



**NSAI**  
Standards

Irish Standard  
I.S. EN 12421:2017

# Magnesium and magnesium alloys - Unalloyed magnesium

**I.S. EN 12421:2017**

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

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

*This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):*

*NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.*

*This document is based on:*

EN 12421:2017

*Published:*

2017-03-08

*This document was published  
under the authority of the NSAI  
and comes into effect on:*

2017-03-26

ICS number:

77.120.20

NOTE: If blank see CEN/CENELEC cover page

NSAI  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

Sales:  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

## National Foreword

I.S. EN 12421:2017 is the adopted Irish version of the European Document EN 12421:2017, Magnesium and magnesium alloys - Unalloyed magnesium

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

**Compliance with this document does not of itself confer immunity from legal obligations.**

*In line with international standards practice the decimal point is shown as a comma (,) throughout this document.*

This page is intentionally left blank

EUROPEAN STANDARD

EN 12421

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2017

ICS 77.120.20

Supersedes EN 12421:1998

English Version

## Magnesium and magnesium alloys - Unalloyed magnesium

Magnésium et alliages de magnésium - Magnésium non  
allié

Magnesium und Magnesiumlegierungen -  
Reinmagnesium

This European Standard was approved by CEN on 6 January 2017.

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

CEN members are the national standards bodies of 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 United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>3</b>
<b>Introduction .....</b>	<b>4</b>
<b>1 Scope .....</b>	<b>5</b>
<b>2 Normative references .....</b>	<b>5</b>
<b>3 Terms and definitions .....</b>	<b>5</b>
<b>4 Designations.....</b>	<b>5</b>
<b>5 Order information .....</b>	<b>5</b>
<b>6 Manufacture .....</b>	<b>6</b>
<b>7 Requirements .....</b>	<b>6</b>
<b>7.1 Chemical composition .....</b>	<b>6</b>
<b>7.2 General condition of the product .....</b>	<b>6</b>
<b>8 Sampling.....</b>	<b>6</b>
<b>8.1 General.....</b>	<b>6</b>
<b>8.2 Frequency and number of tests .....</b>	<b>6</b>
<b>9 Testing.....</b>	<b>6</b>
<b>9.1 Determination of the chemical composition.....</b>	<b>6</b>
<b>9.2 Rounding of results of chemical analysis .....</b>	<b>6</b>
<b>10 Inspection documentation.....</b>	<b>8</b>
<b>11 Marking.....</b>	<b>8</b>
<b>12 Packaging and surface protection.....</b>	<b>8</b>
<b>13 Complaints.....</b>	<b>8</b>
<b>Annex A (informative) Comparison of cast unalloyed magnesium material designations according to EN 12421 and ISO 8287 [3] .....</b>	<b>9</b>
<b>Annex B (informative) Significant technical changes between this European Standard and the previous edition .....</b>	<b>10</b>
<b>Bibliography.....</b>	<b>11</b>

## European foreword

This document (EN 12421:2017) 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 September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

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 12421:1998.

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

EN 12421:1998, *Magnesium and magnesium alloys — Unalloyed magnesium*

Annex B 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 12421:2017 (E)**

### **Introduction**

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

Four new grades of cast unalloyed magnesium, as specified in ISO 8287:2011 [3], has been added.

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 corresponding requirements for cast unalloyed magnesium.

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

## 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

#### **unalloyed magnesium**

material where the minimum magnesium content is 99,0 % (mass fraction)

### 3.2

#### **cast unalloyed magnesium**

unalloyed magnesium processed in various moulds

## 4 Designations

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

NOTE The comparison of EN 12421 grade designations with the designations from the ISO standard for unalloyed magnesium, ISO 8287 [3], is given in Annex A.

## 5 Order information

The following information shall be supplied by the purchaser:

- a) the number of this European Standard;
- b) the designation of the material;
- c) product shape;
- d) quantity (e.g. number, mass, etc.);
- e) any special requirements.

All requirements shall be agreed between the manufacturer and the purchaser by the time of acceptance of the order.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-