SLOVENSKI STANDARD
SIST EN 575:1998

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Aluminij in aluminijeve zlitine - Predzlitine, izdelane s taljenjem - Specifikacije

Aluminium and aluminium alloys - Master alloys produced by melting - Specifications

Aluminium und Aluminiumlegierungen - Vorlegierungen durch Erschmelzen hergestellt - Spezifikationen

Aluminium et alliages d'aluminium - Alliages mères obtenus par fusion - Spécifications

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Descriptors: aluminium, aluminium alloys, alloys, grades : quality, chemical composition, designation, classifications, specifications, inspection, packing, marking

English version

Aluminium and aluminium alloys - Master alloys produced by melting - Specifications

Aluminium et alliages d'aluminium - Alliages mères obtenus par fusion - Spécifications

Aluminium und Aluminiumlegierungen - Vorlegierungen durch Erschmelzen hergestellt - Spezifikationen

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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
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Contents

Foreword

This European Standard has been prepared by the Technical Committee CEN/TC 132 "Aluminium and aluminium alloys" of which the secretariat 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of an identical text or by endorsement, at the latest by January 1996, and conflicting national standards shall be withdrawn at the latest by January 1996.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.

1 Scope

This European Standard specifies the requirements for grades of master alloys produced by melting and intended for addition to a melt to adjust composition and/or to control impurities and/or to control the as-cast structure.

It specifies the classification and designation applicable to these grades, the conditions in which they are produced, their properties and the marks by which they are identified.

2 Normative references

This European Standard incorporates by dated and 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.

prEN 1780-1	Aluminium and aluminium alloys - Designation of unalloyed and alloyed aluminium ingots for remelting, master alloys and castings - Part 1 : Numerical designation system
prEN 1780-2	Aluminium and aluminium alloys - Designation of unalloyed and alloyed aluminium ingots for remelting, master alloys and castings - Part 2 : Chemical symbol based designation system
prEN 1780-3	Aluminium and aluminium alloys - Designation of unalloyed and alloyed aluminium ingots for remelting, master alloys and castings - Part 3 : Writing rules for chemical composition
EN ISO 9000-1	Quality management and quality assurance standards - Part 1 : Guidelines for selection and use (ISO 9000-1:1994)

3 Definitions

For the purposes of this standard, the following definitions apply:

3.1 alloy : Metallic substance consisting of a mixture of the basic metallic element (the element predominating by mass) and other elements such as alloying elements and impurities.

3.2 alloying element : Metallic or non-metallic element intentionally added to, or naturally contained by, a basic metal and the amount of which is controlled within specific upper and lower limits for the purpose of giving that metal certain special properties.

3.3 impurity : Metallic or non-metallic element present but which is not intentionally added to a metal and for which no lower limit is specified.

3.4 master alloy : Alloy intended only for addition to a melt to adjust composition and/or to control impurities and/or to control the as-cast structure. Some master alloys can contain more than 50 % of the main alloying element.

4 Orders or tenders

The order or tender shall define the product required and shall contain the following information :

a) designation of the master alloy according to this European Standard (or the customer code after agreement between supplier and purchaser);

b) form of the product;

c) quantity :

- mass (in metric tonnes);

- quantity tolerances if required;

d) any requirements for certificates of conformity, test and/or analysis reports or inspection certificates;

e) all exceptions to this standard which have been agreed between supplier and purchaser.

5 Requirements

5.1 Production and manufacturing processes

Unless otherwise specified in the order, the production and manufacturing processes shall be left to the discretion of the producer.

The master alloy shall be in a condition suitable for use at normal process temperatures.

Unless it is explicitly stated in the order, no obligation shall be placed on the producer to use the same processes for subsequent and similar orders.

The purchaser shall be notified of significant changes in the production and manufacturing process which can influence the product quality.

5.2 Quality control

The supplier shall be responsible for carrying out all inspection and tests required by the relevant European Standard and/or the particular specification, prior to shipment of the product. If the purchaser wishes to inspect the product at the supplier's works, he shall stipulate this at the time of placing the order.

5.3 Chemical composition

Each grade of master alloys shall be in accordance with the designations and chemical composition given in table 1.

The composition shown in this table is given in mass percent maximum and, if applicable, in mass percent minimum.

For the main alloying elements, the supplier shall produce a chemical content as close as possible to the middle of the range.

The writing rules for designations and chemical compositions, as given in prEN 1780-1, prEN 1780-2 and prEN 1780-3, shall be applied.

5.4 Freedom from defects

The products shall be reasonably free from dross, corrosion, scale or salt inclusions, grease or any other foreign bodies, including paint apart from that which is approved for marking purposes, to a degree which does not affect melt quality and/or recovery. The products shall be inspected visually.

The products may have shrinkage holes or cracks which may retain water. They shall therefore be thoroughly dried and preheated before charging to a furnace to avoid the risk of a violent explosion.

5.5 Form and dimension

Master alloys can be supplied in several forms including ingots, splatters, granules and rod, e.g. :

- piglets up to 1 kg;

- notched bar or waffle plates up to 15 kg;

- splatters with typical thickness 1 mm to 8 mm;

- granules up to 10 mm;

- rod either in layer wound coils or in cut lengths nominal rod diameter up to 10 mm.

The tolerances of the unit masses, the dimensions and the dimensional tolerances of the products shall be defined by agreement between supplier and purchaser at the time of ordering.

5.6 Health and safety

The supplier shall be responsible for supplying the necessary information on health and safety for each product.

6 Product inspection and testing methods

6.1 General

Sampling procedures and analytical tests shall be carried out in accordance with quality assurance procedures (see EN ISO 9000-1). The results shall be traceable to national or international standard reference materials. The capability of the analytical procedures shall be verified.

6.2 Sampling - Samples

The melt shall be clearly identified with a traceable number. The shape of the samples and the sampling conditions for chemical analysis shall be so designed that they are representative of the melt being cast. Each sample shall be taken from the liquid metal after any treatment from either the furnace, the liquid stream, or shall be taken from a cast ingot or length of rod.

NOTE: Due to the effects of segregation, there are particular difficulties in sampling of cast ingots.

The supplier shall be able to demonstrate the validity of the whole test procedure, including sampling, sample preparation and measurement.

6.3 Analysis of chemical composition

Analysis is normally made for elements for which specific limits are shown in table 1. For purposes of determining conformance to these limits the analysis values shall be rounded off to the nearest unit in the right hand place of figures as shown in table 1.

The analytical methods are at the discretion of the producer who shall use methods accepted at the European or International levels.