FusRock® FDM Printing Material
Technical Data Sheet

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FusFlex™ TPU64D

一款硬度 64D 的半硬质 3D 打印材料

A high toughness and 64D shore hardness flexible 3D printing material

产品介绍
Product Description

FusFlex™ TPU64D 是一款半硬质 3D 打印材料，在保证一定柔韧性的同时兼顾了较好的刚性。FusFlex™ TPU64D 具有极佳的抗冲击性能和耐磨性，也具有较高的耐热性。FusFlex™ TPU64D 易于打印，可兼容大部分挤出机，可应用于部分替代 ABS 和高抗冲要求零部件生产。

FusFlex™ TPU64D is a semi-rigid 3D printing material that combines moderate flexibility with enhanced structural rigidity. This thermoplastic polyurethane (TPU) formulation demonstrates exceptional impact resistance and wear durability, while maintaining superior heat tolerance. Optimized for FDM processing, FusFlex™ TPU64D exhibits excellent extrudability across most hotend systems, making it an ideal material solution for ABS replacement applications and high-impact component manufacturing requiring balanced mechanical properties.

产品详情
Available

颜色 Color：白色 White/ 黑色 Black

线径 Diameter：1.75mm

净重 Net Wet：1KG

物性表

Material Properties

测试项目 Property	测试方法 Testing method	典型值 Typical value
密度 Density	ISO 1183	1.23 g/cm³
硬度 Hardness	ISO 7619	64 Shore D
熔融指数 Melt index	220°C，2.16kg	15 g/10min
维卡软温度 Vicat softening temperature	ISO 306	126.3 °C
回弹性 Bayshore rebound	ASTM D2632	36 %
拉伸断裂强度（X-Y） Tensile breaking strength (X-Y)	ISO 37	37.23±0.90 MPa
断裂伸长率(X-Y) elongation at break (X-Y)		349.03.15±16.59 %
杨氏模量（X-Y） Young's Modulus		378.80±15.11 MPa
100%定伸应力（X-Y） tensile stress at 100% (X-Y)		23.58±0.66 MPa
200%定伸应力（X-Y） tensile stress at 200% (X-Y)		28.12±0.68 MPa
300%定伸应力（X-Y） tensile stress at 300% (X-Y)		34.34±0.80 MPa
缺口冲击强度（X-Y） Charpy impact strength	ISO179	未冲断 Non-break

试样打印参数：喷嘴大小 0.4mm，喷嘴温度 260°C，底板加热 40°C，打印速度 90mm/s,填充率 100%，填充角度±45°

Specimens printed under the following conditions: Nozzle size 0.4mm，Nozzle temp 260°C, Bed temp 40°C, Print speed 90mm/s, Infill 100%, Infill angle ±45°

建议打印参数

Recommended printing conditions

喷头温度 Nozzle temperature	240-270 °C
建议喷嘴大小 Recommended nozzle diameter	≥0.2 mm
建议底板材质 Recommended build surface	玻璃，PEI 膜或 PC 膜 Glass, PEI Film or PC Film
底板温度 Build plate temperature	40-50 °C
Raft 间距 Raft separation distance	0.18-0.22 mm
冷却风扇 Cooling fan speed	On
打印速度 Print speed	30-120 mm/s
回抽距离 Retraction distance	0.4-1.0 mm
回抽速度 Retraction speed	1800-3600 mm/min

其他建议：

Additional Suggestions：

1. TPU 材料暴露在空气中容易吸收水分，吸湿后打印会出现拉丝，挤出有气泡，打印表面粗糙等现象，降低打印质量。建议您打开 FusFlex™ TPU64D 真空铝箔袋包装后立即将线材放入干燥盒内（湿度控制在 15%以下）进行打印。不用的线材请放回原包装铝箔袋内密封保存。

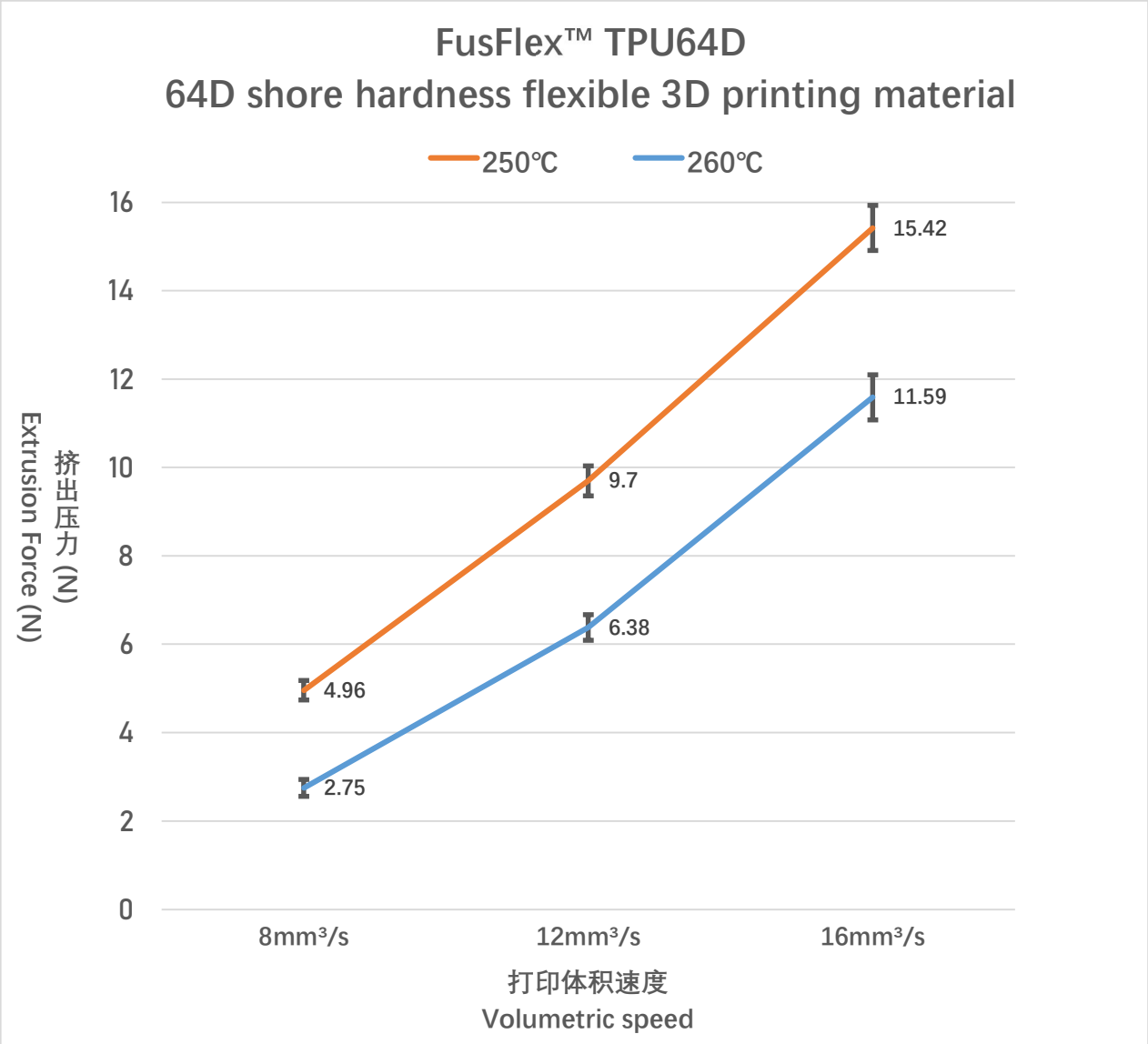
   TPU material is very easy to absorb moisture when exposed to air, and printing after absorbing moisture will result ozzing, extruding with bubbles and rough surface appearance, thus reducing print quality. It is recommended that put the filament into a dry box (humidity below 15%) immediately after opening the FusFlex™ TPU64D vacuum foil bag for printing. Please put the unused filament back into the original aluminum foil bag for sealed storage.

2. 材料受潮后会出现打印拉丝增多，挤出有气泡，打印表面质量粗糙等现象。请将线材放入 70-80°C 烘箱内干燥 4-6h，即可恢复 FusFlex™ TPU64D 的打印质量。

After the material is damp, there will be more printing ozzing, bubbles extruded and rough printing surface. Please dry the filament in an oven at 70-80°C for 4-6h to restore the printing quality of FusFlex™ TPU64D.

挤出压力与打印体积速度测试

Extrusion Force vs Print Volumetric Speed Test



测试参数：20mm 长度铜制加热块，BMG 挤出机，Phaetus 硬化钢喷头，喷嘴大小 0.4mm，层高 0.2mm。

Test parameters: 20mm length brass heat block, BMG extruder, Phaetus Hardened Steel Nozzle, Nozzle size 0.4mm, Layer Height 0.2mm.

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