SLOVENSKI STANDARD
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Porušitveno preskušanje zvarnih spojev na kovinskih materialih - Upogibni preskusi (ISO 5173:2009)

Destructive tests on welds in metallic materials - Bend tests (ISO 5173:2009)

Zerstörende Prüfungen von Schweißnähten an metallischen Werkstoffen - Biegeprüfungen (ISO 5173:2009)

Essais destructifs des soudures sur matériaux métalliques - Essais de pliage (ISO 5173:2009)

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Destructive tests on welds in metallic materials - Bend tests (ISO 5173:2009)

Essais destructifs des soudures sur matériaux métalliques - Essais de pliage (ISO 5173:2009)

Zerstörende Prüfungen von Schweißnähten an metallischen Werkstoffen - Biegeprüfungen (ISO 5173:2009)

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Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

The text of ISO 5173:2009 has been prepared by Technical Committee ISO/TC 44 “Welding and allied processes” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 5173:2010 by Technical Committee CEN/TC 121 “Welding” 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of an identical text or by endorsement, at the latest by October 2010, and conflicting national standards shall be withdrawn at the latest by October 2010.

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.

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Endorsement notice

The text of ISO 5173:2009 has been approved by CEN as a EN ISO 5173:2010 without any modification.

INTERNATIONAL STANDARD

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Destructive tests on welds in metallic materials — Bend tests

Essais destructifs des soudures sur matériaux métalliques — Essais de pliage

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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.

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ISO 5173 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 5, *Testing and inspection of welds*.

This third edition cancels and replaces the second edition (ISO 5173:2000) 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 5 via your national standards body, of which a complete listing can be found at www.iso.org.

Destructive tests on welds in metallic materials — Bend tests

1 Scope

This International Standard specifies a method for making transverse root, face and side bend tests on test specimens taken from butt welds, butt welds with cladding (subdivided into welds in clad plates and clad welds) and cladding without butt welds, in order to assess ductility and/or absence of imperfections on or near the surface of the test specimen. It also gives the dimensions of the test specimen.

In addition, this International Standard specifies a method for making longitudinal root and face bend tests to be used instead of transverse bend tests for heterogeneous assemblies when base materials and/or filler metal have a significant difference in their physical and mechanical properties in relation to bending.

This International Standard applies to metallic materials in all forms of product with welded joints made by any fusion arc welding process.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
transverse face bend test specimen for a butt weld
TFBB
specimen for which the surface in tension is the side that contains the greater width of the weld or the side from which the welding arc was first applied, applicable to transverse butt weld specimens

See Figure 1.

2.2
transverse root bend test specimen for a butt weld
TRBB
specimen for which the surface in tension is the side opposite to that of the face butt weld bend test specimen, applicable to transverse butt weld specimens

See Figure 2.

2.3
transverse side bend test specimen for a butt weld
SBB
specimen for which the surface in tension is a cross-section of the weld

See Figure 3.

2.4
longitudinal face test specimen for a butt weld
root bend test specimen for a butt weld
LFBB
LRBB
specimen whose direction is parallel to butt weld direction, applicable to face and root bend specimens

See Figure 4.

2.5
face bend test specimen for cladding without a butt weld
FBC
specimen for which the cladding is in tension, applicable to both transverse and longitudinal specimens

See Figure 5.

2.6
side bend test specimen for cladding without a butt weld
SBC
specimen for which the cross-section of the cladding overlay is in tension, applicable to both transverse and longitudinal specimens

See Figure 6.

2.7
face bend test specimen for cladding with a butt weld
side bend test specimen for cladding with a butt weld
FBCB
SBCB
specimen for which the cladding is in tension or for which the cross-section of the cladding overlay is in tension and which contains a butt weld

See Figures 7 and 8.

3 Principle

Submitting a test specimen, taken transversely or longitudinally from a welded joint, to plastic deformation by bending it, without reversing the bending direction, in such a way that one of the surfaces or cross-sections of the welded joint is in tension.

Unless otherwise specified, the test shall be carried out at an ambient temperature of (23 ± 5) °C.

The test shall be made in accordance with one of the methods described in Clause 6.

4 Symbols and abbreviated terms

4.1 Symbols

See Table 1 and Figures 1 to 15.

4.2 Abbreviated terms

TFBB	Transverse face bend test specimen for a butt weld
TRBB	Transverse root bend test specimen for a butt weld
SBB	Transverse side bend test specimen for a butt weld
LFBB	Longitudinal face bend test specimen for a butt weld
LRBB	Longitudinal root bend test specimen for a butt weld
FBC	Face bend test specimen for cladding without a butt weld
SBC	Side bend test specimen for cladding without a butt weld
FBCB	Face bend test specimen for cladding with a butt weld
SBCB	Side bend test specimen for cladding with a butt weld