



## FERRY CAPITAIN

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## MATERIAL DATA SHEET

## REFRACTORY STEEL

## MATERIAL FOR AEROSPACE

## SPF / SPF DB TOOLS

## FERRYNOX 37

### Description

The Ferrynox 37 is the result of an important internal development at **FERRY CAPITAIN**. This refractory alloy is enhanced through the use of a 15-ton capacity AOD converter, resulting in materials with low levels of residual elements and superior mechanical properties and very high creep rupture values.

### Application

This material is mainly used in the **Aerospace** field (Super Plastic Forming and Diffusion Bonding tools). In general, components subject to frequent thermal cycle shocks and high temperature fields.

### Chemical Composition

Cast Analysis		
FC Reference	%Ni	%Cr
Ferrynox 37	33-39	17-22

**Density : 8,1**

### Physical Properties

FC Reference	Temperature (°C)	Mean coefficient of thermal expansion (m/m.°C)
Ferrynox 37	Between 20°C and 525°C	15,6. 10 <sup>-6</sup>
	Between 20°C and 725°C	16,9. 10 <sup>-6</sup>
	Between 20°C and 925°C	17,3. 10 <sup>-6</sup>



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## Mechanical properties

Creep Properties				
FC Reference	Temperature (°C)	Stress rupture (MPa)		Creep rate 1% (MPa)
		100h	1000h	1000h
Ferrynox 37	925°C	32	24	19

Tensile Test				
FC Reference	Temperature (°C)	Tensile Strength (Mpa)	Yield Point (Mpa)	Elongation (%)
Ferrynox 37	20°C	420	240	14
	925°C	135	100	33

## Weldability

Ferrynox 37 can be welded, **FERRY CAPITAIN** make available a complete welding procedure specific to this material.

We developed cold welding; it allows the welding of accessories on parts.