

We offer a complete SLS dyeing service, taking parts from the build chamber through cleaning, surface preparation and colouring in a single managed workflow.

Available as a contract colouring service, it delivers a consistent, repeatable finish across prototype batches, pre-production runs and low-volume end-use parts.



'Print-to-Product' workflow

Our automated cleaning, surfacing and colouring solution uses a combined three-step workflow that enables scaling from prototyping or small series to high-volume manufacturing.



Step 1 - B6 Cleaning

Automated, highly efficient, damage-preventative part cleaning, reducing lead times.



Step 2 - S2 Surfacing

Automated proprietary blasting process creates dirt- and scratch-resistant surfaces and improves the look, feel and colour quality.



Step 3 - D5 Colouring

Automated colouring of parts in black. Long-lasting UV-stable colour.

Consistent and repeatable SLS dyeing

Our repeatable SLS dyeing service is run in-house. We use technology from Munich-based specialists DyeMansion, developers of the specialist, precision dyeing techniques.

For SLS rapid prototyping and additive manufacturing, high levels of repeatable colour quality for 3D-printed parts, across the industrial, consumer and medical sectors, are offered.



| FINISH LEVEL CODE | B6 | S2 | D5 |
|--------------------|----------|----------|----------|
| Step 1 - Cleaning | ✓ | ✓ | ✓ |
| Step 2 - Surfacing | | ✓ | ✓ |
| Step 3 - Colouring | | | ✓ |
| | Standard | Optional | Optional |

Influencing factors

As dyeing always includes the interaction between part material and dye, the final colour is highly influenced by the raw material and the dyeing conditions:

- ▶ **Colour of the raw SLS-part:** Dyeing allows only to change the L^* to smaller values. Therefore, it is impossible to dye parts in lighter colours than the L^* value of the raw part.
- ▶ **Surface roughness:** The dye molecules penetrate from the surface into the part. The more homogeneous the surface, the more homogeneous the dye absorption and thus the dyeing result. As the surface of the up- and down-skin differ, also the dyed part shows little colour deviation between up- and down-skin.
- ▶ **Surface contamination:** Fats, dust and blasting material residues slow down or prevent dye absorption and lead to an inhomogeneous dyeing.
- ▶ **Dyeing parameters:** Dye concentration, temperature, pressure and time influence the absolute amount of adsorbed dye and thus the final colour.

Black dye

SLS parts for prototyping or additive manufacture can be precision dyed black on a consistent and repeatable basis.

Contract SLS colouring service

As well as colouring parts we have made for you, we also offer a contract colouring service for customers who have made the SLS parts themselves or had them made elsewhere. Contact us to discuss your requirements and ask us about pricing.

