Composite Sandwich Panels for Recreational Vehicles

Streamline recreational vehicle (RV) manufacturing with ready-to-install structural composite panels for interior and exterior applications.

Time-honored stick and tin RV panels—and even hand-laid composite panels—consume significant time and labor, impacting productivity and raising manufacturing costs. They require multiple parts and SKUs, which complicate the supply chain. And because each panel is individually fabricated or laid up, it can be difficult to achieve consistently high quality.

PolyOne’s industry-leading portfolio of engineered composite panels offers a solution to these challenges. Our high fiber volume, glass-reinforced thermoplastic panels and continuous resin transfer molding (CRTM) thermoset sandwich panels can streamline production and reduce system costs by eliminating assembly steps such as welding, drilling, bolting and riveting. Our continuous manufacturing processes also provide significant cost savings over traditional composite panel manufacturing techniques. And, these ready-to-install panels minimize parts, SKUs and scrap material.

PolyOne engineered composite panels can be tailored to your design and performance specifications.

Benefits include:
- Superior strength-to-weight ratio vs. wood and aluminum
- Uniform high quality
- Resistance to ultraviolet (UV) light and chemicals
- Impact strength
- Vibration damping and acoustic insulation
- Thermal insulation
- Nearly unlimited lengths, widths up to 10 feet, and thicknesses customized to the application

These versatile panels can be used throughout an RV—for interior walls, floors, ceilings and cabinetry, as well as exterior walls and ramp and patio doors.

Our extensive experience in composite panel technology and rapid, customized product development capabilities can help you meet your specific needs. Working together, we can help optimize your RV manufacturing process to raise throughput, increase efficiency and ensure repeatable quality.
Our composite panels are custom engineered by varying core thicknesses to increase or decrease stiffness; by varying core materials (including end-grain balsa, foam or engineered woods) to increase or decrease weight; by varying fiber to modify the stiffness-to-weight ratio; and by varying resin material to increase or decrease strength.

**TYPICAL SANDWICH PANEL PROPERTIES**

<table>
<thead>
<tr>
<th>SPECIMEN</th>
<th>TYPICAL SKIN THICKNESS (in)</th>
<th>TYPICAL WEIGHT (lb/ft²)</th>
<th>TYPICAL PANEL THICKNESS (in)</th>
<th>TYPICAL FLEXURAL FAILURE LOAD* (lbf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass/Thermoplastic Skinned, PET Foam Core</td>
<td>0.05</td>
<td>0.75–0.85</td>
<td>1.0–1.5</td>
<td>135–195</td>
</tr>
<tr>
<td>Glass/Thermoset Skinned, PET Foam Core</td>
<td>0.05</td>
<td>1.0–1.2</td>
<td>0.5</td>
<td>120–150</td>
</tr>
<tr>
<td>Glass/Thermoset Skinned, PET Foam Core</td>
<td>0.06</td>
<td>1.6–1.7</td>
<td>1.0–1.5</td>
<td>340–395</td>
</tr>
<tr>
<td>Glass/Thermoset Skinned, Balsa Core</td>
<td>0.12</td>
<td>1.2–1.4</td>
<td>0.50–0.75</td>
<td>850–1500</td>
</tr>
<tr>
<td>Glass/Thermoset Skinned, Balsa Core</td>
<td>0.09</td>
<td>3.0</td>
<td>2.25</td>
<td>3000</td>
</tr>
</tbody>
</table>

* 4 point flex., 44 in. span, ASTM 7249

Note: Additional core materials available. Properties shown are based on a representative sample and may vary based on actual material selection.