

## TECHNICAL DATA SHEET

### FILAFLEX 82A ORIGINAL

#### Description

Filaflex is a Thermoplastic Polyether-Polyurethane elastomer with additives that allow high printability in FDM printers. Filaflex® has a remarkable hydrolysis resistance, high resistance to bacteria and low temperature flexibility properties in printed parts.

Physical Property	Value	Unit	Test method according to
Material density	1,120	g/cm <sup>3</sup>	ISO 1183
	1120,000	kg/m <sup>3</sup>	ISO 1183
Melt flow rate (230°C/2,16kg)	0,000	g/10min	ISO 1133

Mechanical Property	Value	Unit	Test method according to
Tensile modulus (Young)	22,00	MPa	ISO 527
Tensile strength	45	MPa	DIN 53504-S2
Elongation at break	650,00	%	DIN 53504-S2
Stress at 20% elongation	2,50	MPa	DIN 53504-S2
Stress at 100% elongation	6,00	MPa	DIN 53504-S2
Stress at 300% elongation	10,00	MPa	DIN 53504-S2
Tear strength	70,00	N/mm	ISO 34-1
Abrasion resistant	25,00	mm <sup>3</sup>	ISO 4649
Compression set 23°C/72 hours	25,00	%	ISO 815
Compression set 70°C/24 hours	45,00	%	ISO 815
Tensile strength after storage in water at 80°C for 42	32,00	Mpa	DIN 53504-S2
Elongation at break after storage in water at 80°C for	600,00	%	DIN 53504-S2
Notched impact strength (Charpy)n at +23°C	nb	kJ/m <sup>2</sup>	ISO 179
Notched impact strength (Charpy)n at -30°C	nb	kJ/m <sup>2</sup>	ISO 179
Tensile notched impact strength, +23°C	580,00	kJ/m <sup>2</sup>	ISO 8256/1

<b>Thermal Property</b>	<b>Value</b>	<b>Unit</b>	<b>Test method according to</b>
Combustibility O2 index	23,0	%	ISO 4589-1/-2
Burning behaviour	HB	CLASS	UL 94
Yellow Card Available	yes		
Glass Transition Temperature 10°C/min	-42,0	°C	ISO 11357-1/-2
VST Vicat Softening Temperature	113,0	°C	Vicat A Method: 10 Nw, 120°C/h
Thermal Conductivity	0,3	W/(mk)	DIN 52612-1
Coefficient Thermal Expansion at 23°C	210,0	1/K	ISO 11359-2

<b>Conductive Property</b>	<b>Value</b>	<b>Unit</b>	<b>Test method according to</b>
WDD Water Vapor Permiability	17,00	g/m2d	ISO 15106-2
Electrical resistivity surface	0	ohm	ASTM D 257
Electrical resistivity	1E+10	ohm cm	
Electrical conductivity	0	ohm-1 cm-1	
Dielectric factor 100Hz	0		IEC 62631-2-1
Dielectric factor 1MHz	6		IEC 62631-2-1
Dissipation factor, 100Hz	300	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	950	E-4	IEC 62631-2-1
Volume resistivity	1E+10	Ohm*m	IEC 62631-3-1
Electric strength	35	kV/mm	IEC 60243-1
CTI Comparative tracking index	600		IEC 60112

<b>Printing properties</b>	<b>Recommended</b>
Printing temperatures	215 - 250°C
Printing speed	20 - 60 mm/s
Hot-bed temperature	0°C
Optimal layer height	0.2 mm
Minimal nozzle diameter	0.4 mm or higher
Retraction parameters	3.5 - 6.5 mm (speed 20 - 160 mm/s)

