Rebound Resin: Production-Ready Elastic 3D Printing Material

With five times the tear strength, three times the tensile strength, and two times the elongation of other production-grade elastomeric materials on the market, Rebound Resin is perfect for 3D printing springy, resilient parts.

End-use production
Gaskets, seals, and grommets
Compliant robotics
Custom cases
Handles, grips, and overmolds
Complex geometries

This material is available exclusively through partnership with Formlabs and requires a minimum quantity commitment to get started. After you contact us, you’ll have the opportunity to request a standard sample, purchase a run of custom samples to evaluate, and finally, buy a turnkey package of the equipment needed to print in Rebound Resin at your facility. consulting@formlabs.com
Material Properties Data Metric

<table>
<thead>
<tr>
<th>METRIC¹</th>
<th>IMPERIAL¹</th>
<th>METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Cured</td>
<td>Post-Cured</td>
<td></td>
</tr>
</tbody>
</table>

**Mechanical Properties**

- **Ultimate Tensile Strength**: 22 MPa (3,391 psi, ASTM D 412-06 (A))
- **Modulus at 50% Elongation**: 3.46 MPa (501.83 psi, ASTM D 412-06 (A))
- **Elongation at Break**: 300 %
- **Compression set at 25 °C for 22 hrs**: 16 % (ASTM D 395-03 (B))
- **Compression set at 70 °C for 22 hrs**: 40 % (ASTM D 395-03 (B))
- **Tear Strength**: 110 kN/m (0.628 lbf/in, ASTM D 624-00)
- **Hardness, Shore A**: 86 A (ASTM D 2633)
- **Bayshore Rebound Resilience**: 57 % (ASTM D 2633)
- **Abrasion**: 101 mm³ (ISO 4649, 40 rpm, 10 N load)
- **Ross Flexing Fatigue**: > 50,000 cycles (no crack propagation)
  - at 23 °C, 60 degree bending, 100 cycles/minute, ASTM D1052, (notched)
  - at -10 °C, 60 degree bending, 100 cycles/minute, ASTM D1052, (notched)

**Dielectric Properties**

- **Dielectric Constant**: 7.7 (ASTM D150, 1MHz)
- **Dissipation Factor**: 0.069 (ASTM D150, 1MHz)

**Temperature Properties**

- **Glass Transition Temperate**: -50 °C (-58 °F, DSC)

¹Material properties can vary with part geometry, print orientation, print settings, and temperature.

**Solvent Compatibility**

Percent weight gain over 24 hours for a printed and post-cured 1 x 1 x 1 cm cube immersed in respective solvent:

<table>
<thead>
<tr>
<th>Solvent</th>
<th>24 hr weight gain (%)</th>
<th>Solvent</th>
<th>24 hr weight gain (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>9</td>
<td>Dichloromethane</td>
<td>367</td>
</tr>
<tr>
<td>Salt Water</td>
<td>7</td>
<td>Propylene Glycol Diacetate</td>
<td>9</td>
</tr>
<tr>
<td>Isopropyl Alcohol</td>
<td>8</td>
<td>Diethylene Glycol Monomethyl Ether</td>
<td>16</td>
</tr>
<tr>
<td>Acetone</td>
<td>37</td>
<td>Mineral Oil (Light)</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Hexane</td>
<td>1</td>
<td>Castor Oil</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Butyl Acetate</td>
<td>26</td>
<td>Hydraulic Oil</td>
<td>&lt; 1</td>
</tr>
</tbody>
</table>