FAÇADE CREATIONS

Technical Specification Sheets

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Chemical Designation
PEEK (Polyetheretherketone)

Colour
grey

Density
1.65 g/cm^3

Fillers
mineral filler

Main features
- developed for the LPKF-LDS® process
- biocompatibility see declaration of conformity
- very good chemical resistance
- inherent flame retardant
- good heat deflection temperature
- low moisture absorption

Target Industries
- electrical engineering
- medical technology

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength		103	MPa	DIN EN ISO 527-1		
Modulus of elasticity (tensile test)		10700	MPa	DIN EN ISO 527-1		
Elongation at break (tensile test)		2,2	%	DIN EN ISO 527-1		
Impact strength (Charpy)		30	kJ/m^2	DIN EN ISO 179-1eU		

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		143	°C	DIN 53765		(1) literature value (2) literature value
Melting temperature		343	°C	DIN 53765		
Heat distortion temperature		254	°C	ISO-R 75 Method A		
Service temperature	short term	300	°C	-	1)	
Service temperature	long term	260	°C	-	2)	
Thermal expansion (CLTE)	longitudinal (at 23 - 100 °C)	18	10^{-6} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	transverse (at 23 - 100 °C)	31	10^{-6} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	longitudinal (at 200 - 260 °C)	47	10^{-6} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	transverse (at 200 - 260 °C)	87	10^{-6} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	longitudinal (at 260 - 300 °C)	63	10^{-6} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	transverse (at 260 - 300 °C)	110	10^{-6} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		0,8	J/(g*K)	DIN EN 821		
Thermal conductivity	in-plane	1,2	W/(K*m)	DIN EN 821		
Thermal conductivity	through-plane	0,5	W/(K*m)	DIN EN 821		
Thermal diffusivity	in-plane	0,67	mm^2/s	DIN EN 821		
Thermal diffusivity	through-plane	0,28	mm^2/s	DIN EN 821		

Electrical properties	parameter	value	unit	norm		comment
surface resistivity		10^{14}	Ω	DIN EN 61340-2-3		
volume resistivity		10^{14}	Ω*m	DIN EN 61340-2-3		
Dielectric loss factor	test frequency of 1 GHz	0,002		-		
Dielectric constant	test frequency of 1 GHz	3,6		-		

Other properties	parameter	value	unit	norm		comment
Water absorption	23 °C / 50 % relative humidity up to saturation	0,04	%	DIN EN ISO 62		(1) No listing at UL (Yellow Card).
Molding shrinkage	longitudinal	0,6	%	DIN EN ISO 294-4		
Molding shrinkage	transverse	0,6	%	DIN EN ISO 294-4		
Flammability (UL94)	at 0,9 mm	V0		DIN IEC 60695-11-10;	1)	

Processing parameter	parameter	value	unit	norm	comment
processing temperatures		360 - 410	°C	-	
Mould temperature		170 - 210	°C	-	

- This material can be processed as a thermoplastic taking the normal technical provisions into account. The above mentioned information refers exclusively to the injection moulding process.
- Back pressure and injection rate should be adjusted to the component geometry accordingly. The optimum processing temperature depends upon the respective geometry of the moulded part and can be different from machine to machine.

Predrying	parameter	value	unit	norm	comment
Permissible residual moisture content		< 0,02	%	-	
Drying temperature		160	°C	-	
Drying time		4	h	-	