



DRAFT INTERNATIONAL STANDARD ISO/DIS 14272

Secretariat: **IIW**

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Specimen dimensions and procedure for cross tension testing resistance spot and embossed projection welds

Dimensions des éprouvettes et mode opératoire pour l'essai de traction sur éprouvettes en croix des soudures par résistance par points et par bossages

[Revision of first edition (ISO 14272:2000)]

ICS 25.160.40

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

Member bodies are requested to consult relevant national interests in ISO/TC 44 before returning their ballot to the ISO Central Secretariat.

This draft International Standard is submitted to all ISO member bodies for voting, as a standard prepared by an international standardizing body in accordance with Council Resolution 42/1999. The proposer, the International Institute of Welding (IIW), has been recognized by the ISO Council as an international standardizing body for the purpose of Council Resolution 42/1999.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 14272 was prepared in collaboration with the International Institute of Welding, which has been approved by the ISO Council as an international standardizing body in the field of welding.

This second edition cancels and replaces the first edition (ISO 14272:2000).

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iTech STANDARD PRE VIEW
(standard/itoh) Full standard/standards/65770040/tec
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Introduction

The first edition of ISO 14272 included figures showing failure types and modes of resistance spot and embossed projection welds in accordance with ISO 14329:2003.

This second edition of ISO 14272 was revised to align it with ISO 17677-1.

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Resistance welding — Destructive testing of welds — Specimen dimension and procedure for cross tension testing of resistance spot and embossed projection welds

1 Scope

This International Standard specifies the dimensions and a testing procedure for test specimens for cross tension testing of spot and projection welds in overlapping sheets in any metallic material of thickness 0,5 mm to 3 mm, where the welds have a maximum diameter of $7\sqrt{t}$ (where t is the sheet thickness in mm).

The object of cross tension testing is to determine the tensile force that the test specimen can sustain.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 17677-1, *Resistance welding — Vocabulary — Part 1: Spot, projection and seam welding*

ISO 7500-1, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system.*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17677-1 and the following apply.

3.1

cross tension strength (CTS)

maximum force obtained from this test

3.2

cross tension force

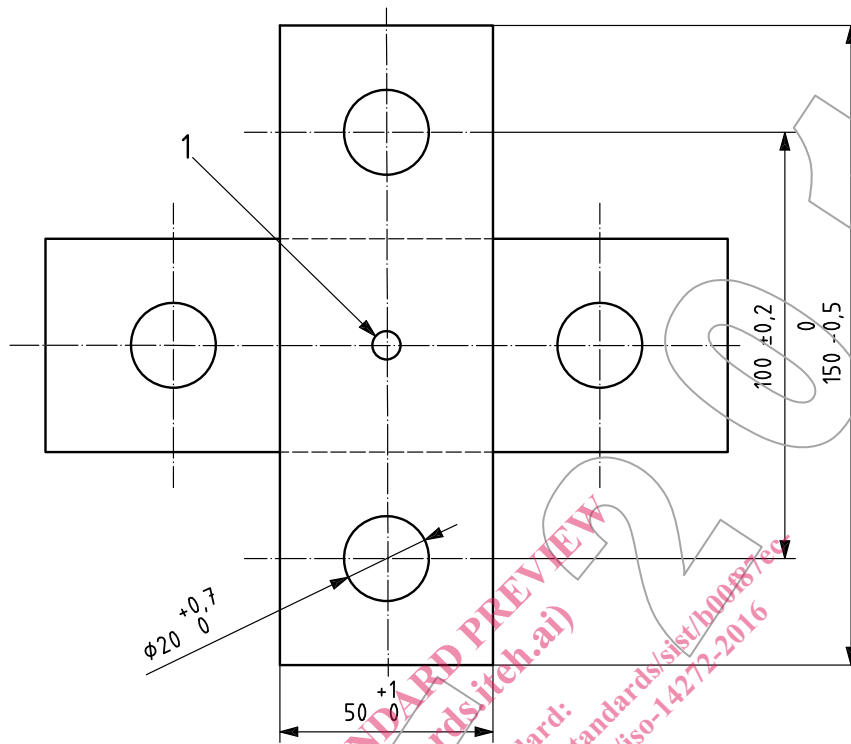
same as cross tension strength

4 Test specimen

The test specimen configuration and dimensions are shown in Figure 1.

Figure 2 illustrates an example of a jig which can be used for welding the two sheets. Two punched strips are placed at right angles to each other, held in the jig, and welded together. The minimum number of specimens tested shall be eleven.

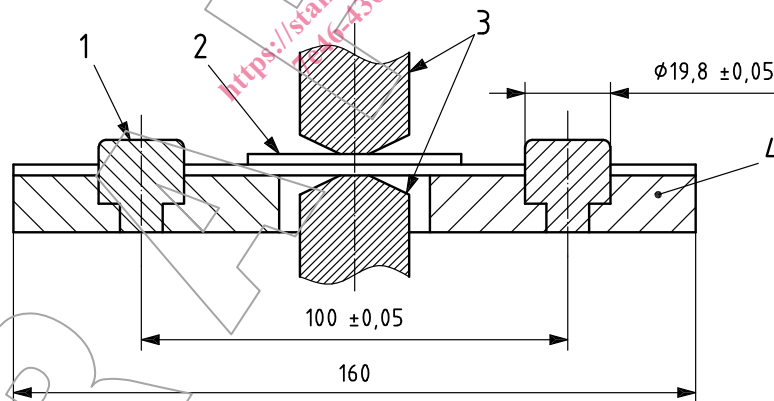
Dimensions in millimetres



Key

- 1 Weld

Figure 1 — Test specimen for cross tension test



Key

- 1 locator pin
- 2 specimen
- 3 welding electrode
- 4 welding jig

Figure 2 — Cross tension test specimen welding jig

5 Test equipment and testing procedure

The specimen is held in clamps as shown in Figure 3 and pulled apart using a tensile testing machine which satisfies the requirements of ISO 7500-1.

A hydraulic clamping system can be used in place of the testing clamps shown in Figure 3.

The cross tension force shall be measured during testing and the weld diameter determined from the broken test specimen. All tests shall be carried out at room temperature.

The test results shall be recorded with values of the cross tension strength in accordance with this test, and type of failure mode and weld diameter of each weld in accordance with ISO 17677-1.

A load-elongation diagram shall be constructed in order to give information on the deformation of the test specimen. An example of such a diagram is shown in Figure 4 and Table 1.

6 Test report

The test report shall contain the following information:

- a) this International standard number;
- b) the welding process;
- c) the welding conditions and equipment;
- d) the material and its condition;
- e) the dimensions of the test specimens;
- f) individual values, mean value and standard deviation of the cross tension force in kN;
- g) the type of failure;
- h) individual values, mean value and standard deviation of the weld diameter;
- i) special remarks if any.