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Copper and copper alloys - Seamless, round tubes for general purposes

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/23

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EUROPEAN STANDARD
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EUROPÄISCHE NORM

EN 12449

June 2023

ICS 23.040.15; 77.120.30 Supersedes EN 12449:2016+A1:2019

English Version

Copper and copper alloys - Seamless, round tubes for general purposes

Cuivre et alliages de cuivre - Tubes ronds sans soudure pour usages généraux

Kupfer und Kupferlegierungen - Nahtlose Rundrohre zur allgemeinen Verwendung

This European Standard was approved by CEN on 13 February 2023.

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

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European foreword

This document (EN 12449:2023) has been prepared by Technical Committee CEN/TC 133 “Copper and copper alloys”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by December 2023, and conflicting national standards shall be withdrawn at the latest by December 2023.

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

This document supersedes EN 12449:2016+A1:2019.

The main changes compared to the previous edition are listed below:

a) update of normative references;

b) addition of the material CuCr1Zr (CW106C) in Table 2 and Table 9;

c) modification of the lead content for CuZn39Pb3 (CW614N) and CuZn40Pb2 (CW617N) in Table 7;

d) correction of hardness values for CuSi3Zn2P (CW124C) of material conditions R650 and H170 in Table 9;

e) modification of 9.1 “Declaration of conformity” and 9.2 “Inspection documentation;

f) editorial amendments.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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Introduction

The European Committee for Standardization (CEN) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning the alloy CuSi3Zn2P (CW124C) given in 6.1.

CEN takes no position concerning the evidence, validity and scope of this patent right. The holder of this patent right has ensured the CEN that they are willing to negotiate licenses under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with CEN.

For CuSi3Zn2P (CW124C) information may be obtained from:

VIEGA GmbH and Co. KG

Ennester Weg 9

57439 Attendorn

GERMANY

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1 Scope

This document specifies the composition, property requirements and tolerances on dimensions and form for seamless round drawn copper and copper alloy tubes for general purposes supplied in the size range from 3 mm up to and including 450 mm outside diameter and from 0,3 mm up to and including 20 mm wall thickness.

The sampling procedures and the methods of test for verification of conformity to the requirements of this document are also specified.

NOTE Tubes having an outside diameter less than 80 mm and/or a wall thickness greater than 2 mm in certain alloys are most frequently used for free machining purposes which are specified in EN 12168.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1173, *Copper and copper alloys - Material condition designation*

EN 1412, *Copper and copper alloys - European numbering system*

EN 1971-1, *Copper and copper alloys - Eddy current test for measuring defects on seamless round copper and copper alloy tubes - Part 1: Test with an encircling test coil on the outer surface*

EN 1971-2, *Copper and copper alloys - Eddy current test for measuring defects on seamless round copper and copper alloy tubes - Part 2: Test with an internal probe on the inner surface*

EN 1976, *Copper and copper alloys - Cast unwrought copper products*

EN 16090, *Copper and copper alloys - Estimation of average grain size by ultrasound*

EN ISO 196, *Wrought copper and copper alloys - Detection of residual stress - Mercury(I) nitrate test (ISO 196)*

EN ISO 2624, *Copper and copper alloys - Estimation of average grain size (ISO 2624)*

EN ISO 6506-1, *Metallic materials - Brinell hardness test - Part 1: Test method (ISO 6506-1)*

EN ISO 6507-1, *Metallic materials - Vickers hardness test - Part 1: Test method (ISO 6507-1)*

EN ISO 6892-1, *Metallic materials - Tensile testing - Part 1: Method of test at room temperature (ISO 6892-1)*

EN ISO 8493, *Metallic materials - Tube - Drift-expanding test (ISO 8493)*

ISO 6957, *Copper alloys — Ammonia test for stress corrosion resistance*

ISO 80000-1:2009, *Quantities and units — Part 1: General*