

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

Chemical Designation

PA 6 (Polyamide 6)

Colour

black opaque

Density

1.36 g/cm³

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
Modulus of elasticity (tensile test)	1mm/min	5700	MPa	DIN EN ISO 527-2	1) (2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	98	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	4	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	5	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
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.
Melting temperature		218	°C	DIN EN ISO 11357	(2) Found in public sources.
Service temperature	short term	180	°C		2) Individual testing regarding application conditions is mandatory.
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
volume resistivity	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω*cm	-	2) (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.
Dielectric strength	23°C, 50% r.h.	32	kV/mm	ISO 60243-1	3) (3) Specimen in 1mm thickness
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
Resistance to hot water/ bases		(+)		-	2) (2) (+) limited resistance
Resistance to weathering		(+)			3) (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.
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	3)

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