



**NSAI**  
Standards

Irish Standard  
I.S. EN 12438:2017

# Magnesium and magnesium alloys - Magnesium alloys for cast anodes

**I.S. EN 12438:2017**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN 12438:2017 is the adopted Irish version of the European Document EN 12438:2017, Magnesium and magnesium alloys - Magnesium alloys for cast anodes

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**EUROPEAN STANDARD**

**EN 12438**

**NORME EUROPÉENNE**

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English Version

## Magnesium and magnesium alloys - Magnesium alloys for cast anodes

Magnésium et alliages de magnésium - Alliages de magnésium pour anodes coulées

Magnesium und Magnesiumlegierungen - Magnesiumlegierungen für Gussanoden

This European Standard was approved by CEN on 2 July 2017.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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## EN 12438:2017 (E)

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## European foreword

This document (EN 12438:2017) has been prepared by Technical Committee CEN/TC 190 “Foundry technology”, 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of an identical text or by endorsement, at the latest by March 2018, and conflicting national standards shall be withdrawn at the latest by March 2018.

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

This document supersedes EN 12438:1998.

Within its programme of work, Technical Committee CEN/TC 190 requested CEN/TC 190/WG 9 “Cast magnesium” to revise:

EN 12438:1998, *Magnesium and magnesium alloys — Magnesium alloys for cast anodes*

Annex D provides details of significant technical changes between this European Standard and the previous edition.

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.

## **EN 12438:2017 (E)**

### **Introduction**

This European Standard classifies magnesium alloys for cast anodes into a number of grades suitable for the applications for which they might be used.

In this European Standard, a new designation system by number, as established in EN 1754 [1], is given.

**NOTE** This designation system by number is based on the structure and rules of EN 10027-2 [2] and so corresponds with the European numbering system for steel and other materials.



## 1 Scope

This European Standard specifies the grades and the corresponding requirements for magnesium alloys for cast anodes.

This European Standard specifies 2 groups of cast magnesium alloy grades by a classification based on chemical composition. The first group deals with magnesium alloy ingots for anodes. The second group deals with magnesium alloy anode castings.

This European Standard specifies chemical composition, designation, testing and inspection documentation.

This European Standard does not cover technical delivery conditions for magnesium alloy anode castings (see EN 1559-1 [3] and EN 1559-5 [4]).

## 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 10204, *Metallic products - Types of inspection documents*

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.

### 3.1

#### **anode**

electrode where oxidation reactions take place

### 3.2

#### **galvanic anode**

anode attached to a metal object to inhibit the corrosion of the object

## 4 Designations

### 4.1 Material

The material shall be designated either by symbol or by number as given in Table 1 and Table 2.

NOTE The comparison of EN 12438 grade designations with the designations from the previous version of this European Standard is given in Annex C.

### 4.2 Casting process

The following symbols shall be used to indicate the different casting processes:

- S Sand casting;
- K Permanent mould casting (gravity);
- C Continuous casting.

NOTE Examples of the use of these designations are given in EN 1559-5 [4].

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