

Tool Steel Specialis[®]



ROSSWAG
engineering

Metal Materials for Additive Manufacturing

ALTERNATIVE NAMES:

FeNiCoMoVTiAl
Maraging 350
1.6356

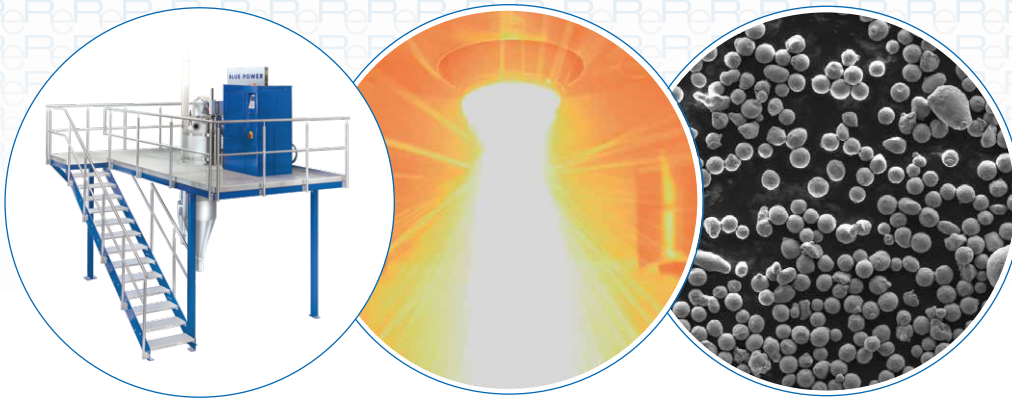
Properties	Unit	As built ¹⁾	+AT ²⁾	+ST +AT ²⁾
Hardness	HV	339 ±5	725 ±10	810 ±15
Yield Strength R _{p0,2}	MPa	756 ±14	-	-
Tensile Strength R _m	MPa	1145 ±11	2135 ±60	2355 ±90
Elongation at Break A ₅	%	13.7 ±0.7	1.5 ±0.2	1.4 ±0.2

ALL PROCESSES ONE COMPANY



Rosswag Engineering offers a holistic and fully integrated process chain for Additive Manufacturing services. This enables the efficient and economical production of functionally optimized metal components from many different alloys. Our service portfolio ranges from manufacturing of your prototypes, tools and serial products to an individual consulting and engineering solution to determine the suitable material, parameters and process chain.





Material characteristics

The high-performance maraging hot-work tool steel Specialis® is a newly developed alloy for LPBF processes and exclusively available at Rosswag. The mechanical properties could be easily optimized by specific heat treatments or plasma nitriding. The main advantages of the Specialis® compared to other LPBF-processable tool steels are the high temperature strength and high temperature hardness. Furthermore, on the material side, low thermal expansion, high corrosion and wear resistance as well as excellent polishability are given. This leads to a superior performance for use cases in the area of functionally optimized and thermally stressed moulds, dies and tools.

CHEMICAL COMPOSITION

Element	Mass Fraction [%]
Fe	Balance
C	< 0.1
Ni	< 20
Co	< 12
Mo	< 5
Ti	< 2
V	< 2
Al	< 0.5

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.