

**Aerospace series —  
Steel FE-PA3901  
(X1CrNi18-10) — Air  
melted — Softened —  
Wires —  
0,4 mm ≤ D ≤ 12,5 mm —  
450 MPa ≤ R<sub>m</sub>  
≤ 650 MPa**

The European Standard EN 2469:2007 has the status of a  
British Standard

ICS 49.025.10

## National foreword

This British Standard was published by BSI. It is the UK implementation of EN 2469:2007.

The UK participation in its preparation was entrusted by Technical Committee ACE/61, Metallic materials for aerospace purposes, to Panel ACE/61/-/15, Steels.

A list of organizations represented on ACE/61/-/15 can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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English Version

**Aerospace series - Steel FE-PA3901 (X1CrNi18-10) - Air melted  
- Softened - Wires -  $0,4 \text{ mm} \leq D \leq 12,5 \text{ mm}$  -  $450 \text{ MPa} \leq R_m \leq$   
 $650 \text{ MPa}$**

Série aérospatiale - Acier FE-PA3901 (X1CrNi18-10) -  
Élaboré à l'air - Trempé - Fils -  $0,4 \text{ mm} \leq D \leq 12,5 \text{ mm}$  -  
 $450 \text{ MPa} \leq R_m \leq 650 \text{ MPa}$

Luft- und Raumfahrt - Stahl FE-PA3901 (X1CrNi18-10) -  
Lufterschmolzen - Abgeschreckt - Drähte -  $0,4 \text{ mm} \leq D \leq$   
 $12,5 \text{ mm}$  -  $450 \text{ MPa} \leq R_m \leq 650 \text{ MPa}$

This European Standard was approved by CEN on 5 October 2006.

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## **Foreword**

This document (EN 2469:2007) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2007, and conflicting national standards shall be withdrawn at the latest by September 2007.

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## Introduction

This standard is part of the series of EN metallic material standards for aerospace applications. The general organization of this series is described in EN 4258.

This standard has been prepared in accordance with EN 4500-5.

## 1 Scope

This standard specifies the requirements relating to:

Steel FE-PA3901 (X1CrNi18-10)  
Air melted  
Softened  
Wires  
 $0,4 \text{ mm} \leq D \leq 12,5 \text{ mm}$   
 $450 \text{ MPa} \leq R_m \leq 650 \text{ MPa}$

for aerospace applications.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2002-6, *Aerospace series — Metallic materials — Test methods — Part 6: Bend testing*.<sup>1)</sup>

EN 2043, *Aerospace series — Metallic materials — General requirements for semi-finished product qualification (excluding forgings and castings)*.<sup>1)</sup>

EN 4258, *Aerospace series — Metallic materials — General organization of standardization — Links between types of EN standards and their use*.

EN 4500-5, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 5: Specific rules for steels*.<sup>1)</sup>

EN 4700-4, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 4: Wire*.<sup>1)</sup>

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<sup>1)</sup> Published as ASD Prestandard at the date of publication of this standard.

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1	Material designation		Steel FE-PA3901 (X1CrNi18-10)							
2	Chemical composition %	Element	C	Si	Mn	P	S	Cr	Ni	Fe
		min.	–	–	–	–	–	17,0	9,0	Base
		max.	0,030	1,00	2,00	0,035	0,025	19,0	12,0	
3	Method of melting		Air melted							
4.1	Form		Wires							
4.2	Method of production		–							
4.3	Limit dimension(s)	mm	$0,4 \leq D \leq 12,5$							
5	Technical specification		EN 4700-4							

6.1	Delivery condition		Softened							
	Heat treatment		$1\ 000\ ^\circ\text{C} \leq \theta \leq 1\ 100\ ^\circ\text{C} / \text{AC or WQ}$							
6.2	Delivery condition code		U							
7	Use condition		Delivery condition							
	Heat treatment		–							

## Characteristics

8.1	Test sample(s)		EN 4700-4										
8.2	Test piece(s)		EN 4700-4										
8.3	Heat treatment		Softened										
9	Dimensions concerned	mm	$0,4 \leq D \leq 6$				$6 < D \leq 12,5$						
10	Thickness of cladding on each face	%	–				–						
11	Direction of test piece		–				–						
12	Temperature	$\theta$	°C		Ambient				Ambient				
13	Proof stress	$R_{p0,2}$	MPa		$\geq 180$				$\geq 180$				
14	T	Strength	$R_m$	MPa		$450 \leq R_m \leq 650$				$450 \leq R_m \leq 650$			
15		Elongation	A	%		$\geq 40$				$\geq 45$			
16		Reduction of area	Z	%		–				–			
17		Hardness		$\leq 201\ \text{HB} ; \leq 212\ \text{HV}^a$				$\leq 201\ \text{HB} ; \leq 212\ \text{HV}^a$					
18	Shear strength	$R_c$	MPa		–								
19	Bending	k	–		–								
20	Impact strength		–										
21	Temperature	$\theta$	°C		–								
22	Time		h		–								
23	C	Stress	$\sigma_a$	MPa		–							
24		Elongation	a	%		–							
25		Rupture stress	$\sigma_R$	MPa		–							
26		Elongation at rupture	A	%		–							
27	Notes (see line 98)		a										

37	Bending of wires (single bend test)	1	EN 2002-6
		2	One end of each coil
		3	$D \leq 3 \text{ mm}$
		7	$\alpha = 180^\circ$ ; in contact
38	Corrosion (intergranular corrosion)	–	See EN 4700-4.
95	Marking inspection	–	See EN 4700-4.
96	Dimensional inspection	–	See EN 4700-4.
98	Notes	–	<sup>a</sup> HV for $D \leq 5 \text{ mm}$
99	Typical use	–	Austenitic corrosion resisting steel.

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100	-	Product qualification	-	See EN 2043.
				Qualification programme to be agreed between manufacturer and purchaser.





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