TECAMID 6 GF25 black - Stock Shapes (rods, plates, tubes)

Chemical Designation
PA 6 (Polyamide 6)

Colour
black opaque

Density
1.33 g/cm^3

Fillers
glass fibres

Data generated directly after machining (standard climate Germany).

Main features
- very high strength
- good weldable and bondable
- resistant to many oils, greases and fuels
- good machinability
- high dimensional stability
- good heat deflection temperature
- good wear properties

Target Industries
- mechanical engineering
- automotive industry

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	50mm/min	96	MPa	DIN EN ISO 527-2		(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. (6) Specimen in 4mm thickness
Modulus of elasticity (tensile test)	1mm/min	5100	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	96	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	50mm/min	9	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	11	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	143	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	4900	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	/ 21/42/105	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	3900	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	78	kJ/m^2	DIN EN ISO 179-1eU	5)	
Ball indentation hardness		230	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		49	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		217	°C	DIN EN ISO 11357		
Service temperature	short term	180	°C		2)	
Service temperature	long term	100	°C			
Thermal expansion (CLTE)	23-60°C, long.	7	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	8	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.4	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.40	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm		comment
surface resistivity		10^{14}	Ω	-		(1) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.
volume resistivity		10^{14}	Ω*cm	-	1)	

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.2 / 0.3	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) (+) limited resistance (3) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		(+)		-	2)	
Resistance to weathering		(+)				
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	3)	

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Ensinger India Engineering Plastics Pvt Ltd.
2205, 22nd Floor, SOLUS Building,
Hiranandani Estate, Thane West - 400607,
India

Phone +91 22-49797082
www.ensinger.in

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