

## **Lekkedetektorsüsteemid. Osa 2: Rõhu- ja vaakumsüsteemid**

Leak detection systems - Part 2: Pressure and  
vacuum systems

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13160-2:2003 sisaldab Euroopa standardi EN 13160-2:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 14.08.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13160-2:2003 consists of the English text of the European standard EN 13160-2:2003.</p> <p>This document is endorsed on 14.08.2003 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 European Standard specifies the requirements for leak detection systems class I for use with double-skin systems, designed for water polluting fluids</p>	<p><b>Scope:</b> This European Standard specifies the requirements for leak detection systems class I for use with double-skin systems, designed for water polluting fluids</p>
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English version

## Leak detection systems - Part 2: Pressure and vacuum systems

Systèmes de détection de fuites - Partie 2: Systèmes en  
pression et en dépression

Leckanzeigesysteme - Teil 2: Über- und  
Unterdrucksysteme

This European Standard was approved by CEN on 10 March 2003.

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## Foreword

This document (EN 13160-2:2003) has been prepared by Technical Committee CEN/TC 221, "Shop fabricated metallic tanks and equipment for storage tanks and for service stations", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by November 2003, and conflicting national standards shall be withdrawn at the latest by November 2003.

This European Standard consists of 7 parts:

*Leak detection systems;*

*Part 1: General principles*

*Part 2: Pressure and vacuum systems*

*Part 3: Liquid systems for tanks*

*Part 4: Liquid and/or vapour sensor systems for use in leakage containments or interstitial spaces*

*Part 5: Dynamic tank gauge leak detection systems*

*Part 6: Sensor in monitoring wells*

*Part 7: General requirements and test methods for interstitial spaces, leak protecting linings and leak protecting jackets*

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This European Standard specifies the requirements for leak detection systems class I for use with double-skin systems, designed for water polluting fluids.

## 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 764, *Pressure equipment - Terminology and symbols - Pressure, temperature, volume.*

EN 13160-1:2003, *Leak detection systems — Part 1: General principles.*

EN 13160-4, *Leak detection systems — Part 4: Liquid and/or vapour sensor systems for use in leakage containments or interstitial spaces.*

EN 13160-7, *Leak detection systems — Part 7: General requirements and test methods for interstitial spaces, leak protecting linings and leak protecting jackets.*

### 3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13160-1:2003 apply.

### 4 Symbols and abbreviations

$g$  is the force of gravity, in metres per second squared

$h$  is the maximum filling height of the tank, in metres

$h_G$  is the maximum height of the groundwater related to the lowest point of the tank, in metres

$h_1$  is the filling height of the interstitial space due to alarm pressure  $p_{AE}$ , in metres

$l$  is the length of the interconnecting line, in metres

$p_{AA}$  is the relative pressure at control point "alarm off", in Pascal

$p_{AE}$  is the relative pressure at control point "alarm on", in Pascal

$p_{PA}$  is the relative pressure at control point "pump off", in Pascal

$p_{PE}$  is the relative pressure at control point "pump on", in Pascal

$p_0$  is the operating pressure according to EN 764, in Pascal

$V$  is the proportional reduction of the interstitial space caused by ingress of liquid for assurance of the alarm, in per cent

$V_1$  is the volume of the interstitial space at filling height  $h_1$ , in cubic metres

$V_0$  is the entire volume of the interstitial space, in cubic metres

$\rho_G$  is the density of the groundwater, in kilograms per cubic metre

$\rho_P$  is the density of the stored product in the tank, in kilograms per cubic metre

### 5 General

General principles according to EN 13160-1.

Where the requirement is for low temperature performance the alternative test temperature is shown in brackets [...].

### 6 Interstitial space

General requirements concerning the interstitial space according to EN 13160-7.

The test methods for class I leak detection systems apply to interstitial space:

- for tanks with an interstitial space volume  $\leq 8 \text{ m}^3$  ;
- for pipes with an interstitial space volume  $\leq 10 \text{ m}^3$ .