



SLOVENSKI STANDARD

SIST EN 573-1:2005

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Nadomešča:
SIST EN 573-1:1998

Aluminij in aluminijeve zlitine - Kemična sestava in oblika gnetenih izdelkov - 1. del: Sistem številčnega označevanja

Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 1: Numerical designation system

Aluminium und Aluminiumlegierungen - Chemische Zusammensetzung und Form von Halbzeug - Teil 1: Numerisches Bezeichnungssystem

Aluminium et alliages d'aluminium - Composition chimique et forme des produits corroyés - Partie 1 : Systeme de désignation numérique

Ta slovenski standard je istoveten z: EN 573-1:2004

ICS:

77.040.30	Kemijska analiza kovin	Chemical analysis of metals
77.150.10	Aluminijski izdelki	Aluminium products

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 573-1

November 2004

ICS 71.120.10; 77.150.10

Supersedes EN 573-1:1994

English version

Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 1: Numerical designation system

Aluminium et alliages d'aluminium - Composition chimique et forme des produits corroyés - Partie 1 : Système de désignation numérique

Aluminium und Aluminiumlegierungen - Chemische Zusammensetzung und Form von Halbzeug - Teil 1: Numerisches Bezeichnungssystem

This European Standard was approved by CEN on 26 August 2004.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Contents

	page
Foreword.....	3
1 Scope	4
2 International registration procedure.....	4
3 Basis for European designation.....	4
4 Four-digit numerical system.....	5
4.1 Alloy groups	5
4.2 1xxx group	5
4.3 2xxx to 8xxx groups	5
5 Registration rules for alloy modifications.....	6
6 Registration rules for national variations	7
Bibliography	8

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[SIST EN 573-1:2005](https://standards.iteh.ai/catalog/standards/sist/71be5396-7a62-423e-b613-49fc7d2a9c32/sist-en-573-1-2005)

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Foreword

This document (EN 573-1:2004) 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 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

This document supersedes EN 573-1:1994. It contains only minor modifications which clarify its technical content without modifying it.

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

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

prEN 573-5, *Aluminium and aluminium alloys – Chemical composition and form of wrought products – Part 5: Codification of standardized wrought products.*

The wording has been clarified in accordance with the "International Alloy Designations and Chemical Composition Limits for Wrought Aluminum and Wrought Aluminum Alloys".

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EN 573-1:2004 (E)**1 Scope**

This document specifies a European designation system of wrought aluminium and aluminium alloys, based on an international designation system, and the procedure to obtain such international designation.

It is in accordance with the "Recommendation" dated December 15, 1970, as revised in March 2002, for an International Designation System for Wrought Aluminum and Wrought Aluminum Alloys issued by the Aluminum Association, Washington DC 20006, USA.

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

2 International registration procedure

All requests for international registration shall be submitted to The Aluminum Association by a signatory of the Declaration of Accord. The organization that requests an alloy designation shall therefore comply with the terms of the Declaration of Accord, as stated in the so called "Teal Sheets" edited by The Aluminum Association.

3 Basis for European designation

The designation is constituted successively by:

- prefix EN followed by a blank space;
- letter A representing aluminium;
- letter W representing wrought products;
- a hyphen;
- an international designation consisting of four digits, representing the chemical composition and, if required, a letter identifying a national variation; this designation is attributed by the Aluminum Association via the international registration procedure.

EXAMPLES EN AW-5052
 EN AW-5154A

4 Four-digit numerical system

4.1 Alloy groups

The first of the four-digits, in the designation indicates the alloy group as follows:

- aluminium 99,00 % and greater 1xxx (1 000 series);
- aluminium alloys grouped by major alloying elements:
 - copper 2xxx (2 000 series);
 - manganese 3xxx (3 000 series);
 - silicon 4xxx (4 000 series);
 - magnesium 5xxx (5 000 series);
 - magnesium and Silicon 6xxx (6 000 series);
 - zinc 7xxx (7 000 series);
 - other elements 8xxx (8 000 series);
- unused series 9xxx (9 000 series).

NOTE For the purpose of this standard an alloying element is any element which is intentionally added for any purpose other than grain refinement and for which minimum and maximum limits are specified.

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4.2 1xxx group <https://standards.iteh.ai/catalog/standards/sist/71be5396-7a62-423e-b613-49fc7d2a9c32/sist-en-573-1-2005>

The designation assigned shall be in the 1xxx group whenever the minimum aluminium content is specified as 99,00 % and greater. In the 1xxx group, the last two of the four digits in the designation indicate the minimum aluminium percentage. These digits are the same as the two digits to the right of the decimal point in the minimum aluminium percentage, when it is expressed to the nearest 0,01 %.

The second digit in the alloy designation indicates alloy modifications in impurity limits or alloying elements. If the second digit in the designation is zero, it indicates unalloyed aluminium having natural impurity limits; integers 1 to 9, which are assigned consecutively as needed, indicate special control of one or more individual impurities or alloying elements.

4.3 2xxx to 8xxx groups

The alloy designation in the 2xxx to 8xxx groups is determined by the alloying element (Mg_2Si for 6xxx alloys) present in the greatest mean percentage. If the greatest mean percentage is common to more than one alloying element, choice of group will be in order of group sequence Cu, Mn, Si, Mg, Mg_2Si , Zn or others.

In the 2xxx to 8xxx alloy groups the last two of the four digits in the designation have no special significance but serve only to identify the different aluminium alloys in the group.

The second digit in the alloy designation indicates the original alloy and alloy modifications. If the second figure in the designation is zero, it indicates the original alloy; integers 1 to 9 inclusive, which are assigned consecutively, indicate alloy modifications.

EN 573-1:2004 (E)

5 Registration rules for alloy modifications

A modification of the original alloy is limited to any one or a combination of the following:

- a) change of not more than the following amounts in the arithmetic mean of the limits for an individual alloying element or combination of elements expressed as an alloying element or both:

Arithmetic mean of limits for alloying elements in original alloy	Maximum change
Up to 1,0 %	0,15 %
Over 1,0 % up to 2,0 %	0,20 %
Over 2,0 % up to 3,0 %	0,25 %
Over 3,0 % up to 4,0 %	0,30 %
Over 4,0 % up to 5,0 %	0,35 %
Over 5,0 % up to 6,0 %	0,40 %
Over 6,0 %	0,50 %

to determine compliance when maximum and minimum limits are specified for a combination of two or more elements in one alloy composition, the arithmetic mean of such combination is compared to the sum of the mean values of the same individual elements, or any combination thereof, in another alloy composition;

- b) addition or deletion of not more than one alloying element with limits having an arithmetic mean of not more than 0,30 %, or addition or deletion of not more than one combination of elements expressed as an alloying element with limits having a combined arithmetic mean of not more than 0,40 %;
- c) substitution of one alloying element for another element serving the same purpose;
- d) change in limits for impurities expressed singly or as a combination;
- e) change in limits for grain refining elements;
- f) maximum iron or silicon limits, of 0,12 % and 0,10 %, or less, respectively, reflecting high purity base metal.

An alloy should not be registered as a modification if it meets the requirements for a national variation (see clause 6).

6 Registration rules for national variations

National variations of wrought aluminium and wrought aluminium alloys registered by another country in accordance with this Recommendation [1] are identified by a serial letter after the numerical designation. The serial letters are assigned in alphabetical sequence starting with A for the first national variation registered, but omitting I, O and Q.

A national variation has composition limits which are similar but not identical to those registered by another country, with differences such as:

- a) differences in arithmetic mean of limits for an individual alloying element or combination of elements expressed as an alloying element, or both, not exceeding the following amounts:

Arithmetic mean of limits for alloying elements in original alloy or modification	Maximum difference
Up to 1,0 %	0,15 %
Over 1,0 % up to 2,0 %	0,20 %
Over 2,0 % up to 3,0 %	0,25 %
Over 3,0 % up to 4,0 %	0,30 %
Over 4,0 % up to 5,0 %	0,35 %
Over 5,0 % up to 6,0 %	0,40 %
Over 6,0 %	0,50 %

to determine compliance when maximum and minimum limits are specified for a combination of two or more elements in one alloy composition, the arithmetic mean of such combination is compared to the sum of the mean values of the same individual elements, or any combination thereof, in another alloy composition;

- b) substitution of one alloying element for another element serving the same purpose;
- c) different limits for impurities except for low iron. Iron maximum of 0,12 % or less, reflecting high purity base metal, should be considered as an alloy modification (see clause 5);
- d) different limits on grain refining elements;
- e) inclusion of a minimum limit for iron or silicon, or both.

An alloy meeting these requirements should not be registered as a new alloy or alloy modification.