

# 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>	>99.5	>99.0	>98.5	>99.5	>99.5	>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>	318 ±5	279 ±15	296 ±15	1125 ±5	627 ±30	525 ±10
<b>Ultimate tensile strength vertical [MPa]</b>	345 ±5	250 ±35	286 ±10	1120 ±10	565 ±15	520 ±10
<b>Yield strength horizontal [MPa]</b>	202 ±5	179 ±15	184 ±10	1070 ±25	380 ±20	510 ±15
<b>Yield strength vertical [MPa]</b>	204 ±5	173 ±10	180 ±15	1060 ±46	360 ±20	480 ±15
<b>Elongation at break horizontal [%]</b>	10 ±4	7 ±2	6.3 ±1	9 ±3	42 ±5	13 ±3
<b>Elongation at break vertical [%]</b>	7 ±2	3.5 ±1	3.1 ±0.5	11 ±2	60 ±5	13 ±3
<b>Youngs modulus horizontal [GPa]</b>	68 ±6	65 ±15	63 ±5	113 ±10	138 ±30	70 ±5
<b>Youngs modulus vertical [GPa]</b>	59 ±6	55 ±10	60 ±15	118 ±7	180 ±10	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>