



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS Z 3234 : 2021

(JWES/JSA)

**Materials for resistance welding
electrodes and ancillary equipment**

Z 3234 : 2021

Date of Establishment: 1971-09-01

Date of Revision: 2021-03-22

Date of Public Notice in Official Gazette: 2021-03-22

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

JIS Z 3234 : 2021, First English edition published in 2022-02

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 2022

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
4.1 Group A — Copper and copper alloys	2
4.2 Group B — Sintered materials	2
4.3 Group C — Dispersion-strengthened copper (DSC) alloys	3
5 Quality	3
6 Tests	10
6.1 Tensile test and elongation	10
6.2 Hardness test	10
6.3 Softening temperature test	10
6.4 Electrical conductivity test	11
7 Inspection	12
7.1 Type inspection	12
7.2 Delivery inspection	12
8 Marking	12
9 Typical applications	12
Annex A (informative) Typical applications of electrode materials	13
Annex JA (normative) Test method for hardness at elevated temperatures	17
Annex JB (informative) Comparison table between JIS and corresponding International Standard	18

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 Welding Engineering Society (JWES)/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 Z 3234** : 1999), which has been technically revised.

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

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, published patent application or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, published patent application or utility model rights.

Materials for resistance welding electrodes and ancillary equipment

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 5182** : 2016, Edition 4, with some modifications of part of the technical contents such as the corresponding material composition.

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 JB.

1 Scope

This Standard specifies the characteristics of materials for resistance welding electrodes and ancillary equipment (hereafter referred to as electrode materials).

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

ISO 5182 : 2016 *Resistance welding — Materials for electrodes and ancillary equipment* (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 B 7724 *Brinell hardness test — Verification and calibration of testing machines*

JIS B 7725 *Vickers hardness test — Verification and calibration of testing machines*

JIS H 3100 *Copper and copper alloy sheets, plates and strips*

JIS H 3250 *Copper and copper alloy rods and bars*

JIS H 5120 *Copper and copper alloy castings*

JIS Z 2241 *Metallic materials — Tensile testing — Method of test at room temperature*

JIS Z 2243-1 *Brinell hardness test — Part 1 : Test method*