

# MATERIAL DATASHEET

## DMP Direct Metal Printing Materials

Measurement	Aluminium (AlSi10Mg)	Stainless Steel (SS316L / 1.4404)	Maraging Steel (1.2709)	Titanium (Ti6AL4V)	Standard
Density	> 2.62 g/cm <sup>3</sup>	> 7.91 g/cm <sup>3</sup>	> 7.98 g/cm <sup>3</sup>	> 4.38 g/cm <sup>3</sup>	WGE-Prod-067EN
Relative Density	>98.0%	>99.3%	>99.8%	>99.5%	WGE-Prod-067EN
Tensile Strenght	325 ± 20 MPa	510 ± 20 MPa	1315 ± 20 MPa	900 ± 20 MPa	DIN EN ISA 6892-1:2009
Yield Strenght	220 ± 20 MPa	320 ± 20 MPa	1450 ± 20 MPa	830 ± 20 MPa	DIN EN ISA 6892-1:2009
E-Modulus	70 ± 8 GPa	180 GPa	170 GPa	110 GPa	DIN EN ISA 6892-1:2009
Elongation at Break	5.1 ± 5 %	43 ± 5 %	10 ± 5 %	11 ± 3 %	DIN EN ISA 6892-1:2009
Hardness by Vickers	117 ± 1 HV	170 ± 10 HV	55 ± 3 HV	320 HV	ISO 6597-1:03-2006
Roughness Ra	4-6 µm	3-8 µm	4-7 µm	15-20 µm	ISO 4287 / AITM 1-00070
Roughness Rz	25-35 µm	20-45 µm	20-50 µm	80-100 µm	ISO 4287 / AITM 1-00070
Achievavle part accuracy	± 100* / ± 0.2%**	± 100* / ± 0.2%**	± 100* / ± 0.2%**	± 100* / ± 0.2%**	

Mentioned information and mechanical properties in our datasheets are optimum values according to our manufacturing partners and are believed to be accurate, though is provided for your guidance only. All guarantees with respect to the information contained herein are explicitly denied.

Due to anisotropic effects, some geometries will only allow for lesser value of max. 15% below manufacturer's information. Please take this into account in the design of the part

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

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

Actual values may vary with build condition

