

Bar

Magnetic Alloys application



Mumetal – Permimphy are the crystalline soft magnetic alloys with very high permeability, linear, stress resistant and the lowest magnetic losses.

1. Chemical content

UNS N14080

Ni	Mo	Fe
79 - 82	3,5 - 6	Bal.

2. Thermal expansion controlled

$12 \cdot 10^{-6} / ^\circ\text{C}$

4. Shapes – Tolerances – Destinations

Round bars

Section	Ø 4 to Ø 20mm	Ø 20 to Ø 115mm	Ø 100 to Ø 400mm
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	500mm to 6m
Weight	min 400Kg	min 1000Kg	
Packaging	Wooden box or narrow strapping	Wooden box or narrow strapping	Secured package
Tolerances	drawn straightened and rectified h9, Ra < 1,2µm	Peeled + roller burnished h11 or h12 Ø > 100mm, 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
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,...	

3. Applications

- Magnetic shielding
- Current sensors
- High precision current transformer cores
- Ground fault circuit breaker (relay parts)

Standards relative to these applications :
ASTM A753

4. Shapes – Tolerances – Destinations

Square bars	
Section	80x80mm to 120x120mm
Process	Bloomed (up to 120x120) 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.