Specialty Glass Products
Technical Reference Document 07/12

Specialty Glass - White Flashed Opal

Description
White Flashed Opal consists of a colorless base soda-lime glass which is fused to a thin white flashed layer. Using white flashed opal, one can create an ambiance in diffused lighting similar to daylight with very little shadow. Flashed opal is perfect for creating a pleasant atmosphere in professional or residential areas.

Features
- Average transmission of approximately 35%
- Can be heat strengthened or tempered if required
- Helps create a similar effect as a skylight
- Scratch resistant, non-deforming, and non-combustible
- Readily available off the shelf in (MR11) - 1.370" diameter and (MR16) - 1.965" diameter sizes

Dimensions
- Thicknesses: 2.7mm to 3.3mm & 4.0mm to 5.0mm
- Sizes: 55" x 67" Max

Transmission
The transmission properties of White Flashed Opal glass are for the most part dependent solely upon the white layer, the thickness of which varies over the manufacturing width and is generally in the order of 0.45 ± 0.2mm. The visual light transmission in the case of standard illuminant A is on average τvA = 35 % (± 10 %).

Light Diffusion
In the visible spectrum of the DESAG, White Flashed Opal glass provides 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 λ = 800nm, the proportion of the directed transmission increases relatively sharply and where λ = 2000 nm, values of 50 % may be reached.

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} Ω/cm

Thermal Properties
Thermal conductivity at 90 °C
λ = 1.06 W/(m • K)
Transformation temperature Tg = 521 °C
Mean linear thermal coefficient of expansion α
(20-300 °C): 9.5 • 10_{-6} K_{-1}

Mechanical Properties
Compressive strength 800-930 N/mm_2
Bending tensile strength 30 N/mm_2 (characteristic value)
Density ∂ = 2.6 g/cm_2