SLOVENSKI STANDARD
oSIST prEN 3361:2021

01-november-2021

Aeronavtika - Jeklo X5CrNiCu15 5 (1.4545) - Pretaljeno s talilno elektrodo - Žarjeno v topilu in utrjeno - Pločevina in trakovi a ≤ 6mm - 1070 MPa ≤ Rm ≤ 1220 MPa

Aerospace series - Steel X5CrNiCu15 5 (1.4545) - Consumable electrode remelted - Solution treated and precipitation treated - Sheets and strips - a ≤ 6mm - 1 070 MPa ≤ Rm ≤ 1 220 MPa

Luft- und Raumfahrt - Stahl X5CrNiCu15-5 (1.454) - Mit selbstverzehrender Elektrode umgeschmolzen - Lösungsgeglüht und ausscheidungsgehärtet - Bleche und Bänder - a ≤ 6 mm - 1 070 MPa ≤ Rm ≤ 1 220 MPa

Série aérospatiale - Acier X5CrNiCu15-5 (1.4545) - Refondu à l'électrode consommable - Mis en solution et vieilli - Tôles et bandes - a ≤ 6 mm - 1 070 MPa ≤ Rm ≤ 1 220 MPa

Ta slovenski standard je istoveten z: **prEN 3361**

ICS:

49.025.10 Jekla Steels

oSIST prEN 3361:2021 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 3361

September 2021

ICS 49.025.10

Will supersede EN 3361:2007

English Version

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 3361:2021) 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 document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 3361:2007.

Introduction

This document 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 document has been prepared in accordance with EN 4500-005.

1 Scope

This document specifies the requirements relating to:

Steel X5CrNiCu15-5 (1.4545)

Consumable electrode remelted

Solution treated and precipitation treated

Sheets and strips

$a \leq 6$ mm

1 070 MPa ≤ R_m ≤ 1 220 MPa

for aerospace applications.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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)*

EN 2951, *Aerospace series - Metallic materials - Micrographic determination of content of non-metallic inclusions*

EN 4700-001, *Aerospace series - Steel and heat resisting alloys - Wrought products - Technical specification - Part 001: Plate, sheet and strip*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at https://www.iso.org/obp
- IEC Electropedia: available at https://www.electropedia.org/

4 Requirements

See Table 1.

Table 1 — Requirements for Steel X5CrNiCu15–5 (1.4545)

1	Material designation		Steel X5CrNiCu15-5 (1.4545)										
2	Chemical Composition %	Element	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Nb+Ta	Fe
		min.	—	—	—	—	—	15,0	—	3,0	3,0	5 × 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		Sheets and strips										
4.2	Method of production		Cold rolled										
4.3	Limit dimension(s)	mm	$a \leq 6$										
5	Technical specification		EN 4700-001										

	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)				See EN 4700-001			
8.2	Test piece(s)				See EN 4700-001			
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	θ	°C	—	—	Ambient	Ambient
13	T	Proof stress	$R_{p0,2}$	MPa	—	—	≥ 1 000	≥ 1 000
14	T	Strength	R_m	MPa	—	—	1 070 ≤ R_m ≤ 1 220	1 070 ≤ R_m ≤ 1 220
15	T	Elongation	A	%	—	—	≥ 8	≥ 5
16	T	Reduction of area	Z	%	—	—	≥ 35	≥ 15
17	Hardness				≤ 363 HB or ≤ 383 HV	≤ 363 HB or ≤ 383 HV	34 ≤ HRC ≤ 39; 335 ≤ HV ≤ 385	
18	Shear strength		R_c	MPa	—	—	—	
19	Bending		k	—	18; $\alpha = 180°$	a	—	
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			

30	Microstructure	—	See EN 4700-001
		7	The δ-ferrite content shall not exceed 2 %
44	External imperfections (visual testing — VT)	—	See EN 4700-001
		1	Visual
50	Inclusion content	—	See EN 4700-001
		1	EN 2951
		7	Category 4
95	Marking inspection	—	See EN 4700-001
96	Dimensional inspection	—	See EN 4700-001
98	Notes	—	[a] To be agreed between manufacturer and purchaser.
99	Typical use	—	—

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