

Data Sheet: LPBF-Inconel® 625

CHEMICAL COMPOSITION

Element	Ni	Cr	Ta+Nb	Mo	Fe	Mn	Ti	AL	P	C	Si	Co	S
Percentage	Min 58	20-23	3.15-4.15	8-10	0- 5	0- 0.5	0-0.4	0-0.4	0-0.015	0-0.1	0-0.5	0-1.00	0-0.015

TOLERANCES FOR 1 – 5

Property	Unit	Value As Built
Achievable Part Accuracy ⁱ	mm	+/- 0.2 mm for parts up to 50 mm +/- 0.3 mm for parts 50-150 mm +/- 0.5 mm for parts 150-250 mm +/- 1.5 mm for parts 250-500 mm
Min. Wall thickness	mm	0.8

AVAILABLE FINISHES WITH SPECIFIC MECHANICAL PROPERTIES

1 | STANDARD

As built with support structure removal and media blasting.

Property	Yield Strength Rp 0.2% [MPa] ⁱⁱ	Ultimate Tensile Strength Rm [MPa] ⁱⁱ	Elongation at Break [%] ⁱⁱ	Young's Modulus [GPa] ⁱⁱ	Relative Density [%]
Value	630-690	850-950	29-39	170-230	>99.5%

2 | HEAT TREATED

As built with support structure removal and media blasting with additional annealing.

Annealing definition for Inconel® 625: The alloy is annealed by heating it to 870°C for 60 minutes, followed by cooling rapidly to below 60°C. The strength of the part is substantially increased by this process.

Property	Yield Strength Rp 0.2 % [MPa] ⁱⁱ	Ultimate Tensile Strength Rm [MPa] ⁱⁱ	Elongation at Break [%] ⁱⁱ	Young's Modulus [GPa] ⁱⁱ	Relative Density [%]
Value	600-690	860-960	30-40	170-230	>99.5%

For other custom heat treatment options please select "custom" in the "finish" dropdown on the MakerVerse platform and specify your requirements to request a quote.

AVAILABLE FINISHES FOR SURFACE REQUIREMENTS

3 | POLISHED

As built with support structure removal and media blasting with additional manual polishing to achieve a homogeneous, smooth surface roughness. Surfaces that require polishing should be specified on the technical drawing or in the comment field on the MakerVerse platform.

4 | TUMBLED

As built with support structure removal and media blasting with additional mechanical tumbling to achieve a smoother surface roughness across all exposed surfaces of the part.

AVAILABLE FINISHES FOR COLOR REQUIREMENTS

5 | PAINTED

As built with support structure removal and media blasting with a color of choice applied to the part. Surfaces that require painting and the RAL color code should be specified on the technical drawing or in the comment field on the MakerVerse platform.

AVAILABLE FINISHES FOR ADDITIONAL REQUIREMENTS

6 | CNC MACHINED

As built with support structure removal and media blasting with additional CNC Machining to the required tolerances. The required tolerances should be specified on the technical drawing.

AVAILABLE COMBINATIONS OF FINISHES

Many finishes can be combined or tuned to specific requirements. Please select "custom" in the "finish" dropdown on the MakerVerse platform and specify your requirements to request a quote for alternative finishing options.

MAXIMUM BUILD CHAMBER SIZE

500 mm x 500 mm x 500 mm

Warranty/Disclaimer: The data from finished parts can deviate from above values depending on the manufacturing process and the component geometry. The data represents our present empirical values. It is incumbent on the person placing the order to examine whether it is suitable for its intended purpose, before using the product.

- i As a result of the part's geometry, strong tensions may cause distortion in the part which may lead to greater deviation.
- ii Depending on build direction.