About Materialise
Materialise has been active in Additive Manufacturing since 1990 and operates one of the largest 3D printing facilities in the world. With its headquarters in Belgium and branches worldwide, Materialise provides Additive Manufacturing software solutions and sophisticated 3D printing services in industries including healthcare, automotive, aerospace, art and consumer products. At Materialise Manufacturing, we help designers and engineers develop better innovations through our rapid prototyping solutions and certified additive manufacturing processes for end-use parts in metals as well as plastics.

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SOMOS® TetraShell
Jumpstart your investment casting process
3D-Printed Foundry Patterns

Save time and money in your investment casting projects by directly printing your foundry patterns.

By pairing SOMOS® TetraShell software with our Mammoth Stereolithography technology, you can eliminate the need for time-consuming and expensive tool production.

With 3D-printed foundry patterns, you get a fast, economical and flexible solution for your casting projects. In addition to prototyping, our patterns are also ideal for tool validation and casting small series of metal components.

TetraShell: How does it work?

TetraShell software converts a solid 3D design file into a hollow model consisting of a very thin outer shell and reinforced with a tetrahedron structure inside. The strong lightweight structure prevents the ceramic shell from being damaged by thermal expansion.

Why choose TetraShell?

- Complex geometries with the highest design freedom
- Very smooth surface finish
- High dimensional accuracy and stability (± 0.2%)
- Rapid production compared to traditional methods
- Large parts up to 2.1 m in length
- Certified manufacturing facility assures high repeatability
- Lower ash residue than other 3D-printed patterns

Building investment casting patterns in one piece results in better dimensional accuracy and repeatability, and reduces the risk of surface flaws such as inclusions.

Our patented Mammoth Stereolithography machine allows us to build patterns with a length up to 2.1 meters and with the best surface finish in its class.

With a fully-equipped facility for Stereolithography and a dedicated post-production unit, our large capacity allows us to offer you competitive lead times for your 3D-printed patterns.

Materials

**TuskXC2700T**

An easy-to-use, low-viscosity, water-resistant material that results in accurate casting patterns.

- Easy to use and finish
- Superior moisture resistance
- Exceptional clarity

**Element**

A material developed together with pattern makers and foundries to create flawless investment castings.

- Suitable for high-end alloy castings
- Rapid draining
- Produces accurate, repeatable parts regardless of size
- Very lightweight and easily removable trace amounts of ash

Technical Specifications

<table>
<thead>
<tr>
<th>Standard lead time</th>
<th>Minimum of 5 working days (depending on part size, number of components and required finishing)</th>
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</thead>
<tbody>
<tr>
<td>Standard accuracy</td>
<td>±/- 0.2% (with lower limit on ± 0.2 mm)</td>
</tr>
<tr>
<td>Maximum part dimensions</td>
<td>2100 x 700 x 800 mm</td>
</tr>
<tr>
<td>Surface roughness</td>
<td>Up to &lt;1.6 µm</td>
</tr>
<tr>
<td>Ash residue</td>
<td>&lt;0.005% (Element) to &lt;0.095% (TuskXC2700T)</td>
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</tbody>
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