SLOVENSKI STANDARD
SIST EN 13958:2009

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Nadomeġļ a:
SIST EN 13958:2004

Aluminij in aluminijeve zlitine - Hladno vleļ ene, okrogle, v kolut navite cevi za sploġno uporabo - Specifikacija

Aluminium and aluminium alloys - Cold drawn, round, coiled tube for general applications - Specification

Aluminium und Aluminiumlegierungen - Gezogene Rundrohre in Ringen für allgemeine Anwendungen - Spezifikation

Aluminium et alliages d'aluminium - Tubes ronds étirés fournis en couronnes pour applications générales - Spécifications

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English Version

Aluminium and aluminium alloys - Cold drawn, round, coiled tube for general applications - Specification

Aluminium et alliages d'aluminium - Tubes ronds étirés fournis en couronnes pour applications générales - Spécifications

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 13958:2008) 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of an identical text or by endorsement, at the latest by April 2009, and conflicting national standards shall be withdrawn at the latest by April 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13958:2003.

Within its programme of work, Technical Committee CEN/TC 132 entrusted CEN/TC 132/WG 5 "Extruded and drawn products" to revise EN 13958:2003.

The following editorial modifications have been introduced during the revision:

— the contents, text and tables have been changed to bring this European Standard in line with EN 754.

The following technical modifications have been introduced during the revision:

— Clause 1 has been amended to make clear the products covered by this European Standard and those which are not. In addition, the list of the most commonly used general engineering alloys is replaced by a reference to the alloy group only;

— Clauses 3 and 4 including Tables: the text and the tables are updated;

— Annex A (informative) has been added to provide further explanation of wall thickness variation (eccentricity) along with some examples.

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CEN/TC 132 affirms that it is its policy that in the case when a patentee refuses to grant licenses on standardised standard products under reasonable and not discriminatory conditions, then this product is removed from the corresponding standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies the tolerances on dimensions and form of round aluminium and aluminium alloys porthole extruded and cold drawn tubes with an outside diameter (OD) of over 2 mm up to and including 50 mm supplied in coil form or in straight lengths cut from coiled material: see Figure 1.

This European Standard mainly applies to round cold drawn tube for general engineering applications manufactured in 1xxx series of aluminium and 3xxx series of alloys. The use of this European Standard for non-standardised 1xxx aluminium and 3xxx alloys or alloys from other series, e.g. 5xxx or 6xxx, is subject to agreement between supplier and purchaser.

This European Standard only applies to:

— round tube extruded by the porthole/bridge method in coil form and then cold drawn to the final dimensions required;

— tube as above but delivered in straight lengths cut from coiled material.

This European Standard does not apply to:

— seamless extruded (die/mandrel method) and drawn tubes (EN 754-7);

— tubes extruded in straight lengths (i.e. not coiled) and drawn (EN 754-8).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) 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 and form of products*

EN 754-2, *Aluminium and aluminium alloys — Cold drawn rod/bar and tube — Part 2: Mechanical properties*

EN 12258-1:1998, *Aluminium and aluminium alloys — Terms and definitions — Part 1: General terms*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12258-1:1998 and the following apply.

3.1
order document
document or set of documents agreed between supplier and purchaser at the time of ordering

4 Ordering information

The order document shall contain the following:

a) form and type of product:

- — form of the product - porthole extruded tube, cold drawn in coil form or straight lengths,
- — reference to EN 573-3 for chemical composition limit,
- — reference to EN 515 for temper designation,
- — any special requirements identified by the purchaser;

b) reference to EN 754-2 for mechanical property limit;

c) reference to this document (EN 13958);

d) dimensions of the tube:

- — length (where appropriate),

and only two of the following dimensions:

- — outside diameter,
- — inside diameter,
- — wall thickness;

e) coil characteristics (where appropriate):

- — inner coil diameter (often fixed/standardised),
- — outer coil diameter,
- — width/height of coil,
- — coil weight limitations,
- — drum/bobbin dimensions (where appropriate);

f) quantity:

- — mass,
- — number of pieces,
- — total length,
- — tolerance on quantity;

g) any requirements for inspection documents;

h) any special requirements agreed between supplier and purchaser:

- — marking of products, e.g. special identification,

— references to drawings, part numbers, etc.,

— additional or special testing,

— surface finish requirements,

— surface protection,

— packaging,

— use of A_{50mm} value instead of A value for elongation;

i) where special requirements are specified, this shall be stated on the order document with reference to the relevant European Standards.

5 Requirements

5.1 Production and manufacturing processes

Unless otherwise specified in the order document, the production and manufacturing processes shall be left to the discretion of the manufacturer. Unless it is explicitly stated in the order document, no obligation shall be placed on the manufacturer to use the same processes for subsequent 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 and/or the particular specification prior to shipment of the product. If the purchaser wishes to inspect the product at the manufacturer's works, he shall notify the supplier at the time of placing the order.

5.3 Chemical composition limits

The chemical composition limits shall be in conformity with the requirements specified in EN 573-3.

If the purchaser requires closer limits for elements than those specified in EN 573-3, these limits shall be according to an agreement between supplier and purchaser and stated in the order document.

5.4 Mechanical properties

The mechanical properties shall be in conformity with those specified in EN 754-2 or those agreed between supplier and purchaser and stated in the order document.

Typical Brinell hardness (mainly used for flat surfaces, i.e. basically not suitable for round tubes/non-flat surfaces) values are given in EN 754-2, but they are not binding for acceptance purposes. However, a Brinell hardness value may be agreed upon for acceptance testing.

5.5 Surface quality

5.5.1 Surface quality in general

The surface shall be free from defects prejudicial to its suitable and proper use. The reference standards shall be agreed between supplier and purchaser.

The product shall have a smooth and clean surface. However, small surface defects such as light scratches, indentations, discolouration and non-uniform surface appearance resulting from the manufacturing process (which cannot always be totally avoided) are generally permitted on the product surface. Such surface quality is commonly referred to as “normal quality”.

A greater degree of tolerance of surface defects (in respect to both the number and severity) is normally necessary for tube supplied in coil form compared to straight lengths, since it is not possible to remove individual defects within the coil. This issue should be taken into account by the purchaser when placing an order for coiled tube.

5.5.2 Surface defects and detection

In the case of stricter and more specific requirements than “normal quality”, the following shall be subject to agreement between supplier and purchaser and stated in the order document:

— testing/detection method (e.g. eddy current testing, pressure/leak testing etc.);

— type (scratches, dents etc.) and size of defects;

— method of marking the defects (e.g. ink, paint).

5.5.3 Surface lubrication

A surface lubricant may be provided if required to:

— prevent the occurrence of fretting corrosion during transport;

— reduce the risk for surface defects created during subsequent manufacturing processes (e.g. decoiling, straightening, cutting, tube manipulation etc.);

— improve the resistance to surface failures related to surface damage resulting from improper handling and/or storage (e.g. water stains, condensation etc.).

As the type and amount of lubrication can have an impact on the following manufacturing process and the final application, the type and amount of lubricant shall be subject to agreement between supplier and purchaser and stated in the order document.

5.6 Coil characteristics

5.6.1 Coil dimensions

The following coil dimensions shall be subject to agreement between supplier and purchaser and stated in the order document:

— the outside diameter, inside diameter and maximum width/height or weight of the coil;

— in the case of coils to be supplied on drums/bobbins, the dimensions of the drum/bobbin shall also be specified.

5.6.2 Type of coil winding

The type of coil winding (random or level winding) can be of importance to the subsequent manufacturing process (e.g. decoiling, straightening etc.) and shall in such cases be subject to agreement between supplier and purchaser and stated in the order document.

5.7 Additional requirements

Any additional requirements shall be agreed between supplier and purchaser and stated on the order document.