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**Non-destructive testing of welds —  
Ultrasonic testing — Characterization  
of discontinuities in welds**

*Essais non destructifs des assemblages soudés — Contrôle par  
ultrasons — Caractérisation des discontinuités dans les assemblages  
soudés*



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# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Principle</b> .....	<b>1</b>
<b>5 Criteria</b> .....	<b>2</b>
5.1 General.....	2
5.2 Echo amplitude criteria (stages 1 and 2).....	3
5.2.1 Low amplitudes (stage 1).....	3
5.2.2 High amplitudes (stage 2).....	3
5.3 Directional reflectivity criteria (stage 3).....	3
5.3.1 Applicability based on length.....	3
5.3.2 Application conditions.....	3
5.3.3 Criteria.....	3
5.4 Echo static pattern criteria (stage 4).....	4
5.5 Transverse echo dynamic pattern criteria (stage 5).....	4
5.6 Complementary testing.....	4
<b>Annex A (normative) Classification of indications from internal discontinuities in welds — Flowchart procedure</b> .....	<b>5</b>
<b>Annex B (informative) Directional reflectivity</b> .....	<b>8</b>
<b>Annex C (informative) Basic echo dynamic patterns of reflectors</b> .....	<b>10</b>

## 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](http://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](http://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 voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document 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 23279:2010), which has been technically revised.

Requests for official interpretations of any aspect of this document should be directed to the Secretariat of ISO/TC 44/SC 5 via your national standards body. A complete listing of these bodies can be found at [www.iso.org](http://www.iso.org).

# Non-destructive testing of welds — Ultrasonic testing — Characterization of discontinuities in welds

## 1 Scope

This document specifies how to characterize indications from discontinuities by classifying them as originating from planar or non-planar embedded discontinuities.

This procedure is also suitable for indications from discontinuities that break the surface after removal of the weld reinforcement.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 11666, *Non-destructive testing of welds — Ultrasonic testing — Acceptance levels*

ISO 17640, *Non-destructive testing of welds — Ultrasonic testing — Techniques, testing levels, and assessment*

## 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

## 4 Principle

Classification of discontinuities as planar or non-planar is based on several parameters:

- a) welding techniques;
- b) geometrical position of the discontinuity;
- c) maximum echo amplitude;
- d) directional reflectivity;
- e) echo static pattern (i.e. A-scan);
- f) echo dynamic pattern (envelope).

The process of classification involves examining each of the parameters against all the others in order to arrive at an accurate conclusion.

For guidance, [Figure A.1](#) gives the classification of indications from internal weld discontinuities suitable for general applications. [Figure A.1](#) should be applied in conjunction with the two parameters a) and b) listed above and not taken in isolation.