SLOVENSKI STANDARD

SIST EN 4263:2014

01-marec-2014

Aeronavtika - Toplotno odporna zlitina FE-PA4901 (X12CrNiCoMoW21-20) - Toplotno neobdelana (nekovana) - Kovni material - a ali D ≤ 200 mm - 690 MPa ≤ Rm ≤ 960 MPa

Aerospace series - Heat resisting alloy FE-PA4901 (X12CrNiCoMoW21-20) - As forged - Forging stock - a or D ≤ 200 mm - 690 MPa ≤ Rm ≤ 960MPa

Luft- und Raumfahrt - Hochwarmfeste Legierung FE-PA4901 (X12CrNiCoMoW21-20) - Nicht wärmebehandelt — Schmiedevormaterial - a oder D ≤ 200 mm - 690 MPa ≤ Rm ≤ 960 MPa

Série aérospatiale - Alliage résistant à chaud FE-PA4901 (X12CrNiCoMoW21-20) - Non traité - Produits destinés à la forge - a ou D ≤ 200mm - 690 MPa ≤ Rm ≤ 960MPa

Ta slovenski standard je istoveten z: **EN 4263:2013**

ICS:

49.025.05 Železove zlitine na splošno Ferrous alloys in general

SIST EN 4263:2014 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 4263

July 2013

ICS 49.025.01

English Version

Aerospace series - Heat resisting alloy FE-PA4901 (X12CrNiCoMoW21-20) - As forged - Forging stock - a or D ≤ 200 mm - 690 MPa ≤ Rm ≤ 960MPa

Série aérospatiale - Alliage résistant à chaud FE-PA4901 (X12CrNiCoMoW21-20) - Non traité - Produits destinés à la forge - a ou D ≤ 200mm - 690 MPa ≤ Rm ≤ 960MPa

Luft- und Raumfahrt - Hochwarmfeste Legierung FE-PA4901 (X12CrNiCoMoW21-20) - Nicht wärmebehandelt - Schmiedevormaterial - a oder D ≤ 200 mm - 690 MPa ≤ Rm ≤ 960 MPa

This European Standard was approved by CEN on 8 May 2013.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

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

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword

This document (EN 4263:2013) 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 January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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 4500-003.

1 Scope

This European Standard specifies the requirements relating to:

Heat resisting alloy FE-PA4901 (X12CrNiCoMoW21-20)
As forged
Forging stock
a or $D \leq 200$ mm
690 MPa $\leq R_m \leq$ 960 MPa

for aerospace applications.

2 Normative references

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

EN 2043, *Aerospace series — Metallic materials — General requirements for semi-finished product qualification (excluding forgings and castings)*[1)]

prEN 2860-2, *Aerospace series — Heat resisting alloys — Forging stock and forgings — Technical specification — Part 2: Forging stock*[1)]

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

EN 4500-003, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 003: Specific rules for heat resisting alloys*

1) Published as ASD-STAN Prestandard at the date of publication of this standard.

1	Material designation		Heat resisting alloy FE-PA4901 (X12CrNiCoMoW21-20)													
2	Chemical Composition %	Element	C	Si	Mn	P	S	Co	Cr	Cu	Mo	Nb	Ni	N2	W	Fe
		min.	0,080	–	1,00	–	–	18,5	20,0	–	2,50	0,75	19,0	0,10	2,00	Base
		max.	0,16	1,00	2,00	0,040	0,030	21,0	22,5	0,50	3,50	1,25	21,0	0,20	3,00	
3	Method of melting		Air melted													
4.1	Form		Forging stock													
4.2	Method of production		–													
4.3	Limit dimension(s)	mm	a or D ≤ 200													
5	Technical specification		EN 2860-2													

6.1	Delivery condition	As forged
	Heat treatment	–
6.2	Delivery condition code	U
7	Use condition	Delivery condition
	Heat treatment	–

Characteristics

8.1	Sample(s)				Cut from forging stock
8.2	Test piece(s)				–
8.3	Heat treatment				See line 29
9	Dimensions concerned			mm	a or $D \leq 200$
10	Thickness of cladding on each face			%	–
11	Direction of test piece				See EN 2860-2
12	T	Temperature	θ	°C	Ambient
13		Proof stress	$R_{p0,2}$	MPa	≥ 345
14		Strength	R_m	MPa	$690 \leq R_m \leq 960$
15		Elongation	A	%	≥ 30
16		Reduction of area	Z	%	–
17	Hardness				192 ≤ HB ≤ 241
18	Shear strength		R_c	MPa	–
19	Bending		k	-	–
20	Impact strength				–
21	C	Temperature	θ	°C	730[a)]
22		Time		h	$t_R \geq 100$
23		Stress	σ_a	MPa	–
24		Elongation	a	%	–
25		Rupture stress	σ_R	MPa	165
26		Elongation at rupture	A	%	≥ 8
27	Notes (see line 98)				a)

29	Reference heat treatment	–	Solution treated Nominal temperature according to the manufacturing schedule ± 15 °C/t = 1 h/WQ + *θ 0 815* °C ± 15 °C/t ≥ 4h / AC
44	External defects	–	See EN 2860-2
51	Macrostructure	–	See EN 2860-2
		7	To be defined on the order
61	Internal defects	–	See EN 2860-2
		7	Class 3
95	Marking inspection	–	See EN 2860-2
96	Dimensional inspection	–	See EN 2860-2
98	Notes	–	a) Proportional round test pieces.
99	Typical use	–	–