

# Metal Additive Manufacturing Materials

## Technical Data

Parameter	AlSi10Mg (DMLS)	AlSi10Mg (DMLS)	AlSi10Mg (DMLS)	Titanium Ti64 (DMLS)	Stainless Steel (DMLS)	Scalmalloy® (DMLS)
<b>Type of material</b>	Aluminium alloy	Aluminium alloy	Aluminium alloy	Titanium alloy	Steel alloy 1.4404	High Performance Aluminium / Scandium Alloy
<b>Layer thickness [µm]</b>	30	60	90	60	50	50
<b>Relative density [%]</b>	>98.5	>98.0	>98.5	>99.2	>99.3	>99.5
<b>Absolute density [ g/cm³]</b>	2.67	2.67	2.67	4.43	7.9	2.67
<b>Ultimate tensile strength horizontal [MPa]</b>	275 ±20	250 ±25	260 ±20	1140 ±20	610 ±25	525 ±10
<b>Ultimate tensile strength vertical [MPa]</b>	280 ±20	250 ±25	260 ±20	1140 ±20	565 ±25	520 ±10
<b>Yield strength horizontal [MPa]</b>	175 ±10	163 ±20	165 ±20	1085 ±30	380 ±20	510 ±15
<b>Yield strength vertical [MPa]</b>	170 ±10	163 ±20	165 ±20	1060 ±40	360 ±20	480 ±15
<b>Elongation at break horizontal [%]</b>	Min 9	Min 3	Min 2.8	Min 6	42 ±5	13 ±3
<b>Elongation at break vertical [%]</b>	Min 8	Min 3	Min 2.8	Min 9	60 ±5	13 ±3
<b>Youngs modulus horizontal [GPa]</b>	67 ±8	55 ±8	60 ±10	116 ±6	130 ±20	70 ±5
<b>Youngs modulus vertical [GPa]</b>	60 ±8	55 ±8	60 ±10	118 ±7	180 ±20	65 ±5
<b>Hardness [HV]</b>	100	100	100	400	90 HRB	-
<b>Build Size</b>	420 x 420 x 400 mm <sup>3</sup>	420 x 420 x 400 mm <sup>3</sup>	420 x 420 x 400 mm <sup>3</sup>	420 x 420 x 400 mm <sup>3</sup>	420 x 420 x 400 mm <sup>3</sup>	420 x 420 x 400 mm <sup>3</sup>