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BS EN ISO 17641-2:2015



BSI Standards Publication

Destructive tests on welds in metallic materials — Hot cracking tests for weldments — Arc welding processes

Part 2: Self-restraint tests

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This British Standard is the UK implementation of EN ISO 17641-2:2015. It supersedes BS EN ISO 17641-2:2005 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee WEE/2, Destructive Testing of Welds.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Essais destructifs des soudures sur matériaux métalliques - Essais de fissuration à chaud des assemblages soudés - Procédés de soudage à l'arc - Partie 2: Essais sur éprouvettes auto-bridées (ISO 17641-2:2015)

Zerstörende Prüfung von Schweißverbindungen an metallischen Werkstoffen - Heißrissprüfungen für Schweißungen - Lichtbogenschweißprozesse - Teil 2: Selbstbeanspruchende Prüfungen (ISO 17641-2:2015)

This European Standard was approved by CEN on 26 September 2015.

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European foreword

This document (EN ISO 17641-2:2015) has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" in collaboration with Technical Committee CEN/TC 121 "Welding and allied processes" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2016, and conflicting national standards shall be withdrawn at the latest by May 2016.

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

This document supersedes EN ISO 17641-2:2005.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 17641-2:2015 has been approved by CEN as EN ISO 17641-2:2015 without any modification.

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Destructive tests on welds in metallic materials — Hot cracking tests for weldments — Arc welding processes —

Part 2: Self-restraint tests

Essais destructifs des soudures sur matériaux métalliques — Essais de fissuration à chaud des assemblages soudés — Procédés de soudage à l'arc —

Partie 2: Essais sur éprouvettes auto-bridées



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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 44, *Welding and allied processes*, Subcommittee SC 5, *Testing and inspection of welds*.

This second edition cancels and replaces the first edition (ISO 17641-2:2005), of which it constitutes a minor amendment.

ISO 17641 consists of the following parts, under the general title *Destructive tests on welds in metallic materials — Hot cracking tests for weldments — Arc welding processes*:

- *Part 1: General*
- *Part 2: Self-restraint tests*
- *Part 3: Externally loaded tests* [Technical Report]

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Destructive tests on welds in metallic materials — Hot cracking tests for weldments — Arc welding processes —

Part 2: Self-restraint tests

1 Scope

This part of ISO 17641 specifies the required specimens, the test piece dimensions, and the procedures to be followed to carry out self-restraint hot cracking tests.

The following tests are described:

- T-joint weld cracking test;
- weld metal tensile test;
- longitudinal bend test.

The tests are designed to provide information about the hot cracking sensitivity of weld metals. The tests are not suitable for the assessment of parent materials.

This part of ISO 17641 applies primarily to fully austenitic stainless steels, nickel, nickel base, and nickel copper weld metals. This part of ISO 17641 can also be used for other weld metals.

This part of ISO 17641 describes only how to carry out the tests and report the results. It does not give any acceptance criteria.

2 Normative references

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

ISO 5173, *Destructive tests on welds in metallic materials — Bend tests*

ISO 5178, *Destructive tests on welds in metallic materials — Longitudinal tensile test on weld metal in fusion welded joints*

ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

ISO 15614-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys*

ISO 15792-1, *Welding consumables — Test methods — Part 1: Test methods for all-weld metal test specimens in steel, nickel and nickel alloys*

ISO 17641-1:2004, *Destructive tests on welds in metallic materials — Hot cracking tests for weldments — Arc welding processes — Part 1: General*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17641-1:2004 apply.