Corning’s New Gorilla® Glass 3 with Native Damage Resistance™ is an alkali-aluminosilicate thin sheet glass that is better able to survive the real-world events that most commonly cause glass failure. With its new core composition, this glass enables improved damage resistance and toughness by helping to prevent the deep chips and scratches that cause glass to break.

**Product Information**

**Benefits**
- Glass designed with improved native damage resistance,
  - Enhances 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
- Optical components
- High strength glass articles

**Dimensions**
Available thicknesses 0.4 mm - 2.0 mm

**Viscosity**
- Softening Point (10.76 poises) 900 °C
- Annealing Point (10.52 poises) 628 °C
- Strain Point (10.47 poises) 574 °C

**Properties**
- Density 2.39 g/cm³
- Young’s Modulus 69.3 GPa
- Poisson’s Ratio 0.22
- Shear Modulus 28.5 GPa
- Vickers Hardness (200 g load)
  - Un-strengthened 534 kgf/mm²
  - Strengthened 649 kgf/mm²
- Fracture Toughness 0.66 MPa m⁰.₅
- Coefficient of Expansion 75.8 x 10⁻⁷/°C
  (0 °C - 300 °C)

**Chemical Strengthening**
- Compressive stress ≥ 950 MPa @ 40 µm DOL
- Depth of Layer ≥ 50 µm

**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>

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’s Gorilla Glass 3 with NDR™.

<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>

Corning® Gorilla® Glass 3 with NDR™ / Product Information Sheet / E_050613

Terminated coaxial line similar to that outlined in NIST Technical Notes 1520 and 1355-R.
Putting Gorilla® Glass 3 with NDR™ to the Test.

**Greater damage resistance**

It takes more load to initiate radial cracks in the glass.

**Greater retained strength**

Devices benefit from greater retained strength.

**Enables the use of thinner cover glass**

Scratches are less visible

**Enables greater strength**

Corning Gorilla Glass 3 with NDR™ exhibits tighter strength distribution.

CORNING

For more information:
Email: specialty.materials.com
Web: www.corninggorillaglass.com

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