

TECAFIL PA6 GF30 black - Filament

Chemical Designation

PA 6 (Polyamide 6)

Colour

black opaque

Density

1.36 g/cm³ (*2)

Fillers

glass fibres, 30% glass fibres

Main features

- high strength
- high dimensional stability
- good weldable and bondable
- good heat deflection temperature
- resistant to many oils, greases and fuels

Target Industries

- electronics
- automotive industry
- mechanical engineering

General material information	parameter	value	unit	norm	comment
Diameter		1,75 +/- 0,05	mm	-	(1) standard spool body
Spool Measurements	outer diameter	Ø 200	mm	-	(1) (2) do not dry spool >120°C (3) Ø 1,75mm
Spool Measurements	width	55	mm	-	
Spool Measurements	holder	Ø 62	mm	-	
Spool Material		Polycarbonate	-	-	(2)
Filament Load per Spool		750	g	-	
Filament Length per Spool		217	m	-	(3)

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50 mm/min	155	MPa	DIN EN ISO 527-1	(1) (*1)
Modulus of elasticity (tensile test)	50 mm/min	9200	MPa	DIN EN ISO 527-1	(2) (*1) (3) (*1) (4) (*1)
Elongation at break (tensile test)	50 mm/min	4,2	%	DIN EN ISO 527-1	(5) (*1) (6) (*1) (7) (*1)
Flexural strength	2 mm/min, 10 N	-	MPa	DIN EN ISO 178	(8) (*1) (4)
Modulus of elasticity (flexural test)	2 mm/min, 10 N	-	MPa	DIN EN ISO 178	(5)
Elongation at break (flexural test)	2 mm/min, 10 N	-	%	DIN EN ISO 178	(6)
Impact strength (Charpy)	max 7,5J - 23°C	55	kJ/m ²	DIN EN ISO 179-1eU	(7)
Notched impact strength (Charpy)	max 7,5J - 23°C	-	kJ/m ²	DIN EN ISO 179-1eA	(8)

Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		60	°C	ASTM D 3418	(1) (*2)
Melting temperature		220	°C	DIN EN ISO 11357	(2) (*2) (3) (*2)
Deflection temperature	HDT-A	-	°C	ISO-R 75 Method A	(4) (*2) (5) (*2) (6) (*2)
Service temperature	long term	100	°C	-	(4)
Service temperature	short term	180	°C	-	(5)
Thermal expansion (CLTE)		6	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1,2	(6)

Other properties	parameter	value	unit	norm	comment
Moisture absorption		0,3	%	DIN EN ISO 62	(1) (*2) (2) (*2)
Melt flow index (MFI)		-	g/10 min	DIN EN ISO 1133	(2)

Processing parameter	parameter	value	unit	norm	comment
Nozzle temperature		260 - 290	°C	-	(1) not required
Max. melt temperature		300	°C	-	
Print bed temperature		80 - 120	°C	-	
Build chamber temperature		80 - 100	°C	-	(1)
Nozzle diameter		0,4 - 0,6	mm	-	
Print speed		30 - 50	mm/s	-	
Fan speed		0 - 20	%	-	

Predrying	parameter	value	unit	norm	comment
Drying temperature		80	°C	-	(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 Minifactory Ultra

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

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