



# SLOVENSKI STANDARD SIST EN 2466:2009

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**ICS:**

49.025.10      Jekla      Steels

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EUROPEAN STANDARD

EN 2466

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2009

ICS 49.025.10

English Version

## Aerospace series - Steel FE-PA3901 (X2CrNi19-11) - Softened - Forgings - De ≤ 100 mm

Série aérospatiale - Acier FE-PA3901 (X2CrNi19-11) -  
Trempe - Pièces forgées et matricées - De ≤ 100 mm

Luft- und Raumfahrt - Stahl FE-PA3901 (X2CrNi19-11) -  
Abgeschreckt - Gesenk- und Freiformschmiedestücke - De  
≤ 100 mm

This European Standard was approved by CEN on 24 August 2008.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

**EN 2466:2009 (E)****Foreword**

This document (EN 2466:2009) 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 August 2009, and conflicting national standards shall be withdrawn at the latest by August 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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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 (X2CrNi19-11)  
Softened  
Forgings  
 $D_e \leq 100$  mm

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 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 4700-6, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 6: Pre-production and production forgings*<sup>2</sup>

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

<sup>2</sup> In preparation at the date of publication of this standard.

## EN 2466:2009 (E)

1	Material designation		Steel FE-PA3901 (X2CrNi19-11)								
2	Chemical composition %	Element	C	Si	Mn	P	S	Cr	Mo	Ni	Fe
		min.	–	–	–	–	–	17,0	–	9,0	Base
		max.	0,030	1,00	2,00	0,035	0,025	19,0	–	11,0	
3	Method of melting		Air melted								
4.1	Form		Forgings								
4.2	Method of production		Forged from forging stock EN xxxx *								
4.3	Limit dimension(s)	mm	$D_e \leq 100$								
5	Technical specification		EN 4700-6								

6.1	Delivery condition		Softened								
	Heat treatment		$1\ 000\ ^\circ\text{C} \leq \theta \leq 1\ 050\ ^\circ\text{C}$ / AQ or WQ								
6.2	Delivery condition code		A								
7	Use condition		Softened								
	Heat treatment		Delivery condition								

## Characteristics

8.1	Test sample(s)		See EN 4700-6.								
8.2	Test piece(s)		See EN 4700-6.								
8.3	Heat treatment		Softened						Reference <sup>a</sup> (see line 29) Bar: $D = 16\ \text{mm}$		
9	Dimensions concerned	mm	$\leq 100$								
10	Thickness of cladding on each face	%	SIST EN 2466:2009 –								
11	Direction of test piece		<a href="https://standards.iteh.ai/catalog/standards/sist/4ebac382-a109-4d6e-a4e8-b260f9446af/sist-en-2466-2009">https://standards.iteh.ai/catalog/standards/sist/4ebac382-a109-4d6e-a4e8-b260f9446af/sist-en-2466-2009</a>								
12	Temperature	$\theta$	°C		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	%		$\geq 45$			$\geq 45$			
16	Reduction of area	Z	%		–			–			
17	Hardness				$HB \leq 187$ $HV \leq 196^b$			$HB \leq 187$			
18	Shear strength	$R_c$	MPa*		–						
19	Bending	k	–		–						
20	Impact strength	kV	J		$\geq 100$			$\geq 100$			
21	Temperature	$\theta$	°C		–						
22	Time		h		–						
23	Stress	$\sigma_a$	MPa*		–						
24	C Elongation	a	%		–						
25	Rupture stress	$\sigma_R$	MPa*		–						
26	Elongation at rupture	A	%		–						
27	Notes (see line 98)		a, b								

\* In preparation at the date of publication this standard.

29	Reference heat treatment	–	Softened + (1 040 ± 10) °C / WQ
95	Marking inspection	–	See EN 4700-6.
96	Dimensional inspection	–	See EN 4700-6.
98	Notes	–	* 1 MPa = 1 N/mm <sup>2</sup> . a Optional test. b HV for $D_e \leq 5$ mm.
99	Typical use	–	Austenitic corrosion resisting steel.

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## EN 2466:2009 (E)

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