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BSI Standards Publication

Copper and copper alloys — Copper profiles and profiled wire for electrical purposes

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National foreword

This British Standard is the UK implementation of EN 13605:2021. It supersedes BS EN 13605:2013, which is withdrawn.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 committee manager.

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Amendments/corrigenda issued since publication

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EUROPÄISCHE NORM

May 2021

ICS 77.150.30

Supersedes EN 13605:2013

English Version

Copper and copper alloys - Copper profiles and profiled wire for electrical purposes

Cuivre et alliages de cuivre - Profilés et fils profilés en cuivre pour usages électriques

Kupfer und Kupferlegierungen - Profile und profilierte Drähte aus Kupfer für die Anwendung in der Elektrotechnik

This European Standard was approved by CEN on 12 April 2021.

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 CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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Contents	Page
European foreword	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Designations	6
4.1 Material	6
4.2 Material condition	6
4.3 Product	7
5 Ordering information	8
6 Requirements	9
6.1 Composition	9
6.2 Mechanical properties	9
6.3 Electrical properties	9
6.4 Freedom from hydrogen embrittlement	9
6.5 Drawings	9
6.6 Dimensions and tolerances	9
6.7 Form of delivery of profiled wire	14
6.8 Mass tolerances	14
6.9 Surface condition	14
7 Sampling	14
7.1 General	14
7.2 Analysis	14
7.3 Mechanical, electrical and hydrogen embrittlement tests	15
8 Test methods	15
8.1 Analysis	15
8.2 Tensile test	15
8.3 Hardness test	15
8.4 Electrical test	15
8.5 Hydrogen embrittlement test	16
8.6 Retests	16
8.7 Rounding of results	16
9 Declaration of conformity and inspection documentation	16
9.1 Declaration of conformity	16
9.2 Inspection documentation	16
10 Marking, packaging, labelling	16
Annex A (informative) Characteristics of coppers for electrical purposes	26
A.1 General grouping of copper types	26
A.2 General characteristics	26
A.3 Particular characteristics	26
Bibliography	28

This is a preview of "BS EN 13605:2021". [Click here to purchase the full version from the ANSI store.](#)

European foreword

This document (EN 13605:2021) 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 November 2021, and conflicting national standards shall be withdrawn at the latest by November 2021.

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 13605:2013.

In comparison with the previous edition, the following technical modifications have been made:

- In 6.4, Freedom from hydrogen embrittlement, the alloys Cu-OFE (CW009A) and Cu-PHCE (CW022A) have been added.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

The products specified in this document are those which are especially suitable for electrical purposes, i.e. with specified electrical properties. Profiles for general purposes are specified in EN 12167.

Annex A (informative) gives guidance on the characteristics of coppers for electrical purposes.

This is one of a series of European Standards for copper products for electrical purposes. Other copper products are specified as follows:

- EN 13599, *Copper and copper alloys — Copper plate, sheet and strip for electrical purposes;*
- EN 13600, *Copper and copper alloys — Seamless copper tubes for electrical purposes;*
- EN 13601, *Copper and copper alloys — Copper rod, bar and wire for general electrical purposes;*
- EN 13602, *Copper and copper alloys — Drawn, round copper wire for the manufacture of electrical conductors;*
- EN 13604, *Copper and copper alloys — Semiconductor devices, electronic and vacuum products made from high conductivity copper.*

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1 Scope

This document specifies the composition, property requirements including electrical properties, and tolerances on dimensions and form for copper profiles and profiled wire for electrical purposes, which would fit within a circumscribing circle of maximum 180 mm diameter.

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

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

EN ISO 2626, *Copper - Hydrogen embrittlement test (ISO 2626)*

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 7438, *Metallic materials - Bend test (ISO 7438)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

profile

wrought product of uniform cross-section along its whole length, supplied in straight lengths

Note 1 to entry: It can be solid or hollow:

- if solid, the contour of its cross-section is complex;
- if hollow, the external contour and/or the internal contour of its cross-section is (are) complex.