

**IRISH STANDARD** 

I.S. EN 1057:2006

ICS 23.040.15

COPPER AND COPPER ALLOYS - SEAMLESS,
ROUND COPPER TUBES FOR WATER AND
GAS IN SANITARY AND HEATING
APPLICATIONS

National Standards Authority of Ireland Glasnevin, Dublin 9 Ireland

Tel: +353 1 807 3800 Fax: +353 1 807 3838 http://www.nsai.ie

#### Sales

http://www.standards.ie

This Irish Standard was published under the authority of the National Standards Authority of Ireland and comes into effect on: 21 July 2006

NO COPYING WITHOUT NSAI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

© NSAI 2006 Price Code L

Údarás um Chaighdeáin Náisiúnta na hÉireann

This is a free page sample. Access the full version online.

# EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

**EN 1057** 

May 2006

ICS 23.040.15

Supersedes EN 1057:1996

### **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 23 March 2006.

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, 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 United Kingdom.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

## EN 1057:2006 (E)

Contents		
Forew	ord	4
Introd	uction	6
1	Scope	7
2	Normative references	
3	Terms and definitions	
4 4.1	Designations	_
4.1 4.1.1	Material General	
4.1.2	Symbol	
4.1.3	Number	
4.2	Material condition	
4.3	Product	9
5	Ordering information	10
6	Material characteristics	11
6.1	Safety in case of fire - Reaction to fire	11
6.2	Properties at high temperature	
6.3	Weldability	11
7	Requirements	
7.1	Composition	
7.2	Mechanical properties	
7.3 7.3.1	Dimensions and tolerances	
7.3.1 7.3.2	Nominal dimensions	
7.3.3	Tolerances on outside diameter	
7.3.4	Tolerances on wall thickness	
7.3.5	Tolerances on length	
7.4	Freedom from defects	
7.5 7.6	Surface quality Bending	
7.0 7.7	Drift expanding	
7.8	Flanging	
8	Evaluation of conformity	
8.1	General	
8.2	Type testing	_
8.2.1	Initial type testing	18
8.2.2	Sampling, testing and conformity criteria	
8.3	Factory production control (FPC)	
8.3.1 8.3.2	GeneralGeneral FPC requirements	
8.3.3	Manufacturer-specific FPC system requirements	
	Sampling	
9	. •	
10	Test methods	
10.1	Analysis	
10.2 10.3	Tensile test Hardness test	
10.3	Carbon content test	
10.5	Carbon film test	
10.6	Bending test	
10.7	Drift-expanding test	
10.8	Flanging testFreedom from defects tests	
10.9	Fieedoni itolii delecis lesis	24

11	Inspection documentation	24
12	Marking and form of delivery	
12.1 12.2	Marking Form of delivery	
	A (normative) Standardized dimensions for reconsideration at a future revision	
Annex B.1	B (normative) Carbon film test	
B.2	Procedure	27
B.3	Detection and assessment of films	27
	C (normative) Freedom from defects tests	
C.1 C.2	Eddy current test	
C.3	Pneumatic test	
Annex	ZA (informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive (CPD) 89/106/EEC	30
ZA.1	Scope and relevant characteristics	30
ZA.2	Procedure(s) for attestation of conformity of pipes	
	System(s) of attestation of conformity  EC Certificate and Declaration of conformity	
ZA.3	CE marking and labelling	
Annex	ZB (informative) Relationship between this European Standard and the Essential Requirements of the EU Pressure Equipment Directive (PED) 97/23/EC	36
Biblio	graphy	
,	y	
Tables		
Table	1 — Mechanical properties	12
Table	2 — Minimal elongation values for R250 (half hard) material condition tubes	13
Table	3 — Standardized dimensions	15
Table 4	4 — Tolerances on outside diameter	16
Table	5 — Tolerances on wall thickness	16
Table	6 — Quantitative and qualitative specification for carbon residues	17
Table	7 — Testing of bending, drift expanding and flanging	18
Table	8 — Sampling rate	21
Table	9 — Minimum radius of curvature	23
Table	10 — Recommended form of delivery	25
Table .	A.1 — Standardized dimensions for reconsideration at a future revision	26
Table	C.1 — Maximum drill diameters for the reference standard tube	28
Table	C.2 — Hydraulic pressure test	28
Table 2	ZA.1 — Relevant clauses	31
Table 2	ZA.2 — Systems of attestation of conformity	32
Table 2	ZA.3.1 — Assignment of evaluation of conformity tasks for pipes under system 3 — 1/5	33
Table 2	ZA.3.2 — Assignment of evaluation of conformity tasks for pipes under system 4 — 2/5	33
	ZB.1 — Correspondence between this European Standard and Directive 97/23/EC	

### EN 1057:2006 (E)

### **Foreword**

This document (EN 1057:2006) 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 2006, and conflicting national standards shall be withdrawn at the latest by February 2008.

This document supersedes EN 1057:1996.

Within its programme of work, Technical Committee CEN/TC 133 requested CEN/TC 133/WG 3 "Copper tubes (installation and industrial)" to prepare the revision of the following standard:

EN 1057:1996, Copper and copper alloys — Seamless, round copper tubes for water and gas in sanitary and heating applications

This document has been prepared within the framework of two mandates given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of the EU Construction Products Directive (CPD) 89/106/EEC and the EU Pressure Equipment Directive (PED) 97/23/EC.

For relationship with EU Directives, see informative Annexes ZA and ZB, which are integral parts of this document.

In comparison with the first edition of EN 1057:1996, the following significant technical changes were made:

- harmonization of the standard to the Construction Product Directive (CPD) and to the Pressure Equipment Directive (PED);
- introduction of two new definitions: "permanently marked" and "durably marked";
- updating of the definitions regarding soldering, brazing, fusion welding, braze welding and mean diameter;
- introduction of five new items in Clause 5 "Ordering information" regarding options on tests and documents;
- due to the process of harmonization to the CPD, introduction of three new characteristics in Clause 6 "Material characteristics" inherent to copper material which are not to be tested;
- modification of Table 3 "Standardized dimensions";
- simplification of Table 6 "Quantitative and qualitative specification for carbon residues": Suppression of the residual and potential carbon and application of the thresholds to the total carbon;
- text in Clause 8 "Evaluation of conformity" added due to the process of harmonization to the CPD;
- for permanent and durable markings, specification of their applicability in 12.1 "Marking";
- modification of the table in Annex A, introduction of new diameters and wall thicknesses;
- due to the process of harmonization to the CPD and PED introduction of Annexes ZA and ZB.

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

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



The is a new provider i arenade and chare publication at the limit below	This is a free preview.	Purchase the	entire publication	at the link below:
--	-------------------------	--------------	--------------------	--------------------

**Product Page** 

- Dooking for additional Standards? Visit Intertek Inform Infostore
- Dearn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation