



# SLOVENSKI STANDARD SIST EN 13617-2:2021

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Nadomešča:  
SIST EN 13617-2:2012

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## Bencinski servisi - 2. del: Varnostne zahteve za izdelavo in lastnosti varnostnih zapor za tlačne in sesalne naprave za točenje goriva

Petrol filling stations - Part 2: Safety requirements for construction and performance of safe breaks for use on metering pumps and dispensers

Tankstellen - Teil 2: Sicherheitstechnische Anforderungen an Bau- und Arbeitsweise von Abreißkupplungen für Zapfsäulen und druckversorgte Zapfsäulen

Stations-service - Partie 2 : Exigences de sécurité relatives à la construction et aux performances des raccords cassants utilisés pour les distributeurs de carburants

Ta slovenski standard je istoveten z: EN 13617-2:2021

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### ICS:

75.200	Oprema za skladiščenje nafte, naftnih proizvodov in zemeljskega plina	Petroleum products and natural gas handling equipment
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## Petrol filling stations - Part 2: Safety requirements for construction and performance of safe breaks for use on metering pumps and dispensers

Stations-service - Partie 2 : Exigences de sécurité relatives à la construction et aux performances des raccords cassants utilisés pour les distributeurs de carburants

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This European Standard was approved by CEN on 14 June 2021.

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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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**EN 13617-2:2021 (E)****European foreword**

This document (EN 13617-2:2021) 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of an identical text or by endorsement, at the latest by March 2022, and conflicting national standards shall be withdrawn at the latest by March 2024.

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

This document supersedes EN 13617-2:2012.

In comparison with the 2012 edition, the following significant changes were made:

- safe breaks for aqueous urea solution added;
- Table 1 corrected to ensure compatibility between components according to EN 13012:2021, EN 13617-2:2021, EN 13617-4:2021 and EN 1360:2013;
- the production acceptance tests are modified to test at least every 500<sup>th</sup> unit;
- the liquid compatibility preconditioning fluid for fuel safe breaks is defined in EN 13617-1.

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 2014/34/EU.

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

EN 13617 consists of four parts:

- *Part 1: Safety requirements for construction and performance of metering pumps, dispensers and remote pumping units;*
- *Part 2: Safety requirements for construction and performance of safe breaks for use on metering pumps and dispensers;*
- *Part 3: Safety requirements for construction and performance of shear valves;*
- *Part 4: Safety requirements for construction and performance of swivels for use on metering pumps and dispensers.*

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This document specifies safety requirements for the construction and performance of safe breaks to be fitted to metering pumps and dispensers installed at filling stations and used to dispense liquid fuels and aqueous urea solution into the tanks of motor vehicles, boats and light aircraft and into portable containers at flow rates up to  $200 \text{ l} \cdot \text{min}^{-1}$ .

This document applies to fuels of subdivision Group IIA according to EN ISO/IEC 80079-20-1 and also aqueous urea solution according to ISO 22241-1.

The requirements apply to safe breaks at ambient temperatures from  $-20 \text{ }^{\circ}\text{C}$  to  $+40 \text{ }^{\circ}\text{C}$  with the possibility for an extended temperature range.

This document pays particular attention to electrical, mechanical and hydraulic characteristics of, and electrical equipment incorporated within or mounted on, the safe break.

This document applies mainly to hazards related to the ignition of liquid fuels being dispensed or their vapour. This document also addresses electrical and mechanical hazards.

This document does not apply to equipment dispensing compressed or liquefied gases.

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

EN 1360:2013, *Rubber and plastic hoses and hose assemblies for measured fuel dispensing systems - Specification*  
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EN 13483:2013, *Rubber and plastic hoses and hose assemblies with internal vapour recovery for measured fuel dispensing systems - Specification*

EN 13617-1:2021, *Petrol filling stations - Part 1: Safety requirements for construction and performance of metering pumps, dispensers and remote pumping units*

EN IEC 60079-0:2018, *Explosive atmospheres - Part 0: Equipment - General requirements (IEC 60079-0:2017)*

EN ISO 228-1:2003, *Pipe threads where pressure-tight joints are not made on the threads - Part 1: Dimensions, tolerances and designation (ISO 228-1:2000)*

EN ISO 1825:2017, *Rubber hoses and hose assemblies for aircraft ground fuelling and defuelling - Specification (ISO 1825:2017)*

EN ISO 8031:2020, *Rubber and plastics hoses and hose assemblies - Determination of electrical resistance and conductivity (ISO 8031:2020)*

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

ISO 261:1998, *ISO general purpose metric screw threads — General plan*

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ISO 965-2:1998, *ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose external and internal screw threads — Medium quality*

ISO 11925-3:1997, *Reaction to fire tests — Ignitability of building products subjected to direct impingement of flame — Part 3: Multi-source test*

**3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 13617-1:2021 and the following apply.

ISO and IEC maintain terminological 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/>

**3.1 safe break**  
device to minimize fuel spillage and to stop fuel flow achieved by separation between nozzle and metering pump or dispenser within a defined range of forces

**3.2 safe break type 1**  
safe break constructed for liquid lines only

**3.3 safe break type 2**  
safe break constructed for liquid lines combined with vapour recovery lines

**3.4 nozzle break**  
safe break fitted directly into the nozzle inlet, or integral with the nozzle

**3.5 hose break**  
safe break fitted within the delivery hose circuit

**3.6 pump break**  
safe break fitted directly to the fixed hydraulics

**3.7 re-usable safe break**  
safe break that, once operated, can be re-assembled for further use

**3.8 non re-usable safe break**  
safe break that, once operated, cannot be re-assembled for further use

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## 4 Explosion protection measures

**4.1** Explosion protection measures shall be taken in accordance with EN 1127-1:2019 and EN 13617-1:2021, Annex B.

**4.2** The safe break shall be explosion protected and shall be Category 2G, Group II, EPL Gb in accordance with EN ISO 80079-36:2016. The vapour path of a vapour recovery safe break shall be Category 1G, Group II, EPL Ga in accordance with EN ISO 80079-36:2016. The safe break shall fulfil the requirements for temperature class T3 and Group IIA according to EN IEC 60079-0:2018 or EN ISO 80079-36:2016.

## 5 Construction

### 5.1 General

**5.1.1** All electrical and non-electrical equipment and components, intended for use in potentially explosive atmospheres, shall be designed and constructed according to good engineering practice and in conformity with the required categories/EPLs for group II equipment to ensure avoidance of any ignition source. To classify the category/EPL of the equipment it shall be subjected to an ignition hazard assessment in accordance with EN ISO 80079-36:2016, 5.2.

**5.1.2** All materials used in the construction shall be chemically and dimensionally stable under known service conditions. Materials likely to come into contact with fuels in both liquid and vapour phases shall be resistant to attack by these fuels. Compliance shall be demonstrated by manufacturer's declaration and compliance with the tests B.1 to B.16 inclusive.

**5.1.3** Light alloys when used shall conform to the requirements of EN IEC 60079-0:2018, 8.3. If other specifications for explosion protected equipment impose more stringent requirements then the more stringent requirement shall apply.

**5.1.4** Outside surfaces likely to be handled shall be free of sharp edges.

**5.1.5** If protective covers are fitted they shall be constructed such that they allow ventilation and evaporation of fuel even if some shrinkage occurs. They shall not affect the performance of the safe break.

**5.1.6** Safe breaks Type 1 and Type 2, except nozzle breaks, when operated shall close liquid lines both upstream and downstream of the break.

**5.1.7** For safe breaks Type 2 it is not required to close vapour lines. A means to close off vapour lines may be included.

**5.1.8** On re-usable safe breaks, the sections that break away shall be constructed so that the means of reconnection cannot be damaged by impacts according to test B.3.

**5.1.9** The construction shall be such that on reconnection of a re-usable device, or attempted reconnection of a non re-usable device, fluid shall not be sprayed out during the reconnection action.

### 5.2 Hose breaks

Hose breaks which incorporate hose shall use hose conforming to EN 1360:2013, EN ISO 1825:2017 or EN 13483:2013.

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## 5.3 Inlet threads

## 5.3.1 Safe break type 1

Safe break type 1 threads for the hose connection shall be parallel threads according to EN ISO 228-1:2003 according to Table 1. The sealing surfaces of the internal and external threads shall be designed such that they are suitable for use with an appropriate seal.

Table 1 — Safe break type 1 Thread specifications

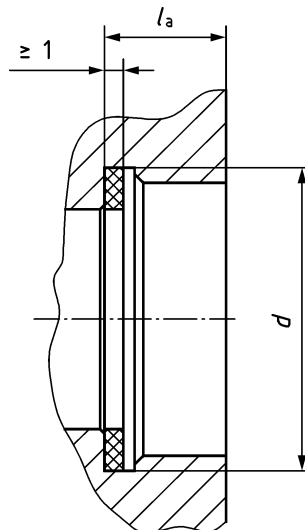
Nominal inlet size $d$	Female threads Thread depth <sup>a</sup> $l_a$ mm See Figure 1.	Male threads Minimum engagement <sup>b</sup> $l_b$ mm See Figure 2.
3/4"	12,0 <sup>0</sup> <sub>-0,5</sub>	12,0
1"	13,0 <sup>0</sup> <sub>-0,5</sub>	13,0
1 1/4"	15,0 <sup>0</sup> <sub>-0,5</sub>	15,0
1 1/2"	18,0 <sup>0</sup> <sub>-0,5</sub>	18,0

<sup>a</sup> The thread depth, measured from the outer fore-part to the metallic inner sealing face.

<sup>b</sup> The stated minimum length only applies if the female thread of the hose fitting includes an inner flat gasket. In case of using an outer flat gasket, the male threads may be shorter than the dimensions in this table.

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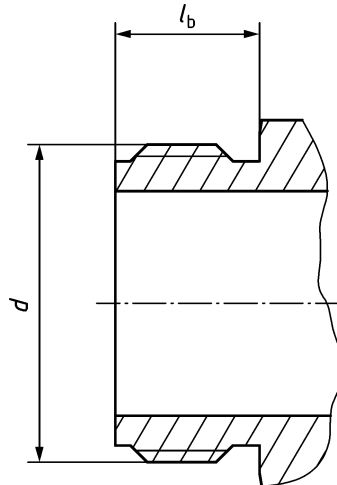
Dimensions in millimetres



## Key

- $l_a$  female thread depth
- $d$  nominal inlet size

Figure 1 — Female inlet thread

**Key**

- $l_b$  male thread minimum engagement
- $d$  nominal inlet size

**Figure 2 — Male inlet thread****5.3.2 Safe break type 2**

Threads shall be M 34 × 1,5 female or male according to ISO 261:1998 and ISO 965-2:1998, and be in accordance with EN 13483:2013. (standards.iteh.ai)

The total thread depth shall be not less than 15,0 mm. The inlet end shall be controlled to a diameter of (35,0 ± 0,05) mm for a length (6,0 ± 0,1) mm. (SIST EN 13617-2:2021)

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**6 Physical properties**

The physical properties of the safe break shall be according to Table 2.

**Table 2 — Physical properties of safe break**

Property	Requirement	Test Method
Electrical resistance of inlet thread to outlet thread when fully assembled	All readings to be < 10 <sup>5</sup> Ω.	B.16
Electrostatic properties	EN ISO 80079-36:2016, 6.7	EN ISO 80079-36:2016
Fuel compatibility of fuel safe breaks	Clause 7	B.2
Ignitability of composites on safe break, Ignition source C; Effect time 20 s; Surface flame impingement	The material tested shall not afterflame.	ISO 11925-3:1997
Characteristics of safe break body and/or cover to prevent dangerous, mechanically generated, sparks (resistance to sparking).	Metallic enclosure requirements of EN IEC 60079-0:2018, 8.3.	—