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Non-destructive testing - Ultrasonic testing - Time-of-flight diffraction technique as a method for detection and sizing of discontinuities (ISO 16828:2012)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/14

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EN ISO 16828

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Supersedes EN 583-6:2008

English Version

Non-destructive testing - Ultrasonic testing - Time-of-flight diffraction technique as a method for detection and sizing of discontinuities (ISO 16828:2012)

Essais non destructifs - Contrôle par ultrasons - Technique de diffraction du temps de vol utilisée comme méthode de détection et de dimensionnement des discontinuités (ISO 16828:2012)

Zerstörungsfreie Prüfung - Ultraschallprüfung - Beugungslaufzeittechnik, eine Technik zum Auffinden und Ausmessen von Inhomogenitäten (ISO 16828:2012)

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Foreword

The text of ISO 16828:2012 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 16828:2014 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of an identical text or by endorsement, at the latest by September 2014, and conflicting national standards shall be withdrawn at the latest by September 2014.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 16828:2012 has been approved by CEN as EN ISO 16828:2014 without any modification.

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

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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 16828 was prepared by Technical Committee ISO/TC 135, *Non-destructive testing*, Subcommittee SC 3, *Ultrasonic testing*.

Introduction

This International Standard is based on EN 583-6:2008, *Non-destructive testing — Ultrasonic examination — Part 6: Time-of-flight diffraction technique as a method for detection and sizing of discontinuities.*

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*

INTERNATIONAL STANDARD **ISO 16828:2012(E)**

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

1 Scope

This International Standard defines the general principles for the application of the time-of-flight diffraction (TOFD) technique for both detection and sizing of discontinuities in low alloyed carbon steel components. It can also be used for other types of materials, provided the application of the TOFD technique is performed with necessary consideration of geometry, acoustical properties of the materials, and the sensitivity of the examination.

Although it is applicable, in general terms, to discontinuities in materials and applications covered by ISO 16810, it contains references to the application on welds. This approach has been chosen for reasons of clarity as to the ultrasonic probe positions and directions of scanning.

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

Unless explicitly stated otherwise, this International Standard is applicable to the following product classes as defined in ISO 16811:

— class 1, without restrictions;

— classes 2 and 3, specified restrictions apply.

NOTE 1 See Clause 9.

The inspection of products of classes 4 and 5 requires special procedures, which are also addressed.

NOTE 2 See Clause 9.

NOTE 3 Techniques for the use of TOFD for weld inspection are described in ISO 10863.

NOTE 4 The related acceptance criteria are given in ISO 15626.

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 NDT personnel — General principles*

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

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

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*