

Maragin Steel

DMLS MATERIAL

Material properties ^{1) 2) 3)}	Value as built	Value heat treated	Unit
Max. tensile strength (xyz)	1100±100	1950±100	MPa
Modulus of elasticity (xy/z)	160±20/150±20	180±20	GPa
Yield strength (R _p 0.2) (xy/z)	1050±100/1000±100	1900±100	MPa
Charpy-notched impact strength	45±10	1±4	J
Elongation at break (xyz)	10±4	2±1	%
Hardness by Rockwell	33-37	50-54	HRC

Process related properties	Value as built / Value heat treated	Unit
Roughness (after micro shot blasting) (R _a / R _z)	4-6.5/20-50	µm
Achievable part accuracy	±40-60 ²⁾ / ±0.2% of nom. ³⁾	µm
Min. wall thickness	0.3-0.4	mm

Thermal properties	Value as built	Value heat treated	Unit
Specific heat capacity	450±20	450±20	J/(kg°C)
Heat conductivity	15±0.8	20±1	W/(m°C)
Max. operating temperature	400	400	°C

Mentioned mechanical properties are optimum values according to manufacturer.

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

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

3) 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.

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