

Copper and copper alloys — Test methods for assessing protective tin coatings on drawn round copper wire for electrical purposes

The European Standard EN 13603:2002 has the status of a British Standard

ICS 25.220.40; 77.150.30

National foreword

This British Standard is the official English language version of EN 13603:2002.

The UK participation in its preparation was entrusted by Technical Committee NFE/34, Copper and copper alloys, to Subcommittee NFE/34/1, Wrought and unwrought copper and copper alloys, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/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.

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This British Standard, having been prepared under the direction of the Engineering Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 20 September 2002

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English version

**Copper and copper alloys - Test methods for assessing
protective tin coatings on drawn round copper wire for electrical
purposes**

Cuivre et alliages de cuivre - Méthodes d'évaluation des
revêtements en étain sur les fils ronds étirés en cuivre pour
usages électriques

Kupfer und Kupferlegierungen - Prüfverfahren zur
Beurteilung von Schutzüberzügen aus Zinn auf gezogenen
Runddrähten aus Kupfer für die Anwendung in der
Elektrotechnik

This European Standard was approved by CEN on 22 February 2002.

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 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 Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document EN 13603:2002 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 September 2002, and conflicting national standards shall be withdrawn at the latest by September 2002.

Within its programme of work, Technical Committee CEN/TC 133 requested CEN/TC 133/WG 5 "Copper for electrical purposes" to prepare the following standard:

EN 13603, *Copper and copper alloys — Test methods for assessing protective tin coatings on drawn round copper wire for electrical purposes.*

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Introduction

In preparing this document CEN/TC 133/WG 5 agreed to study carefully existing standards and to combine the best test methods for assessing tin coatings into a single European Standard.

The following standards were considered:

ISO 2177 : 1985;

ASTM B 33 : 1981, clauses 7 and 8;

BS 4109 : 1970, clause 14;

DIN 51213 : 1970, clause 6.

1 Scope

This European Standard specifies methods for assessing the tin coating on drawn round copper wire for the manufacture of electrical conductors, e.g. according to EN 13602.

Standard includes test methods for the determination of the following characteristics:

- a) thickness of the unalloyed tin coating;
- b) continuity of the tin coating;
- c) adherence of the tin coating.

WARNING This standard can involve the use of hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems associated with their use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

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 (including amendments).

EN 610, *Tin and tin alloys — Ingot tin*.

EN 13602, *Copper and copper alloys — Drawn, round copper wire for the manufacture of electrical conductors*.

NOTE Informative references to documents used in the preparation of this standard, and cited at the appropriate places in the text, are listed in the bibliography.

3 Terms and definitions

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

3.1

unalloyed tin coating

layer of pure tin on the surface of tinned wire