

# 3D Printing Glossary

## **FDM (Fused Deposition Modeling)**

A common 3D printing method where a thermoplastic filament is heated and extruded layer by layer.

## **SLA (Stereolithography)**

A 3D printing process that uses a laser to cure liquid resin into hardened plastic.

## **SLS (Selective Laser Sintering)**

A technique that uses a laser to sinter powdered material into solid structures.

## **DLP (Digital Light Processing)**

Similar to SLA but uses a projector screen to cure the resin layer by layer.

## **Resin**

A liquid photopolymer used in SLA, DLP, and other light-based 3D printing methods.

## **Filament**

Thermoplastic material used as the feedstock in FDM printers, typically PLA, ABS, PETG, or TPU.

## **Build Plate**

The surface on which the 3D object is printed. It can be heated to improve adhesion.

## **Support Structures**

Temporary materials printed to support overhanging features, removed after printing.

## **Layer Height**

The thickness of each printed layer, affecting both resolution and print speed.

## **G-code**

The language used to instruct 3D printers on how to move and extrude material.

## **STL File**

A common file format for 3D models used in slicing and printing.

## **Slicer**

Software that converts 3D models into printer-readable instructions (G-code), e.g., Cura or PrusaSlicer.

## **Brim / Raft / Skirt**

Methods to improve first layer adhesion or stabilize prints.

### **Post-processing**

All the steps taken after printing, such as cleaning, curing, sanding, or painting.

### **Tolerance**

The acceptable dimensional variation in printed parts, important for mechanical or fitting purposes.

### **Warping**

A defect where parts of the print lift from the build plate due to uneven cooling.

### **Stringing**

Thin strands of filament that appear between parts due to oozing during travel moves.

### **Infill**

The internal structure of a print, affecting weight, strength, and material usage.

### **Overhang**

A part of the model that extends outward and may need support structures.

### **Bridging**

Printing a horizontal span of material between two points without support.

### **Extruder**

The part of the printer that melts and pushes out filament through the nozzle.

### **Nozzle**

The tip where filament is extruded; comes in different diameters (e.g., 0.4 mm).

### **Bed Leveling**

The process of ensuring the build plate is parallel to the nozzle for proper first-layer adhesion.

### **Dual Extrusion**

A printer feature allowing printing with two materials or colors at the same time.

### **PolyJet**

A 3D printing technology that sprays and cures layers of photopolymer, enabling high detail and color.

### **Multi-material Printing**

Printing with different materials in a single print, often requiring multiple extruders.

### **CAD (Computer-Aided Design)**

Software used to design 3D models before exporting to STL for printing.

### **Topology Optimization**

A design process where material is minimized while maintaining performance, often used in advanced 3D printed parts.

### **Binder Jetting**

A process where a binding agent is selectively deposited to bond powder material.

### **FFF (Fused Filament Fabrication)**

Another name for FDM, often used interchangeably.