SHD COMPOSITE MATERIALS INC
203 McKenzie Road
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LTB310-1

High bio-content Epoxy Tooling Prepreg

Introduction

LTB310-1 is an epoxy resin tooling system with 30% bio content derived from a renewable source and is designed to cure at low temperatures whilst giving the potential for high temperature tooling. It can be supplied on a variety of fabrics to meet your cost and manufacturing requirements.

Typical applications: *Low CTE tooling*

Key Features & Benefits

- **30%** certified bio-derived content
- Cure temperature from **115°F** to **160°F**
- Low resin viscosity ideal for heavyweight reinforcements
- Service temperature up to **390°C** after post cure
- Low CTE and shrinkage
- Work life at 70°F: **4 days**
- Storage life at 0°F: **12 months**
- Very low VOC content – no added solvents during manufacture
- Excellent handleability in warmer conditions

Available Reinforcements (standard)

Carbon Surface ply – 200g/m^2 2x2 twill

Carbon Bulk ply – 650g/m^2 2x2 twill for standard 1:8:1 layup

– 1000g/m^2 2x2 twill for 1:5:1 layup

Glass Surface ply – 300g/m^2 8 harness satin

Glass Bulk ply – 870g/m^2 2x2 twill

Please consult SHD Technical Team for other reinforcement options including those with flax and flax/carbon hybrids

Note – other reinforcements available on request. Please enquire for details.

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Storage & Out Life

This material should be kept frozen at 0°F. It must be kept sealed in a polythene bag which must not be opened until fully thawed to room temperature. If the material is not fully used, then the material must be resealed in the polythene bag to prevent moisture absorption.

Cure Cycles & performances

CURE CYCLE OPTIONS:

Temperature		Duration		Tg
115°F	(minimum)	40	hours	130°F
130°F		16	hours	150°F
140°F		8	hours	160°F
160°F	(maximum)	4	hours	175°F
390°F	Post cure	8	hours	390°F

- Curing Schedule is meant to be a guide only and is subject to local conditions.
- To avoid exotherm particular care must be taken with thick laminates.
  Ramp rates must not exceed **2.0°F** per minute during **initial cure**.
  Ramp rates must not exceed **1.0°F** per minute during **post cure** (free standing).

Volatile content	< 1.0%
Fibre volume fraction	50 to 60%
Voidage (autoclave cure)	< 1.0%

- Typical Tg:

DMA – Dry Tg	115°F for 16hrs (IC) with 390°F for 2hrs (PC)	Tg E' Onset Tg Peak Tan δ	**394** **446**	**°F** **°F**	*Modified ASTM D7028* *(Single Cantilever)*

*Tests performed on **LTB310-1-C(t)650** laminates*

Cured Material Properties

Contact SHD for additional data.

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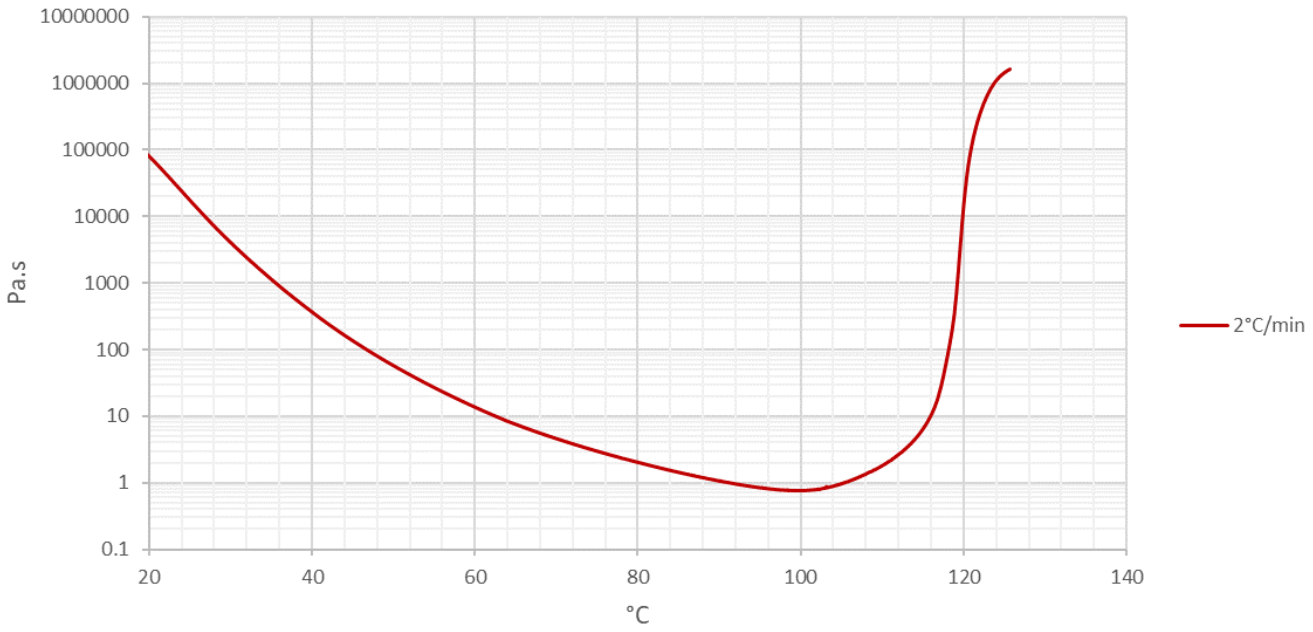
Viscosity Profile



Health and Safety

This material contains epoxy resin which can cause allergic reactions with skin contact and must avoid repeated and prolonged skin contact.

Please refer to the product Safety Data Sheet before using this material. The following precautions must be taken when using epoxy resin prepregs:

- Overalls must be worn
- Impervious gloves must be worn.
- Curing schedule is meant to be as a guide only and is subject to local conditions.
- To avoid exotherm, particular care must be taken with thick laminates.
- Ramp rates must not exceed 2°F/min during initial cure and 1°F/min during post cure.