BS EN 13616-2:2016

BSI Standards Publication

Overfill prevention devices for static tanks for liquid fuels

Part 2: Overfill prevention devices without a closure device

National foreword

This British Standard is the UK implementation of EN 13616-2:2016. Together with BS EN 13616-1:2016 and BS EN 16657:2016 it supersedes BS EN 13616:2004 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee PVE/393, Equipment for storage tanks and filling stations, to Subcommittee PVE/393/3, Overfill prevention devices.

A list of organizations represented on this subcommittee 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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English Version

Overfill prevention devices for static tanks for liquid fuels - Part 2: Overfill prevention devices without a closure device

Dispositifs limiteurs de remplissage pour réservoirs statiques pour carburants liquides - Partie 2: Dispositifs limiteurs de remplissage sans dispositif de fermeture

Überfüllsicherung für ortsfeste Tanks für flüssige Brenn- und Kraftstoffe - Teil 2: Überfüllsicherungen ohne Schließeinrichtung

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

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

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European foreword

This document (EN 13616-2:2016) 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of an identical text or by endorsement, at the latest by December 2016, and conflicting national standards shall be withdrawn at the latest by 2017-07-11.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 13616-1 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.

For relationship with EU Directive, see informative Annex ZA, 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 a closure device;*

  — *Part 2: Overfill prevention devices without a closure device.*

— reference to EN 14116;

— technical parameters regarding explosion updated;

— the requirements for the equipment of the overfill prevention devices with a closure device on the static tank are fixed in EN 13616-1;

— the requirements for the equipment of the overfill prevention devices without a closure device on the tank vehicle were shifted 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 without a closure device.

The overfill prevention device without a closure device is usually composed of

— overfill prevention sensor consists of

  — sensor,

  — electrical interface,

  — mechanical interface,

— overfill prevention controller according to EN 16657.

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

NOTE 1 Liquid fuel means liquids for internal combustion engines, heating/cooling boilers and generators.

NOTE 2 In further text, for liquid fuels the term liquid is used.

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 590, *Automotive fuels — Diesel — Requirements and test methods*

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 60079-0, *Explosive atmospheres — Part 0: Equipment — General requirements (IEC 60079-0)*

EN 60079-11, *Explosive atmospheres — Part 11: Equipment protection by intrinsic safety "i (IEC 60079-11)*

EN 61000-6-2:2005, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity for industrial environments (IEC 61000-6-2:2005)*

EN 61000-6-3:2007, *Electromagnetic compatibility (EMC) — Part 6-3: Generic standards — Emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3:2006)*

EN ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1)*

EN 16657:2016, *Tanks for the transport of dangerous goods — Transport tank equipment for overfill prevention devices for static tanks*

3 Terms, definitions and abbreviated terms

For the purposes of this document, the following terms, definitions and abbreviated terms 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 maximum filling level

3.2
maximum filling level
L_{max}
permitted filling level subject to relevant standards and/or any national/regional safety requirements and/or recommendations

3.3
supply system
connection hoses, fittings, devices 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.

3.4
tank vehicle
vehicle built to carry liquids in integral tanks comprising one or more compartments intended for discharge to static tanks

3.5
level
L_1
filling level at which the sensor of the overfill prevention device provides an activation signal

3.6
sensor
liquid level detection device mounted in a tank for detecting liquid at a predetermined level

3.7
permissive
signal causing the permission of a liquid delivery

3.8
non-permissive
signal causing the prevention of a liquid delivery

3.9
residual volume
amount of liquid which is in the supply system at the moment of shutdown/closure

3.10
interface
point of transfer of specified information

3.11
PID
Product Identification Device

3.12
T_{amb}
ambient temperature

3.13
T_{liq}
liquid temperature

4 Requirements

4.1 Effectiveness

4.1.1 Signal equal or greater than level L_1

To ensure the effectiveness of the overfill prevention device the overfill prevention sensor shall provide a signal showing tank contents are equal or greater than level L_1 to show a non-permissive state.

Functional requirements according to 4.1.3.

4.1.2 Signal below level L_1

To ensure the effectiveness of the overfill prevention device the overfill prevention sensor shall provide a signal showing tank contents are below level L_1 to show a permissive state.

Functional requirements according to 4.1.3.

4.1.3 Functional requirements

4.1.3.1 Electrical interface

4.1.3.1.1 Power supply

The manufacturer shall declare which liquid fuels their overfill prevention sensors are compatible with and according to their flashpoint, define the technical parameters for the electrical supply of the overfill prevention sensor with regard to explosion safety.

For overfill prevention sensors intended to be used in explosive atmospheres the technical parameters shall be at least Ex ia IIB T3 according to EN 60079-0 and EN 60079-11 and shall be suitable for the maximum output values according to 5.4.3.3 of EN 16657:2016.

4.1.3.1.2 Working characteristics of the overfill prevention sensor

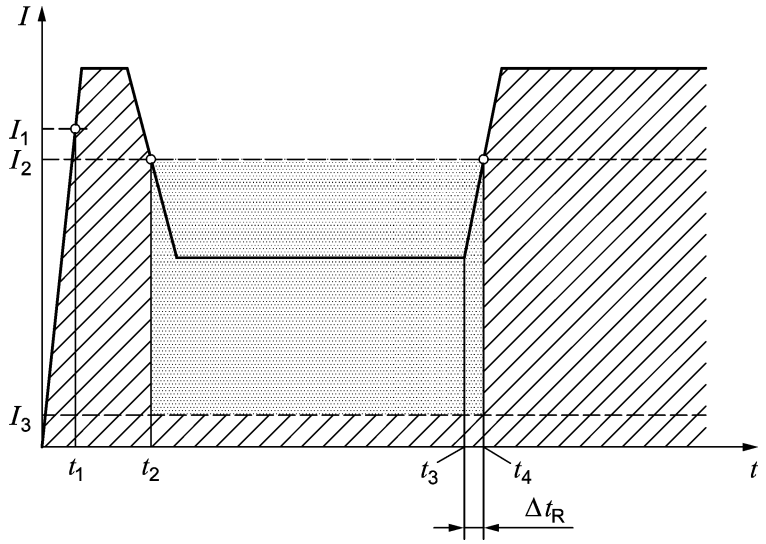
The sensor may be a resistor with a positive temperature coefficient (PTC-resistor) or a device with the same behaviour.

The sensor shall work in a fuel temperature T_{liq} range of −25 °C to +50 °C. If the fuel temperature T_{liq} range deviates from the standard, it shall be declared by the manufacturer.

The operational characteristics for the overfill prevention sensor shall be according to Figure 1 and Table 1.

Any additional use of the electrical interface shall not influence the operating characteristics and the functioning of the overfill prevention sensor.

To obtain the characteristics in Figure 1 the voltage of the supply circuit has to be stabilized over the whole temperature range to a value of (19 ± 0,3) V. The voltage value of (19 ± 0,3) V shall also be up to a current of 80 mA. The internal resistance of the supply circuit shall be (160 ± 3,2) Ω.



Key

range for signal "filling permitted"

range for signal "filling not permitted"

t_1 time of recognition of start of sensor warm up ($I > I_1$)

t_2 time of recognition of reaching sensor operating condition

$0{,}5\ s < (t_2 - t_1) < 180\ s$

NOTE If $(t_2 - t_1) > 180$ s no product flow is possible.

t_3 time of wetting sensor

t_4 time of recognition of a wet sensor i.e. stop of product flow shall be initiated

Δt_R $\Delta t_R = t_4 - t_3$

Reaction time of the overfill prevention sensor (Δt_R) from status permissive to status non-permissive shall be ≤ 1,5 s.

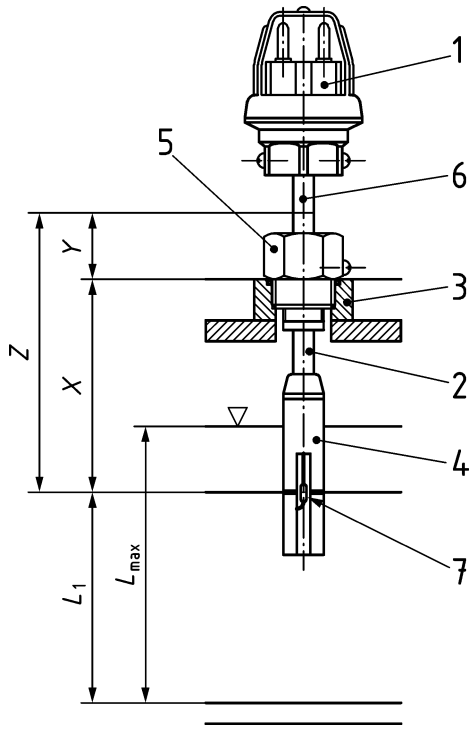
Figure 1 — Cycle of electrical interface

Table 1 — Current values at electrical interface

Current	Max. value mA	Min. value mA	Remark
I_1	49,5	41	$I_1 > I_2$
I_2	44	38	
I_3	10	2	—

4.1.3.2 Installation of the overfill prevention sensor in the tank

The principle installation of the sensor and its main parts shall be according to Figure 2. See also Annex A.



Key

X	adjusted dimension	1	plug according to Figure 3
Y	control dimension	2	sensor pipe
Z	probe length between markings	3	connection thread of the tank for the overfill prevention sensor
L_1	level at which the sensor for overfill prevention sensor is wetted	4	protection against spraying liquid
L_{max}	maximum filling level	5	installation body of the overfill prevention sensor, optional with adjustability for the overfill prevention sensor
		6	place for value Z in mm
		7	sensor

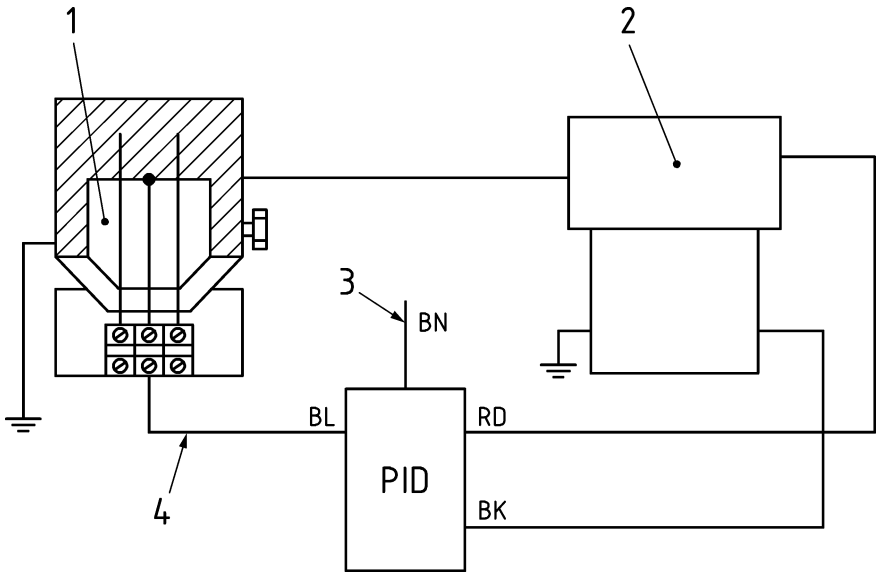
Figure 2 — Structure of the overfill prevention sensor with installation in the static tank

4.1.3.3 Mechanical interface

The plug part of the connection between the overfill prevention sensor and the mating part of the transport tank equipment is shown in Figure 4 and Figure 5.

The mating part (socket) is described in EN 16657.

The wiring at the storage tank between the PID and the listener contact shall be according to Figure 3.

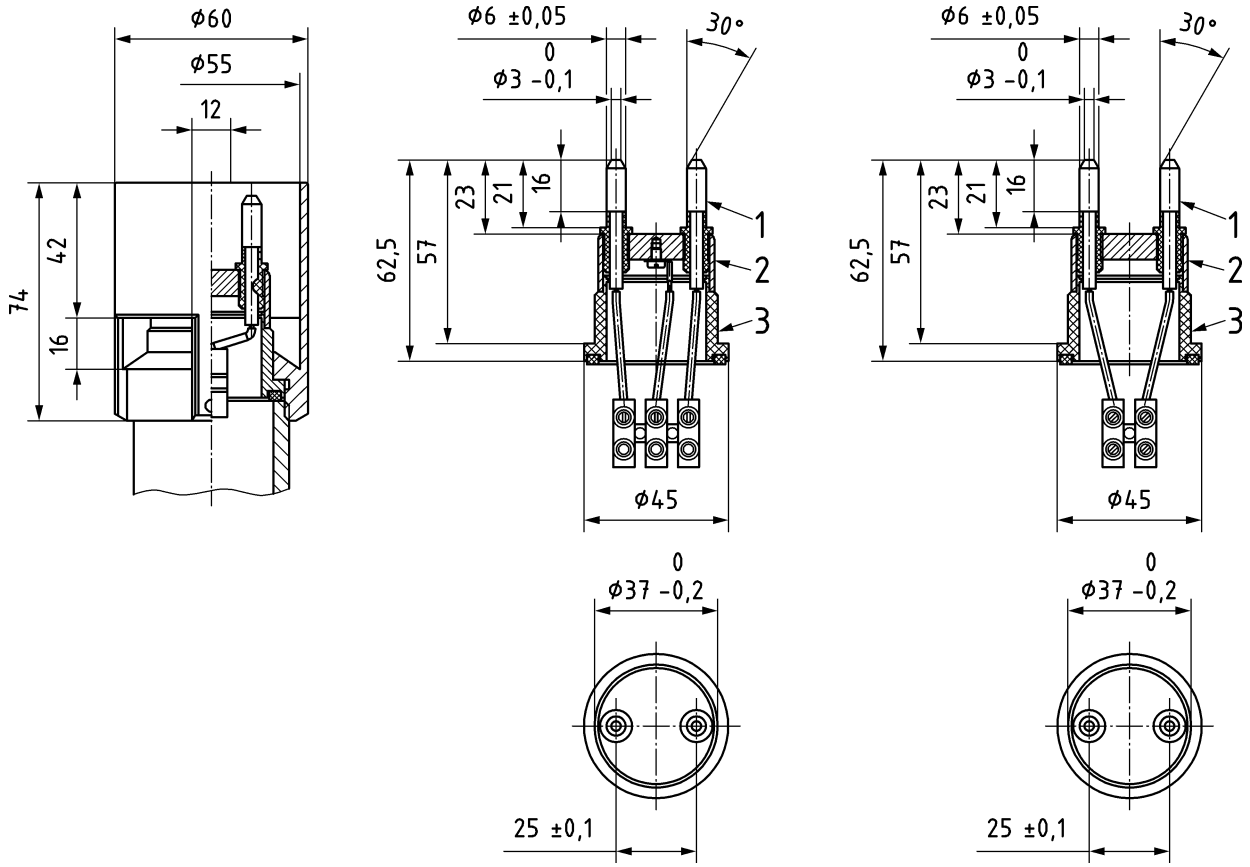


Key

1	overfill prevention system socket	BK	black colour of the wire
2	fill coupling	BL	blue colour of the wire
3	optional vapour recovery	BN	brown colour of the wire
4	listener line	RD	red colour of the wire

Figure 3 — Wiring between the PID and the listener contact

Dimensions in millimetres



a) Plug type 907 and AS 907 **b) Plug insert for type** AS 907 **c) Plug insert for type 907**

Key

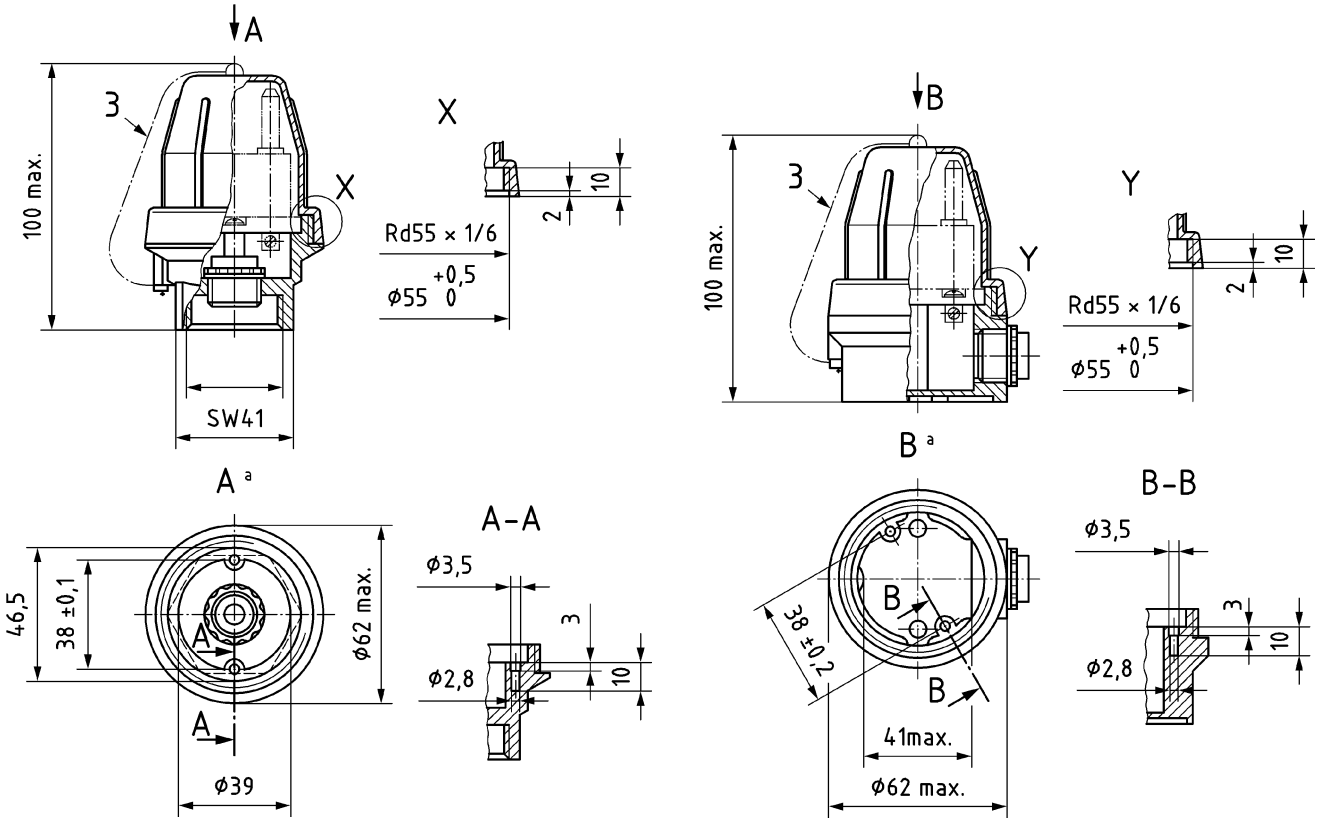
1 contact pin, material: brass nickel plated

2 terminal

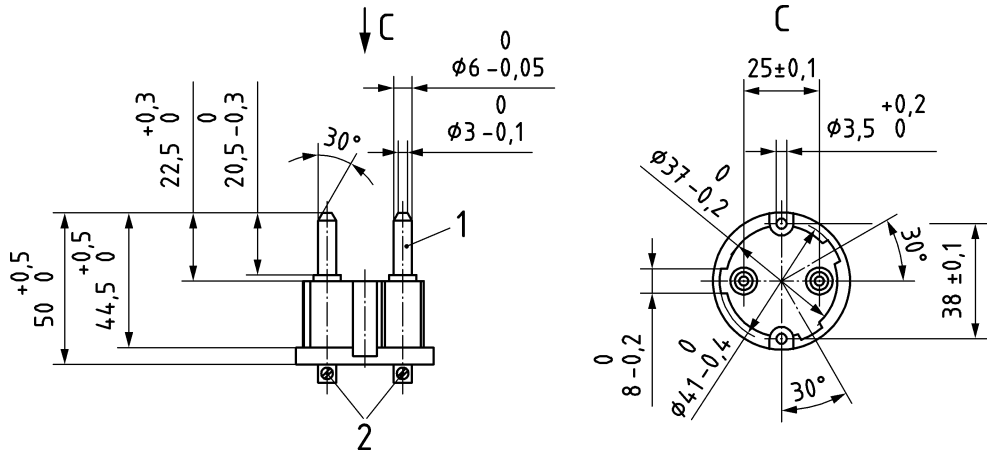
3 insulating sleeve

Figure 4 — Mechanical construction of the overfill prevention sensor plug for type 907 and type AS 907

Dimensions in millimetres



a) Plug type 904 **b) Plug for type 905**



c) Plug insert for type 905 and 904

Key

1 contact pin, material: brass nickel plated

2 drill for terminal cross section 1,5 mm2 with wire protect

3 fastening lug

Figure 5 — Mechanical construction of the overfill prevention sensor plug for type 904 and type 905

4.2 Durability

4.2.1 Durability at ambient temperature, T_{amb}

Overfill prevention sensors shall be designed for an ambient temperature T_{amb} range of −25 °C to +60 °C. Deviations shall be declared by the manufacturer.

4.2.2 Durability against chemical attack

The overfill prevention sensor, or parts normally exposed to liquids or their vapours, shall be durable in contact with the declared liquids.

4.2.3 Durability against operational cycles

The overfill prevention sensor shall withstand ≥ 3.000 operational cycles.

4.3 Electro-magnetic compatibility (EMC)

Overfill prevention devices contain active electronic components, so they shall fulfil the requirements according to:

— EN 61000-6-3 for emission;

— EN 61000-6-2 for immunity.

The classification shall be provided by the manufacturer, only if active electronic components are incorporated.

Concerning immunity the overfill prevention sensor shall work as intended under all conditions or shall provide a signal as above level L_1 for the non-permissive state.

4.4 Fail safe

Resistors with a positive temperature coefficient (PTC-resistor) shall fulfil fail safe requirements.

NOTE The fail safe property of a PTC-resistor is contained in the requirements according to 4.1.3.1.2 and verified according to 5.1.3.1.2 and a test according to 5.4 is not required.

Failure of any active electronic component, one at a time, in short circuit or open circuit state or a permanent automatic self-test shall result in a non-permissive output or correct operation. All components shall not be loaded more than 2/3 of their nominal load with respect to the ambient temperature.

If a binary digital system is used the electronic circuitry of the sensors and the electronics to the interface shall be designed according to the performance level PL b of EN ISO 13849-1.

5 Testing

5.1 Effectiveness

5.1.1 Signal equal or greater than level L_1

The test according to 5.1.3 shall demonstrate the effectiveness of the overfill prevention device by providing the signal above level L_1 for the status non-permissive.

5.1.2 Signal below level L_1

The test according to 5.1.3 shall demonstrate the effectiveness of the overfill prevention device by providing the signal below level L_1 for the status permissive.

5.1.3 Functional requirements

5.1.3.1 Electrical interface

5.1.3.1.1 Power supply

The power supply of the electrical interface shall be tested according to EN 16657.

5.1.3.1.2 Working characteristics of the overfill prevention sensor

5.1.3.1.2.1 Type testing

a) Test equipment

- power supply according to 4.1.3.1.1;
- oscilloscope measurement across the overfill prevention sensor described in 4.1.3.1.2;
- environmental chamber, the temperature of which can be varied over the range from −25 °C to +50 °C with an accuracy of 2 K;
- test liquid: diesel according to EN 590.

b) Test method

The overfill prevention sensor under test shall be connected with a power supply according to 4.1.3.1.1.

Prior to each test to be conducted, and with the overfill prevention sensor fully operational, the environmental chamber shall be at the required test temperature. All equipment (including the test liquid) shall have reached the test temperature ± 2 K, before the test is performed.

The test temperature of the environmental chamber and the test liquid shall be equal:

- −25 °C
- +20 °C
- +50 °C

respectively +20 °C and the limits of the temperatures defined by the manufacturer.

The following series of tests shall be performed three times for each liquid for each temperature. Results shall be recorded:

1) Heating up range — sensor not activated

Measurements commence when the overfill prevention sensor is connected to the power supply.

Measure initial current I_1 and the time according to Figure 1.

Measure current I_2 according to Figure 1 after heating up.

2) Reaction time of the overfill prevention sensor – sensor activated

Electrical current I is measured during the time the sensor is taken in the test liquid.

The reaction time of the overfill prevention sensor Δt_R shall be determined according to 4.1.3.1.2.

c) Test result

The overfill prevention sensor shall be accepted, if the results comply with the criteria listed in 4.1.3.1.2, Figure 1 and Table 1.

5.1.3.1.2.2 Factory production control

a) Test equipment

— power supply according to 4.1.3.1.1 or controller according to EN 16657;

— optional oscilloscope measuring across the resistor;

— the test liquid for this test shall be water containing a corrosion preventing agent or an aliphatic petroleum distillate.

b) Test method

The temperature of the environment and the test liquid shall be equal to (20 ± 10) °C.

The following series of tests shall be performed once with an appropriate test liquid.

— the overfill prevention sensor shall be connected to the power supply;

— the initial current I_1 shall be checked;

— the duration $t_2 - t_1$ shall be checked;

— current I_2 shall be checked;

— the sensor shall be activated (wetted);

— the duration $t_4 - t_3$ shall be checked.

c) Test result / evaluation

The overfill prevention sensor shall be accepted, if the results comply with the criteria listed in 4.1.3.1.2, Figure 1.

5.1.3.2 Installation of the overfill prevention sensor in the tank

5.1.3.2.1 Test equipment

— The mechanical interface connection of the overfill prevention sensor shall fit into the suitable mating part, e.g. thread of the test equipment, see Figure 2;

— Calibrated instrument for measuring the length with a accuracy ± 1 mm.

5.1.3.2.2 Test method

— In the case of a height adjustable overfill prevention sensor, the sensor pipe shall be fitted securely.

— The mechanical interface connection shall be mounted into the mating part.

— Measure the distance between the activated position of the sensor and the marking Z.

5.1.3.2.3 Test result

— The sensor pipe shall be fixed in the installation body. The value of Z shall be visible on the sensor pipe.

— The result shall be identical to indication of Z^{0}_{-2} mm.

5.1.3.3 Mechanical interface

5.1.3.3.1 Test equipment

The socket coupler type 903 and type AS 903 as specified in EN 16657.

5.1.3.3.2 Test method

Connect and disconnect the corresponding plugs and sockets.

5.1.3.3.3 Test result

The mating part socket coupler type 903 and type AS 903 as specified in EN 16657 shall fit into the plugs specified in 4.1.3.3.

5.2 Durability

5.2.1 Durability at ambient temperature, T_{amb}

5.2.1.1 Test equipment

Temperature controlled test chamber.

5.2.1.2 Test method

The overfill prevention sensor without electrical supply shall be exposed to 10 cycles, covering the specified minimum and maximum ambient temperatures.

The duration of exposure at the minimum and maximum ambient temperatures shall be 2 hours, once the temperature has been stabilized. Stabilized conditions are reached when the temperature change in the environmental chamber is $< 1\ K \cdot 15\ min^{-1}$

The change of temperature shall not exceed $5\ K \cdot min^{-1}$ during heating up and cooling down the environmental chamber.

5.2.1.3 Test result

A visual inspection and functional test according to 5.1.3.1.2 shall be carried out at (20 ± 10) °C.

The results shall be recorded.

There shall be no evident visible damage to the overfill prevention sensor and the overfill prevention sensor shall operate in compliance with the criteria listed in 4.1.3.1.2, Figure 1 and Table 1.

5.2.2 Durability against chemical attack

5.2.2.1 General

Third party test results, data sheet of suppliers, as well as empirical values shall be accepted. If such documents are not available, the durability of all materials of the overfill prevention sensor or parts, normally exposed to liquids or their vapours, against chemical attack for the declared liquid shall be checked with the test liquid of each relevant group according to Annex C of EN 14879-4:2007.

5.2.2.2 Test equipment

Appropriate test liquid according to Annex C of EN 14879-4:2007.

5.2.2.3 Test method

The test sample shall be immersed into test liquid for 7 days at a temperature of (+20 ± 5) °C.

5.2.2.4 Test result

A visual inspection and functional test according to 5.1.3.1.2 shall be carried out at (20 ± 10) °C.

The results shall be recorded.

There shall be no evident visible damage to the overfill prevention sensor and the overfill prevention sensor shall operate in compliance with the criteria listed in 4.1.3.1.2, Figure 1 and Table 1.

5.2.3 Durability against operational cycles

5.2.3.1 Test equipment

— Power supply: according to 4.1.3.1.1 or controller according to EN 16657.

— Test liquid: water or diesel according to EN 590.

5.2.3.2 Test method

3 000 cycles of heating up, activating the overfill prevention sensor and cooling down shall be performed at an ambient and liquid temperature of (20 ± 10) °C;

Test sequence:

a) connect the overfill prevention sensor to the power supply;

b) wait for a permissive signal and record;

c) immerse the sensor into the test liquid, wait for a non-permissive signal and record;

d) remove sensor from test liquid, disconnect overfill prevention sensor from the power supply for a time specified by the manufacturer to ensure it is sufficiently cooled ;

e) re-start the test sequence 3.000 times.

A functional test according to 5.1.3.1.2 shall be carried out, but only at a test temperature of (+20 ± 5) °C.

5.2.3.3 Test result

There shall be an equal number of permissive and non-permissive results. At the functional test the overfill prevention sensor shall operate correctly.

5.3 EMC test

Overfill prevention sensors contain active electronic components, so they shall fulfil the requirements according to:

— Table 1 and Table 3 of EN 61000-6-3:2007 for emission;

— Table 1 (except 1.1 of this table) and Table 2 of EN 61000-6-2:2005 for immunity.

5.4 Fail safe

To verify the fail-safe operation that results in a non-permissive signal output, any of the failures listed below, shall in 100 % of the tests, result in correct functioning of the controller, or provide a non-permissive output.

The tests according to 5.2.1 shall be done with 5 000 cycles at temperatures of (5 ± 1) °C, (20 ± 5) °C and (30 ± 2) °C.

For a binary digital system the electronic circuitry of the sensors and the electronics to the interface shall be tested according to the rules for PL b of EN ISO 13849-1.

6 Assessment and verification of constancy of performance — AVCP

6.1 General

The compliance of overfill prevention devices without a closure device to the requirements of this European Standard and with the performances declared by the manufacturer in the DoP shall be demonstrated by:

— determination of the product type;

— factory production control by the manufacturer, including product assessment.

The manufacturer shall always retain the overall control and shall have the necessary means to take responsibility for the conformity of the product within its declared performance(s).

6.2 Type testing

6.2.1 General

All performances related to characteristics included in this European Standard shall be determined when the manufacturer intends to declare the respective performances unless the standard gives provisions for declaring them without performing tests. (e.g. use of previously existing data, CWFT and conventionally accepted performance).

Assessment previously performed in accordance with the provisions of this European Standard, may be taken into account provided that they were made to the same or a more rigorous test method, under the same AVCP system on the same product or products of similar design, construction and functionality, such that the results are applicable to the product in question.

NOTE 1 Same AVCP system means testing by an independent third party *[only for products covered by system 1+, 1 and 3]*, under the responsibility of a notified product certification body *[only for products covered by system 1+ and 1]*.

For the purposes of assessment, the manufacturer's products may be grouped into families, where it is considered that the results for one or more characteristics from any one product within the family are representative for that same characteristics for all products within that same family

NOTE 2 Products may be grouped in different families for different characteristics.

Reference to the assessment method standards should be made to allow the selection of a suitable representative sample.

In addition, the determination of the product type shall be performed for all characteristics included in the standard for which the manufacturer declares the performance:

— at the beginning of production of new or modified overfill prevention devices without a closure device (unless a member of the same product range), or

— at the beginning of a new or modified method of production (where this may affect the stated properties); or

— they shall be repeated for the appropriate characteristic(s), whenever a change occurs in: the overfill prevention devices without a closure device design, in the raw material or in the supplier of the components, or in the method of production (subject to the definition of a family), which would affect significantly one or more of the characteristics.

Where components are used whose characteristics have already been determined, by the component manufacturer, on the basis of assessment methods of other product standards, these characteristics need not be re-assessed. The specifications of these components shall be documented.

Products bearing regulatory marking in accordance with appropriate harmonized European specifications may be presumed to have the performances declared in the DoP, although this does not replace the responsibility on the overfill prevention devices without a closure device manufacturer to ensure that the overfill prevention devices without a closure device as a whole is correctly manufactured and its component products have the declared performance values.

6.2.2 Test samples, testing and compliance criteria

The number of samples of overfill prevention devices without closure devices to be tested/assessed shall be in accordance with Table 2.

Table 2 — Number of samples to be tested and compliance criteria

Characteristic		Requirement	Assessment method	No. of samples	Compliance criteria
Effectiveness	Signal equal or greater than level L_1	4.1.1	5.1.1	1	5.1.3.1.2.1 c)
	Signal below level L_1	4.1.2	5.1.2	1	5.1.3.1.2.1 c)
Durability	at ambient temperature T_{amb}	4.2.1	5.2.1	1	5.2.1.3
	against chemical attack	4.2.2	5.2.2	1	5.2.2.4
	against operational cycles	4.2.3	5.2.3	1	5.2.3.3

6.2.3 Test reports

The results of the determination of the product type shall be documented in test reports. All test reports shall be retained by the manufacturer for at least 10 years after the last date of production of the overfill prevention devices without closure devices to which they relate.

6.2.4 Shared other party results

A manufacturer may use the results of the product type determination obtained by someone else (e.g. by another manufacturer, as a common service to manufacturers, or by a product developer), to justify his own declaration of performance regarding a product that is manufactured according to the same

design (e.g. dimensions) and with raw materials, constituents and manufacturing methods of the same kind, provided that:

— the results are known to be valid for products with the same essential characteristics relevant for the product performance;

— in addition to any information essential for confirming that the product has such same performances related to specific essential characteristics, the other party who has carried out the determination of the product type concerned or has had it carried out, has expressly accepted [1)] to transmit to the manufacturer the results and the test report to be used for the latter's product type determination, as well as information regarding production facilities and the production control process that can be taken into account for FPC;

— the manufacturer using other party results accepts to remain responsible for the product having the declared performances and he also:

  — ensures that the product has the same characteristics relevant for performance as the one that has been subjected to the determination of the product type, and that there are no significant differences with regard to production facilities and the production control process compared to that used for the product that was subjected to the determination of the product type; and

  — keeps available a copy of the determination of the product type report that also contains the information needed for verifying that the product is manufactured according to the same design and with raw materials, constituents and manufacturing methods of the same kind.

6.2.5 Cascading determination of the product type results

For some construction products, there are companies (often called "system houses") which supply or ensure the supply of, on the basis of an agreement [2)] some or all of the components (e.g. in case of windows: profiles, gaskets, weather strips) [3)] to an assembler who then manufactures the finished product (referred to below as the "assembler") in his factory.

Provided that the activities for which such a system house is legally established include manufacturing/assembling of products as the assembled one, the system house may take the responsibility for the determination of the product type regarding one or several essential characteristics of an end product which is subsequently manufactured and/or assembled by other firms in their own factory.

When doing so, the system house shall submit an "assembled product" using components manufactured by it or by others, to the determination of the product type and then make the determination of the product type report available to the assemblers, i.e. the actual manufacturer of the product placed on the market.

To take into account such a situation, the concept of cascading determination of the product type might be taken into consideration in the technical specification, provided that this concerns characteristics for which either a notified product certification body or a notified test laboratory intervene, as presented below.

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1) The formulation of such an agreement can be done by licence, contract, or any other type of written consent.

2) This can be, for instance, a contract, license or whatever kind of written agreement, which should also contain clear provisions with regard to responsibility and liability of the component producer (system house, on the one hand, and the assembler of the finished product, on the other hand.

3) These companies may produce components but they are not required to do so.

The determination of the product type report that the system house has obtained with regard to tests carried out by a notified body, and which is supplied to the assemblers, may be used for the regulatory marking purposes without the assembler having to involve again a notified body to undertake the determination of the product type of the essential characteristic(s) that were already tested, provided that:

— the assembler manufactures a product which uses the same combination of components (components with the same characteristics), and in the same way, as that for which the system house has obtained the determination of the product type report. If this report is based on a combination of components not representing the final product as to be placed on the market, and/or is not assembled in accordance with the system house's instruction for assembling the components, the assembler needs to submit his finished product to the determination of the product type;

— the system house has notified to the manufacturer the instructions for manufacturing/assembling the product and installation guidance;

— the assembler (manufacturer) assumes the responsibility for the correct assembly of the product in accordance with the instructions for manufacturing/assembling the product and installation guidance notified to him by the system house;

— the instructions for manufacturing/assembling the product and installation guidance notified to the assembler (manufacturer) by the system house are an integral part of the assembler's Factory Production Control system and are referred to in the determination of the product type report;

— the assembler is able to provide documented evidence that the combination of components he is using, and his way of manufacturing, correspond to the one for which the system house has obtained the determination of the product type report (he needs to keep a copy of the system house's determination of the product type report);

— regardless the possibility of referring, on the basis of the agreement signed with the system house, to the latter's responsibility and liability under private law, the assembler remains responsible for the product being in compliance with the declared performances, including both the design and the manufacture of the product, which is given when he affixes the regulatory marking on his product.

6.3 Factory production control (FPC)

6.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market comply with the declared performance of the essential characteristics.

The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product.

All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures.

This factory production control system documentation shall ensure a common understanding of the evaluation of the constancy of performance and enable the achievement of the required product performances and the effective operation of the production control system to be checked. Factory production control therefore brings together operational techniques and all measures allowing maintenance and control of the compliance of the product with the declared performances of the essential characteristics.

In case the manufacturer has used shared or cascading product type results, the FPC shall also include the appropriate documentation as foreseen in 6.2.4 and 6.2.5.

6.3.2 Requirements

6.3.2.1 General

The manufacturer is responsible for organizing the effective implementation of the FPC system in line with the content of this product standard. Tasks and responsibilities in the production control organization shall be documented and this documentation shall be kept up-to-date.

The responsibility, authority and the relationship between personnel that manages, performs or verifies work affecting product constancy, shall be defined. This applies in particular to personnel that need to initiate actions preventing product non-constancies from occurring, actions in case of non-constancies and to identify and register product constancy problems.

Personnel performing work affecting the constancy of performance of the product shall be competent on the basis of appropriate education, training, skills and experience for which records shall be maintained.

In each factory the manufacturer may delegate the action to a person having the necessary authority to:

— identify procedures to demonstrate constancy of performance of the product at appropriate stages;

— identify and record any instance of non-constancy;

— identify procedures to correct instances of non-constancy.

The manufacturer shall draw up and keep up-to-date documents defining the factory production control. The manufacturer's documentation and procedures should be appropriate to the product and manufacturing process. The FPC system should achieve an appropriate level of confidence in the constancy of performance of the product. This involves:

a) the preparation of documented procedures and instructions relating to factory production control operations, in accordance with the requirements of the technical specification to which reference is made;

b) the effective implementation of these procedures and instructions;

c) the recording of these operations and their results;

d) the use of these results to correct any deviations, repair the effects of such deviations, treat any resulting instances of non-conformity and, if necessary, revise the FPC to rectify the cause of non-constancy of performance.

Where sub-contracting takes place, the manufacturer shall retain the overall control of the product and ensure that he receives all the information that is necessary to fulfill his responsibilities according to this European standard.

If the manufacturer has part of the product designed, manufactured, assembled, packed, processed and/or labelled by sub-contracting, the FPC of the sub-contractor may be taken into account, where appropriate for the product in question.

The manufacturer who sub-contracts all of his activities may in no circumstances pass the above responsibilities on to a sub-contractor.

NOTE Manufacturers having an FPC system, which complies with EN ISO 9001 standard and which addresses the provisions of the present European standard are considered as satisfying the FPC requirements of the Regulation (EU) No 305/2011.

6.3.2.2 Equipment

6.3.2.2.1 Testing

All weighing, measuring and testing equipment shall be calibrated and regularly inspected according to documented procedures, frequencies and criteria.

6.3.2.2.2 Manufacturing

All equipment used in the manufacturing process shall be regularly inspected and maintained to ensure use, wear or failure does not cause inconsistency in the manufacturing process. Inspections and maintenance shall be carried out and recorded in accordance with the manufacturer's written procedures and the records retained for the period defined in the manufacturer's FPC procedures.

6.3.2.3 Raw materials and components

The specifications of all incoming raw materials and components shall be documented, as shall the inspection scheme for ensuring their compliance. In case supplied kit components are used, the constancy of performance system of the component shall be that given in the appropriate harmonized technical specification for that component.

6.3.2.4 Traceability and marking

Individual product batches shall be identifiable and traceable with regard to their production origin. The manufacturer shall have written procedures ensuring that processes related to affixing traceability codes and/or markings are inspected regularly.

6.3.2.5 Controls during manufacturing process

The manufacturer shall plan and carry out production under controlled conditions.

6.3.2.6 Product testing and evaluation

The manufacturer shall establish procedures to ensure that the stated values of the characteristics he declares are maintained. The characteristics, and the means of control, are:

— each overfill prevention sensor shall be tested for effective indication of level equal or greater than and below L_1 using the test indicated in 5.1.3.1.2.2.

6.3.2.7 Non-complying products

The manufacturer shall have written procedures which specify how non-complying products shall be dealt with. Any such events shall be recorded as they occur and these records shall be kept for the period defined in the manufacturer's written procedures.

Where the product fails to satisfy the acceptance criteria, the provisions for non-complying products shall apply, the necessary corrective action(s) shall immediately be taken and the products or batches not complying shall be isolated and properly identified.

Once the fault has been corrected, the test or verification in question shall be repeated.

The results of controls and tests shall be properly recorded. The product description, date of manufacture, test method adopted, test results and acceptance criteria shall be entered in the records under the signature of the person responsible for the control/test.

With regard to any control result not meeting the requirements of this European standard, the corrective measures taken to rectify the situation (e.g. a further test carried out, modification of manufacturing process, throwing away or putting right of product) shall be indicated in the records.

6.3.2.8 Corrective action

The manufacturer shall have documented procedures that instigate action to eliminate the cause of non-conformities in order to prevent recurrence.

6.3.2.9 Handling, storage and packaging

The manufacturer shall have procedures providing methods of product handling and shall provide suitable storage areas preventing damage or deterioration.

6.3.3 Product specific requirements

The FPC system shall address this European Standard and ensure that the products placed on the market comply with the declaration of performance.

The FPC system shall include a product specific FPC, which identifies procedures to demonstrate compliance of the product at appropriate stages, i.e.:

a) the controls and tests to be carried out prior to and/or during manufacture according to a frequency laid down in the FPC test plan,

and/or

b) the verifications and tests to be carried out on finished products according to a frequency laid down in the FPC test plan

If the manufacturer uses only finished products, the operations under b) shall lead to an equivalent level of compliance of the product as if FPC had been carried out during the production.

If the manufacturer carries out parts of the production himself, the operations under b) may be reduced and partly replaced by operations under a). Generally, the more parts of the production that are carried out by the manufacturer, the more operations under b) may be replaced by operations under a).

In any case the operation shall lead to an equivalent level of compliance of the product as if FPC had been carried out during the production.

NOTE Depending on the specific case, it can be necessary to carry out the operations referred to under a) and b), only the operations under a) or only those under b).

The operations under a) refer to the intermediate states of the product as on manufacturing machines and their adjustment, and measuring equipment etc. These controls and tests and their frequency shall be chosen based on product type and composition, the manufacturing process and its complexity, the sensitivity of product features to variations in manufacturing parameters etc.

The manufacturer shall establish and maintain records that provide evidence that the production has been sampled and tested. These records shall show clearly whether the production has satisfied the defined acceptance criteria and shall be available for at least three years.

6.3.4 Procedure for modifications

If modifications are made to the product, production process or FPC system that could affect any of the product characteristics declared according to this European Standard, then all the characteristics for which the manufacturer declares performance, which may be affected by the modification, shall be subject to the determination of the product type, as described in 6.2.1.

Where relevant, a re-assessment of the factory and of the FPC system shall be performed for those aspects, which may be affected by the modification.

All assessments and their results shall be documented in a report.

6.3.5 One-off products, pre-production products (e.g. prototypes) and products produced in very low quantity

Overfill prevention devices without closure device produced as a one-off, prototypes assessed before full production is established, and products produced in very low quantities (10 per year or less) shall be assessed as follows.

For type assessment, the provisions of 6.2.1, 3rd paragraph apply, together with the following additional provisions:

— in case of prototypes, the test samples shall be representative of the intended future production and shall be selected by the manufacturer;

— on request of the manufacturer, the results of the assessment of prototype samples may be included in a certificate or in test reports issued by the involved third party.

The FPC system of one-off products and products produced in very low quantities shall ensure that raw materials and/or components are sufficient for production of the product. The provisions on raw materials and/or components shall apply only where appropriate. The manufacturer shall maintain records allowing traceability of the product.

For prototypes, where the intention is to move to series production, the initial inspection of the factory and FPC shall be carried out before the production is already running and/or before the FPC is already in practice. The following shall be assessed:

— the FPC-documentation; and

— the factory.

In the initial assessment of the factory and FPC it shall be verified:

a) that all resources necessary for the achievement of the product characteristics included in this European standard will be available, and

b) that the FPC-procedures in accordance with the FPC-documentation will be implemented and followed in practice, and

c) that procedures are in place to demonstrate that the factory production processes can produce a product complying with the requirements of this European standard and that the product will be the same as the samples used for the determination of the product type, for which compliance with this European standard has been verified.

Once series production is fully established, the provisions of 6.3 shall apply.

7 Marking, labelling and packaging

The overfill prevention sensor shall be permanently marked with the following information:

— manufacturer's name and/or logo;

— serial number and/or batch number and/or date code;

— probe length between markings and the value of Z in mm according to Figure 2 and see also Annex A;

— EN 13616-2;

— temperature range if it is not equal to the ambient temperature T_{amb} range of −25 °C to +60 °C and/or not equal the liquid temperature T_{liq} range of −25 °C to +50 °C;

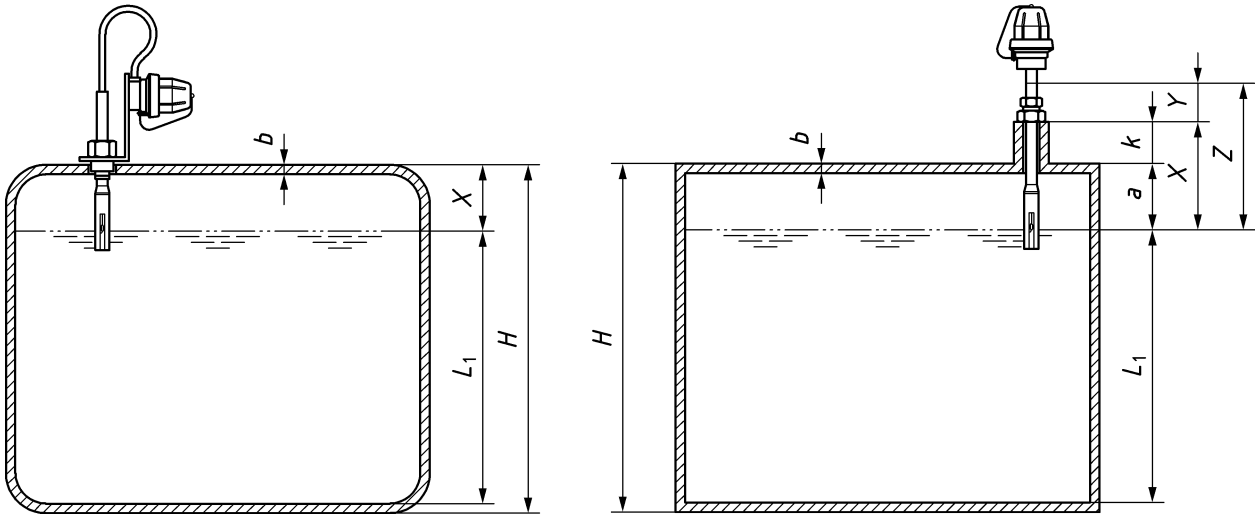
Documentation including maintenance, installation and operating instructions shall be dispatched by the manufacturer with every overfill prevention sensor. The liquid, for which the overfill prevention sensor or its parts can be used, shall be declared.

An example for setting the overfill prevention sensor switching level to level L_1 not to exceed the maximum filling level L_{max}, is given in Annex A.

Annex A
(informative)

Setting of the overfill prevention sensor

For the volume of the level at which the sensor is wetted L_1 shall be subtracted the residual volume from the volume of the maximum filling level L_{max}. By means of the bearing chart, the height of L_1 is determined from this difference. If the tank manufacturer has not provided a bearing chart and the height of L_1 cannot be computed, it is to be defined by gauging the litres capacity of the tank.



Key

a	dimension a = $H - L_1 - b$	*X*	adjusted dimension
b	tank wall thickness	*Y*	control dimension
H	tank height	*Z*	probe length between markings
k	fitting height	L_1	level at which the sensor is wetted

Figure A.1 — Relevant tank dimensions for the setting of the overfill prevention sensor

Computation

1) Value for the maximum product flow from the tank vehicle $\dot{V}_{max}$ in [l/min].

2) Maximum time t_5 from the detection of the liquid to the ceasing of product flow according to EN 16657 with t_5 = 5,5 s.

3) Residual volume from maximum time $V_1 = \dot{V}_{max} \times (t_5 / 60)$ in [l].

4) Residual volume from the product supply system V_2 Definition given in 3.3.

NOTE For example fixed pipework according to EN 10255: $V_2 = (\pi / 4) \times D_I^2 \times L_P / 1\,000$ with D_I internal diameter [mm], L_P length of pipework [m].

5) Total residual volume $V_3 = V_1 + V_2$.

6) Maximum filling capacity of a tank V_4 given with L_{max} .

7) Volume V_5 of setting of the overfill prevention sensor with L_1 $V_5 = V_4 - V_3$.

8) From the bearing chart with V_5, take the following level L_1 .

9) Determine the adjusted dimension X as follows: Direct installation on the tank top or tank crown: $X = H - L_1 - b$ installation into a fitting: $X = H - L_1 - b + k$.

EXAMPLE For adjusted dimension *X:*

Tank:

Length 1 010 mm

Width 1 010 mm

Tank height H = 1 010 mm

Tank wall thickness b = 5 mm

brimful capacity (of a tank) 1 000 l

Fitting height k = 30 mm

Overfill prevention sensor:

Probe length between markings Z = 305 mm

1) Value for the maximum product flow from the tank vehicle $\dot{V}_{max}$ = 1 200 l/min

2) Maximum time from the detection of the liquid to the ceasing of product flow t_5 = 5,5 s

3) Residual volume from maximum time $V_1 = \dot{V}_{max} \times (t_5 / 60)$ = 1 200 l/min × (5,5 s / 60 s) = 110 l

4) Residual volume from the product supply system

Fixed pipework according to EN 10255: internal diameter D_l = 55 mm, length of pipework L_P = 15 m

$V_2 = (\pi / 4) \times D_l^2 \times L_P / 1\,000 = (\pi / 4) \times (55\ mm)^2\ 15\ m / 1\,000 = 35$ l

5) Total residual volume $V_3 = V_1 + V_2 = (110 + 35)$ l = 145 l

6) Maximum filling capacity of a tank V_4 given with L_{max}

Value of 95 % (V/V) of the brimful capacity according to EN 13341

$V_4 = 0{,}95 \times 1\,000$ l = 950 l

7) Volume V_5 of setting of the overfill prevention sensor with L_1

$V_5 = V_4 - V_3$ = (950 – 145) l = 805 l

8) From the bearing chart with V_5, take the following level L_1

or

approach with $L_1 + a - b = H - (2 \times b)$ = 1 000 mm and

for 100 % (V/V) is the brimful capacity of the tank 1 000 l by an interior height 1 000 mm and for the Volume V_5 = 805 l is L_1 = 805 mm

9) Determine the adjusted dimension X

Installation into a fitting: $X = H - L_1 - b + k$ = (1 010 – 805 – 5 + 30) = 230 mm

10) Control dimension of overfill prevention sensor

$Y = Z - X$ = (305 – 230) mm = 75 mm

Annex ZA
(informative)

Clauses of this European Standard addressing the provisions of the EU Construction Products Regulation

ZA.1 Scope and relevant characteristics

This European Standard has been prepared under Mandate M/131 [PIPES, TANKS and ANCILLARIES not in contact with water intended for human consumption] given to CEN by the European Commission and the European Free Trade Association.

If this European standard is cited in the Official Journal of the European Union (OJEU), the clauses of this standard, shown in this annex, are considered to meet the provisions of the relevant mandate, under the Regulation (EU) No. 305/2011.

This annex deals with the CE marking of the Overfill prevention devices without closure device intended for the uses indicated in Table ZA.1 and shows the relevant clauses applicable.

This annex has the same scope as in Clause 1 of this standard related to the aspects covered by the mandate and is defined by Table ZA.1.

Table ZA.1 — Relevant clauses for product and intended use

Product: Overfill prevention devices without closure device **Intended use:** These overfill prevention devices intended to be used in/with underground or above ground, non-pressurized, static tanks designed for liquid fuels.			
Essential Characteristics	**Clauses in this and other European Standard(s) related to essential characteristics**	**Regulatory classes**	**Notes**
Effectiveness: Signal equal or greater than level L_1	4.1.1; 4.1.3	—	—
Effectiveness: Signal below level L_1	4.1.2; 4.1.3	—	—
Durability at ambient temperature T_{amb}	4.2.1	—	—
Durability against chemical attack	4.2.2	—	—
Durability against operational cycles	4.2.3	—	—

The declaration of the product performance related to certain essential characteristics is not required in those Member States (MS) where there are no regulatory requirements on these essential characteristics for the intended use of the product.

In this case, manufacturers placing their products on the market of these MS are not obliged to determine nor declare the performance of their products with regard to these essential characteristics and the option “No performance determined” (NPD) in the information accompanying the CE marking and in the declaration of performance (see ZA.3) may be used for those essential characteristics.

ZA.2 Procedure for AVCP of overfill prevention devices without closure device

ZA.2.1 System(s) of AVCP

The AVCP system(s) of Overfill prevention devices without a closure device indicated in Table ZA.1 established by EC Decision 1999/472/EC published in Official Journal of the European Communities L 184/42 from 17.7.1999 is shown in Table ZA.2 for the indicated intended use(s) and relevant level(s) or class(es) of performance.

Table ZA.2 — System(s) of AVCP

Product(s)	Intended use(s)	Level(s) or class(es) of performance	AVCP system(s)
overfill prevention devices	in installations for the transport/distribution/storage of gas /fuel intended for the supply of building heating/cooling systems, from the external storage reservoir or the last pressure reduction unit of the network to the inlet of the boiler/heater/cooler system(s)of the building(s).	—	3
System 3: See Regulation (EU) No. 305/2011 (CPR) Annex V, 1.4			

The AVCP of overfill prevention devices without a closure device in Table ZA.1 shall be according to the AVCP procedures indicated in Table ZA.3 resulting from application of the clauses of this or other European Standard indicated therein. The content of tasks of the notified body shall be limited to those essential characteristics as provided for, if any, in Annex III of the relevant mandate and to those that the manufacturer intends to declare.

Table ZA.3 — Assignment of AVCP tasks for overfill prevention devices without closure device under system 3

Tasks		Content of the task	AVCP clauses to apply
Tasks for the manufacturer	Factory production control (FPC)	Parameters related to essential characteristics of Table ZA.1 relevant for the intended use which are declared To provide the signal equal or greater than level L_1 To provide the signal below level L_1	6.3.2.6
Tasks for a notified testing laboratory	Determination of the product type on the basis of type testing (based on sampling carried out by the manufacturer), type calculation, tabulated values or descriptive documentation of the product	To provide the signal equal or greater than level L_1 To provide the signal below level L_1 Durability of the effectiveness against temperature Durability of the effectiveness against chemical attack by liquid fuels Durability of the effectiveness against Operational cycles	6.2.2

ZA.2.2 Declaration of performance (DoP)

ZA.2.2.1 General

The manufacturer draws up the DoP and affixes the CE marking on the basis of the different AVCP systems set out in Annex V of the Regulation (EU) No 305/2011:

— the factory production control carried out by the manufacturer; and

— the determination of the product-type on the basis of type testing (based on sampling carried out by the manufacturer), type calculation, tabulated values or descriptive documentation of the product, carried out by the notified testing laboratory.

ZA.2.2.2 Content

The model of the DoP is provided in Annex III of the Regulation (EU) No 305/2011.

According to this Regulation, the DoP shall contain, in particular, the following information:

— the reference of the product-type for which the declaration of performance has been drawn up;

— the AVCP system or systems of the construction product, as set out in Annex V of the CPR;

— the reference number and date of issue of the harmonized standard which has been used for the assessment of each essential characteristic;

— where applicable, the reference number of the Specific Technical Documentation used and the requirements with which the manufacturer claims the product complies.

The DoP shall in addition contain:

a) the intended use or uses for the construction product, in accordance with the applicable harmonized technical specification;

b) the list of essential characteristics, as determined in the harmonized technical specification for the declared intended use or uses;

c) the performance of at least one of the essential characteristics of the construction product, relevant for the declared intended use or uses;

d) where applicable, the performance of the construction product, by levels or classes, or in a description, if necessary based on a calculation in relation to its essential characteristics determined in accordance with the Commission determination regarding those essential characteristics for which the manufacturer shall declare the performance of the product when it is placed on the market or the Commission determination regarding threshold levels for the performance in relation to the essential characteristics to be declared.

e) the performance of those essential characteristics of the construction product which are related to the intended use or uses, taking into consideration the provisions in relation to the intended use or uses where the manufacturer intends the product to be made available on the market;

f) for the listed essential characteristics for which no performance is declared, the letters “NPD” (No Performance Determined);

Regarding the supply of the DoP, Article 7 of the Regulation (EU) No 305/2011 applies.

The information referred to in Article 31 or, as the case may be, in Article 33 of Regulation (EC) No 1907/2006, (REACH) shall be provided together with the DoP.

ZA.2.2.3 Example of DoP

The following gives an example of a filled-in DoP for overfill prevention devices without closure device

DECLARATION OF PERFORMANCE

No. 001 CPR 2015-07-14

1. Unique identification code of the product-type:

Overfill prevention devices without a closure device

2 Type, batch or serial number or any other element allowing identification of the construction product as required under Article 11(4):

Overfill prevention devices without a closure device

Type: …

3. Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Overfill prevention devices without a closure device intended to be used in/with underground or above ground, non-pressurized, static tanks designed for liquid fuels.

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required under Article 11(5):

AnyCo SA,

PO Box 21

B-1050 Brussels, Belgium

Tel. +32987654321

Fax: +32123456789

Email: **anyco.sa@provider.be**

5. Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2):

Anyone Ltd

Flower Str. 24

West Hamfordshire

UK-589645 United Kingdom

Tel. +44987654321

Fax: +44123456789

e-mail: anyone.ltd@provider.uk

6. System or systems of assessment and verification of constancy of performance of the construction product as set out in CPR, Annex V:

System 3

7. In case of the declaration of performance concerning a construction product covered by a harmonized standard:

8. Declared performance

Essential characteristics	Performance	Harmonized technical specification
To provide the signal equal or greater than level L_1	**Pass**	EN 13616–2
To provide the signal below level L_1	**Pass**	
Durability: — against temperature — against chemical attack	**Pass** **Pass** **Pass**	

9. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 8. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4. Signed for and on behalf of the manufacturer by:

……

(name and function)

…… ……

(place and date of issue) (signature)

ZA.3 CE marking and labelling

The CE marking symbol shall be in accordance with the general principles set out in Article 30 of Regulation (EC) No 765/2008 and shall be affixed visibly, legibly and indelibly:

— to the overfill prevention device without closure device – overfill prevention sensor

or

— to a label attached to it.

Where this is not possible or not warranted on account of the nature of the product, it shall be affixed:

— to the packaging

or

— to the accompanying documents.

NOTE In addition to the above, ZA.3 of Annex ZA of the standard could include provisions to be followed where it is intended to split the information accompanying the CE marking and to place them in different locations

The CE marking shall be followed by:

— the last two digits of the year in which it was first affixed,

— the name and the registered address of the manufacturer, or the identifying mark allowing identification of the name and address of the manufacturer easily and without any ambiguity,

— the unique identification code of the product-type

— the reference number of the declaration of performance

— the dated reference to the harmonized technical specification applied

— the intended use as laid down in the harmonized technical specification applied.

The CE marking shall be affixed before the construction product is placed on the market. It may be followed by a pictogram or any other mark notably indicating a special risk or use.

Figures ZA.1 give examples of the information related to products subject to AVCP under each of the different systems to be given in ZA.3.

CE XXXX	*CE marking, consisting of the "CE"-symbol* *Identification number of the notified test laboratory*
AnyCo Ltd, PO Box 21, B-1050, Brussels, Belgium **16** No. 001 CPR 2015–07–14	*name and the registered address of the manufacturer, or identifying mark* *Last two digits of the year in which the marking was first affixed* *Reference number of the DoP*
EN 13616–2 **Overfill prevention device without a closure device** **Overfill prevention sensor** ***Product type ...*** intended to be used in/with underground or above ground, non-pressurized, static tanks designed for liquid fuels. To provide the signal equal or greater than level L_1: Pass To provide the signal below level L_1: Pass Durability of the effectiveness against: — temperature: Pass — chemical attack by liquid fuels: Pass — operational cycles: Pass	*No. of European Standard applied, as referenced in OJEU (see note 14)* *Unique identification code of the product-type* *Intended use of the product as laid down in the European Standard applied*

Figure ZA.1 — Example CE marking information of products under AVCP system 3

Bibliography

[1] EN 13237, *Potentially explosive atmospheres — Terms and definitions for equipment and protective systems intended for use in potentially explosive atmospheres*

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

[3] EN 13616-1, *Overfill prevention devices for static tanks for liquid fuels — Requirements and test/assessment methods — Part 1: Overfill prevention devices with closure device*

[4] EN 14116:2012+A1:2014, *Tanks for transport of dangerous goods — Digital interface for product recognition devices for liquid fuels*

[5] EN ISO/IEC 17065, *Conformity assessment — Requirements for bodies certifying products, processes and services (ISO/IEC 17065)*

[6] EN 60079-7, *Explosive atmospheres — Part 7: Equipment protection by increased safety "e" (IEC 60079-7)*

[7] EN 60079-10, *Electrical apparatus for explosive gas atmospheres — Part 10: Classification of hazardous areas (IEC 60079-10)*

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

[9] EN 60079-15, *Explosive atmospheres — Part 15: Equipment protection by type of protection "n" (IEC 60079-15)*

[10] EN 60079-18, *Explosive atmospheres — Part 18: Equipment protection by encapsulation "m" (IEC 60079-18)*

[11] EN 60079-25, *Explosive atmospheres — Part 25: Intrinsically safe electrical systems (IEC 60079-25)*

[12] EN 60079-26, *Explosive atmospheres — Part 26: Equipment with equipment protection level (EPL) Ga (IEC 60079-26)*

[13] EN 60204-1, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1)*

[14] EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

[15] EN ISO 9001:2015, *Quality management systems — Requirements (ISO 9001:2015)*

[16] EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025)*

[17] ADR European Agreement concerning the International Carriage of Dangerous Goods by Road

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