

# SLOVENSKI STANDARD

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**Bencinski servisi - 1. del: Varnostne zahteve za izdelavo in lastnosti tlačnih in sesalnih naprav za točenje goriva in naprav za točenje goriva z daljinskim upravljanjem**

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

Tankstellen - Teil 1: Sicherheitstechnische Anforderungen an Bau- und Arbeitsweise von Zapfsäulen, druckversorgten Zapfsäulen und Fernpumpen

Stations-service - Partie 1 : Exigences relatives à la construction et aux performances de sécurité des distributeurs à pompe immergée, distributeurs de carburants et unités de pompage à distance

**Ta slovenski standard je istoveten z: EN 13617-1:2021**

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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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EUROPEAN STANDARD

EN 13617-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2021

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

Stations-service - Partie 1 : Exigences relatives à la construction et aux performances de sécurité des distributeurs à pompe immergée, distributeurs de carburants et unités de pompage à distance

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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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN 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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**EN 13617-1:2021 (E)****European foreword**

This document (EN 13617-1:2021) 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 13617-1:2012.

In comparison with EN 13617-1:2012, the following significant changes were made:

- Scope modified to reference that this document applies to dispensing of flammable liquids;
- Introduction and 7.3 modified to reference extended temperature ranges for storage and use;
- float testing clarified in 5.3.4.1;
- vent pipes to terminate outside of the dispenser housing in 5.3.4.4;
- shear valves to comply with EN 13617-3 in 5.3.4.7;
- alternative stability test has been added to 6.1.5.2;
- test liquid for material assessment defined in 6.1.7.2;
- revision of 7.4 Marking;
- introduction of Annex D;
- introduction of Annex E;
- update of normative references.

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 Directives 2014/34/EU and 2006/42/EC.

For relationship with EU Directives, see informative Annexes ZA and ZB, which are 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.

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## EN 13617-1:2021 (E)

### Introduction

This document is a type C standard as stated in EN ISO 12100.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document. The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards, for machines that have been designed and built according to the provisions of the type C standard.

It has been assumed that the use of the equipment for dispensing of fuels will be by untrained persons (user/dispenser), while other aspects of the operation, maintenance, etc., will be by designated and trained personnel (station personnel or operator).

Measures in addition to those required by this document are expected to be assessed if the metering pump or dispenser is intended for use and storage at temperature outside of the range stated in the Scope. The manufacturer should demonstrate the suitability of the metering pump or dispenser design over the full temperature range, and the temperature range should be marked in accordance with 7.4.1. The need for and nature of additional requirements should be determined by the manufacturer, if necessary, after consulting the installer and user.



## 1 Scope

This document applies to metering pumps, dispensers and remote pumping units to be installed at liquid fuel filling stations, designed to dispense flammable liquid fuels into the tanks of motor vehicles, boats and light aircraft and into portable containers at flow rates up to  $200 \text{ l} \cdot \text{min}^{-1}$ , and intended for use and storage at ambient temperatures between  $-20 \text{ }^{\circ}\text{C}$  and  $+40 \text{ }^{\circ}\text{C}$ .

This document deals with all significant hazards, hazardous situations and events relevant to metering pumps, dispensers and remote pumping units, when they are used as intended and under the conditions foreseeable by the manufacturer (see Clause 4).

This document gives health and safety related requirements for the selection, construction and performance of the equipment.

This document does not specify a required performance level,  $PL_r$ , according to EN ISO 13849-1.

This document does not deal with noise and with hazards related to transportation and installation.

This document does not include any requirements for metering performance.

Vapour recovery efficiency rates are not considered within this document.

Fuels other than the ones of subdivision Group IIA according to EN ISO/IEC 80079-20-1:2019 are excluded from this document.

This document does not apply to equipment for use with liquefied or compressed gases.

This document does not cover the installation of the emergency stop provisions for the liquid fuel filling station.

This document is not applicable to metering pumps, dispensers and remote pumping units, which are manufactured before the date of publication of this document by CEN.

## 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 590:2013+A1:2017, *Automotive fuels - Diesel - Requirements and test methods*

EN 1360:2013, *Rubber and plastic hoses and hose assemblies for measured fuel dispensing systems - Specification*

EN 13012:2021, *Petrol filling stations - Construction and performance of automatic nozzles for use on fuel dispensers*

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

EN 13617-3:2021, *Petrol filling stations - Part 3: Safety requirements for construction and performance of shear valves*

EN 14125:2013, *Thermoplastic and flexible metal pipework for underground installation at petrol filling stations*

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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*

EN 15293:2018, *Automotive fuels - Automotive ethanol (E85) fuel - Requirements and test methods*

EN 50525-2-21:2011,<sup>1</sup> *Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U<sub>o</sub>/U) - Part 2-21: Cables for general applications - Flexible cables with crosslinked elastomeric insulation*

EN 50525-2-51:2011, *Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U<sub>o</sub>/U) - Part 2-51: Cables for general applications - Oil resistant control cables with thermoplastic PVC insulation*

EN 60079-1:2014, *Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d" (IEC 60079-1:2014)*

EN 60079-10-1:2015, *Explosive atmospheres - Part 10-1: Classification of areas - Explosive gas atmospheres (IEC 60079-10-1:2015)*

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

EN 60204-1:2018, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:2016, modified)*

EN 60529:1991,<sup>2</sup> *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 60730-2-10:2007, *Automatic electrical controls for household and similar use - Part 2-10: Particular requirements for motor-starting relays (IEC 60730-2-10:2006)*

EN 60947-3:2009,<sup>3</sup> *Low-voltage switchgear and controlgear - Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units (IEC 60947-3:2008)*

EN IEC 62368-1:2020,<sup>4</sup> *Audio/video, information and communication technology equipment - Part 1: Safety requirements (IEC 62368-1:2018)*

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

EN 60079-7:2015,<sup>5</sup> *Explosive atmospheres - Part 7: Equipment protection by increased safety "e" (IEC 60079-7:2015)*

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<sup>1</sup> As impacted by EN 50525-2-21:2011/AC:2013.

<sup>2</sup> As impacted by EN 60529:1991/A1:2000 and EN 60529:1991/A2:2013.

<sup>3</sup> As impacted by EN 60947-3:2009/A1:2012 and EN 60947-3:2009/A2:2015.

<sup>4</sup> As impacted by EN IEC 62368-1:2020/A11:2020.

<sup>5</sup> As impacted by EN IEC 60079-7:2015/A1:2018.

EN IEC 61000-6-1:2019, *Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity standard for residential, commercial and light-industrial environments (IEC 61000-6-1:2016)*

EN ISO 1182:2020, *Reaction to fire tests for products - Non-combustibility test (ISO 1182:2020)*

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

EN ISO 12100:2010, *Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 16852:2016, *Flame arresters - Performance requirements, test methods and limits for use (ISO 16852:2016)*

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

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 ISO 12100:2010 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

##### **air and/or vapour separator**

device used for continuously separating and removing air or gases contained in the liquid

#### 3.2

##### **delivery hose assembly**

flexible delivery system to which the nozzle is connected

#### 3.3

##### **column extension**

fabrication extending upwards from or to the side of a metering pump/dispenser hydraulic housing

#### 3.4

##### **metering pump**

measuring system containing its own pumping system to draw and deliver liquid fuel from a supply tank or tanks into the tanks of motor vehicles, boats and light aircraft and into portable containers

#### 3.5

##### **dispenser**

measuring and delivery system similar to that of a metering pump but without an integral pumping system

**EN 13617-1:2021 (E)****3.6****multi product metering pump/dispenser**

unit designed to deliver liquid fuels where the customer can choose from more than one product

Note 1 to entry: This may include systems where the fuel delivered is a mix of more than one base fuel.

**3.7****remote pumping unit**

suction pump assembly mounted remotely from a dispenser

**3.8****filling station**

establishment providing for the delivery of liquid fuels into the tanks of motor vehicles, boats and light aircraft and into portable containers

**3.9****hazardous area**

area in which an explosive gas atmosphere is present, or can be expected to be present, in quantities such as to require special precautions for the construction, installation and use of equipment

[SOURCE: EN 60079-10-1:2015, 3.3.1, modified - Note 1 to entry removed]

**3.10****non-hazardous area**

area in which an explosive gas atmosphere is not expected to be present in quantities such as to require special precautions for the construction, installation and use of equipment

Note 1 to entry: An area classified as non-hazardous in accordance with this document is not necessarily non-hazardous in all respects. For example, other hazards could arise from other sources including pressure, or chemicals.

[SOURCE: EN 60079-10-1:2015, 3.3.2]

**3.11****metering unit**

device for continuously measuring the amount of liquid fuels delivered

**3.12****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

[SOURCE: EN 13617-2:2021, 3.1]

**3.13****type of protection**

specific measures applied to equipment to avoid ignition of a surrounding explosive atmosphere

Note 1 to entry: Measures are according to EN IEC 60079-0 and EN ISO 80079-36.

**3.14****hydraulic housing of a metering pump/dispenser**

structure, which may include cladding, to provide physical and ingress protection of the liquid and/or vapour equipment

**3.15****automatic delivery nozzle**

manually operated device that controls the flow of fuel during a dispensing operation and includes a spout and an automatic shut-off mechanism

[SOURCE: EN 13012:2021, 3.1]

**3.16****vapour recovery nozzle**

delivery nozzle that additionally includes a path through which vapour can be recovered

[SOURCE: EN 13012:2021, 3.2]

**3.17****nozzle boot**

location, normally a partially enclosed housing, where the nozzle or vapour recovery nozzle is stored when not in use

**3.18****nozzle sensor**

device detecting the nozzle position in the nozzle boot

**3.19****vapour barrier**

sealing system to limit hazardous areas

**3.20****shear valve**

component whose function is to prevent continuous liquid flow or vapour release in the event of impact or fire

[SOURCE: EN 13617-3:2021, 3.1]

**3.21****sight glass**

device to allow checking that all, or part, of the measuring system is completely filled with liquid

**3.22****vapour recovery system**

system in and attached to the metering pump/dispenser to feed back the vapours displaced from the fuel tank and led back into the vapour return lines to the storage tank

**3.23****vapour pump**

pump positioned in the vapour recovery system to supply vacuum for vapour suctioning

**3.24****screen**

perforated cladding fabrication which may be provided to enhance the visual appearance of a metering pump or dispenser or to provide another related function

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function is to prevent continuous liquid flow or vapour release in the event of impact or fire  
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**EN 13617-1:2021 (E)****3.25****vapour pipe**

tubing of the vapour recovery system, excluding the vapour recovery delivery hose assembly and vapour recovery nozzle

**3.26****retraction system**

system to assist the stowage of a delivery hose assembly or a vapour recovery delivery hose assembly

**3.27****hose cassette**

separate assembly primarily for the storage of delivery hose assembly(s) or vapour recovery delivery hose assembly(s)

**3.28****normal operation**

situation when the equipment, protective systems, and components perform their intended function within their design parameters

Note 1 to entry: See EN ISO 12100:2010, 5.3.

Note 2 to entry: Minor release of flammable material may be part of normal operation. For example, releases of substances from seals which rely on wetting by the fluid which is being pumped are considered to be minor releases.

Note 3 to entry: Failures (such as a breakdown of pump seals, flange gaskets or releases of substances caused by accidents) which involve repair or shut-down are not considered to be part of normal operation.

**3.29****cladding**

external panels that serve no structural, load bearing purpose but which contribute to the physical protection of the contents of the housing

**3.30****vapour trap**

unventilated part of a structure where vapours can accumulate creating an area of greater hazard than its immediate surroundings

**3.31****preset delivery**

delivery where the maximum volume (cost) for that delivery is fixed, either directly at the metering pump/dispenser or remote from the metering pump/dispenser, before the delivery commences

**3.32****preset delivery slowdown**

last part of a preset delivery where the flow rate is limited by the metering pump/dispenser to allow accurate completion of the delivery

**3.33****flow rate**

volume flow delivered under normal working conditions

Note 1 to entry:  $\text{In l} \cdot \text{min}^{-1}$  or  $\text{m}^3 \cdot \text{h}^{-1}$ .

**3.34****potential ignition source**

equipment related ignition source which has the capability to ignite an explosive atmosphere (i.e. to become effective)

Note 1 to entry: The likelihood of becoming effective determines the EPL (they may arise in normal operation, expected malfunction, rare malfunction).

[SOURCE: ISO 80079-36:2016 3.1.3]

**3.35****high hose inlet joint**

delivery hose assembly connection at a location on equipment that will be at a height greater than 2 m above ground level when the equipment is installed

**3.36****de-mountable joint**

joint which is designed to be assembled and disassembled

**3.37****satellite delivery system**

remote delivery system connected to a metering pump/dispenser

**3.38****check valve**

normally closed valve which is opened by flow of liquid in normal working conditions

**3.39****catastrophic failure**

irreversible damage resulting in an unsafe condition

**3.40****routine test**

test to which each individual device is subjected during or after manufacture to ascertain whether it complies with certain criteria

[SOURCE: EN IEC 60079-0:2018, 3.55]

**3.41****powering up sequence**

internal sequence of events that follows the application of electrical power to the equipment

**3.42****cross ventilation**

ventilation which facilitates airflow from one side of a housing or enclosure to the opposite side, usually horizontally

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