

TECAFIL PEEK EV CF30 black - Filament

Chemical Designation

PEEK (Polyetheretherketone)

Colour

black opaque

Density

1.41 g/cm³ (*2)

Fillers

carbon fibres, 30% carbon fibres

Main features

- very high stiffness
- inherent flame retardant
- good chemical resistance
- high dimensional stability
- hydrolysis and superheated steam resistant

Target Industries

- oil and gas industry
- automotive industry
- chemical technology
- mechanical engineering
- aircraft and aerospace technology

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	-	(2) do not dry spool > 120°C (3) Ø 1,75mm
Spool Measurements	width	55	mm	-	
Spool Measurements	holder	Ø 52	mm	-	
Spool Material		Polycarbonate	-	-	(2)
Filament Load per Spool		500	g	-	
Filament Length per Spool		141	m	-	(3)
Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50 mm/min	204	MPa	DIN EN ISO 527-1	1) (1) (*1)
Modulus of elasticity (tensile test)	50 mm/min	19400	MPa	DIN EN ISO 527-1	2) (2) (*1)
Elongation at break (tensile test)	50 mm/min	3,2	%	DIN EN ISO 527-1	3) (3) (*1)
Flexural strength	2 mm/min, 10 N	-	MPa	DIN EN ISO 178	4) (4) (*1)
Modulus of elasticity (flexural test)	2 mm/min, 10 N	-	MPa	DIN EN ISO 178	5) (5) (*1)
Elongation at break (flexural test)	2 mm/min, 10 N	-	%	DIN EN ISO 178	6) (6) (*1)
Impact strength (Charpy)	max. 7,5J - 23°C	55	kJ/m ²	DIN EN ISO 179-1eU	7) (7) (*1)
Notched impact strength (Charpy)	max. 7,5J - 23°C	-	kJ/m ²	DIN EN ISO 179-1eA	8) (8) (*1)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		143	°C	ASTM D 3418	1) (1) (*2)
Melting temperature		343	°C	DIN EN ISO 11357	2) (2) (*2)
Deflection temperature	HDT-A	155	°C	ISO-R 75 Method A	3) (3) (*2)
Service temperature	short term	300	°C	-	4) (4) (*2)
Service temperature	long term	260	°C	-	5) (5) (*2)
Thermal expansion (CLTE)		6	10 ⁻² K ⁻¹	DIN EN ISO 11359-1;2	6) (6) (*2)
Other properties	parameter	value	unit	norm	comment
Moisture absorption		0,5	%	DIN EN ISO 62	1) (1) (*2)
MVR	380°C / 5kg	12	cm ³ /10 min	DIN EN ISO 1133	2) (2) (*2)
Processing parameter	parameter	value	unit	norm	comment
Nozzle temperature		420 - 460	°C	-	(1) required
Max. melt temperature		470	°C	-	
Print bed temperature		160 - 230	°C	-	
Build chamber temperature		180 - 230	°C	-	1)
Nozzle diameter		0,4 - 0,6	mm	-	
Print speed		20 - 30	mm/s	-	
Fan speed		0	%	-	
Predrying	parameter	value	unit	norm	comment
Drying temperature		120	°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 Minifactory Ultra

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

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