

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

The European Standard EN 1057:1996 has the status of a British Standard

ICS 23.040.15

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW



Document Sharing Hub

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee NFE/34, Copper and copper alloys, to Subcommittee NFE/34/7, upon which the following bodies were represented:

- British Non-Ferrous Metals Federation
- British Plumbing Fittings Manufacturers' Association
- British Refrigeration Association**
- Copper Development Association**
- National Association of Plumbing, Heating and Mechanical Services Contractors
- Non-Ferrous Metal Stockists**
- Power Generation Contractors' Association (BEAMA)

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 August 1996

© BSI 12-1998

The following BSI references relate to the work on this standard:
Committee reference NFE/34
Draft for comment 93/304025 DC

ISBN 0 580 26225 1

Amendments issued since publication

Amd. No.	Date	Comments
9372	March 1997	Indicated by a sideline in the margin

Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
Foreword	2
Text of EN 1057	5
List of references	Inside back cover

National foreword

This British Standard has been prepared by Technical Committee NFE/34 and is the English language version of EN 1057:1996 *Copper and copper alloys — Seamless, round copper tubes for water and gas in sanitary and heating applications*, published by the European Committee for Standardization (CEN). It supersedes BS 2871-1:1971 which is withdrawn.

Textual error. When implementing this European Standard a textual error was noticed in the text relating to the introduction, which has been reported to CEN Central Secretariat. For the convenience of the user of this standard the omitted text is reproduced below.

“In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this standard:

- 1) This standard provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA;
- 2) It should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 16, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

ICS 23.040.15

Descriptors: Copper, copper alloys, copper tube, seamless tubes, water pipes, gas pipes, sanitary appliances, heating, designation, chemical composition, mechanical properties, dimensions, dimensional tolerances, tests, defects, marking, conditioning.

English version

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

Cuivre et alliages de cuivre —
Tubes ronds sans soudure en cuivre pour l'eau
et le gaz dans les applications sanitaires et de
chauffage

Kupfer und Kupferlegierungen —
Nahtlose Rundrohre aus Kupfer für Wasser —
und Gasleitungen für Sanitärinstallationen
und Heizungsanlagen

This European Standard was approved by CEN on 1996-02-25. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

© 1996 All rights of reproduction and communication in any form and by any means reserved in all countries to CEN and its members.

 **Documents**
Ref. No. EN 1057:1996 E
Document Sharing Hub

Foreword

This European Standard has been prepared by CEN/TC 133, Copper and copper alloys, the secretariat of which is held by DIN.

Within its programme of work, Technical Committee CEN/TC 133 requested CEN/TC 133/WG 3.1, Copper tubes, to prepare the following standard:

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

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 October 1996, and conflicting standards shall be withdrawn at the latest by October 1996.

The attention of the user of this standard is drawn to the fact that national or local regulations or practices might restrict the choice of dimensions and tempers in the application of products conforming to this standard.

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

¹⁾*Copper and copper alloys — Seamless, round tubes for general purposes* (WI: 00133008)

¹⁾*Copper and copper alloys — Seamless, round tubes for heat exchangers* (WI: 00133009)

¹⁾*Copper and copper alloys — Rolled, finned, seamless tubes for heat exchangers* (WI: 00133011)

¹⁾ *Copper and copper alloys — Seamless, round copper tubes for air conditioning and refrigeration*

Part 1: *Tubes for piping systems* (WI: 00133031)

¹⁾*Copper and copper alloys — Seamless, round copper tubes for air conditioning and refrigeration*

Part 2: *Tubes for equipment* (WI: 00133037)

¹⁾*Copper and copper alloys — Seamless, round copper tubes for medical gases* (WI: 00133032)

¹⁾*Copper and copper alloys — Seamless, round copper capillary tubes* (WI: 00133034)

¹⁾*Copper and copper alloys — Pre-insulated copper tubes*

Part 1: *Tubes with solid covering* (WI: 00133044)

¹⁾*Copper and copper alloys — Pre-insulated copper tubes*

Part 2: *Tubes with expanded covering* (WI: 00133050)

¹⁾*Copper and copper alloys — Seamless copper tubes for electrical purposes* (WI: 00133023)

According to CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

¹⁾ In course of preparation

Contents

		Page
Foreword	2	
Introduction	5	
1 Scope	5	
2 Normative references	5	
3 Definitions	5	
3.1 seamless round copper tube	5	
3.2 soldering and brazing	5	
3.3 welding	6	
3.4 braze welding	6	
3.5 mean diameter	6	
3.6 deviation from circular form	6	
3.7 deviation from concentricity	6	
3.8 production batch	6	
4 Designations	6	
4.1 Material	6	
4.2 Material temper	6	
4.3 Product	6	
5 Ordering information	7	
6 Requirements	9	
6.1 Composition	9	
6.2 Mechanical properties	9	
6.3 Dimensions and tolerances	10	
6.4 Freedom from defects	10	
6.5 Surface quality	10	
6.6 Bending	10	
6.7 Drift expanding	10	
6.8 Flanging	10	
7 Sampling	12	
8 Test methods	12	
8.1 Analysis	12	
8.2 Tensile test	12	
8.3 Hardness test	12	
8.4 Carbon content test	12	
8.5 Carbon film test	12	
8.6 Bending test	12	
8.7 Drift expanding test	12	
8.8 Flanging test	12	
8.9 Freedom from defects tests	12	
8.10 Retests	13	
9 Marking and form of delivery	13	
9.1 Marking	13	
9.2 Form of delivery	13	
		Annex A (normative) Standardized dimensions for reconsideration at a future revision 14
		Annex B (normative) Carbon film test 14
		Annex C (normative) Freedom from defects tests 14
		Annex D (informative) Bibliography 15
		Table 1 — Mechanical properties 7
		Table 2 — Minimal elongation values for R250 (half hard) temper tubes 8
		Table 3 — Nominal outside diameters and thicknesses 9
		Table 4 — Tolerances on outside diameter 10
		Table 5 — Tolerances on wall thickness 10
		Table 6 — Quantitative and qualitative specification for carbon residues 11
		Table 7 — Testing of bending, drift expanding and flanging 11
		Table 8 — Sampling rate 12
		Table 9 — Minimum radius of curvature 12
		Table 10 — Recommended form of delivery 13
		Table A.1 14
		Table C.1 14
		Table C.2 15