

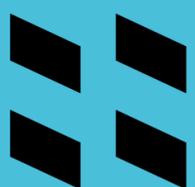
Our mission is to build a closed-loop ecosystem that keeps valuable materials out of landfills and in the heart of product design.

Ready to make a difference? Join the loop!

CONTACTS

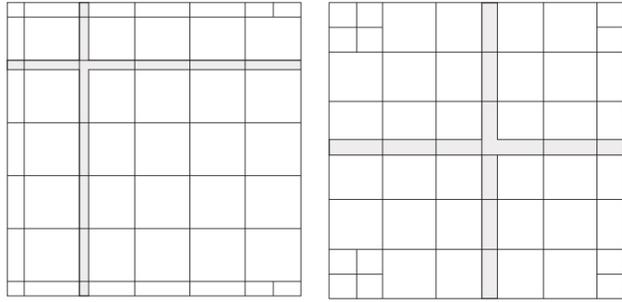
For further information on this product range, please contact:
sales@fairmat.tech

Material Data Sheet



FAIRMAT

Creating Layouts and Products with CFRP Chips



Layout

A layout is a single ply of our material composed of Fairmat CFRP Chips. Within a layout, we place chips along a very precise pattern in order to custom the mechanical, thermic or conductive performance according to client's needs or product specifications.

We can play with the Chips' shape, position and orientation to get the most out of the carbon fibers' properties.

Structure

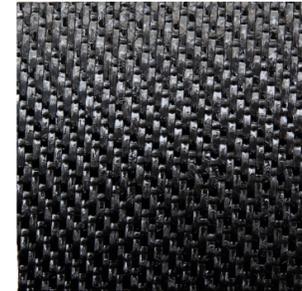
A wide range of reinforcement structures (fiber orientation, ply orientation, number of plies) and choice of resin systems are available. The combination of resin and ply can form a structure from 1mm (0.04 inches) to 65mm (2.56 inches) of thickness.

Fairmat CFRP Chips

Fairmat CFRP Chips are a second-generation carbon fiber composite material. It's a new kind of high-performance composite made from 100% recycled content that can be used across product design.

Fairmat's CFRP Chips are versatile, durable and lightweight; properties engineers look for as they develop the net-zero innovations of tomorrow.

Powered by robots and AI, Fairmat CFRP Chips can be put into a variety of layouts and structures to create tailored parts and products across consumer goods.



PROPERTIES	WE1-WE6	UDE1-UDE6
FIBER ORIENTATION	Woven (BD)	Unidirectional (UD)
DIMENSION MM (INCHES)	60x60 (2.36x2.36)	95x42 (3.7x1.65)
MEASURED THICKNESS MM (INCHES)	0,2-0,8 (0.01-0.03)	0,2-0,8 (0.01-0.03)
MOLDABILITY (FORM FACTOR)	From low to high depending on thickness	
RESIN COMPABILITY	All chips are compatible with epoxy or polyurethane (PU) resins. Request for more information.	

FAIRMAT.TECH

Laminates

From sports to mobility, Fairmat designs and builds high-performing parts and products, made with CFRP Chips, a second-generation carbon fiber. Our laminates combine recycled carbon fiber reinforcements (woven/bidirectional and unidirectional) and thermoset matrix systems that provide unique properties and environmental benefits for various industries.

PROPERTIES	STANDARD	LAM002-S001*	LAM002-S002*	LAM002-S003*	LAM002-S039**
THICKNESS RANGE MM (INCHES)	—	0,8-10 (0.03-0.39)	0,8-10 (0.03-0.39)	0,8-10 (0.03-0.39)	0,8-10 (0.03-0.39)
CHIPS	—	UD	UD	Woven (BD)	Woven (BD)
LAYUP	—	[0/0/0/0/0]	[0/90/0/90/0]	[0/0/0/0/0]	[0/45/0]
DENSITY	—	1,4	1,4	1,4	1,4
YOUNG'S MODULUS (GPa)	ISO 527	96	60	32	—
TENSILE STRENGTH (MPa)	ISO 527	445	350	176	—
FLEXURAL MODULUS (GPa)	ISO 14125	81	65	30	24,5
FLEXURAL STRENGTH (MPa)	ISO 14125	800	500	301	272
INTERLAMINAR SHEAR STRENGTH (MPa)	ASTM D2344	60	—	55	—
RESIN COMPATIBILITY	All laminates can be molded with epoxy or polyurethane (PU) resins. Request for more information.				
FINISH OPTION	The surface of the material may be painted and is available in different finishes: glossy, matte, or other specific finish.				

* Test conditions: 2mm samples thickness, 5 plies laminates, 65% vol of chips, epoxy resin ** Test conditions: 1mm samples thickness, 3 plies laminates, 55% vol of chips, epoxy resin



All data given is based on representative samples of the materials in question. Since the method and circumstances under which these materials are tested are key to their performance, and Fairmat has no assurance of how its customers will use the material, Fairmat cannot guarantee these properties. Fairmat® is a registered trademark of Fairmat SAS.

RESIN SYSTEMS

A wide range of reinforcement structures and resin systems are available.

Additional properties can be provided by the inclusion of resin additives, from a simple improvement of surface finish or the addition of color to more complex enhancement, such as UV resistance, antimicrobial properties, and fire retardancy.

HEALTH & SAFETY

Refer to Material Safety Data Sheet

Fairmat certifies that our 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

Surface Finishing: The surface of the products is paintable.

Machining: Standard machining techniques are suitable with specialized tools (or closely monitored tool life).

Assembly: Parts can be assembled by bonding or mechanical actions.