

Super Invar 32-5

Super Invar 32-5, a magnetic, austenitic, solid solution alloy containing iron, nickel, and cobalt, is designed to provide minimum thermal expansion at room temperatures. This alloy also exhibits austenite stability to service temperature at least -55°C and thermal expansion properties less than Invar 36 alloy when used in the temperature range between -55 and 95°C. It is characterized by:

- extremely low coefficient of thermal expansion between -55 and 95°C
- good ductility and toughness
- good fatigue and mechanical properties at cryogenic temperature

Chemical Composition, %

element	Ni	Fe	Co	Cr	C	Mn	Si	P	S	Al	Ti	Mg	Zr
min.	32	bal.	5	0.25	0.05	0.60	0.25	0.015	0.015	0.10	0.10	0.10	0.10
max.													

chemical Composition according to ASTM F1684, K93500. Some compositional limits of other specifications may vary slightly.

Designation and standards

National Standards	Material designation	Chemical composition	Forgings	Rod and bar	Plate and sheet	Strip	Wire
ASTM	UNS K93500	ASTM F1684	ASTM F1684	ASTM F1684	ASTM F1684	ASTM F1684	ASTM F1684
GB/T	4J32	YB/T 5241	YB/T 5241	YB/T 5241	YB/T 5241	YB/T 5241	YB/T 5241

Density 8.10g/cm³

Corrosion resistance

- corrosion resistant in dry atmospheres at room temperature
- Corrosion can occur in the form of rust in humid or moist atmospheres.

Applications

Typical applications are:

- structural components for supports and substrates in optical and laser systems requiring precision measurements
- wave guide tubes and other systems requiring metals in conjunction with low expansion glass/quartz assemblies