INTERNATIONAL STANDARD

ISO 11666

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Non-destructive testing of welds — Ultrasonic testing — Acceptance levels

Contrôle non destructif des assemblages soudés — Contrôle par ultrasons — Niveaux d'acceptation

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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 11666 was prepared by the European Committee for Standardization (CEN) Technical Committee TC 121, *Welding*, Subcommittee SC 5, *Testing of welds*, in collaboration with ISO Technical Committee TC 44, *Welding and allied processes*, Subcommittee SC 5, *Testing and inspection of welds,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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. A complete listing of these bodies can be found at www.iso.org.

Non-destructive testing of welds — Ultrasonic testing — Acceptance levels

1 Scope

This International Standard specifies ultrasonic acceptance levels 2 and 3 for full penetration welded joints in ferritic steels, which correspond to ISO 5817 quality levels B and C. An acceptance level corresponding to ISO 5817 quality level D is not included in this International Standard as ultrasonic testing is generally not requested for this weld quality.

These acceptance levels are applicable to testing carried out in accordance with ISO 17640.

This International Standard applies to the examination of full penetration ferritic steel welds, with thicknesses from 8 mm to 100 mm. It can also be used for other types of welds, materials and thicknesses above 100 mm, provided the examinations have been performed with necessary consideration of the geometry and acoustic properties of the component, and an adequate sensitivity can be employed to enable the acceptance levels of this International Standard to be applied. The nominal frequency of probes used in this International Standard is between 2 MHz and 5 MHz unless attenuation or requirements for higher resolution call for other frequencies. The use of these acceptance levels in conjunction with frequencies outside this range needs to be considered carefully.

2 Normative references

The following referenced documents are indispensable for the application 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 5817, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections*

ISO 17635, *Non-destructive testing of welds — General rules for metallic materials*

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

ISO 23279, *Non-destructive testing of welds — Ultrasonic testing — Characterization of indications in welds*

3 Measurement of indication length

The length of an indication shall be determined by measuring the distance along the length over which the echo amplitude is above the evaluation level, using the fixed amplitude level technique specified in Annex B.

Alternative techniques for measuring indication length may be used when specified.