PRODUCT DATA SHEET

DESCRIPTION
Toray PMC CFRT® (XT-Orthotics) are reinforced thermoplastic composite laminates. They blend the benefits of a thermoplastic polymer matrix with uni-directional glass fibers for enhanced performance. The XT-style laminate is offered in 6 rigidity grades for ultimate design control.

FEATURES
› Uni-directional glass
› Lightest weight, thin, multiple layers
› Easy to mold and finish
› High performance, yet economical
› Available in different prints and patterns

PRODUCT TYPE AND COMPOSITION
Glass Fiber: 45%–55%
Polypropylene: 35%–45%
Polyester: 5%
Acrylic: 5%
(Note: Percentages are by volume and are nominal values)

MATERIAL PROPERTIES
Specific Gravity 1.40 ± 0.15 (calculated based upon material volume)

SHELF LIFE
Stable indefinitely at 25°C (77°F)
Materials must be dried prior to heating and thermoforming. Please refer to the TPMC Processing Instructions.

TYPICAL APPLICATIONS
› Footwear
› Medical / Podiatry

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**Product Data Sheet**

**Toray CFRT® XT-Orthotics**

**Typical Laminate Properties: Thickness vs. Rigidity**

<table>
<thead>
<tr>
<th>Property</th>
<th>Ease-Flex*</th>
<th>Semi-Flex**</th>
<th>Semi-Rigid***</th>
<th>Medium-Rigid****</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness</td>
<td>1.5–1.75 (mm)</td>
<td>1.6–1.8 (mm)</td>
<td>1.85–2.0 (mm)</td>
<td>2.1–2.4 (mm)</td>
</tr>
<tr>
<td>Weight (200 cm²) (g)</td>
<td>~ 40</td>
<td>~ 45</td>
<td>~ 50</td>
<td>~ 60</td>
</tr>
<tr>
<td>Rigidity (N-cm)</td>
<td>85</td>
<td>265</td>
<td>600</td>
<td>724</td>
</tr>
<tr>
<td>Flexural Modulus (GPa)</td>
<td>3.0</td>
<td>9.0</td>
<td>6.7</td>
<td>7.3</td>
</tr>
<tr>
<td>Forming Time Grid at 204°C/Min.</td>
<td>3.0 min</td>
<td>3.5 min</td>
<td>4.0 min</td>
<td>4.5 min</td>
</tr>
</tbody>
</table>

*Based upon 1.6 mm thickness  
**Based upon 1.7 mm thickness  
***Based upon 1.95 mm thickness  
****Based upon 2.2 mm thickness

<table>
<thead>
<tr>
<th>Property</th>
<th>Rigid*</th>
<th>Ultra-Rigid**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness</td>
<td>2.4–2.65 mm</td>
<td>2.85–3.2 mm</td>
</tr>
<tr>
<td>Weight (200 cm²) (g)</td>
<td>~ 70</td>
<td>~ 80</td>
</tr>
<tr>
<td>Rigidity (N-cm)</td>
<td>920</td>
<td>1350</td>
</tr>
<tr>
<td>Flexural Modulus (GPa)</td>
<td>5.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Forming Time Grid at 204°C/Min.</td>
<td>4.5 min</td>
<td>5.0 min</td>
</tr>
</tbody>
</table>

*Based upon 2.6 mm thickness  
**Based upon 3.0 mm thickness

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