



SLOVENSKI STANDARD

SIST EN 1774:1998

01-april-1998

Cink in cinkove zlitine - Zlitine za livarske namene - Ingoti in taline

Zinc and zinc alloys - Alloys for foundry purposes - Ingot and liquid

Zink und Zinklegierungen - Gußlegierungen - In Blockform und in flüssiger Form

Zinc et alliages de zinc - Alliages pour fonderie - Lingots et liquide

Ta slovenski standard je istoveten z: EN 1774:1997

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ICS:

77.120.60	Svinec, cink, kositer in njihove zlitine	Lead, zinc, tin and their alloys
77.150.60	Svinčeni, cinkovi in kositrovi izdelki	Lead, zinc and tin products

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1774

September 1997

ICS 77.120.60; 77.150.60

Descriptors: zinc, zinc alloys, ingots, liquids, designation, specifications, chemical composition, marking, labelling

English version

Zinc and zinc alloys - Alloys for foundry purposes - Ingot and liquid

Zinc et alliages de zinc - Alliages pour fonderie - Lingots et liquide

Zink und Zinklegierungen - Gußlegierungen - In Blockform und in flüssiger Form

This European Standard was approved by CEN on 9 August 1997.

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.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 209 "Zinc and zinc alloys", 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 March 1998, and conflicting national standards shall be withdrawn at the latest by March 1998.

Within its programme of work Technical Committee CEN/TC 209 requested CEN/TC 209/SC 4 "Casting alloys and castings" to prepare the following standard :

EN 1774 Zinc and zinc alloys - Alloys for foundry purposes - Ingots and liquid

This European standard is one a series concerning zinc and zinc alloys for foundry purposes.

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

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1 Scope

This European Standard specifies the designations, chemical compositions, marking and other requirements for zinc alloys, in ingots or liquid form, produced for foundry purposes.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 1179	Zinc and zinc alloys - Primary zinc
pr EN 12019	Zinc and zinc alloys - Optical emission spectrometric analysis
pr EN 12060	Zinc and zinc alloys - Method of sampling - Specifications
ISO 301:1981	Zinc alloy ingots intended for casting

3 Definitions

For the purpose of this European Standard, the following definitions apply :

3.1 ingot : Cast product intended for remelting.

3.2 jumbo : Large ingot, not suitable for manual handling, weighing at least 30 kg. Normally a jumbo weighs several hundred kilograms.

3.3 bundle : Collection of ingots taken from one or more batches (see 3.6) and secured, for example by banding, for the purposes of handling, shipment and storage.

3.4 zinc alloys : Zinc with additions of one or more alloying elements, such as : Al, Mg, Cu, Cr, Ti.

NOTE : Zinc alloys are normally supplied in ingot form, but may be available in liquid form.

3.5 cast

3.5.1 cast from non-continuous casting : Product of one furnace or crucible melt.

3.5.2 cast from continuous casting : Identified quantity of liquid metal.

3.6 batch : Number of ingots or identified quantity of liquid metal, taken from a single cast.

4 Alloy designation

4.1 General

Zinc alloys conforming to this standard are designated either by symbol (see 4.2) or by number (see 4.3). For marking and labelling purposes only (see clause 9) the short designation and/or colour code may be used (see 4.4 and 4.5).

NOTE : Informative annex A gives the relationship between the former national alloy designations and those designations used in this standard.

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4.2 Designation of zinc alloys by symbol

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The designation by symbol is derived from the designation system given in ISO 301:1981.

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ZnAl4Cu1 designates a zinc alloy containing, nominally, 4 % aluminium and 1 % copper.

4.3 Designation of zinc alloys by number

The designation by number shall consist of two letters ZL (denoting zinc alloy) and four numerals, having the following significance :

- the first two numerals indicate the nominal aluminium content ;
- the third numeral indicates the nominal copper content ; and
- the fourth numeral indicates the nominal content of the next highest alloying element. If this is less than 1 % , the fourth numeral shall be "0".

4.4 Colour code

The alloy colour code shall consist of two colours. The colours shall be as given in table 1, in relation to the alloy symbols or alloy numbers.

4.5 Short designation

The short designation of the alloy shall consist of the two letters ZL, followed by one or two numerals. The short designations shall be as indicated in table 1, in relation to the alloy symbol or alloy number.

NOTE : For a transitional period of five years from the date of publication of this standard, the short designation, when used as an ingot mark (see 9.1), may be composed in a different form from that given in 4.5, provided that the numerals specified in the short designation in table 1 are used.

5 Manufacture

The zinc alloy shall be manufactured from :

- a) zinc ingots or liquid zinc conforming to grade Z1 of EN 1179, with the addition of appropriate alloying elements (see table 1) ; and/or
- b) identifiable casting process returns, e.g. sprues, runners and overflows ; and/or
- c) identifiable castings rejected from the foundry, or after secondary operations.

Used, recycled materials and all other materials, which could cause contamination, such as shredder scrap shall not be used.

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6 Ordering information

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

- a) the number of this European Standard (EN 1774) ;
- b) the designation of the zinc alloy required, by either symbol or number (see 4.2 et 4.3) ;
- c) the total mass required, and whether ingot or liquid form is required ;
- d) whether a specific ingot shape is required (see 7.2) ;
- e) whether a certificate of chemical composition or a declaration of conformity is required (see clause 10).

7 Requirements

7.1 Chemical composition

The ingots or liquid shall conform to the requirements for chemical composition given for the appropriate alloy in table 1.

NOTE : Methods of analysis, for use in cases of dispute, are given in prEN 12019.

In expressing the results for the analysis, the values obtained shall be rounded in one step to the same number of figures used to express the specified limit in table 1. The following rules shall be used for rounding :

- a) if the figure immediately after the last figure to be retained is less than five, the last figure to be retained shall be kept unchanged ;
- b) if the figure immediately after the last figure to be retained is equal to or greater than five, the last figure to be retained shall be increased by one.

7.2 Shape of ingots

The shape of ingots shall be at the discretion of the supplier, unless a specific shape is agreed between the purchaser and the supplier at the time of ordering (see 6 d).

7.3 Surface condition of ingots SIST EN 1774:1998

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The surface condition of the ingots shall be such that it does not affect the chemical composition and is not detrimental to the use of the ingots.

8 Sampling

Sampling of zinc alloy ingots and liquid, for verification of compliance with the chemical composition requirements shall be in accordance with prEN 12060.

9 Marking and labelling

9.1 Ingot

Each ingot shall be marked with the following minimum information :

- a) name or identification of manufacturer ;
- b) the zinc alloy designation, by alloy symbol and/or number, and/or colour code, and/or short designation (see clause 4 et table 1).