

Main features

Low warpage

Impact resistance

Low water absorption

High-strength and stiffness parts with low creep

Physical properties	Test method	Specimen	Units	Typical value
Specific gravity	ISO 1183-3		g/cm ³	1
Water absorption	ISO 62	MPTS ISO 3167 A	%	<0,3

Mechanical Properties at 23°C

Tensile strength	ISO 527	MPTS ISO 3167 A	MPa	54
Tensile modulus				
Impact strength	ISO 179 1eU	80x10x4mm	kJ/m ²	35
Impact strength notched				
Flexurtal modulus	ISO 178	MPTS ISO 3167 A	GPa	6
Flexurtal strength	ISO 178	MPTS ISO 3167 A	MPa	78
Flexural elongation F. max.	ISO 178	MPTS ISO 3167 A	%	1.5
Elongation F. max.	ISO 527	MPTS ISO 3167 A	%	1.2

Thermal properties

Heat distortion temperature	VST A	ISO 306	MPTS ISO 3167 A	°C	80
Continuous service temperature	20.000 h	IEC 60216	MPTS ISO 3167 A	°C	100

Electrical properties

Insulation resistance	Strip electrode R25	DIN IEC 60167	MPTS ISO 3167 A	ohm	10 ⁻⁷
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Material DataSheet PLENE CARBON

TDS Nr.: 5049

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SUGGESTED PRINT SETS (1)

Suggest print sets	Unit	Value	Test method
Extruder temp	C°	255-270	Internal
Plate temp	C°	50	Internal
Min. nozzle diameter (2)	mm.	0,5	Internal
Fan	%	0	Internal
Print speed	mm/l°	35 - 45	Internal

ADDITIONAL INFORMATIONS

In general filaments made with PLENE Carbon can be processed on conventional 3D printer using FDM / FFF technology.

PLENE Carbon is a special polypropilene carbon fiber reinforced developed for 3D printing and to obtain best results we recommend pre drying the filaments at 80° for 2 h. Increase drying time for spools up 1kg.

Don't leave the filament stopped inside the nozzle more than 20 min. If that down the temperature under 210°, better stop the thermal control.

(1) Suggested print set merely represent a recommendation for general use . Every printer necessity a specific set , nozzle temp, bed temp, etc .

(2) 0.5 mm is the minimum diameter of the nozzle with carbon fibers reinforced. Carbon fibers are abrasive, we suggest to use a nozzle in hardened or tempered metal, like Widia, or wear resistance internal surface, like ceramics or other.
NO tefloned surface!

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