Corning® Gorilla® Glass 3

Corning® Gorilla® Glass 3 is uniquely formulated as a high damage resistance glass, providing up to 4x improvement in scratch resistance when compared to competitive aluminosilicate glasses.

Product Information

Benefits
- High resistance to scratch and sharp contact damage
- High retained strength after use
- Superior surface quality

Applications
Ideal protective cover material for the front and back of all electronic devices:
- Smartphones
- Notebook PCs
- Tablets
- Smartwatches and wearables
- Smart Home devices
- Cameras
- Commercial and Point of Sale Displays

Thickness
Standard 0.4 mm – 2.0 mm

Viscosity
Softening Point (10^7 poises) 905 °C
Annealing Point (10^9.2 poises) 633°C
Strain Point (10^10.7 poises) 580°C

Properties
- Density 2.39g/cm³
- Young’s Modulus 70 GPa
- Poisson’s Ratio 0.22
- Shear Modulus 28.5 GPa
- Vickers Hardness (200g load) Unstrengthened 555 kgf/mm²
- Strengthened 653 kgf/mm²
- Fracture Toughness 0.66 MPa m^0.5
- Coefficient of Expansion (0-300°C) 75.8 x 10^-7/°C

Chemical Strengthening
Please contact a Corning Account Manager for chemical strengthening capability based on thickness and application.

Optical

Refractive Index* (590 nm)
- Core Glass 1.50
- Compression Layer 1.51
- Photo-elastic constant 31.9 nm/cm/MPa

Transmission
- @ 0.7 mm thickness ≥ 91.5%

Chemical Durability
Durability is measured via weight loss per surface area after immersion in the solvents shown below. Values are highly dependent upon actual testing conditions.

<table>
<thead>
<tr>
<th>Reagent</th>
<th>Time</th>
<th>Temperature (°C)</th>
<th>Weight Loss (mg/cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCl – 5%</td>
<td>24 hrs.</td>
<td>95</td>
<td>0.6</td>
</tr>
<tr>
<td>NH4F:HF – 10%</td>
<td>20 min.</td>
<td>20</td>
<td>2.1</td>
</tr>
<tr>
<td>HF – 10%</td>
<td>20 min.</td>
<td>20</td>
<td>12.3</td>
</tr>
<tr>
<td>NaOH – 5%</td>
<td>6 hrs.</td>
<td>95</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Electrical

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Dielectric Constant</th>
<th>Loss Tangent</th>
</tr>
</thead>
<tbody>
<tr>
<td>54</td>
<td>7.59</td>
<td>0.022</td>
</tr>
<tr>
<td>163</td>
<td>7.48</td>
<td>0.022</td>
</tr>
<tr>
<td>272</td>
<td>7.44</td>
<td>0.021</td>
</tr>
<tr>
<td>381</td>
<td>7.42</td>
<td>0.022</td>
</tr>
<tr>
<td>490</td>
<td>7.38</td>
<td>0.021</td>
</tr>
<tr>
<td>599</td>
<td>7.37</td>
<td>0.022</td>
</tr>
<tr>
<td>912</td>
<td>7.30</td>
<td>0.023</td>
</tr>
<tr>
<td>1499</td>
<td>7.26</td>
<td>0.023</td>
</tr>
<tr>
<td>1977</td>
<td>7.23</td>
<td>0.023</td>
</tr>
<tr>
<td>2466</td>
<td>7.20</td>
<td>0.024</td>
</tr>
<tr>
<td>2986</td>
<td>7.19</td>
<td>0.025</td>
</tr>
</tbody>
</table>

*Core index is used for FSM-based measurements since it is unaffected by ion-exchange conditions.

Optical

Transmission
- ≥ 91.5%

- Core index is used for FSM-based measurements since it is unaffected by ion-exchange conditions.

Terminated coaxial line similar to that outlined in NIST Technical Notes 1520 and 1355-R.
Damage Resistance Performance

Scratch Test Performance

Scratches are less visible on Gorilla® Glass 3 compared to competitive Al-Si when using our Knoop Diamond Scratch Test (after Ion Exchange).

It takes more load to initiate radial cracks in Gorilla® Glass 3 (with IOX) when compared to soda lime glass (with IOX).

Always Tough. Always Innovating.

Corning® Gorilla® Glass 3

Contact us
gorillaglass@corning.com

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