



BINDER JETTING

AZOTH offers **Metal Additive Manufacturing** via high-precision binder jetting technology - ideal for manufacturing of small complex components with fine surface roughness and minimal need for post processing. The first step is printing on a metal powder bed. The final step is sintering; same as for Metal Injection Molding (MIM). The main advantages of Metal Binder Jetting can be seen in the isotropic physical properties of the final parts as no lasers are involved. Sintering is an integral part of the process and is therefore the main limitation parameter.

PART DESIGN

A case-by-case evaluation is required for part design

SUPPORT

Supports are not required for printing. If required, Azoth will design and use sintering supports

PART SIZE

MINIMUM:

Larger than 0.2mm as a guideline

MAXIMUM:

< 75mm in longest direction is recommended in order to minimize deformation during sintering. Larger components can be evaluated on a case-by-case basis

MATERIALS

- 316L, 17-4PH, and D2
*We follow MIM, MPIF 35, ASTM B883 and ISO 22068
- Ti6Al4V, Inconel DM625, Mar DM247
- Copper coming soon!

FINISHING OPTIONS

- High polish:
approx. Ra 1 μm ;
mirror-look surface
- Metallic bead blast:
approx. Ra 3 μm ;
smooth surface

RESOLUTION

3535 μm in z-direction, as layer thickness is 42 μm and shrinkage is close to 20% during sintering

SURFACE ROUGHNESS

As-printed surface is on average Ra 6 μm after sintering, and Ra 3 μm after blasting.

WALL THICKNESS

Dependent upon area and design but > 0.3mm is recommended as a guideline.

HOLES

Larger than 0.2mm recommended as a guideline.

TOLERANCE, CONSISTENCY, AND REPEATABILITY

For serial production, Azoth can typically each and overall dimensional tolerance of $\pm 0.5\%$ and at best $\pm 50 \mu\text{m}$ from batch to batch. For one-off jobs, typically a tolerance of $\pm 2.0\%$ is achieved

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Azoth is an ISO 9001:2015 certified company