



MTC275

Out of Autoclave Epoxy Component Prepreg

Introduction

MTC275 is an epoxy resin system designed to give excellent clarity and surface finish out of autoclave. It is a toughened epoxy resin system designed for component manufacturing that can be supplied on a variety of fabrics and in UD format to meet your cost and manufacturing requirements.

Typical applications: General purpose – Visual

Key Features & Benefits

- Cure temperature from **80°C** to **120°C**
- Service temperature up to **115°C**
- Low CTE and shrinkage
- Work life at 20°C: **30 days**
- Storage life at -18°C: **12 months**
- Very low VOC content – no added solvents during manufacture
- Excellent surface finish **out of autoclave**

Storage & Out Life

This material should be kept frozen at -18°C. 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

- Recommended Initial cure:
 - 1st dwell at **85°C** for **1h**, at a ramp rate of **1°C/min**
 - 2nd dwell at **120°C** for **1h**, at a ramp rate of **2°C/min**
- The use of solid release film is recommended.

CURE CYCLE OPTIONS:

Temperature	Duration	Tg
80°C (minimum)	16 hours	90°C
90°C	8 hours	95°C
100°C	4 hours	105°C
110°C	2 hours	115°C
120°C (maximum)	1 hour	120°C

- 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 **3.0°C** per minute during **initial cure**.
Ramp rates must not exceed **0.3°C** per minute during **post cure** (free standing).

Cured Material Properties

Tests performed on **MTC275-C200T-T300-2X2T-3K-42%RW** laminates, cured **out of autoclave**

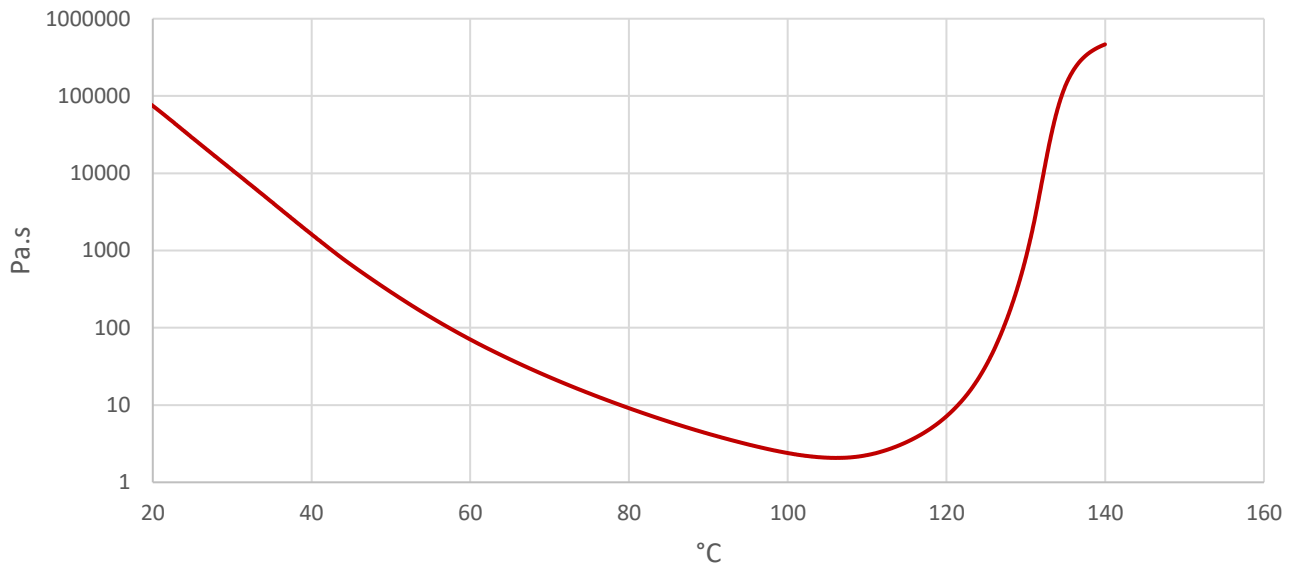
Test	Results	Standard
Compression	Compressive strength 483 MPa	<i>BS EN ISO 14126 : 1999</i>
Tension	Tensile strength 521 MPa	<i>BS EN ISO 527-4 : 1997</i>
	Tensile modulus 55.1 GPa	
Flexure	Flexural strength 777 MPa	<i>BS EN ISO 14125 : 1998</i>
	Flexural modulus 46.7 GPa	
	Strain to failure - %	
Interlaminar Shear Strength	Interlaminar shear strength 64.7 MPa	<i>BS EN 2563 : 1997</i>
DMA	Tg – Storage Modulus Onset 121 °C	<i>AITM 1-0003 Issue 3</i>
	Tg – Tan δ Peak 135 °C	

Mechanical testing carried out at 23±2°C, 50±5% RH. All mechanical tests were completed independently by UKAS approved organisations. Complete tests reports can be supplied independently upon request. All figures are actual test results and haven't been normalised.



Viscosity Profile

Testing carried out at $23\pm 2^{\circ}\text{C}$, $50\pm 5\%$ RH. Ramp rate: $2^{\circ}\text{C}/\text{min}$.



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 $3.0^{\circ}\text{C}/\text{min}$ during initial cure and $0.3^{\circ}\text{C}/\text{min}$ during post cure.

Disclaimer: Technical advice, instruction, data or recommendation, whether verbal or in writing, is given in good faith. The SHD company providing any such advice gives no warranty or guarantee, whether express or implied, in relation to such advice.

Customers must carry out their own tests and assessments as necessary in order to determine the quality and suitability of the product for their particular application and circumstances. Such testing should be performed under conditions identical to those to which the final component/product may be subjected. Values listed in any SHD document are for typical properties of the product or substance in question and are not intended to be used in establishing either statistical specifications nor engineering basis values. They do not constitute either minimum or maximum values for the product or substance in question.