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**Specimen dimensions and
procedure for cross tension testing
resistance spot and embossed
projection welded joints**

ICS 25.160.40

Descriptors : spot welding, welded joints, tensile testing

Reference number : JIS Z 3137 : 1999 (E)

Z 3137 : 1999

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS Z 3137 : 1990** is replaced with **JIS Z 3137 : 1999**.

In this revision, **ISO/DIS 14272 : 1994** *Specimen dimensions and procedure for cross tension testing resistance spot and embossed projection welds* has been used as the basis, for the purpose of conformity with International Standards.

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In the event of any doubts arising as to the contents,
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Specimen dimensions and procedure for cross tension testing resistance spot and embossed projection welded joints

Introduction This Japanese Industrial Standard is based on ISO/DIS 14272 *Specimen dimensions and procedure for cross tension testing resistance spot and embossed projection welds*, issued in 1994 and the technical contents are the same as ISO/DIS 14272, except the following items.

- a) ISO/DIS specifies the maximum diameter of welded zone as $5\sqrt{t}$ (t : thickness of plate).
- b) The number of test pieces is 11 as specified in ISO/DIS and it can be reduced based on an agreement between the parties concerned, if the standard deviation is not required.
- c) The shape and dimensions of jig for test piece is specified.
- d) The hexagon bolts for fixing test piece to testing jig are specified as M12 in ISO/DIS. However, they are specified to be one of M12, 14, 16 and 18 in this Standard and the larger one is recommended.

1. **Scope** This Japanese Industrial Standard specifies the shape and dimension of test piece having 0.5 mm to 5.0 mm plate thickness and arbitrary welded diameter, and the method of test, for spot and projection welded joint of metallic materials.

2. **Normative references** The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards indicated below shall be applied.

JIS Z 2241 *Method of Tensile Test for Metallic Materials*

JIS Z 3001 *Welding Terms*

JIS Z 8401 *Rules of Rounding Off of Numerical Values*

3. **Definitions** The definitions of the main terms used in this Standard shall be based on JIS Z 3001 and the items below.

- a) **cross tension force** (cross tension load) The maximum force (load) obtained by this test.
- b) **diameter of weld** The diameter of weld is the average diameter of plugs fractured, and the average diameter of fusion zone excluding the corona for interface fracture. In the case of partial fracture in which the both types can be seen, the average diameter shown in Fig. 1 shall be taken.