

STEREOLITHOGRAPHY

WHAT IS STEREOLITHOGRAPHY?

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Stereolithography starts with a design produced through the use of CAD software. The 3D design is exported as a STL file (Standard Tessellation Language). It is this file, that is used to drive the SLA (StereoLithographic Apparatus) machine, which manufactures the product / component.

COMPUTER AIDED DESIGN



STL FILE



SLA MACHINE

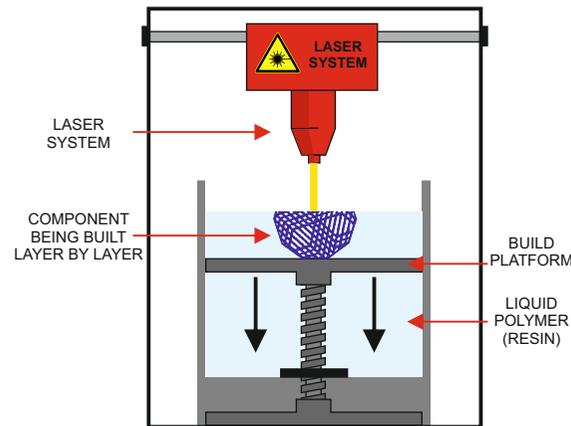
HELPFUL LINKS

http://www.technologystudent.com/despro_3/stereo1.html

HOW STEREOLITHOGRAPHY WORKS

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The component is 'built' on a platform, which moves down microns (a micron = one thousandth of a millimetre) at a time. The laser solidifies a layer of resin before the platform moves down, and solidifies the next layer. This process continues until the component is complete.



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ADVANTAGES OF STEREOLITHOGRAPHY

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Ideal for the manufacture of prototypes.

Efficient use of materials - no waste.

Cost effective for one-offs and low production numbers.

Solid and flexible components / products can be manufactured through this process.

Produces a smooth surface finish.

Can produce clear / transparent or opaque components.

A number of resin based components can be manufactured in the same tank, at the same time.

This process can manufacture products that cannot be manufactured through traditional engineering methods.

1. What does STL mean. What does SLA mean. **2 marks**

STL:

SLA:

2. Describe the process called stereolithography. **4 marks**

3. Explain ONE **advantage** of stereolithography. **2 marks**
