

## **Mittepurustav kontrollimine. Lekke katsetus. Rõhuvahetusmeetod**

Non-destructive testing - Leak test - Pressure  
change method

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 13184:2001 sisaldab Euroopa standardi EN 13184:2001 ingliskeelset teksti.	This Estonian standard EVS-EN 13184:2001 consists of the English text of the European standard EN 13184:2001.
Käesolev dokument on jõustatud 16.11.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.	This document is endorsed on 16.11.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

<b>Käsitlusala:</b> This standard describes the techniques for the determination of the leakage rates across the boundary of an isolated object, subjected to a pressure difference.	<b>Scope:</b> This standard describes the techniques for the determination of the leakage rates across the boundary of an isolated object, subjected to a pressure difference.
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**Võtmesõnad:** change of pressure, leak tests, materials testing, non-destructive testing, nondestructive tests, test gases, testing

ICS 19.100

English version

## Non-destructive testing - Leak testing - Pressure change method

Essais non destructifs - Contrôle d'étanchéité - Méthode  
par variation de pression

Zerstörungsfreie Prüfung - Dichtheitsprüfung -  
Druckänderungsverfahren

This European Standard was approved by CEN on 18 January 2001.

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 Management Centre or to any CEN member.

This European Standard exists 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 Management Centre has the same status as the official versions.

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



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## 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 September 2001, and conflicting national standards shall be withdrawn at the latest by September 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.

Annex A is normative, the annexes B and C are informative.

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.

## 1 Scope

This document describes the techniques for the determination of the leakage rates across the boundary of an isolated object, subjected to a pressure difference. The techniques are based on the evaluation of the change of the mass of gas within the test object. The ideal gas equation states the relationship between mass, pressure, temperature, volume of the gas contained in the internal free volume of the object. In some circumstances one or more variables may be considered constant and so the mass change can, for example, be assessed by monitoring the pressure or pressure-temperature changes within the test object.

The volume change of the object (due to pressure and temperature changes during the test) should be taken into account. In most industrial applications, however, this change is so small that can be neglected. Therefore the main part of this standard considers the volume as a constant during the test.

The deformability of the object under test is normally be considered in drafting of the test specification and, if test precision can be affected by a volume change, alternative formulas or some techniques of keeping the pressure constant (flow measurement) can be used.

## 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 473 *Qualification and certification of NDT personnel - General principles*

EN 1330-8 *Non destructive testing - Terminology- Part 8 - Terms used in leak tightness testing*

EN 1779 *Non destructive testing - Leak testing - Criteria for method and technique selection*

EN 13185:2001 *Non destructive testing -Leak testing - Tracer gas method*

prEN 13625:2001 *Non destructive testing - Leak test - Guide to the selection of instrumentation for the measurement of gas leakage*

## 3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions given in EN 1330-8 and the following apply.

### 3.1

#### **differential pressure gauge**

instrument measuring the difference between two pressures

## 4 Personnel qualification

It is assumed that leak tightness testing is performed by qualified and capable personnel. In order to prove this qualification, it is recommended to certify the personnel according to EN 473 or equivalent.

NOTE For pressure equipment see directive 97/23/EC (Annex I, paragraph 3.1.3) : "For pressure equipment in categories III and IV, the personnel must be approved by a third party organization recognized by a Member State"