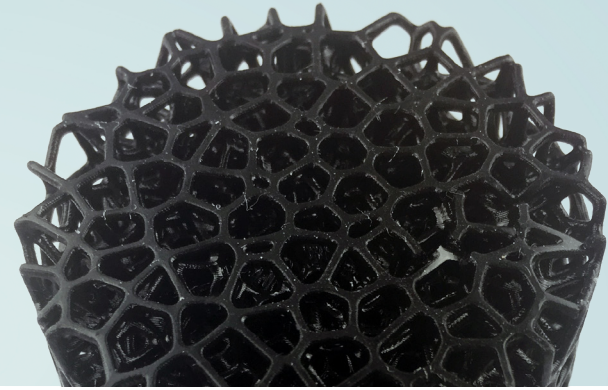


CLIP – Vat Photopolymerization (VPP)



CLIP (Continuous Liquid Interface Production) is an innovative technology in which components are made of liquid polymer and produced by the targeted action from a DLP projector and its ultraviolet light. A continuous and full-area exposure allows exceptionally short construction times and the use of reactive materials with remarkable properties. The final material properties are achieved by annealing and post-curing in the oven or UV cabinet.

High-quality and reproducible components produced cost-effectively in standard materials.

Properties

- High accuracy and surface quality.
- Complicated structures and thin-walled geometries can be generated.
- Available various material groups, such as solid, flexible and elastic polyurethane or heat-resistant cyanate ester.
- Individual materials are comparable to established plastics and thermoplastics. Component properties are isotropic in all spatial directions.
- Overhangs and angles exceeding the design guidelines need to be supported
- Max. chamber size: 189 × 118 × 326 mm
- 1 – 10.000 units | Delivery time: 1 to 3 working days

Applications

- Functional prototypes
- Integration of functions
- Small batch production
- Light weight construction
- Individualization



50x EGR pipe, CE 221, HDT B
up to 231 °C
2 working days



200x Vmax cover, RPU70, CE221
3 working days

Materials	RPU70	SIL30	EPU40	CE221	EPX82
Ultimate tensile strength	45 MPa	3.4 MPa	10.2 MPa	92 MPa	2 MPa
Elongation at break	100 %	330 %	310 %	3.3 %	5.9 %
Tensile modulus	1900 MPa	N/A	N/A	3870 MPa	2800 MPa
Shore hardness	80D	35A	68A	92D	89D
Impact strength*	22 J/m	N/A	N/A	15 J/m	44 J/m
High detection temperature**	70°C	N/A	N/A	231°C	115°C
Design guidelines / feature sizes					
Min. wall thickness (mm)	0.3	0.5	0.4	0.3	1.5
Unsupported angle	40°	40°	40°	40°	50°
Engraving depth (mm)	0.3	0.5	0.3	0.4	0.3
Overhangs (mm)	3.0	0.5	0.4	0.3	1.5

* NOTCHED IZOD, ASTM D256, ** 0.455 MPA, ASTM D648