Material data sheet – PA12 CF in selective laser sintering (SLS)

Property	Standard	Value	Unit
Density (sintered)	DIN EN ISO 1183-1	1,2 ± 0.1	g/cm3
Flexural modulus	DIN EN ISO 178	7330	MPa
Flexural strength	DIN EN ISO 178	132	MPa
Tensile modulus	DIN EN ISO 527	8300	MPa
Tensile strength	DIN EN ISO 527	85 ± 5	MPa
Yield strength	DIN EN ISO 527	75 ± 5	MPa
Elongation at break	DIN EN ISO 527	3,2 ± 1	%
Melting Point	DSC	180–185	°C
Heat deflection temperature	DIN EN ISO 75	170 ± 5	°C
Coefficient of thermal expansion		5x10-5	Per Kelvin
Thermal conductivity	DIN 52616	0,201	W/(mK)
Heat transfer coefficient	DIN 52616	47,91	W/(m²K)
Surface resistivity		10^3–10^5	Ω
Volume resistivity		10^5–10^7	Ωm

Note: The values refer to tensile specimens built in the **X direction**. Mechanical properties may vary depending on build orientation, process parameters, and powder age.

Property	Direction	Standard	Value	Unit
Tensile modulus	Y	DIN EN ISO 527	3400	MPa
	Z	DIN EN ISO 527	2900	MPa
Tensile strength	Y	DIN EN ISO 527	55	MPa
	Z	DIN EN ISO 527	45	MPa
Yield strength	Y	DIN EN ISO 527	49	MPa
	Z	DIN EN ISO 527	38	MPa
Elongation at break	Y	DIN EN ISO 527	3	%
	Z	DIN EN ISO 527	2,2	%

Note: The values refer to tensile specimens built in the **Y and Z directions**. Mechanical properties may vary depending on build orientation, process parameters, and powder age.

Process parameters

Parameter	**Value**
Manufacturing Technology	Selective laser sintering (SLS)
Maximum build size	490 x 490 x 740 mm (X/Y/Z)
Layer thickness	0.1 mm
Minimum feature size	0.8 mm
Tolerances	±0,3 mm or for dimensions over 50 mm: ±0.5% of the nominal dimension
Surface Finish	Glass bead blasted