

## Lux-process description

The Lux-process smoothes plastic surfaces of 3D-parts e.g. generated out of powdery feedstock material. Surfaces can get smoothed strong or soft, depending on duration and repetitions of the process. When choosing a strong smoothing, the loss of detailed features is possible. Due to this fact, it is necessary to name the grade of smoothing and important features to be maintained, at the time of order!

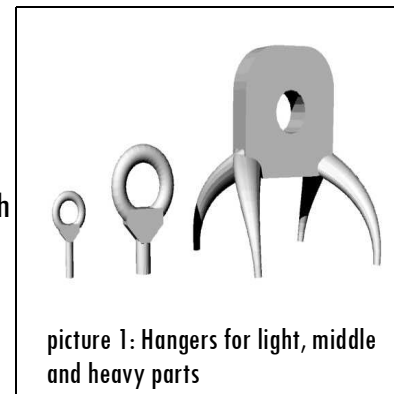
It is recommended to build parts directly with hangers, which can after the process easily be removed. At the hold point, the mounting will get impressed, since the part softens all over during the Lux-process. Since this is usually not allowed for end customer parts, the hangers should be foreseen, since after removing those, just a smooth sheared edge remains. If you choose the position well-considered, usually this no problem for the end customer.

It's advised to use following hangers:

(The STL-files are to be downloaded from our website)

Very heavy parts ( $> \sim 1$ kg) need several of such hangers.

Alternatively you can foresee also holes at strong areas of the part which can serve as fixation points. (Please note: At these points the part will show impressions, possibly discolouring and different or missing smoothing) During the Lux-process the part is fixed at these points.



picture 1: Hangers for light, middle and heavy parts

The result of the smoothing depends (due to current state of knowledge) of several factors:

- Surface quality before the Lux-process:
  - surface defects like grooves, layer stair steps or recoating defects or similar become even better visible due to the smooth surface!
- Cleanliness of the parts before the Lux-process.
- Material the part is made of:
  - The best results get achieved with parts made from PA, TPU, PEBA and PET.
  - Impureness of the feedstock material will become visible by the smoothing. This is also true for willingly applied impureness like e.g. pigments.
- Duration and repetitions of the Lux-process. The more often and stronger the Lux-process gets applied, the smoother the surface becomes, but this will also increase the amount of detail loss.
- The geometry of the part. Inside surfaces get very low to no smoothing. In case the smoothing of such surfaces is necessary, please inform as at order, so we we can process the parts accordingly.

Possible, unwanted effects caused by the Lux-process:

- Warpage of the parts. Thin walled parts which shall get a strong smoothing can completely soften, so strong smoothing is not advised for thin-walled parts ( $< 1$ mm).
- Contamination on the part will get worked into the surface, non-removable.
- Strong smoothing can lead to deviation of the surface

Strong smoothing levels also macroscopic roughness. This could also be achieved by previous e.g. grinding. Even at soft smoothing the surface gets smooth and shiny.

**Talk to us before and after your order!**

**Before, to allow us to understand your requirements, so we can optimise the process to best serve you. And afterwards to let us know what you think of the result. Your commendation and your review help us to continuously improve.**

**After the Lux-process:**

Each Lux-treated part undergoes additionally an oven process, for stripping process media and gets washed afterwards. If you require very timely delivery, minor amounts of our process media will still gas out. Since the outgassing requires time, we do not advise you to further process the parts promptly. Our process media are corrosive, the mounting to corroding materials is advised just after several days of open-air outgassing.

**Disclaimer:**

Since the chemical smoothing is a new technology, the suitability for critical application needs thorough evaluation. Currently there is no certification for any regulated industry done! LuxYours will not accept any liability for consequential damages caused by the application of parts smoothed by us. The data are based on our latest knowledge and are subject to changes without notice. They do not guarantee properties for a particular part and suitability for a particular application.