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## Wrought magnesium and magnesium alloys — Rolled plates and sheets

ICS: 77.120.20

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[ISO/DIS 23700](#)

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 79, *Light metals and their alloys*, Subcommittee SC 5, *Magnesium and alloys of cast or wrought magnesium*.

This edition specifies chemical composition, mechanical properties, dimension and shape tolerance, and the technical conditions for inspection and delivery of wrought magnesium and magnesium alloy plates and sheets.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

This document classifies the commercially available magnesium and magnesium alloy rolled plates and sheets into a number of grades suitable for the application to which they might be put.

Some of the alloys referenced in this document can be the subject of a patent or of patent applications and their listing herein is not to be construed in any way as the granting of a licence under such patent rights.

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# Wrought magnesium and magnesium alloys — Rolled plates and sheets

## 1 Scope

This International Standard specifies chemical composition, mechanical properties, dimension and shape tolerance, heat treatment and the technical conditions for inspection and delivery of rolled magnesium and magnesium alloy plates and sheets.

It applies to rolled magnesium and magnesium alloy plates and sheets.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced documents (including any amendments) applies.

ISO 3116, *Magnesium and magnesium alloys — Wrought magnesium and magnesium alloys*

ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

## 3 Terms and definitions (standards.iteh.ai)

### 3.1

#### Sheet

Product that is rectangular in cross-section with nominal thickness less than 6mm, but not less than 0.20mm, and with slit, sheared or sawed edges.

### 3.2

#### Plate

Product that is rectangular in cross-section and with thickness not less than 6 mm with sheared or sawn edges.

### 3.3

#### Tempers

The following symbols shall be used for temper designation:

- O: annealed;
- H112: strain hardened from working at elevated temperature or from a limited amount of cold work, and for which there are mechanical properties limits;
- H × 4: half hardened (strain hardened to give an ultimate tensile strength approximately midway between that of annealed and H × 8 temper);
- H × 2: quarter hardened (strain hardened to give an ultimate tensile strength approximately midway between that of annealed and H × 4 temper);
- T5: cooled from an elevated temperature shaping process and then artificially aged.

## 4 Orders or tenders

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

- a) type and form of product:
  - designation of the magnesium or magnesium alloy;
  - form of the product (sheet, plate);
- b) metallurgical temper (degree of hardness or heat treatment condition) of the material for delivery and, if different, metallurgical temper for use;
- c) number of ISO 23700 or specification number, or, where none exists, properties agreed between the supplier and the purchaser;
- d) dimensions and shape of the product (thickness, width, length, diameter of the coil);
- e) tolerances of the dimensions and form, with reference to the appropriate part of ISO 23700;
- f) quantity;
- g) any requirements for certificates of conformity, test and/or analysis;
- h) any special requirements agreed between the supplier and the purchaser (for example drawings).

## 5 Requirements

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### 5.1 Designation

The alloy designation and temper should be given in [Table 1](https://standards.iteh.ai/catalog/standards/sist/697e3d7f-074e-4c2e-a890-32bc3dd59713/iso-dis-23700).

**Table 1 — Alloy designation and temper**

Alloy designation	Alloy symbol	Temper	Thickness (mm)
MAM61	ISO-MgAl6Mn1	H112	1≤t≤5
MAM91	ISO-MgAl9Mn1	H112	1≤t≤5
MAT11	ISO-MgAl1Sn1	0	0.5≤t≤2
MAT61	ISO-MgAl6Sn1	0	0.5≤t≤2
MAZ31a	ISO-MgAl3Zn1(A)	0, H × 4, H × 2	0.5≤t≤25
MAZ31b	ISO-MgAl3Zn1(B)	0, H112	0.4≤t≤70
MAZ40	ISO-MgAl4Zn	H112	40≤t≤70
MAZ41	ISO-MgAl4Zn1	H112	10≤t≤70
MAZX310	ISO-MgAl3Zn1Ca	0	0.5≤t≤1.5
MAZE310	ISO-MgAl3Zn1RE	0	0.5≤t≤1.5
MVWE751	ISO-MgGd7Y5RE1	T5	10≤t≤20
MVW76	ISO-MgGd7Y6	T5	12≤t≤70
MLAZ931	ISO-MgLi9Al3Zn1	0, H112	0.5≤t≤60
MME20	ISO-MgMn2RE	H112	10≤t≤70
MWE43c	ISO-MgY4RE3Zr(C)	T5	12≤t≤70
MWEK711	ISO-MgY7RE1Zr1	T5	10≤t≤20
MZE10	ISO-MgZn1RE	0	0.5≤t≤1.5
MZE20	ISO-MgZn2RE	0	0.5≤t≤1.5
MZM21	ISO-MgZn2Mn1	0, H × 4	6≤t≤25



Table 1 (continued)

Alloy designation	Alloy symbol	Temper	Thickness (mm)
MZK60	ISO-MgZn6Zr0	H112	20≤t≤60
MZK61	ISO-MgZn6Zr1	T5, H112	10≤t≤70

## 5.2 Production and manufacturing processes

Unless otherwise specified in the order, the production and manufacturing processes shall be left to the discretion of the producer. Unless it is explicitly stated otherwise in the order, no obligation shall be placed on the producer to use the same processes for subsequent and similar orders.

## 5.3 Quality control

The supplier shall be responsible for the performances of all inspection and tests required by the relevant International Standard or specification, prior to shipment of the product. If the purchaser wishes to inspect the product at the supplier's works, he shall notify the supplier at the time of placing the order.

## 5.4 Chemical composition

The chemical composition shall conform to the requirements for the appropriate material given in [Table 2](#), or comply with the requirements specified in ISO 3116.

If the purchaser requires content limits for elements not specified in Table 2 nor in ISO 3116, these limits shall be stated in the order document.

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