

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	1.12	g/cm ³	ISO 1183
Mechanical Property			
Hardness	82	shore A	DIN ISO 7619-1 (3s)
	31	shore D	
Tensile modulus (Young)	22	MPa	ISO 527
Tensile strength	45	MPa	DIN 53504-S2
Elongation at break	650	%	DIN 53504-S2
Stress at 20% elongation	1.1	%	DIN 53504-S2
Stress at 100% elongation	6	%	DIN 53504-S2
Stress at 300% elongation	10	%	DIN 53504-S2
Tear strength	70	N/mm	ISO 34-1
Abrasion resistant	25	mm ³	ISO 4649
Compression set 23°C/72 hours	25	%	ISO 815
Compression set 70°C/24 hours	45	%	ISO 815
Tensile strength after storage in water at 80°C for 72 hours	32	Mpa	DIN 53504-S2
Elongation at break after storage in water at 80°C for 72 hours	600	%	DIN 53504-S2
Notched impact strength (Charpy)n at +23°C	nb	kJ/m ²	ISO 179
Notched impact strength (Charpy)n at -30°C	nb	kJ/m ²	ISO 179
Tensile notched impact strength, +23°C	580	kJ/m ²	ISO 8256/1
Abrasion loss	25	mm ³	ISO 4649

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

Electrical Property	Value	Unit	Test method according to
WDD Water Vapor Permiability	17	g/m2d	ISO 15106-2
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	1,00E+10	Ohm*m	IEC 62631-3-1
Electric strength	35	kV/mm	IEC 60243-1
CTI Comparative tracking index	600		IEC 60112

Printing properties	Recommended
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)