

JAPANESE INDUSTRIAL STANDARD

Translated and Published by Japanese Standards Association

JIS B 7735: 2020

(JTM/JSA)

Vickers hardness test — Calibration of reference blocks

ICS 19.060; 77.040.10

Reference number: JIS B 7735: 2020 (E)

B 7735: 2020

Date of Establishment: 1981-01-15

Date of Revision: 2020-12-21

Date of Public Notice in Official Gazette: 2020-12-21

Investigated by: Japanese Industrial Standards Committee

Standards Board for ISO area

JIS B 7735 : 2020, First English edition published in 2021-08

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 HN

Contents

			Page
Introd	luction ·····		1
1	Scope		1
2	-	es · · · · · · · · · · · · · · · · · · ·	
3		ns ·····	
4 4.1 4.2 4.3 4.4 4.5 4.6	General requirements of reference blocks Manufacture Thickness Test surface area Flatness and parallelism Surface roughness Prevention of the regrind of the test surface Calibration machine		$\begin{array}{c} \cdots 2 \\ \cdots 3 \\ \cdots 3 \end{array}$
5.1 5.2 5.3 5.4 5.5 5.6	Direct verification · Traceability of verif Test force · · · · · · · · · Indenter · · · · · · · · ·	ication and calibration instruments	··· 3 ··· 3 ··· 4
6	Calibration procedure ······6		
7	Number of indentations · · · · 6		
8 8.1 8.2	Uniformity of hardness and uncertainty 6 Relative non-uniformity 6 Uncertainty of measurement 7		$\cdots 6$
9	Marking 7		$\cdots 7$
10	Calibration certificate · · · · · · 7		$\cdots 7$
11	Validity ·····		8
Annex		Incertainty of the mean hardness value of hardness eference blocks	9
Annex	x B (informative) A	djustment of Köhler illumination systems	·14
Annex JA (informative) Uniformity of hardness of reference block ······15			·15
Annex	x JB (informative) N	Materials of reference block ······	·16
Biblio	graphy ·····		·17

Annex JC (informative)	Comparison table between JIS and corresponding
	International Standard

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 Testing Machine Association (JTM)/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 B 7735:2010), 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.

Blank

Vickers hardness test — Calibration of reference blocks

JIS B 7735: 2020

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 6507-3**: 2018, Edition 4, with some modifications of the technical contents.

The dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JC. Annex JA and Annex JB are unique to **JIS** and not given in the corresponding International Standard.

1 Scope

This Standard specifies a method for the calibration of hardness reference blocks (hereafter referred to as reference blocks) to be used for the indirect verification and daily accuracy control of Vickers hardness testing machines as specified in **JIS B 7725** (hereafter referred to as the testing machine).

It should be noted that Vickers hardness determination from indentations $< 20 \mu m$ in diagonal length may cause large uncertainties in the results.

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

ISO 6507-3: 2018 Metallic materials — Vickers hardness test — Part 3: Calibration of reference blocks (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 0601 Geometrical Product Specifications (GPS) Surface texture: Profile method Terms, definitions and surface texture parameters
- JIS B 0621 Definitions and designations of geometrical deviations
- JIS B 7725 Vickers hardness test Verification and calibration of testing machines
- NOTE Corresponding International Standard: ISO 6507-2 Metallic materials Vickers hardness test Part 2: Verification and calibration of testing machines
- JIS B 7728 Calibration of force-proving instruments used for the verification of