



**SCHOTT**  
glass made of ideas

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## Xensation® 3D

Chemical strengthened  
lithium alumino-silicate glass



# SCHOTT Xensation® 3D

## Chemical strengthened lithium alumino-silicate glass

Xensation® 3D is a chemically strengthened lithium alumino-silicate glass that offers an outstanding level of mechanical impact and bending strength, as well as high resistance to scratches. The low transformation point of Xensation® 3D allows thermal bending in the temperature range of ordinary soda-lime glass. This specialty glass has been designed to achieve strength performance levels ideally suited to tough applications – from smartphone to rugged displays to automotive applications to safety glazing. The unique glass composition combined with more than 130 years' experience in making specialty glass results in one of the most robust and reliable cover glass available today.



For the usage as smartphone cover glass, customers appreciate the outstanding set-drop performance of Xensation® 3D.

Xensation® 3D convinces with its efficient chemically strengthening process.

### Key-Benefits of Xensation® 3D

- Extremely high impact and bending strength for thinner, sleeker and more touch sensitive solutions
- High scratch and wear resistance for superior aesthetic appeal, durability, strength and reliability even after surface damage
- Thermal bending at temperatures similar to soda-lime glass
- Manifold combinations of CS and DoL at the highest levels
- Available in a broad range of thicknesses from 0.55 mm to 8.00 mm



Xensation® 3D's outstanding impact strength facilitates the development of innovative glazing solutions that are lightweight, rugged and capable of offering an unmatched level of protection across a variety of applications.

Mechanical Properties		Electrical Properties*		
Density	2.49 g/cm <sup>3</sup>	Frequency (MHz)	Dielectric Constant (ε')	Loss Tangent (tanδ)
Young's Modulus E	83 kN/mm <sup>2</sup>	1	7.60	0.0064
Poisson's Ratio	0.22	54	7.37	0.0063
Shear Modulus	34 kN/mm <sup>2</sup>	480	7.35	0.0082
<b>Knoop Hardness HK<sub>0.1/20</sub></b>		825	7.22	0.0088
Non-strengthened	590	912	7.22	0.009
Strengthened	740	1977	7.18	0.01
<b>Vickers Hardness HV<sub>0.2/20</sub></b>		2170	7.17	0.01
Non-strengthened	640	2986	7.15	0.01
Strengthened	690			

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

Optical Properties				Chemical Properties	
Refractive Index at	365 nm	595 nm	640 nm	<b>Hydrolytic resistance acc. to DIN ISO 719</b>	
Core Glass	1.548	1.528	1.525	Hydrolytic class	HGB 2
Compression Layer KNO <sub>3</sub> pure	1.56	1.53	1.53	Equivalent of alkali (Na <sub>2</sub> O) per gram of glass grains in µg/g	41
Photoelastic Constant nm/(cm*MPa)	29.6	27.4	27.2	<b>Acid resistance acc. to DIN 12116</b>	
<b>Transmittance τ</b>	0.7 mm	3.0 mm	8.0 mm	Acid class	S 3
840 nm	> 91 %	> 91 %	> 91 %	Half surface weight loss after 6 hours in mg/dm <sup>2</sup>	10
560 nm	> 91 %	> 90 %	> 90 %	<b>Alkali resistance acc. to DIN ISO 695</b>	
380 nm	> 90 %	> 85 %	> 85 %	Class	A 1
				Surface weight loss after 3 hours in mg/dm <sup>2</sup>	41

Thermal Properties		Chemical Strengthening*	
Thermal Conductivity λ <sub>(25 °C)</sub>	1.22 W/(m•K)	Compressive Stress	capable > 700 MPa
Specific Heat Capacity c <sub>p</sub> (20 °C; 100 °C)	0.9 J/(g•K)	Depth of Layer	capable > 120 µm
Coefficient of Mean Linear		4-Point Bending Strength	capable > 600 MPa
Thermal Expansion α <sub>(20 °C; 300 °C)</sub>	8.5 • 10 <sup>-6</sup> K <sup>-1</sup>	* Specialized strengthening process is required.	
Transformation Point T <sub>g</sub>	505 °C	<b>Forms supplied*</b>	
Annealing Point (10 <sup>13</sup> dPas)	515 °C	Thickness Range:	0.55 – 8.00 mm
Softening Point (10 <sup>7.6</sup> dPas)	720 °C	Sheet size:	1,150 x 850 mm
Working Point (10 <sup>4</sup> dPas)	1070 °C	*Further thicknesses and sheet sizes are available on request.	