Epoxy tooling prepreg system

**RP803**

*Mid-range cure cycle*

**Applications**
- Composite Tooling

TDS020
**Description**

RP803 is formulated to provide an initial cure cycle of either 12 hours at 60°C or 6 hours at 70°C and extended out life of 9 days at 20°C. The system is capable of withstanding temperatures up to 190°C after full post cure.

RP803 is available in carbon and glass woven fabrics from 200 - 800 g/m² impregnated with epoxy resin. RP803 prepreg allows high quality tooling laminates to be produced directly from a low temperature master model permitting a wide choice of master model materials. Using a low temperature vacuum bag and autoclave process for initial cure, the tool laminate can then be demoulded for freestanding post cure.

**Main features**

- Initial cure from 60°C to 70°C
- Post cure: 170°C
- Autoclave processing
- Excellent surface finish

**Shelf life**

<table>
<thead>
<tr>
<th>Storage Temperature</th>
<th>Shelf life</th>
</tr>
</thead>
<tbody>
<tr>
<td>-18°C</td>
<td>12 month</td>
</tr>
<tr>
<td>20°C</td>
<td>Tack life: 7 days</td>
</tr>
<tr>
<td></td>
<td>Out life: 9 days</td>
</tr>
</tbody>
</table>

**Material types**

<table>
<thead>
<tr>
<th>Fibre type</th>
<th>Weave style</th>
<th>Weight</th>
<th>Thickness/Ply</th>
<th>Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>2/2 twill</td>
<td>200 g/m³</td>
<td>0.23 mm</td>
<td>1250 mm</td>
</tr>
<tr>
<td>Carbon</td>
<td>2/2 twill</td>
<td>645 g/m³</td>
<td>0.72 mm</td>
<td>1250 mm</td>
</tr>
<tr>
<td>Glass</td>
<td>8HS</td>
<td>300 g/m³</td>
<td>0.25 mm</td>
<td>1250 mm</td>
</tr>
<tr>
<td>Glass</td>
<td>2/2 twill</td>
<td>800 g/m³</td>
<td>0.70 mm</td>
<td>1250 mm</td>
</tr>
</tbody>
</table>

Other fabrics available on request.
Curing

**Preferred initial cure** can be either of the following:

- 60°C for 12 hours
- 70°C for 6 hours

**Heat ramp up rate:** 0.5-1.0°C/minute up to temperature, under 6-7 bar pressure and >0.9 bar vacuum.

Ensure even heat in the autoclave and make sure that temperature does not exceed over 5°C of the component initial cure temperature.

When the entire component has reached the initial curing temperature, hold for the specified time.

Cool the laminate under pressure to room temperature (or <30°C) at 3°C per minute (max). Tooling can be demoulded from the master after this cure.

**For post cure,** the tool must rest on a level surface to prevent possible deformation. The recommended post cure cycle is as follows:

- From initial cure temperature, ramp up at 1°C per minute up to 170°C and cure for >2.5 hours, then cool naturally. This will provide a Tg >170°C (DSC).
- Post cure > 4h @ 170°C provides a Tg of 190°C (DSC).

The maximum heat ramp up rate at each stage is 1°C/minute.

**Health and Safety** - Refer to the full Material Safety Datasheet before use.
Find out what PRF can do for your business

Make an enquiry today at:
t: +44 (0) 1202 680022
e: enquiries@prfcomposites.com
www.prfcomposites.com

PRF Composite Materials
3 Upton Road
Poole
Dorset BH17 7AA

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