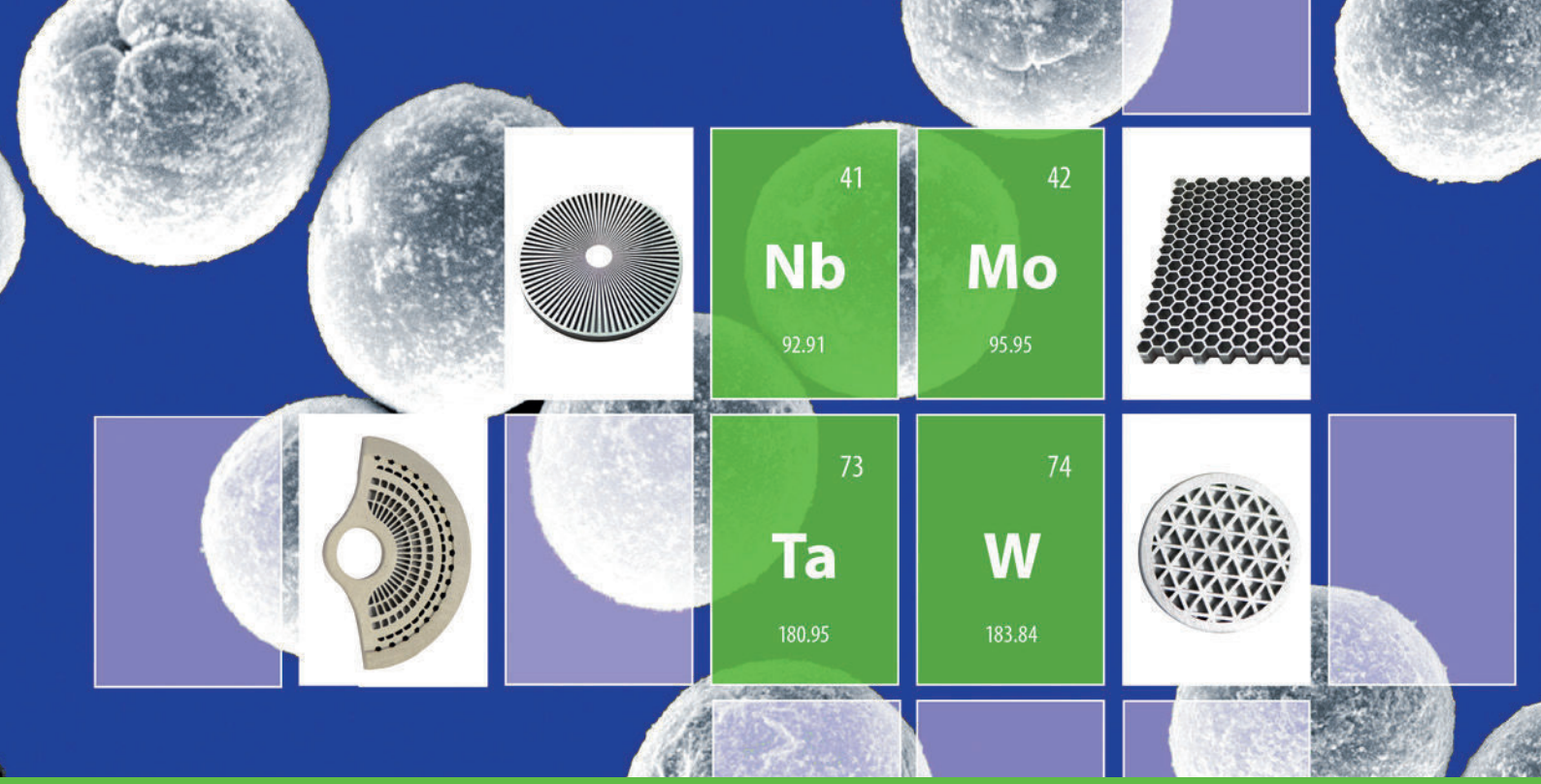


3D Screen Printing

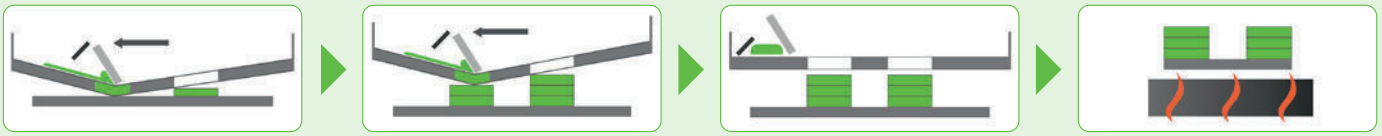
Building on our History

Combining 100 years of experience in refractory metals with competency in 3D printing technologies, the QSIL Metals Hermsdorf GmbH provides cutting edge knowledge in the quickly evolving field of additive manufacturing (AM).

The 3D Screen Printing method for AM of refractory metals uses a metal printing paste that is applied in vertical layers to create the desired geometry. The technology is successfully utilized in producing complex grid structures.

The process enables us to print very small feature sizes with tight tolerances. It utilizes traditional powders resulting in exceptional customer value.

Proprietary post-print processing is typically required as a finishing step and allows us to achieve properties that exceed traditional powder metallurgy specifications. This enables our customers to take advantage of the benefits of AM without sacrificing on material characteristics.



PRINTING LAYER 1 *PRINTING LAYER 3* *PRINTING COMPLETE* *POST-PRINT-SINTERING*

QSIL Metals Hermsdorf - Your Partner for AM

QSIL Metals Hermsdorf works closely with its customers to select the correct feedstock and method that will provide the most value to any given application. 3D Screen printing provides high resolution with excellent dimensional control while offering exceptional customer value.

Screen Printing Process Capabilities

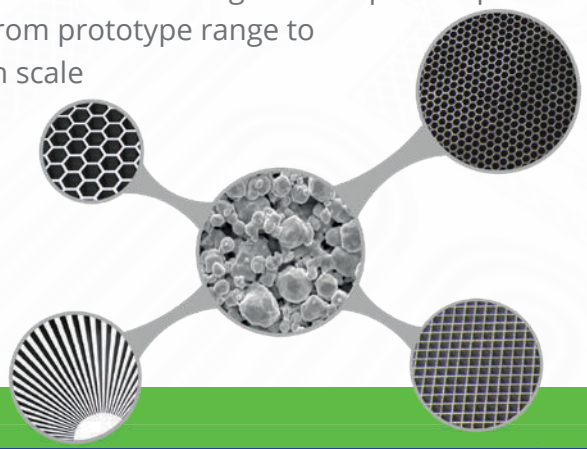
Overall Print Size (H x W x L)	100 x 220 x 270 mm
Height Range	0.1 – 100 mm
Minimum Feature Size	120 µm
Typical Dimensional Tolerance	± 1% with a minimum tolerance of ± 0.05 mm
Density Range	7 – 17 g/cc depending on material
Current Materials	Tungsten heavy alloy in as-sintered or printed
	+ infiltrated condition
Alternate Materials	Fe, Co, and Ni-based alloys upon request

Potential Applications

> Collimators
> Balance weights
> Fuel cells
> Catalyst substrates
> Micromechanics
> Heat exchangers
> Thermal insulation
> Abradable seals
> Bio implants
> Jewelry
> Flow control

What We Provide

> Stencil design & layout optimization
> Printing paste formulation & improvement
> Printing services in custom materials
> Proprietary post-print processing
> Strategies to increase strength of the printed parts
> Volumes from prototype range to production scale



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