

Tool Steel Alloy M300



Metal Alloys

for Additive Manufacturing

ALTERNATIVE NAMES:

X3NiCoMoTi18-9-5
18% Ni Maraging 300
1.2709

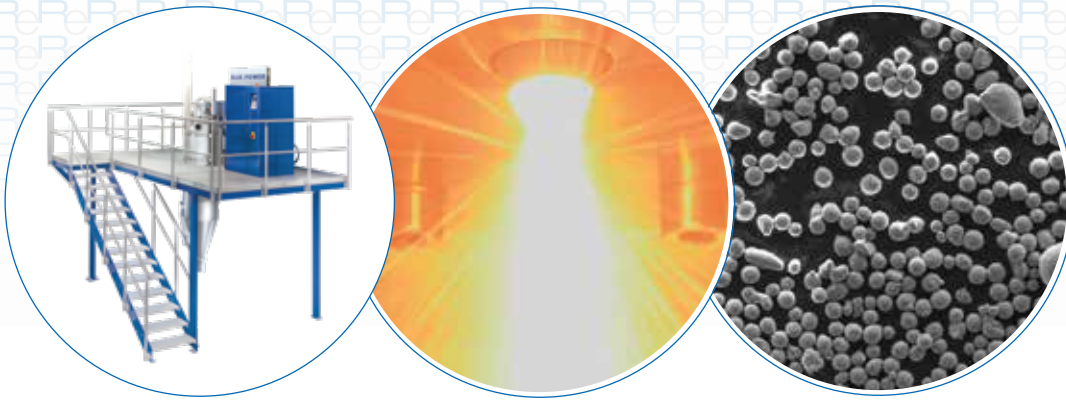
Properties	Unit	As built ¹⁾	Heat-treated ²⁾
Tensile Strength R_m	MPa	1200 ±50	2100 ±50
Yield Strength $R_{p0,2}$	MPa	1000 ±50	2000 ±50
Elongation at Break A_5	%	12 ±2	5 ±1
Young's Modulus E	GPa	175 ±5	195 ±5
Hardness	HRC	34 ±1	53 ±1

Rosswag Engineering offers a holistic and fully integrated process chain for Additive Manufacturing services. Our portfolio ranges from manufacturing of your prototypes, tools and small serial products to an individual consulting and engineering process for the choice of material, parameters and process chain.



ALL PROCESSES at ONE COMPANY





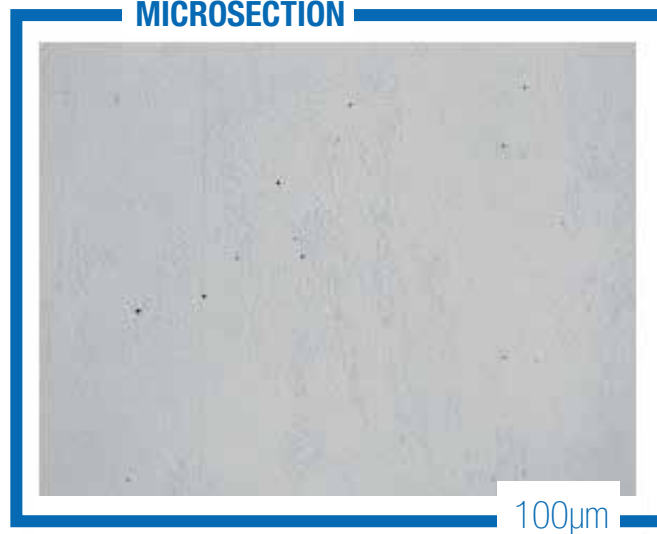
Material characteristics

The maraging hot-work tool steel alloy M300 has a good temperature resistance and toughness. Possible use cases include tool and casting moulds with internal cooling channels. After the AM process, heat treatment processes can be performed to increase hardness up to 54 HRC.

CHEMICAL COMPOSITION

Element	Mass Fraction [%]
Ni	18.0 - 19.0
Co	8.50 - 9.50
Mo	4.70 - 5.20
Ti	0.50 - 0.80
C	≤ 0.03
Si	≤ 0.10
Mn	≤ 0.10
P	≤ 0.01
S	≤ 0.01
Al	0.05- 0.15
Fe	Balance

MICROSECTION



- 1) The specified material properties were determined at room temperature. They are multi-dimensionally dependent on many different machine and process parameters. Without further investigation, the material properties do not constitute a sufficient basis for component dimensioning.
- 2) Specific heat treatment processes lead to optimized mechanical-technological properties to meet the component requirements.