

Technical datasheet

Alloy 36 / W-Nr. 1.3912

A binary nickel-iron alloy containing 36% nickel with a low room temperature coefficient of thermal expansion making it ideal for precision components requiring high dimensional stability and for aerospace composite tooling.

Available products

Product form	Size range from	Size range to
Sheet/plate	0.25 mm thickness	50.0 mm thickness
Bar	2.00 mm diameter	190.0 mm diameter
Tube/pipe	12.00 mm outside diameter	

Chemical composition (%)

Ni	Fe	Mo	Co	Cr	Mn	Si	C
35.0-38.0	Balance	0.50 max	1.0 max	0.50 max	0.60 max	0.35 max	0.10 max

Major specifications

ASTM B388, B753, F90, F1684-06	UNS K93600
SEW 385	DIN 385, 1715

Physical properties

Density	8.11 g/cm ³	Coefficient of thermal expansion (20-100°C)
Melting temperature	1430°C	1.5 µm/m•C

Mechanical properties – typical room temperature properties

Yield strength	240 MPa
Tensile strength	490 MPa
Elongation	42 %

Key attributes

Alloy 36 is known for its controlled expansion coefficient for precision applications where dimensional stability is key. It has a very low room temperature thermal expansion coefficient and minimum variation at cryogenic temperatures through to 260°C. Alloy 36 maintains good strength and excellent toughness at temperatures down to -253°C.

Alloy 36 is readily formed by both hot and cold forming and can be machined. Workability characteristics are similar to those of austenitic stainless steels. Alloy 36 can be welded by most standard techniques. Please contact us for further details on forming and fabrication.

Applications

Tooling for aerospace composites
Standards of length and measuring gauges
Laser components
Thermostat rods
Bimetallic components in electrical industries
Piping and tanks for liquified natural gas (LNG)

All information is subject to change without notice. The properties correspond to the material in the heading. They may vary for other specifications. Please contact us for more details.