

# **Non-destructive testing - Ultrasonic testing - General principles (ISO 16810:2012)**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

|                                                                                                                     |                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| See Eesti standard EVS-EN ISO 16810:2014 sisaldab Euroopa standardi EN ISO 16810:2014 ingliskeelset teksti.         | This Estonian standard EVS-EN ISO 16810:2014 consists of the English text of the European standard EN ISO 16810:2014.              |
| 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. |
| Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 05.03.2014. | Date of Availability of the European standard is 05.03.2014.                                                                       |
| Standard on kättesaadav Eesti Standardikeskusest.                                                                   | The standard is available from the Estonian Centre for Standardisation.                                                            |

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ICS 19.100

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English Version

**Non-destructive testing - Ultrasonic testing - General principles  
(ISO 16810:2012)**

Essais non destructifs - Contrôle par ultrasons - Principes  
généraux (ISO 16810:2012)

Zerstörungsfreie Prüfung - Ultraschallprüfung - Allgemeine  
Grundsätze (ISO 16810:2012)

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

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Foreword

The text of ISO 16810:2012 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 16810:2014 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 583-1:1998.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### Endorsement notice

The text of ISO 16810:2012 has been approved by CEN as EN ISO 16810:2014 without any modification.

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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.

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ISO 16810 was prepared by Technical Committee ISO/TC 135, *Non-destructive testing*, Subcommittee SC 3, *Ultrasonic testing*.

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## Introduction

This International Standard is based on EN 583-1:1998, *Non-destructive testing — Ultrasonic examination — Part 1: General principles*.

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*

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# Non-destructive testing — Ultrasonic testing — General principles

## 1 Scope

This International Standard defines the general principles required for the ultrasonic examination of industrial products that permit the transmission of ultrasound.

The specific conditions of application and use of ultrasonic examination, which depend on the type of product examined, are described in documents which could include:

- product standards;
- specifications;
- codes;
- contractual documents;
- written procedures.

Unless otherwise specified in the referencing documents the minimum requirements of this International Standard are applicable.

This International Standard does not define:

- extent of examination and scanning plans;
- acceptance criteria.

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

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

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

ISO 16823, *Non-destructive testing — Ultrasonic testing — Transmission technique*

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

EN 12668-1, *Non-destructive testing — Characterization and verification of ultrasonic examination equipment — Part 1: Instruments*

EN 12668-2, *Non-destructive testing — Characterization and verification of ultrasonic examination equipment — Part 2: Probes*



EN 12668-3, *Non-destructive testing — Characterization and verification of ultrasonic examination equipment — Part 3: Combined equipment*

### **3 Qualification and certification of personnel**

The examination shall be performed by personnel qualified in accordance with ISO 9712.

The requirements for qualification and certification shall be specified in the product standards and/or other applicable documents.

### **4 Information required prior to examination**

Prior to examination the following information shall be available, as applicable:

- purpose of examination;
- qualification and certification of personnel;
- environmental conditions and state of examination object;
- requirement for a written examination procedure;
- any special requirements for preparation of scanning surface;
- examination volume;
- examination sensitivity and method of setting-up sensitivity;
- requirements for evaluation and recording level;
- acceptance criteria;
- extent of examination including scanning plan;
- requirements for a written examination report.

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