

CarbonMide PA12-CF

EOS GmbH - Electro Optical Systems

Product Texts

Product Texts

The anthracite black, carbon-fibre filled polyamide 12 material stands out for excellent stiffness and a maximised weight-strength-ratio. Laser-sintered parts made from CarbonMide possess excellent material properties:

- extreme stiffness
- excellent strength and hardness
- light weight
- · electric conductivity

Due to the process related orientation of the fibres the mechanical properties varies in the three axis directions. Typical applications of the material are mechanically stressed parts which are optimised considering the self-weight of the part. Surface finished CarbonMide laser-sinter parts are suited for e.g. usage as aerodynamic components in motor sports application.

аррисаціон.			
3D Data	Value	Unit	Test Standard
The properties of parts manufactured using additive manufacturing technology (
due to their layer-by-layer production, to some extent direction dependent. This	has to be considered when	designing the part and	defining the build orientation.
Tensile Modulus (X Direction)	6100	MPa	ISO 527-1/-2
Tensile Modulus (Y Direction)	3400	MPa	ISO 527-1/-2
Tensile Modulus (Z Direction)	2200	MPa	ISO 527-1/-2
Tensile Strength (X Direction)	72	MPa	ISO 527-1/-2
Tensile Strength (Y Direction)	56	MPa	ISO 527-1/-2
Tensile Strength (Z Direction)	25	MPa	ISO 527-1/-2
Strain at break (X Direction)	4.1	%	ISO 527-1/-2
Strain at break (Y Direction)	6.3	%	ISO 527-1/-2
Strain at break (Z Direction)	1.3	%	ISO 527-1/-2
Charpy impact strength (+23°C, X Direction)	20.5	kJ/m	ISO 179/1eU
Charpy impact strength (+23°C, Y Direction)	27.5	kJ/m	ISO 179/1eU
Charpy impact strength (+23°C, Z Direction)	5.5	kJ/m	ISO 179/1eU
Charpy notched impact strength (+23°C, X Direction)	5.3	kJ/m	ISO 179/1eA
Charpy notched impact strength (+23°C, Y Direction)	4.4	kJ/m	ISO 179/1eA
Charpy notched impact strength (+23°C, Z Direction)	2.1	kJ/m	ISO 179/1eA
Volume resistivity (X Direction)	0.0463	Ohm*m	IEC 60093
Volume resistivity (Y Direction)	0.107	Ohm*m	IEC 60093
Volume resistivity (Z Direction)	3.08	Ohm*m	IEC 60093
Thermal properties	Value	Unit	Test Standard
Melting temperature (20°C/min)	176	°C	ISO 11357-1/-3
Other properties	Value	Unit	Test Standard
Density (lasersintered)	1040	kg/m	EOS Method

Characteristics

Processing Special Characteristics

Laser Sintering, Rapid Prototyping

Increased electrical conductivity

Last change: 2010-10-15 Source: www.materialdatacenter.com

Page: 1/1

The data correspond to our knowledge and experience at the time of publication. They do not on their own represent a sufficient basis for any part design, neither do they provide any agreement about or guarantee the specific properties of a product or part or the suitability of a product or part for a specific application. It is the responsibility of the producer or customer of a part to check its properties as well as its suitability for a particular purpose. This also applies regarding the consideration of possible intellectual property rights as well as laws and regulations. The data are subject to change without notice as part of EOS' continuous development and improvement processes.