BRITISH STANDARD

BS EN
1715-4 : 1998

# Aluminium and aluminium alloys — Drawing stock

## Part 4. Specific requirements for welding applications

The European Standard EN 1715-4 : 1997 has the status of a British Standard

ICS 77.150.10

# National foreword

This British Standard is the English language version of EN 1715-4 : 1997.

The UK participation in its preparation was entrusted by Technical Committee NFE/35, Light metals and their alloys, to Subcommittee NFE/35/5, Wrought aluminium and aluminium alloys, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

**Cross-references**

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled 'International Standards Correspondence Index', or by using the 'Find' facility of the BSI Standards Electronic Catalogue.

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**Summary of pages**

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 4, an inside back cover and a back cover.

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 January 1998



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# EN 1715-4

September 1997

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

English version

# Aluminium and aluminium alloys — Drawing stock — Part 4: Specific requirements for welding applications

Aluminium et alliages d'aluminium — Fil machine — Partie 4: Exigences spécifiques pour les applications soudage

Aluminium und Aluminiumlegierungen — Vordraht — Teil 4: Besondere Anforderungen für schweißtechnische Anwendungen

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.

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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**



Ref. No. EN 1715-4 : 1997 E

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

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

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.

## Contents

## 1 Scope

This Part of EN 1715 applies to drawing stock of aluminium alloys for 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.

## 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 welding are given in table 1. These common alloys are the alloys classified 'A' in EN 1715-1.

Their chemical compositions 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, Be, Ti.

If other elements (e.g. 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 aluminium and aluminium alloys used 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 of the wires manufactured. 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;

– O3: homogenized by high-temperature treatment.

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 the 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.

### 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 purchaser.

## 5 Delivery documents and inspection documents

A certificate of mass and analysis shall be provided in accordance with EN 1715-1.

In addition, a test report in accordance with EN 1715-1 shall be delivered for each consignment, with reference to the order, and shall give the following information:

– identification of the alloy;

– temper;

– diameter;

– list of coil identification numbers;

– results of test for mechanical characteristics;

– date of manufacture;

– date of heat treatment if any;

– net mass.

NOTE. Other inspection documents can be defined between the supplier and customer in accordance with **7.2** of EN 1715-1 : 1997.

## 6 Marking and packing

Marking and packing shall be in accordance with EN 1715-1.

**Table 1. Alloys for mechanical purposes — Tempers for delivery — Typical mechanical characteristics (tensile strength)**

| Alloy designation | Temper | Tensile strength, typical range, $R_m$ MPa |
|---|---|---|
| **1000 series** | | |
| EN AW-1080A [Al 99,8(A)] | F | 80 to 110 |
| EN AW-1050A [Al 99,5] | F | 80 to 130 |
| **4000 series** | | |
| EN AW-4043A [Al Si5(A)] | O3 | 100 to 140 |
| EN AW-4047A [Al Si12(A)] | O3 | 125 to 180 |
| **5000 series** | | |
| EN AW-5154A [Al Mg3,5(A)] | F<br>O3 | 210 to 270<br>210 to 250 |
| EN AW-5754 [Al Mg3] | F<br>O3 | 190 to 250<br>190 to 230 |
| EN AW-5356 [Al Mg5Cr(A)] | F<br>O3 | 240 to 300<br>240 to 290 |
| EN AW-5556A [Al Mg5Mn] | F<br>O3 | 300 to 380<br>300 to 360 |
| EN AW-5183 [Al Mg4,5Mn0,7(A)] | F<br>O3 | 290 to 360<br>290 to 350 |
| EN AW-5087 [Al Mg4,5MnZr] | F<br>O3 | 290 to 360<br>290 to 350 |

O annealed
O3 homogenized
F as fabricated

*blank*

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