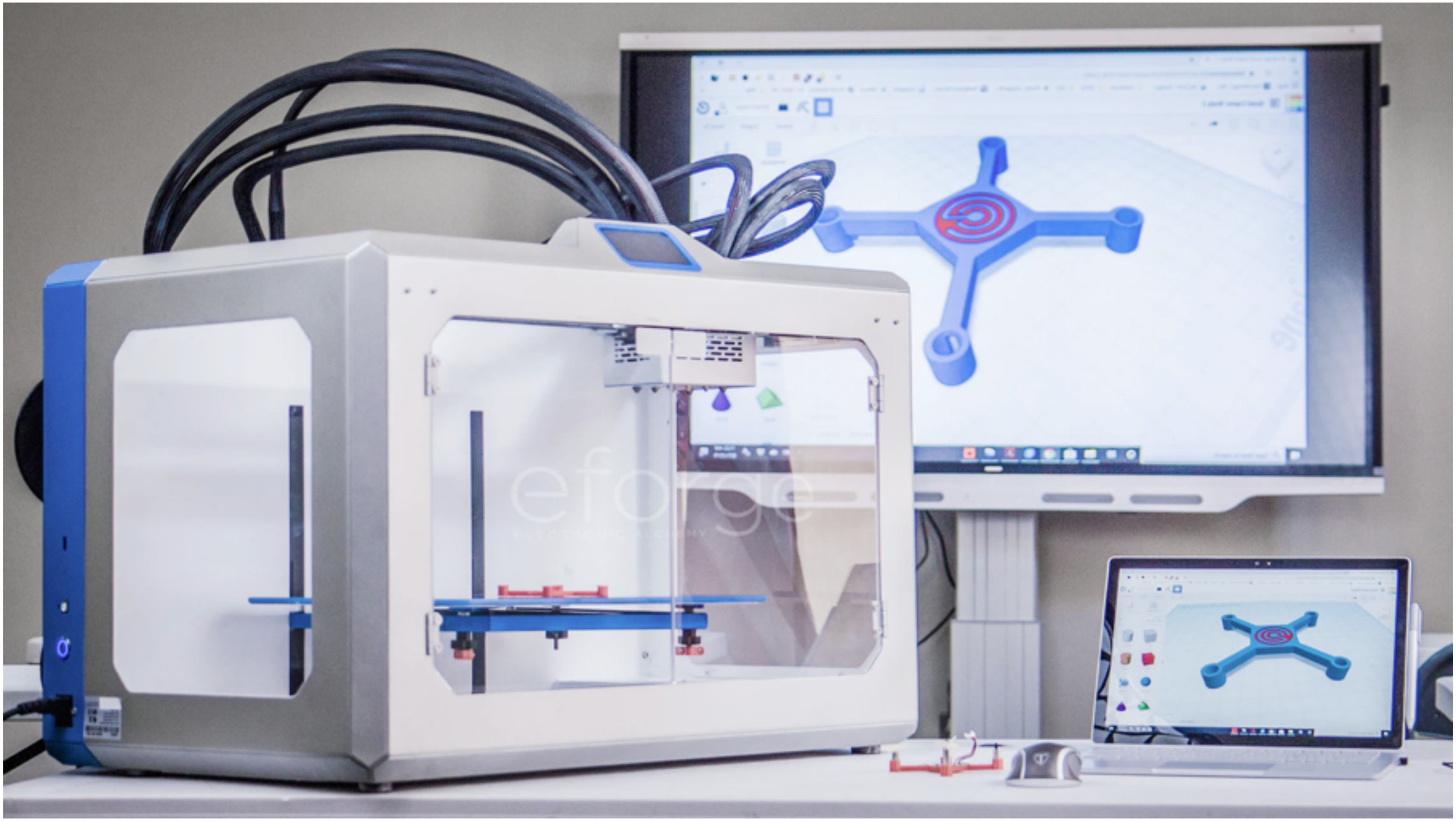
3D Printing



	 ABS	 Flexible	 PLA	 HIPS	 PETG	 Nylon	 Carbon Fiber Filled	 ASA	 Polycarbonate	 Polypropylene	 Metal Filled	 Wood Filled	 PVA
	Learn More	Learn More	Learn More	Learn More	Learn More	Learn More	Learn More	Learn More	Learn More	Learn More	Learn More	Learn More	Learn More
Compare Selected	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ultimate Strength	40 MPa	26 - 43 MPa	65 MPa	32 MPa	53 MPa	40 - 85 MPa	45 - 48 MPa	55 MPa	72 MPa	32 MPa	20 - 30 MPa	46 MPa	78 MPa
Stiffness	5 / 10	1 / 10	7.5 / 10	10 / 10	5 / 10	5 / 10	10 / 10	5 / 10	6 / 10	4 / 10	10 / 10	8 / 10	3 / 10
Durability	8 / 10	9 / 10	4 / 10	7 / 10	8 / 10	10 / 10	3 / 10	10 / 10	10 / 10	9 / 10	4 / 10	3 / 10	7 / 10
Maximum Service Temperature	98 °C	60 - 74 °C	52 °C	100 °C	73 °C	80 - 95 °C	52 °C	95 °C	121 °C	100 °C	52 °C	52 °C	75 °C
Coefficient of Thermal Expansion	90 µm/m-°C	157 µm/m-°C	68 µm/m-°C	80 µm/m-°C	60 µm/m-°C	95 µm/m-°C	57.5 µm/m-°C	98 µm/m-°C	69 µm/m-°C	150 µm/m-°C	33.75 µm/m-°C	30.5 µm/m-°C	85 µm/m-°C
Density	1.04 g/cm³	1.19 - 1.23 g/cm³	1.24 g/cm³	1.03 - 1.04 g/cm³	1.23 g/cm³	1.06 - 1.14 g/cm³	1.3 g/cm³	1.07 g/cm³	1.2 g/cm³	0.9 g/cm³	2 - 4 g/cm³	1.15 - 1.25 g/cm³	1.23 g/cm³
Price (per kg)	$10 - $40	$30 - $70	$10 - $40	$24 - $32	$20 - $60	$25 - $65	$30 - $80	$38 - $40	$40 - $75	$60 - $120	$50 - $120	$25 - $55	$40 - $110
Printability	8 / 10	6 / 10	9 / 10	6 / 10	9 / 10	8 / 10	8 / 10	7 / 10	6 / 10	4 / 10	7 / 10	8 / 10	5 / 10
Extruder Temperature	220 - 250 °C	225 - 245 °C	190 - 220 °C	230 - 245 °C	230 - 250 °C	220 - 270 °C	200 - 230 °C	235 - 255 °C	260 - 310 °C	220 - 250 °C	190 - 220 °C	190 - 220 °C	185 - 200 °C
Bed temperature	95 - 110 °C	45 - 60 °C	45 - 60 °C	100 - 115 °C	75 - 90 °C	70 - 90 °C	45 - 60 °C	90 - 110 °C	80 - 120 °C	85 - 100 °C	45 - 60 °C	45 - 60 °C	45 - 60 °C
Heated Bed	Required	Optional	Optional	Required	Required	Required	Optional	Required	Required	Required	Optional	Optional	Required
Recommended Build Surfaces	Kapton Tape, ABS Slurry	PEI, Painter's Tape	Painter's Tape, Glue Stick, Glass Plate, PEI	Glass Plate, Glue Stick, Kapton Tape	Glue Stick, Painter's Tape	Glue Stick, PEI	Painter's Tape, Glue Stick, Glass Plate, PEI	Glue Stick, PEI	PEI, Commercial Adhesive, Glue Stick	Packing Tape, Polypropylene Sheet	Painter's Tape, Glue Stick, PEI	Painter's Tape, Glue Stick, PEI	PEI, Painter's Tape
Other Hardware Requirements	Heated Bed, Enclosure Recommended	Part Cooling Fan	Part Cooling Fan	Heated Bed, Enclosure Recommended	Heated Bed, Part Cooling Fan	Heated Bed, Enclosure Recommended, May Require All Metal Hotend	Part Cooling Fan	Heated Bed	Heated Bed, Enclosure Recommended, All Metal Hotend	Heated Bed, Enclosure Recommended, Part Cooling Fan	Wear Resistant or Stainless Steel Nozzle, Part Cooling Fan	Part Cooling Fan	Heated Bed, Part Cooling Fan


ABS
ABS
acetone smoothed
PLA
PET
a ColorFabb XT
HIPS
FLEX
NinjaFlex, FlexFill
ASA
BRONZEFILL
and other metal
composites
BRONZEFILL
after polishing
PP
Polypropylene
CARBON
ColorFabb XT-CF20
20% carbon fiber
NYLON
Taulman Bridge
and more
T-GLASE
BAMBOOFILL
and other wood
composites

UNDER EXTRUSION

OVER EXTRUSION

HOLES OR GAPS IN TOP LAYER

STRINGING OR OOZING

OVERHEATING

FAILURE TO FEED FILAMENT OR STOPS MID PRINT

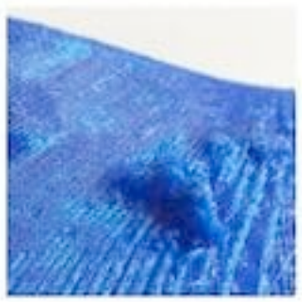
WEAK INFILL

GAPS BETWEEN INFILL AND OUTLINE

CURLING/ PEELING OFF PRINT BED

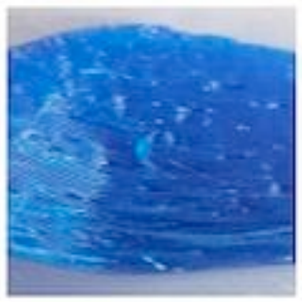
SCARS OR DRIPS ON TOP SURFACE

SIDE LAYER SURFACE ISSUES



CLUMPING ON TOP SURFACE

OVERLY MATTE OR TEXTURED SURFACE FINISH



OUTER SHELL NOT STICKING TO INNER SHELL