

SUPREMAX® 33

Multifunctional rolled borosilicate glass for unlimited applications

SUPREMAX® 33 is a rolled borosilicate glass available in sheet form with a chemical composition identical to SCHOTT's floated borosilicate glass BOROFLOAT® 33.

The outstanding physical and chemical properties of **SUPREMAX® 33** offer the benefits of low thermal expansion, high thermal resistance, excellent light transmission and impressive chemical durability. **SUPREMAX® 33** is also a low density glass that is 12 % lighter than soda lime glass. This, in combination with the availability of a broad thickness range (up to 57.2 mm), makes **SUPREMAX® 33** a highly versatile material suitable for an unlimited array of applications.

SUPREMAX® 33 is a borosilicate glass type 3.3 as specified in the international standard ISO 3585. The quality of **SUPREMAX® 33** is guaranteed by our ISO 9001 certified quality assurance system.

SUPREMAX® 33 is environmentally friendly and made of non-hazardous inorganic and natural raw materials. The glass can be recycled several times and disposed of without difficulties.

Sheet sizes and tolerances



SUPREMAX® 33 ultra thick borosilicate glass.

Standard sheet size

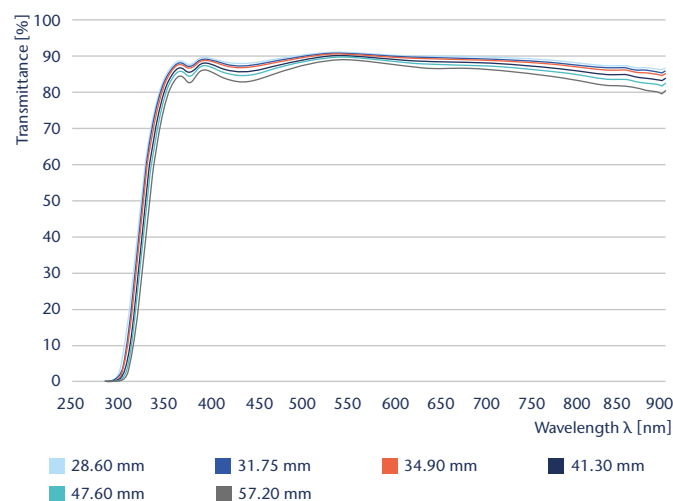
Dimensions	in mm (inch)
Gross dimensions	1.200 x 1.500 (47.24 x 59.06)
Net dimensions	1.000 x 1.500 (39.37 x 59.06)

Available thicknesses

Thicknesses in mm (inch)	Tolerances in mm (inch)
28.60 (1 1/8)	± 1.0 (± 0.040)
31.75 (1 1/4)	± 1.0 (± 0.040)
34.90 (1 3/8)	± 1.6 (± 0.064)
41.30 (1 5/8)	± 1.6 (± 0.064)
47.60 (1 7/8)	± 3.2 (± 0.125)
57.20 (2 1/4)	± 6.4 (± 0.250)

Technical properties

Transmission



SUPREMAX® 33 is available in large sheet sizes.

Optical properties

Refractive index n_d [λ 587.6 nm]	1.472
Stress optical coefficient [K]	$4.0 \cdot 10^{-6} \text{ mm}^2 \text{ N}^{-1}$
Dispersion ($n_f - n_c$)	$71.9 \cdot 10^{-4}$

Thermal properties

Coefficient of linear thermal expansion α [20-300 °C/68-572 °F]	$3.25 \cdot 10^{-6} \text{ K}^{-1}$
Specific heat capacity C_p [20-100 °C/68-212 °F]	0.83 kJ/(kg·K)
Thermal conductivity λ [90 °C/194 °F]	1.2 W/(m·K)
Softening point ($10^{7.6}$ dPas)	820 °C/1508 °F
Annealing point (10^{13} dPas)	560 °C/1040 °F
Strain point ($10^{14.5}$ dPas)	518 °C/964 °F
Transformation temperature T_g	530 °C/986 °F

Optical index of refraction

Dielectric constant ϵ_r [at 25 °C and 1MHz]	4.6
Loss tangent $\tan \delta$ [at 25 °C and 1MHz]	$27 \cdot 10^{-4}$

Specific electric volume resistivity

Ig p 250 °C	$8.0 \Omega \cdot \text{cm}$
Ig p 350 °C	$6.5 \Omega \cdot \text{cm}$
t_{k100}	250 °C/482 °F

Chemical durability

Acid resistance	[ISO 1776]	1
Alkali resistance	[ISO 695]	A 2
Hydrolytic class	[ISO 719] [ISO 720]	HGB 1 HGA 1

Mechanical properties

Density ρ	2.23 g/cm ³
Young's modulus [E]	64 GPa
Poisson's ratio μ	0.2
Shear modulus	27 GPa
Vickers hardness [0.2/15]	568
Knoop hardness [0.1/20]	480

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SCHOTT
glass made of ideas