TECAMID 6 GF30 black - Stock Shapes (rods, plates, tubes)

Chemical Designation
PA 6 (Polyamide 6)

Colour
black opaque

Density
1.36 g/cm^3

Fillers
glass fibres

Data generated directly after machining (standard climate Germany).

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

Target Industries
- mechanical engineering
- electronics
- automotive industry

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	50mm/min	98	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.
Modulus of elasticity (tensile test)	1mm/min	5700	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	98	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	50mm/min	4	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	5	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	140	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	5200	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	21/42/107	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	4200	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	60	kJ/m^2	DIN EN ISO 179-1eU	5)	
Shore hardness	D	84		DIN EN ISO 868		

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		218	°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.	6	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	6	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.3	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.41	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm		comment
surface resistivity	Silver electrode, 23°C, 12% r.h.	10^{14}	Ω	-	1)	(1) Specimen in 20mm thickness (2) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise. (3) Specimen in 1mm thickness
volume resistivity	Silver electrode, 23°C, 12% r.h.	10^{14}	Ω*cm	-	2)	
Dielectric strength	23°C, 50% r.h.	32	kV/mm	ISO 60243-1	3)	
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	550 / 475	V	DIN EN 60112		

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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