INTERNATIONAL STANDARD

ISO 17654

Second edition
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Resistance welding — Destructive tests of welds — Pressure test of resistance seam welds

Soudage par résistance — Essais destructifs des soudures — Essai de pression des soudures par résistance à la molette

Reference number
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Foreword

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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.

ISO 17654 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 6, *Resistance welding and allied mechanical joining*.

This second edition cancels and replaces the first edition (ISO 17654:2003), which has been technically revised.

Requests for official interpretations of any aspect of this [International Standard] should be directed to the Secretariat of ISO/TC 44/SC 6 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

Resistance welding — Destructive tests of welds — Pressure test of resistance seam welds

1 Scope

This International Standard specifies the pressure test method to be applied to resistance-seam-welded specimens of different types of materials with single sheet thicknesses ranging from 0,3 mm to 3,2 mm.

The purpose of this pressure test is to determine the suitability of the material, welding equipment, welding parameters and of other factors on a tank, a vessel or a container for liquids or gases, which are manufactured by resistance seam welding.

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 14329, *Resistance welding — Destructive tests of welds — Failure types and geometric measurements for resistance spot, seam and projection welds*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17677-1 and ISO 14329 apply.

4 Purpose of test

The pressure test can be performed as a type test.

5 Test specimens

5.1 Requirements

The following shall apply to the preparation of all specimens.

— Materials, thickness, heat treatment and condition of the sheets used for the test specimens shall be identical to those used for welding the actual component.

— For a given welding process, the welding equipment used to produce the test specimens shall have a specification comparable to that used for welding the actual component.

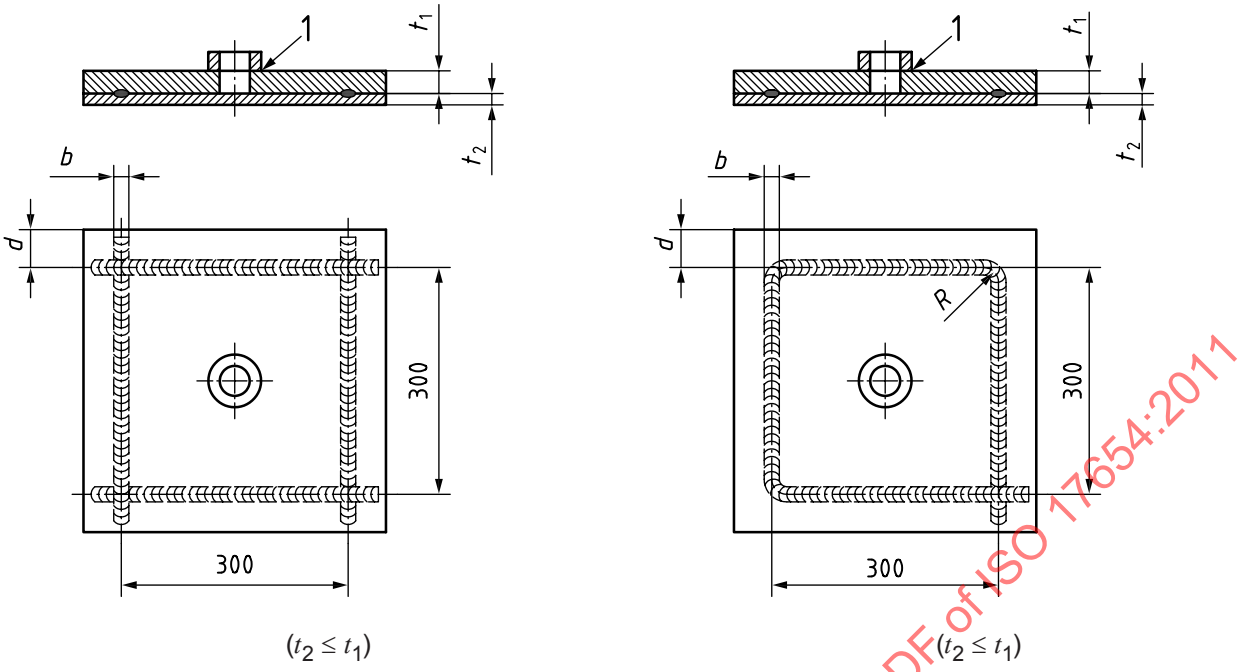
In special cases, e.g. transfer of welding parameters into production lines, the same parameters should be used.

— It has to be ensured that the electrodes that are used to weld the specimens shall be of the same material and geometry as the ones used for welding the actual component.

5.2 Dimensions

Dimensions of resistance-seam-welded test specimens, of type A and type B, are given in Figure 1.

Dimensions in millimetres



a) Type A — Specimen with four seams

b) Type B — Specimen with one seam

Key

1 leakproof weld
R radius specified for the product
t_1 thickness of top sheet
t_2 thickness of bottom sheet
d edge distance = 2,5 × b (smaller distances may be used for wire seam welding)
b width of weld seam

Figure 1 — Dimensions of test specimens

5.3 Number of test specimens

At least three test specimens shall be tested.

6 Test equipment and test procedure

The test shall be carried out with the specimen shown in Figure 1 assembled in a restraining fixture as shown in Figure 2. The purpose of the restraining fixture is to restrict expansion of the specimen within the expansion range, G, indicated in Figure 2.

The test specimen shall be connected to a supply of compressed air or water at the specified pressure and in the case of compressed air immersed in a water bath. No leaks (in the form of bubbles escaping from any of the seam welds after a specified time) are permitted.