

## TECAFIL PA6 GF30 black - Filament

### Chemical Designation

PA 6 (Polyamide 6)

### Colour

black

### Density

1.36 g/cm<sup>3</sup> (\*2)

### Fillers

30% glass fibres

### Target Industries

- electronics
- automotive industry
- mechanical engineering

General material information	parameter	value	unit	norm	comment
Diameter		2,85 +/- 0,05	mm	-	(1) standard spool body
Spool Measurements	width	55	mm	-	(2) do not dry spool >120°C
Spool Measurements	holder	Ø 52	mm	-	(3) Ø 2,85mm
Spool Measurements	outer diameter	Ø 200	mm	-	1)
Spool Material		Polycarbonate	-	-	2)
Filament Load per Spool		750	g	-	
Filament Length per Spool		83	m	-	3)
Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	5mm/min, Orientation XY	72	MPa	DIN EN ISO 527-2	1) (1) (*5), (*6)
Modulus of elasticity (tensile test)	5mm/min, Orientation XY	5200	MPa	DIN EN ISO 527-2	2) (2) (*5), (*6)
Elongation at break (tensile test)	5mm/min, Orientation XY	5,0	%	DIN EN ISO 527-2	3) (3) (*5), (*6)
Flexural strength	2mm/min, Orientation XY	115	MPa	DIN EN ISO 178	4) (4) (*5), (*6)
Modulus of elasticity (flexural test)	2mm/min, Orientation XY	4460	MPa	DIN EN ISO 178	5) (5) (*5), (*6)
Elongation at break (flexural test)	2mm/min, Orientation XY	6,0	%	DIN EN ISO 178	6) (6) (*5), (*6)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		60	°C	ASTM D 3418	1) (1) (*2)
Melting temperature		220	°C	DIN EN ISO 11357	2) (2) (*2)
Deflection temperature	HDT-A	-	°C	ISO-R 75 Method A	3) (3) (*2)
Service temperature	short term	180	°C	-	4) (4) (*2)
Service temperature	long term	100	°C	-	5) (5) (*2)
Thermal expansion (CLTE)		6	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	6) (6) (*2)
Other properties	parameter	value	unit	norm	comment
Moisture absorption		0,3	%	DIN EN ISO 62	1) (1) (*2)
Melt flow index (MFI)		-	g/10 min	DIN EN ISO 1133	2) (2) (*2)
Processing parameter	parameter	value	unit	norm	comment
Nozzle temperature		255 - 270	°C	-	(1) not required
Max. melt temperature		300	°C	-	
Print bed temperature		70 - 80	°C	-	
Build chamber temperature		80 - 100	°C	-	1)
Nozzle diameter		0,4 - 0,6	mm	-	
Print speed		30 - 50	mm/s	-	
Fan speed		50	%	-	
Predrying	parameter	value	unit	norm	comment
Drying temperature		80	°C	-	1) (1) (*4)
Drying time		8	h	-	

→ To achieve optimum mechanical properties, it is recommended to pre-dry the material with the above mentioned parameters.

- (\*1) Values measured on injection moulded test specimens
- (\*2) Values measured on the raw material
- (\*3) The exact parameters depend on the printer used.
- (\*4) Do not exceed maximum drying temperature of 120°C
- (\*5) Properties tested on printed specimens
- (\*6) Specimens printed on Ultimaker S5

→ The filament should preferably be stored in dry, normal temperature rooms and protected from direct sunlight.

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