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## Non-destructive testing of welds — Radiographic testing —

### Part 2: X- and gamma-ray techniques with digital detectors

*Essais non destructifs des assemblages soudés — Contrôle par  
radiographie —*

*Partie 2: Techniques par rayons X ou gamma à l'aide de détecteurs  
numériques*



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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](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 of 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 [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*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 121, *Welding and allied processes*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 17636-2:2013), which has been technically revised.

The main changes are as follows:

- the normative references have been updated;
- the figures have been updated;
- manual and automated inspection with DDAs has been considered in [6.6](#), [6.7](#), and [7.8](#);
- references to [Figures 1](#) to [19](#) have been updated throughout the document;
- in [6.7](#) a), the acceptance of a wire visibility shorter than 10 mm for pipes with an external diameter < 50 mm has been added;
- in [6.7.1](#), the use of ASTM wires and other IQIs by agreement of the contracting parties has been added;
- [6.8](#), "Evaluation of image quality" for digital radiography has been added;
- in [6.9](#) and [7.2.2](#), the lower thickness limit for Se-75 applications has been deleted;
- in [6.8](#), [6.9](#) and [7.3.1](#), a clarification for the IQI usage for DWDI technique has been added;
- permission to reduce  $SNR_N$  if the tube voltage is reduced or energy-resolving detectors are used to < 80 % of the values given in [Figure 20](#) has been added in [7.3.1](#);

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- in [7.3.2](#), the compensation principle II (CP II) has been extended to three wire pairs without the agreement of the contracting parties;
- [Annex C](#) has been shortened to avoid duplication with ISO 19232-5;
- in [D.2](#), a new note on fading has been added;
- a new [Annex F](#) has been added;
- a new [Annex G](#) has been added.

A list of all parts in the ISO 17636 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html). Official interpretations of ISO/TC 44 documents, where they exist, are available from this page: <https://committee.iso.org/sites/tc44/home/interpretation.html>.

This corrected version of ISO 17636-2:2022 incorporates the following corrections:

- the formulae in 3.11, 3.13, [Formula \(D.1\)](#) and [Figure D.2](#) have been updated to include units for the constant  $c$ ;
- [Formulae \(6\)](#) and [\(7\)](#) revised and  $D_d$  defined as "diagonal size of the detector area".