap faces the lower point of the sail or cover, similar to the laying of roof tiles.
12. Be cautioned that the design of the feed-in foot piece of some sewing machines are extremely sharp and abrasive, and could damage the coating layer of DriZ.
13. It is not recommended that corner reinforcement be stitched onto the body of the DriZ sail or cover, as this will restrict fabric elasticity and will damage the integrity of the coating layer, resulting in leakage (photo 16).



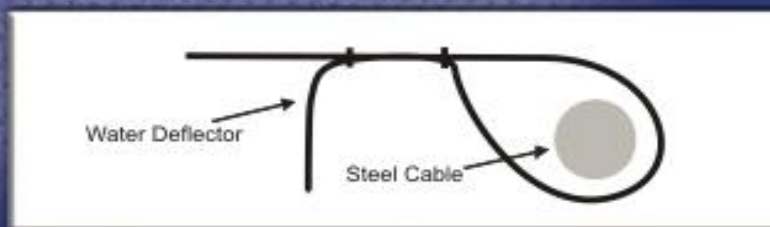
sketch 1



sketch 2



photo 15



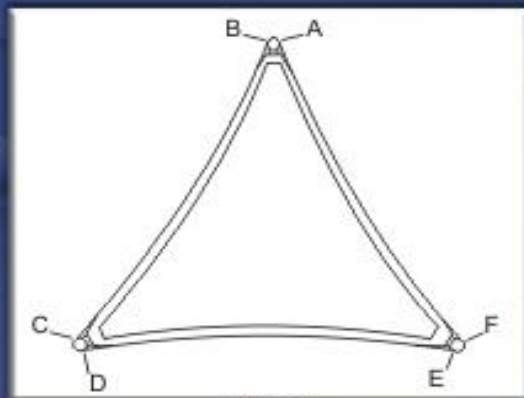
sketch 3



photo 16

## FORMULA FOR DETERMINING THE CABLE LENGTH FOR A SHADE SAIL

### TRIANGULAR SAIL



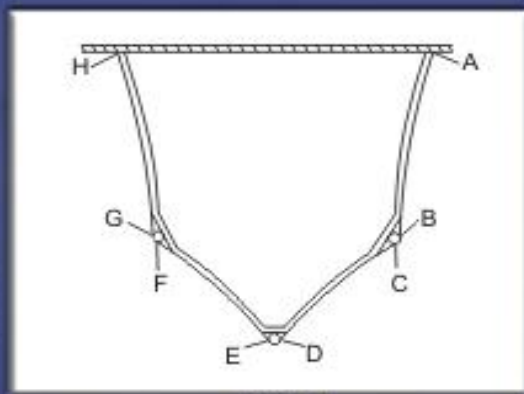
sketch 4

$$\begin{aligned} \text{Perimeter} &= \text{Cable length excluding overlapping} \\ &\quad \text{cable required for fixing or swagging} \\ &= AB + BC + CD + DE + EF + FA \end{aligned}$$

- Where: (a) AB, CD and EF are the contact distances of the cable on the outer surface of the tensioning buckles.  
(b) BC, DE and FA are the perimeter distances between the cable contact points on the tensioning buckles.

### MULTIPLE CORNER SAIL (refer to sketch 5 below)

Follow the same principle as for the triangular sail. The total length of the cable for the sail on sketch 5 will be:



sketch 5

$$\begin{aligned} \text{Perimeter} &= \text{Cable length excluding overlapping} \\ &\quad \text{cable required for fixing or swagging} \\ &= AB + BC + CD + DE + EF + FG + GH \end{aligned}$$

- Where: (a) BC, DE and FG are the contact distances of the cable on the outer surface of the tensioning buckles.  
(b) AB, CD, EF and GH are the perimeter distances between the cable contact points on the tensioning buckles and/or the fixing points.

**NOTE:** When using independent cables with fixed D-ring attachments, the individual cable lengths must measure the perimeter distance between the D-ring attachment points on the sail. In the case of the triangular sail referred to in sketch 4, BC, DE and FA would be the perimeter dimension for each cable.

In the design and make up of the DriZ shade sails, it is of utmost importance to note that:

- All sides of the shade sail must have a catenary of the correct dimension. Long sides with midway fixing points must have catenary cuts between all such fixing points.
- In the case where one or more sides of the shade sails are permanently fixed to a building or structure, e.g. sail track, only the sides with cable require catenary cuts.
- The cable length must measure the exact perimeter size of the sail, including the outer contact distance of the dual tension buckle, D-ring or Easy Slide devices. (sketch 4 and 5)

Incorrect cable sizing will either result in the following:

- Over sizing** - Excessive tension, stretch and distortion of the DriZ sail causes point loading and damage to the coating layer. (photo 20)
- Under sizing** - Excessive fabric and insufficient outward tension of the cable will occur causing slackness and sagging of the DriZ sail. Wind damage to the sail will occur and any accumulation of water on the shade sail will cause severe damage to the installation and shade sail.

Correct cable sizing and catenary cuts enables the cable, under tension, to exert equal outward forces along the entire perimeter of the shade sail, thus distributing even and balanced surface tension throughout the DriZ cover.



# Summary Of Recommendations

## Do's

1. Always install DriZ with the coated side down.
2. All structures, cables and fittings must be of adequate dimension and strength, capable of withstanding the forces to which they are subjected when in situ. (Consult your qualified engineer)
3. Finished covers must be handled with care and protected against heat shrinkage before installation.
4. All joins must be waterproofed with a UV resistant sealant or adhesive tape. When using a UV sealant use a soft brush to dab the sealant onto the seams, ensuring closure of the needle holes. When using adhesive tape, apply it to the coated side with a soft roller or rag. Make sure all the air bubbles are removed.
5. Ensure that forces are evenly distributed along the perimeter of the covers and sails when erected. "AVOID POINT LOADING AT ALL TIMES"
6. The reinforcing of the covers must be incorporated within the hems only.
7. Cable exit points on hems must be reinforced.
8. The perimeter cables and catenaries must follow the same arc, complementing each other and ensuring an even distribution of forces across the entire length of each side.
9. Shade sails measuring 5m x 5m and smaller, must be installed at a gradient of no less than 6 (six) degrees. (For larger sails, consult your qualified engineer)
10. Always ensure that the overlap of the seam faces the lowest point of the cover or sail. (e.g. roof tiles)
11. Shade sails must be made up and tensioned in accordance to the specifications as laid out in the Manufacturers Guide
12. Ensure surrounding areas are free from moving plants and falling debris and materials that could potentially damage the DriZ fabric

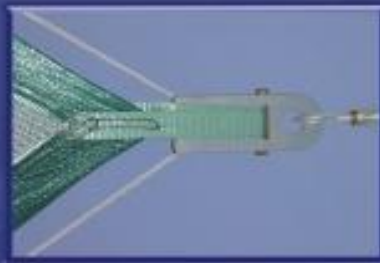


photo 17  
Dual Tensioner



photo 18  
Surround cable carrying the



photo 19  
Ideal finish on a shade sail

## Don'ts

1. DO NOT use under-engineered supports, fittings and cables.
2. DO NOT use nylon, polyester or any other products that have high elongation properties for perimeter support.
3. DO NOT point load.
4. DO NOT manhandle the fabric or covers.
5. DO NOT forget to seal the seams and hems.

photo 20  
Over tensioning of DriZ fabric.  
Cable not taking the load.



# Technical Features



## SHEER STRENGTH

FABRIC	:	Knitted shade fabric of high density polyethylene. SABS quality approved
COATING	:	Ultraviolet stabilised polyethylene
MASS	:	280 grams per square metre
WIDTH	:	3,0 metre
ROLL SIZE	:	33 metre (Standard Lengths)
CUT LENGHTS	:	Supplied to order
BREAKING FORCE	:	616 N (Warp) 1143 N (Weft)
TEAR STRENGTH	:	50kg Warp (min) 120kg Weft (min)
BURST PRESSURE	:	Test method 50mm strips extended to point of failure 250 Kpa (min) Test Method SABS 1703 2500 Kpa As 2001.2.4-1990 method B

### STANDARD COLOUR RANGE

- ROYAL BLUE
- RAIN FOREST GREEN
- SILVER
- DESERT SAND
- RUST GOLD
- TERRACOTTA
- RED
- CHARCOAL

### SHADE FACTOR

- 91%
- 93%
- 93%
- 88%
- 94%
- 91%
- 86%
- 96%

### UV FACTOR

- 96%
- 97%
- 94%
- 94%
- 97%
- 95%
- 93%
- 97%

### NON STANDARD COLOUR RANGE

- MULBERRY
- NAVY BLUE
- LAGUNA BLUE
- MIST GREEN
- CHAMPAGNE
- TURQUOISE

### SHADE FACTOR

- 94%
- 94%
- 95%
- 92%
- 83%
- 86%

### UV FACTOR

- 97%
- 97%
- 96%
- 95%
- 93%
- 92%

Warranty: 5 years limited

DriZ has been tested by CSIR under wind conditions in excess of 200km per hour

