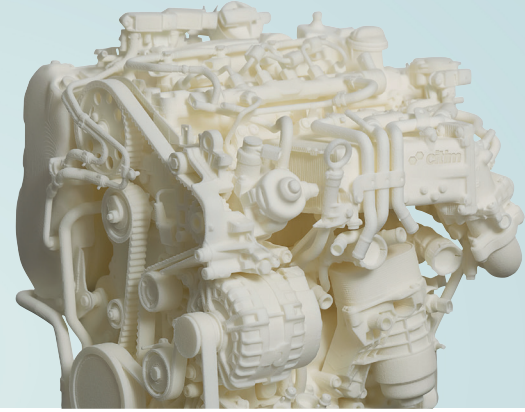


SLS - Laser Powder Bed Fusion of Polymers



Selective Laser Sintering (SLS) is an efficient technology to produce functional prototypes and small batch series.

A laser beam melts the polymer powder and connects on layer onto the next. This way complex and tough parts are build.

Nearly all shapes and geometries are possible to be printed without the need of any tool.

Properties

- Complex parts can be build up without the need of any support structure.
- Unfilled or filled thermoplastic materials e.g. polyamid with glass or aluminium can be processed.
- Laser sintered parts can be sealed by dipping and can then be used in the engine area for example.
- The components can be spray painted or dyed afterwards, the mechanical properties remain unchanged.
- Max. chamber size: 330 x 330 x 600 mm
- 1 – 10.000 units (depending on the size)
- Delivery time: 2 to 5 working days

Applications

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



50x Dipstick pipe, PA12-GB
5 working days



1000x Protective cap, PA12
3 working days

Materials	PA12	PA12-GB	PA12-AI	PA12-CF	TPU
Ultimate tensile strength	45 MPa	48 MPa	48 MPa	72 MPa	N/A
Elongation at break Fe-based	25 %	9 %	4 %	2 %	300 %
Tensile modulus	1700 MPa	3200 MPa	3600 MPa	6600 MPa	40 MPa
Shore hardness	73D	80D	76D	N/A	N/A
Impact strength*	53 kJ/m ²	5 kJ/m ²	9 kJ/m ²	N/A	N/A
Usage temperature	100°C	120°C	130°C	150°C	80°C
Design guidelines / feature sizes					
Min. wall thickness (mm)	0.8	1.0	1.0	1.0	1.2
Engraving depth / embossing height (mm)	0.7	0.7	0.7	0.7	0.7
Min. clearance between mating parts	0.6	1.0	1.0	1.0	2.0