



**NSAI**  
Standards

Irish Standard  
I.S. EN 1503-4:2016

# Valves - Materials for bodies, bonnets and covers - Part 4: Copper alloys specified in European Standards

**I.S. EN 1503-4:2016**

*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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*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):*

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## National Foreword

I.S. EN 1503-4:2016 is the adopted Irish version of the European Document EN 1503-4:2016, Valves - Materials for bodies, bonnets and covers - Part 4: Copper alloys specified in European Standards

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

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EUROPEAN STANDARD

EN 1503-4

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2016

ICS 23.060.01; 77.120.30

Supersedes EN 1503-4:2002

English Version

## Valves - Materials for bodies, bonnets and covers - Part 4: Copper alloys specified in European Standards

Appareils de robinetterie - Matériaux pour les corps,  
chapeaux et couvercles - Partie 4: Alliages de cuivre  
spécifiés dans les Normes Européennes

Armaturen - Werkstoffe für Gehäuse, Oberteile und  
Deckel - Teil 4: Kupferlegierungen, die in Europäischen  
Normen festgelegt sind

This European Standard was approved by CEN on 15 December 2015.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



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## European foreword

This document (EN 1503-4:2016) has been prepared by Technical Committee CEN/TC 69 “Industrial valves”, the secretariat of which is held by AFNOR.

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 August 2016, and conflicting national standards shall be withdrawn at the latest by August 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 1503-4:2002.

The main changes compared to the previous edition are:

- a) Clause 2 “Normative references” has been updated;
- b) Table 1 has been deleted and therefore a reference to EN 12516-4:2014, Table 8 has been added;
- c) material “CuSn5Zn5Pb2-C” has been added to Table 1;
- d) the Bibliography has been deleted.

EN 1503, *Valves — Materials for bodies, bonnets and covers* consists of four parts:

- *Part 1: Steels specified in European Standards*
- *Part 2: Steels other than those specified in European Standards*
- *Part 3: Cast Irons specified in European Standards*
- *Part 4: Copper alloys specified in European Standards*

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.

## EN 1503-4:2016 (E)

### 1 Scope

This European Standard lists copper alloys for pressure containing valve bodies, bonnets and covers which are specified in European Standards.

### 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 1982, *Copper and copper alloys — Ingots and castings*

EN 12163, *Copper and copper alloys — Rod for general purposes*

EN 12164, *Copper and copper alloys — Rod for free machining purposes*

EN 12167, *Copper and copper alloys — Profiles and bars for general purposes*

EN 12168, *Copper and copper alloys — Hollow rod for free machining purposes*

EN 12420, *Copper and copper alloys — Forgings*

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

EN 12516-4:2014, *Industrial valves — Shell design strength — Part 4: Calculation method for valve shells manufactured in metallic materials other than steel*

### 3 Materials

#### 3.1 General

The materials shall be as given in 3.2 and 3.3.

The selection of materials should take account of the intended use and all reasonably foreseeable operation conditions. Selecting materials from Group 1 will provide some assurance of their suitability for valve bodies, bonnets and covers, whereas selecting from Group 2 will not provide the same assurance.

Due consideration should be given to all reasonably foreseeable degradation mechanism (e.g. corrosion, creep, fatigue) that may occur in some applications.

#### 3.2 Group 1 materials

EN 12516-4:2014, Table 8, lists copper alloys specified in European material standards which have been in regular use for valve bodies, bonnets and covers.

#### 3.3 Group 2 materials

Table 1 lists copper alloys specified in European material standards that may be used for valve bodies, bonnets and covers.



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