POSITION STATEMENT

TINTING OF CAR GLASS AND WINDOW GLASS FOR PROTECTION AGAINST SOLAR ULTRAVIOLET RADIATION

Clear or tinted films applied to the side windows of cars can substantially reduce the amount of solar ultraviolet radiation (UVR) that is transmitted into the vehicle. However consumers must weigh up the costs against the benefits.

The Cancer Council Australia recommends that people who spend long periods in a car during summer use personal protection, ie wear long sleeves, wear sunglasses and apply sunscreen to any exposed skin. This will ensure occupants are protected both in the vehicle and when they leave it. The use of driving sleeves and gloves are another option.

The need for tinting windows of buildings should be weighed against the risks. In general UVR through the windows of buildings poses little risk to people unless they are spending extended periods of time close to a window that receives the direct sun.

Definition of solar ultraviolet radiation (UVR)

Solar ultraviolet radiation (UVR) is comprised of UVA, UVB and UVC. UVC does not reach the earth's surface as it is absorbed or scattered in the atmosphere[1]. UVA and UVB are the wavelengths of the solar ultraviolet spectrum of concern because of their potential to cause skin cancer[1].

Transmission of UVB and UVA through car windscreens and side windows

UVR levels inside a car vary depending on factors such as whether the side windows are open or closed and the orientation of the vehicle with respect to the sun. They are generally much lower than outside in full sunlight, varying from as low as 4% up to 50% of the ambient UVR outside the vehicle[2].

Clear autoglass (side windows) blocks about 97% of the UVB radiation and about 37% of UVA radiation. Laminated windscreens block all of the UVB radiation and about 80% of the UVA radiation[3].

Clear windscreen films can reduce the transmission of UVR further so that as much as 97% of the UVA is blocked. This depends on the quality of film used[3].

Clear or tinted films can also reduce the amount of UVA and UVB penetrating through the side glass. The amount of protection varies with different products.[3]

The National Road Traffic Act[4] requires a minimum luminous (light) transmission for certain windows as follows:

- Windscreen 75%
- Driver and passenger front windows 70%
- Windows behind the drivers seat (excluding internal windows) 35%

These regulations may vary between states and territories.

Applying films and tints will only be effective in providing protection against UVR if the windows are closed, so air-conditioning of vehicles may also be required.

House window glass filters out about 90% of UVR while office building glass blocks about 97.5%. Where the windows are under deep eaves, verandahs or awnings the transmission of UVR will be less.[5]

While tinting of windows in buildings can further reduce UVR transmission the need for this should be weighed against the actual risks to occupants. Generally UVR through windows of buildings poses little risk to people unless they are spending extended periods of time close to a window that receives the direct sun or have a severe photosensitive skin disorder.

References

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3. Gies HP, Roy CR and Wand Z, Ultraviolet Radiation protection Factors for Clear and Tinted Automobile Windscreens, *Radiation Protection in Australia* 1992 Vol 10 No 4, pp91 – 94.
4. http://www.austlii.edu.au/au/legis/sa/consol_reg/rtsr1999308/s44.html
5. http://www.arpansa.gov.au/is_upf.htm

This position statement has been approved by the Australian College of Dermatologists.

October 2004