

TECAFIL PEEK VX MT CF30 black - 1.75 mm - Filament

Chemical Designation

PEEK (Polyetheretherketone)

Colour

black opaque

Density

1.38 g/cm³ (*2)

Fillers

carbon fibres, 30% carbon fibres

Main features

- autoclavable
- very high stiffness
- very good sterilisable
- good chemical resistance
- high gamma radiation resistance
- hydrolysis and superheated steam resistant

Target Industries

- medical technology

General material information	parameter	value	unit	norm	comment
Diameter		1,75 +/- 0,05	mm	-	(1) standard spool body
Spool measurements	holder	Ø 52	mm	-	(2) do not dry spool >120°C
Spool measurements	width	55	mm	-	(3) Ø 1,75mm
Spool measurements	outer diameter	Ø 200	mm	-	1)
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	5mm/min, Orientation XY	123	MPa	DIN EN ISO 527-2	1) (1) (*5), (*6)
Tensile strength	5mm/min, Orientation ZX	62	MPa	DIN EN ISO 527-2	2) (2) (*5), (*6)
Modulus of elasticity (tensile test)	5mm/min, Orientation XY	12850	MPa	DIN EN ISO 527-2	3) (3) (*5), (*6)
Modulus of elasticity (tensile test)	5mm/min, Orientation ZX	3880	MPa	DIN EN ISO 527-2	4) (4) (*5), (*6)
Elongation at break (tensile test)	5mm/min, Orientation XY	2,3	%	DIN EN ISO 527-2	5) (5) (*5), (*6)
Elongation at break (tensile test)	5mm/min, Orientation ZX	2,5	%	DIN EN ISO 527-2	6) (6) (*5), (*6)
Flexural strength	2mm/min, Orientation XY	178	MPa	DIN EN ISO 178	7) (7) (*5), (*6)
Flexural strength	2mm/min, Orientation ZX	121	MPa	DIN EN ISO 178	8) (8) (*5), (*6)
Modulus of elasticity (flexural test)	2mm/min, Orientation XY	7790	MPa	DIN EN ISO 178	9) (9) (*5), (*6)
Modulus of elasticity (flexural test)	2mm/min, Orientation ZX	4050	MPa	DIN EN ISO 178	10) (10) (*5), (*6)
Elongation at break (flexural test)	2mm/min, Orientation XY	3,3	%	DIN EN ISO 178	11) (11) (*5), (*6)
Elongation at break (flexural test)	2mm/min, Orientation ZX	3,4	%	DIN EN ISO 178	12) (12) (*5), (*6)

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	162	°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)		4	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1:2	6) (6) (*2)

Other properties	parameter	value	unit	norm	comment
Moisture absorption		0,03	%	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		420 - 460	°C	-	(1) required
Max. melt temperature		470	°C	-	-
Print bed temperature		160 - 250	°C	-	-
Build chamber temperature		160 - 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 Kumovis R1

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

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Ensinger GmbH
Rudolf-Diesel Str. 8
71154 Nufringen - Deutschland

Tel +49 7032 819 0
Fax +49 7032 819 100
ensingerplastics.com

Date: 2023/05/09

Version: AC