MATERIAL DATASHEET

ZX-324 3D FILAMENT

ZEDEX®
3D TRIBO FILAMENT

Description

ZX-324 filament is made of 100% pure PEEK (polyetheretherketone). In contrast to conventional PEEK, it has a higher glass transition temperature and better ductility. ZX-324 filament is a high temperature resistant thermoplastic with a high melting point of 340°C. It is very resistant to almost all organic and inorganic chemicals.

Although PEEK filament is 70% lighter than metals with similar properties, it can provide much of the same thermal and mechanical stability. Printing with ZX-324 filament is extremely cost-effective compared to a CNC milling machine, and the material yield is also almost 100%.

Properties

- hard, stiff, tough
- high fatigue strength
- good hydrolysis resistance
- enough UV resistance and resistance to weathering
- resistence to stress cracking (except with acetone)
- flame resistant (low toxicity of flue gases)
- bondable and weldable
- PTFE- and Silicone-Free
- vacuum suitable

Resistances

Lubricants and fuels
resistant

Chemicals, resistant
universal resistant

Chemicals, unstable
concentrated acids, sulfuric and nitric acid, bromic, sulfonic and chromium acids, halogenated hydrocarbons, sodium, chlorine, fluorine, bromine

Water
max. water absorption: 0.5 %
Resistant up to max. 200 °C

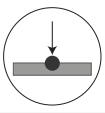
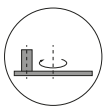
Reaction to fire
Classification: HB (UL94)

Conformities

- FDA & EU 10/2011
- RoHS / WEEE
- REACH

Properties	Symbol | Unit		Standard	Value
Filament data				
Material code	-	-	-	581
Diameter	-	mm	-	1,75
Tolerance of the diameter	-	mm	-	±0,05
Weight per metre (theoretical)	-	g/m	-	-

Values determined on printed test specimens.
Filament undried – Alignment: horizontal/upright – slicing 45°

	Properties	Symbol | Unit		Standard	Value (horizontal)
	Material properties				
	Filament moisture content during printing	w	%	DIN EN ISO 15512	0,061
	Thermal post-treatment (annealing)	-	-	-	no
	3D printing orientation	-	-	-	XY
	Tensile modulus	E_t	MPa	DIN EN ISO 527-2/1B/1	-
	Tensile strength at yield	σ_y	MPa	DIN EN ISO 527-2/1B/5	81
	Tensile strain at yield	ε_y	%	DIN EN ISO 527-2/1B/5	3,1
	Tensile strength	σ_m	MPa	DIN EN ISO 527-2/1B/5	91
	Elongation at tensile strength	ε_m	%	DIN EN ISO 527-2/1B/5	5,0
	Tensile strength at break	σ_b	MPa	DIN EN ISO 527-2/1B/5	75
	Elongation at break	ε_b	%	DIN EN ISO 527-2/1B/5	10
	Impact resistance notched Charpy	α_{cN}	kJ/m²	DIN EN ISO 179	-
	Impact resistance un-notched Charpy	α_{cU}	kJ/m²	DIN EN ISO 179	88
	Ball indentation hardness	HB	N/mm²	DIN 2039 H358/30	-
	Specific wear rate p = 1N / mm²; v = 100m / min; 100Cr6, dry-running	K	mm³/km * 10-7	ASTM G99:2000	-
	Specific wear rate p = 10N / mm²; v = 4 m / min; 100Cr6, dry-running	K	mm³/km * 10-7	ASTM G99:2000	-
	Annealing shrinkage 125 ° C, length	-	%	-	-
	Annealing shrinkage 125 ° C, width	-	%	-	-
	Annealing shrinkage 125 ° C, thickness	-	%	-	-