



MTC575

High Visual Quality Epoxy Component Prepreg

Introduction

MTC575 is a toughened epoxy resin system engineered to deliver an exceptional visual quality surface finish on carbon fibre components. It is specifically formulated for cosmetic component manufacture and is supplied exclusively on a carefully selected range of reinforcements optimised for surface ply applications.

MTC575 has been developed to work in conjunction with standard MTC275, and using this system as the backing ply ensures the most consistent, reliable, and premium visual result.

Typical applications: *Highly Visual Carbon Components*

Key Features & Benefits

- Cure temperature of **120°C (248°F)**
- Glass transition temperature above **120°C (248°F)**
- 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
- Capable of achieving a premium surface finish

Storage & Out Life

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



Reinforcement Selection

Surface

- SHD4329-1250 (MTC575-C245T-HS-3K-42%RW-1250)

Other surfacing fabrics may be appropriate after trialling, consult with SHD technical support for advice.

To achieve the best possible visual quality finish, SHD strongly recommend the use of either of the following items as backing material:

- SHD1040-1250 (MTC275-C416T-HS-6K-38%RW-1250)
- SHD1760-1250 (MTC275-C650T-HS-12K-36%RW-1250)

Cure Cycles & performances

- Recommended Initial cure:
 - 1st dwell at **85°C (185°F)** for **15minutes**, at a ramp rate of **2°C/min (3.6°F/min)**
 - 2nd dwell at **120°C (248°F)** for **1hour**, at a ramp rate of **2°C/min (3.6°F/min)**
- The use of 6 bar processing pressure is recommended.
- The use of solid release film is recommended.

CURE CYCLE OPTIONS:

Temperature	Duration	Tg
120°C (248°F)	1 hour	120°C (248°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 **3.0°C (5.4°F/min)** per minute during **initial cure**.



Mechanical Properties

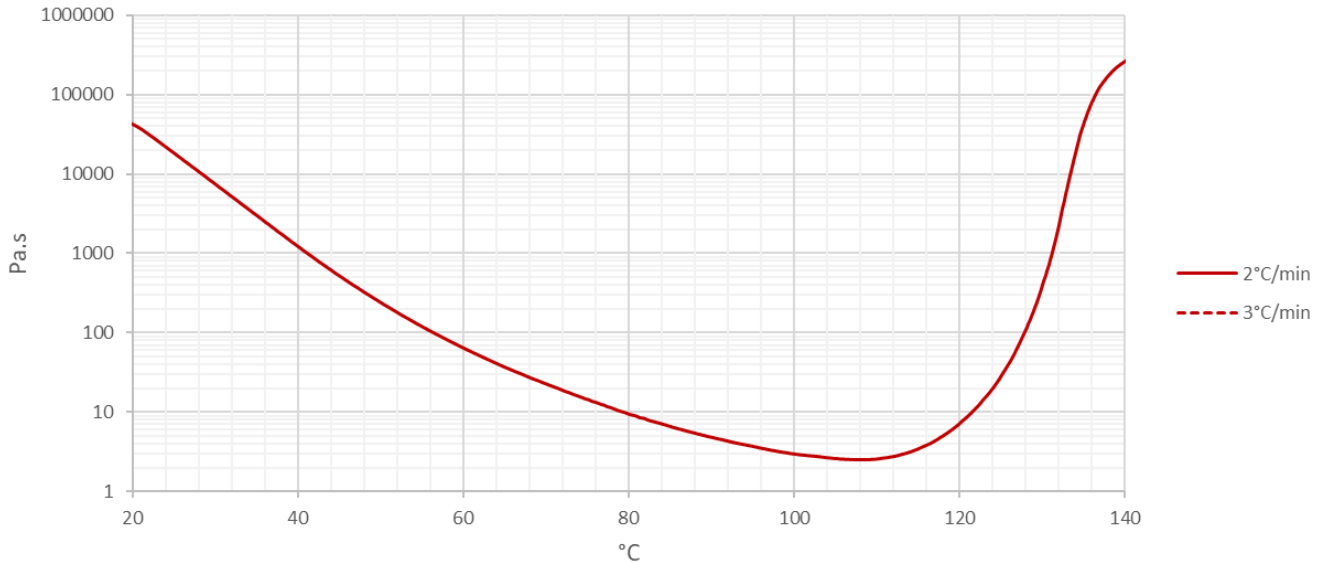
SHD Part:	MTC575-C245T-HS-3K-42%RW-1250			
Fabric Type:	245gsm 2x2 twill			
Fibre Type:	HS 3K carbon fibre			
Test	Typical Results	Unit	Typical Method	
Vf	Fibre volume fraction	45.52 – 51.67	%	BS EN ISO 14127
CPT	Cured ply thickness	0.259 – 0.305	mm	BS EN ISO 14127
Density	Density	1.46 – 1.50	g/cm ³	ASTM D792
Tensile	0° Strength	> 550	MPa	BS EN ISO 527-4
	0° Modulus	50 – 60		
	0° Poisson's ratio	0.04 – 0.09		
	90° Strength	> 550	MPa	
	90° Modulus	50 – 60		
	90° Poisson's ratio	0.04 – 0.09		
Compressive	0° Strength	> 600	MPa	EN 2850 Type B
	0° Modulus	46 – 55	GPa	
	90° Strength	> 600	MPa	
	90° Modulus	46 – 55	GPa	
Flexural	0° Strength	> 800	MPa	BS EN ISO 14125
	0° Modulus	48 – 57	GPa	
	90° Strength	> 800	MPa	
	90° Modulus	48 – 57	GPa	
In-Plane Shear (±45°)	Strength, 5% strain	> 55	MPa	BS EN ISO 14129
	Strength, ultimate	> 95	MPa	
	Modulus	3.0 – 3.8	GPa	
Interlaminar Shear	0° Strength	> 60	MPa	BS EN ISO 14130
	90° Strength	> 60	MPa	
Dry Tg (DMA)	Tg E' Onset	120 – 140	°C	ASTM D7028
	Tg Peak Tan δ	130 – 155	°C	
Wet Tg* (DMA)	Tg E' Onset	80 – 100	°C	
	Tg Peak Tan δ	90 – 110	°C	

*For specimens conditioned by being submerged in water at 70°C (158°F) for 14 days.

The figures above are typical properties expected from these materials, cured under the recommended conditions of temperature and pressure. They are indicative only. Actual test reports demonstrating these figures can be supplied independently upon request.



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 3.0°C/min (5.4°F/min) during 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.