



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS Z 2247 : 2006
(JISF/JSA)

Method of Erichsen cupping test

ICS 77.040.10

Reference number : JIS Z 2247 : 2006 (E)

Foreword

This translation has been made based on the original Japanese Industrial Standard 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 Iron and Steel Federation (JISF)/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 Z 2247** : 1998 is replaced with this Standard.

This revision has been made based on **ISO 20482** : 2003 *Metallic materials—Sheet and strip—Erichsen cupping test* for the purposes of making it easier to compare this Standard with International Standard; to prepare Japanese Industrial Standard conforming with International Standard; and to propose a draft of an International Standard which is based on Japanese Industrial Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

Date of Establishment: 1970-05-01

Date of Revision: 2006-03-25

Date of Public Notice in Official Gazette: 2006-03-27

Investigated by: Japanese Industrial Standards Committee
Standards Board
Technical Committee on Iron and Steel

JIS Z 2247:2006, First English edition published in 2006-10

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

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

© JSA 2006

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

Contents

	Page
Introduction	1
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Testing equipment	1
6 Test pieces and symbols of Erichsen cupping index	2
7 Test conditions	3
8 Procedure	4
9 Test report	4
Annex A (informative) Recommended composition of the graphite grease	6
Annex 1 (informative) Comparison table between JIS and corresponding International Standard	7

Method of Erichsen cupping test

Introduction This Japanese Industrial Standard has been prepared based on the first edition of **ISO 20482** *Metallic materials—Sheet and strip—Erichsen cupping test* published in 2003 with some modifications of the technical contents.

The portions underlined with dots are the matters in which the contents of the original International Standard have been modified. A list of modifications with the explanations is give in Annex 1 (informative).

1 Scope This Standard specifies the test method for the plastic deformation characteristics at the time of punch stretch forming process for the metallic sheets of 0.1 mm or over up to and including 2 mm in thickness and 90 mm or over in width. However, this Standard may be applied to the metallic sheets of over 2 mm up to and including 3 mm in thickness or the narrow metallic sheets of 30 mm or over to and excluding 90 mm in width.

NOTE : The International Standard corresponding to this Standard is as follows.

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**.

ISO 20482:2003 *Metallic materials—Sheet and strip—Erichsen cupping test* (MOD)

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 7729 *Erichsen cupping testers*

JIS Z 8401 *Guide to the rounding of numbers*

3 Terms and definitions For the purposes of this Standard, the following definitions apply.

3.1 through crack crack that goes through the full thickness of the test piece and is just sufficiently wide to allow light to pass through part of its length

4 Principle Forming an indentation by pressing a punch with a spherical end against a clamped test piece between a blank holder and a die until a through crack appears. The measured depth of the indentation is the result (Erichsen cupping index) of the test based on the movent of the punch.

5 Testing equipment The testing equipment shall be in accordance with **JIS B 7729**.

The dimension of jig specified in **JIS B 7729** shall be as shown in informative table 1.