



SLOVENSKI STANDARD

SIST EN 603-1:1998

01-april-1998

Aluminij in aluminijeve zlitine - Gneteni surovci za kovanje - 1. del: Tehnični pogoji za prevzem in dobavo

Aluminium and aluminium alloys - Wrought forging stock - Part 1: Technical conditions for inspection and delivery

Aluminium und Aluminiumlegierungen - Stranggepreßtes oder gewalztes Schmiedevormaterial - Teil 1: Technische Lieferbedingungen

Aluminium et alliages d'aluminium - Produits corroyés destinés a la forge - Partie 1: Conditions techniques de contrôle et de livraison

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ICS:

77.150.10 Aluminijski izdelki Aluminium products

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EUROPEAN STANDARD

EN 603-1

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Descriptors: aluminium products, rolled products, aluminium alloys, forgings, delivery condition, quality control, surface condition, roughness, tests, quality certificate

English version

Aluminium and aluminium alloys - Wrought forging stock - Part 1: Technical conditions for inspection and delivery

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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.

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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

Contents

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Definitions	4
3.1 wrought forging stock	4
3.2 cast.....	4
3.3 inspection lot	5
3.4 sample.....	5
3.5 specimen	5
3.6 test pieces	5
3.7 test	5
4 Orders or tenders	5
5 Requirements	6
5.1 Production and manufacturing processes	6
5.2 Quality control	6
5.3 Chemical composition	6
5.4 Mechanical properties	6
5.5 Surface quality	7
5.6 Tolerances on dimensions and form	7
5.7 Quantity tolerance	7
5.8 Internal quality	8
6 Test procedure	8
6.1 Sampling	8
6.2 Test methods.....	10
6.3 Retests	10
7 Inspection documents	11
7.1 General	11
7.2 Documents established on the basis of inspections and tests performed by qualified personnel who are involved in the manufacturing process and/or belong to the quality control department	11
7.3 Documents established on the basis of inspections and tests performed or supervised by qualified personnel organisationally independent from the manufacturing department, according to the requirements specified on the order and carried out on the prod	11
8 Marking	12
9 Packaging	12
10 Arbitration	12

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 March 1997, and conflicting national standards shall be withdrawn at the latest by March 1997.

Within its programme of work, Technical Committee CEN/TC 132 entrusted CEN/TC 132/WG 3 "Forgings and cast and wrought forging stock" to prepare the following standard :

EN 603-1 Aluminium and aluminium alloys - Wrought forging stock - Part 1 : Technical conditions for inspection and delivery

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

EN 603-2 Aluminium and aluminium alloys - Wrought forging stock - Part 2 : Mechanical properties

EN 603-3 Aluminium and aluminium alloys - Wrought forging stock - Part 3 : Tolerances on dimensions and form

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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.

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1 Scope

This part of EN 603 specifies the technical conditions for inspection and delivery of aluminium and aluminium alloy forging stock for general engineering applications.

It applies to extruded and rolled products.

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 515	Aluminium and aluminium alloys - Wrought products - Temper designations
EN 573-3	Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 3 : Chemical composition
EN 603-2	Aluminium and aluminium alloys - Wrought forging stock - Part 2 : Mechanical properties
EN 603-3	Aluminium and aluminium alloys - Wrought forging stock - Part 3 : Tolerances on dimensions and form
EN 10002-1	Metallic materials - Tensile testing - Part 1 : Method of test (at ambient temperature)
EN 10204	Metallic products - Types of inspection documents
ISO 468	Surface roughness - Parameters, their values and general rules for specifying requirements

3 Definitions

For the purpose of this standard the following definitions apply :

3.1 wrought forging stock

Extruded or rolled material suitable for the production of forgings.

3.2 cast

Quantity of product cast simultaneously, from the same heat. The different ingots of a cast may have different dimensions.

3.3 inspection lot

Consignment, or part thereof, submitted for inspection, comprising products of the same grade or alloy, form, temper, size, shape, thickness or cross-section and processed in the same manner.

3.4 sample

One or more products taken from an inspection lot.

3.5 specimen

One or more pieces taken from each product in the sample for the purpose of producing test pieces.

3.6 test pieces

Piece taken from each specimen and suitably prepared for test.

3.7 test

Operation to which the test piece is subjected in order to measure or classify a property.

4 Orders or tenders

The order or tender shall define the product required and shall contain the following details :

- a) the form of the product (extruded bar, rolled plate etc.) ;
- b) the type and metallurgical condition of the material :
 - the designation of the aluminium and aluminium alloy ;
 - the metallurgical condition for delivery in accordance with EN 515 (as fabricated or annealed).
- c) the number of this European Standard ;
- d) the dimensions and shape of the product (thickness, width, length, diameter) and/or reference to a drawing defining the product ;
- e) whether mechanical testing is required ;
- f) quantity and, where applicable, quantity tolerances (see 5.7) ;
- g) any requirements for inspection documents ;
- h) any special requirements agreed between the purchaser and supplier.

5 Requirements

5.1 Production and manufacturing processes

The production and manufacturing processes shall be left to the discretion of the producer. Unless it is explicitly stated otherwise in the order, no obligation shall be placed on the producer to use the same processes for subsequent and similar orders.

5.2 Quality control

The supplier shall be responsible for the performance of all inspection and tests required by the relevant European Standard or specification, prior to shipment of the product. If the purchaser wishes to inspect the product at the supplier's works, he shall notify the supplier at the time of placing the order.

5.3 Chemical composition

The chemical composition shall comply with the requirements given in EN 573-3.

If the purchaser requires content limits for elements not specified in the above standard, these limits shall be stated on the order, after agreement between purchaser and supplier.

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5.4 Mechanical properties

When requested by the purchaser and stated on the order, the mechanical properties of the forging stock in the metallurgical condition shall comply with those given in EN 603-2.

5.5 Surface quality

5.5.1 Surface roughness

The surface roughness of the product shall be in accordance with Table 1.

Table 1 : Surface roughness limits of forging stock

Class	Alloy group(s)		R_a μm max.
2		2xxxx (lead bearing) 4xxxx	12,5
1	1xxxx 2xxxx (lead free) 3xxxx 5xxxx 6xxxx 7xxxx		6,3

5.5.2 Surface finish

The products shall be free from defects likely to impair the final surface finish of forgings subsequently produced. Whilst an operation designed to mask a defect is not permissible, the elimination of a superficial surface defect is permissible, provided that the dimensional tolerances are observed.

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5.5.3 Peripheral coarse grain

When the existence of peripheral coarse grain resultant from recrystallization during heat treatment of forgings produced from extruded forging stock in certain susceptible alloys is considered likely to impair the surface quality of such forgings, a restriction, agreed between purchaser and supplier, shall be placed on this feature and stated on the order.

5.6 Tolerances on dimensions and form

Tolerances on dimensions and form shall comply with EN 603-3.

The purchaser may only reject those products having dimensions not complying with the specified tolerances.

5.7 Quantity tolerance

The quantity tolerance shall be $+20\%$
 0 unless otherwise agreed between purchaser and supplier.