

TECACOMP® PEEK LDS black 3980 - Compounds

Chemical Designation

PEEK (Polyetheretherketone)

Colour

black

Density

1.7 g/cm³

Fillers

mineral filler

Main features

→ developed for the LPKF-LDS® process

Target Industries

→ electrical engineering
→ mechanical engineering
→ medical technology

Mechanical properties	parameter	value	unit	norm	comment
Modulus of elasticity (tensile test)	50 mm/min	11500	MPa	DIN EN ISO 527-1	
Tensile strength	50 mm/min	105	MPa	DIN EN ISO 527-1	
Elongation at break	50 mm/min	2,0	%	DIN EN ISO 527-1	
Impact strength (Charpy)		25	kJ/m ²	DIN EN ISO 179-1eU	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		143	°C	DIN 53765	
Melting temperature		343	°C	DIN 53765	
Heat distortion temperature		218	°C	ISO-R 75 Method A	
Service temperature	short term	300	°C	-	
Service temperature	long term	260	°C	-	
Thermal expansion (CLTE)	longitudinal (at 23 - 100 °C)	15	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 23 - 100 °C)	25	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 200 - 260 °C)	50	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 200 - 260 °C)	72	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 260 - 300 °C)	67	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 260 - 300 °C)	95	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Electrical properties	parameter	value	unit	norm	comment
Specific surface resistance		5,8 x 10 ¹²	Ω	DIN EN 61340-2-3	
Specific volume resistance		5,8 x 10 ¹¹	Ω*m	DIN EN 61340-2-3	
Dielectric strength	70 mm x 70 mm x 3 mm	17,5	kV/mm	ISO 60243-1	
Resistance to tracking (CTI)		< 250	V	DIN EN 60112	
Other properties	parameter	value	unit	norm	comment
Molding shrinkage	longitudinal	0,38	%	DIN EN ISO 294-4	(1) test method: pull-off-test
Molding shrinkage	transverse	0,48	%	DIN EN ISO 294-4	
Melt flow index (MFI)	380 °C / 10 kg	70	g/10 min	DIN EN ISO 1133	
MVR	380 °C / 5 kg	34	cm ³ /10 min	DIN EN ISO 1133	
Bulk density		0,90	g/cm ³	EN ISO 60	
Adhesive strength (metal path)		19,4	N/mm ²	-	1)
Laser Marking Parameter	Power	2 - 8	W	-	
Laser Marking Parameter	Frequency	120 - 180	kHz	-	
Laser Marking Parameter	Forward movement	1,8 - 2,4	m/s	-	
Processing parameter	parameter	value	unit	norm	comment
Cylinder/processing temperature		360 - 400	°C	-	
Mould temperature		160 - 210	°C	-	
Material temperature		390 - 400	°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		140 - 160	°C	-	
Drying time		4 - 6	h	-	

→ In order to achieve optimum mechanical properties, pre-drying of the material is recommended with the parameters mentioned above.

→ Granulate should preferably be stored in dry rooms at normal temperatures and be protected from direct sunlight.

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