

Iron Nickel Alloy Invar 36[®]



Metal Alloys

for Additive Manufacturing

ALTERNATIVE NAMES:

Pernifer 36
Alloy 36
1.3912

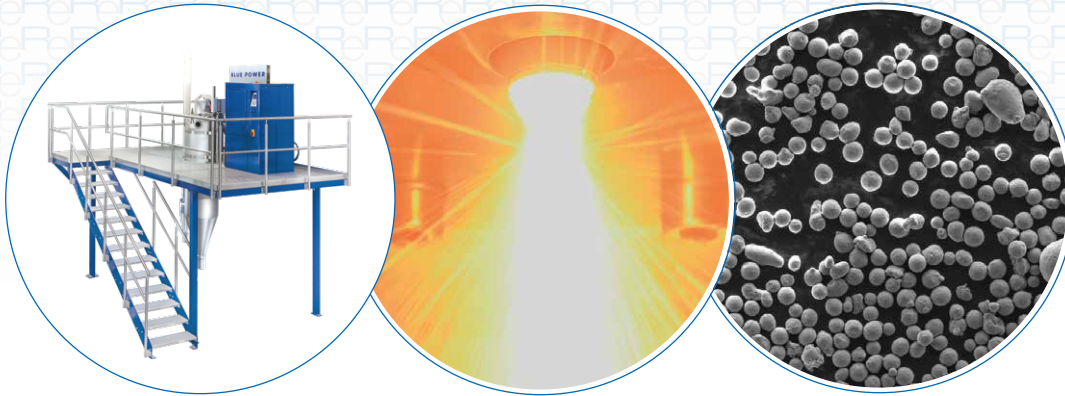
Properties	Unit	As built ¹⁾
Tensile Strength R_m	MPa	485 ±20
Yield Strength $R_{p0,2}$	MPa	380 ±20
Elongation at Break A_5	%	33 ±5
Young's Modulus E	GPa	140 ±10
Hardness	HV	150 ±2

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 BY ONE COMPANY





Material characteristics

The iron-based alloy with 36 % nickel has a very low coefficient of thermal expansion of up to 250 °C. In addition, the material Invar 36® has a high toughness and ductility. The low thermal expansion leads to a wide range of application possibilities, for example in the field of measuring instruments or in the optoelectronic industry. Thereby, the additive manufacturing technology enables added values through functional integration.

CHEMICAL COMPOSITION

Element	Mass Fraction [%]
Fe	Balance
Ni	35.0 - 37.0
Cr	≤ 0.50
Mn	≤ 0.50
Si	≤ 0.50
C	≤ 0.10
Other each	≤ 0.20
Other total	≤ 0.50

MICROSECTION



500 µm

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.

