

**Mittepurustav katsetamine.
Ultraheliuuring. Osa 5: Katkevuste
iseloomustus ja klassifikatsioon
(suuruse järgi)**

Non-destructive testing - Ultrasonic examination -
Part 5: Characterization and sizing of discontinuities

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 583-5:2001 sisaldab Euroopa standardi EN 583-5:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 04.04.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 583-5:2001 consists of the English text of the European standard EN 583-5:2000.</p> <p>This document is endorsed on 04.04.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This European standard specifies the general principles and techniques for the characterisation 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 EN 583-1:1998.</p>	<p>Scope:</p> <p>This European standard specifies the general principles and techniques for the characterisation 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 EN 583-1:1998.</p>
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ICS 19.100

Võtmesõnad: dimensional measurements, no, nondestructive tests, probe, pulse replies, size measurement, sound pressure, test equipment, test specifications, test techniques, testing, ultrasonic frequencies, ultrasonic testing, ultrasonic transmission technique, ultrasonics

ICS 19.100

English version

Non-destructive testing

Ultrasonic examination

Part 5: Characterization and sizing of discontinuities

Essais non destructifs – Contrôle
ultrasonore – Partie 5: Caractérisation
et dimensionnement des discontinui-
tés

Zerstörungsfreie Prüfung – Ultra-
schallprüfung – Teil 5: Beschreibung
und Größenbestimmung von
Inhomogenitäten

This European Standard was approved by CEN on 2000-06-30.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Contents

	Page
Foreword	3
1 Scope	4
2 Normative references	4
3 Principles of characterization of discontinuities	4
3.1 General.....	4
3.2 Requirements for surface condition.....	5
4 Pulse echo techniques	5
4.1 General.....	5
4.2 Location of discontinuity.....	5
4.3 Orientation of discontinuity.....	5
4.4 Assessment of multiple indications.....	5
4.5 Shape of discontinuity.....	6
4.6 Maximum echo height of indication.....	7
4.7 Size of discontinuity.....	7
5 Transmission technique	10
5.1 General.....	10
5.2 Location of discontinuity.....	10
5.3 Evaluation of multiple discontinuities.....	10
5.4 Reduction of signal amplitude.....	10
5.5 Sizing of discontinuity.....	11
Annex A (normative) Analysis of multiple indications	14
Annex B (normative) Techniques for the classification of discontinuity shape	16
Annex C (informative) Maximum echo height sizing technique	26
Annex D (normative) Probe movement sizing techniques	28
Annex E (normative) Iterative sizing technique	40
Annex F (normative) Mathematical algorithms for the estimation of the actual size of a discontinuity	46
Annex G (informative) Examples of special sizing techniques	51
Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of UE Directives	54

Foreword

This European Standard has been prepared 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 May 2001, and conflicting national standards shall be withdrawn at the latest by May 2001.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This standard consists of the following parts under a general title "Non-destructive testing – Ultrasonic examination":

- *Part 1: General principles*
- *Part 2: Sensitivity and range setting*
- *Part 3: Transmission technique*
- *Part 4: Examination for imperfections perpendicular to the surface*
- *Part 5: Characterization and sizing of discontinuities*
- *Part 6: Time-of-flight diffraction technique as a method for detection and sizing of imperfections.*

1 Scope

This European standard specifies the general principles and techniques for the characterisation 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 EN 583-1:1998.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 583-1:1998, *Non-destructive testing - Ultrasonic examination - Part 1: General principles*.

prEN 583-2:2000, *Non-destructive testing - Ultrasonic examination - Part 2: Sensitivity and range setting*.

EN 583-3, *Non-destructive testing - Ultrasonic examination - Part 3: Transmission technique*.

ENV 583-6, *Non-destructive testing – Ultrasonic examination – Part 6: Time-of-flight diffraction technique as a method for detection and sizing of imperfections*

EN 1713, *Non-destructive testing of welds - Ultrasonic examination - Characterization of imperfections 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;
- f) assessment of probable nature, e.g. crack or inclusion, where adequate knowledge of the test object and its manufacturing history makes this feasible.

Where the examination of a test object in accordance with the principles of EN 583-1:1998 yields sufficient data on the discontinuity for its evaluation against the applicable acceptance criteria, no further characterisation is necessary.

The techniques used for characterisation shall be specified in conjunction with the applicable acceptance criteria.