

# Stereolithography (SLA)



If you need low or single run production of prototype parts for concept models, presentation models or tooling masters and you need them delivering quickly and cost effectively, it's likely that Stereolithography (SLA) is the prototyping process you require.

SLA is ideal for the production of prototype parts that are required fast (hence *rapid prototyping*) and, depending on your exact requirement, parts can typically be produced overnight for delivery next day.

This process guide describes the Prototype Projects approach to producing prototype parts using SLA.

## What is SLA?

SLA is a rapid prototyping process that is typically used early in the product development process. It produces parts with a quality and surface finish that is usually very good. The range of materials that can be used allows for a range of tolerances and property resilience\*.

SLA prototyping is a very cost-effective process. The comparatively low cost means that SLA models can be thrown away and designs modified prior to moving further into the higher cost stages of the production process.

*\* Prototype Projects is currently the only Prototyping Bureau in the UK to offer SLA parts using Accura® PEAK™ Plastic from 3D Systems. Accura Peak properties include high stiffness, moisture stability and temperature resistance, with excellent model accuracy.*



## SLA Benefits

SLA is one of the most popular prototyping processes among product designers and is widely regarded as the first rapid prototyping process. It enables product designers to get their designs off the drawing board and on to the table quickly. Benefits include:

- ✓ Speed: The principle benefit. Depending on exact specifications, SLA models can be turned around overnight
- ✓ Low cost: One of the cheapest prototyping processes, allowing for disposable casts or prototype parts
- ✓ Low runs: Single parts can be produced quickly and easily
- ✓ Tight tolerances: parts can be produced to very specific requirements

In the overall product design and development cycle, SLA is a vital process for helping your get your products to market fast.

## SLA Summary

### PROCESS FEATURES

- ✓ Ideal for small runs or single runs of highly accurate prototype parts
- ✓ Useful for concept or one-off presentation models and masters
- ✓ Very fast lead time; same day or overnight depending on exact requirement
- ✓ Highly cost effective

### PROPERTIES

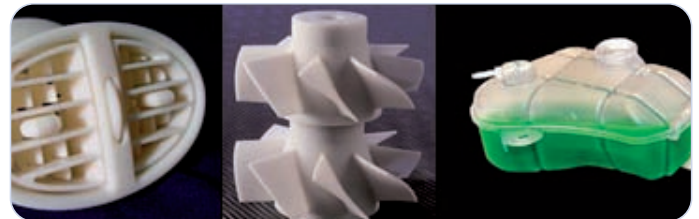
- ✓ High temperature resistance
- ✓ Moisture resistant
- ✓ Clear, white or translucent; colour finishing available
- ✓ High level of feature complexity
- ✓ Excellent surface finish
- ✓ Range of model sizes
- ✓ Lathing and drilling options
- ✓ Flexible polyurethane casting resin grades range

### MATERIAL SIMULATIONS

- ✓ Polypropylene
- ✓ PC
- ✓ High temperature high durability plastic
- ✓ ABS

### PRE-PRODUCTION APPLICATIONS

- ✓ Concept models
- ✓ Presentation models
- ✓ Investment castings
- ✓ Master patterns



## About Prototype Projects

Prototype Projects is an expert prototyping bureau providing rapid prototyping and model making services for clients across a range of sectors.

With 30 years of experience built on a reputation for service excellence, Prototype Projects aims to help its clients build and maintain a strong competitive edge in engineering design and production.

Underpinning its commitment to excellence and service quality is an ongoing process of investment in prototyping systems, expertise and technologies.

### Prototype Projects service capabilities include:

- ✓ SLA (Stereolithography)
- ✓ SLS (Selective Laser Sintering)
- ✓ FDM (Fused Repositioning Modelling)
- ✓ CNC (Computer Numerical Control) Milling (4 Axis) & Turning
- ✓ Injection Moulding (Max Shot Weight - 100g PP/ 70-80g GF PA)
- ✓ Vacuum Casting
- ✓ RIM (Reaction Injection Moulding)
- ✓ CAD (Computer Aided Modelling)
- ✓ CAM (Computer Aided Machining)
- ✓ CAE (Computer Aided Engineering)