



SLOVENSKI STANDARD
SIST EN 1173:1998

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6 U_Yf`]b`VU_fcj Yn`]HbY!`GHUb`Y`a UHf]UU]b`cnbU Yj Ub`Y

Copper and copper alloys - Material condition or temper designation

Kupfer und Kupferlegierungen - Zustandsbezeichnungen

Cuivre et alliages de cuivre - Désignation des états métallurgiques

Ta slovenski standard je istoveten z: EN 1173:1995

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ICS:

77.120.30 Baker in bakrove zlitine Copper and copper alloys

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English version

Copper and copper alloys - Material condition or temper designation

Cuivre et alliages de cuivre - Désignation des états métallurgiques

Kupfer und Kupferlegierungen - Zustandsbezeichnungen

This European Standard was approved by CEN on 1995-10-27. 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.

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CEN

European Committee for Standardization
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Contents

	Page
Foreword	3
1 Scope	4
2 Basis of designation system	4
3 Structure of designation	4
3.1 General	4
3.2 Position 1	4
3.3 Positions 2 to 4	4
3.4 Positions 5 and 6	5
4 Examples	5
4.1 General	5
4.2 Elongation	5
4.3 Spring bending limit	5
4.4 As drawn	5
4.5 Grain size	5
4.6 Hardness	5
4.7 As manufactured	6
4.8 Tensile strength	6
4.9 0,2% proof strength	6
4.10 Additional treatment "Stress relieving"	6
Annex A (informative) Bibliography	7

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SIST EN 1173:1998

<https://standards.iteh.ai/catalog/standards/sist/4f738828-983c-4ffe-80dd-621a7f110538/sist-en-1173-1998>



Foreword

This draft European Standard has been drawn up by CEN/TC 133 "Copper and copper alloys", the Secretariat of which is held by DIN.

Within its programme of work, Technical Committee CEN/TC 133 decided to prepare the following standard:

prEN 1173 Copper and copper alloys – Material condition or temper designation

In the course of its plenary meeting on 30/31 May 1994, CEN/TC 133 "Copper and copper alloys" agreed by Resolution No. 6, see document CEN/TC 133 N 480, to submit this draft for formal vote.

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 May 1996, and conflicting national standards shall be withdrawn at the latest by May 1996.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

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1 Scope

This European Standard establishes a system for designation of material conditions or tempers to be used for the identification of mandatory property requirements. These designations are applicable to wrought or cast products of copper and copper alloys, except ingots.

2 Basis of designation system

The material condition or temper designation is based on the mandatory property requirement(s), the level of property required and if necessary, any special additional treatment.

3 Structure of designation

3.1 General

The material condition or temper designation usually consists of four characters. In position 1 there shall be a letter and in positions 2 to 4 there shall be figures. A further figure shall be added in position 5 or, in the case of additional treatment, a suffix letter shall be added in position 5 or 6.

Only one designation is allowed for a certain material condition or temper and the whole size range, for which the minimum requirement applies.

3.2 Position 1

Position 1 indicates the designating mandatory property, specified in the appropriate European product standard, by one capital letter of the alphabet.

The use of a letter indicating the designating mandatory property does not preclude the combination of two or more mandatory properties if specified in the appropriate product standard.

Letters shall be used in accordance with table 1.

Table 1: Letters for Position 1

Letter	Designating mandatory property
A	Elongation
B	Spring bending limit
D	As drawn, without specified mechanical properties
G	Grain size
H	Hardness (Brinell or Vickers)
M	As manufactured, without specified mechanical properties
R	Tensile strength
Y	0,2% proof strength

NOTE: The manufacturing process and/or heat treatment is intentionally not indicated by these letters.

3.3 Positions 2 to 4

Except for designations D, G and M, positions 2 to 4 consist of a three digit figure to designate the minimum value of the mandatory property specified in the European product standard. Designations D and M are not followed by any further characters. For designation G, positions 2 to 4 consist of a three digit figure to designate the mid-range value of the mandatory property specified in the European product standard.

In the case of a value of two significant digits a zero "0" is to be indicated at position 2 in front of the value specified, e.g. for hardness. In the case of a value of one significant digit, zeros are to be indicated at positions two and three in front of the value specified, e.g. for elongation.

3.4 Positions 5 and 6

If necessary a four digit figure may be indicated by use of the additional position 5, e.g. for very high tensile strength of heat-treatable alloys.

If an additional treatment is applicable for the purpose of stress relieving a product, the suffix "S" is added in position 5 or 6.

4 Examples

4.1 General

The material condition or temper designation is intended to be used in product designation and ordering information. In the product designation the material condition or temper designation shall follow the material designation and be separated from it by a hyphen ("—").

Some examples of material condition or temper designations in accordance with this standard are given in 4.2 to 4.10.

4.2 Elongation

Wire EN — Cu-OF — A007 — ¹⁾ [7]

4.3 Spring bending limit

Strip EN 1654 — CuSn8 — B410 — ¹⁾ [2]

4.4 As drawn

Tube EN — Cu-ETP — D — ¹⁾ [6]

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4.5 Grain size

Strip EN 1652 — CuZn37 — G020 — ¹⁾ [1]

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4.6 Hardness

Sheet EN 1652 — CuZn37 — H150 — ¹⁾ [1]

¹⁾ Continued according to the appropriate product standard, see bibliography in annex A.

4.7 As manufactured

Hollow rod EN 12168 – CuZn36Pb3 – M – ¹⁾ [5]

4.8 Tensile strength

Rod EN 12164 – CuZn39Pb3 – R500 – ¹⁾ [4]

or

Strip EN 1652 – CuBe2 – R1200 – ¹⁾ [1]

4.9 0,2% proof strength

Strip EN 1654 – CuZn30 – Y460 – ¹⁾ [2]

4.10 Additional treatment "Stress relieving"

Tube EN – CuZn20Al2 – R340S – ¹⁾ [3]

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¹⁾ see page 5