Corning® Gorilla® Glass 5

Corning® Gorilla® Glass 5 is engineered to better survive drops from the worldwide average waist height. In lab tests, it successfully survives up to 1.2-meter drops onto rough surfaces, while still maintaining the superior scratch performance synonymous with Gorilla® Glass. This represents up to 2x improvement in scratch performance compared to alternative aluminosilicate.

Product Information

Benefits
- Improved drop performance, up to 1.2m
- 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 – 1.2 mm

Viscosity
Softening Point (10^7 poises) 884 °C
Annealing Point (10^11 poises) 623°C
Strain Point (10^13 poises) 571°C

Properties
Density 2.43g/cm³
Young’s Modulus 77 GPa
Poisson’s Ratio 0.21
Shear Modulus 31.7 GPa
Vickers Hardness (200g load) Unstrengthened 559 kgf/mm²
Strengthened 608 kgf/mm²
Fracture Toughness Unstrengthened 0.69 MPa m^0.5
Strengthened 78.8 x 10^-17/°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 30.2 nm/cm/MPa

Transmission
@ 0.8 mm thickness ≥ 90.5%

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>5.9</td>
</tr>
<tr>
<td>NH4F:HF – 10%</td>
<td>20 min.</td>
<td>20</td>
<td>1.0</td>
</tr>
<tr>
<td>HF – 10%</td>
<td>20 min.</td>
<td>20</td>
<td>25.2</td>
</tr>
<tr>
<td>NaOH – 5%</td>
<td>6 hrs.</td>
<td>95</td>
<td>2.7</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>7.08</td>
<td>0.009</td>
</tr>
<tr>
<td>163</td>
<td>7.01</td>
<td>0.010</td>
</tr>
<tr>
<td>272</td>
<td>7.01</td>
<td>0.011</td>
</tr>
<tr>
<td>381</td>
<td>7.00</td>
<td>0.010</td>
</tr>
<tr>
<td>490</td>
<td>6.99</td>
<td>0.010</td>
</tr>
<tr>
<td>599</td>
<td>6.97</td>
<td>0.011</td>
</tr>
<tr>
<td>912</td>
<td>7.01</td>
<td>0.012</td>
</tr>
<tr>
<td>1499</td>
<td>6.99</td>
<td>0.012</td>
</tr>
<tr>
<td>1977</td>
<td>6.97</td>
<td>0.014</td>
</tr>
<tr>
<td>2466</td>
<td>6.96</td>
<td>0.014</td>
</tr>
<tr>
<td>2986</td>
<td>6.96</td>
<td>0.014</td>
</tr>
</tbody>
</table>

*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.
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Drop Test Performance

![Bar chart showing Drop Test Performance](chart)

- **Competitive Al-Si**
- **Gorilla® Glass 5**

**Scratch Test Performance**

We tested for scratch threshold using our Knoop Diamond Scratch Test.

![Scratch Test images](images)

**Corning® Gorilla® Glass 5**

Contact us
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