

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS H 3250 : 2021

(JCBA/JSA)

**Copper and copper alloy rods and
bars**

ICS 77.150.30

Reference number : **JIS H 3250 : 2021 (E)**

H 3250 : 2021

Date of Establishment: 1977-05-01

Date of Revision: 2021-01-20

Date of Public Notice in Official Gazette: 2021-01-20

Investigated by: Japanese Industrial Standards Committee
Standards Board for ISO area
Technical Committee on Metal and Inorganic
Materials

JIS H 3250:2021, First English edition published in 2021-04

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 2021

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

AT

PROTECTED BY COPYRIGHT

Contents

	Page
1	Scope 1
2	Normative references 1
3	Terms and definitions 2
4	Designation and symbol of grade 3
5	Quality 7
5.1	Appearance 7
5.2	Chemical composition 7
5.3	Mechanical properties 11
5.4	Conductivity and electrical resistivity 14
5.5	Season cracking 15
5.6	Hydrogen embrittlement 16
5.7	Dezincification corrosion resistance 16
6	Dimensions and tolerances thereof 16
6.1	Dimensions 16
6.2	Tolerances on dimensions 16
6.3	Permissible values of camber for drawn bars 20
6.4	Permissible values of corner radii for drawn bars 21
7	Tests 21
7.1	Chemical analysis 21
7.2	Tensile test 22
7.3	Hardness test 22
7.4	Conductivity test and electrical resistivity test 22
7.5	Season cracking test 22
7.6	Hydrogen embrittlement test 23
7.7	Dezincification corrosion test 23
8	Inspection 23
9	Marking 23
10	Report 24
Annex A (normative)	Dezincification corrosion test (immersion method) 25
Annex B (normative)	Dezincification corrosion test (electrochemical method) 29
Annex C (informative)	Typical dimensions of bars 33
Annex D (normative)	Atomic emission spectrometry by solid sample for copper and copper alloy bars 34

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 Japan Copper and Brass Association (JCBA)/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act. This edition replaces the previous edition (**JIS H 3250:2015**), which has been technically revised.

However, **JIS H 3250:2015** may be applied in the **JIS** mark certification based on the relevant provisions of Article 30, paragraph (1), etc. of the Industrial Standardization Act until 19 January 2022.

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

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

Company name	Address	Patent number	Date of establishment	Designation
SAN-ETSU METALS Co., Ltd.	1-4-1 Yoshihisa, Takaoka-shi, Toyama-ken	3966896	2007.06.08	Brass
		4509801	2010.05.14	Copper alloy material
Mitsubishi Shindoh Co., Ltd.	4-7-35 Kita-shinagawa, Shinagawa-ku, Tokyo-to	4951623	2012.3.16	Free-cutting copper alloy with ultra-low lead content
KITZ METAL WORKS CORPORATION	7377 Miyagawa, Chino-shi, Nagano-ken	4184357	2008.9.12	Lead-free free-cutting brass alloy and method for producing the same
KITZ Corporation	1-10-1 Nakase, Mihama-ku, Chiba-shi, Chiba-ken	4184357	2008.9.12	Lead-free free-cutting brass alloy and method for producing the same
		4397963	2009.10.30	Lead-free brass alloy with excellent stress corrosion cracking resistance
		4550154	2010.7.16	Lead-free brass alloy with excellent stress corrosion cracking resistance
		5847326	2015.12.4	Brass alloy, processed parts and wetted parts
DOWA METALTECH CO., LTD.	4-14-1 Sotokanda, Chiyoda-ku, Tokyo-to	3824944	2006.7.7	Copper alloy excellent in stress corrosion cracking resistance and dezincing resistance and manufacturing method thereof

The holders of these patent rights and other 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 and other 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.

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

The “patent rights and other rights” as mentioned here include patent right, published patent application or utility model right.

Blank

Copper and copper alloy rods and bars

1 Scope

This Japanese Industrial Standard specifies requirements for the extended copper and copper alloy rods and bars having a round, regular hexagonal, square, rectangular, or rounded regular hexagonal section (hereafter referred to as bars).

NOTE 1 “Bars” refer to the extended solid products of a uniform section throughout their length, which are cut to a specified length and supplied in a straight form.

NOTE 2 “Rounded regular hexagonal” refers to the shape of a regular hexagon with corners rounded along the circumference of a circle concentric with the inscribed and circumscribed circles of the hexagon, having a diameter larger than the former and smaller than the latter.

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 0321 *General rules for inspection of non-ferrous metal materials*
- JIS H 0500 *Glossary of terms used in wrought copper and copper alloys*
- JIS H 0505 *Measuring methods for electrical resistivity and conductivity of non-ferrous materials*
- JIS H 1012 *General rules for chemical analysis of copper and copper alloys*
- JIS H 1051 *Copper and copper alloys—Determination of copper content*
- JIS H 1052 *Methods for determination of tin in copper and copper alloys*
- JIS H 1053 *Methods for determination of lead in copper and copper alloys*
- JIS H 1054 *Methods for determination of iron in copper and copper alloys*
- JIS H 1055 *Methods for determination of manganese in copper and copper alloys*
- JIS H 1056 *Methods for determination of nickel in copper and copper alloys*
- JIS H 1057 *Methods for determination of aluminium in copper and copper alloys*
- JIS H 1058 *Copper and copper alloys—Determination of phosphorus content*
- JIS H 1059 *Copper and copper alloys—Determination of arsenic content*
- JIS H 1061 *Methods for determination of silicon in copper and copper alloys*
- JIS H 1065 *Method for determination of selenium in copper and copper alloys*
- JIS H 1068 *Methods for determination of bismuth in copper and copper alloys*
- JIS H 1069 *Methods for determination of cadmium in copper and copper alloys*
- JIS H 1072 *Methods for determination of antimony in copper and copper alloys*