

Mittepurustav kontrollimine. Lekke katsetus. Trasseeriva gaasi meetod

Non-destructive testing - Leak testing - Tracer gas
method

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13185:2001 sisaldab Euroopa standardi EN 13185:2001 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 16.11.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13185:2001 consists of the English text of the European standard EN 13185:2001.</p> <p>This document is endorsed on 16.11.2001 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: This standard describes the techniques to be applied for the detection of a leak, using a tracer gas and a tracer gas specific leak detector.</p>	<p>Scope: This standard describes the techniques to be applied for the detection of a leak, using a tracer gas and a tracer gas specific leak detector.</p>
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ICS 19.100

Võtmesõnad: leak tests, materials testing, non-destructive testing, nondestructive tests, test gases, testing

ICS 19.100

English version

Non-destructive testing - Leak testing - Tracer gas method

Essais non destructifs - Contrôle d'étanchéité - Méthode
par gaz traceur

Zerstörungsfreie Prüfung - Dichtheitsprüfung -
Prüfgasverfahren

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.



EUROPEAN COMMITTEE FOR STANDARDIZATION
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Contents

	Page
Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions.....	4
4 Personnel qualification	4
5 Principles of detection	4
6 Generation and detection of tracer gas flow.....	5
6.1 Tracer gas flows into the object (Group A techniques).....	5
6.2 Tracer gas flows out of the object (Group B techniques):	5
7 Apparatus - see prEN 13625:2001	5
8 Object preparation	5
9 Group A techniques, tracer gas flowing into the object.....	6
9.1 Initial system set up procedure	6
9.2 Vacuum technique (total) test procedure (A.1).....	7
9.3 Vacuum technique (partial) test procedure (A2).....	8
9.4 Vacuum technique (local) test procedure (A.3)	8
10 Group B techniques, tracer gas flowing out of object.....	8
10.1 Initial system set up procedure	9
10.2 Ammonia test procedure (B.1).....	10
10.3 Vacuum box test procedure (B.2.1, B.2.2).....	11
10.4 Accumulation technique procedures (B.3, B.6).....	12
10.5 Sniffing test (B.4)	14
10.6 Pressure evacuation procedure (B.5)	14
11 Test report	16
Annex A (informative) Accumulation technique : calibration leak connected to enclosure of unknown volume.....	17
Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	18

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 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 standard describes the techniques to be applied for the detection of a leak, using a tracer gas and a tracer gas specific leak detector.

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*

prEN 13192:2001 *Non destructive testing -Leak test – Calibration of gaseous reference leaks*

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 terms and definitions given in EN 1330-8 apply.

4 Personnel qualification

It is assumed that leak testing is performed by qualified and capable personnel. In order to provide this qualification, it is recommended to certify the personnel in accordance with 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"

5 Principles of detection

A partial pressure difference of tracer gas is created across the boundary of the object to be tested. The tracer gas, having passed through the leak, is revealed by its physical or chemical properties. Chemical detection is generally based on reactions that cause a local colour change (the object surface shall therefore be visible).

Detection based on physical properties usually involves a sensor, for example:

- a mass spectrometer, tuned for the specific tracer gas used (generally helium-4);
- an alkali ion diode, for halogen gas, and electron-capture equipment (i.e. for SF₆);
- a Pirani gauge, for tracer gas with thermal conductivity different from that of the ambient atmosphere;
- a photometer, with band-pass filter in the frequency range of the tracer gas absorption or emission.

These types of detection generally give an electrical signal which varies with the tracer gas partial pressure.