

RAPID PROTOTYPING PROCESSES

RAPID PROTOTYPING	PROCESS	PROS	CONS
Fused Deposition Modeling (FDM)	<p>A print nozzle extrudes melted thermoplastics in layers to produce a solid piece.</p> <p>Best for basic models or quick, low-cost prototypes.</p>	<ul style="list-style-type: none">• Fast• Low-cost machines/materials	<ul style="list-style-type: none">• Low accuracy• Limited detail• Non-compatible with many designs
Stereolithography (SLA)	<p>A laser is used to cure liquid resin into a hard plastic. Ideal for highly detailed designs with smooth surfaces.</p>	<ul style="list-style-type: none">• Best value• Extremely accurate• Smooth surface finish	<ul style="list-style-type: none">• Sensitive to UV light
Selective Laser Sintering (SLS)	<p>A high-powered laser fuses polymer powder while unfused powder supports the part, eliminating the need for a dedicated support structure.</p> <p>Most commonly used as an alternative to injection molding or for limited-run manufacturing.</p>	<ul style="list-style-type: none">• Strong, functional parts• Design flexibility• Eliminates need for support structures	<ul style="list-style-type: none">• Rough surface finish• Limited material options