



SLOVENSKI STANDARD

SIST EN 603-2:1998

01-april-1998

Aluminij in aluminijeve zlitine - Gneteni surovci za kovanje - 2. del: Mehanske lastnosti

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

Aluminium und Aluminiumlegierungen - Stranggepreßtes oder gewalztes Schmiedevormaterial - Teil 2: Mechanische Eigenschaften

Aluminium et alliages d'aluminium - Produits corroyés destinés a la forge - Partie 2: Caractéristiques mécaniques

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ICS:

77.150.10 Alumijski izdelki Aluminium products

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EUROPEAN STANDARD

EN 603-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 1996

ICS 77.120.10

Descriptors: aluminium products, aluminium alloys, rolled products, forgings, mechanical properties, acceptance testing, user supplier relations

English version

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

Aluminium et alliages d'aluminium - Produits corroyés destinés à la forge - Partie 2: Caractéristiques mécaniques

Aluminium und Aluminiumlegierungen - Stranggepreßtes oder gewalztes Schmiedevormaterial - Teil 2: Mechanische Eigenschaften

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

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

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

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.

1 Scope

This Part of EN 603 specifies the mechanical properties of wrought forging stock in aluminium and aluminium alloys for general engineering applications.

The chemical composition and temper designations for these alloys are specified in EN 573-3 and EN 515 respectively.

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 603-1	Aluminium and aluminium alloys - Wrought forging stock - Part 1 - Technical conditions for inspection and delivery
EN 2004-1	Aerospace series - Test methods for aluminium and aluminium alloy products - Part 1 - Determination of electrical conductivity of wrought aluminium alloys
EN 10002-1	Metallic materials - Tensile testing - Part 1 - Methods of test (at ambient temperature)

3 Definitions

For the purposes of this standard the following definition applies :

section size : The minor sectional dimension, ie. diameter for extruded round bar, width across flats for extruded square bar and thickness for extruded rectangular section, designated *t*.

4 Tensile testing

For the selection of specimens and preparation of test pieces, see EN 603-1.

Tensile testing shall be carried out in accordance with EN 10002-1.

5 Mechanical properties

5.1 Extruded forging stock

Extruded forging stock is normally supplied in the F or H112 temper condition.

Testing to determine mechanical properties of extruded forging stock shall be undertaken only when requested by the purchaser and specified on the order (see EN 603-1).

In instances where tensile testing is specified on extruded forging stock in heat treatable alloys, the specimen selected for test shall be heat treated in accordance with the recommended practice for the temper condition of final use.

The mechanical properties of aluminium alloys are specified in tables 1 to 6.

Test results shall be rounded in accordance with the rules given in annex A.

For section sizes greater than those quoted, the levels of mechanical properties shall be as agreed between purchaser and supplier.

5.2 Rolled forging stock

Mechanical properties for rolled forging stock shall be subject to an agreement between purchaser and supplier.

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6 Electrical conductivity

The electrical conductivity of extruded forging stock produced in alloy EN AW-7075 in the T732 temper condition shall be determined in accordance with EN 2004-1, as part of the inspection lot acceptance, by testing the surface of the previously selected tensile test specimen to the criteria shown in table 6.

Table 1 : Alloy EN AW-2014 [Al Cu4SiMg]

Product	Temper	Section size t mm	Tensile strength	Proof stress	Elongation
			R_m MPa min.	$R_{P0,2}$ MPa min.	A % min.
Extruded	T42	All sizes	370	210	11
	T62	$t \leq 180$	440	380	6

Table 2 : Alloy EN AW-2024 [Al Cu4Mg1]

Product	Temper	Section size t mm	Tensile strength	Proof stress	Elongation
			R_m MPa min.	$R_{P0,2}$ MPa min.	A % min.
Extruded	T42	$t \leq 150$	420	260	8

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Table 3 : Alloy EN AW-5083 [Al Mg4, 5Mn0,7]

Product	Temper	Section size t mm	Tensile strength	Proof stress	Elongation
			R_m MPa min.	$R_{P0,2}$ MPa min.	A % min.
Extruded	H112	$t \leq 150$	270	110	12

Table 4 : Alloy EN AW-5754 [Al Mg3]

Product	Temper	Section size <i>t</i> mm	Tensile strength <i>R_m</i> MPa min.	Proof stress <i>R_{P0,2}</i> MPa min.	Elongation <i>A</i> % min.
Extruded	H112	$t \leq 150$	180	80	14

Table 5 : Alloy EN AW-6082 [Al SiMgMn]

Product	Temper	Section size <i>t</i> mm	Tensile strength <i>R_m</i> MPa min.	Proof stress <i>R_{P0,2}</i> MPa min.	Elongation <i>A</i> % min.
Extruded	T62	$t \leq 200$	310	260	7

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