



EOS NickelAlloy IN718
for EOS M 300-4

EOS NickelAlloy IN718

EOS M 300-4 | 40 μm

EOS NickelAlloy IN718 is a precipitation-hardening nickel-chromium alloy that is characterized by having good tensile, fatigue, creep and rupture strength at temperatures up to 700 °C (1,290 °F).



Project Partner Isar Aerospace

Main Characteristics

- Parts are easily precipitation hardened
- Parts can be machined, spark-eroded, welded, micro shot-peened, polished and coated
- Chemical composition corresponding to UNS N07718, AMS 5662, AMS 5664, W.Nr 2.4668, DIN NiCr19Fe19NbMo3

Typical Applications

- Gas turbine components
- Instrumentation parts
- Power industry parts
- Process industry parts

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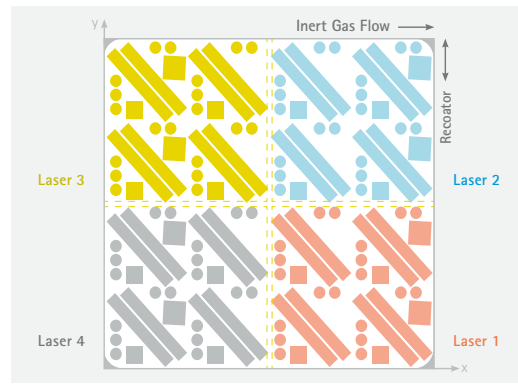
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Product Information

DMLS System	EOS M 300-4
Material	EOS NickelAlloy IN718
Process	40 μm layer thickness
Inert Gas	Argon
Recoater blade	HSS, two-sided recoating
Volume rate	up to 4 x 4.2 mm ³ /s

Layout of test job

Part properties based on 2 test jobs each for the as manufactured and heat treated data.



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Typical part properties	Yield strength Rp _{0.2} [MPa]	Tensile strength Rm [MPa]	Elongation at break A [%]	Number of samples
As manufactured vertical	634	957	36	158
As manufactured horizontal	796	1,092	27	62
Heat treated vertical	1,141	1,370	20	159
Heat treated horizontal	1,267	1,531	15	44
Max. pore size	< 100 μm			64
Porosity	< 0.05 %			64

Mechanical properties tested according to EN ISO 6892-1 B10. The values in the table are average values. Heat treatment procedure in accordance with AMS 5662.

Status 11/2020

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The quoted values refer to the use of this material with above specified type of EOS DMLS system, EOSYSTEM and EOSPRINT software version, parameter set and operation in compliance with parameter sheet and operating instructions. Part properties are measured with specified measurement methods using defined test geometries and procedures. Further details of the test procedures used by EOS are available on request. Any deviation from these standard settings may affect the measured properties. The data correspond to EOS knowledge and experience at the time of publication and they are subject to change without notice as part of EOS' continuous development and improvement processes. EOS does not warrant any properties or fitness for a specific purpose, unless explicitly agreed upon. This also applies regarding any rights of protection as well as laws and regulations.

