

# Shade Cloth Fabric Information

## Shade Factor

Shade factor is the actual shade that is cast or created on a sunny day. If you think of a shadow as 100% shade, then a shade cloth with factor of say 50 would create a lighter shadow or shade factor.

Shade cloth is typically given a rating which represents the amount of UV Radiation it blocks, e.g. 90%. This is a different measurement to its shade factor. Lighter coloured shade cloths such as white create lower shade factors than darker shade cloths, say black. Both could be rated to block 90% UVR but the white might only give a 50% Shade factor whereas the black might give an 80% shade factor. What is happening is that darker coloured shade cloths are blocking more visible light than lighter coloured ones.

## UVR Block and UPF

### Ultraviolet Radiation Block – Ultraviolet Protection Factor

UVR Block is the percentage of ultra violet radiation that a fabric, in this instance, shade cloth, prevents from transmitting through the fabric. Shade cloth forms a physical barrier which actually absorbs and/or reflects the UV radiation essentially blocking it and creating a lower UV zone beneath it.

It helps in understanding UVR Block to compare it to another widely used measurement, UPF or Ultraviolet Protection Factor. UPF is a widely used scale to rate fabrics as to their effectiveness in protecting against UV radiation.

UPF RATING	UVR BLOCK	PROTECTION
15-20	93.3-95.9%	Good
25, 30, 35	96-97.4%	Very Good
40, 45, 50, 50+	Greater than 97.5%	Excellent

Factors which effect the effectiveness of Shade cloth

- **Weave density.** How much of the fabric is solid fibres and how much is space between the strands is important. The tighter the weave, the less space there is between the strands for the UVR to pass through.
- **Construction of the fabric.** Most fabrics are either woven or knitted and the construction determines whether the amount of open area in a fabric changes when tension is applied.
- **Fabric thickness.** As fabric thickness increases, the measured protection increases.
- **Tension.** Stretching a knitted fabric will normally cause a decrease in the UPF rating as the spaces in the fabric open up. Some shade cloths have high UPF or UVR Block ratings but when they are stretched, such as in a shade sail application their effectiveness drops significantly.
- **Colour.** In general, darker colours and higher dye concentrations absorb more UVR than do lighter colours.
- **Condition.** Often the UV protection of shade creating fabrics lessens as the fabric gets older or deteriorates. Be careful with older fabrics because they may not provide the protection they did when they were new.

## Choosing the right shade cloth for the job

Seeking UV protective shade is a widely accepted strategy for protecting oneself against the dangerous effect so of UV Radiation, particularly UV-B (280nm to 315nm).and to a lesser extent UV-A (315nm to 400nm).

Referring to the chart above, we can see that shade fabrics with a UPF of 35 or a UVR block of 96%+ are rated by ARPANSA as very good.