

Material properties

High-Strength structural parts

Characteristics

- thermoplastic polyamide matrix (PA6)
- individual contours
- continuous fiber reinforcement
- variable fiber content from 40 to 65 %
- very low void content
- perfect unidirectional fiber orientation
- continuous process

Benefits

- high light-weight potential
- can be thermoformed
- weldable
- in mold reinforcement
- resistant to a wide range of chemicals
- recyclable
- wide range of operating temperature
- perfect fiber orientation

Mechanical data

Property	Test Standard
Fiber content	DIN 51006
Density	DIN EN ISO
Melting temperature	DIN EN ISO 11357
Tensile strength*	DIN EN ISO 527
Flexural modulus*	DIN EN ISO 14125
Young`s modulus*	DIN EN ISO 527

*in direction of the profile

Si-unit	Metric-units
	UD-PA6-CF50%
vol-%	50
g/cm ³	1,47
°C	215
MPa	2000
GPa	105
GPa	110



Perfect unidirectional fiber orientation

To achieve high mechanical properties a perfect unidirectional fiber orientation in the polyamide matrix is essential. The fiber orientation of the TKP pultrusion parts can be seen in the high quality (3k) computed tomography scan on the left. thermoplastic polyamide matrix (PA6)

The picture shows:

- homogenous distribution of the fiber in the matrix
- no voids
- unidirectional fiber orientation
- no delamination
- good fiber-matrix bonding

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