

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	-	
Spool measurements	outer diameter	Ø 200	mm	-	1)
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	5mm/min, Orientation XY	169,0	MPa	DIN EN ISO 527-2	1) (1) (*5), (*6)
Tensile strength	5mm/min, Orientation XZ	196,5	MPa	DIN EN ISO 527-2	2) (2) (*5), (*6)
Tensile strength	5mm/min, Orientation ZX	71,0	MPa	DIN EN ISO 527-2	3) (3) (*5), (*6)
Modulus of elasticity (tensile test)	5mm/min, Orientation XY	17310,0	MPa	DIN EN ISO 527-2	4) (4) (*5), (*6)
Modulus of elasticity (tensile test)	5mm/min, Orientation XZ	19963,0	MPa	DIN EN ISO 527-2	5) (5) (*5), (*6)
Modulus of elasticity (tensile test)	5mm/min, Orientation ZX	4164,8	MPa	DIN EN ISO 527-2	6) (6) (*5), (*6)
Elongation at yield (tensile test)	5mm/min, Orientation XY	2,6	%	DIN EN ISO 527-2	7) (7) (*5), (*6)
Elongation at yield (tensile test)	5mm/min, Orientation XZ	2,6	%	DIN EN ISO 527-2	8) (8) (*5), (*6)
Elongation at yield (tensile test)	5mm/min, Orientation ZX	3,7	%	DIN EN ISO 527-2	9) (9) (*5), (*6)
Elongation at break (tensile test)	5mm/min, Orientation XY	2,7	%	DIN EN ISO 527-2	10) (10) (*5), (*6)
Elongation at break (tensile test)	5mm/min, Orientation XZ	2,7	%	DIN EN ISO 527-2	11) (11) (*5), (*6)
Elongation at break (tensile test)	5mm/min, Orientation ZX	3,8	%	DIN EN ISO 527-2	12) (12) (*5), (*6)
Impact strength (Charpy)	max. 7,5J - 23°C	55,0	kJ/m ²	DIN EN ISO 179-1eU	13) (13) (*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	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)		6	10 ⁻⁵ 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)
Flammability (UL94)	125x13x1,5mm	V0		DIN IEC 60695-11-10;	2) (2) (*2)
Melt flow index (MFI)	380°C / 5kg	2,9	g/10 min	DIN EN ISO 1133	3) (3) (*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	-	

