



# SLOVENSKI STANDARD

## SIST EN 4882:2023

01-marec-2023

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**Aeronavtika - Jeklo X5CrNiCu 17-4 (1.4542) - Taljeno - Topilno žarjeno in izločevalno utrjeno - Pločevina in trakovi -  $a \leq 6$  mm -  $R_m \geq 1070$  MPa**

Aerospace series - Steel X5CrNiCu 17-4 (1.4542) - Air melted - Solution treated and precipitation treated - Sheets and strips -  $a \leq 6$  mm -  $R_m \geq 1070$  MPa

Luft- und Raumfahrt - Stahl X5CrNiCu 17-4 (1.4542) - Lufterschmolzen - Lösungsgeglüht und ausscheidungsgehärtet - Bleche und Bänder -  $a \leq 6$  mm -  $R_m \geq 1070$  MPa

Série aérospatiale - Acier X5CrNiCu 17-4 (1.4542) - Élaboré à l'air - Mis en solution et précipité - Tôles et bandes -  $a \leq 6$  mm -  $R_m \geq 1070$  MPa

**Ta slovenski standard je istoveten z: EN 4882:2022**

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**ICS:**

49.025.10	Jekla	Steels
77.140.50	Ploščati jekleni izdelki in polizdelki	Flat steel products and semi-products

**SIST EN 4882:2023**

**en,fr,de**



EUROPEAN STANDARD

EN 4882

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2022

ICS 49.025.10

English Version

**Aerospace series - Steel X5CrNiCu 17-4 (1.4542) - Air  
melted - Solution treated and precipitation treated - Sheets  
and strips -  $a \leq 6$  mm -  $R_m \geq 1\ 070$  MPa**

Série aérospatiale - Acier X5CrNiCu 17-4 (1.4542) -  
Élaboré à l'air - Mis en solution et précipité - Tôles et  
bandes -  $a \leq 6$  mm -  $R_m \geq 1\ 070$  MPa

Luft- und Raumfahrt - Stahl X5CrNiCu 17-4 (1.4542) -  
Lufterschmolzen - Lösungsgeglüht und  
ausscheidungsgehärtet - Bleche und Bänder -  $a \leq 6$  mm  
-  $R_m \geq 1\ 070$  MPa

This European Standard was approved by CEN on 22 August 2022.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



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 4882:2022) 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, 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 2023, and conflicting national standards shall be withdrawn at the latest by June 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this document: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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**EN 4882:2022 (E)**

## **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.

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## 1 Scope

This document specifies the requirements relating to:

Steel X5CrNiCu 17-4 (1.4542)  
Air melted  
Solution treated and precipitation treated  
Sheets and strips  
 $a \leq 6$  mm  
 $R_m \geq 1\ 070$  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 4700-001, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 001: Plate, sheet and strip*

AMS 2315,<sup>1)</sup> *Determination of Delta Ferrite Content*

## 3 Terms and definitions

No terms and definitions are listed in this document.

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

- ISO Online browsing platform: available at [https://www.iso.org/obp/](https://www.iso.org/obp/ui/#iso:code:3964b0c99d6/sist-en-4882-2023)
- IEC Electropedia: available at <https://www.electropedia.org/>

## 4 Requirements

See Table 1.

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<sup>1)</sup> Published by: SAE International (US), <https://www.sae.org/>.

Table 1 — Requirements for steel X5CrNiCu 17-4 (1.4542)

1	Material designation	Steel X5CrNiCu 17-4 (1.4542)												
2	Chemical composition %	Element	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Nn + Ta	Fe	
		min.	—	—	—	—	—	15,0	—	3,0	3,0	5 × C	Base	
		max.	0,07	1,00	1,00	0,040	0,030	17,5	0,50	5,0	5,0	0,45		
3	Method of melting	Air melted												
4.1	Form	Sheets and strips												
4.2	Method of production	Hot or cold rolled												
4.3	Limit dimension(s)	mm	$a \leq 6$											
5	Technical specification	EN 4700-001												

6.1	Delivery condition	Solution treated	Solution treated and precipitation treated
	Heat treatment	$1\ 025\ ^\circ\text{C} \leq \theta \leq 1\ 055\ ^\circ\text{C}/t \geq 30\ \text{min/AC}$ , PQ or OQ + cool to $\theta \leq 30\ ^\circ\text{C}$	$1\ 025\ ^\circ\text{C} \leq \theta \leq 1\ 055\ ^\circ\text{C}/t \geq 30\ \text{min/AC}$ , PQ or OQ + cool to $\theta \leq 30\ ^\circ\text{C}$ + $540\ ^\circ\text{C} \leq \theta \leq 560\ ^\circ\text{C}/t \geq 4\ \text{h/AC}$
6.2	Delivery condition code	<i>W</i>	<i>U</i>
7	Use condition	Solution treated and precipitation treated	Delivery condition
	Heat treatment	Delivery condition + $540\ ^\circ\text{C} \leq \theta \leq 560\ ^\circ\text{C}/t \geq 4\ \text{h/AC}$	—

## Characteristics

8.1	Test sample(s)	According to EN 4700-001.													
8.2	Test piece(s)	According to EN 4700-001.													
8.3	Heat treatment	Solution treated											Use condition		
9	Dimensions concerned	mm	$a \leq 6$												
10	Thickness of cladding on each face	%	—												
11	Direction of test piece	—											L		
12	T	Temperature	$\theta$	$^\circ\text{C}$	—									Ambient	
13		Proof stress	$R_{p0,2}$	MPa	—									$\geq 1\ 000$	
14		Strength	$R_m$	MPa	—									$\geq 1\ 070$	
15		Elongation	$A$	%	—									$\geq 6$	
16		Reduction of area	$Z$	%	—									—	
17	Hardness	HV	$\leq 370$											$364 \leq \text{HV} \leq 431^a$	
18	Shear strength	$R_c$	MPa	—											—
19	Bending	$k$	—	—											—
20	Impact strength	—											—		
21	C	Temperature	$\theta$	$^\circ\text{C}$	—									—	
22		Time	h		—									—	
23		Stress	$\sigma_a$	MPa	—									—	
24		Elongation	$a$	%	—									—	
25		Rupture stress	$\sigma_R$	MPa	—									—	
26		Elongation at rupture	$A$	%	—									—	
27	Notes (see line 98)	a													

30	Microstructure	—	According to EN 4700-001.
		1	According to AMS 2315.
		7	The $\delta$ ferrite content shall not exceed 5 %.
34	Grain size	—	According to EN 4700-001.
		7	$G \geq 4$
44	External imperfections (visual testing - VT)	—	According to EN 4700-001.
		1	Visual.
50	Inclusion content	—	According to EN 4700-001.
		7	Category 2
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95	Marking inspection	—	According to EN 4700-001.
96	Dimensional inspection	—	According to EN 4700-001.
98	Notes	—	a Or $34 \leq \text{HRC} \leq 42$ .
99	Typical use	—	—

## EN 4882:2022 (E)

100	—	Product qualification	—	<p data-bbox="963 174 1102 203">EN 4700-001</p> <p data-bbox="659 219 1406 271">The qualification programme shall be agreed between manufacturer and purchaser.</p>
<p data-bbox="391 972 1201 1106" style="text-align: center;">iTeh STANDARD PREVIEW (standards.iteh.ai)</p> <p data-bbox="667 1155 927 1189" style="text-align: center;"><u>SIST EN 4882:2023</u></p> <p data-bbox="205 1196 1385 1267" style="text-align: center;"><a href="https://standards.iteh.ai/catalog/standards/sist/e27cdc47-a096-40e1-a3af-8f964b0c99d6/sist-en-4882-2023">https://standards.iteh.ai/catalog/standards/sist/e27cdc47-a096-40e1-a3af-8f964b0c99d6/sist-en-4882-2023</a></p>				