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BS EN 13160-4:2016



BSI Standards Publication

Leak detection systems

Part 4: Requirements and test/assessment methods for sensor based leak detection systems

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This British Standard is the UK implementation of EN 13160-4:2016. It supersedes BS EN 13160-4:2003 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PVE/393/2, Leak detection devices.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Published by BSI Standards Limited 2016

ISBN 978 0 580 86634 0

ICS 23.020.01; 23.040.99; 29.260.20

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 July 2016.

Amendments/corrigenda issued since publication

Date	Text affected
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EUROPÄISCHE NORM

July 2016

ICS 23.020.01; 23.040.99; 29.260.20

Supersedes EN 13160-4:2003

English Version

Leak detection systems - Part 4: Requirements and test/assessment methods for sensor based leak detection systems

Systèmes de détection de fuites - Partie 4: Exigences et méthodes d'essai/d'évaluation des systèmes de détection de fuites par capteur

Leckanzeigesysteme - Teil 4: Anforderungen und Prüf-/Bewertungsverfahren für sensorbasierte Leckanzeigesysteme

This European Standard was approved by CEN on 8 April 2016.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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European foreword

This document (EN 13160-4:2016) has been prepared by Technical Committee CEN/TC 393 "Equipment for tanks and filling 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 January 2017, and conflicting national standards shall be withdrawn at the latest by April 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13160-4:2003.

This document 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 document.

According to edition 2003 the following fundamental changes are given:

- requirements from EN 13160-1:2003 included, which are no longer contained in EN 13160-1:2016;
- new structure — requirements, testing, marking divided;
- new test procedure for vapour sensors and reusability of vapour sensors;
- test liquids revised.

This European Standard *Leak detection systems* consists of 7 parts:

- *Part 1: General principles*
- *Part 2: Requirements and test/assessment methods for pressure and vacuum systems*
- *Part 3: Requirements and test/assessment methods for liquid systems for tanks*
- *Part 4: Requirements and test/assessment methods for sensor based leak detection systems*
- *Part 5: Requirements and test/assessment methods for in-tank gauge systems and pressurized pipe work systems*
- *Part 6: Sensors in monitoring wells*
- *Part 7: Requirements and test/assessment methods for leak detection linings*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands,

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Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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1 Scope

This European Standard gives requirements and the corresponding test/assessment methods applicable to sensor based leak detection systems (leak detection kits). The leak detection kits are intended to be used in interstitial spaces, leakage containments or monitoring wells. The leak detection kits are usually composed by:

- sensing device(s);
- evaluation device;
- alarm device.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 228, *Automotive fuels — Unleaded petrol — Requirements and test methods*

EN 12285-1, *Workshop fabricated steel tanks — Part 1: Horizontal cylindrical single skin and double skin tanks for the underground storage of flammable and non-flammable water polluting liquids*

EN 13160-1:2016, *Leak detection systems — Part 1: General principles*

EN 13160-3:2016, *Leak detection systems — Part 3: Requirements and test/assessment methods for liquid systems for tanks*

EN 14879-4:2007, *Organic coating systems and linings for protection of industrial apparatus and plants against corrosion caused by aggressive media — Part 4: Linings on metallic components*

EN 60079-29-1, *Explosive atmospheres — Part 29-1: Gas detectors — Performance requirements of detectors for flammable gases (IEC 60079-29-1)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13160-1:2016 and the following apply.

3.1

re-usability of the sensor

capability of a sensor to be used again after already detected liquid or vapour

4 Requirements

4.1 Effectiveness

4.1.1 General

This type of leak detection kit is classified according to EN 13160-1:2016 as class III.