



# **SLOVENSKI STANDARD**

## **kSIST FprEN 12168:2015**

**01-december-2015**

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**Baker in bakrove zlitine - Votle palice za obdelavo z odrezovanjem na avtomatih**

Copper and copper alloys - Hollow rod for free machining purposes

Kupfer und Kupferlegierungen - Hohlstangen für die spanende Bearbeitung

**Ta slovenski standard je istoveten z: FprEN 12168**

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**ICS:**

77.150.30      Bakreni izdelki      Copper products

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English Version

## Copper and copper alloys - Hollow rod for free machining purposes

Kupfer und Kupferlegierungen - Hohlstangen für die spanende Bearbeitung

This draft European Standard is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 133.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## European foreword

This document (FprEN 12168:2015) has been prepared by Technical Committee CEN/TC 133 “Copper and copper alloys”, the secretariat of which is held by DIN.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 12168:2011.

Within its programme of work, Technical Committee CEN/TC 133 requested CEN/TC 133/WG 4 “Extruded and drawn products, forgings and scrap” to revise the following standard:

— EN 12168:2011, *Copper and copper alloys — Hollow rod for free machining purposes*.

This document is one of a series of European Standards for the copper and copper alloy products rod, wire, profile and forgings. Other products are specified as follows:

- EN 12163, *Copper and copper alloys — Rod for general purposes*;
- EN 12164, *Copper and copper alloys — Rod for free machining purposes*;
- EN 12165, *Copper and copper alloys — Wrought and unwrought forging stock*;
- EN 12166, *Copper and copper alloys — Wire for general purposes*;
- EN 12167, *Copper and copper alloys — Profiles and bars for general purposes*;
- EN 13601, *Copper and copper alloys — Copper rod, bar and wire for general electrical purposes*;
- EN 13602, *Copper and copper alloys — Drawn, round copper wire for the manufacture of electrical conductors*;
- EN 13605, *Copper and copper alloys — Copper profiles and profiled wire for electrical purposes*.

In comparison with EN 12168:2011, the following significant technical changes were made:

- a) addition of four new materials: CuZn37Pb1 (CW605N), CuZn35Pb1,5AlAs (CW625N), CuZn33Pb1,5AlAs (CW626N) and CuZn33Pb1AlSiAs (CW725R) due to the market requirements on restriction of lead and modification of the chemical composition for CuZn39Pb1 (CW611N);
- b) introduction of an optional procedure how to refer to restrictions to the chemical composition imposed by the 4 MS Common Composition List for materials used for products accepted for contact with drinking water;
- c) requirements and test methods for resistance of dezincification modified;
- d) provisions for surface quality added;
- e) mechanical properties for CuZn21Si3P (CW724R) modified.

## Introduction

The European Committee for Standardization (CEN) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning the alloy CuZn<sub>21</sub>Si<sub>3</sub>P (CW724R) and CuZn<sub>33</sub>Pb<sub>1</sub>AlSiAs (CW725R) given in 6.1.

CEN takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has ensured the CEN that he is willing to negotiate licenses under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with CEN.

— For CuZn<sub>21</sub>Si<sub>3</sub>P (CW724R) information may be obtained from:

Wieland-Werke AG  
Graf Arco Straße 36  
D-89079 Ulm  
GERMANY

— For CuZn<sub>33</sub>Pb<sub>1</sub>AlSiAs (CW725R) information may be obtained from:

Diehl Metall Messing  
Heinrich-Diehl-Straße 9  
D-90552 Röthenbach/Pegnitz  
GERMANY

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. CEN shall not be held responsible for identifying any or all such patent rights.

CEN and CENELEC maintain online lists of patents relevant to their standards. Users are encouraged to consult the lists for the most up to date information concerning patents (<ftp://ftp.cencenelec.eu/EN/IPR/Patents/IPRdeclaration.pdf>).

Due to developing legislation, the composition of a material may be restricted to the composition specified in this European Standard with respect to individual uses (e.g. for the use in contact with drinking water in some Member States of the European Union). These individual restrictions are not part of this European Standard. Nevertheless, for materials for which traditional and major uses are affected, these restrictions are indicated. The absence of an indication, however, does not imply that the material can be used in any application without any legal restriction.

## 1 Scope

This European Standard specifies the composition, property requirements and dimensional tolerances for copper alloy hollow rod, finally produced by drawing or extruding, specifically intended for free machining purposes.

NOTE Hollow products having an outside diameter greater than 80 mm and/or a wall thickness less than 2 mm are specified in EN 12449.

The sampling procedures, the methods of test for verification of conformity to the requirements of this European Standard, are also specified.

## 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 1173, *Copper and copper alloys — Material condition designation*

EN 1412, *Copper and copper alloys — European numbering system*

EN 1655, *Copper and copper alloys — Declarations of conformity*

EN 10204, *Metallic products — Types of inspection documents*

EN 14977, *Copper and copper alloys — Detection of tensile stress — 5 % ammonia test*

EN ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method (ISO 6506-1)*

EN ISO 6507-1, *Metallic materials - Vickers hardness test - Part 1: Test method (ISO 6507-1)*

EN ISO 6509-1, *Corrosion of metals and alloys — Determination of dezincification resistance of copper alloys with zinc — Part 1: Test method (ISO 6509-1)*

EN ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1)*

ISO 1190-1, *Copper and copper alloys — Code of designation — Part 1: Designation of materials*

ISO 6957, *Copper alloys — Ammonia test for stress corrosion resistance*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1 hollow rod

straight product, of uniform cross-section along its whole length with an enclosed void for which the longitudinal axes of its external contour and its internal contour, which is the boundary with the enclosed void, are coincidental