



# SLOVENSKI STANDARD SIST EN 1780-2:1998

01-april-1998

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

Aluminium und Aluminiumlegierungen - Bezeichnung von unlegiertem und legiertem Aluminium in Masseln, Vorlegierungen und Gußstücken - Teil 2: Bezeichnungssystem mit chemischen Symbolen (standards.iteh.ai)

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 2: Systeme de désignation basé sur les symboles chimiques

**Ta slovenski standard je istoveten z: EN 1780-2:1996**

### **ICS:**

77.150.10      Aluminijski izdelki      Aluminium products

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EUROPEAN STANDARD

EN 1780-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 1996

ICS 77.150.10

Descriptors: aluminium, aluminium alloys, ingots, castings, designation, chemical symbols

English version

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

Aluminium et alliages d'aluminium - Système de  
désignation applicable aux lingots pour  
refusion en aluminium allié ou non allié, aux  
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2: Système de désignation basé sur les symboles  
chimiques

Aluminium und Aluminiumlegierungen -  
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Aluminium in Masseln, Vorlegierungen und  
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chemischen Symbolen

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

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

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

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 code of designation applicable to unalloyed aluminium, aluminium alloys and master alloys as specified in the relevant European Standards. It is a descriptive code based primarily on chemical symbols.

It applies to ingots for remelting and to castings.

An alternative numerical designation system is specified in EN 1780-1. 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 1780-1	Aluminium and aluminium alloys - Designation of unalloyed and alloyed aluminium ingots for remelting and castings - Part 1 : Numerical designation system
EN 1780-3	Aluminium and aluminium alloys - Designation of unalloyed and alloyed aluminium ingots for remelting and castings - Part 3 : Writing rules for chemical composition

## 3 Basis of codification

**3.1** The designations of aluminium, aluminium alloys and master alloys are based on their chemical symbols, usually followed by numbers indicating the purity of aluminium or nominal content of the considered alloying element.

**3.2** The chemical symbols used are those of the international nomenclature (see Annex A).

**3.3** The numbers or figures indicating the purity of aluminium, or the nominal content of the alloying element in question, are based on the chemical composition limits specified in clause 3 of EN 1780-3.

**3.4** Preferably all designations complying with this codification should be put within square brackets, following the five figure designation. If only the chemical symbol based designation is used, then it shall have the prefix EN, followed by a blank space, then the letter A representing aluminium and the letter B identifying ingots for remelting, or the letter C identifying castings, or the letter M identifying master alloys.

This letter (B, C or M) shall be separated from the following designation by a hyphen.

EXAMPLES :

EN AB-45400 [Al Si5Cu3] or EN AB-Al Si5Cu3

**3.5** The designations currently in use and the corresponding chemical compositions limits are specified in the standards listed in clause 3 of EN 1780-3.

**3.6** Assignments or revisions of designations shall be approved by Technical Committee CEN/TC132.

#### **4 Rules for the coded designation of unalloyed aluminium**

**4.1** The designation for unalloyed aluminium shall consist of the international chemical symbol of the metal (Al) followed by the percentage purity expressed to one or two decimal places, as necessary.

EXAMPLE :

EN AB-Al 99,80

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The symbol Al is separated by a blank space from the percentage purity.

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#### **4.2 Special use**

A letter suffix following the first decimal may be used.

It characterizes :

- either a specific application : letter E for electrical applications.

EXAMPLE :

EN AB-Al 99,7 E :

- or the chronological order of registration : letters A, B, C ... (except E, I, O, Q).

EXAMPLES :

EN AB-Al 99,7 A

EN AB-Al 99,7 B

## 5 Rules for the coded designation of aluminium alloys and master alloys

5.1 An alloy shall be designated by the symbol Al, followed by the symbols of the main element or elements.

These symbols are usually followed by numbers which express the mass percent contents of the considered elements, in compliance with the rules shown in 5.2.

The symbol Al shall be separated by a blank space from the remainder of the designation.

5.1.1 When several alloying elements are deemed to be required in the designation, they shall be arranged in order of decreasing nominal contents.

EXAMPLE :

EN AB-Al Si5Cu3

5.1.2 If these contents are equal, the alloying elements shall be arranged in the alphabetical order of the symbols, as shown in Annex A.

EXAMPLE :

EN AB-Al Si12CuMgNi

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5.1.3 The chemical symbols for alloying elements shall be restricted to four elements.

EXAMPLES :

EN AB-Al Si12CuMgNi

EN AC-Al Si12CuMgNi

EN AM-Al Sr10Ti1B0,2

## 5.2 Rules for distinguishing between two alloys of similar composition

Care shall be taken to use the simplest possible designation.

In the case of alloys with similar compositions, the following additional designation shall be used for distinguishing between alloys.

In decreasing priority :

5.2.1 The alloying element shall be distinguished by the nominal content (middle of the range) rounded to the nearest integer or, if necessary, to the nearest 5/10, or, for contents less than 1 % to the nearest 1/10.



EXAMPLES :

EN AB-AI Si7Mg0,3

EN AB-AI Si7Mg0,6

**5.2.2** The main impurity or impurities shall be added in brackets.

EXAMPLES :

EN AB-AI Si12(Fe)

EN AB-AI Si10Mg(Cu)

EN AB-AI Si9Cu3(Fe)(Zn)

**5.2.3** If the above provision is not acceptable for differentiating between several alloys, a suffix shall be used : (a), (b), (c)..., according to the date of submission to CEN. This suffix shall be placed in parentheses to avoid confusion with the chemical symbols.

EXAMPLES :

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EN AB-AI Si12(a)

EN AB-AI Si12(b)

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### **5.3 Special application for master alloys**

A suffix (A) or (B) shall be used at the end of the chemical designation, according to the level of impurities, i.e :

- (A) for master alloy with low level of impurities ;
- (B) for master alloy with high level of impurities.