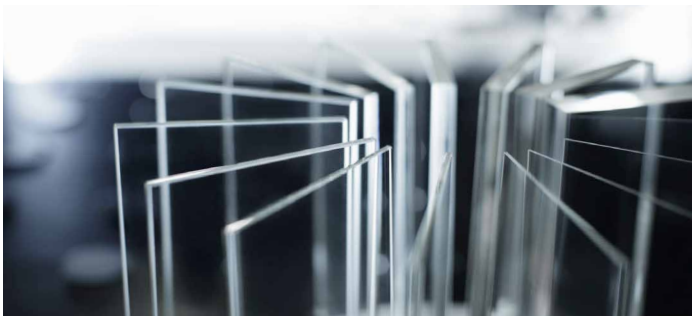
BOROFLOAT® 33 – Technical Data



The world's first floated Borosilicate Glass.

Key benefits:

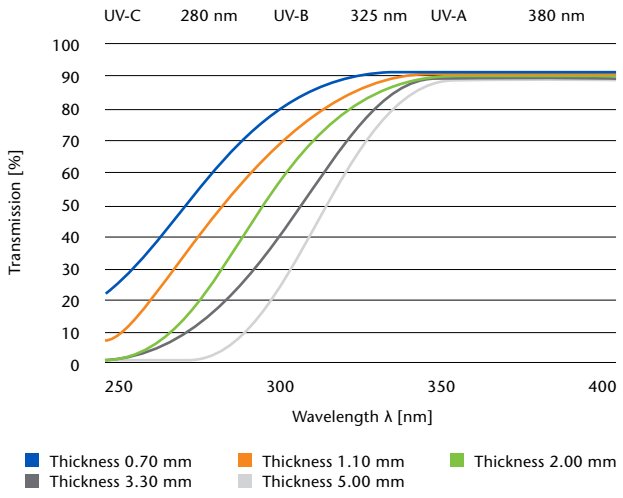
- Outstanding thermal resistance
- Exceptionally high transparency
- High chemical durability
- Excellent mechanical strength

Thermal properties

Coefficient of Linear Thermal Expansion (C.T.E.) $\alpha_{(20-300\ °C)}$	3.25 x 10^{-6} K^{-1} *
Transformation temperature T_g	525 °C
Annealing Point (10^{13} dPas)	560 °C
LITTLETON temperature/Softening point ($10^{7.6}$ dPas)	820 °C
Thermal conductivity λ (90 °C)	1.2 W/(m·K)
Specific heat capacity $c_{p\ (20-100\ °C)}$	0.83 kJ/(kg·K)
Maximum Operating Temperature	
For short-term usage (< 10 h)	500 °C
For long-term usage (≥ 10 h)	450 °C

* According to ISO 7991.

Transmission in UV range



Optical Properties

Refraction index (n_d ($\lambda_{587.6\ nm}$))	1.471
Dispersion (n_F - n_C)	71.4 x 10^{-4}
Low inherent fluorescence and solarisation tendency	

Chemical durability

Hydrolytic resistance	(according to ISO 719 / DIN 12 111)	HGB 1
	(according to ISO 720)	HGA 1
Acid resistance	(according to ISO 1776 / DIN 12 116)	1
Alkali resistance	(according to ISO 695 / DIN 52 322)	A 2

Mechanical properties

Density ρ (25 °C)	2.23 g/cm^3
Young's Modulus E (according to DIN 13316)	64 kN/mm^2
Poisson's Ratio μ (according to DIN 13316)	0.2
Knoop Hardness $_{0.1/20}$ (according to ISO 9385)	480
Bending Strength σ (according to DIN 52292 T 1)	25 MPa
Impact resistance	

The impact resistance of BOROFLOAT® 33 depends on the way it is fitted, the size and thickness of the panel, the type of impact involved, presence of drill holes and their arrangement as well as other parameters.

Electrical Properties

Dielectric Constant ε_r (1 MHz & 25 °C)	4.6
Loss Tangent tan δ (1 MHz & 25 °C)	37 x 10^{-4}
Specific Volume Resistance in Ω cm	
log ρ 250 °C	8.0
log ρ 350 °C	6.5

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