

**Mittepurustav katsetamine. Lekke  
katsetus. Mullkatse meetod**

Non-destructive testing - Leak testing - Bubble test  
method

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1593:2000 sisaldab Euroopa standardi EN 1593:1999 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.02.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1593:2000 consists of the English text of the European standard EN 1593:1999.</p> <p>This document is endorsed on 18.02.2000 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><b>Käsitlusala:</b> This draft European Standard describes procedures for the detection and location of leaks by bubble emission techniques.</p>	<p><b>Scope:</b> This draft European Standard describes procedures for the detection and location of leaks by bubble emission techniques.</p>
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**ICS** 19.100

**Võtmesõnad:**

ICS 19.100

English version

Non-destructive testing – Leak testing

Bubble emission techniques

Essais non destructifs – Contrôle  
d'étanchéité – Contrôle à la bulle

Zerstörungsfreie Prüfung – Dicht-  
heitsprüfung – Blasenprüfverfahren

This European Standard was approved by CEN on 1999-08-16.

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

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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 March 2000, and conflicting national standards shall be withdrawn at the latest by March 2000.

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.

## 1 Scope

This European Standard describes procedures for the detection and location of leaks by the bubble emission techniques. The sensitivity depends on techniques and materials used.

Two techniques are described:

- a) immersion technique: quantitative measurements can be made using this procedure with particular devices (see informative annex A).
- b) liquid application technique.

This standard can be used for equipment which can be evacuated or pressurised.

## 2 Normative references

This 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 standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

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 1779:1999	Non-destructive testing - Leak testing – Criteria for method and technique selection

## 3 Definitions

For the purposes of this standard, the 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 prove this qualification, it is recommended to certify the personnel in accordance with EN 473 or equivalent.

## 5 Principle

The techniques involve the establishment of a pressure difference across the object wall and the observation of bubble formation in a liquid medium located on the low pressure side. The minimum detectable leakage rate by these techniques depends on the pressure difference, the gas and the liquid used for testing.