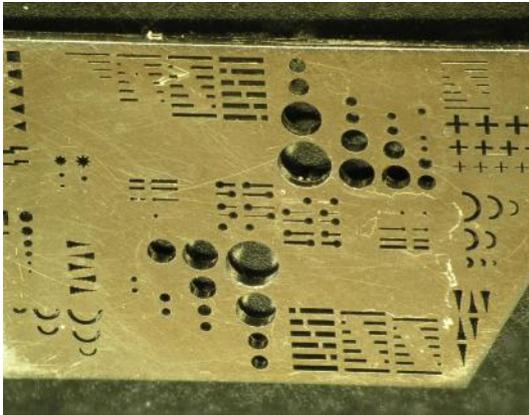
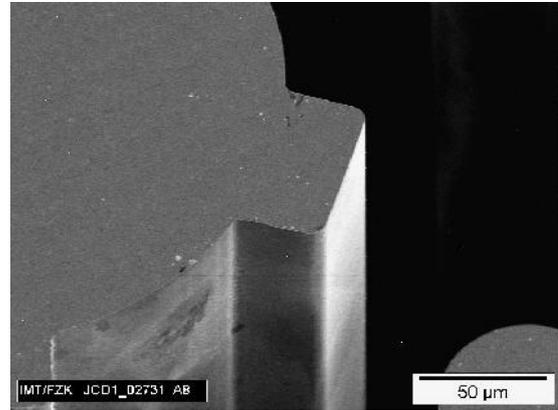


Properties of LIGA Structures as Moulds



Patterned plate of electroplated NiCo alloy. Structure height: 600 μ m; smallest slit width: 10 μ m



SEM view of a detail

Material	Nickel or Nickel-Cobalt(80/20)
Precision of lateral dimensions	+1 μ m (3)
Range of Thicknesses	100 μ m to 2300 μ m
Thickness tolerance	+10 μ m, lower values upon request
Structure details	Less than 1 μ m possible
Smallest hole dimensions	One twentieth of the structure height as a safe guideline, one fiftieth is usually possible by implementing specific layout rules
Roughness of the sidewall	Less than 50nm
Verticality of the pattern	Less than 0,6 μ m per 100 μ m of height
Hardness	Ni >250Hv0.1 NiCo >450Hv0.2
Elastic limit Rp 0,2	NiCo > 750 N/mm ²
Tensile strength Rm	NiCo 1.200 – 1.800 N/mm ²
Strain at failure A 5	NiCo > 3.5 %
Young's Modulus	Ni and NiCo 130 – 180 GPa

Examples – Application Areas:

- Moulds for hot embossing and injection moulding (MIM, CIM or polymers)
- Precise hole geometries
- Very small gear trains

Contact: Dr. Joachim Schulz
 Managing Director
 microworks GmbH
 Tel. +49 721 608 24438
 joachim.schulz@micro-works.de