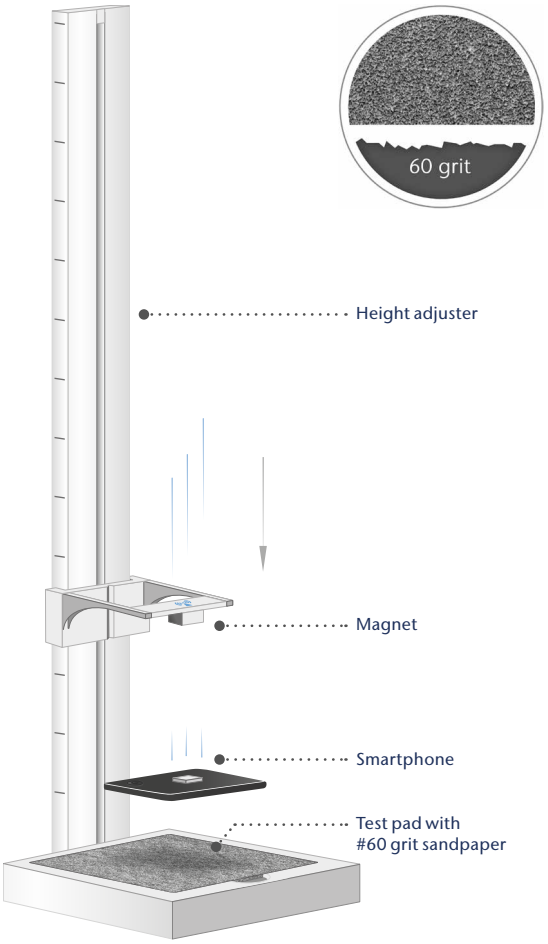
SCHOTT Xensation® α

Driven by our innovative power and with years of research in specialty glass, we have given the vision of unbreakable glass a new dimension. Discover the revolutionary composition behind our most drop-resistant cover glass to date, Xensation® α, a lithium-alumino-borosilicate glass (LABS) specifically designed to withstand the challenges of high-end smartphones.

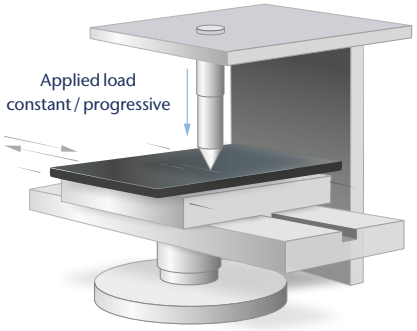


Features

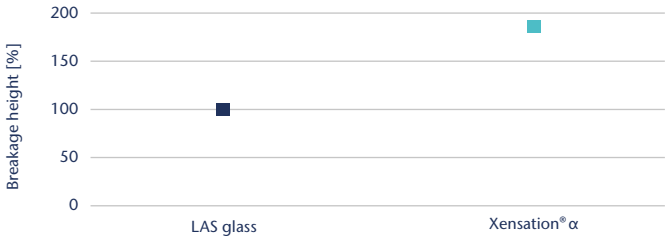
The innovative high-performance cover glass impressively combines the chemical strengthening potential of lithium-alumino-silicate glass (LAS) with the scratch resistance of borosilicate glass and the stability of a powerful glass framework found in glass-ceramics.

Key Benefits

- Superior drop resistance compared to other premium cover glasses with up to 100 % higher resistance on rough and uneven surfaces
- Significantly improved scratch resistance compared to conventional LAS glass, confirmed by the Knoop scratch test

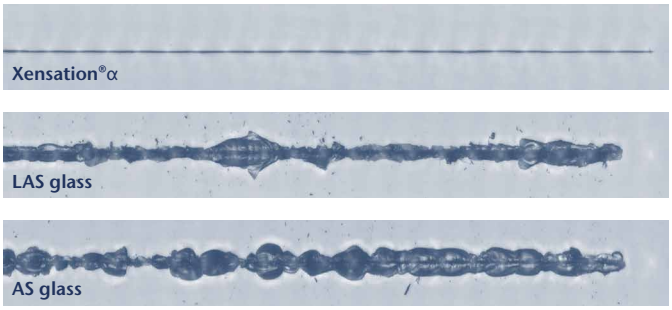


Test results of test with #60 grit sandpaper



Mean values of dummy test series with 0.8 mm thickness, compared to LAS glass; results may vary depending on test set-up

Test results of Knoop scratch test



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Mechanical properties

Density ρ	2.39 g/cm³
Young's modulus E	80 kN/mm²
Poisson's ratio ν	0.26
Shear modulus G	32 kN/mm²
Vickers hardness HV	
unstrengthened	570
strengthened*	660

Thermal properties

Coefficient of linear thermal expansion $\alpha_{(20-300\,°C)}$	$5.3 \cdot 10^{-6}\ K^{-1}$
Transformation temperature T_g	577 °C
Viscosity	
Annealing point at 10^{13} dPas	589 °C
Softening point $10^{7.6}$ dPas	840 °C
Working point 10^{4} dPas	1233 °C

Optical properties

Wavelength λ [nm]	365	405	518	595	640
Measurement method	FSM-UV	SLP-2000	SLP-2000	FSM-LE	SLP-1000
Refractive index n of core glass	1.528	1.522	1.512	1.508	1.507
Refractive index n of K-exchanged layer*	1.531	1.525	1.514	1.510	1.508
Photoelastic constant C [nm/(cm*MPa)]	32.3	31.6	30.5	30.0	29.8
Transmittance T [%] (t = 0.78 mm)	89	90	91	91	92

Chemical properties

Hydrolytic resistance acc. to DIN ISO 719	
Hydrolytic class	HGB 1
Equivalent of alkali Na_2O per gram of glass grains [µg/g]	32
Acid resistance acc. to DIN 12 116	
Acid class	S2
Half surface weight loss after 6 hours [mg/dm²]	1.4
Alkali resistance acc. to ISO 695	
Alkali class	A2
Surface weight loss after 3 hours [mg/dm²]	92

Electrical properties (extrapolated)

Frequency f_0 [MHz]	Dielectric constant ε	Loss tangent tan δ
54	6.1	0.008
480	6.0	0.009
825	6.0	0.010
912	6.0	0.010
1977	6.0	0.011
2170	6.0	0.011
2986	6.0	0.012

Chemical strengthening*

Compressive stress CS	capable > 900 MPa
Depth of compressive layer DoCL	capable >180 µm
4-Point bending strength	capable > 800 MPa

Forms supplied**

Thickness range	0.55 – 0.80 mm
Sheet size	1150 mm x 950 mm

All values are typical measured values and refer to unstrengthened glass.
* Values that can be achieved after chemical strengthening process
** Further thicknesses and sheet sizes are available on request

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