BRITISH STANDARD

BS EN
573-2:1995

Aluminium and aluminium alloys — Chemical composition and form of wrought products —

Part 2: Chemical symbol based designation system

The European Standard EN 573-2:1994 has the status of a British Standard

UDC 669.71:669.715.018.26:62-777

Cooperating organizations

The European Committee for Standardization (CEN), under whose supervision this European Standard was prepared, comprises the national standards organizations of the following countries:

Austria	Oesterreichisches Normungsinstitut
Belgium	Institut belge de normalisation
Denmark	Dansk Standard
Finland	Suomen Standardisoimisliito, r.y.
France	Association française de normalisation
Germany	Deutsches Institut für Normung e.V.
Greece	Hellenic Organization for Standardization
Iceland	Technological Institute of Iceland
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Sweden	Standardiseringskommissionen i Sverige
Switzerland	Association suisse de normalisation
United Kingdom	British Standards Institution

This British Standard, having been prepared under the direction of the Engineering Sector Board (E/-), was published under the authority of the Standards Board and comes into effect on 15 January 1995

The following BSI references relate to the work on this standard:
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Contents

National foreword

This Part of this British Standard has been prepared by Subcommittee NFE/35/5, Wrought aluminium and aluminium alloys and is the English language version of EN 573-2:1994 *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 2: Chemical symbol based designation system,* published by the European Committee for Standardization (CEN).

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 6, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 573-2

August 1994

UDC 669.71:669.715.018.26:62-777

Descriptors: Aluminium, aluminium alloys, rolled products, aluminium products, chemical composition, shape, designation, chemical formulae, codification

English version

Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 2: Chemical symbol based designation system

Aluminium et alliages d'aluminium — Composition chimique et form des produits corroyés — Partie 2: Système de désignation fondé sur les symboles chimiques

Aluminium und Aluminiumlegierungen — Chemische Zusammensetzung und Form von Halbzeug — Teil 2: Bezeichnungssytem mit chemischen Symbolen

This European Standard was approved by CEN on 1994-08-17. 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.

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 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 drawn up by CEN/TC 132, Aluminium and aluminium alloys, whose Secretariat is held by the Association Française de Normalisation (AFNOR).

Within its programme of work, Technical Committee CEN/TC 132 has been entrusted to prepare the following standard:

EN 573-2, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 2: Chemical symbol based designation system*.

This standard is part of a set of four standards. The other standards deal with:

EN 573-1, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 1: Numerical designation system*.

EN 573-3, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 3: Chemical composition*.

EN 573-4, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 4: Forms of products*.

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 February 1995, and conflicting national standards shall be withdrawn at the latest by February 1995.

In accordance with the CEN/CENELEC Internal Regulations, 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 United Kingdom.

Contents

1 Scope

This Part of EN 573 specifies a code of designation applicable to aluminium and aluminium alloys as specified in the relevant European Standards. It is a descriptive code based primarily on chemical symbols.

The designations in accordance with this Part of EN 573 are intended primarily as a supplement to the four figure designation described in EN 573-1.

This standard applies to wrought products and to ingots intended to be wrought.

It is not applicable to:

— ingots for remelting;

— castings;

— composite products, i.e. those containing, in addition to aluminium and its alloys, other metallic or non-metallic materials;

— products of powder metallurgy.

2 Normative references

This European Standard incorporates by dated or undated references, 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 573-1, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 1: Numerical designation system.*

EN 573-3, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 3: Chemical composition.*

ISO 209-1:1989, *Wrought aluminium and aluminium alloys — Chemical composition and forms of products — Part 1: Chemical composition.*

3 Basis of coding

3.1 The designations of aluminium and aluminium alloys are based on the chemical symbols, usually followed by numbers indicating the purity of aluminium or nominal content of the considered 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 considered element, are based on the chemical composition limits given in EN 573-3.

3.4 Normally all designations complying with this coding shall be put within square brackets, following the four figure designation.

If, exceptionally, only the chemical symbol based designation is used, then it shall have the prefix EN, followed by a blank, then the letter A representing aluminium and the letter W identifying wrought products (and ingots to be wrought).

The letter W shall be separated from the following designation by a hyphen.

Examples:

Normal use:	EN AW-5052 or EN AW-5052 [Al Mg2,5]
Exceptional use:	EN AW-Al Mg2,5

3.5 The designations currently in use and the corresponding chemical composition limits are specified in EN 573-3.

3.6 Assignments or revisions of designations shall be approved by Technical Committee CEN/TC 132.

3.7 In order to ensure consistency with other national and international standards, and in particular with ISO 209-1:1989 whose code of designation is based on the same principles:

— where the composition of an alloy is strictly identical to the composition of an alloy registered by ISO, the ISO designation shall be used;

— where the composition of an alloy does not correspond to the composition of any alloy in ISO 209-1:1989, CEN/TC 132 will create a new designation for this alloy, and keep ISO/TC 79 informed.

4 Rules for the coded designation of wrought unalloyed aluminium

Designations for unalloyed aluminium for working shall consist of the international chemical symbol of the metal (Al) followed by the percentage purity expressed to one or more decimal places, as necessary.

Examples:	EN AW-1199 [Al 99,99] EN AW-1070A [Al 99,7]

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

If an element is added to unalloyed aluminium at a low content, the symbol corresponding to this element shall be added without a space after the percentage purity.

Example: EN AW-1100 [Al 99,0Cu]

5 Rules for the coded designation of wrought aluminium alloys

5.1 Basic principles

5.1.1 An alloy is designated by Al, followed by the symbols of the main alloying 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 is separated by a blank space from the remainder of the designation.

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

Examples: EN AW-6061 [Al Mg1SiCu]
EN AW-2014 [Al Cu4SiMg]

5.1.3 If these contents are equal, the alloying elements are arranged in alphabetical order of the symbols.

Example: EN AW-2011 [Al Cu6BiPb]

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

Example: EN AW-7050 [Al Zn6CuMgZr]

5.2 Rules for distinguishing between two alloys of similar compositions

5.2.1 Care shall be taken to use the simplest possible designation.

In the case of alloys with similar compositions, additional designations shall be used for distinguishing between alloys. They are given, in decreasing priority, in **5.2.2** to **5.2.4**.

5.2.2 The primary 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 AW-5251 [Al Mg2]
EN AW-5052 [Al Mg2,5]
EN AW-6063 [Al Mg0,7Si]

5.2.3 The secondary alloying elements are distinguished by the nominal content (middle of the range) rounded to the nearest integer of, if necessary, to the nearest 5/10, or, for contents less than 1 %, to the nearest 1/10.

Examples: EN AW-3103 [Al Mn1]
EN AW-3005 [Al Mn1Mg0,5]
EN AW-3004 [Al Mn1Mg1]

5.2.4 If the above provisions are not sufficient for differentiating between several alloys, a suffix shall be used: (A), (B), (C), etc.., according to the date of submission to CEN; the first alloy submitted has no suffix. This suffix shall be placed in parentheses to avoid confusion with the chemical symbols.

Examples: EN AW-2014 [Al Cu4SiMg]
EN AW-2014A [Al Cu4SiMg(A)]

6 Special use of grades of wrought aluminium and aluminium alloys

This practice shall be restricted as far as possible. It shall be limited to the case where the considered application requires specific chemical composition limits for at least one element.

A letter introducing the chemical composition can then be used. The letter E has been allocated to electrical applications.

Examples: EN AW-1350 [EAl 99,5] electrical applications
EN AW-6101 [EAl MgSi] electrical applications
EN AW-1050A [Al 99,5] general applications

7 Alloys produced from high purity aluminium

In certain alloys, the base metal is of high purity, for example Al 99,85 %. It is then necessary to give the specified high content in full. This content is given to two decimal places; the alloying elements are then given as set out above.

Example: EN AW-5305 [Al 99,85Mg1]

Annex A (normative)
International chemical symbols

The International chemical symbols are as follows:

Aluminium	: Al	Magnesium	: Mg
Antimony	: Sb	Manganese	: Mn
Beryllium	: Be	Molybdenum	: Mo
Bismuth	: Bi	Nickel	: Ni
Boron	: B	Niobium	: Nb
Cadmium	: Cd	Rare Earths	: RE
Cerium	: Ce	Silicon	: Si
Chromium	: Cr	Silver	: Ag
Cobalt	: Co	Strontium	: Sr
Copper	: Cu	Tin	: Sn
Gallium	: Ga	Titanium	: Ti
Iron	: Fe	Vanadium	: V
Lead	: Pb	Zinc	: Zn
Lithium	: Li	Zirconium	: Zr

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National annex NA (informative)
Committees responsible

The United Kingdom participation in the preparation of this European Standard was entrusted by Technical Committee NFE/35, Light metals and their alloys, to Subcommittee NFE/35/5, Wrought aluminium and aluminium alloys upon which the following bodies were represented:

Aluminium Federation
Aluminium Stockholders' Association
London Metal Exchange
Magnesium Industry Council

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

Association of British Welded Aluminium Tube Makers
Association of Light Alloy Refiners Limited
Institution of Structural Engineers
Metal Packaging Manufacturers' Association

National annex NB (informative)
Committees responsible

Publication referred to	Corresponding British Standard
	BS EN 573 *Aluminium and aluminium alloys — Chemical composition and form of wrought products*
EN 573-1:1994	Part 1:1995 *Numerical designation system*
EN 573-3:1994	Part 3:1995 *Chemical composition*

BSI — British Standards Institution

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