



## FERRY CAPITAIN

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# MATERIAL DATA SHEET      REFRACTORY STEEL MATERIAL FOR **AEROSPACE** HF TOOLS

## FERRYNOX 25

### Description

The Ferrynox 25 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 (Hot Forming Tools and molds). In general, components subject to frequent thermal cycle shocks and high temperature fields.

### Chemical Composition

Cast Analysis		
FC Reference	%Ni	%Cr
Ferrynox 25	22-28	18-22

**Density : 7,8**

### Physical Properties

FC Reference	Temperature (C°)	Mean coefficient of thermal expansion (m/m.°C)
Ferrynox 25	800	17,67.10 <sup>-6</sup>
	960	18,06.10 <sup>-6</sup>
	1000	18,16.10 <sup>-6</sup>



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## Mechanical properties

Creep Properties				
FC Reference	Temperature (C°)	Stress Rupture (Mpa)		Creep Rate 1%
		100h	1000h	10000h
Ferrynox 25	700	100	80	65
	800	75	50	36
	900	47	28	17
	1000	28	16	7

Tensile Test				
FC Reference	Temperature (C°)	Tensile Strength (Mpa)	Yield Point (Mpa)	Elongation (%)
Ferrynox 25	20	442	266	13
	700	346	161	16.8
	800	249	146	18.8
	900	146	117	20.5
	960	78	98	21
	1050	83	68	21.5

## Weldability

Ferrynox 25 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.