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Laser sintering

To make your idea tangible within a short space of time, including coloured pieces

Our selective laser sintering (SLS) facilities rapidly deliver test-quality models, prototypes and small-run series made directly from the CAD data.

PRINCIPLE

The process uses a polyamide, polypropylene or TPU powder which is subjected to localised melting in layers using a laser beam.

APPLICATION

Whether it's one-off pieces or series production, simple shapes, functioning prototypes, customised models or complex designs: laser sintering allows workable components to be produced for any industry. cirp also offers a wide range of colours that can be used to dye the sintered parts in accordance with our customers' preferences.

THE BENEFITS FOR YOU

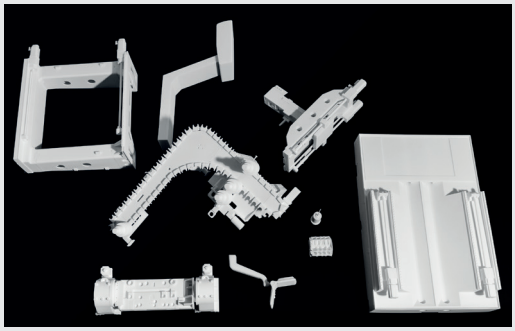
- Very rapid implementation
- Maximum design freedom
- Hollow pieces with spatial grid structures
- Snap fits and integral hinges
- High level of dimensional accuracy
- Elastic, strong and thermally resistant
- Mechanical properties close to series standard

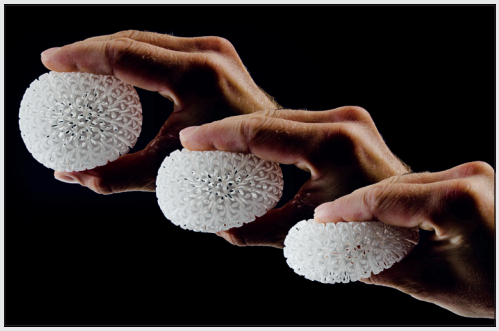
OUR FACILITIES

EOS GmbH - EOS P 770
Building space (X x Y x Z) 700 x 380 x 580 mm
EOS GmbH - EOS P 760
Building space (X x Y x Z) 700 x 380 x 580 mm
EOS GmbH - EOS P 396
Building space (X x Y x Z) 340 x 340 x 600 mm
EOS GmbH - EOS P 395
Building space (X x Y x Z) 340 x 340 x 600 mm
EOS GmbH - Formiga P 100
Building space (X x Y x Z) 200 x 250 x 330 mm

TYPICAL BATCH SIZES

1-1000 pieces and more





Material data

PA 12 fine polyamides are usually used in the SLS equipment. The polyamides PA 2200 and PA 2201 have been certified as biocompatible and additionally meet the strict requirements of the FDA. In addition to the standard materials we also offer filled materials such as Alumide, PDX and PA 3200 GF. Flexible components made from thermoplastic polyurethane (TPU) are also possible.

Description	Alumide	PA 2200	PA 2201	PA 3200 GF	TPU 1301	PDX
Colour	metallic gray	white	white	white	white	black
Hardness [Shore A/D]	D 76	D 75	D 75	D 80	A 86	D 80
Flexural modulus [MPa]*	3600	1500	1500	2900		7330
Bending strength [MPa]*	72		58	73		132
Tensile modulus of elasticity [MPa]*	3800	1700	1700	3200	60	8300
Tensile strength [MPa]*	48	50	48	51	7	85 ± 5
Elongation at break [%]*	4	20	15	9	250	3,2 ± 1
Notched bar impact strength [kJ/m²]*	4,6	4,8	4,8	5,4	no breakage	2 - 3
Density [g/cm³]	1,36	0,93	0,93	1,22	1,11	1,2 ± 0,1
HDT @ 0.45 MPa [°C]*	175			157		170 ± 5

*X direction

Under no circumstances can the published information about the material data be considered as express warranty or otherwise. The density and mechanical properties may vary depending on the light exposure parameters and the x, y, z positioning of the test pieces. The application of these information and references as well as the decision on the suitability of any product for special applications is in all cases subject to the sole responsibility of the user.

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