SLOVENSKI STANDARD
oSIST prEN 3487:2020

01-november-2020

Aeronavtika - Jeklo X6CrNiTi18-10 (1.4541) - Taljeno na zraku - Popuščano - Palice za obdelavo - a ali D =< 250 mm - 500 MPa =< Rm =< 700 MPa

Aerospace series - Steel X6CrNiTi18-10 (1.4541) - Air melted - Softened - Bars for machining - a or D ≤ 250 mm - 500 MPa ≤ Rm ≤ 700 MPa

Luft- und Raumfahrt - Stahl X6CrNiTi18-10 (1.4541) - Lufterschmolzen - Weichgeglüht - Stangen zur spanenden Bearbeitung - a oder D ≤ 250 mm - 500 MPa ≤ Rm ≤ 700 MPa

Série aérospatiale - Acier X6CrNiTi18-10 (1.4541) - Élaboré à l'air - Adouci - Barres pour usinage - a ou D ≤ 250 mm - 500 MPa ≤ Rm ≤ 700 MPa

Ta slovenski standard je istoveten z: **prEN 3487**

ICS:

49.025.10	Jekla	Steels
77.140.60	Jeklene palice in drogovi	Steel bars and rods

oSIST prEN 3487:2020 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 3487

September 2020

ICS 49.025.10

Will supersede EN 3487:2007

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 3487:2020) 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-STAN, prior to its presentation to CEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 3487:2007.

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 X6CrNiTi18–10 (1.4541)

Air melted

Softened

Bars for machining

a or $D \leq 250$ mm

500 MPa $\leq R_m \leq$ 700 MPa

for aerospace applications.

W.nr: 1.4541.

ASD-STAN designation: FE-PA3601.

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 4436,[1] *Aerospace series - Steel - Test methods - Determination of δ ferrite content*

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

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 http://www.electropedia.org/

4 Requirements

See Table 1.

[1] Published as ASD-STAN Standard at the date of publication of this document by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN), http://www.asd-stan.org/

Table 1 — Requirements for steel X6CrNiTi18–10 (1.4541)

1	Material designation		Steel X6CrNiTi18–10 (1.4541)								
2	Chemical composition %	Element	C	Si	Mn	S [a]	P [a]	Cr [a]	Ni [a]	Ti	Fe
		min.	—	—	—	—	—	17,00	9,00	5 × C	Base
		max.	0,08	1,00	2,00	0,030	0,045	19,00	12,00	0,70	
3	Method of melting		Air melted								
4.1	Form		Bars for machining								
4.2	Method of production		Rolled or forged or drawn								
4.3	Limit dimension(s)	mm	a or $D \leq 250$								
5	Technical specification		EN 4700-002								

6.1	Delivery condition	Softened	
	Heat treatment	1 050 °C ≤ θ ≤ 1 100 °C/WQ or AQ	
6.2	Delivery condition code	*U*	
7	Use condition	Delivery condition	
	Heat treatment	—	

			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		
9	Dimensions concerned	mm	a or $D \leq 50$	50 < a or $D \leq 250$	
10	Thickness of cladding on each face	%	—		
11	Direction of test piece		*L*		
12	T — Temperature	θ °C	Ambient		
13	T — Proof stress	$R_{p0,2}$ MPa	≥ 220	≥ 210	
14	T — Strength	R_m MPa	500 ≤ R_m ≤ 700		
15	T — Elongation	A %	≥ 40		
16	T — Reduction of area	Z %	—		
17	Hardness	HB	≤ 217		
18	Shear strength	R_c MPa	—		
19	Bending	k —	—		
20	Impact strength		—		

21	C	Temperature	θ	°C	—
22		Time		h	—
23		Stress	σ_a	MPa	—
24		Elongation	a	%	—
25		Rupture stress	σ_R	MPa	—
26		Elongation at rupture	A	%	—
27	Notes (see line 98)				a

30	Microstructure	—	See EN 4700-002.
		1	EN 4436
		7	The δ ferrite content shall not exceed 8 %.
38	Intergranular corrosion	—	See EN 4700-002.
44	External imperfections (visual testing – VT)	—	See EN 4700-002.
50	Inclusion content	—	See EN 4700-002.
		7	Category 2
61	Internal imperfections (ultrasonic testing – UT)	—	See EN 4700-002.
		7	Class 2
95	Marking inspection	—	See EN 4700-002.
96	Dimensional inspection	—	See EN 4700-002.
98	Notes	—	[a] For specific welding applications (e.g. high power beam), and after agreement between manufacturer and purchaser: - maximum content of S and P should be reduced to 0,005 % and 0,020 %, respectively; - ratio between Cr and Ni according to SUUTALA Formula should be > 1,67 %; - S + P + B should be ≤ 0,025 %.
99	Typical use	—	—

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