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**Methods of macro testing and
Vickers hardness testing for sec-
tion of resistance spot, projection
and seam welds**

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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 of revision of Japanese Industrial Standard submitted by The Japan Welding Engineering Society (JWES)/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 3139** : 1978 is replaced with this Standard.

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Methods of macro testing and Vickers hardness testing for section of resistance spot, projection and seam welds

Introduction

This Japanese Industrial Standard has been prepared by revising **JIS Z 3139** *Method of macro test for section of spot welded joint* published in 1978 to make it reflect to the actual situation in Japan and by adding the Vickers hardness testing method for the section.

1 Scope

This Standard specifies the methods of macro testing and Vickers hardness testing for section of resistance spot, projection and seam welds of metallic materials of 0.3 mm to 6.0 mm in plate thickness.

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 7725 *Vickers hardness test—Verification of testing machines*

JIS Z 2244 *Vickers hardness test—Test method*

JIS Z 3001-1 *Welding and allied processes—Vocabulary—Part 1: General*

JIS Z 3001-2 *Welding and allied processes—Vocabulary—Part 2: Welding processes*

JIS Z 3136 *Specimen dimensions and procedure for shear testing resistance spot and embossed projection welded joints*

3 Terms and definitions

For the purposes of this Standard, the terms and definitions given in **JIS Z 3001-1** and **JIS Z 3001-2**, and the following apply.

3.1 diameter of nugget

the diameter of nugget obtained at joining interface after the macro testing for section of the resistance spot and projection welds

3.2 width of nugget

the width of nugget obtained at joining interface after the macro testing for section of the seam weld