



## Overfill prevention devices for static tanks for liquid fuels

### Part 1: Overfill prevention devices with closure device

Überfüllsicherungen für ortsfeste Tanks für flüssige Brenn- und Kraftstoffe —  
Teil 1: Überfüllsicherungen mit Schließeinrichtung

Dispositifs limiteurs de remplissage pour réservoirs statiques pour carburants  
liquides — Partie 1: Dispositifs limiteurs de remplissage avec dispositif de  
fermeture

---

#### Publisher and printing

Austrian Standards Institute/  
Österreichisches Normungsinstitut  
Heinestraße 38, 1020 Wien

#### Copyright © Austrian Standards Institute 2016

**All rights reserved.** No part of this publication may be reproduced or utilized in any form or by any means – electronic, mechanical and photocopying or any other data carrier – without prior permission!  
E-Mail: [publishing@austrian-standards.at](mailto:publishing@austrian-standards.at)  
Internet: [www.austrian-standards.at/terms-of-use](http://www.austrian-standards.at/terms-of-use)

**Sale and distribution** of national and foreign standards and technical regulations via  
Austrian Standards plus GmbH  
Heinestraße 38, 1020 Wien  
E-Mail: [sales@austrian-standards.at](mailto:sales@austrian-standards.at)  
Internet: [www.austrian-standards.at](http://www.austrian-standards.at)  
Webshop: [www.austrian-standards.at/webshop](http://www.austrian-standards.at/webshop)  
Tel.: +43 1 213 00-300  
Fax: +43 1 213 00-818

**ICS** 23.020.10

**Identical (IDT) with** EN 13616-1:2016-06

**Supersedes** see National Foreword

**responsible** Committee 132  
Tanks and equipment for service stations and storage tanks

# ÖNORM EN 13616-1:2016-09

## National Foreword

The present ÖNORM EN 13616-1:2016-09, together with ÖNORM EN 13616-2:2016-09 and ÖNORM EN 16657:2016-07, supersedes ÖNORM EN 13616:2006-11.

English Version

## Overfill prevention devices for static tanks for liquid fuels - Part 1: Overfill prevention devices with closure device

Dispositifs limiteurs de remplissage pour réservoirs  
statiques pour carburants liquides - Partie 1:  
Dispositifs limiteurs de remplissage avec dispositif de  
fermeture

Überfüllsicherungen für ortsfeste Tanks für flüssige  
Brenn- und Kraftstoffe - Teil 1: Überfüllsicherungen  
mit Schließeinrichtung

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

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

CEN members are the national standards bodies of 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, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

**Contents**

Page

<b>European foreword</b> .....	<b>4</b>
<b>1 Scope</b> .....	<b>5</b>
<b>2 Normative references</b> .....	<b>5</b>
<b>3 Terms and definitions</b> .....	<b>5</b>
<b>4 Requirements</b> .....	<b>6</b>
<b>4.1 General</b> .....	<b>6</b>
<b>4.1.1 Vapour tight</b> .....	<b>6</b>
<b>4.1.2 Non vapour tight</b> .....	<b>6</b>
<b>4.2 Effectiveness</b> .....	<b>6</b>
<b>4.2.1 General</b> .....	<b>6</b>
<b>4.2.2 Operational flow range and operational pressure range</b> .....	<b>6</b>
<b>4.2.3 Pressure surge range</b> .....	<b>7</b>
<b>4.2.4 Closure level range</b> .....	<b>7</b>
<b>4.2.5 Operational leak rate</b> .....	<b>7</b>
<b>4.3 Construction</b> .....	<b>7</b>
<b>4.4 Durability against wear from closure cycles</b> .....	<b>8</b>
<b>5 Test methods</b> .....	<b>8</b>
<b>5.1 General</b> .....	<b>8</b>
<b>5.2 Chemical suitability test</b> .....	<b>8</b>
<b>5.3 Temperature range test</b> .....	<b>8</b>
<b>5.4 Component pressure tests</b> .....	<b>9</b>
<b>5.5 Function tests</b> .....	<b>9</b>
<b>5.5.1 General</b> .....	<b>9</b>
<b>5.5.2 Final closure level test</b> .....	<b>9</b>
<b>5.5.3 Operational leak rate after final closure level test</b> .....	<b>10</b>
<b>5.5.4 Pressure surge test</b> .....	<b>10</b>
<b>5.6 Mechanical strength</b> .....	<b>10</b>
<b>5.7 Vapour tight - Non vapour tight test procedure</b> .....	<b>11</b>
<b>5.7.1 Vapour tight test procedure</b> .....	<b>11</b>
<b>5.7.2 Non vapour tight test procedure</b> .....	<b>11</b>
<b>5.8 Durability test</b> .....	<b>11</b>
<b>6 Assessment and verification of constancy of performance - AVCP</b> .....	<b>11</b>
<b>6.1 General</b> .....	<b>11</b>
<b>6.2 Type testing</b> .....	<b>11</b>
<b>6.2.1 General</b> .....	<b>11</b>
<b>6.2.2 Test samples, testing and compliance criteria</b> .....	<b>12</b>
<b>6.2.3 Test reports</b> .....	<b>13</b>
<b>6.2.4 Shared other party results</b> .....	<b>13</b>
<b>6.2.5 Cascading determination documentation of the product type testing results</b> .....	<b>14</b>
<b>6.3 Factory production control (FPC)</b> .....	<b>15</b>
<b>6.3.1 General</b> .....	<b>15</b>
<b>6.3.2 Requirements</b> .....	<b>15</b>
<b>6.3.3 Product specific requirements</b> .....	<b>18</b>
<b>6.3.4 Procedure for modifications</b> .....	<b>18</b>

6.3.5	One-off products, pre-production products (e.g. prototypes) and products produced in very low quantity .....	19
7	Classification .....	19
8	Marking, labelling and packaging.....	20
8.1	Identification.....	20
8.2	Instruction plate .....	20
8.3	Technical documentation .....	20
Annex A (normative) Equipment for use in a hazardous area .....		21
A.1	General .....	21
A.2	Avoidance or reduction of ignition sources .....	21
A.3	Electrical equipment .....	21
A.4	Non-electrical equipment.....	21
A.5	Electrostatic discharge .....	21
Annex B (normative) Test rigs layouts.....		22
Annex C (normative) Additional information on diameter and flow rate .....		23
Annex D (informative) Environmental checklist.....		24
Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Regulation .....		25
ZA.1	Scope and relevant characteristics .....	25
ZA.2	Procedure for AVCP of overfill prevention devices with closure device .....	26
ZA.2.1	System(s) of AVCP.....	26
ZA.2.2	Declaration of performance (DoP) .....	27
ZA.2.2.1	General .....	27
ZA.2.2.2	Content .....	27
ZA.2.2.3	Example of DoP .....	28
ZA.3	CE marking and labelling .....	30
Annex ZB (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2014/34/EU.....		32
Bibliography .....		33

## European foreword

This document (EN 13616-1:2016) has been prepared by Technical Committee CEN/TC 393 “Equipment for storage tanks and for 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 December 2016, and conflicting national standards shall be withdrawn at the latest by 2017-07-11.

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, together with EN 13616-2 and EN 16657, supersedes EN 13616:2004.

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 or ZB, which is an integral part of this document.

According to EN 13616:2004, the following fundamental changes are given:

- splitting of EN 13616:2004; the new EN 13616, under the general title *Overfill prevention devices for static tanks for liquid fuels*, will consist of the following parts:
  - *Part 1: Overfill prevention devices with closure device;*
  - *Part 2: Overfill prevention devices without closure device.*
- parameters regarding explosion safety updated;
- informative Annex C concerning environmental aspects added;
- the requirements for overfill prevention devices without closure device on static tanks are in EN 13616-2;
- the requirements for overfill prevention devices without closure device on the tank vehicle were moved to EN 16657, *Tanks for the transport of dangerous goods — Transport tank equipment for overfill prevention devices for static tanks.*

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

## 1 Scope

This European Standard contains requirements, test and assessment methods, marking, labelling and packaging applicable to overfill prevention devices with closure device. The devices are usually composed by

- sensor,
- evaluation device,
- closure device.

Overfill prevention devices intended to be used in/with underground and/or above ground, non-pressurized, static tanks designed for liquid fuels.

NOTE Liquid fuel means liquids for internal combustion engines, heating/cooling boilers and generators.

## 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 1127-1:2011, *Explosive atmospheres — Explosion prevention and protection — Part 1: Basic concepts and methodology*

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 60079-14, *Explosive atmospheres — Part 14: Electrical installations design, selection and erection (IEC 60079-14)*

EN ISO 80079-36:2016, *Explosive atmospheres — Part 36: Non-electrical equipment for explosive atmospheres — Basic method and requirements (ISO 80079-36:2016)*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### **overfill prevention device**

device installed in a supply system, which automatically stops the delivery, preventing the liquid level in the tank exceeding a final closure level

### 3.2

#### **initial closure level**

lower level than final closure level at which the overfill prevention device stops the liquid flow and which level it can be reopened

### 3.3

#### **final closure level**

level at which the overfill prevention device prevents any further product, apart from a permissible leak rate, entering the storage tank