

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS H 4203 : 2018

(JMA/JSA)

Magnesium alloy bars and wires

ICS 23.040.15 ; 77.120.20 ; 77.150.20

Reference number : JIS H 4203 : 2018 (E)

H 4203 : 2018

Date of Establishment: 1964-03-01

Date of Revision: 2018-10-22

Date of Public Notice in Official Gazette: 2018-10-22

Investigated by: Japanese Industrial Standards Committee
Standards Board for ISO area

JIS H 4203 : 2018, First English edition published in 2019-03

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 2019

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

HN

PROTECTED BY COPYRIGHT

Contents

	Page
Introduction	1
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Classification	2
5 Quality	5
5.1 Appearance	5
5.2 Chemical composition	5
5.3 Mechanical properties	7
6 Dimensions and tolerances	10
6.1 Bars	10
6.2 Wires	11
7 Tests	12
7.1 Chemical analysis	12
7.2 Tensile test	12
8 Inspection	13
9 Marking	13
Annex JA (informative) Comparison table between JIS and corresponding International Standard	14

Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by The Japan Magnesium Association (JMA)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS H 4203:2011** is replaced with this Standard.

This **JIS** document is protected by the Copyright Law.

It should be noted that being in conformance with this Standard may come under the use of the patent rights held by the following:

Patent No.	Title of patent	Patent holder	Expiration date
No. 3030338	Method of producing a high strength, flame retardant magnesium alloy	National Institute of Advanced Industrial Science and Technology (AIST)	October 5, 2018
No. 4415098	Preparation and its extruded material of the flame-retardant magnesium alloy extruded material	National Institute of Advanced Industrial Science and Technology (AIST)	March 15, 2025
No. 5035893	A high strength and high ductility, flame retardant magnesium alloy and manufacturing method thereof	National Institute of Advanced Industrial Science and Technology (AIST)	August 30, 2027
No. 3905115	High strength and high toughness magnesium alloy and manufacturing method thereof	Yoshihito Kawamura	November 26, 2024
No. 4500916	Magnesium alloy and manufacturing method thereof	Kumamoto University Honda Motor Co., Ltd. Fuji Light Metal Co., Ltd. Japan Steel Works Ltd.	September 28, 2024
No. 5024705	Magnesium alloy material and a method of manufacturing	Kobe Steel Ltd. Nissan Motor Co., Ltd. Kumamoto University	November 16, 2027
Japanese Unexamined Patent Application Publication No. 2015-14046	Magnesium alloy wire and a manufacturing method thereof	Toho Metal Co., Ltd. Kumamoto University	June 3, 2034

The relevant holders of the above-mentioned patent rights have indicated an intention of granting license to anyone under the nondiscriminatory and reasonable conditions, except to the other relevant holders of the patent rights related to this Standard who will not grant their licenses under the same conditions.

It should be noted that following this Standard does not always refer to granting a free license.

There is the possibility that some parts of this Standard may conflict with patent rights other than those mentioned above. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights.

The “patent rights” as mentioned here include patent right, application for a patent after opening to the public or utility model right.

Magnesium alloy bars and wires

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 3116 : 2007**, Edition 4, with some modifications of the technical contents.

The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JA.

1 Scope

This Standard specifies the magnesium alloy bars (hereafter referred to as bars) and magnesium alloy wires (hereafter referred to as wires) with a circular, rectangular, square, regular hexagonal or regular octagonal cross section, which are manufactured by extrusion and drawing process.

NOTE The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 3116 : 2007 *Magnesium and magnesium alloys — Wrought magnesium alloys* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are **IDT** (identical), **MOD** (modified), and **NEQ** (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS H 0001 *Aluminium, magnesium and their alloys — Temper designation*

JIS H 0321 *General rules for inspection of non-ferrous metal materials*

JIS H 1331 *Magnesium and magnesium alloys — General rules for sampling and analytical methods*

JIS H 1332 *Methods for determination of aluminium in magnesium and magnesium alloys*

JIS H 1333 *Methods for determination of zinc in magnesium and magnesium alloys*

JIS H 1334 *Methods for determination of manganese in magnesium and magnesium alloys*

JIS H 1335 *Methods for determination of silicon in magnesium and magnesium*