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Interested committees:

Title: Draft BS EN 13616-1 BS Overfill prevention devices for static tanks for liquid fuels. Part 1: Overfill prevention devices with closure device.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

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 draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 393.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 13616-1:2024) has been prepared by Technical Committee CEN/TC 393 “Equipment for storage tanks and for service stations”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 13616-1:2016.

prEN 13616-1:2024 includes the following significant technical changes with respect to EN 13616-1:2016:

- a) Clause 2: Normative references were updated;
- b) 3.1: the term “initial closure level” was replaced by “initial closure level for two stages closure device only”;
- c) 3.2: the term “final closure level” was replaced by “final closure level for single or two stages closure final device”;
- d) 3.9: Definition was added;
- e) 4.2.1 and 4.2.3: Tolerance of 5 % was added and the maximum flow velocities was reduced to 2,5 m/s;
- f) 5.2: Chemical suitability test was updated;
- g) 5.3: Temperature range for final closure simulation was deleted;
- h) New subclause 5.5: Subclause relating to pressure surge test was removed from previous subclause on function test (5.6);
- i) New Clause 6: Only FPC (Factory Production Control) aspects were kept according to previous Clause 6 “AVCP”;
- j) Figure B.1: Key was updated;
- k) Table C.1: Maximum flow rate values were updated;
- l) Annex ZA “Construction products Regulation - CPR” was deleted due to the fact that revision is not candidate to the harmonization to CPR (but only to ATEX Directive).

An environmental check-list is indicated in the informative Annex D.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

1 Scope

This document 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 are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 228:2012+A1:2017, *Automotive fuels — Unleaded petrol — Requirements and test methods*

EN 590:2022, *Automotive fuels — Diesel — Requirements and test methods*

EN 1127-1:2019, *Explosive atmospheres — Explosion prevention and protection — Part 1: Basic concepts and methodology*

EN 14214:2012+A2:2019, *Liquid petroleum products — Fatty acid methyl esters (FAME) for use in diesel engines and heating applications — Requirements and test methods*

CEN/TR 15993:2018, *Automotive fuels — Ethanol (E85) automotive fuel — Background to the parameters required and their respective limits and determination*

EN ISO 22854:2021, *Liquid petroleum products — Determination of hydrocarbon types and oxygenates in automotive-motor gasoline and in ethanol (E85) automotive fuel — Multidimensional gas chromatography method (ISO 22854:2021)*

EN 60079-14:2014,¹ *Explosive atmospheres — Part 14: Electrical installations design, selection and erection (IEC 60079-14:2013)*

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.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

¹ As impacted by EN 60079-14:2014/AC:2016.

3.1**overflow 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 for single or two stages closure final device

3.2**initial closure level for two stages closure device only**

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

3.3**final closure level for single or two stages closure final device**

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

3.4**supply system**

connection hoses, fittings, devices, pumps and any fixed pipework through which the liquid is delivered to the static tank from any tank vehicle

Note 1 to entry: The supply system includes both tank vehicle and stationary tank equipment.

3.5**tank vehicle**

vehicle built to carry liquids in integral tanks comprising one or more compartments intended for discharge to static tanks

Note 1 to entry: The tank vehicle can integrate a pump.

3.6**operational leak rate**

permitted flow rate of liquid allowed to pass through the overflow prevention device after final closure

3.7**operational pressure**

pressure in the filling pipe which can be reached during the filling of the tank, excluding the pressure during the closure of the overflow prevention device

3.8**vapour tight overflow prevention device**

device where no vapour can pass through from the ullage spaces in normal operation

3.9**non vapour tight overflow prevention device**

device where vapour can pass through from the ullage spaces in normal operation

4 Requirements**4.1 General**

The overflow prevention device shall be either vapour tight or non-vapour tight.

4.1.1 Vapour tight

The overflow prevention device shall not leak vapour between the tank vapour space to the filling pipe.

4.1.2 Non vapour tight

The overfill prevention device shall not present an overall vapour leak greater than the equivalent leak from a hole of $\varnothing 3 \pm 0,05$ mm at a pressure $(3,5 \pm 0,5)$ kPa pressure.

4.2 Effectiveness

4.2.1 General

For pressure, flow velocity, flow rate and time the tolerances are ± 5 %.

4.2.2 Operational flow range and operational pressure range

4.2.2.1 Overfill prevention device for gravity filling only (see Table C.1)

The device shall work at flow velocities between 0,2 m/s and 2,5 m/s ± 5 %.

The device shall not re-open at a static pressure $> (15 \pm 5 \text{ \%})$ kPa after closure.

The device shall withstand static pressure of at least $(200 \pm 5) \text{ \%}$ kPa after closure.

4.2.2.2 Overfill prevention device for gravity or pump filling (see Table C.1)

The device shall work at flow velocities between 0,2 m/s and 2,5 m/s ± 5 %.

The device shall not open at a static pressure $> (15 \pm 5 \text{ \%})$ kPa after closure.

The device shall withstand a static pressure of at least $(600 \pm 5 \text{ \%})$ kPa or $(800 \pm 5 \text{ \%})$ kPa after closure according to manufacturer's declaration.

4.2.3 Pressure surge range

4.2.3.1 General

The operation of the overfill prevention device shall not generate pressure in excess of the design criteria of the supply system.

4.2.3.2 Overfill prevention device for gravity filling only

Any pressure surge created by the overfill prevention device at closure, exceeding $(300 \pm 5 \text{ \%})$ kPa, shall not exceed a period of more than $(10 \pm 5 \text{ \%})$ ms.

4.2.3.3 Overfill prevention device for gravity or pump filling

For pumps with a performance of $(600 \pm 5 \text{ \%})$ kPa, any pressure surge created by the overfill prevention device at closure exceeding $(900 \pm 5) \text{ \%}$ kPa shall not exceed a period of more than $(10 \pm 5 \text{ \%})$ ms.

For pumps with a performance of $(800 \pm 5 \text{ \%})$ kPa any pressure surge created by the overfill prevention device at closure exceeding $(1\,200 \pm 5 \text{ \%})$ kPa shall not exceed a period of more than $(10 \pm 5 \text{ \%})$ ms.

4.2.4 Closure level range

4.2.4.1 General

For both, single and two stage closure devices once the final closure level for single or two stages closure final device is reached, no further liquid other than the operational leak rate (see 4.2.5) shall enter the tank.

The final closure level for single or two stages closure final device shall be set so that after final closure of any device, the contents of the flexible delivery hose (and preferably the site delivery pipe) can be emptied into the tank.