

Meltio Invar

Material Group: Nickel Iron Alloy

This alloy gets its name thanks to its extremely low coefficient of thermal expansion, from -250°C up to about 200°C. This feature makes it an ideal choice for measuring equipment, cryogenic applications and molds for the manufacturing of composite components for aerospace use.

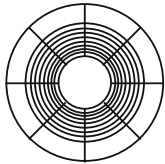
Nomenclature Standards

Material N° _____ 1.3990

Chemical Composition

C	Ni	Fe	Mn	Nb	Ti
0.35	36	Base	1	2.5	1.0

Spool Specs



Diameter	1 mm
Weight	15 kg
Volume	1851 cm³
Density	8.1 g/cm³
Spool Type	BS300

Applications



Aerospace industries



Tools and prototypes

Mechanical Properties

Results show Meltio's wire LMD 3D printed specimens to perform at the same level as conventional manufacturing methods.

		Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (%)	Hardness (HV-30)
Wrought Properties		448	241	30	127
Meltio as Built	XZ	522 ± 14	337 ± 22	24 ± 2	147

Printing Parameters Used

Print Speed	Deposition Width	Layer Height	Laser Power
450 mm/min	1 mm	0.8 mm	1100 W

Shielding gas: Argon > 99.996% purity.

Machine Used: Meltio M450

Laser System: 6x200W Fiber coupled diode lasers. 976nm wavelength.

* Data represent typical reference values from Wrought (ASTM A36) and Cast (ASTM A352) material classification compared to Meltio (M450) horizontal (XY) and vertical (XZ) specimens extracted from 3D printed walls and tensile tested according to UNE EN ISO 6892-1

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