



SLOVENSKI STANDARD

SIST EN 1715-1:1998

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

Aluminium und Aluminiumlegierungen - Vordraht - Teil 1: Allgemeine Anforderungen und technische Lieferbedingungen (standards.iteh.ai)

Aluminium et alliages d'aluminium - Fil machine - Partie 1: Exigences générales et conditions techniques de contrôle et de livraison

Ta slovenski standard je istoveten z: EN 1715-1:1997

ICS:

77.150.10 Alumijski izdelki Aluminium products

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Descriptors: aluminium, aluminium alloys, drawing stock, designation, specifications, quality, dimensions, dimensional tolerances, inspection, chemical composition, mechanical properties, delivery, marking, packaging

English version

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

Aluminium et alliages d'aluminium - Fil machine
- Partie 1: Exigences générales et conditions
techniques de contrôle et de livraison

Aluminium und Aluminiumlegierungen - Vordraht
- Teil 1: Allgemeine Anforderungen und
technische Lieferbedingungen

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

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

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

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

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 specifies the general drawing stock characteristics to be satisfied by unalloyed aluminium and aluminium alloy drawing stock delivered in the form of coils with a unit weight ranging between 1 t and 3 t and obtained by common industrial processes.

It also specifies the technical conditions for inspection and delivery of these products.

These general characteristics and conditions apply to drawing stock intended for the following three main fields of application :

- electrical conductors of aluminium and aluminium alloys ;
- wires for general mechanical uses ;
- wires for brazing and welding.

The specific requirements to drawing stock for these applications are specified in parts 2, 3 and 4 of EN 1715.

It does not apply to wires which are drawn, but only to drawing stock which is produced by hot-working.

NOTE 1 : Manufacture of drawing stock :

two main methods exist for the manufacture of drawing stock :

- continuously Cast Rod - (CCR) :

a section is cast continuously in the groove of a wheel, the groove being closed by an endless strip ;

the solid and still hot section is rolled in a multistand rolling mill to the required diameter ;

the drawing stock rod thus produced is wound continuously to form coils 1 t to 3 t in weight ;

- hot rolled Rod - (HRR) :

a wirebar of diameter 100 mm to 150 mm is heated and rolled to the required diameter ;

the coils produced, weighing up to about 100 kg are butt welded together and wound to form coils with unit weight of 1 t to 3 t.

NOTE 2 : It is also possible to obtain drawing stock by extrusion.

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 573-4	Aluminium and aluminium alloys - Chemical composition and forms of wrought products - Part 4 : Forms of product
EN 10002-1	Metallic materials - Tensile testing - Part 1 : Method of test (At ambient temperature)
EN 10204	Metallic products - Types of inspection documents
EN 1715-2	Aluminium and aluminium alloys - Drawing stock - Part 2 : Specific requirements for electrical applications
EN 1715-3	Aluminium and aluminium alloys - Drawing stock - Part 3 : Specific requirements for mechanical uses (excluding welding)
EN 1715-4	Aluminium and aluminium alloys - Drawing stock - Part 4 : Specific requirements for welding applications

3 Definitions

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

3.1 drawing stock

Intermediate wrought solid product manufactured by hot working with cross-section approximately circular along its entire length, delivered in coils and in a single length, and with a unit weight normally ranging between 1 t and 3 t.

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3.2 cast

Quantity of liquid metal in the furnace that has simultaneously undergone the same treatment before continuously casting and rolling or casting into wirebar or extrusion ingot.

3.3 manufacturing batch

Quantity of final product produced from the same cast, during the same manufacturing run and treatment charge with the same temper and diameter.

3.4 delivery batch

Quantity of final product produced from the same cast, temper, diameter, and forming part of the same shipment.

4 Orders or tenders

The order or tender shall define the product in detail and shall contain the following information :

a) the type of product :

- product identification : drawing stock ;
- designation of the aluminium grade or aluminium alloy in accordance with EN 573-3 ;
- unit mass of the coil ;

b) the dimensions expressed in millimetres :

- nominal diameter of the drawing stock ;
- dimensions of coils ;

c) the temper of the material for delivery in accordance with EN 515 ;

d) reference to the relevant parts of this Standard ;

e) quantity :

- mass (in metric tons) ;
- tolerances on quantity (if required) ;

f) any special requirement agreed between supplier and purchaser, for instance :

- properties other than those specified in EN 1715-2, EN 1715-3 or EN 1715-4;
- loose or tight winding ;
- surface protection ;
- special packaging ;
- special marking ;

- any requirement for certificates of conformity, test and/or analysis reports or inspection certificates.

EXAMPLE :

Drawing stock in EN-AW-6101, diameter 9,5 mm, T4 temper, unit mass 2 000 kg, coils with inner diameter 540 mm, height 850 mm, 50 t according to EN 1715-1 and EN 1715-2.

5 Requirements

5.1 Production and manufacturing processes

Unless otherwise specified in the order, the production and manufacturing processes shall be left to the discretion of the producer.

Unless it is explicitly stated in the order no obligation shall be placed on the producer to use the same processes for subsequent and similar orders.

In the case of special requirements it is recommended that trial quantities be produced to confirm that requirements are met.

5.2 Quality control

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

The traceability of the products shall be provided at the producer's permises over a period to be agreed between the parties.

5.3 Families of aluminium and aluminium alloys used

Aluminium and aluminium alloys commonly used for the production of drawing stock are listed in table 1, together with their field of application which refers to the relevant part of this Standard.

NOTE : The alloys are divided into two classes :

- class A, alloys produced in large quantities in Europe :
- class B, alloys corresponding to specific applications, limited to certain countries.

Table1 : Alloys list

Alloy designation	Mechanical uses (see EN 1715-3)	Welding applications (see EN 1715-4)	Electrical applications (see EN 1715-2)
1 000 series			
EN AW-1098 [Al 99,98]	A	B	-
EN AW-1090 [Al 99,90]	B		-
EN AW-1080A [Al 99,8 (A)]	A	A	-
EN AW-1070A [Al 99,7]	A		
EN AW-1370 [E-Al99,7]	-	-	A
EN AW-1050A [Al 99,5]	A	A	
EN AW-1350 [E-Al99,5]	-	-	A
EN AW-1450 [Al 99,5Ti]	-	B	-
EN AW-1200 [Al 99,0]	B	-	-
2 000 series			
EN AW-2011 [Al Cu6BiPb]	A	-	-
EN AW-2014A [Al ICu4 SiMg (A)]	A	-	-
EN AW-2017A [Al Cu4 MgSi (A)]	A	-	-
EN AW-2117 [Al Cu2,5Mg]	A	-	-
EN AW-2319 [Al Cu6Mn (A)]		B	-
EN AW-2024 [Al Cu4Mg1]	A	-	-
EN AW-2030 [Al Cu4 PbMg]	B	-	-
3 000 series			
EN AW-3003 [Al Mn1Cu]	A	-	-
EN AW-3103 [Al Mn1]	A	B	-
4 000 series			
EN AW-4043A [Al Si5 (A)]	-	A	-
EN AW-4045 [Al Si10]	-	B	-
EN AW-4047A [Al Si12 (A)]	-	A	-
EN AW-4046 [Al Si10Mg]	-	B	-
5 000 series			
EN AW-5005 [Al Mg1 (B)]	B	-	-
EN AW-5305 [Al 99,85Mg 1]	B	-	-
EN AW-5505 [Al 99,9Mg1]	B	-	-
EN AW-5110 [Al 99,85Mg0,5]	B	-	-
EN AW-5210 [Al 99,9Mg0,5]	B	-	-
EN AW-5018 [Al Mg3Mn0,4]	-	B	-
EN AW-5019 [Al Mg5]	A	-	-
EN AW-5119 [Al Mg5(A)]		B	
EN AW-5149 [Al Mg2Mn0,8(A)]		B	
EN AW-5249 [Al Mg2Mn0,8Zr]		B	
EN AW-5051A [Al Mg2(B)]	A		
EN AW-5251 [Al Mg2]	A		

"to be continued"

Table 1 (concluded)

Alloy designation	Mechanical uses (see EN 1715-3)	Welding applications (see EN 1715-4)	Electrical applications (see EN 1715-2)
5 000 series			
EN AW-5052 [Al Mg2,5]	A		
EN AW-5154A [Al Mg3,5 (A)]	A	A	
EN AW-5354 [Al Mg2,5MnZr]		B	
EN AW-5554 [Al Mg3Mn(A)]		B	
EN AW-5654 [Al Mg3,5Cr]		B	
EN AW-5754 [Al Mg3]	A	A	
EN AW-5356 [Al Mg5Cr (A)]		A	
EN AW-5456A [Al Mg5Mn1 (A)]		B	
EN AW-5556A [Al Mg5Mn]		A	
EN AW-5082 [Al Mg4,5]	B		
EN AW-5183 [Al Mg4,5Mn0,7 (A)]		A	
EN AW-5086 [Al Mg4]	A		
EN AW-5087 [Al Mg4,5MnZr]		A	
6 000 series			
EN AW-6101 [E-AlMgSi]			A
EN AW-6201 [E-AlMg0,7Si]			A
EN AW-6401 [Al 99,9MgSi]	B		
EN AW-6012 [Al MgSiPb]	B		
EN AW-6060 [Al MgSi]	A		
EN AW-6061 [Al MgSiCu]	A		
EN AW-6063 [Al Mg0,7Si]	A		
EN AW-6082 [Al Si1MgMn]	A		
7 000 series			
EN AW-7020 [Al Zn4,5Mg1]	B		
EN AW-7050 [Al Zn6CuMgZr]	B		
EN AW-7075 [Al Zn5,5MgCu]	A		

5.4 Technical specifications

Drawing stock covered by this standard shall meet the following general minimum requirements.

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5.4.1 Chemical composition

Chemical composition shall be in accordance with EN 573-3. SIST EN 1715-1:1998
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If the purchaser requires tighter content limits of the specified elements or content limits for elements not specified in the above standard, these limits shall be stated on the order, after agreement between the supplier and the purchaser.