

PLA filament: technical datasheet

PROPERTY	VALUE	UNITS	TEST METHOD
General properties			
Specific gravity	1.24	g/cm ³	ASTM D792
Mechanical properties			
Flexural elastic modulus	3600	MPa	ISO 178
Flexural Strength	108	MPa	ISO 178
Hardness, Sh D	85	Sh D	ASTM D2240
Thermal properties			
Heat distortion temperature HDT B (0,45MPa)	56	°C	ISO 75/2B
Melting temperature	145-160	°C	ASTM D3418
Glass Transition Temperature	56-64	°C	ASTM D3418

In addition to the described properties, we have performed tensile tests on tensile specimen printed with our PLA and on injection moulded tensile specimen in order to ascertain the mechanical properties of the final printed object. The following table contains the results:

Mechanical properties	Injection moulded tensile specimen	Printed tensile specimen ^a	Printed tensile specimen ^b	Units	Test method
Tensile strength at break	52	50	39	MPa	ISO 527
Tensile elongation at break	5	9	4	%	ISO 527
Tensile modulus	1320	1230	1120	MPa	ISO 527

^a Stretch-direction is parallel to the layers.

^b Stretch-direction is perpendicular to the layers.

Tensile specimen	Layer height (mm)	Shell thickness (mm)	Bottom/top thickness (mm)	Fill density (%)	Print design
Tensile specimen print-direction is parallel to the layers	0.2	2	0.2	100	
Tensile specimen print-direction is perpendicular to the layers	0.3	1	0.3	100	