



SLOVENSKI STANDARD

SIST EN 1715-3:2002

01-februar-2002

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Aluminium and aluminium alloys - Drawing stock - Part 3: Specific requirements for mechanical uses (excluding welding)

Aluminium und Aluminiumlegierungen - Vordraht - Teil 3: Besondere Anforderungen für mechanische Anwendungen (ausgenommen Schweißen)

Aluminium et alliages d'aluminium - Fil machine - Partie 3: Exigences spécifiques pour les applications mécaniques (soudage excepté)

Ta slovenski standard je istoveten z: EN 1715-3:1997

ICS:

77.150.10 Alumijski izdelki Aluminium products

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ICS 77.150.10

Descriptors: aluminium, aluminium alloys, drawing stock, specifications, quality, chemical composition, delivery condition, mechanical properties, inspection, tests

English version

**Aluminium and aluminium alloys - Drawing stock -
Part 3: Specific requirements for mechanical uses
(excluding welding)**

Aluminium et alliages d'aluminium - Fil machine
- Partie 3: Exigences spécifiques pour les
applications mécaniques (soudage excepté)

Aluminium und Aluminiumlegierungen - Vordraht
- Teil 3: Besondere Anforderungen für
mechanische Anwendungen (ausgenommen Schweißen)

This European Standard was approved by CEN on 1997-08-21. 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.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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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 1998, and conflicting national standards shall be withdrawn at the latest by March 1998.

Within its programme of work, Technical Committee CEN/TC 132 entrusted CEN/TC 132/WG 4 "Wires and drawing stock" to prepare the following standard :

EN 1715-3 Aluminium and aluminium alloys - Drawing stock - Part 3 : Specific requirements for mechanical uses (excluding welding)

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

EN 1715-1 Aluminium and aluminium alloys - Drawing stock - Part 1 : General requirements and technical conditions for inspection and delivery

EN 1715-2 Aluminium and aluminium alloys - Drawing stock - Part 2 : Specific requirements for electrical applications

EN 1715-4 Aluminium and aluminium alloys - Drawing stock - Part 4 : Specific requirements for welding applications

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, 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 1715 applies to drawing stock of aluminium alloys for general mechanical uses (excluding welding) and specifies characteristics and specific technical conditions for inspection and delivery of these products.

The general requirements and technical conditions for inspection and delivery are specified in EN 1715-1.

This standard does not apply to drawn wire.

In the case of more demanding uses in terms of surface aspects, ductility..., the final use shall be indicated and special requirements shall be agreed between the producer and purchaser.

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 product - Temper designations
EN 573-3	Aluminium and aluminium alloys - Chemical composition and forms of wrought products - Part 3 : Chemical composition
EN 1715-1	Aluminium and aluminium alloys - Drawing stock - Part 1 : General requirements and technical conditions for inspection and delivery

3 Specifications

3.1 Chemical composition

Aluminium grades and aluminium alloys used commonly for mechanical uses (excluding welding) are given in table 1. These common alloys are the alloys classified "A" in EN 1715-1.

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Table 1 : Alloys for mechanical purposes - Tempers for delivery - Typical mechanical characteristics (tensile strength)

Alloy designation	Temper	Tensile strength typical range R_m MPa	
		Continuously Cast Rod	Hot Rolled Rod
1 000 Serie			
EN AW-1098 [Al 99,98]	F	75 to 85	75 to 85
EN AW-1080A [Al 99,8 (A)]	F	80 to 110	80 to 110
	O	60 to 75	60 to 75
EN AW-1070A [Al 99,7]	F	80 to 110	80 to 110
	O	60 to 75	60 to 75
EN AW-1050A [Al 99,5]	F	80 to 130	80 to 130
	O	60 to 80	60 to 80
2 000 Serie			
EN AW-2011 [Al Cu6BiPb]	F	170 to 230	170 to 400
	O3	110 to 170	110 to 170
EN AW-2014A [Al Cu4 MgSi (A)]	F	200 to 260	200 to 400
	O3	150 to 220	150 to 220
EN AW-2017A [Al Cu4 MgSi (A)]	F	200 to 260	200 to 400
	O3	150 to 220	150 to 220
EN AW-2117 [Al Cu2,5Mg]	F	170 to 230	170 to 360
	O3	140 to 200	140 to 200
EN AW-2024 [Al Cu4Mg1]	F	200 to 280	200 to 440
	O3	180 to 240	180 to 240
3 000 Serie			
EN AW-3003 [Al Mn1Cu]	F	120 to 220	120 to 220
	O3	95 to 120	95 to 120
EN AW-3103 [Al Mn1]	F	120 to 220	120 to 220
	O3	95 to 115	95 to 115
5 000 Serie			
EN AW-5051A [Al Mg2(B)]	F	170 to 230	
EN AW-5251 [Al Mg2]	F	170 to 230	
EN AW-5052 [Al Mg2,5]	F	180 to 250	
EN AW-5154A [Al Mg3,5(A)]	F	210 to 270	
	O3	210 to 250	
EN AW-5754 [Al Mg3]	F	190 to 250	
	O3	190 to 230	
EN AW-5019 [Al Mg5]	F	250 to 320	
	O3	250 to 310	
EN AW-5086 [Al Mg4]	F	240 to 320	
	O3	240 to 310	
6 000 Serie			
EN AW-6060 [Al MgSi]	T4	155 to 210	
EN AW-6061 [Al MgSiCu]	F	120 to 200	
	T4	250 to 280	
EN AW-6063 [Al Mg0,7Si]	T4	160 to 220	
EN AW-6082 [Al Si1MgMn]	F	130 to 220	
	T4	260 to 290	
7 000 Serie			
EN AW-7075 [Al Zn5,5MgCu]	O3	180 to 290	
O : Annealed ; O3 : Homogenised ; F : As fabricated ; T4 : heat solution treated, quenched and naturally aged.			

Their chemical composition shall be in accordance with EN 573-3.

The elements determined and reported in the certificate of mass and analysis shall be :

Si, Fe, Cu, Mn, Mg, Cr, Zn, Ti.

If other elements (e.g. Pb, Bi, Zr...) are specified in EN 573-3 ; they shall be determined and reported in the certificate of mass and analysis.

3.2 Temper of delivery

The variety of application of drawn wire made from drawing stock of aluminium and aluminium alloys used for mechanical applications requires a precise definition of the temper of delivery which is liable to exert a significant influence on the ability to process and on the final characteristics. Tempers shall be indicated in accordance with EN 515.

The usual tempers for drawing stock covered by this standard are :

- F : as fabricated ;
- O : annealed by heat treatment on the coil ;
- O3 : homogenised by high temperature treatment ;
- T4 : heat solution treated, quenched and naturally aged (for age hardening alloys).

These tempers are listed in table 1 with typical ranges of mechanical characteristics (tensile strength).

If no temper is specified when ordering, the delivered temper shall be F.

Particular requirements concerning the mechanical strength range shall be agreed between supplier and purchaser.

4 Product inspection and testing methods

4.1 Chemical composition

The chemical composition shall be checked for each cast delivered in accordance with EN 1715-1.

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4.2 Mechanical characteristics

The mechanical characteristics shall be measured once per coil in accordance with EN 1715-1.

Other sampling frequencies shall be agreed between the supplier and the purchaser.