



## **Frequently Asked Questions**

The following general questions are the most frequently asked of us. If you have any other general questions which are not answered here please do not hesitate to call us.

- 1 What is the difference between commodity grade PVC and tension membrane grade PVC? Answer commodity grade PVC is designed to be used as tarpaulins for the transport industry and are not usually under much tension. The quality of the base cloth and the coating comprise cheaper materials because the transport industry rarely use them for more than 3 years. Tension membrane grade PVC is designed to be under tension and to have an economic life of 10 + years under normal circumstances. They are treated with fire retardant, higher levels of UV stabilizers and anti dirt protective coatings.
- 2 Why are waterproof fabrics welded and which welding method is the most appropriate? Sewn waterproof membranes leak where the needle perforates the material and the appropriate thread has an economic life of 5 to 6 years. They cannot be re-sewn because the sewing process weakens the fabric. Welding involves no stitching and so there is no thread to rot. It is very important that the appropriate welding method is used. HF welding is the strongest and the only method recommended by fabric manufactures for membranes under tension. Hot wedge, hot air and ultrasonic is OK for membranes not under tension such as awnings, tarpaulins etc.
- 3 How waterproof is shade cloth? It is not waterproof. Some water will usually runoff but this will vary from very little to in excess of 90%. Factors which affect water runoff include, the type of shade cloth, the pitch ( Installed vertical angle) of the shade cloth, the intensity and duration of the rainfall. If waterproofing is an important consideration we recommend that you use waterproof fabrics.
- 4 If a fabric is fire retardant, does that mean it will not suffer fire or heat damage? No, the Australian Standard for fire retardency measures smoke evolved and spread of flame. Fire retardant means it will burn but self extinguish when the source of flame is removed. Also the smoke evolved is not at dangerous levels.
- 5 Can shade membranes be satisfactorily welded? No, they can only be sewn.
- 6 Which threads are recommended for shade sail? There are two types of thread commonly used for shade sails. Polyester with a breaking load of 18Kg is the most common because it is soft and has some elasticity so it is suitable for membranes under tension. Economic life is around 5 years for white thread and 7 years for black thread. PTFE thread, sometimes called Tenara is a good choice for membranes over awnings and pergolas because of its long economic life (12+ years). PTFE thread is not suitable for membranes under tension due to it's low tensile strength and because it has very little elasticity which causes the thread to cut into the shade fabric. This weakens the shade cloth and makes it vulnerable to storm damage.
- 7 Is shade cooler than waterproof PVC? If the height of the membrane is under 3 metres shade is usually cooler whereas over 3 metres waterproof is cooler. The reason is complicated but too long to explain in FAQ.
- 8 How should I use to clean the sails? We recommend a Ph neutral detergent and a soft nylon broom then rinse thoroughly. Pressure cleaners and harsh chemicals such as chlorine, bleach, degreaser, acids can cause permanent damage to the fabric. As a general rule, if it is harsh on your bare skin, it is too harsh to use on a shade or PVC membrane.
- 9 Do shade sails need building approval? In the NT, if they are attached to a building or are freestanding exceeding 30 m2 they need a building permit. Aerosail can arrange this on your behalf.
- 10 What is the difference between a building permit and a planning permit. Planning permits govern the type of building, design, use, boundary setbacks and building heights. Building permits deal with engineering, workmanship and spread of fire. Both are administered by NT Government Departments but they are separate and each Department has it's own requirements.
- 11 What do fabric warranties cover? This varies widely amongst different material suppliers. As a general rule, cheaper fabrics are covered for UV degradation only, which can be difficult to prove. Better quality fabrics cover loss of tensile strength which is better. All fabric warranties diminish in value over time and only cover the fabric but not the manufacturing or installation labour.
- 12 Are shade structures suitable for DIY? Small shade sails are fine for "do it yourself" but all waterproof and large shade structures need to be design an installed by trained technicians. Not only does the structure need to be strong enough, it also must be rigid enough so that the membranes can be tensioned and taut. Membranes which cannot or are not tensioned correctly will fail the structure and wear out in a much shorter time. All permanent Aerosail membrane structures are engineered.
- 13 Do tension membranes need to be removed in the event of a cyclone warning? In most cases Building Board regulations require the membranes to be removed when a cyclone warning has been issued. Sometimes we design the structure to



withstand cyclones with the membranes in place during a cyclone. If your structure has been designed to withstand cyclones with membranes in place, you will be specifically advised of this and the time of estimating.

- 14 Do shade sails and waterproof membranes fade? Yes they all do. However, fading is more noticeable in darker colours.
- 15 I sometimes see membranes with aluminium corner plates and wire ropes. What is the purpose? Aluminium corner plates and wire rope distribute the load more evenly and greater extend the life span of the membrane.
- 16 What do the terms “shade”, “shade cover” and “UV block” mean?  
“Shade” refers to the amount of light that is transmitted through the fabric. The colour and the material density determine this. Dark colours will reduce the amount of light transmitted through the material significantly whilst light colours will allow a lot more light through. This does not affect UV radiation.  
“Shade cover” refers to the visibility through the fabric.  
“UV Block” refer to reduction of three types of direct UV radiation.
- UV-A which causes skin aging, wrinkles, and also also damages outdoor plastics and paint.
  - UV –B is much stronger than UV- A and causes skin cancers and cataracts. It also affects the health of plant life and animals.
  - UV –C is stronger than UV – B which fortunately do not reach the earth’s surface because they are filtered by the Earth’s atmosphere. Continued destruction of the Earth’s Ozone layer can result in UV – C rays reaching the earths surface which will create major problems for humans, animals and plant life. Actions one takes for protection against UV – B will usually provide protection against UV – A.
- 17 If a shade material has 95% UV block does that mean it will provide that level of protection is ordinary use? No the testing is done in an un-tensioned state. In use, the weave will open up. If this is important avoid lightweight shade material with a low tensile strength and high elasticity because the weave will open up considerably, so a type 44 shade cloth with 98% shade may end up with 88% shade cover. Look for heavy duty shade material with a high tensile strength because these will stretch far less.
- 18 What does SPF mean? SPF is an abbreviation for sun protection factor, theoretically, If it takes 15 minutes for skin reddening to occur without protection, having SPF 15 protection will take 15 times longer for reddening to occur. Ie 15 Minutes compared to 3 Hours 45 minutes.
- 19 Will 90% shade mean I will get 10% more UV protection than 80% shade? No you will receive much more. If the measure was in a tensioned state, 80% shade cloth would be equivalent to SPF 4, whereas 90% shade cloth would be equivalent to SPF10. Where UV protection is important, Aerosail recommend using a type 81 shade fabric (Heavy duty) with at least 94% shade cover. This will give approximately SPF 15 protection. Refer clause 16 above. When considering SPF protection, it should be noted that UV rays are also reflected up from grass, concrete and glass.

Aerosail Engineered Fabric structures specialize in design, engineering, manufacture and installation of fabric structures. We take pride in providing practical passive solutions to everyday solar radiation problems. If we can’t answer your specific inquiry ourselves in most instances we will be able to introduce you to a specialist who can provide a solution.

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