

Bar

Corrosion application



This grade is a nickel-iron with very low thermal expansion from cryogenic temperatures up to 200°C.

1. Chemical content

UNS K93600	UNS K93601
UNS K93603	Wr 1.39121

Ni	Fe
35 - 37	Bal.

2. Thermal expansion controlled

Mean coefficient between 0°C and 100°C
= $1.1 \cdot 10^{-6}/^{\circ}\text{C}$

3. Applications

- Aeronautic Mould, missile body
- Liquid gas transport, cryogeny
- Optical device, Space and detection devices

Standards relative to these applications :
ASTM F1684 – SEW 385 – A54-301

4. Shapes – Tolerances – Destinations

Round bars

Section	Ø 4 to Ø 20mm	Ø 20 to Ø 180mm	Ø 100 to Ø 500mm
Process	Cold bars	Hot-rolled bars	Forged bars
Surface Conditions	Raw, rectified, chamfrened	Peeled , rectified, polished, roller burnished, raw	Peeled , ground, rectified, polished, raw
Length	3 to 6m	3 to 6m	500 mm to 6 m
Weight	min 400Kg	min 1000Kg	
Packaging	Wooden box or narrow strapping	Wooden box or narrow strapping	Secured package
<u>Tolerances</u>	drawn straightened and rectified h9, Ra < 1,2µm	Peeled + roller burnished h11 or h12 Ø > 100 mm, Ra < 3,2µm	
Ground		+/- 3mm	+/- 3mm
Peeled (Ra < 6,3µm)		-0/+ 0,8mm for diameter < 80mm -0/+1,2mm for diameter > 81mm	- 0 / +3mm
Straightness	< 1mm/m	< 2mm/m	< 4,2mm/m
Uses	Bars for machining	Bars for machining or hot-transformation	
Customer processes used in manufacturing finished parts	Machining, free-cutting	Machining, forging, stamping, hot-rolling, drop forging, ring beking, drawing, upsetting, ring rolling,...	

4. Shapes – Tolerances – Destinations

Square bars	
Section	80x80mm to 265x265mm
Process	Bloomed (up to 185x185) or forged
Surface Conditions	Ground
Length	3 to 6m
Weight	min 1000Kg
Tolerances	+/- 3mm
Straightness	10mm/m
Uses	Bars for hot-transformation only
Customer processes used in manufacturing finished parts	Forging, stamping, drop forging, ring becking, ring rolling,...

Others shapes : Please consult us.

5. Certificate

Certificate 10204-3.1
Chemical composition according to relevant standards.

Bars for hot-transformation :
Ultrasonic test according to standard EN10308

Bars for others applications :
Condition and tests according to specified standard

The data enclosed in this document are only given as indicative values and correspond to our standard product. Different specific requirement are subject to discussion and formal approval by Aperam Alloys Imphy. For further information or special request, please contact us.