

TECHNICAL DATA SHEET

KEXCELLED WOOD^{k7}

Product code:	Revision Number:	Revision date:	TDS No.:
WOOD ^{k7}	01	19/06/2019	KT04.012.0135

BRIEF INTRODUCTION

Filament suitable for all commercially available leading brands FDM/FFF Printers.

CHARACTERISTIC

environmentally friendly | excellent effect applied to 3D printing | visual effect and the texture of wood.

IDENTIFICATION OF THE MATERIAL

Trade name	WOOD ^{k7}
Chemical name	Polylactic Acid
Use	3D printing
Origin	KEXCELLED

GUIDELINE FOR PRINT SETTINGS

Nozzle temperature	205±15°C
Bed temperature	0~60°C
Bed modification	Tape or glue below 60°C
Active cooling fan	ON, 100%
Layer height	0.2mm
Shell thickness	≥0.8mm
Print speed	40-80mm/s

Settings are based on a 0.4mm nozzle.

MATERIAL PROPERTIES

		Test Method
Melt temperature	~160°C	ISO 11357
Glass transition temperature	~60°C	ISO 11357
Melt flow rate (MFR) ¹	12.1g/10min	ISO 1133
Heat deflection temperature(HDT) ²	56.9°C	ISO 75
Vicat softening temperature(VST) ³	57.9°C	ISO 306
density	~1.20g/cm ³	ISO 1183
Odor	Odorless	/
Solubility	Insoluble in water	/

1. test conditions: T= 190°C; m=2.16 kg.

2. test conditions: 0.45MPa; 120°C/h

3. test conditions: 10N; 120°C/h

MECHANICAL PROPERTIES|TENSILE TEST

Test Method ISO 527

All test specimens were printed using an FlashForge Guider 2s under the following conditions:

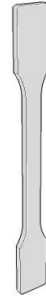
Printing temperature: 205°C

Heated bed temperature: 50°C

Print speed: 50mm/s

Shell thickness: 0.8mm

Infill under 45°



Printed Vertical Z-axis

Printed horizontal
X,Y-axis

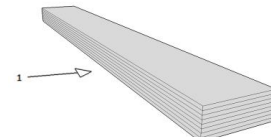
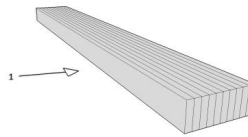
	50%	100%	50%	100%
Infill	50%	100%	50%	100%
Tensile strength (Mpa)	5.8	11.6	18.7	23.6
Force at break (Mpa)	5.8	11.6	18.7	23.6
Elongation at break (%)	4.0	7.5	5.3	11.0
Emodulus (Mpa)	209	321	422	494

MECHANICAL PROPERTIES|IMPACT TEST

Test Method ISO 179

The same conditions as tensile test.

1→impact direction



Charpy(en)

Charpy(ep)

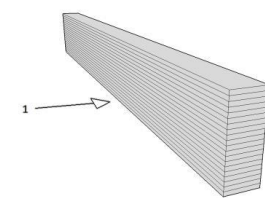
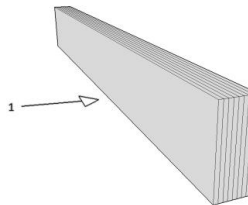
	50%	100%	50%	100%
Infill	50%	100%	50%	100%
Impact strength (KJ/m ²)	10.7	14.6	5.5	12.1
Notch impact strength ¹ (KJ/m ²)	3.7	4.3	2.5	3.4

MECHANICAL PROPERTIES |FLEXURAL TEST

Test Method ISO 178

The same conditions as tensile test.

1→bending direction



Normal

parallel

	50%	100%	50%	100%
Infill	50%	100%	50%	100%
Maximum force (Mpa)	34.8	52.0	48.5	62.0
Flexural modulus (Mpa)	1668	2331	2281	2855

1. notch type: type A

FILAMENT SPECIFICATION		Test Method
Diameter 1.75mm	1.75±0.03mm	EX1125
Diameter 2.85mm	2.85±0.03mm	EX1125
Diameter 3.00mm	3.00±0.03mm	EX1125
Max roundness deviation (1.75)	0.03mm	EX1125
Max roundness deviation (2.85)	0.03mm	EX1125
Max roundness deviation (3.00)	0.03mm	EX1125
Net weight on reel	1kg	EX1125