TECHNICAL DATA SHEET

VERSION 1.2
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SMARTFIL by smart materials 3D

FLEX 98A

SMARTFIL® FLEX 98A is a thermoplastic polyurethane that has been additivated to obtain a filament that allows printing flexible objects with some elasticity, being easier to print than other more common flexible filaments, since it has a higher hardness with respect to these, so it works with a wide range of printers of all kinds, such as direct extrusion or bowden.

For certain applications, such as objects subjected to great stress or vibration, it can be a very useful material, in addition, it has very good adhesion between layers and a high impact resistance.

Flexible

Impact resistance

	VALUES		UNIT OF MEASUREMENT	STANDARD
PHYSICAL PROPERTIES				
Chemical name	Thermoplastic polyurethane			
Density	1,09		g/cm^3	ASTM D792
MECHANICAL PROPERTIES [1]	**XY PLANE**	**ZX PLANE**		
Tensile strength	16,8	6,8	MPa	ISO 527
Traction module	4,7	9,1	MPa	ISO 527
Flexion strength	8	5,1	MPa	ISO 178
Flexion module	50,1	60,2	MPa	ISO 178
Elongation at maximum effort	225	51	%	ISO 527
Elongation by traction at break	244,5	71,4	%	ISO 527
Flexion elongation	15,4	15,4	%	ISO 178
Charpy Impact Force (non-notched)	123,5	30,8	kJ/m2	ISO 179
Hardness	98		Shore A	ISO 7619-1

[1] Values obtained on printed specimens, nozzle 0,4 mm, rectilinear infill 100%, layer height 0,2 mm. For more information please contact us by email at info@smartmaterials.com or visit our website www.smartmaterials3d.com

THERMAL PROPERTIES			
Glass transition temperature (Tg)	-	˚C	ISO 11357
VICAT B (50 N 50°C/h)	57	˚C	ISO 306
HDT B (0,45 MPa)	-	˚C	ISO 75
PRINTING PROPERTIES			
Printing temperature	220 – 240	˚C	
Bed temperature	0 – 60	˚C	
Layer fan	60 – 80	%	
Material flow	100	%	
Layer height	≥ 0,1	mm	
Nozzle recommendations	≥ 0,2	mm	
Print speed	20 – 35	mm/s	

SIZE	NET WEIGHT	GROSS WEIGHT	DIAMETER	COLOR	PACKAGING
M	750 g	975 g	1,75 mm/2,85 mm	Several	SmartBag, security seal, desiccant bag.

NOTICE: The information provided in the data sheets is intended for reference only. It should not be used as design or quality control values. Actual values may differ significantly depending on printing conditions. The final performance of printed components not only depends on materials, design and printing conditions are also important.