

Technical Data Sheet

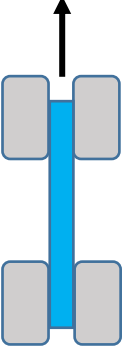

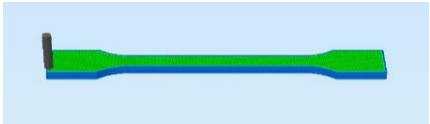
PLA by Procatec GmbH

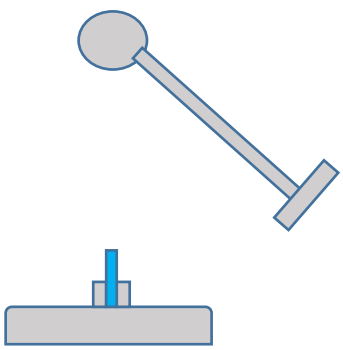
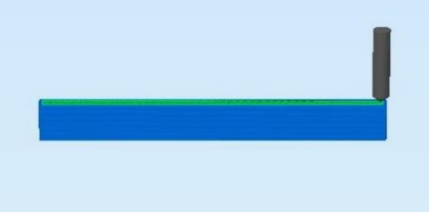
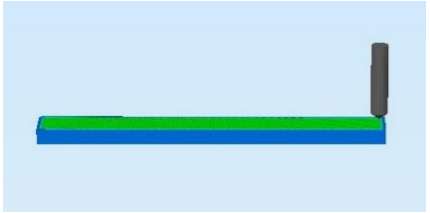
IDENTIFICATION OF THE MATERIAL	
Trade Name	PLA
Chemical name	Polylactic Acid
Chemical family	Thermoplastic Polylactic Acid
Use	3D-Printing

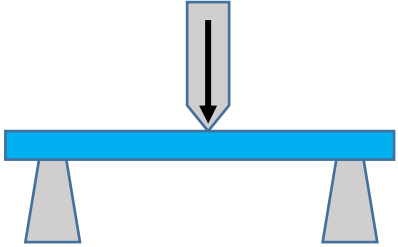

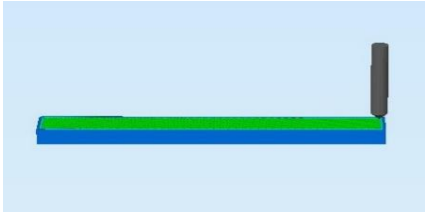
Print parameters of the test procedure	
Nozzle temperature	220 °C
Bed temperature	60 °C
Layer height	0,2mm
Nozzle size	0,6mm
Print speed	60mm/s
Printer	Original Prusa i3 MK2

MATERIAL PROPERTIES *		Test method
Melt temperature	165 - 180°C	ASTM D3418
Glass transition temperature	≈ 57°C	ASTM D3418
Melt flow rate ¹	7-9 g/10min	ISO 1133
Density	1,24 g/cm ³	ASTM D1505

* These data were taken from the raw material manufacturer

MECHANICAL PROPERTIES TENSILE TEST		Test method ISO 527		
				
Infill	50%	100%	50%	100%
Tensile strength (N/mm ²)	15,9 ± 1,5	26,2 ± 3,1	24,1 ± 0,7	37,6 ± 1,4
Force break (N)	643,9 ± 64,4	1062,1 ± 129,3	974,1 ± 28,7	1518,9 ± 60,4
Elongation at max force (%)	1,56 ± 0,2	2,1 ± 0,3	4,6 ± 0,8	4,1 ± 0,4
Elongation at brake (%)	1,56 ± 0,2	2,1 ± 0,3	4,6 ± 0,8	4,1 ± 0,4

MECHANICAL PROPERTIES CHARPY Impact Test		Test method ISO 179-1 / eU	
			
Infill	100%	100%	
Impact strength (kJ/m ²)	15,1	16,8	
Impact energy (mJ)	606,1	662,8	

MECHANICAL PROPERTIES FLEXURAL TEST		Test method	ISO 178
			
Infill	100%	100%	
Maximum force (N)	152,1 ± 1,0	97,9 ± 1,5	

FILAMENT SPECIFICATION		Test method
Diameter 1,75	1,75 ± 0,03 mm	PROCATEC
Diameter 2,85	2,85 ± 0,03 mm	PROCATEC
max. roundness deviation 1,75	0,05 mm	PROCATEC
max. roundness deviation 2,85	0,05 mm	PROCATEC