

Material Information

Aluminum AlSi10Mg



Introduction

Aluminum AlSi10Mg is the most widely used class of non-ferrous metal materials in the industry. This aluminum alloy is lightweight, strong, and has a metallic color, and it can be 3D printed into various functional products and prototypes.

Advantages

Close to or beyond high-quality aluminum processed with traditional manufacturing technology. Excellent electrical conductivity and corrosion resistance.

Disadvantages

The surface may have pits and large tolerances and may require post-processing, such as sandblasting and annealing, to ensure better results.

Tolerance

±300µm or 0.3%

Recommendation

The excellent material properties of aluminum AlSi10Mg make it suitable for engineering verification, design verification and mass production of complex structural metal products that cannot be achieved by traditional manufacturing processes.

Material Specifications		
Hardness	ISO 6597-1:03-2006	100 HV
Density	WGE-Prod-067EN	2.65 g/cm ³
Relative Density	WGE-Prod-067EN	99.0%
Tensile strength	DIN EN ISO 6892-1:2009	300MPa
Elongation at Break	DIN EN ISO 6892-1:2009	2.00%
Yield Strength	DIN EN ISO 6892-1:2009	190MPa
Elastic modulus	DIN EN ISO 6892-1:2009	70GPa
Roughness Ra	ISO 4287 / AITM 1-00070	16 µm
Roughness Rz	ISO 4287 / AITM 1-00070	70 µm

Attention

Products printed with powdered metal material come with grainy/pitted surfaces. All metal products supplied by 3DSPRO will be sandblasted for better results. If you have a specific requirement for surface finishing, you may need to add 3D Plus™ services, such as polishing, to reach a smooth surface. 3DSPRO offers anodizing and electroplating for coloring as well.

Applications

3DSPRO finds people using Aluminum AlSi10Mg to make functional parts and prototypes in the following industries and applications.

Automotive parts and supplies:

Car bezels, rearview mirrors, dashboards, steering wheels, lights, seats, handles, etc.

Consumer electronic products:

Laptops, tablets, mobile phones, digital cameras, game consoles, MP3, and mobile power banks.

Electromechanical equipment:

Industrial display panels, switches, sockets, power tools, electrical instruments, experimental instruments, measuring tools, etc.

Consumer supplies:

Golf clubs, tennis rackets, bicycles, wristwatches, glasses, knives, jewelry, and sculptures.