Irish Standard
I.S. EN 13348:2016

Copper and copper alloys - Seamless, round copper tubes for medical gases or vacuum

I.S. EN 13348:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

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

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

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This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

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Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN 13348:2016 is the adopted Irish version of the European Document EN 13348:2016, Copper and copper alloys - Seamless, round copper tubes for medical gases or vacuum

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13348

June 2016

ICS 23.040.15

Supersedes EN 13348:2008

English Version

Copper and copper alloys - Seamless, round copper tubes for medical gases or vacuum

Cuivre et alliages de cuivre - Tubes ronds sans soudure en cuivre pour gaz médicaux ou le vide

Kupfer und Kupferlegierungen - Nahtlose Rundrohre aus Kupfer für medizinische Gase oder Vakuum

This European Standard was approved by CEN on 28 February 2016.

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

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European foreword

This document (EN 13348:2016) 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 2016 and conflicting national standards shall be withdrawn at the latest by December 2016.

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 13348:2008.

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 Directive 2014/68/EU, Pressure Equipment Directive (PED).

For relationship with 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 3 "Copper tubes (installation and industrial)" to revise EN 13348:2008.

In comparison with EN 13348:2008, the following significant technical changes were made:

a) The size range of the outside diameters has been increased from 133 mm to 219 mm;

b) Nominal outside diameters have been added to Table 1;

c) Lubricant residue values for the new outside diameters have been added in 6.5;

d) Sub-clause 8.7 has been revised and a new normative Annex B "Freedom from defects tests" has been added.

This is one of a series of European Standards for copper and copper alloy tubes. Other products are specified as follows:

— EN 1057, *Copper and copper alloys — Seamless, round copper tubes for water and gas in sanitary and heating applications*

— EN 12449, *Copper and copper alloys — Seamless, round tubes for general purposes*

— EN 12450, *Copper and copper alloys — Seamless, round copper capillary tubes*

— EN 12451, *Copper and copper alloys — Seamless, round tubes for heat exchangers*

— EN 12452, *Copper and copper alloys — Rolled, finned, seamless tubes for heat exchangers*

— EN 12735-1, *Copper and copper alloys — Seamless, round tubes for air conditioning and refrigeration — Part 1: Tubes for piping systems*

— EN 12735-2, *Copper and copper alloys — Seamless, round tubes for air conditioning and refrigeration — Part 2: Tubes for equipment*

— EN 13349, *Copper and copper alloys — Pre-insulated copper tubes with solid covering*

— EN 13600, *Copper and copper alloys — Seamless copper tubes 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, 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

It is recommended that tubes manufactured to this European Standard are certified as conforming to the requirements of this standard based on continuing surveillance which should be coupled with an assessment of a supplier's quality management system such as EN ISO 9001.

Tubes to this European Standard are suitable for capillary soldering, brazing or assembling by mechanical compression or collared fittings.

NOTE It is advised to take appropriate precautions if applying insulating material because it could be detrimental to the copper tube.

1 Scope

This European Standard specifies the requirements, sampling, test methods and conditions of delivery for copper tubes.

It is applicable to seamless round copper tubes having an outside diameter from 6 mm up to and including 219 mm for pipeline systems under vacuum or for distributing the following medical gases intended to be used at operating pressures up to 2 000 kPa:

— oxygen, nitrous oxide, nitrogen, helium, carbon dioxide, xenon;

— medical air;

— specific mixtures of these above mentioned gases;

— air for driving surgical tools;

— anaesthetic gases and vapours.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 723, *Copper and copper alloys - Combustion method for determination of the carbon content on the inner surface of copper tubes or fittings*

EN 1173, *Copper and copper alloys - Material condition designation*

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 10204:2004, *Metallic products - Types of inspection documents*

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 8491, *Metallic materials - Tube (in full section) - Bend test (ISO 8491)*

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

ISO 1553, *Unalloyed copper containing not less than 99,90 % of copper - Determination of copper content - Electrolytic method*

ISO 4741, *Copper and copper alloys - Determination of phosphorus content - Molybdovanadate spectrometric method*