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 ($10^{7.6}$ poises) 905 °C
Annealing Point ($10^{10.2}$ 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 m⁰.⁵
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
Frequency (MHz)  Dielectric Constant  Loss Tangent
54              7.59               0.022
163             7.48               0.022
272             7.44               0.021
381             7.42               0.022
490             7.38               0.021
599             7.37               0.022
912             7.30               0.023
1499            7.26               0.023
1977            7.23               0.023
2466            7.20               0.024
2986            7.19               0.025

*Refractive 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.
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).

Damage Resistance Performance

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

Corning® Gorilla® Glass 3

Contact us
gorillaglass@corning.com

Corning and Gorilla are a registered trademarks of Corning Incorporated, Corning, N.Y., USA
© 2020 Corning Incorporated. All rights reserved.

Rev: 08102020