SLOVENSKI STANDARD
SIST EN 2119:2018

01-marec-2018

Aeronavtika - Toplotno odporna zlitina FE-PA2601 (X6NiCrTiMoV26-15) - Topilno žarjena in izločevalno utrjena - Žice za kovice - 2 mm ≤ D ≤ 10 mm - Rm ≥ 960 MPa

Aerospace series - Heat resisting alloy FE-PA2601 (X6NiCrTiMoV26-15) - Solution treated and precipitation treated - Wires for rivets - 2 mm ≤ D ≤ 10 mm - Rm ≥ 960 MPa

Luft- und Raumfahrt - Hochwarmfeste Legierung FE-PA2601 (X6NiCrTiMoV26-15) - Lösungsgeglüht und ausgehärtet - Drähte für Niete - 2 mm ≤ D ≤ 10 mm - Rm ≥ 960 MPa

Série aérospatiale - Acier résistant à chaud FE-PA2601 (X6NiCrTiMoV26-15) - Mis en solution et précipité - Fils pour rivets - 2 mm ≤ D ≤ 10 mm - Rm ≥ 960 MPa

Ta slovenski standard je istoveten z: **EN 2119:2017**

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49.025.05 Železove zlitine na splošno Ferrous alloys in general

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English Version

Aerospace series - Heat resisting alloy FE-PA2601 (X6NiCrTiMoV26-15) - Solution treated and precipitation treated - Wires for rivets - 2 mm ≤ D ≤ 10 mm - Rm ≥ 960 MPa

Série aérospatiale - Acier résistant à chaud FE-PA2601 (X6NiCrTiMoV26-15) - Mis en solution et précipité - Fils pour rivets - 2 mm ≤ D ≤ 10 mm - Rm ≥ 960 MPa

Luft- und Raumfahrt - Hochwarmfeste Legierung FE-PA2601 (X6NiCrTiMoV26-15) - Lösungsgeglüht und ausgehärtet - Drahte für Niete - 2 mm ≤ D ≤ 10 mm - Rm ≥ 960 MPa

This European Standard was approved by CEN on 11 September 2017.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 2119:2017) 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of an identical text or by endorsement, at the latest by June 2018 and conflicting national standards shall be withdrawn at the latest by June 2018.

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Introduction

This European 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 European Standard has been prepared in accordance with EN 4500-003.

1 Scope

This European Standard specifies the requirements relating to:

Heat resisting alloy FE-PA2601 (X6NiCrTiMoV26-15)
Solution treated and precipitation treated
Wires for rivets
2 mm ≤ D ≤ 10 mm
R_m ≥ 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)*

EN 3238, *Aerospace series — Metallic materials — Test method — Shear test for wires and rivets*

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*

EN 4700-002, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 002: Bar and section*

EN 4700-004, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 004: Wire*

3 Requirements

See Table 1.

Table 1 — Requirements for heat resisting alloy FE-PA2601

1	Material designation		Heat resisting alloy FE-PA2601 (X6NiCrTiMoV26-15)													
2	Chemical Composition %	Element	C	Si	Mn	P	S	Al	B	Cr	Mo	Ni	Ti	V	Pb	Fe
		min.	–	–	–	–	–	–	30 *	13,5	1,00	24,0	1,90	0,10	–	Base
		max.	0,080	1,00	2,00	0,020	0,015	0,35	100 *	16,0	1,50	27,0	2,30	0,50	20 *	
3	Method of melting		Consumable electrode remelted													
4.1	Form		Wire													
4.2	Method of production		–													
4.3	Limit dimension(s)	mm	$2 \le D \le 10$													
5	Technical specification		EN 4700-004													

6.1	Delivery condition	Solution treated
	Heat treatment	900 °C ≤ θ ≤ 930 °C [a] / t ≥ 15 min/OQ or WQ
6.2	Delivery condition code	W
7	Use condition	Solution treated and precipitation treated
	Heat treatment	Delivery condition + 680 °C ≤ θ ≤ 780 °C / t ≥ 30 min/AC

Characteristics

8.1	Test sample(s)				See EN 4700-002.	
8.2	Test piece(s)				See EN 4700-002.	
8.3	Heat treatment				Delivery condition	Use condition
9	Dimensions concerned			mm	$2 \le D \le 10$	$2 \le D \le 10$
10	Thickness of cladding on each face			%	–	–
11	Direction of test piece				See EN 4700-004.	See EN 4700-004.
12	T	Temperature	θ	°C	Ambient	Ambient
13	T	Proof stress	$R_{p0,2}$	MPa	–	–
14	T	Strength	R_m	MPa	≤ 720	≥ 960
15	T	Elongation	A	%	–	–
16	T	Reduction of area	Z	%	–	–
17	Hardness				≤ 205 HV	≥ 260 HV
18	Shear strength		R_c	MPa	–	550 ≤ R_c ≤ 650 [b]
19	Bending		k	–	–	
20	Impact strength				–	
21	C	Temperature	θ	°C	–	
22	C	Time		h	–	
23	C	Stress	σ_a	MPa	–	
24	C	Elongation	a	%	–	
25	C	Rupture stress	σ_R	MPa	–	
26	C	Elongation at rupture	A	%	–	
27	Notes (see line 98)				*, a, b	

34	Grain size	–	See EN 4700-004.
		2	One per batch
		3	L and LT
		7	G ≥ 5 - No duplex structure
36	Reverse torsion test for wires	–	See EN 4700-004.
		7	6 turns in each direction
37	Bending of wires (Reverse bend)	–	See EN 4700-004.
		7	5 times without failure
44	External defects	–	External imperfections – See EN 4700-004.
		1	Only visual testing is required
95	Marking inspection	–	See EN 4700-004.
96	Dimensional inspection	–	See EN 4700-004.
98	Notes	–	* p.p.m. a Heat treatment at θ = 980 °C ± 10 °C may be used by agreement between manufacturer and purchaser. b See EN 3238.
99	Typical use	–	–