# SCHOTT Xensation® 3D

Chemical strengthened lithium alumino-silicate cover glass for tough applications – from smartphone to safety glazing

## Key Benefits

- Outstanding results in set drop performance for very high survival likelihhod after smartphone drops
- 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 similar temperatures to soda-lime glass
- Manifold combinations of CS and DoL possible

| **Mechanical properties** | |
|---|---|
| Density ρ | 2.49 g/cm³ |
| Young's Modulus *E* | 83 kN/mm² |
| Poisson's ratio ν | 0.22 |
| Shear Modulus *G* | 34 kN/mm² |
| **Knoop Hardness HK** $_{0.1/20}$ | |
| non-strengthened | 590 |
| strengthened | 740 |
| **Vickers Hardness HV** $_{0.2/20}$ | |
| non-strengthened | 640 |
| strengthened | 690 |

| **Optical properties** | | | |
|---|---|---|---|
| Refractive Index at | 365 nm | 595 nm | 640 nm |
| Core Glass | 1.548 | 1.528 | 1.525 |
| Compression Layer $KNO_3$ pure | 1.56 | 1.53 | 1.53 |
| Photoelastic Constant nm/(cm*MPa) | 29.6 | 27.4 | 27.2 |
| **Transmittance τ** | 0.7 mm | 3.0 mm | 8.0 mm |
| 840 nm | > 91 % | > 91 % | > 91 % |
| 560 nm | > 91 % | > 90 % | > 90 % |
| 380 nm | > 90 % | > 85 % | > 85 % |

| **Thermal properties** | |
|---|---|
| Thermal Conductivity $\lambda_{(25°C)}$ | 1.22 W/(m·K)[1] |
| Specific Heat Capacity $c_{p\ (20\ °C;\ 100°C)}$ | 0.9 KJ/(g·K) |
| Coefficient of Mean Linear Thermal Expansion $\alpha_{(20\ °C;\ 300\ °C)}$ | $8.5 \cdot 10^{-6}$ K$^{-1}$ |
| Transformation point $T_g$ | 505 °C |
| Annealing point ($10^{13}$ dPas) | 515 °C |
| Softening point ($10^{7.6}$ dPas) | 720 °C |
| Working point ($10^{4}$ dPas) | 1070 °C |

| **Electrical properties*** | | |
|---|---|---|
| **Frequency (MHz)** | **Dielectric Constant (ε)** | **Loss Tangent (tan δ)** |
| 1 | 7.60 | 0.0064 |
| 54 | 7.37 | 0.0063 |
| 480 | 7.35 | 0.0082 |
| 825 | 7.22 | 0.0088 |
| 912 | 7.22 | 0.009 |
| 1977 | 7.18 | 0.010 |
| 2170 | 7.17 | 0.010 |
| 2986 | 7.15 | 0.010 |

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

| **Chemical properties** | |
|---|---|
| **Hydrolytic resistance acc. to DIN ISO 719** | |
| Hydrolytic class | HGB 2 |
| Equivalent of alkali ($Na_2O$) per gram of glass grains [µg/g] | 41 |
| **Acid resistance acc. to DIN 12 116** | |
| Acid class | S 3 |
| Half surface weight loss after 6 hours in mg/dm² | 10 |
| **Alkali resistance acc. to DIN ISO 695** | |
| Class | A1 |
| Surface weight loss after 3 hours in mg/dm² | 41 |

| **Chemical strengthening*** | |
|---|---|
| Compressive stress (K-CS) | capable > 700 MPa |
| Depth of layer (Na-DoL) | capable > 120 µm |
| 4-Point bending strength | capable > 600 MPa |

* Specialized strengthening process is required.

| **Forms supplied*** | |
|---|---|
| Thickness Range: | 0.55 – 0.80 mm |
| Sheet size: | 1,150 x 950 mm |

* Further thicknesses and sheet sizes are available on request.

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