

TECAMID 66/X GF50 black - Stock Shapes (rods, plates, tubes)

Chemical Designation

PA 66 (Polyamide 66)

Colour

black opaque

Density

1.61 g/cm³

Fillers

glass fibres

Main features

- good heat deflection temperature
- high thermal and mechanical capacity
- resistant to many oils, greases and fuels
- high dimensional stability
- high fatigue strength
- good machinability
- very high strength
- very high creep resistant

Target Industries

- mechanical engineering
- automotive industry
- electronics

Data generated directly after machining
(standard climate Germany).

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50mm/min	115	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	8700	MPa	DIN EN ISO 527-2	(1) (2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	115	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	2	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	2	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	200	MPa	DIN EN ISO 178	(2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	9000	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	28/56/141	MPa	EN ISO 604	(3)
Compression modulus	5mm/min, 10 N	6200	MPa	EN ISO 604	(4)
Shore hardness	D	90		DIN EN ISO 868	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		78	°C	DIN EN ISO 11357	(1)
Melting temperature		256	°C	DIN EN ISO 11357	(2)
Service temperature	short term	200	°C		(2)
Service temperature	long term	130	°C		
Thermal expansion (CLTE)	23-60°C, long.	4	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
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)	0.1 / 0.2	%	DIN EN ISO 62	(1) (1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		-	-	-	(2) - poor resistance
Resistance to weathering		(+)	-	-	(3) (+) limited resistance
Flammability (UL94)	listed (value at 0.85mm)	HB		DIN IEC 60695-11-10;	(4) 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.

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