SLOVENSKI STANDARD
SIST EN 3484:2020

01-februar-2020

Aeronavtika - Jeklo X5CrNiCuNb16-4 (1.4549 tip 1.4542) - Kot litina - Referenčna toplotna obdelava: homogenizirano, topilno žarjeno, izločevalno utrjeno in s temperaturo pod nič stopinj - Material za pretaljevanje

Aerospace series - Steel FE-CM61 - As cast - Reference heat treatment: homogenised, solution treated, precipitation hardened and sub zero - Remelting stock

Luft- und Raumfahrt - Stahl FE-CM61 - Gegossen - Referenz wärmbehandlung: diffusionsgeglüht, losungsgeglüht, ausgehärtet und tieftemperaturbehandelt - Guss vor material

Série aérospatiale - Acier FE-CM61 - Coulé - Traitement hermique de référence : homogénéisé, mis en solution, durci par précipitation et traité par le froid - Demi-produits pour refusion

Ta slovenski standard je istoveten z: **EN 3484:2019**

ICS:

49.025.10 Jekla Steels

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English Version

Aerospace series - Steel X5CrNiCuNb16-4 (1.4549 type 1.4542) - As cast - Reference heat treatment: homogenised, solution treated, precipitation hardened and sub zero - Remelting stock

Série aérospatiale - Acier X5CrNiCuNb16-4 (1.4549 type 1.4542) - Brut de coulée - Traitement thermique de référence : homogénéisé, mis en solution, durci par précipitation et traité sous-zéro - Produits pour refusion

Luft- und Raumfahrt - Stahl X5CrNiCuNb16-4 (1.4549 typ 1.4542) - Gegossen - Referenz wärmebehandlung: diffusionsgeglüht, lösungsgeglüht, ausgehärtet und tieftemperaturbehandelt - Gussvormaterial

This European Standard was approved by CEN on 22 April 2019.

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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 (EN 3484:2019) 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 document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2020, and conflicting national standards shall be withdrawn at the latest by June 2020.

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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 X5CrNiCuNb16-4 (1.4549 type 1.4542)
As cast
Reference heat treatment:
homogenised, solution treated, precipitation hardened and sub zero
Remelting stock

for aerospace applications.

ASD-STAN designation: FE-CM61.

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 2103-2, *Aerospace series — Steel, nickel base and cobalt base alloy remelting stock and castings — Technical specification — Part 2: Remelting stock*

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 http://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

4 Requirements

See Table 1.

Table 1 — Requirements for steel X5CrNiCuNb16-4 (1.4549 type 1.4542)

1	Material designation		Steel X5CrNiCuNb16-4 (1.4549 type 1.4542)										
2	Chemical composition %	Element	C	Si	Mn	P	S	Cr	Ni	Cu	N	Nb + Ta	Fe
		min.	–	0,50	–	–	–	15,5	3,6	2,8	–	0,15	Rem.
		max.	0,06	1,00	0,70	0,030	0,030	16,7	4,6	3,5	0,05	0,40	
3	Method of melting		EN 2103-2										
4.1	Form		Remelting stock										
4.2	Method of production		–										
4.3	Limit dimension(s)	mm	–										
5	Technical specification		EN 2103-2										

6.1	Delivery condition	As cast
	Heat treatment	
6.2	Delivery condition code	U
7	Use condition	As delivered
	Heat treatment	

Characteristics

8.1	Test sample(s)				Separately cast test pieces	
8.2	Test piece(s)				–	
8.3	Heat treatment				Reference heat treatment: see line 29.	
9	Dimensions concerned			mm	–	
10	Thickness of cladding on each face			%	–	
11	Direction of test piece				L or LT in accordance with EN 2103-2	
12	T	Temperature	θ	°C	Ambient	
13	T	Proof stress	$R_{p0,2}$	MPa*	≥ 1 100	
14	T	Strength	R_m	MPa*	≥ 1 240	
15	T	Elongation	A	%	≥ 5	
16	T	Reduction of area	Z	%	–	
17	Hardness				≥ 40 HRC	≥ 363 HB
18	Shear strength		R_c	MPa*	–	
19	Bending		k	–	–	
20	Impact strength				–	
21	C	Temperature	θ	–	–	
22	C	Time		h	–	
23	C	Stress	σ_a	–	–	
24	C	Elongation	a	–	–	
25	C	Rupture stress	σ_R	–	–	
26	C	Elongation at rupture	A	–	–	
27	Notes (see line 98)				*	

29	Reference heat treatment		–	Homogenised, solution treated, precipitation hardened and sub zero θ = 1 150 °C/t ≥ 90 min/AC or OQ θ = 1 040 °C/t ≥ 60 min/AC or OQ θ = 480 °C/t ≥ 4 h/AC θ = - 70 °C/t ≥ 60 min
97	Designation		–	–
98	Notes		–	*) 1 MPa = 1 N/mm²
99	Typical use		–	–
100	–	Product qualification	–	–
				Qualification programme to be agreed between manufacturer and purchaser.