

# SHADE SAILS & TENSION STRUCTURES



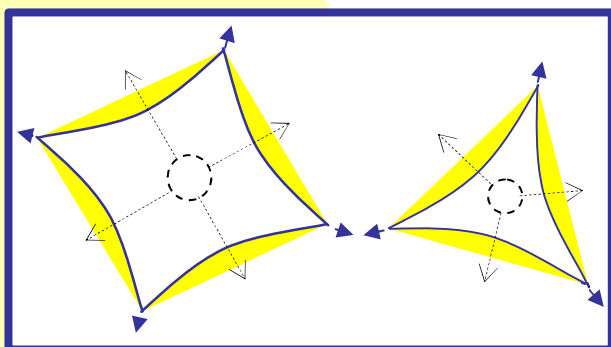
Shade Sails and Tension Structures are far more complicated than you may think. In order to be effective they should be designed and installed by experts. Whilst such expertise takes experience and skill, this letter offers you some background information that will be useful in helping you develop ideas that will assist Horizon Sailmakers develop a solution that perfectly suites your needs.

## Part 1: Design Considerations

### WHY HOLLOWS IN SIDES?

It is important to explain the need for a sail to have hollows cut into the side. As is shown below, the cables within the hems of the sail try to pull straight under tension, in turn tensioning the centre of the sail outwards and prevent sagging.

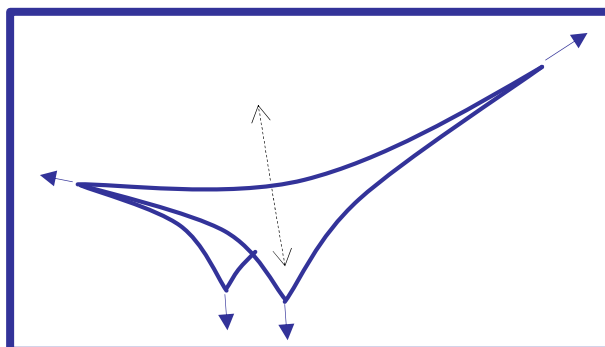
As can be seen in the diagram (right), this also leads to some loss of Shade Sail Area and coverage (shown in grey). Furthermore, the loss will be greater as a percentage of total area for a triangle, actually an extra 50% of the loss of area experienced by a four sided shape of the same total area.



### WHY DIFFERENCE IN HIGH AND LOW DIAGONAL HEIGHTS?

A common design is called the “hyperbolic” shape. Done correctly, the designer accentuate the differences between the height of low and high diagonal fixing points. Doing this will breathe life into the shape of the sail and give it “twist”.

In addition it stabilises the sail and helps deflect wind so that loads placed on posts and fixing points are minimised under all weather conditions.



## Part 2: Common Fabrics

### Ozone 2000

Providing around 93% UV protection and guaranteed against Sun degradation for 10 years, this shade mesh has far greater strength than other widely used options that are prone to stretching. Being made from a tightly woven, monofilament mesh it is also far easier to maintain and clean. We manufacture mesh shade sails with double stitching and cabled hems, which is important given that the webbed seams in competitors' sails are prone to stretching.

Colours: Ivory, Beige, Terracotta, Claret, Navy, Tan, Dark Green, Royal Blue, Grey, White and Black.

Warranty: 10 years pro-rata

### Horizon Shadeview

The benefit of a PVC coated mesh is in its smoother textured appearance and low maintenance. Such membranes have a fully welded construction, which provides far greater durability than stitched seams. The sails have stainless steel cabled hems, which is important given that the webbed seams in competitors' sails are prone to stretching.

Colours: Antique Linen, Jarrah, Champagne, Mist Green, Tuscan Gold, Midnight Blue, Coffee Cream, Sand, Denim, Shell, Driftwood, Smoke & Forest Green.

Warranty: 3 years



## Ferrari 502

Where customers are looking for a smaller waterproof shade sail solution then we recommend an acrylic lacquer coated PVC, named Ferrari 502. Such membranes have a fully welded construction, which provides far greater durability than stitched seams. The sails have stainless steel cabled hems, which is important given that the webbed seams in competitors' sails are prone to stretching.

Colours: Over 25 colours

Warranty: 5 years



## Mehler 8506T

Where customers are looking for a medium-sized (25m<sup>2</sup> – 100m<sup>2</sup>), waterproof membrane then we recommend a PVDF coated PVC, Mehler Haku 8506T. PVDF is a form of Teflon. Such membranes have a fully welded construction that provides greater durability than stitched seams. The stainless steel cabled hems we use provide a distinct advantage over the webbed seams in competitors' sails that are prone to stretching.

Colours: White, Pearl White, Creme

Warranty: 5 years



## Why Horizon Sailmakers?

Horizon Sailmakers has been designing and installing shade structures for the education sector, homes, clubs and companies for over twenty years. In that time we have seen that compromises in quality can at best be costly in the long run, and at worst be dangerous.

1. We use cabled hems rather than webbing to hold the shape of the sail. Whilst the sails look fine in photos and at the time of installation, webbing stretches over time leaving the sail looking tired and limp within a matter of months.
2. We offer a 5-year warranty on workmanship, offering peace of mind.
3. We take time to find out what you want you want, and do not try to fit our products to your needs... we design and create solutions specific to your needs.
4. We handle it all!  
Not only do we manufacture and install all of our structures, we can also organise and prepare engineering detail and all relevant Permits on behalf our clients.



## Next steps...

As there are very rarely 'standard' requirements, construction issues and designs. The next stage is the organisation of a consultation and design preparation. Please call to arrange an appointment and site inspection as we must take time to understand your needs and develop a proposal that best serves them.

For more ideas, you may visit our website at [www.horizonsails.com](http://www.horizonsails.com).

We look forward to talking to you soon on the road to developing your shade sail.



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