Irish Standard
I.S. EN 13148:2010

Copper and copper alloys - Hot-dip tinned strip

I.S. EN 13148:2010

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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EUROPEAN STANDARD

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EN 13148

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ICS 77.150.30

Supersedes EN 13148:2001

English Version

Copper and copper alloys - Hot-dip tinned strip

Cuivres et alliages de cuivre - Bandes étamées à chaud

Kupfer und Kupferlegierungen - Feuerverzinnte Bänder

This European Standard was approved by CEN on 21 August 2010.

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

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Contents

Page

Tables

Figures

Foreword

This document (EN 13148:2010) 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of an identical text or by endorsement, at the latest by March 2011, and conflicting national standards shall be withdrawn at the latest by March 2011.

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 13148:2001.

Within its programme of work, Technical Committee CEN/TC 133 requested CEN/TC 133/WG 2 "Rolled flat products" to revise the following standard:

EN 13148, *Copper and copper alloys — Hot-dip tinned strip*

This is one of a series of European Standards for copper and copper alloy rolled flat products. Other products are, or will be, specified as follows:

- EN 1172, *Copper and copper alloys — Sheet and strip for building purposes;*
- EN 1652, *Copper and copper alloys — Plate, sheet, strip and circles for general purposes;*
- EN 1653, *Copper and copper alloys — Plate, sheet and circles for boilers, pressure vessels and hot water storage units;*
- EN 1654, *Copper and copper alloys — Strip for springs and connectors;*
- EN 1758, *Copper and copper alloys — Strip for lead frames;*
- EN 13599, *Copper and copper alloys — Copper plate, sheet and strip for electrical purposes;*
- EN 14436, *Copper and copper alloys — Electrolytically tinned strip.*

In comparison with EN 13148:2001, the following significant technical changes were made:

a) Table 3:

   1) composition of Sn, increasing of the upper limits: Cu from 0,030 % to 2,0 %, Pb from 0,03 % to 0,1 % and Zn from 0,0010 % to 0,7 %;
   2) column "Material designation" and reference to "EN 610 and EN 29453" are deleted;

b) Table 4: column 0,2 % proof strength, at the 1st line (R220), the value "(min. 140)" where corrected in "(max. 140)".

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, Croatia, 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.

Introduction

Hot-dip tinned strip is manufactured by passing strip through a molten bath of tin, tin-lead alloy or other tin alloys. By this process a solid bond is created between the metallic coating and the strip by formation of a layer of an intermetallic phase and a diffusion zone.

The base metal is hot-dip tinned to protect it against corrosion, to facilitate soldering operations, to improve insertion and withdrawal forces of connectors, to reduce contact resistance at electrical junctions and to avoid whisker growth on components. The properties of coatings can be modified by mechanical and/or thermal treatments.

When the strip is emerging from the bath the thickness of the coating is adjusted by partially wiping off the molten film, either by stationary wiping devices or by a flat air jet. The thickness of the coating can be continously measured and regulated on both sides of the strip during or after the tinning process. Usually strips are tinned in larger widths and slit to narrower width specified by the customer. In this case, the final slit product has untinned edges.

1 Scope

This European Standard specifies:

— the composition and tolerances on dimensions of strip produced by rolling in the thickness range from 0,10 mm up to and including 1,50 mm of copper and copper alloys to be tinned, with tin, a tin-lead alloy or other tin alloys;

— the composition of material normally used for the melt;

— the properties of strip before tinning;

— the properties of hot-dip tinned strip;

— the preferred thicknesses (mean values) and thickness ranges of coatings;

— the edgewise curvature of hot-dip tinned strip;

— the sampling procedure;

— the methods of test to be used for verification of conformity to the requirements of this European Standard;

— the delivery conditions.

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 1655, *Copper and copper alloys — Declarations of conformity*

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