DIGITAL® MECHANICS
RAPID PRODUCTION SERVICES

METALS
PLASTICS

Aluminum AlSi10Mg

Material data sheet for aluminum parts produced by Selective Laser Melting

Material Properties	Value as built	Value as heat treated
Max. Tensile Strength	397 ± 27 MPa	325 ± 20 MPa
Modulus of elasticity	64 ± 8 GPa	65 ±5 GPa
Yield strength (Rp 0.2)	227 ± 11 MPa	220 ± 20 MPa
Elongation at break	4.1 ± 1 %	9 ± 2 %
Hardness by Vickers	117 ± 1 HV10	-
Reduction of area	8 ± 1 %	-

Process-related properties	Value as built	Value as heat treated
Roughness (Ra/Rz)	4-6/25-35 µm	4-6/25-35 µm
Achievable part accuracy	± 100[1] / ±0.2% of nom.[3] µm	± 100[1] / ±0.2% of nom.[2] µm

1) As a result of the part's geometry, strong tensions may cause distortion in the part which may lead to greater deviation.

2) For surfaces which are to be finished mechanically, an allowance of at least 0.5 mm is recommended for part sizes up to 200 mm and 1.0 mm for bigger parts

Note: Due to anisotropic effects, some geometries will only allow for lesser values of max. 15 % manufacturer's information. Please consider this in the design of the part.

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