



Carbiso™ M products are a range of nonwoven mats made from 100% recycled carbon fibres that provide cost and environmental benefits in composite manufacturing processes

Carbiso™ M nonwoven mats can be used with most thermoset and thermoplastic matrix systems. They are suited for closed mould processes and can also be used for the manufacture of intermediate products such as prepregs, semi-prepregs and sheet moulding compounds.

NOMENCLATURE

Example

CARBISO™ M – SM45D – 200 – 1500

BRAND NAME	PRODUCT TYPE	FIBRE CLASSIFICATION	DIMENSIONS
CARBISO™	M	SM45D	200-1500
	Nonwoven mat made from 100% recycled carbon fibres	Standard Modulus fibre with a strength of 4-5 GPa D denotes Dry Fibre feedstock	Areal weight: 200 gsm Width: 1500mm

For additional details please refer to ELG Technical Note 1702: Product Nomenclature

PRODUCT AVAILABILITY

DESCRIPTION	VALUES
Areal weight [g/m ²]	100-500
Tolerance [%]	FAW +/- 10%, CV% <8%
Roll length [m]	50 – 100 *
Roll width [mm]	500 - 2600
Roll diameter [mm]	200 – 900

*depending on areal weight/thickness of the mat

STORAGE AND SHELF LIFE

Storage life 24 months

Stacking Lay flat to avoid telescoping of the roll

Packaging Sealed in polythene bag

Temperature Ambient conditions and Humidity

HEALTH AND SAFETY *Refer to Material Safety Data Sheet*

ELG Carbon Fibre certifies that our recycled carbon fibre products are compliant with the **European Union Regulation (EC) 1907/2006** governing the Registration, Evaluation, Authorization and Restriction of Chemicals (**REACH**) and do not contain substances above 0.1% weight of a Substance of Very High Concern (**SVHC**) listed in Annex XIV. Advised precautions for safe handling are general PPE (gloves, safety goggles, mask and protective clothing).

PROCESSING GUIDELINES

Component Manufacture - Liquid Compression Moulding – Vf of up to 35% achievable

- Snap curing liquid resin system
- Heated press capable of pressures up to at least 25Bar
- Hot-In-Hot-Out process at 100 - 150°C
- 30 seconds to 5 minutes processing time depending on resin chemistry.

Component Manufacture - Infusion – Vf of up to 20% achievable

- Standard infusion consumables
- Must be used with flow media
- For sandwich panels use grooved/drilled core materials to promote resin flow.

Prepreg/SMC manufacture – Compression moulding – Vf of up to 35% achievable

- Aim for a resin content of 50 to 65% depending on subsequent process
- Hot melt system – fabric laid onto resin film before subsequent impregnation
- Solvent line – care needs to be taken not to neck material. Stitched material possible.

Typical properties – SM45D

DESCRIPTION	UNIT	LIQUID COMPRESSION MOULDING		PRESSED SMC	
		TRANSVERSE	LONGITUDINAL	TRANSVERSE	LONGITUDINAL
Tensile Modulus	GPa	32.5	20.5	35.9	21.7
Tensile Strength	MPa	349.3	242.9	388.6	254.1
Compressive Modulus	GPa	30.2	18.7	Under development	
Compressive Strength	MPa	376.3	250.6	363.1	331.2
Flexural Strength	MPa	515.5	333.9	541.8	364.8
Density	g/cm ³	1.37			

200gsm SM45D Carbiso M and epoxy resin – Normalised to 30% Vf – Mean Values – Data with other fibre types available

ELG CARBON FIBRE CONTACTS

GLOBAL

Office: +44 (0) 1902 406010 | contactus@elgcf.com

AUSTRALIA AND NEW ZEALAND

Adam Harrison Melman - Agencies Australia | adam@melman.com.au