

# Printer Compatibility and Settings

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## FFF Printers

Our [PET+ material](#) is for filament based printers (FFF/FDM technology). Here are the printer settings for 3D printers that are compatible, though there are many other printers that will work with PET+.

## PET+ Best Practices and Tips

There are a lot of different FFF style printers and settings out there, but there are some general practices we found that have worked best:

- **Extrusion temp 220-255C**
- **If layers are not adhering to each other well, try extruding at a higher temperature**
- **Clear PET+ has a higher melting point than the opaque's. Try printing at a higher temperature**
- **Adheres well to heated bed at 60C and for non-heated beds on blue painters tape.**
- **You can also try printing on a glass build plate with a glue stick applied**
- **For a more glossy/transparent look, try increasing your layer height to 0.2mm or higher**

### Leapfrog

#### Creatr

### Makerbot

#### Replicator

*Extrusion Temperature:* 250°C - 255°C

*Layer Height(s):* 0.1 - 0.3mm

#### Replicator 2

*Extrusion Temperature:* 250°C - 255°C

*Layer Height(s):* 0.1 - 0.3mm

#### Replicator 2X

*Extrusion Temperature:* 250°C - 255°C

*Layer Height(s):* 0.1 - 0.3mm

### MakerGear

#### M2

*Extrusion Temperature:* 245°C for block style, 225°C for heater core style

*Extrusion Multiplier:* 0.96

*Layer Height(s):* 0.15mm

*Extrusion Diameter:* 0.35mm

*Fan:* 100% on layer 2

*Heated Bed:* 60°C

*Retract Distance:* 3.2mm

*Retract Speed:* 3000mm/min

*Coasting:* 2mm

*Restart Distance:* -.05, 2mm, 3.2mm

## Type A Machines

### Series 1

*Extrusion Temperature: 220°C - 230°C*

*Layer Height(s): 0.15mm*

*Extrusion Diameter: 0.35mm*

*Fan: Off*

*Heated Bed: 60°C*

*Retract Distance: 4.5mm*

*Retract Speed: 40.0mm/s*

### Ultimaker

#### Ultimaker Original

*Extrusion Temperature: 240°C*

*Layer Height: 0.2mm*

*Extrusion Diameter: 2.85mm*

*Cooling Fan: OFF*

*Print Speed: 30mm/s*

*Infill Speed: 60mm/s*

*Travel Speed: 250mm/s*

*Retraction: 25mm/s, 3mm*

#### Ultimaker 2

*Extrusion Temperature: 240°C*

*Layer Height: 0.2mm*

*Extrusion Diameter: 2.85mm*

*Cooling Fan: OFF*

*Print Speed: 30mm/s*

*Infill Speed: 60mm/s*

*Travel Speed: 250mm/s*

*Retraction: 25mm/s, 3mm*

### Up!

#### Up! Mini

*Extrusion Temperature: 245C @ Normal/Fast Speeds*

*Resolution: 0.2 to 0.4*

Rockwell Hardness R-scale: 87 (smooth side), 71 (textured side)

HDT (at 66psi): 71.8 C

Izod Impact: 0.69 ft-lb/in

Flexural Stress at 5% strain: 8,480 psi (smooth) 9,880 psi (textured)

Flexural Modulus: 248,000 psi (smooth) 267,000 psi (textured)

Tensile strength at yield: 6640 psi

Elongation at yield: 4.0%

Tensile stress at break: 2630 psi (wide variation though, from 638-5520psi)

Elongation at break: 18% (varied from 7.1%-32%)

Modulus of elasticity: 268,000 psi