



SLOVENSKI STANDARD
SIST EN 4500-004:2024

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Aeronavtika - Kovinski materiali - Pravila za načrtovanje in predstavljanje standardov za materiale - 004. del: Posebna pravila za titan in titanove zlitine

Aerospace series - Metallic materials - Rules for drafting and presentation of material standards - Part 004: Specific rules for titanium and titanium alloys

Luft- und Raumfahrt - Metallische Werkstoffe - Regeln für das Erstellen und die Gestaltung von Werkstoffnormen Teil 004: Besondere Regeln für Titan und Titanlegierungen

Série aérospatiale - Matériaux métalliques - Règles pour la rédaction et la présentation des normes de matériaux - Partie 004: Règles spécifiques au titane et aux alliages de titane

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Aerospace series - Metallic materials - Rules for drafting and presentation of material standards - Part 004: Specific rules for titanium and titanium alloys

Série aérospatiale - Matériaux métalliques - Règles
pour la rédaction et la présentation des normes de
matériaux - Partie 004: Règles spécifiques au titane et
aux alliages de titane

Luft- und Raumfahrt - Metallische Werkstoffe - Regeln
für das Erstellen und die Gestaltung von
Werkstoffnormen Teil 004: Besondere Regeln für Titan
und Titanlegierungen

This European Standard was approved by CEN on 17 June 2024.

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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EN 4500-004:2024(E)**European foreword**

This document (EN 4500-004:2024) has been prepared by 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 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2025, and conflicting national standards shall be withdrawn at the latest by February 2025.

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.

This document supersedes EN 4500-004:2012.

The main changes with respect to the previous edition are as follows:

EN 4500-004 (P2), 10/2012 — XXXX.

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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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.

The EN 4500 series (*Aerospace series — Metallic materials — Rules for drafting and presentation of material standards*) is composed by the following documents:

- General rules EN 4500-001;
- Specific rules for aluminium, aluminium alloys and magnesium alloys EN 4500-002;
- Specific rules for heat-resisting alloys EN 4500-003;
- Specific rules for titanium and titanium alloys EN 4500-004;
- Specific rules for steels EN 4500-005;
- Specific rules for filler metals for welding EN 4500-002 to EN 4500-005;
- Specific rules for filler metals for brazing EN 4500-006.

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EN 4500-004:2024(E)**1 Scope**

The EN 4500 series specifies the rules for the drafting and presentation of metallic material standards for aerospace applications.

This Part 004 specifies the “Specific rules for titanium and titanium alloys”.

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 4259, *Aerospace series — Metallic materials — Definition of general terms*

EN 4500-001, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 001: General rules*

EN 4800-001,¹ *Aerospace series — Titanium and titanium alloys — Technical specification — Part 001: Plates, sheets and strips*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 4259 and EN 4500-001 apply.

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/>

— IEC Electropedia: available at <https://www.electropedia.org/>

4 Rules for drafting a European standard for aerospace metallic materials**4.1 General**

Examples given in Annexes are only intended to illustrate the rules for drafting and presentation and might not correspond to real standardized EN semi-finished products. Technological development can require the use of terms additional to those listed.

4.2 Title**4.2.1 General**

Should be according to EN 4500-001 and Annex A of this document.

The following are examples of descriptions which shall be used.

¹ Published as ASD-STAN prEN at the date of publication of this document available at: <https://www.asd-stan.org/>.

4.2.2 Method of melting

For forging stock and forgings, only the required grade shall be indicated in accordance with EN 4800-001.

For other forms, use one or more of the following terms:

- non consumable electrode vacuum melted;
- consumable electrode vacuum arc melted;
- consumable electrode vacuum arc remelted;
- multiple melted;
- plasma cold hearth melted (P.C.H.M.);
- electron-beam melted.

4.2.3 Form entries

- a) Sheets, strips, plates.

The terms may be qualified with one of the following terms:

- 1) cold rolled;
- 2) hot rolled.

- b) Bars.

The term may be qualified with one or more of the following terms:

- 1) rolled;
- 2) extruded;
- 3) forged.

- c) Sections.

The term may be qualified with the following term:

- 1) extruded.

- d) Tubes.

The term may be qualified with one or more of the following terms:

- 1) rolled;
- 2) drawn;
- 3) extruded;

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- 4) seamless;
- 5) welded.
- e) Wires.

The term may be qualified with one or more of the following terms:

- 1) extruded;
- 2) rolled;
- 3) drawn.
- f) Forging stock.
- g) Forgings.
- h) Remelting stock.
- i) Castings.

The term may be qualified with one or more of the following terms:

- 1) investment;
- 2) rammed graphite mould;
- 3) hot isostatically pressed (hipped).
- j) Rings.

The term may be qualified with one or more of the following terms:

- 1) rolled;
- 2) forged;
- 3) welded.

4.2.4 Additional information entries

- For structural applications.
- For pressure applications.
- For superplastic forming.
- For machining.
- For forged fasteners.
- For machined fasteners.
- For welding.