

Technical Data

Structure:

White Flashed Opal Glass consists of a colourless base glass which serves as a carrier material and a thin white flashed layer. White Flashed Opal Glass is manufactured with a constant white flashed layer in six different base glass thicknesses to suit all requirements.

Transmission:

The transmission properties of White Flashed Opal Glass are for the most part dependent solely on the white layer, the thickness of which varies over the manufacturing width and is generally in the order of 0.45 ± 0.20 mm. The visual light transmission in the case of standard illuminant A is on average $T_{VA} = 35\%$ ($\pm 10\%$).

Light diffusion:

In the visible range of the spectrum DESAG White Flashed Opal Glass gives almost ideal diffusion. In the near infrared range a directed component is superimposed which appears on the diffusion indicatrix (fig. 2) as a small "nose". From $\lambda = 800$ nm the proportion of the directed transmission increases relatively sharply and where $\lambda = 2000$ nm, values of 50% may be reached.

For testing purposes DESAG Flashed Opal Glass can be supplied with a restricted spread of white flashed layer and smaller tolerated light transmission level depending on the panel size.

Toughening:

White Flashed Opal Glass can be toughened and shaped provided that the differing viscosity characteristics of the white flashed layer and the base glass are taken into account. As a result of heat treatment, transmission can be reduced whilst at the same time approximating to an ideal diffusion indicatrix.

Cleaning:

White Flashed Opal Glass may be treated with any commercial, non-abrasive cleaning agent. Even cleaning with clinical disinfectants presents no problems. White Flashed Opal Glass is virtually antistatic.

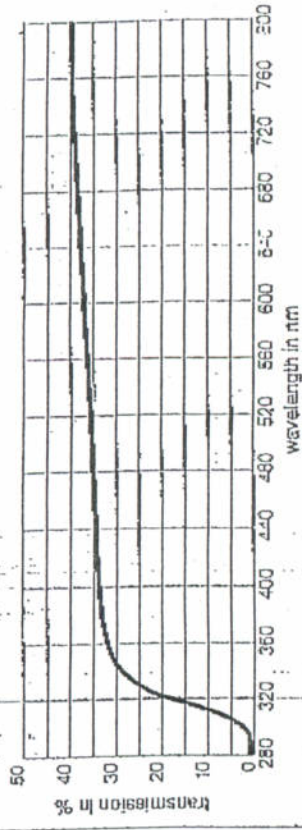


Fig. 1: Spectral transmission level of White Flashed Opal Glass

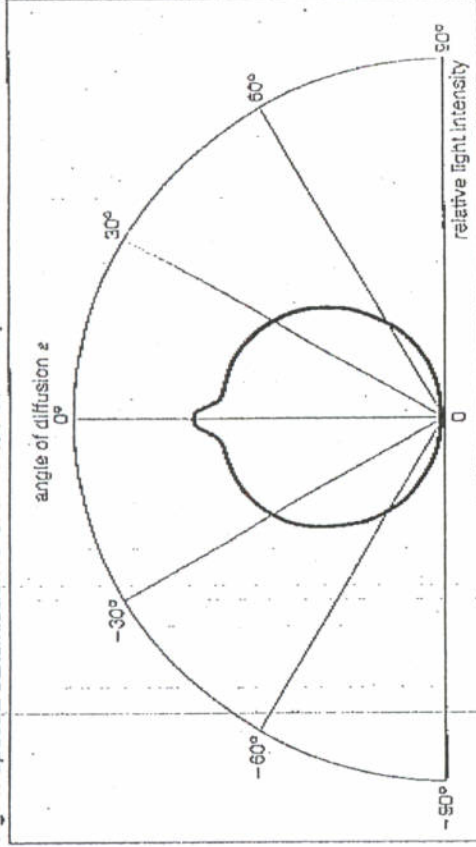


Fig. 2: Typical diffusion indicatrix

Chemical properties:

White Flashed Opal Glass is largely insensitive to the action of water, acids, alkalis and salt solutions (with the exception of hydrofluoric acid).

Electrical properties:

Specific electrical resistivity $> 10^{10} \Omega \cdot \text{cm}$

Thermal properties:

Thermal conductivity at 90°C :
 $\lambda = 1.06 \text{ W}/(\text{m} \cdot \text{K})$
 Transformation temperature $T_g = 521^\circ\text{C}$
 Mean linear thermal coefficient of expansion α ($20\text{-}300^\circ\text{C}$): $9.5 \cdot 10^{-6} \text{K}^{-1}$

Mechanical properties:

Compressive strength $800\text{-}930 \text{ N}/\text{mm}^2$
 Bending tensile strength $30 \text{ N}/\text{mm}^2$
 (characteristic value)
 Density $\rho = 2.6 \text{ g}/\text{cm}^3$

Dimensions:

Thickness (mm)	Max. dimensions (cm)
1.7-2.2	140x150-170
2.2-2.5	140-170x150-200/220
2.7-3.3	140-170x150-200/220
3.5-4.2	140-170x150-200/240
4.0-5.0	
5.0-6.0	

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