



National Federation of Glaziers

Excellence and Integrity in Glazing

CONSERVATORY ROOF MATERIALS

Part of the definition of a conservatory is that the roof must have at least 75% translucent material. This creates four important considerations when designing the roof component of a conservatory; **insulation, solar gain (heat) control, fading of fabrics (UV rays) and glare.**

There are 3 types of material available; **PVC, Polycarbonate and Glass.**

PVC

There are extruded **PVC** systems for lean to conservatories: The most useful have aluminium reinforcement integral with the system. This allows larger sizes to be used, without additional supports. Insulation properties are very good, glare is considerably reduced but they are not very effective for the reduction of heat.

Polycarbonate

Polycarbonate has been used for over 20 years, and is still the most popular material. Over the years, greater thicknesses have been developed, which can be used in all major roof structures. It is light, strong, stable and almost unbreakable. The most commonly used is 25mm thick, which has 5 walls (4 insulating chambers), which provides **very good insulation** properties.

There are many varieties of Polycarbonate available, with different properties.

Clear Polycarbonate is the most popular, which allows approximately 70% light transmission.

Other varieties include, **OPAL** (white) and **BRONZE** which considerably reduce glare, but also reduce light transmission. **OPAL** still allows considerable solar gain, **BRONZE** does not.

For **Solar Control**, polycarbonate with perforated inserts (such as **TEC SUN**) placed in the top chamber, is the most effective material available to combat excessive heat and glare; a vital consideration in south facing sites. In addition, the inserts will assist the retention of heat in winter.

Reflective coatings or combinations i.e. Bronze/Opal, are available, but these reduce light transmission considerably.

In particular heavy rainfall, and especially on low pitch lean to roofs, polycarbonate will be noisy.

Glass

Glass units have made considerable progress, as a conservatory roof material over the last few years. Self cleaning coatings are essential to maintain the aesthetic appeal of this material.

Improvements for both **insulation** and **solar control** have been made, so that the insulation properties, providing special low e coatings are used now rival polycarbonate, and solar control is better than clear polycarbonate but not as good as polycarbonate with inserts or reflective coatings. However, the glare factor still remains an obstacale, particularly in south facing situations, where blinds will normally be required.

The incidence of fading fabrics may be considerably reduced by the use of laminated glass on one sheet of the glass units.

Analysis:	Insulation	Solar Control	Glare	UV Rays
BEST	All polycarbonate and glass units with low e coatings	Polycarbonate with perforated inserts	Polycarbonate with perforated inserts	Polycarbonate with perforated inserts or laminated glass
		Glass with solar control coating	Polycarbonate (Opal, Bronze or combinations)	
WORSE	Glass without low e coating	Glass without solar control coating	All Glass units	Clear Polycarbonate

For further information, contact John Reed, Technical Executive

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