AS/NZS 2205.3.1:2020
ISO 5173:2009
ISO 5173:2009/Amd.1:2011

Australian/New Zealand Standard™

Destructive tests on welds in metallic materials

Method 3.1: Bend tests

AS/NZS 2205.3.1:2020

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Australian Steel Institute
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Austroads
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Method 3.1: Bend tests

Originated as part of AS B301.4—1971.
Revised and redesignated as AS 2205.3.1—1980.
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Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee WD-003, Welding of Structures, to supersede AS 2205.3.1—2003, *Methods for destructive testing of welds in metal, Method 3.1: Transverse guided bend test* and AS 2205.3.3—2003, *Methods for destructive testing of welds in metal, Method 3.3: Longitudinal guided bend test.*

The objective of this document is to specify 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.

This document also gives the dimensions of the test specimen.

In addition, this document 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 document applies to metallic materials in all forms of product with welded joints made by any fusion arc welding process.

This document is identical with, and has been reproduced from, ISO 5173:2009, *Destructive tests on welds in metallic materials — Bend tests* and its Amendment No. 1 (2011) which is added following the source text.

As this document has been reproduced from an International Standard, the following applies:

(a) In the source text "this International Standard" should read "this document".

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The term"informative" is used in Standards to define the application of the appendices or annexes to which it applies. An "informative" appendix or annex is only for information and guidance.

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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.

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.

Australian/New Zealand Standard

Destructive tests on welds in metallic materials

Method 3.1: 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