

TECHNICAL DATA SHEET

ABS Premium

BRIEF INTRODUCTION

ABS is a filament made with an improved formula ABS resin which retains the original good mechanical properties but not warping and cracking. Easy to print, a good choice for mechanical parts like in functional prototyping, robotics or home appliance spare parts, it brings you excellent printing quality with minimal odor, and lower shrinkage rate.

CHARACTERISTIC

Excellent toughness|lower odor|lower shrinkage|lower print temperature

IDENTIFICATION OF THE MATERIAL

Trade name	ABS Premium
Chemical name	Acrylonitrile-butadiene-styrene terpolymer
Application	3D PRINTING

GUIDELINE FOR PRINT SETTINGS

Nozzle temperature	220~250°C
Bed temperature	80~100°C
Bed modification	Tape or glue
Active cooling fan	OFF
Layer height	0.2mm
Shell thickness	≥0.8mm
Print speed	40-80mm/s

Settings are based on a 0.4mm nozzle.

MATERIAL PROPERTIES

	Typical value	Test Method
Melt temperature	~180°C	ISO 11357
Melt flow rate (MFR) ¹	30~35 g/10min	ISO 1133
Heat deflection temperature(HDT)²	85 °C	ISO 75
Vicat softening temperature(VST)³	95 °C	ISO 306
Density	1.05 g/cm ³	ISO 1183
Odor	Low odor	/
Solubility	Insoluble in water	/

1. Test conditions: T= 220°C; m= 10kg.

2. Test conditions:0.45MPa;120°C/h.

3. Test conditions:10N; 120°C/h.

MECHANICAL PROPERTIES|TENSILE TEST

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

Printing temperature: 240°C

Heated bed temperature: 90°C

Print speed: 45mm/s

Shell thickness: 0.8mm

Infill under 45.



Printed Vertical Z-axis

Test Method ISO 527



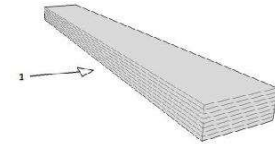
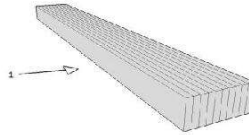
Printed horizontal X,Y-axis

Infill	50%	100%	50%	100%
Tensile strength (Mpa)	18~20	28~30	22~26	40~42
Elongation at break (%)	4~6	4~6	6~8	10~12

MECHANICAL PROPERTIES|IMPACT TEST

The same conditions as tensile test.

1→Impact direction



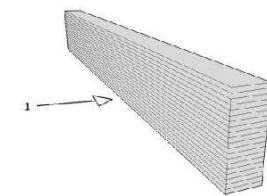
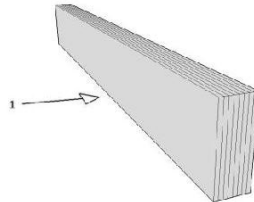
Test Method ISO 179

Infill	50%	100%	50%	100%
Impact strength (KJ/m ²)	18~20	38~42	24~28	38~42
Notch impact strength ¹ (KJ/m ²)	10~12	20~24	8~10	18~22

MECHANICAL PROPERTIES |FLEXURAL TEST

The same conditions as tensile test.

1→Bending direction



Test Method ISO 178

Infill	50%	100%	50%	100%
Maximum force (Mpa)	50~55	75~80	50~55	75~80
Flexural modulus (Mpa)	2000~2200	2600~2800	2100~2300	2600~2800

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

Suzhou Melovy Technology CO., Ltd

Tel: +86-0-512-6580-8834

NO.68, Nantiancheng Road, Xiangcheng Dist.

Email:info@melovy3d.com

Suzhou City, Jiangsu Prov. China

Website: www.melovy3d.com