

Specialty Glass Products Technical Reference Document

10/12

High Ion-Exchange (HIE)

SCHOTT Xensation™ - Is a high-quality alumino-silicate glass with outstanding resistance to breakage and scratches for all cover and touch applications, including capacitive, resistive, optical, and acoustic.

- **Xensation™ Cover** - Alumino-Silicate Glass for capacitive touch technologies
Xensation™ Cover is a high-quality Alumino-silicate glass with outstanding resistance to breakage and scratches for capacitive touch technologies.



Key-Benefits of Xensation™ Cover:

- SCHOTT's unique microfloat manufacturing process gives the Xensation™ Cover alumino-silicate glass its excellent sheet quality.
- Due to the impressively high Compressive Stress (CS) and Depth of Layer (DoL), Xensation™ Cover offers outstanding strength.
- The robust nature of Xensation™ Cover results in very stable CS, DoL and overall strength even under varying chemical strengthening conditions. This enables a broad process window.
- Xensation™ Cover maintains its high strength even when process optimization calls for shorter ion exchange. Xensation™ Cover is available in a wide range of thicknesses with tight tolerances.

Thermal Properties:

Thermal Conductivity λ (25 °C)	0.96 W/(m·K)
Specific Heat Capacity C_p (20 °C; 100 °C)	0.84 kJ/(Kg·K)
Coefficient of Mean Linear Thermal Expansion α (20 °C; 300 °C)	$8.8 \cdot 10^{-6} K^{-1}$ *
Transformation Point T_g	615 °C*
Annealing Point (10^{13} dPas)	635 °C
Softening Point ($10^{7.6}$ dPas)	880 °C
Working Point (10^4 dPas)	1265 °C

*cooled according to DIN

Chemical Properties:

Hydrolytic Resistance	DIN ISO 719	Class HGB 1
Acid Resistance	DIN 12116	Class S 4
Alkali Resistance	DIN ISO 695	Class A 1

Optical Properties:

Refractive Index at	588 nm (n_d)	633 nm	780 nm
Core Glass	1.508	1.506	1.502
Compression Layer KNO ₃ pure	1.516	1.514	1.510
Transmittance τ (Glass Thickness 0.7mm)			
840 nm			> 91.5 %
560 nm			> 91.5 %
380 nm			> 90 %
Photoelastic Constant		29.2 nm/cm/MPa	

Sheet Dimensions:

- Sheet Size*: 1150 x 950 mm
- 475 x 575 mm
- Thickness Range: 0.55 to 2 mm stocked - call (877) 622-7472 for other requirements

Electrical Properties:

Frequency MHz	Dielectric Constant ϵ'	Loss Tangent $\tan\delta$
1	7.74	0.011
54	7.49	0.008
480	7.40	0.009
825	7.38	0.010
912	7.38	0.010
1977	7.35	0.012
2170	7.35	0.012
2986	7.34	0.012
Electric Volume Resistivity ρ_D for A.C. at 50Hz		
$v = 250$ °C		$1.5 \cdot 10^6 \Omega \cdot \text{cm}$
$v = 350$ °C		$8.9 \cdot 10^4 \Omega \cdot \text{cm}$

*These values are no guaranteed data - for customer orientation only.

Mechanical Properties:

Density	2.477 g/cm ³ *
Young's Modulus E	74 kN/mm ²
Poisson's Ratio	0.215
Shear Modulus	30 kN/mm ²
Knoop Hardness HK _{0.1/20}	
Non-strengthened	534
Strengthened	639
Vickers Hardness HV _{0.2/20}	
Non-strengthened	617
Strengthened	681

*cooled according to DIN

Chemical Strengthening:

Compressive Stress	capable > 900 MPa
Depth of Layer	capable > 50 μm
4-Point Bending Strength	cap. > 800 MPa