SLOVENSKI STANDARD
SIST EN 12861:2018

01-julij-2018

Nadomešča:
SIST EN 12861:2000

Baker in bakrove zlitine - Tehnološki kovinski odpadki

Copper and copper alloys - Scrap

Kupfer und Kupferlegierungen - Schrotte

Cuivre et alliages de cuivre - Scrappes

Ta slovenski standard je istoveten z: EN 12861:2018

ICS:

77.150.30	Bakreni izdelki	Copper products

SIST EN 12861:2018 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12861

May 2018

ICS 77.150.30

Supersedes EN 12861:1999

English Version

Copper and copper alloys - Scrap

Cuivre et alliages de cuivre - Scrappes

Kupfer und Kupferlegierungen - Schrotte

This European Standard was approved by CEN on 22 January 2018.

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

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Ref. No. EN 12861:2018 E

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European foreword

This document (EN 12861:2018) 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of an identical text or by endorsement, at the latest by November 2018, and conflicting national standards shall be withdrawn at the latest by November 2018.

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

This document supersedes EN 12861:1999.

Within its programme of work, Technical Committee CEN/TC 133 “Copper and copper alloys” prepare the following revision of the standard:

EN 12861:1999, *Copper and copper alloys — Scrap*

In comparison with EN 12861:1999, the following significant technical changes were made:

a) replacement of secondary raw materials by metallic raw materials;

b) modification of material numbers for S-Cu-1, S-Cu-2, S-Cu-3, S-Cu-4, S-Cu-5, S-Cu-10A, S-CuZn-1A, S-CuZn-1B, S-CuZn-1C, S-CuZn-2 and S-CuZn-3;

c) modification of subclauses B.4 “Type S-CuZn-4” (Cu max. 65 % Copper-zinc alloy) and B.5 “Type S-CuZn-5” (Cu max. 65 % Copper-zinc alloy turnings);

d) introduction of the new subclauses B.8 “Type S-CuZn-8” (Silicon bearing copper-zinc alloys) and B.9 “Type S-CuZn-9” (Silicon bearing copper-zinc alloys turnings);

e) renumbering of annexes.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the requirements for characteristics, condition, moisture, composition, metal content, metal yield and test procedures of metallic raw materials for direct melting (melting grades) in the form of copper and copper alloy scrap.

All provisions of this European Standard apply regardless of the legal status of the scrap. The respective legal requirements should be met.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

EN 12451, *Copper and copper alloys - Seamless, round tubes for heat exchangers*

EN ISO 80000-1:2013, *Quantities and units - Part 1: General (ISO 80000-1:2009 + Cor 1:2011)*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
scrap for direct melting
metallic raw material with levels of impurity elements which would not prohibit its use for direct melting, with or without preliminary mechanical treatment

Note 1 to entry: Examples for preliminary mechanical treatment are baling, fragmenting and crushing.

Note 2 to entry: According to the Directive 2008/98/EC of the European Parliament and of the Council on waste and to Commission Regulation (EU) No 715/2013 establishing criteria determining when copper scrap ceases to be waste, metallic raw materials may be considered as “waste” or as “by-products”, or may have “end-of-waste status”. Depending on its legal status metallic raw material may either be regulated by the European waste legislation or by the European chemicals legislation, notably Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

3.1.1
production scrap
clean metallic raw material arising from production processes (e.g. offcuts from casting, rolling, extrusion, forging) or from further processing

Note 1 to entry: E.g. stamping grids.

3.1.2
old scrap
metallic raw material other than material specified as “production scrap”

Note 1 to entry: See 3.1.1.

3.2
free from ..... (substance)
maximum quantity of substances adhering to the scrap:

— 0,005 % (mass fraction) for metallic impurities;

— 0,2 % (mass fraction) for moisture;

— 0,05 % (mass fraction) for other non-metallic impurities

3.3
excluded ..... (substance)
maximum quantity of substances adhering to the scrap:

— 0,000 1 % (mass fraction) for metallic impurities;

— 0,001 % (mass fraction) for non-metallic impurities

3.4
clean material
state of the material free from foreign substances

Note 1 to entry: E.g. paper, dirt, liquid residues, grease, plastics (see 3.2 for definition “free from .....” and 3.6 for definition “foreign substances”).

3.5
bright material
material which neither intentionally nor unintentionally had been subject to any process that resulted in a coating

Note 1 to entry: See 3.7 (e.g. oxidation or other surface changes due to environmental interactions and/or changes due to their usage).

3.6
foreign substances
material, other than specified in this standard, whether metallic or non-metallic including free iron

Note 1 to entry: See 3.8.

3.7
coated, plated or enamelled material
material with any kind of coating or plating, independent of the process of coating or plating

Note 1 to entry: E.g. paint, varnish, print, plastics or metals (e.g. aluminium, lead, chromium, nickel, tin).

3.8
free iron
ferrous materials (e.g. steels) either magnetic or non-magnetic

3.9
moisture
any liquid (single- or multi-phase) that adheres to the scrap when it reaches the point of delivery due to fabrication, usage or pick-up during storage

3.10
impurity
metallic or non-metallic element present but which is not intentionally added to or retained by a metal

3.11
remainder
percentage content of the element calculated by difference from 100 % (mass fraction)

3.12
mass deduction
quantity being deducted from mass in case of exceeding limits that have been stipulated in this standard

3.13
inspection lot
consignment or a part thereof submitted for inspection by the purchaser

3.14
representative sample
sample, fully representing the range of scrap in an inspection lot

3.15
metal content
net mass of the inspection lot after deduction of all foreign substances including moisture

4 Designations

4.1 Material

The material is designated either by symbol or number (see Annexes A to D). The material number designation is in accordance with the system given in EN 1412.

4.2 Product (metallic raw material)

The product designation provides a standardized pattern of designation from which a rapid and unequivocal description of a product is conveyed in communication. It provides mutual comprehension at the international level with regard to products which meet the requirements of the relevant European Standard.

The product designation is no substitute for the full content of the standard.

The product designation for products to this standard shall consist of:

— denomination (scrap);

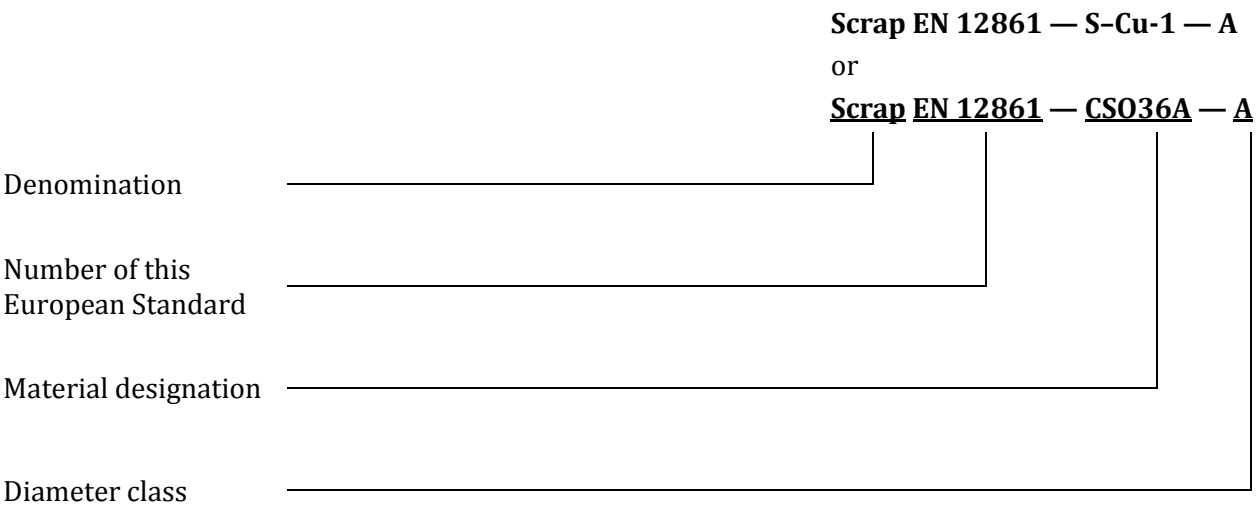
— number of this European Standard (EN 12861);

— material designation, either symbol or number (see tables in Annexes A to D);

— diameter class, if specified (see tables in Annexes A to D).

The derivation of a product designation is shown in the following example.

EXAMPLE Scrap conforming to this standard, in material designated either S-Cu-1 or CS036A, diameter class A, will be designated as follows:



5 Ordering information

In order to facilitate the enquiry, order and confirmation of order procedures between the purchaser and the supplier, the purchaser shall state on his enquiry and order the following information:

a) quantity of material required (mass);

b) denomination (Scrap);

c) number of this European Standard (EN 12861);

d) material designation (see Annexes A to D);

e) diameter class, if specified (see Annexes A to D).

It is recommended that the product designation, as described in 4.2, is used for items b) to e).

In addition, the purchaser shall also state on the enquiry and order any of the following, if required:

f) form of packaging.

EXAMPLE Ordering details for 20 t scrap conforming to EN 12861, in material designated either S-Cu-1 or CS036A, diameter class A:

20 t Scrap EN 12861 — S-Cu-1 – A

or

20 t Scrap EN 12861 — CS036A – A

EXAMPLE Ordering details for 15 t scrap conforming to EN 12861, in material designated either S-CuNi15 or CS350H:

15 t Scrap EN 12861 — S-CuNi15

or

15 t Scrap EN 12861 — CS350H

6 Requirements

6.1 Characteristics

The characteristics shall conform to the requirements for the appropriate material given in Annexes A to D.

6.2 Condition

The condition of the scrap shall conform to the requirements for the appropriate material given in Annexes A to D. Briquetted or baled material may be supplied subject to agreement between the purchaser and the supplier. Unless otherwise agreed, the maximum dimension of each piece shall not be greater than 800 mm × 500 mm × 400 mm and shall not exceed 200 kg.

6.3 Moisture

The moisture shall conform to the requirements for the appropriate material given in Annexes A to D. The test(s) shall be carried out in accordance with Table 1. The moisture content shall be determined upon presentation of the inspection lot to the agreed receiving point.

6.4 Composition

The compositions given in Annexes A to D refer to the analytical results obtained, using “state of the art” techniques, from a representative sample taken from an inspection lot. If necessary, the representative sample shall be dried and melted before analysis.

Reference methods shall be the appropriate EN or ISO Standards agreed between the disputing parties.

It is the right of the supplier not to accept the classification of the purchaser and require an audit in arbitration with the presence of a third party accepted by both the purchaser and the supplier.

The composition shall conform to the requirements for the appropriate material given in Annexes A to D.

The scrap shall be free from the following elements, provided they are not alloying elements:

— cadmium, bismuth, selenium, antimony, cobalt.

The following elements shall be excluded, provided they are not alloying elements:

— beryllium, mercury, tellurium.

6.5 Metal content/metal yield

The metal content or metal yield shall conform to the requirements for the appropriate material given in Annexes A to D.

6.6 Deliveries against contract

Unless agreed between the purchaser and the supplier, for contract quantities from 10 000 kg up to and including 300 000 kg, the difference between that and the total quantity delivered shall not exceed 1 % (mass fraction). If the contract quantity is smaller than 10 000 kg, the difference shall not exceed 100 kg. If the contract quantity is larger than 300 000 kg, the difference shall not exceed 3 000 kg.

6.7 Additional requirements

If not otherwise specified in Annexes A to D, the following applies:

The scrap shall be free from:

— mica, asbestos, plastic, PVC, rubber, paper impregnated with oil.

The following substances shall be excluded according to definition 3.3 unless there are European or national laws which shall take precedence:

— chlorine;

— materials being recognized as substances that deplete the ozone layer of the earth.

No radioactively contaminated scrap or radioactively contaminated substances adhering to the scrap or mixed with the scrap (see Figure 1) shall be accepted.

7 Inspection of incoming material

7.1 General

The inspection scheme given in Figure 1 shall be applied.

In the case of separately identifiable sources of scrap, it nevertheless may be delivered as a single consignment subject to agreement between the purchaser and the supplier. The scrap from each source shall be inspected separately.

The test procedures shall be carried out on representative samples. For expression of results, the rounding rules given in 7.5 shall be used.

In case of dispute with respect to sampling or testing methods or their results, arbitration shall be agreed between the purchaser and the supplier.

7.2 Time limits

All scrap is accepted with reservation on qualitative control at the purchaser's plant. Within 5 working days from receipt of the material the purchaser shall advise the supplier on the classification and moisture content of the material accepted with reservation. The 5 working days term shall be increased to 10 days if further analysis is required to ensure that the delivered type is in accordance with the one declared.

7.3 Test procedures

The test procedures given in Table 1 shall be used as appropriate.