3D Printing Glossary

ABS	Acrylonitrile Butadiene Styrene, a filament used for making low cost, sturdy components. This is the material used for Lego bricks. It is a slightly more temperamental filament to print with compared to some of the others and gives off a distinctive odour. It is recommended that ABS is printed within an enclosure to prevent the spread of the odour and protect the printing process from draughts.
ASA	A type of filament used for FDM printers. Acrylic Styrene Acrylonitrile is a successor to ABS. ASA is more UV resistant, warps less, and doesn't smell as much as ABS. Suitable for outdoor use and for making mechanical parts.
Brim	A type of 3D print raft that is only attached at the outer edges of a print. It helps with adhesion of the model to the printing/build bed. It is often used when a model has a small contact area with the bed.
Build Bed	The bed or plate onto which the print is deposited. This is often heated on FDM printers and may also be removable. The adhesive properties of the first layer to the bed are crucial in order to get good quality prints. Some printers use textured beds whilst others suggest the use of specific tapes on the bed. When a bed is heated it will typically be heated to a lower temperature than the mating point of the filament. For example PLA is heated to 215 degrees in the extruder, but the bed is only heated to 60 degrees.
DLP	Digital Light Processing. A 3D printing process becoming more popular in the home printing market. A UV light sensitive resin is used, in a clear bath in the base of the printer. Beneath the bath a UV light source shines through a liquid crystal display. Where the display is not 'lit' the resin cures to form a layer of the print. The printer uses a build plate onto which the first layer of the model is cured. The object is then lifted by a layer thickness and the process is repeated. The resolution of the print is dependant on the resolution of the LCD screen in the X & Y direction and the mechanical resolution in the Z direction.
EBM	Electron Beam Melting. A 3D printing process the is very similar to SLM, however, it makes use of an electron beam instead of a high-powered laser. The electron beam fully melts a metal powder to form the desired object. The process is slower and more expensive than for SLM with a greater limitation on the available materials.
FDM	Filament Deposition Modelling. A type of 3D printing process in which a filament is melted and then forced through a nozzle to form a layer of the 3D object. The print head is then lifted by a layer thickness and the process repeated to produce the next layer. Normally the print head will move in one direction in the horizontal plane whilst the print bed moves at 90 degrees to the movement of the print head. This is perhaps the most widely seen process for home 3D printers.

G-Code	The codes that are sent to the printer itself to control the printing process. G-code was originally designed for use with CNC milling machines but has since been used for a number of machine tool applications. It is the code system universally used for 3D printers.
HotEnd	The hot-end is a term used to group the heated components of an FDM printer that extrude the filament. This includes the nozzle itself and the heated extruder.
IPA	Isopropyl alcohol. A solvent used for cleaning resin prints. It may also be used to finish prints produced using PVB filaments. It dissolves the surface and removes the ridged effect created when layers are built up one on another in an FDM printer.
LOM	Laminated Object Manufacturing. Objects are created by selectively laminating material held on a roll using heat and pressure.
PETG	A type of FDM filament. Polyethylene Terephthalate modified with Glycol is a commonly used technical material, popular among 3D printer users for its low price and good printability. It's tenacious, with good temperature resistance; PETG is most commonly used for printing various mechanical parts, holders, clamps, and waterproof parts.
PLA	A type of FDM filament. Polylactic acid or polylactide, is a biodegradable thermoplastic made from renewable resources such as corn starch, tapioca roots or sugar cane. It is the most commonly used type of filament and offers reasonable mechanical strength but does not require high temperatures.
PVB	A type of FDM filament. Polyvinyl *butyral* is a material designed for easy smoothing with isopropyl alcohol (IPA). It gives a transparent, smooth finish after being treated with IPA.
Raft	One or more layers of filament that are printed under and around a model to form the first layers of a build that does not contact with the printer bed sufficiently to allow good adhesion to the build bed. It is similar to a brim, however a raft will also extend under a model and not just on the outer edges.
Shell	The shell is the solid outer surface of a 3D printed object. Solid objects are not normally printed of solid material, instead they have a solid outer shell and an infill of some pattern. This reduces the amount of filament needed for an object, thus reducing the cost and also decrease the amount of time it takes to print the object.
Sintering	The process of compacting and forming a solid mass of material by heat or pressure without melting it to the point of liquefaction.
Slicer	The program that prepares your model for printing. It takes the model and slices it into a number of layers. Each layer is then converted to the G-code that needs to be sent to print that layer. The slicer will also typically add supports, rafts and brims to the model.
SLA	Stereolithography prints a 3D object from a liquid plastic. Liquid resin is placed in a vat that has a transparent bottom. A UV laser

	traces each layer in the liquid resin from the bottom of the clear container to cure a layer of the resin. The solidified structure is progressively lifted from the liquid resin by a build plate to create the desired shape of the 3D object
SLS	Selective Laser Sintering. A 3D printing technology that uses a vat of powdered material and stereo lithography like process to sinter the powder. Powder is applied to the object with a roller and then selectively sintered. The object is then lowered and the operation repeated. Any powder not sintered remains as a support but may be reused in future print runs.
SLM	Selective Laser Melting. A 3D printing technology that works in the same way as SLS except it melts the powdered material rather than sintering it.
STL	A standard file format that is often exported from a drawing package into the Slicer program that is used to create the codes to send to your printer. STL comes from the stereolithography world and its name is taken from the letters of STereoLithography.
Support	3D printed models are printed layer by layer, typically if a layer overhangs the layer beneath it then some form of support is required to prevent the overhanging material from sagging under gravity. The requirement for supports vary with materials and the amount of overhang. The slicer program will typically add supports to your print. Some printers can utilised multiple material types and may have a support material that can be more easily removed.
Thermoplastic	A plastic polymer that becomes pliable when heated and will set hard again once cooled. These properties are important for filament used in FDM printing.