Technical Specification Sheets

T: +44 (0) 116 289 3343 E: info@facadecreations.co.uk W: www.facadecreations.co.uk
Registered Office Address: 124 City Road, London, England, EC1V 2NX. Registered in England, Company Number: 16267073

Chemical Designation
PEEK (Polyetheretherketone)

Colour
black opaque

Density
1.67 g/cm^3 (*2)

Fillers
mineral filler

Main features
- developed for the LPKF-LDS® process

Target Industries
- electronics
- mechanical engineering
- semiconductor technology
- aircraft and aerospace interiors
- aircraft and aerospace technology

General material information	parameter	value	unit	norm		comment
Diameter		1,75 +/- 0,05	mm	-		(1) standard spool body (2) do not dry spool >120°C (3) Ø 1,75mm
Spool measurements	holder	Ø 52	mm	-		
Spool measurements	width	55	mm	-		
Spool measurements	outer diameter	Ø 200	mm	-	1)	
Spool Material		Polycarbonate		-	2)	
Filament Load per Spool		500	g	-		
Filament Length per Spool		118	m	-	3)	

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	5mm/min, Orientation XY	79,0	MPa	DIN EN ISO 527-2	1)	(1) (*5) , (*6) (2) (*5) , (*6) (3) (*5) , (*6) (4) (*5) , (*6) (5) (*5) , (*6) (6) (*5) , (*6) (7) (*5) , (*6) (8) (*5) , (*6) (9) (*5) , (*6) (10) (*5) , (*6) (11) (*5) , (*6) (12) (*5) , (*6) (13) (*1)
Tensile strength	5mm/min, Orientation XZ	81,3	MPa	DIN EN ISO 527-2	2)	
Tensile strength	5mm/min, Orientation ZX	8,8	MPa	DIN EN ISO 527-2	3)	
Modulus of elasticity (tensile test)	5mm/min, Orientation XY	9694,0	MPa	DIN EN ISO 527-2	4)	
Modulus of elasticity (tensile test)	5mm/min, Orientation XZ	9896,0	MPa	DIN EN ISO 527-2	5)	
Modulus of elasticity (tensile test)	5mm/min, Orientation ZX	2317,3	MPa	DIN EN ISO 527-2	6)	
Elongation at yield (tensile test)	5mm/min, Orientation XY	1,4	%	DIN EN ISO 527-2	7)	
Elongation at yield (tensile test)	5mm/min, Orientation XZ	1,8	%	DIN EN ISO 527-2	8)	
Elongation at yield (tensile test)	5mm/min, Orientation ZX	0,3	%	DIN EN ISO 527-2	9)	
Elongation at break (tensile test)	5mm/min, Orientation XY	1,4	%	DIN EN ISO 527-2	10)	
Elongation at break (tensile test)	5mm/min, Orientation XZ	1,9	%	DIN EN ISO 527-2	11)	
Elongation at break (tensile test)	5mm/min, Orientation ZX	0,3	%	DIN EN ISO 527-2	12)	
Impact strength (Charpy)	max. 7,5J - 23°C	35,0	kJ/m^2	DIN EN ISO 179-1eU	13)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		143	°C	ASTM D 3418	1)	(1) (*2) (2) (*2) (3) (*2) (4) (*2) (5) (*2) (6) (*2) (7) (*2) (8) (*2) (9) (*2) (10) (*2) (11) (*2) (12) (*2) (13) (*2)
Melting temperature		343	°C	DIN EN ISO 11357	2)	
Deflection temperature	HDT-A	204	°C	ISO-R 75 Method A	3)	
Service temperature	short term	300	°C	-	4)	
Service temperature	long term	260	°C	-	5)	
Thermal expansion (CLTE)	longitudinal (at 23 - 100 °C)	18	10^{-6} K^{-1}	DIN EN ISO 11359-1;2	6)	
Thermal expansion (CLTE)	transverse (at 23 - 100 °C)	26	10^{-6} K^{-1}	DIN EN ISO 11359-1;2	7)	
Thermal expansion (CLTE)	longitudinal (at 200 - 260 °C)	46	10^{-6} K^{-1}	DIN EN ISO 11359-1;2	8)	
Thermal expansion (CLTE)	transverse (at 200 - 260 °C)	67	10^{-6} K^{-1}	DIN EN ISO 11359-1;2	9)	
Thermal expansion (CLTE)	longitudinal (at 260 - 300 °C)	63	10^{-6} K^{-1}	DIN EN ISO 11359-1;2	10)	
Thermal expansion (CLTE)	transverse (at 260 - 300 °C)	88	10^{-6} K^{-1}	DIN EN ISO 11359-1;2	11)	
Thermal diffusivity	through-plane	0,29	mm^2/s	DIN EN 821	12)	
Thermal diffusivity	in-plane	0,84	mm^2/s	DIN EN 821	13)	

Electrical properties	parameter	value	unit	norm		comment
volume resistance		5,8 x 10^{11}	Ω	DIN EN 61340-2-3	1)	(1) (*2) (2) (*2) (3) (*2) (4) (*2) (5) (*2) (6) (*2)
Dielectric strength	70mm x 70mm x 3mm	17,5	kV/mm	ISO 60243-1	2)	
Dielectric loss factor	test frequency of 1 kHz	0,0066		DIN 53483-1	3)	
Dielectric constant	test frequency of 1 kHz	3,73		DIN 53483-1	4)	
Surface resistivity		5,8 x 10^{12}		DIN EN 61340-2-3	5)	
Resistance to tracking (CTI)		225	V	DIN EN 60112	6)	

Other properties	parameter	value	unit	norm		comment
Moisture absorption		0,1	%	DIN EN ISO 62	1)	(1) (*2) (2) (*2) (3) (*2) / pull-off-test (4) (*2) (5) (*2) (6) (*2)
Melt flow index (MFI)	380°C / 10kg	77,0	g/10 min	DIN EN ISO 1133	2)	
Adhesive strength (metal path)		19,4	N/mm^2	-	3)	
Laser Marking Parameter	Power	2 - 8	W	-	4)	

T: +44 (0) 116 289 3343 E: info@facadecreations.co.uk W: www.facadecreations.co.uk
Registered Office Address: 124 City Road, London, England, EC1V 2NX. Registered in England, Company Number: 16267073

Laser Marking Parameter	Frequency	120 - 180	kHz	-	5)	
Laser Marking Parameter	Forward movement	1,8 - 2,4	m/s	-	6)	
Processing parameter	***parameter***	***value***	***unit***	***norm***		***comment***
Nozzle temperature		390 - 420	°C	-		(1) required
Max. melt temperature		430	°C	-		
Print bed temperature		160 - 250	°C	-		
Build chamber temperature		160 - 230	°C	-	1)	
Nozzle diameter		0,4	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	-		

While the information on this data sheet is believed to be correct at the time of publication, it is the customer's responsibility to ensure the correct use and application of this product. The buyer undertakes all liability in respect of the application, processing or use of this information or product, whose quality and other properties he shall verify, or any consequence thereof.