



TECHNICAL DATA SHEET

TPU Flex Hard CF

DESCRIPTION

TPU Flex Carbon combines the 2 worlds of fibre composites and the extremely resistant and durable elastomer based on polycaprolactone polyester. The carbon fibres reinforce the TPU and makes it more resistant and stiffer. It also creates an outstanding carbon look. The material is also very easy to process because of its low warping tendency. It was specially developed for industrial applications. The material is optimised for the FFF/FDM process in terms of thermal stability and better flow properties. The raw material is compliant with REACH and RoHS standards.

FEATURES

- Extreme layer bonding
- Carbon optics
- Very low warping
- Excellent chemical resistance
- Free of silicone, plasticisers and oil
- Free from halogen
- UV resistant

PROPERTIES ¹

TEST	METHOD	UNIT	VALUE
Tensile modulus (E-Modulus)	ISO 527-2/5A/500	MPa	35
Ultimate elongation	ISO 527-2/5A/500	%	380
Stress at break	ISO 527-2/5A/500	MPa	14 (50%)
	ISO 527-2/5A/500	MPa	14 (100%)
	ISO 527-2/5A/500	MPa	27 (300%)
VICAT A (VST)	ISO 306	°C	140*
Melting temperature	ISO 3146-C	°C	200-240
Density	ISO 2781	g/cm ³	1.22
Abrasion resistance	ISO 4649-A	mm ³	26
Shore hardness	ISO 868	Shore	70D
Tear strength	ISO 34-1B	kN/m	165
Glass transition temperature		°C	-24
Compressive strength	DIN 53452	MPa	50
Permeability AIR	DIN 53380	25°/60°C	420/-
Permeability N2	DIN 53380	25°/60°C	300/1600
Permeability O2	DIN 53380	25°/60°C	790/3900
Permeability CO2	DIN 53380	25°/60°C	5800/1700
Permeability N2O	DIN 53380	25°/60°C	11600/-
Poisson-ratio	acc. to Hencky		0.45

*Temperature resistance tested at a minimum wall thickness of 4 mm.

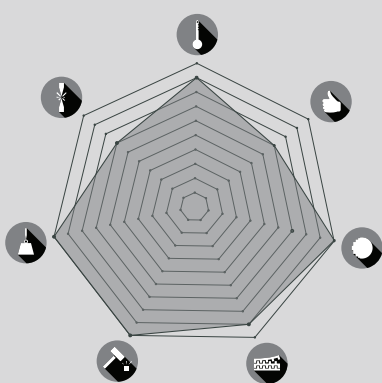
CERTIFICATIONS & ADDITIONAL INFORMATION ²



STORAGE AND SHELF LIFE

Store in a dry room at room temperature (18-27 °C / 65-80 °F). Keep out of direct heat and sunlight. When stored correctly, this material has a shelf life of 2 years.

1. Additional info in our regulatory, additional information and chemical resistance data sheets.
 2. Certifications depend on colors in final product. More info in the additional information sheet.



TEMPERATURE RESISTANCE	9
EASE OF PRINTING	7
VISUAL QUALITY	10
LAYER ADHESION	9
IMPACT RESISTANCE	10
MAXIMUM STRESS	10
ELONGATION AT BREAK	7

PRINT SETTINGS

Nozzle	230-260 °C
Heatbed	50-60 °C
Adhesive	not required
Speed	20-40mm/s
Cooling	10-30%

Recommended settings for printers with a 0.4mm Nozzle. Max. 50% layerheight. Optimal print settings may vary between different printers and also depend on environmental factors.

NEED HELP?

If you have any question about the product and/or you are experiencing an issue, please contact us via support@extrudr.com

