## TECAMID 66 GF30 black - Stock Shapes (rods, plates, tubes)

### Chemical Designation
PA 66 (Polyamide 66)

### Colour
black opaque

### Density
1.34 g/cm³

### Fillers
glass fibres

Data generated directly after machining (standard climate Germany).

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

**Target Industries**
- mechanical engineering
- aircraft and aerospace technology
- automotive industry

### Mechanical properties

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| Modulus of elasticity (tensile test) | 1mm/min | 5500 | MPa | DIN EN ISO 527-2 | (1) For tensile test specimen type 1b
| Tensile strength                  | 50mm/min | 91 | MPa | DIN EN ISO 527-2 | (2) For flexural test span 64mm, norm specimen.
| Tensile strength at yield         | 50mm/min | 91 | MPa | DIN EN ISO 527-2 | (3) Specimen 10x10x10mm
| Elongation at yield               | 50mm/min | 8 | % | DIN EN ISO 527-2 | (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
| Elongation at break               | 50mm/min | 14 | % | DIN EN ISO 527-2 | (5) For Charpy test: span 64mm, norm specimen.
| Flexural strength                 | 2mm/min, 10 N | 135 | MPa | DIN EN ISO 178 | (6) Specimen in 4mm thickness
| Modulus of elasticity (flexural test) | 2mm/min, 10 N | 4700 | MPa | DIN EN ISO 178 |
| Compression strength              | 1% / 5% / 9% | 5/46/104 | MPa | EN ISO 604 | (1) From resin, stock shape or information might be taken regarding application.
| Impact strength (Charpy)          | 5mm/min | 216 | kJ/m² | DIN EN ISO 608-1 | (2) (+) limited resistance
| Ball indentation hardness         | 2mm/min, 10 N | 50 | MPa | ISO 2038-1 | (3) Corresponding means no insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.

### Thermal properties

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| Glass transition temperature     | 48 | °C | DIN EN ISO 11357 | (1) Found in public sources. Individual testing regarding application conditions is mandatory.
| Melting temperature              | 254 | °C | DIN EN ISO 11357 | (2) Found in public sources.
| Service temperature short term   | 180 | °C | DIN EN ISO 179-16U | (3) Specimen 10x10x10mm, span 64mm, norm specimen.
| Service temperature long term    | 110 | °C | DIN EN ISO 11357-1-2 | (4) Specimen 10x10x10mm, span 64mm, norm specimen.
| Thermal expansion (CLTE)          | 23-60°C, long | 5 | 10⁻⁶ K⁻¹ | DIN EN ISO 11359-1-1-2 | (5) Specimen 10x10x10mm, span 64mm, norm specimen.
| Specific heat                     | 1.2 | J/(g*K) | ISO 22007-4:2008 |
| Thermal conductivity             | 0.39 | W/(K*m) | ISO 22007-4:2008 |

### Electrical properties

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| surface resistivity              | Silver electrode, 23°C, 12% r.h. | 10¹⁴ | Ω | DIN IEC 60093 | (1) Specimen in 20mm thickness.
| volume resistivity               | Silver electrode, 23°C, 12% r.h. | 10¹⁴ | Ω/cm | DIN IEC 60093 | (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              | 25°C, 50% r.h. | 35 | kV/mm | ISO 60243-1 | (3) Specimen in 1mm thickness.
| Resistance to tracking (CTI)     | Platin electrode, 25°C, 50% r.h., solvent A | 550 / 475 | V | DIN EN 60911 |

### Other properties

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| Water absorption                 | 24h / 96h (23°C) | 0.1 / 0.2 | % | DIN EN ISO 62 | (1) Ø ca. 50mm, h=13mm
| Resistance to weathering         | 250°C | 50% r.h. | DIN EN ISO 60595-1-10 | (2) (+) limited resistance
| Flammability (UL 94)            | 50mm/min | 146 | – | DIN EN 60695-1-10 | (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.

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