International Standard

ISO 16826

Non-destructive testing — Ultrasonic testing — Testing for discontinuities perpendicular to the surface

Essais non destructifs — Contrôle par ultrasons — Contrôle des discontinuités perpendiculaires à la surface

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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 16826:2012), which has been technically revised.

The main changes are as follows:

— revised figures and formulae;

— editorial revisions.

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 documents 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 — Testing for discontinuities perpendicular to the surface

1 Scope

This document specifies principles for the tandem technique and the longitudinal-longitudinal-transverse wave (LLT) technique for detection of discontinuities perpendicular to the surface or almost perpendicular to the surface.

The general principles for ultrasonic testing of industrial products are described in ISO 16810.

The tandem or LLT techniques can be used for the detection of embedded planar discontinuities.

This document gives guidelines for the testing of metallic materials with a thickness between 40 mm and 500 mm with parallel or concentric surfaces.

The procedures provided in this document can be used for testing of other materials or smaller thickness if special measures are taken according to a written testing procedure.

Phased array techniques can also be applied for the tandem technique and the LLT technique, but additional steps or verifications can be needed.

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

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

3 Terms and definitions

For the purposes 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 Test equipment and test personnel

The requirements of ISO 16810 on test equipment and test personnel shall be applied unless stated otherwise.

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