Corning® Gorilla® Glass 5 – Corning’s latest glass design was formulated to address breakage – the greatest concern of consumer, according to Corning’s research. The new glass is just as thin and light as previous versions, but has been formulated to deliver dramatically improved damage resistance allowing improved in-field performance. Corning® Gorilla® glass 5 has been tested for performance when subjected to sharp contact damage.

Product Information

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

Applications
- Ideal protective cover for electronic displays in:
  - Smartphones
  - Laptop and tablet computer screens
  - Mobile devices
- Touchscreen devices
- Wearable devices

Dimensions
Thickness: 0.4 mm - 1.3 mm

Viscosity
Softening Point (10^7 poises)  884 °C
Annealing Point (10^11.2 poises)  623 °C
Strain Point (10^14.7 poises)  571 °C

Properties
Density 2.43 g/cm^3
Young’s Modulus 76.7 GPa
Poisson’s Ratio 0.21
Shear Modulus 31.7 GPa
Vickers Hardness (200 g load)
  - Un-strengthened 601 kgf/mm^2
  - Strengthened 638 kgf/mm^2
Fracture Toughness 0.69 MPa m^0.5
Coefficient of Expansion 78.8 x 10^-7/°C (0 °C - 300 °C)

Chemical Strengthening
Compressive Stress Capability  ≥ 850 MPa
Depth of Compression Capability  ≥ 75 μm

Optical
Refractive Index (590 nm)
  - Core glass* 1.50
  - Compression layer 1.51
Photo-elastic constant 30.2 nm/cm/MPa
* Core index is used for FSM-based measurements since it is unaffected by ion-exchange conditions.

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. Data reported is for Corning® Gorilla® Glass 5.

<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>95</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
Frequency (MHz)

<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>
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<td>0.014</td>
</tr>
<tr>
<td>2986</td>
<td>6.96</td>
<td>0.014</td>
</tr>
</tbody>
</table>

Terminated coaxial line similar to that outlined in NIST Technical Notes 1520 and 1355-R.
Putting Corning® Gorilla® Glass 5 to the test.

Improved damage resistance on rough surfaces.

Faster chemical strengthening with high Compressive Stress and deeper Depth of Compression.

Greater damage resistance with deep abrasion.

Similar scratch performance with previous Gorilla® Glasses. Clearly outperforms soda-lime glass.

CORNING

For more information about Corning® Gorilla® Glass 5:
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