



SLOVENSKI STANDARD

SIST EN 1503-4:2016

01-april-2016

Nadomešča:
SIST EN 1503-4:2003

Ventili - Gradiva za ohišja in pokrove - 4. del: Bakrove zlitine, določene v evropskih standardih

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

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

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

Ta slovenski standard je istoveten z: EN 1503-4:2016

ICS:

23.060.01	Ventili na splošno	Valves in general
77.120.30	Baker in bakrove zlitine	Copper and copper alloys

SIST EN 1503-4:2016

en,fr,de

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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
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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.



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

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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

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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.

Table 1 — Group 2 materials

Type of alloy	Material designation		Material/form to be selected from:						
	Symbol	Number	EN 1982	EN 12163	EN 12164	EN 12167	EN 12168	EN 12420	EN 12449
Copper-aluminium alloys	CuAl6Si2Fe	CW301G		X		X		X	
	CuAl7Si2	CW302G		X		X		X	
	CuAl8Fe3	CW303G						X	
	CuAl10Fe3Mn2	CW306G		X		X		X	
	CuAl10Ni5Fe4	CW307G		X		X		X	
	CuAl10Ni3Fe2-C	CC332G	X						
Copper-nickel alloys	CuNi10Fe1Mn	CW352H		X				X	X
	CuNi30Mn1Fe	CW354H		X				X	X
	CuNi10Fe1Mn1-C	CC380H	X						
	CuNi30Fe1Mn1-C	CC381H	X						
Copper-tin alloys	CuSn10-C	CC480K	X						
	CuSn12-C	CC483K	X						
	CuSn12Ni2-C	CC484K	X						
	CuSn5Zn5Pb2-C	CC499K	X						
Copper-zinc alloys	CuZn37	CW508L		X		X		X	X
	CuZn40	CW509L				X		X	X
Copper-zinc-lead alloys	CuZn35Pb2	CW601N			X	X	X		X
	CuZn36Pb3	CW603N			X	X	X		X
	CuZn38Pb2	CW608N			X	X	X	X	X
	CuZn38Pb4	CW609N			X	X	X		
	CuZn39Pb0,5	CW610N			X	X		X	
	CuZn39Pb2	CW612N			X	X	X	X	
	CuZn39Pb2Sn	CW613N				X		X	
	CuZn39Pb3Sn	CW615N						X	
	CuZn40Pb2Sn	CW619N				X		X	
Complex copper-zinc alloys	CuZn37Mn3Al2PbSi	CW713R			X	X	X	X	X
	CuZn39Sn1	CW719R		X		X		X	
	CuZn40Mn1Pb1AlFeSn	CW721R			X	X	X	X	
	CuZn40Mn1Pb1FeSn	CW722R			X	X	X	X	
	CuZn35Pb2Al-C	CC752S	X						
	CuZn37Pb2Ni1AlFe-C	CC753S	X						
	CuZn34Mn3Al2Fe1-C	CC764S	X						
	CuZn35Mn2Al1Fe1-C	CC765S	X						
	CuZn37Al1-C	CC766S	X						
	CuZn38Al-C	CC767S	X						