SLOVENSKI STANDARD
SIST EN 3361:2009

01-maj-2009

Aeronavtika - Jeklo FE-PM1802 (X5CrNiCu15-5) - Pretaljeno s talilno elektrodo, ģarjeno v topilu in utrjeno, ploļ evina in trakovi a Ò6mm, 1070 MPa ÒRm Ò1220 MPa

Aerospace series - Steel FE-PM1802 (X5CrNiCu15-5) - Consumable electrode remelted, solution treated and precipitation treated, sheet and strip a Ò6mm, 1 070 MPa ÒRm Ò1 220 MPa

Luft- und Raumfahrt - Stahl FE-PM1802 (X5CrNiCu15-5) - Mit selbstverzehrender Elektrode umgeschmolzen, lº sungsgegl¿ht und ausgeh ª rtet, Bleche und B ª nder a Ò6 mm, 1 070 MPa ÒRm Ò1 220 MPa

S®rie a®rospatiale - Acier FE-PM1802 (X5CrNiCu15-5) - Refondu ¨ l'®lectrode consommable, mis en solution et vieilli, t¹ les et bandes a Ò6 mm, 1 070 MPa ÒRm Ò1 220 MPa

Ta slovenski standard je istoveten z: **EN 3361:2007**

ICS:

49.025.10 Jekla Steels

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EUROPEAN STANDARD
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English Version

Aerospace series - Steel FE-PM1802 (X5CrNiCu15-5) - Consumable electrode remelted, solution treated and precipitation treated, sheet and strip a ≤ 6mm, 1 070 MPa ≤ Rm ≤ 1 220 MPa

Série aérospatiale - Acier FE-PM1802 (X5CrNiCu15-5) - Refondu à l'électrode consommable, mis en solution et vieilli, tôles et bandes a ≤ 6 mm, 1 070 MPa ≤ Rm ≤ 1 220 MPa

Luft- und Raumfahrt - Stahl FE-PM1802 (X5CrNiCu15-5) - Mit selbstverzehrender Elektrode umgeschmolzen, lösungsgeglüht und ausgelagert, Bleche und Bänder a ≤ 6 mm, 1 070 MPa ≤ Rm ≤ 1 220 MPa

This European Standard was approved by CEN on 15 February 2007.

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

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Foreword

This document (EN 3361:2007) 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of an identical text or by endorsement, at the latest by January 2008, and conflicting national standards shall be withdrawn at the latest by January 2008.

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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-PM1802 (X5CrNiCu15-5) — Consumable electrode remelted, solution treated and precipitation treated, sheet and strip $a \leq 6$ mm, 1 070 MPa $\leq R_m \leq$ 1 220 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 2043, *Aerospace series — Metallic materials — General requirements for semi-finished product qualification (excluding forgings and castings)*[1)]

EN 2951, *Aerospace series — Metallic materials — Test method — Micrographic determination of content of non-metallic inclusions*[1)]

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 the drafting and presentation of material standards — Part 5: Specific rules for steels*[1)]

EN 4700-1, *Aerospace series — Steel and heat resisting alloy — Wrought products — Technical specification — Part 1: Plate, sheet and strip*[1)]

1) Published as AECMA Prestandard at the date of publication of this standard.

1	**Material designation**		**Steel FE-PM1802 (X5CrNiCu15-5)**										
2	Chemical composition %	Element	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Nb+Ta	Fe
		min.	–	–	–	–	–	15,0	–	3,0	3,0	5 x C	Base
		max.	0,07	1,00	1,00	0,030	0,015	15,5	0,50	5,5	4,5	0,45	
3	Method of melting		Consumable electrode remelted										
4.1	Form		Sheet and strip										
4.2	Method of production		Cold rolled										
4.3	Limit dimension(s)	mm	$a \leq 6$										
5	Technical specification		EN 4700-1										

6.1	Delivery condition	Solution treated	Solution treated and precipitation treated
	Heat treatment	1 025 °C ≤ θ ≤ 1 055 °C / 30 ≤ t ≤ 40 min / AC or OQ + cool to θ ≤ 30 °C	1 025 °C ≤ θ ≤ 1 055 °C / 30 ≤ t ≤ 40 min / AC or OQ + cool to θ ≤ 30 °C + 535 °C ≤ θ ≤ 565 °C / t ≥ 4 h / AC
6.2	Delivery condition code	W	U
7	Use condition	Solution treated and precipitation treated	Delivery condition
	Heat treatment	Delivery condition + 535 °C ≤ θ ≤ 565 °C / t ≥ 4 h / AC	–

Characteristics

8.1	Test sample(s)			Solution treated		Use condition	
8.2	Test piece(s)			See EN 4700-1		See EN 4700-1	
8.3	Heat treatment			Solution treated		Use condition	
9	Dimensions concerned		mm	$a \leq 2,8$	$2,8 < a \leq 6$	$a \leq 6$	
10	Thickness of cladding on each face		%	–	–	–	
11	Direction of test piece			–	–	L	T
12	T	Temperature	°C	–	–	Ambient	Ambient
13	T	Proof stress	MPa	–	–	≥ 1 000	≥ 1 000
14	T	Strength	MPa	–	–	1 070 ≤ R_m ≤ 1 220	1 070 ≤ R_m ≤ 1 220
15	T	Elongation	%	–	–	≥ 8	≥ 5
16	T	Reduction of area	%	–	–	≥ 35	≥ 15
17	Hardness			≤ 363 HB or ≤ 383 HV	≤ 363 HB or ≤ 383 HV	34 ≤ HRC ≤ 39; 335 ≤ HV ≤ 385	
18	Shear strength		MPa	–	–	–	
19	Bending		–	18; α = 180°	1)	–	
20	Impact strength			–			
21	C	Temperature	°C	–			
22	C	Time	h	–			
23	C	Stress	MPa	–			
24	C	Elongation	%	–			
25	C	Rupture stress	MPa	–			
26	C	Elongation at rupture	%	–			
27	Notes (see line 98)			1)			

30	Microstructure	–	See EN 4700-1
		7	The δ-ferrite content shall not exceed 2 %
44	External defects	–	See EN 4700-1
		1	Visual
50	Cleanliness/inclusion content (micro-cleanness)	–	See EN 4700-1
		1	EN 2951
		7	Category 4
95	Marking	–	See EN 4700-1
96	Dimensional inspection	–	See EN 4700-1
98	Notes	–	[1]) To be agreed between manufacturer and purchaser.
99	Typical use	–	–