

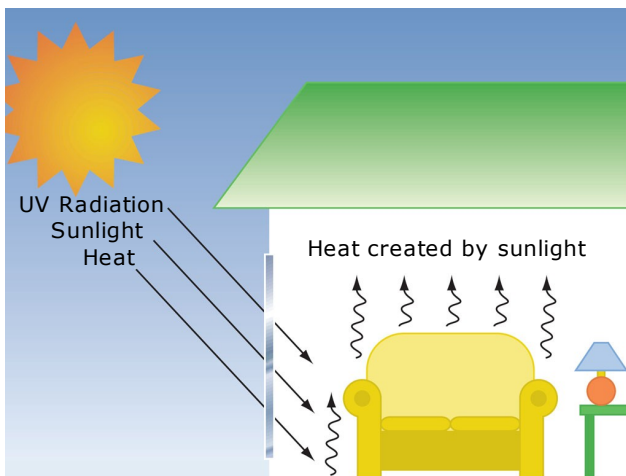
INFO BRIEF

Fade Reduction

It is well recognized that carpets, curtains and furnishings exposed to direct sunlight will over time experience the effects of fading and yellowing. While the solution is usually to close off the room with curtains and blinds, this shuts out your natural light, ventilation and view. However by selecting the appropriate glass, it is possible to allow natural light to enter a room yet significantly reduce the rate at which fading occurs. Before we consider glass in this respect, the process of fading should firstly be explained.

Research has confirmed the major cause of fading is solar radiation (or sunlight), which comprises of three specific energy bands: ultra-violet radiation (UV); visible light; and infra-red radiation. Pollutants, moisture and oxygen are, to a lesser extent, other contributing factors.

As solar radiation enters the room, it is absorbed by the exposed fabric causing the temperature to rise. This continual heating of the fabric by the visible light and infra-red radiation, along with the more damaging effects of the UV rays, combine



The above illustrates how a combination of UV radiation, sunlight and heat creates heat within the chair. This heat, and in particular the UV radiation, causes a breakdown of the fabric structure which leads to fading. By selecting the right glass you can eliminate up to 99% of UV radiation & significantly reduce sunlight and heat.

to deteriorate and break down the dye and fabric structure of furnishings which eventually leads to the discolouration that is associated with fading.

From a glass perspective, the objective is therefore to select a product that has high absorption or reflection of UV, visible light and infra-red radiation. In the instance of reducing the damaging effects of UV radiation, it is important to know the clear polyvinyl butyral interlayer in laminated glass effectively absorbs up to 99% of the UV. By incorporating a reflective or tinted solar control glass into a laminated product will reduce both the amount of visible light and total solar energy that passes through the glass.

In order to compare the relative fading reduction offered by different glass types and configurations, a measurement called the Damage Weighted Transmittance (Tdw) is employed. This measure is 'weighted' to include the fact that damage caused by fading decreases as the energy wavelength increases. In addition, clear 3mm float is designated as the benchmark against which the fading reduction qualities of all other glass types are measured. For this purpose 3mm float has a measured Tdw of 0.72, while complete exposure (with no glass) is stated as 1.0 Tdw. Consequently the lower the Tdw of a glass, the better the fade reducing qualities of the glass. Refer to the table below for a comparison of glass types.

Table 1: Damaged Weighted Transmission

Glass Type	Tdw - ISO
3mm Clear Float	0.84
5mm Grey Float	0.45
6.38mm Clear Laminate	0.62
6.38mm Grey Laminate	0.32
6.38mm Solect® Clear	0.57
6.38mm Solect® Grey	0.31