

## Bar

### Corrosion application



SY 90 is an aged hardening nickel-chromium-cobalt alloy. It combines a high tensile strength up to 600°C with good creep-rupture properties up to 920°C. It has a good corrosion resistance in wide oxidizing environment. It presents also a good resistance to cyclic heating.

#### 1. Chemical content

UNS N07090	Wr 2.4632
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Ni	Cr	Co	Fe	Ti	Al
Base	18-21	16-21	<2	2-3	1-2

#### 2. Heat treatments

Our standard is : Solution : 1080°C, 2 to 4 hrs, air cooling + Aged hardening 700°C - 16hrs, air cooling

Other treatments are possible. Please consult us.

#### 3. Applications

- Elements for gas turbines (discs, blades, ...)
- Forgings
- Ring sections
- Hot working tools

#### 4. Shapes – Tolerances – Destinations

##### Round bars

Section	Ø 4 to Ø 20mm	Ø 20 to Ø 140mm	Ø 100 to Ø 300mm
Process	Cold bars	Hot-rolled bars	Forged bars
Surface Conditions	Raw, rectified, chamfrened	<b>Peeled</b> , rectified, polished, roller burnished, raw	<b>Peeled</b> , ground, rectified, polished, raw
Length	3 to 6m	3 to 6m	
Weight	min 400Kg	min 1000Kg	
Packaging	Wooden box or narrow strapping	Wooden box or narrow strapping	Secured package
<b>Tolerances</b>	drawn straightened and rectified h9, Ra < 1,2µm	Peeled + roller burnished h11, 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	< 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

<b>Square bars</b>	
<b>Section</b>	<b>80x80mm to 265x265mm</b>
Process	<b><u>Bloomed (up to 120x120mm) or forged</u></b>
Surface Conditions	ground
Length	3 to 6m
Weight	min 1000Kg
Tolerances	+/- 3mm
Straightness	10mm/m
<b>Uses</b>	<b>Bars for hot-transformation only</b>
<b>Customer processes used in manufacturing finished parts</b>	Forging, stamping, drop forging, ring becking, upsetting, drawing, ring rolling

#### 5. Certificate

Certificate 10204-3.1  
Chemical composition according to relevant standards.

**Bars for hot-transformation :**  
Ultrasonic test according to the norm EN10308

**Bars for other 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.