



SLOVENSKI STANDARD
oSIST prEN 4500-006:2022
01-januar-2022

Aeronavtika - Kovinski materiali - Pravila za načrtovanje in predstavljanje standardov za materiale - 6. del: Posebna pravila za kovinska polnila za spajkanje

Aerospace series - Metallic materials - Rules for drafting and presentation of material standards - Part 6: Specific rules for filler metals for brazing

Luft- und Raumfahrt - Metallische Werkstoffe - Regeln für das Erstellen und die Gestaltung von Werkstoffnormen - Teil 6: Besondere Regeln für Hartlote

Série aérospatiale - Matériaux métalliques - Règles pour la rédaction et la présentation des normes de matériaux - Partie 006: Règles spécifiques aux métaux d'apport de brasage

<https://standards.iteh.ai/catalog/standards/sist/fe4dcafe-f8ef-4b93-bb3e-ce576c7da18d/osist-pren-4500-006-2022>

Ta slovenski standard je istoveten z: prEN 4500-006

ICS:

25.160.20 Potrošni material pri varjenju Welding consumables
49.025.05 Železove zlitine na splošno Ferrous alloys in general

oSIST prEN 4500-006:2022

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN 4500-006:2022](#)

<https://standards.iteh.ai/catalog/standards/sist/fe4dcafe-f8ef-4b93-bb3e-ee576c7da18d/osist-pren-4500-006-2022>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 4500-006

November 2021

ICS

English Version

Aerospace series - Metallic materials - Rules for drafting and presentation of material standards - Part 6: Specific rules for filler metals for brazing

Série aérospatiale - Matériaux métalliques - Règles
pour la rédaction et la présentation des normes de
matériaux - Partie 006: Règles spécifiques aux métaux
d'apport de brasage

Luft- und Raumfahrt - Metallische Werkstoffe - Regeln
für das Erstellen und die Gestaltung von
Werkstoffnormen - Teil 6: Besondere Regeln für
Hartlote

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.

This draft European Standard was established by CEN 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, Turkey and United Kingdom.

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.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Rules for drafting a European Standard for aerospace metallic materials	6
4.1 General	6
4.2 Title	6
4.2.1 General	6
4.2.2 Method of melting	6
4.2.3 Form entries	7
4.3 Introduction	8
4.4 Scope, normative references, terms and definitions, requirements	8
4.5 Table 1 (1 of 3)	8
4.5.1 Line 1: Material designation	8
4.5.2 Line 2: Chemical composition	8
4.5.3 Line 3: Method of melting	8
4.5.4 Line 4.1: Form	8
4.5.5 Line 4.2: Method of production	8
4.5.6 Line 4.3: Limit dimension(s)	8
4.5.7 Line 5: Technical specification	8
4.5.8 Line 6.1: Delivery condition and Heat treatment	8
4.5.9 Line 6.2: Delivery condition code	8
4.5.10 Line 7: Use condition and Heat treatment	9
4.5.11 Line 8.1: Test sample(s)	9
4.5.12 Line 8.2: Test piece(s)	9
4.5.13 Line 8.3: Heat treatment	9
4.5.14 Line 9: Dimensions concerned	9
4.5.15 Line 10: Thickness of cladding on each face	9
4.5.16 Line 11: Direction of test piece	9
4.5.17 Lines 12 to 16: Tensile (T)	9
4.5.18 Line 17: Hardness	9
4.5.19 Line 18: Shear strength	9
4.5.20 Line 19: Bending	9
4.5.21 Line 20: Impact strength	9
4.5.22 Lines 21 to 26: Creep (C)	9
4.5.23 Line 27: Notes (see line 98)	9
4.6 Table 1 (2 of 3)	10
4.6.1 Line 29: Reference heat treatment	10
4.6.2 Lines 30 to 94	10
4.6.3 Line 95: Marking inspection	10
4.6.4 Line 96: Dimensional inspection	10
4.6.5 Line 98: Notes	10

4.6.6	Line 99: Typical use	10
4.7	Table 1 (3 of 3).....	10
4.8	Bibliography	10
	Annex A (informative) Completion of title page.....	11
A.1	Completion of title when the material does not have an ECISS designation	11
A.2	Completion of title when the material has an ECISS designation.....	11
	Annex B (informative) Completion of the introduction.....	12
	Annex C (informative) Completion of the scope, normative references, terms and definitions, requirements.....	13
	Annex D (informative) Completion of Table 1 (1 of 3)	14
	Annex E (informative) Completion of Table 1 (2 of 3)	15
	Annex F (informative) Completion of Table 1 (3 of 3).....	16
	Annex G (informative) Completion of the bibliography	17
	Bibliography	18

iTeh STANDARD PREVIEW (standards.iteh.ai)

[oSIST prEN 4500-006:2022](https://standards.iteh.ai/catalog/standards/sist/fe4dcafe-f8ef-4b93-bb3e-ee576c7da18d/osist-pren-4500-006-2022)

<https://standards.iteh.ai/catalog/standards/sist/fe4dcafe-f8ef-4b93-bb3e-ee576c7da18d/osist-pren-4500-006-2022>

prEN 4500-006:2021 (E)

European foreword

This document (prEN 4500-006:2021) 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-STAN, prior to its presentation to CEN.

This document is currently submitted to the CEN Enquiry.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[oSIST prEN 4500-006:2022](https://standards.iteh.ai/catalog/standards/sist/fe4dcafe-f8ef-4b93-bb3e-ee576c7da18d/osist-pren-4500-006-2022)

<https://standards.iteh.ai/catalog/standards/sist/fe4dcafe-f8ef-4b93-bb3e-ee576c7da18d/osist-pren-4500-006-2022>

Introduction

This document is part of the series of European 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;
- Aluminium, aluminium alloys and magnesium alloys EN 4500-002;
- Heat-resisting alloys EN 4500-003;
- Titanium and titanium alloys EN 4500-004;
- Steels EN 4500-005;
- Filler metals for welding EN 4500-002 to EN 4500-005;
- Filler metals for brazing EN 4500-006.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[oSIST prEN 4500-006:2022](https://standards.iteh.ai/catalog/standards/sist/fe4dcafe-f8ef-4b93-bb3e-ee576c7da18d/osist-pren-4500-006-2022)

<https://standards.iteh.ai/catalog/standards/sist/fe4dcafe-f8ef-4b93-bb3e-ee576c7da18d/osist-pren-4500-006-2022>

prEN 4500-006:2021 (E)**1 Scope**

The EN 4500 series specifies the rules for the drafting and presentation of metallic material standards for aerospace applications. This Part 006 specifies the “Specific rules for filler metals for brazing”.

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.

FprEN 4259:2019,¹ *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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in FprEN 4259:2019 and EN 4500-001 apply.

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 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 may not correspond to real standardized EN semi-finished products. Technological development may require the use of terms additional to those listed.

4.2 Title**4.2.1 General**

According to EN 4500-001 and A.1.

When the material has an ECISS designation, this shall be shown, for information, in brackets after the designation. See A.2.

The following are examples of descriptions which shall be used.

4.2.2 Method of melting

Complete in accordance with EN 4500-001 using 1 (one) or more of the following terms:

- air melted;
- inert gas melted;
- vacuum melted;

¹ at draft stage.

- non-consumable electrode vacuum melted;
- consumable electrode vacuum arc melted;
- consumable electrode vacuum arc remelted.

4.2.3 Form entries

a) amorphous foil;

The term may be qualified with the following term:

- 1) melt spun;

b) borided foil;

The term may be qualified with 1 (one) or more of the following terms:

- 1) cold rolled;
- 2) hot rolled;
- 3) boron diffused into the surface;

c) rolled foil;

The term may be qualified with 1 (one) of the following terms:

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

d) powder;

The term may be qualified with 1 (one) or more of the following terms:

- 1) water atomised;
- 2) gas atomised;
- 3) sieved;

e) paste;

f) tape;

g) wire;

The term may be qualified with 1 (one) of the following terms:

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/fe4dcafe-f8ef-4b93-bb3e-ee576c7da18d/osist-pren-4500-006-2022>

prEN 4500-006:2021 (E)**4.3 Introduction**

According to EN 4500-001 and Annex B of this document.

4.4 Scope, normative references, terms and definitions, requirements

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**

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 order of presentation of elements shall conform to the following rules:

- C, Si, Mn, P, S;
- alloying elements in alphabetical order using their chemical symbol;
- trace elements in alphabetical order;
- ratio and/or total elements.

4.5.3 Line 3: Method of melting

According to EN 4500-001 and Annex D of this document, using the terms listed in 4.2.2.

4.5.4 Line 4.1: Form

According to EN 4500-001 and Annex D of this document.

4.5.5 Line 4.2: Method of production

According to EN 4500-001 and Annex D of this document, using the applicable terms given in 4.2.

4.5.6 Line 4.3: Limit dimension(s)

According to EN 4500-001 and Annex D of this document.

4.5.7 Line 5: Technical specification

According to EN 4500-001 and Annex D of this document.

4.5.8 Line 6.1: Delivery condition and Heat treatment

According to EN 4500-001 and Annex D of this document, using 1 (one) or more of the following terms:

- as manufactured;
- annealed.

4.5.9 Line 6.2: Delivery condition code

According to EN 4500-001 and Annex D of this document.

ITEH STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/fe4dcafe-f8ef-4b93-bb3e-ee576c7da18d/osist-pren-4500-006-2022>

4.5.10 Line 7: Use condition and Heat treatment

According to EN 4500-001 and Annex D of this document. The terms given in 4.5.8 shall be used or the following shall be stated:

- delivery condition

4.5.11 Line 8.1: Test sample(s)

Not normally applicable to filler metals for brazing.

4.5.12 Line 8.2: Test piece(s)

Not normally applicable to filler metals for brazing.

4.5.13 Line 8.3: Heat treatment

Not normally applicable to filler metals for brazing.

4.5.14 Line 9: Dimensions concerned

Not normally applicable to filler metals for brazing.

4.5.15 Line 10: Thickness of cladding on each face

Not normally applicable to filler metals for brazing.

4.5.16 Line 11: Direction of test piece

Not normally applicable to filler metals for brazing.

4.5.17 Lines 12 to 16: Tensile (T)

Not normally applicable to filler metals for brazing.

4.5.18 Line 17: Hardness

Not normally applicable to filler metals for brazing.

4.5.19 Line 18: Shear strength

Not normally applicable to filler metals for brazing.

4.5.20 Line 19: Bending

Not normally applicable to filler metals for brazing.

4.5.21 Line 20: Impact strength

Not normally applicable to filler metals for brazing.

4.5.22 Lines 21 to 26: Creep (C)

Not normally applicable to filler metals for brazing.

4.5.23 Line 27: Notes (see line 98)

According to EN 4500-001 and Annex D of this document.

STANDARD PREVIEW
(standards.iteh.ai)

oSIST prEN 4500-006:2022

<https://standards.iteh.ai/catalog/standards/sist/fe4dcafe-f8ef-4b93-bb3e-ee576c7da18d/osist-pren-4500-006-2022>