



# Installation Manual

CUSTOM SHADE SAILS

<sup>NZ</sup> Custom  
Shade



# Installation Manual

Before placing an order for your custom shade sail it is important to plan your space carefully to ensure a good fit and easy installation. If you are unsure we recommend employing a local builder / handyman to assist.

## SAFETY PRECAUTIONS

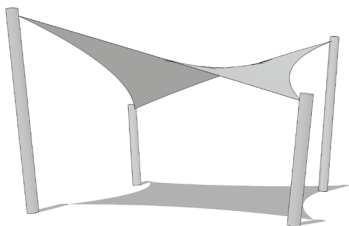
1. Ensure the installation area is free from obstructions and hazards.
2. Use appropriate safety gear, including gloves and safety glasses.
3. Do not install during adverse weather conditions.
4. Make sure you have at least one other person to assist with the installation.

**Before you measure for your shade sail we strongly recommend installing all the fixing points.** Make sure all posts, eye bolts, and wall plates are securely in place so you can accurately measure the correct size for your custom shade sail.

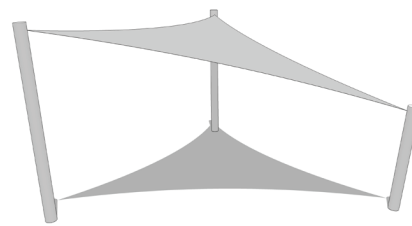
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## DESIGNS

We recommend that Shade Sails are installed as shown in fig 1 & 2. Shade Sails can also attach to a building (or existing structure) and to additional poles, but are not limited to this. They can be attached in many different configurations. It is also possible to use a wire cable to extend your Shade Sail corner to a fixing point.



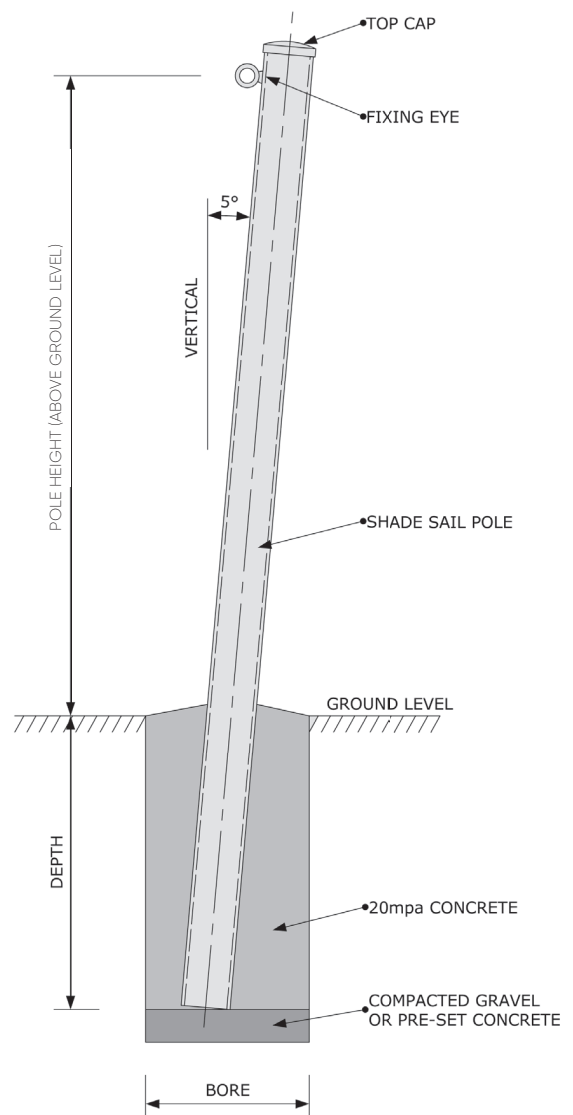
1. Hyperbolic Shape (Hypar) For square and rectangular sails. This helps the shade sail to stay tight and look great!



2. Angled Shape For triangular sails. This helps prevent sagging in the middle of the shade sail.

## STEEL POSTS






- **Steel posts:** Steel posts are an ideal choice for shade sail fixing points due to their structural integrity and high resistance to corrosion. They provide a strong, stable foundation for the high tension of a shade sail.
- **To install a steel post:** a concrete footing is essential to ensure it is secure. The required depth for the concrete footing varies based on the size of the shade sail and the ground conditions. A common rule of thumb is to embed the post to at least one-third of its total length in concrete. Generally, the depth can range from 0.8 to 1.5 metres, with deeper footings required for larger sails or softer ground.
- **Angle the posts:** We recommend that shade sail posts are installed with a 5° lean out away from the centre of the sail (direction of pull). This must be taken into account when positioning the posts. If using steel posts it is advisable to have a galvanised coating to prevent rust. If using timber poles it is advisable to use treated timber. Posts can be painted to match your shade sail or surrounding environment.
- **Set posts:** Once you have chosen the correct size posts and measured the position of them, dig holes to the required size (**See guide on page 4**). Lay a 100mm of medium size gravel at the base of the hole, compact to form a solid pad OR pre-set 100mm of concrete. Posts should be embedded in concrete footings with a minimum of 20Mpa concrete. The concrete must be mixed to the manufactures' instructions or supplied by a certified concrete supplier.
- **Position each post:** at a 5° angle leaning out away from the centre of the shade sail and add concrete, ensure the post remains in the correct position. The top of the concrete surface should be sloping away from the post to assist with water drainage. You may require bracing while concrete sets. Posts should be left for at least 72 hours to allow the concrete to set.



**NZ Custom Shade can supply - Square, hollow 4m long 100mm x 100mm galvanised steel post with end cap. Please look under accessories in our online store to purchase.**

## GUIDE FOR POLES & FOOTING

Please note, this is an indicative guide for standard shade sails and is not certified by a structural engineer. All sizes are based on firm ground conditions and med/high wind zone areas. Sites and situations vary therefore these sizes will not apply to every situation. Please use with care.

Shade Sail Size	Pole Height	Round Timber	Square Section Steel	Round Section Steel	Footing Depth	Footing Bore Diameter
<b>4m x 4m</b>						
	2.5m	175 SED	75 x 75 x 3	89.0 x 3.2	1.0m	300mm
	3m	200 SED	75 x 75 x 3	102.1 x 3.2	1.0m	300mm
	3.5m	200 SED	100 x 100 x 3	114.3 x 3.6	1.1m	300mm
	4m	225 SED	100 x 100 x 3	114.4 x 3.6	1.2m	300mm
	4.5m	255 SED	100 x 100 x 6	114.3 x 4.5	1.3m	300mm
	5m	255 SED	125 x 125 x 5	139 x 4.5	1.4m	300mm
<b>5m x 5m</b>						
	2.5m	200 SED	75 x 75 x 4	102.0 x 3.2	1.2m	350mm
	3m	200 SED	100 x 100 x 4	114.3 x 3.6	1.2m	350mm
	3.5m	225 SED	100 x 100 x 4	114.3 x 3.6	1.2m	350mm
	4m	225 SED	100 x 100 x 4	114.3 x 4.5	1.3m	350mm
	4.5m	225 SED	100 x 100 x 5	139.7 x 4.5	1.3m	350mm
	5m	250 SED	125 x 125 x 4	139.7 x 4.5	1.4m	350mm
<b>6m x 6m</b>						
	2.5m	200 SED	100 x 100 x 4	114.3 x 3.6	1.2m	400mm
	3m	225 SED	100 x 100 x 5	114.3 x 4.5	1.2m	400mm
	3.5m	225 SED	100 x 100 x 5	139.7 x 4.5	1.3m	400mm
	4m	250 SED	125 x 125 x 4	139.7 x 4.5	1.3m	400mm
	4.5m	250 SED	125 x 125 x 5	165.1 x 5	1.4m	400mm
	5m	250 SED	125 x 125 x 5	165.1 x 5	1.5m	400mm
<b>7m x 7m</b>						
	2.5m	225 SED	100 x 100 x 5	114.3 x 4.5	1.3m	450mm
	3m	225 SED	100 x 100 x 5	139.7 x 4.5	1.4m	450mm
	3.5m	250 SED	125 x 125 x 5	139.7 x 4.5	1.4m	450mm
	4m	250 SED	125 x 125 x 5	139.7 x 4.5	1.5m	450mm
	4.5m	250 SED	125 x 125 x 5	165.1 x 5	1.6m	450mm
	5m	275 SED	125 x 125 x 5	165.1 x 5	1.7m	450mm
<b>8m x 8m</b>						
	2.5m	225 SED	125 x 125 x 5	139.7 x 4.5	1.4m	450mm
	3m	250 SED	125 x 125 x 5	139.7 x 4.5	1.5m	450mm
	3.5m	250 SED	150 x 150 x 5	165.1 x 5	1.6m	450mm
	4m	275 SED	150 x 150 x 5	165.1 x 5	1.6m	450mm
	4.5m	275 SED	150 x 150 x 5	165.1 x 5	1.7m	450mm
	5m	300 SED	200 x 200 x 5	219.1 x 6	1.8m	450mm

## FIXING TO A BUILDING

- **Timber Building or Beam:** Timber structures and beams make excellent anchor points for shade sails. When attaching a shade sail to the exterior of your house, it is crucial to connect the hardware to structurally sound components such as rafters, beams, or solid masonry. This ensures the shade sail is securely fixed and can withstand the significant tension placed on it. This method also provides the benefit of shading your home from UV rays, which can help with temperature regulation.
- **Attaching to a Roof:** For securing shade sail brackets to a roof, it is recommended to use stainless steel roof iron brackets. These are specifically designed for this purpose and are attached along a screw or nail line on the roof. To ensure a strong and weather-tight connection, use 14 gauge batten screws that are 75mm long. These screws should be used with rubber washers both on the head of the screw and between the bracket and the roofing iron. For added protection against moisture, a sealant can also be applied between the bracket and the roofing iron.
- **Masonry / Concrete:** To securely attach a shade sail to a masonry or concrete wall, a threaded rod is an excellent solution. The process involves drilling a hole into the concrete and then fixing a stainless steel M12 threaded rod into it using a specialized adhesive, such as a chemical or epoxy-based glue. Once the adhesive has cured, a stainless steel eye nut is screwed onto the exposed end of the threaded rod. The eye nut provides a secure and strong point to connect your shade sail, distributing the significant tension across the solid masonry.

# Hardware & Fittings

It is important to ensure you use the correct brackets and fixings for your custom shade sail to insure structural integrity and lasting performance.

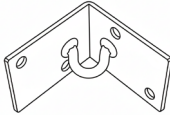

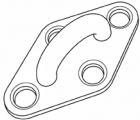


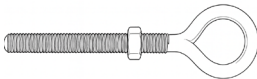
## GETTING THE RIGHT FIXINGS

All our custom shade sails include tensioning turnbuckles and D shackles for attachment to fixing points.

You'll need to choose suitable brackets and fixings based on what your fixing points are attached to.

If you're unsure which fittings you require, please email us at [sales@nzcustomshade.co.nz](mailto:sales@nzcustomshade.co.nz)

**These are some of the common brackets and fixings we offer through our online store:**

	<p><b>EXTERNAL CORNER BRACKET GALVANISED CB-EX100 100mm</b> Suitable for fixing point on the corner of a building.</p>
	<p><b>INTERNAL CORNER BRACKET GALVANISED CB-IN100 100mm</b> Suitable for attaching to the internal corner of a building or a solid structure.</p>
	<p><b>CORRUGATED ROOF BRACKET WITH EYEBOLT S/S 316</b> Suitable for fixing sail to a corrugated iron roof.</p>
	<p><b>SHADE BRACKET DIAMOND PAD 100mm x 62mm</b> Suitable for larger sails, a diamond-shaped plate is screwed or bolted directly onto a suitable structure, such as a timber post, a concrete wall, or a steel beam.</p>
	<p><b>SHADE BRACKET DIAMOND PAD 67mm x 38mm</b> Suitable for smaller sails, a diamond-shaped plate is screwed or bolted directly onto a suitable structure, such as a timber post, a concrete wall, or a steel beam.</p>
	<p><b>STAINLESS STEEL EYE NUT - M10 / M12</b> A marine-grade stainless steel nut that is typically screwed onto a threaded rod or bolt that is anchored into a solid post, wall, or beam. Available in 2 sizes: M10 for small sails and M12 for large sails.</p>
	<p><b>STAINLESS STEEL CAST EYE BOLT HEAD - M10 / M12</b> A marine-grade stainless steel bolt that is typically anchored into a post or wall, the eye provides a connection point for tensioning hardware like turnbuckles and shackles. Available in 2 sizes: M10 for small sails and M12 for large sails.</p>
	<p><b>STAINLESS STEEL CAST EYE BOLT - M12</b> A stainless steel eye bolt designed for fixing through posts, secured with nuts on both sides. The eye provides a strong connection point for hardware such as turnbuckles and shackles. Available in M12 for sails of any size.</p>

# Measuring for Your Shade Sail

Once all relevant posts, eye bolts, and wall plates are securely in place you can accurately measure the correct size for your custom shade sail.

## 1. MEASURE PERIMETER LENGTHS

Measure the distance between each consecutive attachment point, from the inside of one eye bolt to the inside of the next. Keep the tape taut to prevent sagging. Record these measurements on your diagram using the letters you assign.

**For a square or rectangle sail, this would be A-B, B-C, C-D, and D-A.**

## 2. MEASURE DIAGONAL LENGTHS

For a sail with four sides, measure and record the diagonal distances between opposite corners. This allows the manufacturer to cross-check your measurements for accuracy.

**For a square sail, this would be from A-C and B-D.**

## 3. MEASURE RELATIVE HEIGHTS

If your sail will be installed with a slope (which is recommended for water run-off), you need to measure the vertical height of each attachment point relative to a single horizontal reference point.

- 1. Create a horizontal reference line:** Use a laser level or stretch a string line between the posts, ensuring it is perfectly level with a spirit level.
- 2. Mark each post:** Make a clear mark on each post or wall bracket where the level line intersects.
- 3. Measure up from the mark:** For each attachment point, measure the vertical distance from your level mark up to the center of the eye bolt. Record this measurement on your diagram.

## IMPORTANT CONSIDERATIONS

**Tensioning allowance:** The manufacturer will account for the hardware and tensioning needed to stretch the sail tightly. Do not subtract for turnbuckles or other hardware yourself; simply provide the exact "eye-to-eye" measurements.

**Double-check everything:** Take each measurement twice to ensure accuracy. Mistakes can lead to a sail that doesn't fit properly.

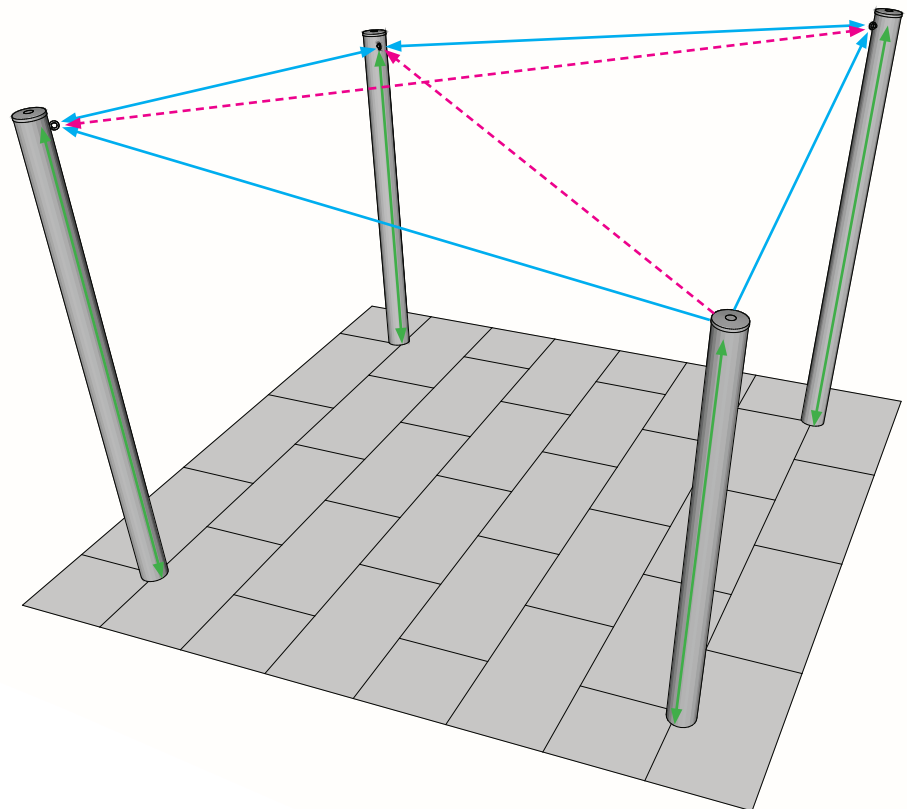
# How to Measure

Measuring your shade sail is a critical part of the project. **Always install your poles and accurately locate any other fixing points before measuring up for a custom made shade sail.** Custom made sails are specifically manufactured to fit your site, they can be made to almost any shape or size, so make sure to ensure all your fixing points are established before measuring your shade sail.

Make sure you take accurate measurements and double check them all while on site. You must have all poles installed first. We also recommend all eyebolts and any eye plates are installed too. It is possible to mark where your eye plates will be attached and measure to that mark, but you must be sure the eye plate can fasten at that exact point. This must be noted on your plan.

**The example below shows a 4 point shade sail and all the required measurements.**

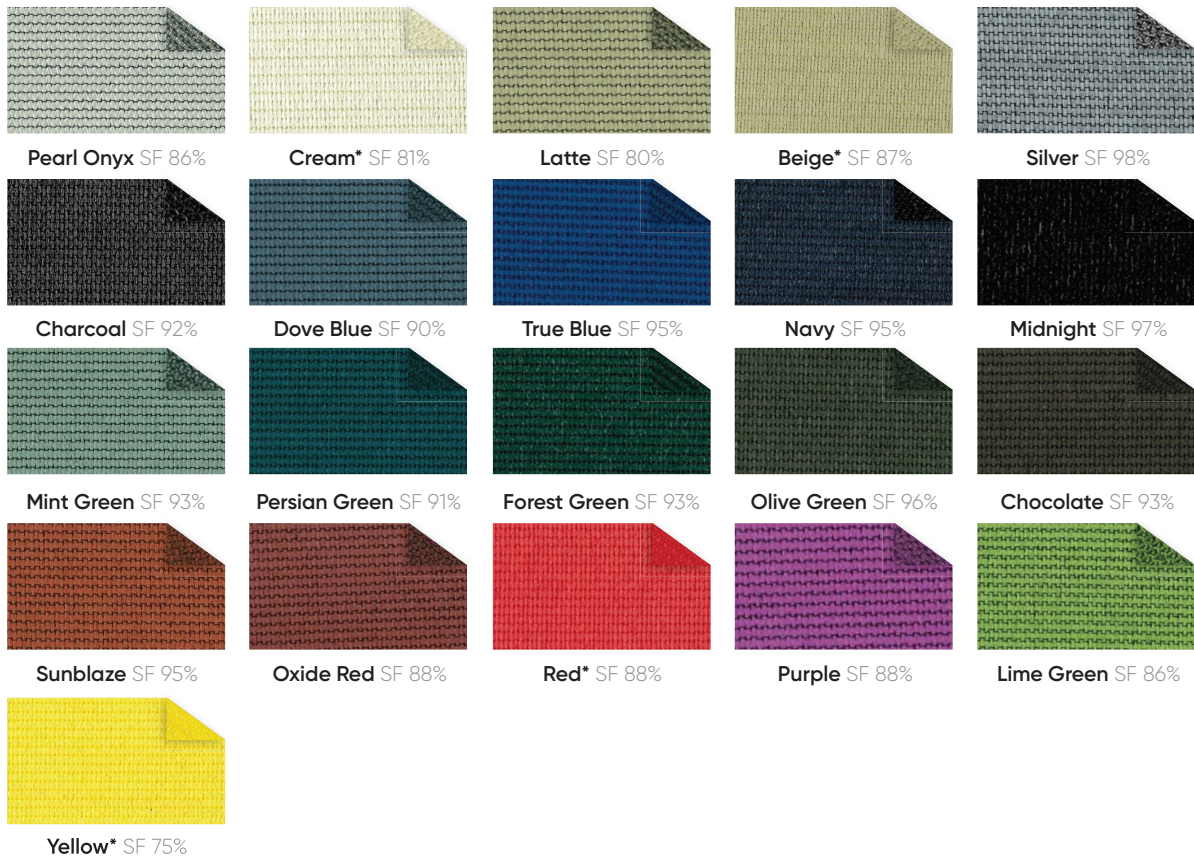
- ▶ 4x perimeter measurements (required)
- - -▶ 2x diagonal measurements (required)
- ▶ 4x pole height measurements (required)



All measurements must be taken from the inside of the fixing eyes.  
The manufacturer will account for tensioning hardware and the sail stretch.  
If you have any questions please contact us at [info@nzcustomshade.co.nz](mailto:info@nzcustomshade.co.nz)

# Colour Options

Extrablock 330 fabric is available in an extensive range of up to 21 colours, allowing for a high degree of customisation. This wide palette includes everything from neutral, earthy tones that blend seamlessly with landscapes to vibrant, bold colours that make a statement. The colour options are not only about aesthetics; they also have varying levels of UV protection and shade factor, allowing you to choose the perfect combination of style and sun safety for your specific needs.



\*Not Fire Retardant

Warranty	10 years
Shade Factor	75-98%
UVR Block	90-98%
UPF	21-41
Roll Width x Length	3.0m x 32m
Breaking Force Warp (AS2001.2.3.2-2001 Grab Method)	979N
Breaking Force Weft (AS2002.3.1-2001)	1228N
Elongation at Break Warp	67%
Elongation at Break Weft	57%
Bursting Strength (AS2001.2.4-1990)	3000kPa
Tear Resistance Warp (AS2001.2.10-1986)	157N
Tear Resistance Weft (AS2001.2.10-1986)	170N

Email [make@shadesystems.co.nz](mailto:make@shadesystems.co.nz) to request your free fabric samples today.



# Shade Sail Example

## CURVES & ANGLES

This is an example custom shade sail project for a 4 corner sail.

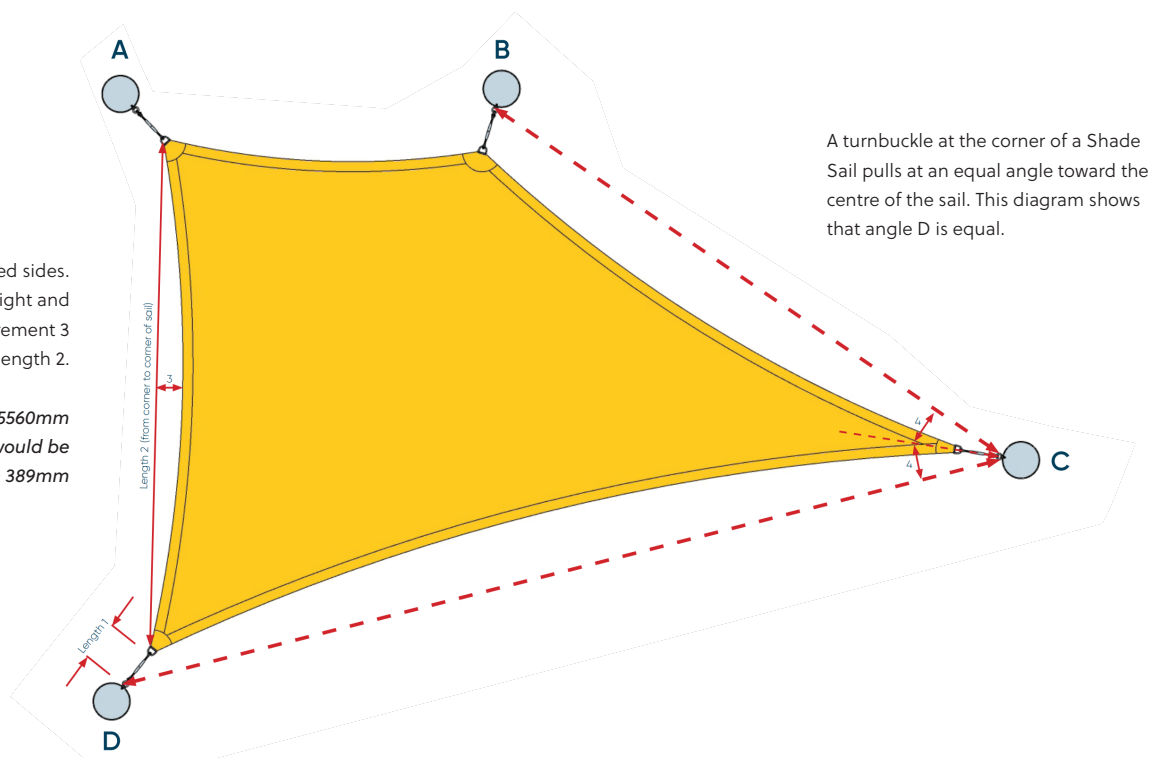
Always label your Shade Sail corners A, B, C etc. in a clockwise direction. This helps to orientate the sail at each point in the design and manufacturing process

Our Shade Sails are custom made so the posts can be placed where they suit best. They do not have to be perfectly square or symmetrical.

There is always some fixing hardware at the corner of a shade sail, it may be a shackle, turnbuckle or short length of chain. Length 1 is usually between 60mm–350mm depending on the type of hardware used.

Shade Sails must have curved sides. This is to keep the sail tight and stable. The dip measurement 3 ranges between 5% – 7% of length 2.

**Example:** If length 2 was 5560mm then the dip of that side would be somewhere between 278 – 389mm



A turnbuckle at the corner of a Shade Sail pulls at an equal angle toward the centre of the sail. This diagram shows that angle D is equal.

If you have any questions please contact us at [sales@nzcustomshade.co.nz](mailto:sales@nzcustomshade.co.nz)

# Shade Sail Install Guide

When your Shade sail arrives keep it in a cool place out of direct sunlight when it is folded. Exposing the folded / rolled sail to hot sun or other heat can damage it.

## WHAT'S IN THE BOX

- Shade Sail
- Sail Plan
- Fixing hardware

## TOOLS YOU WILL NEED

- Cord / rope (5-10m)
- Nulan grease
- Crescent wrench x 2
- Load lock
- Ladder

## PPE

- Harness
- Hi-vis vest
- Hard hat
- Safety Boots

## SHADE SAIL LAYOUT

Unpack your Shade Sail, being careful when unrolling the sail, to lay it out on a smooth flat surface so that the fabric does not snag. Make sure that the hem is on the underside. The sail should have the corners labeled or numbered to indicate which pole each corner is fixing to. Using these indicators, arrange your sail so that it is the same orientation to match your fixing points.

## FIXING HARDWARE

Included in the box should also be a plan or copy of your order form which indicates what fixing hardware is to go on each corner.

If you were being supplied the fixing hardware with your sail, this will also be found packaged in the box.



## ATTACHING THE CORNERS

The first corners should be able to be attached without the aid of a ratchet. You will then need to attach the last turnbuckle corner with mechanical help.

1. **Start with the corners which do not require a tensioner**, fixing these to the eyes. If using shackles make sure to install these with the pins going in from the top as shown.



2. **Extend all turnbuckles to their longest length and grease the threads well.** Always grease hardware threads to prevent them from cross-threading when tensioning.



3. **Attach one end of the turnbuckle to a corner dee of the sail.** At this point you will need to use a strong piece of braided cord or rope to attach the rest of these points to the fixing eyes.



4. **Loop the cord/rope around the dee ring on the Shade Sail, then through the fixing eye.** You can then tension the rope by hand or use a tensioning device (load ratchet, winch etc). This will allow you to pull the sail close enough to connect the turnbuckle to the eye.

5. **Once the corner has been connected put the pin in and secure it with the safety ring.** The temporary rope can now be released and removed.



**Repeat the steps until all Shade Sail corners are attached.**

## TENSIONING THE SHADE SAIL

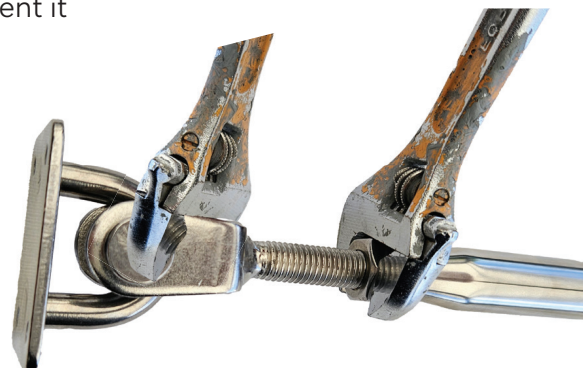
Now that all points of the Shade Sail are attached, the turnbuckles and tensioners need to be tightened until your Shade Sail becomes taught.

1. **Using adjustable crescents, tighten the turnbuckles (approx. halfway) or until the sail is taught with no wrinkles.**

This can sometimes be rather difficult and take a lot of effort, but is required to keep the sail tight in any weather condition.



2. **Lastly, use 2 crescent wrenches, one to hold the turnbuckle and the other wrench to tighten the lock-nuts up against the turnbuckle body. This will lock the turnbuckle to prevent it unwinding overtime.**



**Repeat these two steps for all turnbuckles.**

### TIP TO KEEP IT TIGHT:

The key to a good fit is to get the webbing as tight as possible with even tension on all sides. Just remember, the tighter it is, the longer it will last, and the better it will look.

# Care Instructions

## REMOVING YOUR SHADE

To remove your shade for storage during the winter months or in advance of bad weather, just reverse the order of the installation. Make sure to fit each corner with the tensioned rope before removing the hardware. This will hold the corner secure and allow you to slowly release and lower the corner.

Once you have the Shade Sail down, make sure to add a mark to each corner so you can easily layout the sail for reinstallation. (E.g. deck post, north corner.)

Make sure your sail is dry before folding it up, and store in a dry, sheltered place. Remember to grease the hardware again prior to re-installation.

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## CLEANING

To clean your Shade Sail, you can do this in-situ or remove the shade. If removing the shade, make sure to lay it out flat on a non-abrasive surface and keep all fixing hardware separate.

A water blaster or cold water pressure washer should remove most of the dirt but if it hasn't been cleaned for a while a mild mould remover can be used. Do not use products such as wet and forget solution which contains Benzalkonium Chloride as this does not suit shade sails.

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## TIGHTENING

Occasionally a Shade Sail may become loose or wrinkly if the sail has loosened off overtime. If you notice this on your Sail, you can tension the turnbuckles tighter, to pull the sail out tight again. You will need to tighten each turnbuckle on the sail by the same amount.

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## CONTACT US

For any further assistance and support contact us at: [sales@nzcustomshade.co.nz](mailto:sales@nzcustomshade.co.nz)