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ISO 16811

Non-destructive testing — Ultrasonic testing — Sensitivity and range setting

Essais non destructifs — Contrôle par ultrasons — Réglage de la sensibilité et de la base de temps

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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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 document 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).

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This document was prepared by Technical Committee ISO/TC 135, *Non-destructive testing*, Subcommittee SC 3, *Ultrasonic testing*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 138 *Non-destructive testing,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 16811:2012), which has been technically revised.

The main changes are as follows:

— normative references have been updated;

— Annex A and Annex B from the prior edition have been moved to the main text;

— document has been editorially revised.

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.

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Introduction

The following standards on ultrasonic testing are linked:

— ISO 16810, Non-destructive testing — Ultrasonic testing — General principles;

— ISO 16811, Non-destructive testing — Ultrasonic testing — Sensitivity and range setting;

— ISO 16823, Non-destructive testing — Ultrasonic testing — Through transmission technique;

— ISO 16826, Non-destructive testing — Ultrasonic testing — Testing for discontinuities perpendicular to the surface;

— ISO 16827, Non-destructive testing — Ultrasonic testing — Characterization and sizing of discontinuities;

— ISO 16828, Non-destructive testing — Ultrasonic testing — Time-of-flight diffraction technique as a method for detection and sizing of discontinuities.

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Non-destructive testing — Ultrasonic testing — Sensitivity and range setting

1 Scope

This document specifies the general rules for setting the time-base range and sensitivity (i.e. gain adjustment) of a manually operated ultrasonic instrument with A-scan display in order that reproducible determinations can be made of the location and echo height of a reflector.

This document is applicable to contact techniques employing a single probe with either a single transducer or dual transducers. This document does not apply to the immersion technique and techniques employing more than one probe.

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 2400, *Non-destructive testing — Ultrasonic testing — Specification for calibration block No. 1*[1)]

ISO 5577, *Non-destructive testing — Ultrasonic testing — Vocabulary*

ISO 7963, *Non-destructive testing — Ultrasonic testing — Specification for calibration block No. 2*[1)]

ISO 9712, *Non-destructive testing — Qualification and certification of NDT personnel*

ISO 22232-1, *Non-destructive testing — Characterization and verification of ultrasonic test equipment — Part 1: Instruments*

ISO 22232-2, *Non-destructive testing — Characterization and verification of ultrasonic test equipment — Part 2: Probes*

ISO 22232-3, *Non-destructive testing — Characterization and verification of ultrasonic test equipment — Part 3: Combined equipment*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 5577 apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Quantities and symbols

A full list of the quantities and symbols used throughout this document is given in Table 1.

1) In the next revision of the standard, the term "calibration block" is intended to be replaced by the term "standard block".

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