SELECTIVE LASER SINTERING

PA 12 CARBON-FILLED

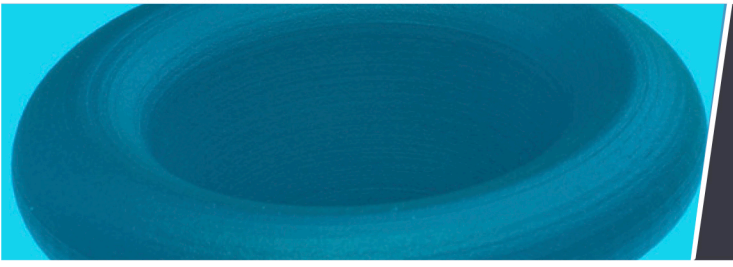
PRODUCT SPECIFICATIONS

PRODUCT DESCRIPTION:

PA 12 Carbon-Filled is an anthracite grey nylon characterized by extreme stiffness and high temperature resistance, coupled with electric conductivity properties and light weight. It can be used for both functional prototypes and end-use parts.
The carbon-fiber filler provides different mechanical properties based on the considered three axis direction.
This material exhibits a good surface quality and smoother finish compared to other SLS nylons.

APPLICATIONS:

The material's properties make it an excellent choice for the production of mechanically stressed parts, for instance highly rigid components for automotive applications (e.g. aerodynamic products for wind tunnel tests) as well as jigs, fixtures and gauges.



KEY PRODUCT BENEFITS

- Extreme stiffness
- Electric conductivity
- Excellent long term stability

PROPERTY	TEST METHOD	VALUE
Colour	-	Dark / anthracite grey
Sintered Density	DIN EN ISO 1183-1	1,2 ± 0,1 g/cm³
E-Module (x plane)	DIN EN ISO 527	8300 ± 400 MPa
E-Module (y plane)		3400 ± 400 MPa
E-Module (z plane)		2900 ± 400 MPa
Tensile strength (x plane)		85 ± 5 MPa
Tensile strength (y plane)		55 ± 4 MPa
Tensile strength (z plane)		45 ± 4 MPa
Elongation at break (x plane)		3,2 ± 2%
Elongation at break (y plane)		3,0 ± 2%
Elongation at break (z plane)		2,2 ± 1%
Thermal conductivity	DIN 52616	0,201 W/(mK)
Specific Surface resistivity	-	10^3–10^5 Ω
Specific Electric resistance	-	10^5–10^7 Ωm
Heat deflection temperature @ 0,46 MPa	DIN EN ISO 75	170 ± 5 °C

TOLERANCES:

For well-designed parts, tolerances of ±0,20 mm plus ±0,002mm/mm can typically be achieved. For parts bigger than 100 mm, tolerance will be ± 0,3% of nominal dimension. Note that tolerances may change depending on part geometry.