

SLOVENSKI STANDARD

SIST EN 1780-1:1998

01-april-1998

5`i a]b]^[b`Ui a]b]Yj Yn`h]bY!`CnbU Yj UbY`bYU[]fUb]]b`Y[]fUb]]b[c]c]`nU
dfYU Yj UbY`ZdfYXn`h]b]b`i`]h_cj`!`%`XY.`G]ghYa`y`h]j]` bY[UcnbU Yj UbY`

Aluminium and aluminium alloys - Designation of unalloyed and alloyed aluminium ingots for remelting, master alloys and castings - Part 1: Numerical designation system

Aluminium und Aluminiumlegierungen - Bezeichnung von unlegiertem und legiertem Aluminium in Masseln, Vorlegierungen und Gußstücken - Teil 1: Numerisches Bezeichnungssystem

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Aluminium et alliages d'aluminium - Systeme de désignation applicable aux lingots pour refusion en aluminium allié ou non allié, aux alliages-mères et aux produits moulés - Partie 1: Systeme de désignation numérique

Ta slovenski standard je istoveten z: EN 1780-1:1996

ICS:

77.150.10 Alumijski izdelki Aluminium products

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en

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EUROPEAN STANDARD

EN 1780-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 1996

ICS 77.150.10

Descriptors: aluminium, aluminium alloys, ingots, castings, designation, numerical designation

English version

**Aluminium and aluminium alloys - Designation of
unalloyed and alloyed aluminium ingots for
remelting, master alloys and castings - Part 1:
Numerical designation system**

Aluminium et alliages d'aluminium - Système de désignation applicable aux lingots pour refusion en aluminium allié ou non allié, aux alliages-mères et aux produits moulés - Partie 1: Système de désignation numérique

Aluminium und Aluminiumlegierungen - Bezeichnung von unlegiertem und legiertem Aluminium in Massen, Vorlegierungen und Gußstücken - Teil 1: Numerisches Bezeichnungssystem

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This European Standard was approved by CEN on 1996-10-26. 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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 132 "Aluminium and aluminium alloys", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 1997, and conflicting national standards shall be withdrawn at the latest by May 1997.

Within its programme of work, Technical Committee CEN/TC 132 entrusted CEN/TC 132/WG 1 "Liquid metal, unalloyed and alloyed ingots" to prepare the following standard :

EN 1780-1 Aluminium and aluminium alloys - Designation of unalloyed and alloyed aluminium ingots for remelting, master alloys and castings - Part 1 : Numerical designation system

This standard is a part of EN 1780 which is in three parts. The other parts are :

EN 1780-2 Aluminium and aluminium alloys - Designation of unalloyed and alloyed aluminium ingots for remelting, master alloys and castings - Part 2 : Chemical symbol based designation system

EN 1780-3 Aluminium and aluminium alloys - Designation of unalloyed and alloyed aluminium ingots for remelting, master alloys and castings - Part 3 : Writing rules for chemical composition

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This part of EN 1780 specifies a five-figure numerical designation system for unalloyed aluminium, aluminium alloys and master alloys.

It applies to ingots for remelting and to castings and applies to alloys for all applications including aerospace.

An alternative chemical symbol based designation system is specified in EN 1780-2. Writing rules for chemical composition are specified in EN 1780-3.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

| | |
|-------------|--|
| EN 576 | Aluminium and aluminium alloys - unalloyed aluminium ingots for remelting. Specifications |
| EN 2032-1 | Aerospace series - Metallic materials - Part 1 : Designation |
| prEN 1780-2 | Aluminium and aluminium alloys - Designation of unalloyed and alloyed aluminium ingots for remelting, master alloys and castings - Part 2 : Chemical symbol based designation system |
| prEN 1780-3 | Aluminium and aluminium alloys - Designation of unalloyed and alloyed aluminium ingots for remelting, master alloys and castings Part 3 : Writing rules for chemical composition |

3 Basis of codification

The designation is constituted successively by :

- a) the prefix EN followed by a blank space ;
- b) the letter A representing aluminium ;
- c) a letter representing the form of the product :
 - the letter B representing unalloyed or alloyed aluminium ingots for remelting ;
 - or
 - C representing castings ;
 - or
 - M representing master alloys ;

d) a hyphen ;

e) five figures representing the alloy composition limits.

EXAMPLES :

EN AB-44000

EN AM-91400

The prefix letters of alloys for aerospace applications are different from those above and are specified in EN 2032-1.

4 Five figure designation system

4.1 Unalloyed aluminium

The first of the five figures in the designation system is the number 1 (as used in wrought aluminium for aluminium 99,00 % minimum and greater).

The second of the five figures in the designation system is the number 0.

The third and fourth figures indicate the minimum aluminium percentage. They are the same as the two figures to the right of the decimal point in the minimum aluminium percentage, when it is expressed to the nearest 0,01 %.

EXAMPLE :

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AB- 10⁹⁷0 for Al 99,⁹⁷

The fifth figure is :

- 0 for unalloyed aluminium ingots listed in the tables for general applications of EN 576 ;
- 1, 2, ... for unalloyed aluminium ingots listed in the tables for (specific applications) of EN 576.

4.2 Aluminium alloys ingots and castings

For a given alloy, ingots and castings have the same numerical designation.

The first of the five figures in the designation indicates the major alloying element as follows :

- copper : 2XXXX
- silicon : 4XXXX
- magnesium : 5XXXX
- zinc : 7XXXX

The second of the five figures in the designation indicates the alloy group :

- 2 \square 1XXX : Al Cu ;

- 4 \square 1XXX : Al SiMgTi ;

- 4 \square 2XXX : Al Si7Mg ;

- 4 \square 3XXX : Al Si10Mg ;

- 4 \square 4XXX : Al Si ;

- 4 \square 5XXX : Al Si5Cu ;

- 4 \square 6XXX : Al Si9Cu ;

- 4 \square 7XXX : Al Si(Cu) ;

- 4 \square 8XXX : Al SiCuNiMg ;

- 5 \square 1XXX : Al Mg ;

- 7 \square 1XXX : Al ZnMg.

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The third figure is arbitrary.

The fourth figure is generally 0.

The fifth figure is always 0 but never 0 for alloys for aerospace applications.

4.3 Master alloys

The first of the five figures in the designation system is the number 9.

The second and third figures represent the atomic number of the main element.

EXAMPLES :

- 05 for Boron ;

- 14 for Silicon ;

- 29 for Copper.