

**Non-destructive testing - Ultrasonic testing -
Examination for discontinuities perpendicular to the
surface (ISO 16826:2012)**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 16826:2014 sisaldab Euroopa standardi EN ISO 16826:2014 inglisekeelset teksti.	This Estonian standard EVS-EN ISO 16826:2014 consists of the English text of the European standard EN ISO 16826:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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English Version

**Non-destructive testing - Ultrasonic testing - Examination for
discontinuities perpendicular to the surface (ISO 16826:2012)**

Essais non destructifs - Contrôle par ultrasons - Contrôle
des discontinuités perpendiculaires à la surface (ISO
16826:2012)

Zerstörungsfreie Prüfung - Ultraschallprüfung - Prüfung auf
Inhomogenitäten senkrecht zur Oberfläche (ISO
16826:2012)

This European Standard was approved by CEN on 9 February 2014.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

The text of ISO 16826:2012 has been prepared by Technical Committee ISO/TC 135 “Non-destructive testing” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 16826:2014 by Technical Committee CEN/TC 138 “Non-destructive testing” the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2014, and conflicting national standards shall be withdrawn at the latest by September 2014.

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Endorsement notice

The text of ISO 16826:2012 has been approved by CEN as EN ISO 16826:2014 without any modification.

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Introduction

This International Standard is based on EN 583-4:2002+A1:2003, *Non-destructive testing — Ultrasonic examination — Part 4: Examination for discontinuities perpendicular to the surface*.

The following International Standards 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 — Transmission technique*

ISO 16826, *Non-destructive testing — Ultrasonic testing — Examination 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*

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

1 Scope

This International Standard defines the principles for tandem- and longitudinal-longitudinal-transverse (LLT) wave examination for the detection of discontinuities perpendicular to the surface.

The general principles required for the ultrasonic examination of industrial products are described in ISO 16810. A list of symbols and equations is given in ISO 16811.

The tandem- or LLT-examination should be used for the detection of planar discontinuities with distance to the surface greater than 15 mm. This International Standard has been prepared for the examination of metallic materials with a thickness between 40 mm and 500 mm with parallel or concentric surfaces. It can, however, be used for other materials and smaller thickness provided special measures are taken.

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

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

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

EN 1330-4, *Non-destructive testing — Terminology — Terms used in ultrasonic testing*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5577 and EN 1330-4 apply.

4 Tandem examination

4.1 General

The examination is normally carried out using two similar 45° angle probes, one probe operating as the transmitter and the other probe as receiver. For wall thicknesses greater than approximately 160 mm, probes with different transducer sizes are preferred in order to ensure approximately the same beam diameters in the examination zone.

The use of probe angles other than 45° may be necessary to comply with particular geometrical conditions. Probe angles that give rise to mode conversions shall be avoided.