



SLOVENSKI STANDARD

SIST EN 487:1998

01-april-1998

Aluminij in aluminijeve zlitine - Brame za valjanje - Specifikacije

Aluminium and aluminium alloys - Rolling ingots - Specifications

Aluminium und Aluminiumlegierungen - Walzbarren - Spezifikation

Aluminium et alliages d'aluminium - Plaques de laminage - Spécifications

Ta slovenski standard je istoveten z: EN 487:1993

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ICS:

77.150.10 Aluminijski izdelki Aluminium products

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EUROPEAN STANDARD

EN 487

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 1993

UDC 669.71-147:669.715

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

English version

Aluminium and aluminium alloys - Rolling ingots - Specifications

Aluminium et alliages d'aluminium - Plaques de
laminage - Spécifications

Aluminium und Aluminiumlegierungen - Walzbarren
- Spezifikationen

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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of an identical text or by endorsement, at the latest by June 1994, and conflicting national standards shall be withdrawn at the latest by June 1994.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 Standard specifies the general requirements to be met by rolling ingots of aluminium or aluminium alloys obtained by semi-continuous vertical casting.

2 Normative references

This European Standard incorporates by dated and undated reference, provisions from other publications. These normative references are cited in 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
- 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 rolling ingot : Metal cast in a form suitable for rolling.

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 top butt : End of the unsawn rolling ingot corresponding to the end of the cast.

3.5 bottom butt : End of the unsawn rolling ingot corresponding to the start of the cast.

3.6 top end : End of a sawn rolling ingot corresponding to the end of the cast.

3.7 bottom end : End of a sawn rolling ingot corresponding to the start of the cast.

3.8 edge : One of the narrow faces (plane or of a specific geometry) of the rolling ingot, parallel to the casting axis.

3.9 rolling face : One of the wide faces of the rolling ingot, parallel to the casting axis.

3.10 corner : Junction of a rolling face with an edge.

4 Orders or callings for tenders

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

- a) the form of the product (rolling ingot) ;
- b) the designation of the aluminium and aluminium alloy according to EN 573-1 and 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 homogenizing parameters should be agreed between the customer and the producer ;

- d) the number of this European Standard ;
- e) the dimensions and shape of the product :
 - 1) nominal thickness ;
 - 2) nominal width ;
 - 3) nominal length and tolerance if different from standard ;
 - 4) cross sectional profile details or drawing number.

All dimensions shall be expressed in millimetres.

- f) sawing code (see 5.7.4) ;
- g) whether rolling ingots are to be supplied scalped or not ;
- h) whether the rolling ingots will be scalped or not before hot rolling ;
- i) end use (e.g. foil, packaging,) (see 5.1) ;
- j) quantity :
 - 1) mass (in metric tonnes) or number of pieces,
 - 2) quantity tolerances if required ;
- k) any requirements for inspection documents (see 7) ;
 - l) any additional requirements agreed between supplier and purchaser (see 7).

5 Requirements

5.1 Production and manufacturing processes

The product requirements as formulated in this clause normally are not sufficient for rolling ingots to meet the customer's requirements for rolled products. Therefore, the customer shall give the producer full details concerning the end use requirements so the manufacturing conditions of the producer may best be adjusted to fulfill the requirements.

It is recommended that trial quantities be produced to confirm that the end use 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 EN 29004.

5.2 Aluminium alloys

The main aluminium alloys used for rolling ingots 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.

It is recommended that tighter composition limits than those given in EN 573-3 be agreed between customer and producer as required.

Control of alkali metals is recommended :

- sodium and calcium for magnesium alloys ;
- lithium for foil end use alloys.

It is recommended that the hydrogen level should not exceed 0,15 ml per 100 g of aluminium. The analysis method will be defined by agreement between supplier and purchaser.

5.4 Surface and internal quality

Rolling ingots shall :

- a) be free of casting surface defects, protruding metal, handling marks, oil, dirt and corrosion ;
- b) be free of inclusions, porosity, shrinkage cavities and cracks ;
- c) have a suitable metallurgical structure (e.g. grain size, shell zone depth, fir-tree structure) ;

to a standard agreed between customer and producer to be suitable for rolling, after scalping or not as required, and subsequent processing.

5.5 Tolerances on dimensions

5.5.1 Cross-section

The shape of the cross-section is left to the discretion of the customer, who shall give the supplier a dimensional drawing.