

**SLOVENSKI STANDARD**  
**SIST EN 1780-3:1998****01-april-1998**

5`i a ]b]^[b`Ui a ]b]Yj Yn`h]bY!`CnbU Yj UbY`bY[Y ]fUb] ]b`Y[ ]fUb] ]b[ c]c]`nU  
dfYHj Yj UbY`ZdfYXn`h]b ]b`i` ]h\_cj`!` "XY. `DfUj ]UnUnUd]gcj UbY`\_Ya ] bY`gYgHj Y

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

Aluminium und Aluminiumlegierungen - Bezeichnung von unlegiertem und legiertem Aluminium in Masseln, Vorlegierungen und Gußstücken - Teil 3: Schreibregeln für die chemische Zusammensetzung

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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 3: Regles d'écriture pour la composition chimique

**Ta slovenski standard je istoveten z: EN 1780-3:1996**

**ICS:**

77.150.10      Alumijski izdelki      Aluminium products

**SIST EN 1780-3:1998****en**

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EUROPEAN STANDARD

EN 1780-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 1996

ICS 77.150.10

Descriptors: aluminium, aluminium alloys, ingots, castings, chemical composition, writing rules

English version

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

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 3: Règles d'écriture pour la composition chimique

Aluminium und Aluminiumlegierungen - Bezeichnung von unlegiertem und legiertem Aluminium in Masseln, Vorlegierungen und Gußstücken - Teil 3: Schreibregeln für die chemische Zusammensetzung

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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



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

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

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 prEN 1780 specifies the writing rules for chemical composition of unalloyed aluminium, aluminium alloys and master alloys.

It applies to ingots for remelting and to castings.

The five-figure numerical and the chemical symbol based designation systems of materials are specified in EN 1780-1 and EN 1780-2, respectively.

## 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 575	Aluminium and aluminium alloys - Master alloys produced by melting - Specifications
EN 576	Aluminium and aluminium alloys - Unalloyed aluminium ingots for remelting - Specifications
EN 1676	Aluminium and aluminium alloys - Alloyed aluminium ingots for remelting - Specifications
prEN 1706	Aluminium and aluminium alloys - Castings - Chemical composition and mechanical properties
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 1780-2	Aluminium and aluminium alloys - Designation of unalloyed aluminium, aluminium alloys and master alloys for remelting and castings - Part 2 : Chemical symbol based designation system

## 3 Chemical composition limits

The chemical composition limits are specified in EN 575, EN 576, EN 1676 and prEN 1706.

## 4 Writing rules

4.1 Standard limits for alloying elements and impurities are generally expressed in percentage by mass to the following places (except in certain cases as specified in the standards listed in clause 3) :

- |  |                   |
|--|-------------------|
| a) less than 0,001 %.....                | 0,000X ;          |
| b) 0,001 % through less than 0,01 %..... | 0,00X ;           |
| c) 0,01 % through less than 0,10 % :     |                   |
| - refined aluminium.....                 | 0,0XX ;           |
| - others.....                            | 0,0X ;            |
| d) 0,10 through 0,55 %.....              | 0,XX ;            |
| e) over 0,55 %.....                      | 0,X ; X,X ; XX,X. |

4.2 The aluminium content for refined aluminium is the difference between 100,00 % and the sum of all other metallic elements present in amounts of 0,0010 % or more each, expressed to the third decimal before determining the sum, which is rounded to the second decimal before subtracting.

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The aluminium content for unalloyed aluminium not made by a refining process is the difference between 100,00 % and the sum of all other metallic elements present in amounts of 0,010 % or more each expressed to the second decimal before determining the sum.

## 5 Alloy designations

Both the five figure based designations and the chemical symbol based designations are used in the tables appended to the specific European Standards (see clause 3).

## 6 Sequence of elements

Standards limits for alloying elements and impurities are expressed in the following sequence : Silicon, Iron, Copper, Manganese, Magnesium, Chromium, Nickel, Zinc ... Titanium, Other Elements each, Other Elements total, Aluminium.

Additional specified elements having limits are inserted in alphabetical order of their chemical symbols between zinc and titanium, or are specified in footnotes.

Aluminium is specified as a minimum for unalloyed aluminium and as a remainder for aluminium alloys.

## 7 Rounding rules for determination of compliance

In recording chemical analysis test results, the number representing the result for any element specified in this standard shall be expressed to the same number of decimal places as the corresponding number in the reference standard. For unalloyed aluminium, the aluminium content is derived as described in 4.2.

The following rounding rules shall be used for determination of compliance with this standard :

- a) when the figure immediately after the last figure to be retained is less than 5, the last figure to be retained remains unchanged ;
- b) when the figure immediately after the last figure to be retained is greater than 5, or equal to 5 and followed by at least one figure other than zero, the last figure to be retained is increased by one ;
- c) when the figure immediately after the last figure to be retained is equal to 5 and followed by zeros only, the last figure to be retained remains unchanged if even and is increased by one if odd.

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