

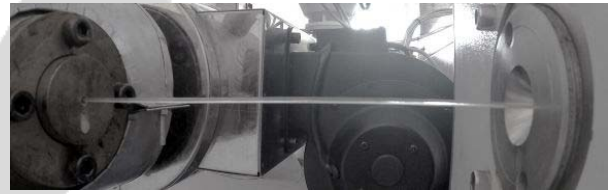
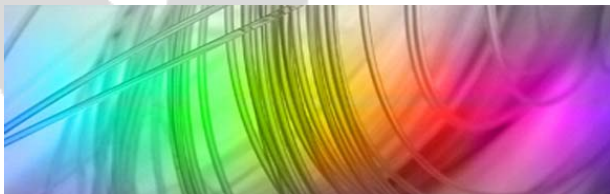
COMPARISON DATASHEET

Filaticum products

Comparison datasheet contains practical printing information and standardized mechanical test of 3D printed specimen.

- Filaticum product groups
- Main characteristics and applications of Filaticum products
- Overview of products
- Recommended printing settings
- Raw material properties
- Mechanical properties of printed specimens

Filaticum product groups



Filaticum Basic

Filaticum Basic product group includes PLA, ABS, and PETG filaments which, in addition to the plastic raw material, contain pigments and other additives, which facilitate the printing. High quality, reliable products for general and hobby printing. Wide range of colors, saturated shades even in one layer.

Filaticum Technical

This product group serves a wide range of industries and applications – automotive, mechanical engineering, electronics, architecture, design, etc. – providing filaments for special 3D printing needs. Most Filaticum Technical products are PLA-based, in addition they contain special additives that result in filaments with special properties.

Main characteristics and applications of Filaticum products

	Characteristics	Applications
FILATICUM BASIC		
PLA	easy to print, low shrinkage, saturated colors, biopolymer	general use

PLA Advanced	more precise printing, increased layer adhesion, higher heat resistance	quality printing to meet higher demands, industrial use
ABS	high heat resistance and tensile strength, raw materials and additives developed for automotive, relatively low shrinkage	prototypes, functional objects, specimens, industrial use
PETG	high heat resistance: 80 °C, elastic	general use
FILATICUM TECHNICAL		
Essence	easy to print, homogenous surface	technical objects, jigs and fixtures, prototypes
Model	easy to shape by cutting, sanding, detailed surface, UV-resistance	architectural and industrial models, mock-ups, objects for film industry
Gypsum	gypsum-like appearance, easy to reshape, paint and sand	models, art objects, can be used as a support also
ESD, Conductive	ESD-safe, high surface conductivity	tools, jigs, fixtures clamps, covers, boxes for electrical industry
Antistatic	antistatic properties, antistatic surface	disposed to electric charge objects, covers in industry and household
Glass Reinforced	high impact, tough, unique surface	wide range of industrial applications: fittings, spare parts; robotics; design objects
Engineering	technical composite, tough, high impact and heat resistance: 140 °C; matt surface	industrial prototypes, fixtures, vibrational and mechanical parts, robotics
Glass Advance		
Heat Resistant	high heat resistance: 130 °C, crystal-like structure and surface, sterilizable	objects and parts exposed to elevated temperature; prosthesis
High Transparent	high transparency, clear, glossy surface, no yellowish color	design and household objects; Processing tools for casting
Antibacterial	wide range microbial protection against bacteria, fungi, and algae	objects at risk of infection in healthcare, trade, households, beauty salons
Tribo	tribological, Teflon-like filament, high abrasion resistance, low friction, non-stick	wear parts, gears, bearings, bushes friction parts
Wood	wood-like surface	furniture components, design objects
Support	breakable, easy to remove; compatible with most used FDM filaments	objects requiring support material
Foam	light-weight, foam-like structure	modelling, architecture, lightweight parts

Overview of product characteristics

	Ease of printing	Matt surface	Heat resistance	Hardness	Elasticity	Tensile Strength	Impact Strength	Shrinkage	UV-resistance	Post-Processing
FILATICUM BASIC										
PLA	•••	•	•	••	••	••	••	•	••	•
PLA Advanced	•••	•	•••	•••	••	••	•••	•	••	•
ABS	•	•••	•••	•••	••	••	•••	•••	••	•••
PETG	•••	•	••	•••	•••	••	•••	•	••	••
FILATICUM TECHNICAL										

Essence	•••	•	••	•••	•••	••	•••	•	••	•••
Model	••	••	•	••	•••	••	••	•	•••	•••
Gypsum	••	•••	•	•	•	•	•	•	••	•••
ESD, Conductive	••	•••	••	••	••	••	••	••	••	••
Antistatic	•••	•	••	••	••	••	••	•	••	••
Glass Reinforced	••	•••	••	•••	•	•••	•••	•	••	••
Engineering	•••	••	•••	•••	••	•••	•••	••	••	••
Glass Advance										
Heat Resistant	•••	•	•••	••	••	••	•••	••	••	••
High Transparent	•••	•	••	••	••	••	••	•	••	•
Antibacterial	•••	•	••	•••	••	••	••	•	••	••
Tribo	•	••	•••	•••	••	•••	•••	••	••	•
Wood	••	•••	••	••	•	••	••	••	••	•
Support	•••	•••	••	•	•	•	•	•	••	•••
Foam	••	•••	••	••	•	••	••	•	••	•

Recommended printing settings

	Nozzle temp. °C	Bed temp. °C	Flow %	Layer height, micron	Speed, mm/s
FILATICUM BASIC					
PLA	190-220	20-70	100	20-600	20-150
PLA Advanced	210-230	20-60-90	100	20-600	20-150
ABS	240-260	80-110	100	20-600	20-100
PETG	230-250	80-90	100	20-600	20-100
FILATICUM TECHNICAL					
Essence	190-220	20-60	100	20-600	20-100
Model	190-210	20-60	100	20-600	20-80
Gypsum	180-200	20-60	100	20-600	20-50
ESD, Conductive	200-230	20-60	100	20-600	20-50
Antistatic	200-230	20-60	100	20-600	20-100
Glass Reinforced	200-230	20-60	100	20-600	20-100
Engineering	200-230	20-60-90	100	20-600	20-100
Glass Advance	200-230	20-60-90	100	20-600	20-100
Heat Resistant	210-230	20-60-90	100	20-600	20-100
High Transparent	210-230	20-60	100	20-600	20-100
Antibacterial	200-230	20-60	100	20-600	20-100
Tribo	260-290	100-120	100	20-600	20-50
Wood	190-220	20-60	100	20-600	20-50
Support	190-210	20-60	100	20-600	20-60

Foam	190-230	20-60	50-70	20-600	20-50
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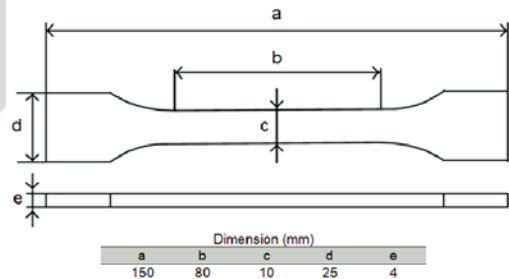
Raw material properties

Physical properties *	Method	PLA	PLA Advanced	PETG	ABS
Specific Gravity, g/cm ³	D792	1.24	1.24	1.29	1.05
Heat Distortion Temp (HDT)***, °C	D790	55	80-90	68	80
Glass Trans. Temp, °C	D3418	55-60	55-60	80	105
Tensile Strength, MPa	ISO 527	60	66	53	38
Tensile Elongation, %	ISO 527	6,00	3,31	4,01	2,72
Tensile Modulus, MPa	ISO 527	3800	4400	2040	1900
Notched Izod Impact, kJ/m ²	ISO 180	16	118	4,5	42

* Typical properties for injection molded amorphous bars; not to be construed as specifications. This data can be used for comparison.

**66 psi (0.45 MPa)

Mechanical properties of 3D printed specimens



	Notched Izod Impact, (kJ/m ²)	Tensile Strength, (MPa)	Tensile Modulus, (GPa)
FILATICUM BASIC			
PLA	2,6	31,6	1,8
PLA Advanced	3,8	33,0	2,3
ABS	5.2	32,5	1,8
PETG	9.4	43,0	2,8
FILATICUM TECHNICAL			
Essence	2.1	30.2	2.5
Model	3.1	29.2	1.7
Gypsum	2.9	25	1.4

ESD, Conductive	under testing		
Antistatic	2,5	31,3	1,8
Glass Reinforced	4.5	27,1	2.2
Engineering	3,7	32.2	2.5
Glass Advance	under testing		
Heat Resistant	3.8	33	2.3
High Transparent	3.5	31	2.5
Antibacterial	2,5	31,3	1,8
Tribo	under testing		
Wood	under testing		
Support	3.05	29.2	1.75
Foam	2.2	20	5,10

Producer

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Disclaimer: The information presented are typical values intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. End-use material performance can be impacted by, but not limited to part design, end-use conditions, test conditions, etc. Actual values will vary with build conditions. Product specifications are subject to change without notice. The performance characteristics of these materials may vary according to application, operating conditions, or end-use. Each user is responsible for determining that the material is safe, lawful and technically suitable for the intended application, as well as for identifying the proper disposal method consistent with applicable environmental laws and regulations. Filamania Ltd. makes no warranties of any kind, express or implied including but not limited to the warranties of merchantability, fitness for a particular use.