ELG Carbon Fibre Ltd.
RECYCLED CARBON FIBRE

TECHNICAL DATA SHEET

CARBISO™ C

Carbiso™ C IM56P-03/10 and C IM56L-03/10 products are chopped, recycled carbon fibres recovered via a modified pyrolysis process. This lower cost alternative to chopped virgin fibre enables weight saving via improved mechanical properties in engineering plastics.

These products are made from reclaimed Intermediate modulus fibres and chopped to the target fibre length. The fibres have no sizing - giving excellent compatibility and dispersibility with a range of matrices. Applications include: thermoplastic compounding and cement reinforcement.

NOMENCLATURE

CARBISO™ C IM56P – 03/10 and C IM56L – 03/10

BRAND NAME	PRODUCT TYPE	FIBRE CLASSIFICATION		DIMENSIONS
	C	IM56P	IM56L	03/10
CARBISO™	Random, pyrolysed, chopped carbon fibres	Intermediate modulus (IM) fibre with a strength of **5-6 GPa** **P** denotes pyrolysed, pre-preg feedstock	Intermediate modulus (IM) fibre with a strength of **5-6 GPa** **L** denotes pyrolysed, laminate feedstock	Fibre length between 3 and 10 mm - with a mean fibre length of 5 mm

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

TYPICAL PROPERTIES

PROPERTY	UNIT	IMPREGNATED STRAND	SINGLE FILAMENT
Tensile Strength	MPa	5504	4100
Tensile Modulus	GPa	292	259
Test Standard		**ASTM D4018**	**ASTM D1577**

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 googles, mask and protective clothing).

PROCESSING GUIDELINES

Due to the low bulk density of this product, special processing equipment is required for bulk handling in extrusion applications. Configurations which have been successfully demonstrated include:

1. Low bulk density feeder, into a densifier/crammer (mounted vertically on the extrusion line).
2. Low bulk density feeder, into a modified side-feeder.

For further details on suppliers for the above equipment and tailored processing guidelines, please contact the relevant Technical Service Engineer.

Typical mechanical properties of compound – Carbiso™ C IM56P-03/10

Table 1 – Mechanical data of compounded Carbiso™ C IM56P-03/10 with PA6*

PROPERTY	UNIT	CARBISO™ C IM56P-03/10 WEIGHT CONTENT (WT%)			
		0	15	20	30
Tensile Modulus	GPa	3.5	12.2	13.0	19.0
Tensile Strength	MPa	90	181	185	220
Flexural Modulus	GPa	3	6.3	9.4	12.3
Flexural Strength	MPa	-	242	274	322
Unnotched Charpy Impact Strength	kJ/m² (5 J)	-	70	75	91

Table 2 - Mechanical data of compounded Carbiso™ C IM56P-03/10 with PP*

PROPERTY	UNIT	CARBISO™ C IM56P-03/10 WEIGHT CONTENT (WT%)			
		0	10	20	30
Tensile Modulus	GPa	-	6.5	10.8	15.4
Tensile Strength	MPa	37	72	95	109
Flexural Modulus	GPa	1.7	5.9	10.0	15.3
Flexural Strength	MPa	-	102	136	167
Unnotched Charpy Impact Strength	kJ/m² (5 J)	-	33	46	62

*Compound property data are provided as an indication and shouldn't be used for design calculations. Final injection moulded part performance will be dependent on the compound formulation and specific manufacturing process.

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