



SLOVENSKI STANDARD

SIST EN 486:1998

01-april-1998

Aluminij in aluminijeve zlitine - Okroglice za iztiskovanje - Specifikacije

Aluminium and aluminium alloys - Extrusion ingots - Specifications

Aluminium und Aluminiumlegierungen - Preßbarren - Spezifikationen

Aluminium et alliages d'aluminium - Billettes de filage - Spécifications

Ta slovenski standard je istoveten z: **EN 486:1993**

[SIST EN 486:1998](https://standards.iteh.ai/catalog/standards/sist/c2cfb9ec-a371-4ed7-8364-9f91f0d3f0b0/sist-en-486-1998)

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ICS:

77.150.10 Alumijski izdelki Aluminium products

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EUROPEAN STANDARD

EN 486

NORME EUROPÉENNE

EUROPÄISCHE NORM

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Descriptors: Metallurgical product, aluminium, aluminium alloys, billets, order sale document, surface condition, dimensional tolerances, inspection, test, delivery, marking

English version

Aluminium and aluminium alloys - Extrusion ingots - Specifications

Aluminium et alliages d'aluminium - Billettes de filage - Spécifications
Aluminium und Aluminiumlegierungen - Preßbarren - Spezifikationen

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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 drawn up by Technical Committee CEN/TC 132 "Aluminium and aluminium alloys", of which the secretariat is held by AFNOR.

The text of the draft was submitted to the formal vote and approved as European Standard.

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 June 1994, and conflicting national standards shall be withdrawn at the latest by June 1994.

In accordance with the CEN/CENELEC Internal Regulations, 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.

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1 Scope

This European Standard specifies the general requirements to be met by extrusion ingots of aluminium and aluminium alloys obtained by semi-continuous or continuous casting, from primary or recycled metal, for general engineering applications.

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 573-1 Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 1 : Numerical designation system
- 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
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- EN 573-4 Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 4 : Form of products
- EN 10204 Metallic products - Types of inspection documents
- EN 29000 Quality management and quality assurance standards - Guidelines for selection and use (ISO 9000:1987)
- EN 29004 Quality management and quality system elements - Guidelines (ISO 9004:1987)

3 Definitions

For the purposes of this standard, the following definitions apply :

3.1 extrusion ingot : Metal cast in a form suitable for extruding.

3.2 heat : Quantity of liquid metal that has simultaneously undergone the same preparatory treatment in the furnace before the casting operation.

3.3 cast : Quantity of products cast simultaneously from the same heat.

NOTE : The different pieces of a cast may have different dimensions.

3.4 bundle : Set of ingots held together by suitable means for their transport.

4 Orders or callings for tenders

The order or calling for tenders shall define the product required and shall contain the following information :

- a) the form of the product (extrusion ingot) ;
- b) the designation of the aluminium or aluminium alloy according to EN 573-1 and EN 573-2 (or the customer alloy designation after agreement between supplier and purchaser). Tighter limits may be specified as required ;
- c) whether as cast or homogenized ;

The word "homogenized" can be replaced by the abbreviation "HO". Other abbreviations shall be agreed between supplier and purchaser ;

- d) the number of this European Standard ;
- e) the nominal dimensions of the product (i.e. diameter and length) expressed in millimetres. For hollow ingots and ingots other than round, dimensions and tolerances shall be given with reference to a drawing ;
- f) quantity :
 - 1) mass (in metric tonnes),
 - 2) quantity tolerances if required ;
- g) any requirements for inspection documents (see 7) ;
- h) any additional requirements agreed between supplier and purchaser.

5 Requirements

5.1 Production and manufacturing processes

If no special requirements have been agreed between producer and customer, the manufacturing process, including homogenizing, is the producer's responsibility.

In the case of special requirements, it is recommended that trial quantities be produced to confirm that requirements are met. It is also recommended that the customer asks the producer to advise of any significant change in the manufacturing processes which may affect the quality of the final product.

It is recommended that a quality assurance system be implemented as described in EN 29000 and 29004.

5.2 Aluminium alloys

The main aluminium alloys used are given in EN 573-4.

5.3 Chemical composition

The chemical composition of the ingots shall conform to the compositions specified in EN 573-3.

5.4 Surface and internal quality

Extrusion ingots shall :

- be free of casting surface defects, handling marks, oil, dirt and corrosion, and
 - be free of inclusions, porosity and cracks, and
 - have a suitable metallurgical structure,
- to a standard suitable for extrusion and subsequent processing.

Unless otherwise agreed between customer and producer, the grain size is not guaranteed.

5.5 Tolerances on dimensions

5.5.1 Diameter (round ingots)

The measurements shall be taken at the two sawn ends, on two diameters 90° apart.

The tolerance on the nominal diameter is :

- a) 0 mm for ingot diameters not greater than 200 mm ;
- 2
- b) 0 mm for ingot diameters greater than 200 mm and not greater than 400 mm ;
- 3
- c) 0 mm for ingot diameters greater than or equal to 400 mm.
- 4

5.5.2 Length

The length is measured overall after sawing.

The tolerance is :

- a) ± 3 mm for ingot lengths not greater than 1 200 mm ;
- b) ± 15 mm for ingot lengths greater than 1 200 mm.

5.5.3 Squareness

Sawn ends of extrusion ingots shall be square to $\pm 0,5^\circ$.

5.5.4 Straightness

The deflection, measured on any generating line of the ingot, shall be less than 3 mm per metre with a maximum of 15 mm over the full length of the ingot.

5.5.5 Other dimensions

For hollow ingots and ingots other than round, tolerances shall comply with the specifications in the order.

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6 Test procedures SIST EN 486:1998

6.1 <https://standards.iteh.ai/catalog/standards/sist/c2c9b9ec-a371-4ed7-8364-9b710d31060/sist-en-486-1998> Analysis of chemical composition

The analytical samples shall be taken in accordance with quality assurance procedures and shall be representative of the whole cast.

The analytical samples shall be taken during the cast, from the metal distribution system, after the grain refiner addition (if any).

The analytical samples shall be suitably machined and, when analysed by emission spectrometry, shall be subject to at least two determinations. The sample result is the arithmetic mean of the determinations.

The final result is the arithmetic mean of the results of the taken samples.

For cast acceptance, each sample shall meet the specified composition limits.

The producer shall determine and periodically check the analytical accuracy of each element analysed.

The producer shall use analytical methods standardized at the European or International level. The choice of appropriate methods is at the discretion of the producer.