
**Non-destructive testing — Ultrasonic
testing — Characterization and sizing of
discontinuities**

*Essais non destructifs — Contrôle par ultrasons — Caractérisation et
dimensionnement des discontinuités*



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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.

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

ISO 16827 was prepared by Technical Committee ISO/TC 135, *Non-destructive testing*, Subcommittee SC 3, *Ultrasonic testing*.

Introduction

This International Standard is based on EN 583-5:2000+A1:2003, *Non-destructive testing — Ultrasonic examination — Part 5: Characterization 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*

Non-destructive testing — Ultrasonic testing — Characterization and sizing of discontinuities

1 Scope

This document specifies the general principles and techniques for the characterization and sizing of previously detected discontinuities in order to ensure their evaluation against applicable acceptance criteria. It is applicable, in general terms, to discontinuities in those materials and applications covered by ISO 16810.

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 16810:2012, *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 16828, *Non-destructive testing — Ultrasonic testing — Time-of-flight diffraction technique as a method for detection and sizing of discontinuities*

ISO 23279, *Non-destructive testing of welds — Ultrasonic testing — Characterization of indications in welds*

3 Principles of characterization of discontinuities

3.1 General

Characterization of a discontinuity involves the determination of those features which are necessary for its evaluation with respect to known acceptance criteria.

Characterization of a discontinuity may include:

- a) determination of basic ultrasonic parameters (echo height, time of flight);
- b) determination of its basic shape and orientation;
- c) sizing, which may take the form of either:
 - i) the measurement of one or more dimensions (or area/volume), within the limitations of the methods; or
 - ii) the measurement of some agreed parameter e.g. echo height, where this is taken as representative of its physical size;
- d) location e.g. the proximity to the surface or to other discontinuities;
- e) determination of any other parameters or characteristics that may be necessary for complete evaluation;