



BSI Standards Publication

Copper and copper alloys - Ingots and castings

National foreword

This British Standard is the UK implementation of EN 1982:2017. It supersedes BS EN 1982:2008, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee NFE/34, Copper and copper alloys.

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

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© The British Standards Institution 2017
Published by BSI Standards Limited 2017

ISBN 978 0 580 91767 7

ICS 77.150.30

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2017.

Amendments/corrigenda issued since publication

Date	Text affected
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1982

September 2017

ICS 77.150.30

Supersedes EN 1982:2008

English Version

Copper and copper alloys - Ingots and castings

Cuivre et alliages de cuivre - Lingots et pièces moulées

Kupfer und Kupferlegierungen - Blockmetalle und
Gussstücke

This European Standard was approved by CEN on 9 July 2017.

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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 1982:2017) 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of an identical text or by endorsement, at the latest by March 2018, and conflicting national standards shall be withdrawn at the latest by March 2018.

This document supersedes EN 1982:2008.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive 2014/68/EU, see informative Annex ZA, which is an integral part of this document.

Within its programme of work, Technical Committee CEN/TC 133 requested CEN/TC 133/WG 7 “Ingots and castings” to prepare the revision of the following standard:

EN 1982:2008, *Copper and copper alloys — Ingots and castings*

In comparison with EN 1982:2008, the following significant changes were made:

- a) introduction of a clear distinction between ingots and castings with regard to pressure equipment applications in the whole standard;
- b) addition of information concerning pressure equipment application to the introduction and to the scope;
- c) addition of information concerning materials that can be used for products in contact with drinking water in Tables F.1, F.4, G.4, G.8, G.9, H.2, K.2, P.1 and P.2;
- d) rearrangements of the tables giving the chemical compositions and mechanical properties of the materials which were moved from Clause 6 to Annex C to Annex P;
- e) addition of the following 16 new materials: CB773S and CC773S (new Table F.4), CB757S and CC757S (new Table G.8), CB768S and CC768S (new Table H.2), CB770S and CC770S (new Table G.4), CB771S and CC771S (new Table F.1), CB772S and CC772S (new Table G.9) CB245E and CC245E (new Table P.1) and CB246E and CC246E (new Table P.2);
- f) addition of the terms “ingot” and “casting” and their definitions in Clause 3;
- g) deletion of item o) in Clause 5 “Ordering information” and renumbering of the subsequent items;
- h) subdivision between ingots and castings with regard to pressure equipment applications in 6.2.1 “Ingots” and 6.2.2 “Castings”;
- i) revision of Clause 5 i), 6.1, 6.4, 6.5 and 8.2.3;
- j) indication that mechanical properties for the “Pressure die cast – GP” castings are mandatory;
- k) amendment of Table ZA.1;
- l) deletion of B.5;

m) several editorial amendments.

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

Introduction

This European Standard for copper alloy ingots, and copper and copper alloy castings is based on previous national standards and harmonizes the compositions and mechanical properties required.

This European Standard does not include copper refinery shapes which are intended for working into wrought products and are the subject of EN 1976. Nor does it include master alloys intended for the manufacture of copper alloys which are the subject of EN 1981.

The essential information relevant to correct ordering, given in Clause 5 of the standard, is supplemented by Annex A, which is based upon the recommended practice for the ordering and supply of castings given in EN 1559-1. Its purpose is to assist the purchaser in providing full information to the supplier to ensure that he supplies castings according to the purchaser's requirements. It is recommended that full consultation takes place between the purchaser and the supplier at the stages of enquiry and ordering.

Sampling and testing frequency, where applicable, are specified in Clause 7. For certain applications, more rigorous inspection procedures may be required. Annex B gives supplementary inspection procedures which may be invoked, at the option of the purchaser [see Clause 5 o)].

Some copper and copper alloys can be used in castings for pressure equipment. Ingots are not suitable for pressure equipment.

The permitted material grades of copper and copper alloys for pressure applications and the conditions for their use are given in specific product or application standards.

For the design of pressure equipment, specific design rules apply.

Annex ZA gives information relating to the conformance of permitted material grades of copper and copper alloys used in castings to the New Approach Pressure Equipment Directive 2014/68/EU.

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 CuZn21Si3P-B (CB768S) and CuZn21Si3P-C (CC768S) given in Table H.2 as well as concerning the alloy CuSi4Zn4MnP-B (CB245E) and CuSi4Zn4MnP-C (CC245E) given in Table P.1 as well as concerning the alloy CuSi4Zn9MnP-B (CB246E) and CuSi4Zn9MnP-C (CC246E) given in Table P.2

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 he is willing to negotiate licenses either free of charge or 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 CuZn21Si3P-B (CB768S) and CuZn21Si3P-C (CC768S) information may be obtained from

Wieland-Werke AG
Graf Arco Straße 36
D-89079 Ulm
GERMANY

- For CuSi₄Zn₄MnP-B (CB245E), CuSi₄Zn₄MnP-C (CC245E), CuSi₄Zn₉MnP-B (CB246E) and CuSi₄Zn₉MnP-C (CC246E) information may be obtained from

VIEGA GmbH and Co. KG

Viega Platz 1

D-57439 Attendorn

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Due to developing legislation, the composition of a material specified in this European Standard may be restricted to the composition with respect to individual uses (e.g. for the use in contact with drinking water in some Member States of the European Union). These individual restrictions are not part of this European Standard. Nevertheless, for materials for which traditional and major uses are affected, these restrictions are indicated. The absence of an indication, however, does not imply that the material can be used in any application without any legal restriction.