TECHNICAL DATA SHEET

3D FILAMENT PLA Plus ProSpeed(Impact)
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PRODUCT NAME: 3D FILAMENT PLA Plus ProSpeed(Impact) 1,75mm

PRODUCT DESCRIPTION: PLA Plus ProSpeed(Impact) filament – blend of thermoplastic polymers based on polylactic acid in the form of a thread, designed for 3D printing using the FFF/FDM method. Filament coiled on spools, vacuum-packed with desiccant in a PA/PE bag, and then in a box.

STORAGE Store in dry area. Store in a closed container.

PRODUCT PARAMETERS

Parameter	**Value**	
Filament diameter [mm]	1,75	
Diameter tolerance [mm]	+/- 0,05	
Oval tolerance [mm]	+/- 0,02	
Net weight [g]	**1000**	**3000**
Weight with packaging [g]	1400	4000
Spool weight [g]	Transparent PC: 260	710
	ECO PP wood: 205	
	Masterspool ROSA3D: 250	
Spool dimensions [mm] (ø / height / hole ø)	Transp. PC: 200/68/52	300/100/52
	ECO PP wood: 200/70/52	
	Masterspool ROSA3D: 201,7/65/52	
Box dimensions [mm]	220/210/75	325/310/110

RECOMMENDED PRINTING PARAMETERS

Parameter	**Value**
Print temperature [°C]	190-230
Bed temperature [°C]	50-70
Cooling [%]	50-100
Closed chamber	Not necessary
Drying conditions: [°C/h]	50/4

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PHYSICAL PARAMETERS OF THE MATERIAL*

Parameter	Value	Unit	Test method
Density	1,22	g/cm^3	-
Tensile modulus XY axis	2863	MPa	ASTM D638
Tensile modulus YX axis	2444	MPa	ASTM D638
Tensile modulus ZX axis	2475	MPa	ASTM D638
Tensile strength XY axis	39	MPa	ASTM D638
Tensile strength YX axis	31	MPa	ASTM D638
Tensile strength ZX axis	24	MPa	ASTM D638
Izod impact strength (notched) XY axis	160	J/m	ASTM D256 (amorphous)
Izod impact strength (notched) YX axis	21	J/m	ASTM D256 (amorphous)
Izod impact strength (notched) ZX axis	109	J/m	ASTM D256 (amorphous)
Izod impact strength (notched) XY axis	233	J/m	ASTM D256 (crystalline)
Izod impact strength (notched) YX axis	200	J/m	ASTM D256 (crystalline)
Izod impact strength (notched) ZX axis	64	J/m	ASTM D256 (crystalline)
HDT	75-85	°C	ASTM E2092
Food Contact Approval	YES	-	FCA declaration in separate document

*All tested samples were printed at 100% infill and annealed at 110°C for 20 minutes.

The values above have been measured using standard test specimens made of non-colored material at room temperature. The figures should be considered as indicative values only. Actual properties of PLA Plus ProSpeed(Impact) parts can be affected by the printing parameters, design of the model, ambient conditions, application of the printout etc. It is essential that users test our products to determine whether they are suitable for their intended use. ROSA PLAST Sp. z o.o. accepts no liability for any health detriment or material losses or any other losses related to the use of the material.

ANNEALING

Printouts can be annealed in order to improve the mechanical properties of the printout (heat resistance and impact strength). The time required for every stage of annealing process of a 3D print depends on its size and volume. Smaller parts will require less time to evenly heat. During annealing the object changes its size. Uneven heating of the 3D print increases this effect.

To anneal printed object place it in an unheated oven. Set the temperature to 40 degrees and preheat the 3D print for about 4h. Then increase the temperature to 50 degrees for another 4h. This additional stage should help ensuring that 3D print is evenly heated inside and reduce warping that will occur during crystallization process in final stage. Finally temperature should be raised to 80 degrees for about 1h20min.

It is recommended to support overhanging parts of the 3D print. It should help reduce warping which will occur during annealing process.

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