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**Aeronavtika - Kovinski materiali - Pravila za načrtovanje in predstavljanje  
standarov za materiale - 002. del: Posebna pravila za aluminij, aluminijeve in  
magnezijske zlitine**

Aerospace series - Metallic materials - Rules for drafting and presentation of material standards - Part 002: Specific rules for aluminium, aluminium alloys and magnesium alloys

Luft- und Raumfahrt - Metallische Werkstoffe - Regeln für das Erstellen und die Gestaltung von Werkstoffnormen - Teil 002: Besondere Regeln für Aluminium, Aluminiumlegierungen und Magnesiumlegierungen

Série aérospatiale - Matériaux métalliques - Règles pour la rédaction et la présentation des normes de matériaux - Partie 002: Règles spécifiques à l'aluminium, aux alliages d'aluminium et aux alliages de magnésium

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## Aerospace series - Metallic materials - Rules for drafting and presentation of material standards - Part 002: Specific rules for aluminium, aluminium alloys and magnesium alloys

Série aérospatiale - Matériaux métalliques - Règles pour la rédaction et la présentation des normes de matériaux - Partie 002 : Règles spécifiques à l'aluminium, aux alliages d'aluminium et aux alliages de magnésium

Luft- und Raumfahrt - Metallische Werkstoffe - Regeln für das Erstellen und die Gestaltung von Werkstoffnormen - Teil 002: Besondere Regeln für Aluminium, Aluminiumlegierungen und Magnesiumlegierungen

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  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## EN 4500-002:2024(E)

### European foreword

This document (EN 4500-002:2024) 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 XP prEN 4500-2:1997, which was published by ASD-STAN.

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

XP prEN 4500-2, 02/1997 — Editorial improvements and update of the scope to change “single mode fibre core” to “simplex fibre”.

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 4500-002:2024(E)

### 1 Scope

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

This Part 002 specifies the “Specific rules for aluminium, aluminium alloys and magnesium 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 515, *Aluminium and aluminium alloys — Wrought products — Temper designations*

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

EN 1753, *Magnesium and magnesium alloys — Magnesium alloy ingots and castings*

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

ASTM B275,<sup>1</sup> *Standard Practice for Codification of Certain Zinc, Tin and Lead Die Castings*

### 3 Terms and definitions

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

For temper designations, the terms and definitions given in EN 515 and EN 1753 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.

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<sup>1</sup> Published by American Society for Testing and Materials (ASTM International), available at: <https://www.astm.org/>



## 4.2.2 Condition T4 and T42 or T6 and T62

It is permissible to quote 2 (two) use conditions (e.g. T4 and T42 or T6 and T62) in the same material standard providing they have the same mechanical properties and are metallurgically the same. See Annex B.

## 4.2.3 Descriptions

### 4.2.3.1 General

The following are examples of some descriptions which may be used.

### 4.2.3.2 Surface condition entries

- a) Where unclad or as manufactured, no entry required.
- b) Clad.
- c) Machined.

### 4.2.3.3 Form entries

- a) Sheets and strips.
- b) Plates.
- c) Bars.

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

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

- d) Sections.

The term may be qualified with the following term:

- 1) extruded.

- e) Bars and sections.

The term may be qualified with the following term:

- 1) extruded.

- f) Tubes.

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

- 1) extruded;
- 2) drawn.

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g) Wires.

h) Forging stock.

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

1) cast;

2) extruded.

i) Forgings.

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

1) die;

2) hand.

j) Remelting stock.

k) Castings.

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

1) sand;

2) permanent mould;

3) investment;

4) high-strength.

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#### 4.2.3.4 Additional information entries

- With peripheral coarse grain control.
- For structural applications.
- For hydraulic applications.
- For superplastic forming.
- Damage tolerant.
- For the manufacture of rivets.
- For the manufacture of fasteners.
- For machining.
- For welding.

### 4.3 Introduction

#### 4.3.1 General

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

#### 4.3.2 Condition Tx510 and Tx511, applicable to extruded bars and sections and drawn tubes

Material standards shall be prepared on the basis that all material will be supplied in the Tx511 condition according to EN 515.

These standards can also be used to supply material in the Tx510 condition according to EN 515. In this case, the scope shall be completed as shown in Annex C of this document.

### 4.4 Scope, normative references, terms and definitions, requirements

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

### 4.5 Table 1 (1 of 3)

#### 4.5.1 Line 1: Material designation

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

#### 4.5.2 Line 2: Chemical composition

The chemical composition shall be written in accordance with EN 4500-001 and the following rules:

- a) aluminium alloys:
  - 1) wrought products

The order of presentation of elements and chemical composition limits shall conform to that registered with the Aluminium Association for that alloy designation;

- 2) cast products

The order of presentation of elements shall conform to the Aluminium Association order used for wrought products;

- b) magnesium alloys:

The order of presentation of elements and chemical composition limits shall conform to that registered with the American Society for Testing and Materials, Committee B-7; currently listed in ASTM B275.

#### 4.5.3 Line 3: Method of melting

Not normally used for aluminium, aluminium alloys and magnesium alloys.

#### 4.5.4 Line 4.1: Form

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