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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: prEN 13617-1**

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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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**prEN 13617-1**

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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

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

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

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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**prEN 13617-1:2018 (E)****European foreword**

This document (prEN 13617-1:2018) 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 document is currently submitted to the CEN Enquiry.

This document will supersede EN 13617-1:2012.

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

- Scope modified to reference that this standard applies to dispensing of flammable liquids.
- Introduction of Annex D.
- Alternative stability test has been added to 6.1.5.2.
- Float testing clarified in 5.3.4.1.
- Update of normative references.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directives, see informative Annexes ZA and ZB, which are integral parts of this document.

This European Standard *Petrol filling stations* 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.*

## Introduction

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

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).

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**prEN 13617-1:2018 (E)****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  $+40 \text{ }^\circ\text{C}$ . Measures in addition to those required by this European Standard might be required for use and storage at temperature outside this range. The need for and nature of additional requirements should be determined by the manufacturer, if necessary after consulting the client.

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 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 European Standard.

Fuels other than the ones of Explosion Group IIA are excluded from this European Standard.

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.

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

**2 Normative references**

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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, *Automotive fuels — Unleaded petrol — Requirements and test methods*

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

EN 976-1:1997, *Underground tanks of glass-reinforced plastics (GRP) - Horizontal cylindrical tanks for the non-pressure storage of liquid petroleum based fuels - Part 1: Requirements and test methods for single wall tanks*

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

prEN 13012:2018, *Petrol filling stations — Construction and performance of automatic nozzles for use on fuel dispensers*

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

prEN 13617-2:2018, *Petrol filling stations — Part 2: Safety requirements for construction and performance of safe breaks for use on metering pumps and dispensers*



- EN 14125, *Thermoplastic and flexible metal pipework for underground installation at petrol filling stations*
- EN 14214, *Automotive fuels — Fatty acid methyl esters (FAME) for diesel engines — Requirements and test methods*
- EN 50525-2-21, *Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (Uo/U) - Part 2-21: Cables for general applications - Flexible cables with crosslinked elastomeric insulation*
- EN 50525-2-51, *Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (Uo/U) - Part 2-51: Cables for general applications - Oil resistant control cables with thermoplastic PVC insulation*
- CEN/TS 15293, *Automotive fuels - Ethanol (E85) automotive fuel - Requirements and test methods*
- EN 60079-0, *Explosive atmospheres - Part 0: Equipment - General requirements (IEC 60079-0)*
- EN 60079-1:2014, *Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"*
- EN 60079-7, *Explosive atmospheres — Part 7: Equipment protection by increased safety "e" (IEC 60079-7)*
- EN 60079-10-1:2015, *Explosive atmospheres - Part 10-1: Classification of areas - Explosive gas atmospheres (IEC 60079-10-1:2015 + COR1:2015)*
- EN 60079-14, *Explosive atmospheres - Part 14: Electrical installations design, selection and erection (IEC 60079-14)*
- EN 60204-1:2006, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:2006)*
- EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*
- EN 60730-2-10, *Automatic electrical controls for household and similar use - Part 2-10: Particular requirements for motor-starting relays (IEC 60730-2-10)*
- EN 60947-3, *Low-voltage switchgear and controlgear - Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units (IEC 60947-3)*
- EN 60950-1, *Information technology equipment - Safety - Part 1: General requirements (IEC 60950-1)*
- EN ISO 1182, *Reaction to fire tests for products - Non-combustibility test (ISO 1182)*
- EN ISO 1825, *Rubber hoses and hose assemblies for aircraft ground fuelling and defuelling - Specification (ISO 1825)*
- EN ISO 12100:2010, *Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)*
- EN ISO 13849-1, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1)*
- EN ISO 16852, *Flame arresters - Performance requirements, test methods and limits for use (ISO 16852:2016)*

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

ISO 1813, *Belt drives — V-ribbed belts, joined V-belts and V-belts including wide section belts and hexagonal belts — Electrical conductivity of antistatic belts: Characteristics and methods of test*

ISO 11925-3, *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:

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

**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

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**3.3****column extension**

fabrication extending upwards from a metering pump/dispenser hydraulic housing

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**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

**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 apparatus

**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

[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: prEN 13617-2:2018, 3.1]

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

measures to avoid ignition of a surrounding explosive atmosphere

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

**3.14****metering pump/dispensers hydraulic housing**

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

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**prEN 13617-1:2018 (E)****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: prEN 13012:2018, 3.1]

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

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

[SOURCE: prEN 13012:2018, 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

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**3.20****shear valve****impact check valve**

normally open valve, activated by impact and heat, which closes to prevent flow from a pressure source and remains closed after activation

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**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 pump or dispenser or to provide another related function

**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 delivery hose assembly or 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:  $\text{ln l} \cdot \text{min}^{-1}$  or  $\text{m}^3 \cdot \text{h}^{-1}$ .

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

according to EN ISO 80079-36

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**prEN 13617-1:2018 (E)****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, 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 performed on each unit on completion of manufacture

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

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

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**3.42****cross ventilation**

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

**4 List of significant hazards**

Table 1 contains the significant hazards and hazardous situations, as far as they are dealt with in this European Standard, identified by a risk assessment significant for metering pumps, dispensers and remote pumping units used for the dispensing of liquid fuels, and which require action to eliminate or reduce risks.

A risk assessment should be carried out to determine whether the hazards identified at Table 1 exist and whether there are additional hazards not covered by this standard. It is the responsibility of the manufacturer, outside the scope of this standard, to identify such hazards and provide suitable protective measures.

Table 1 — List of significant hazards

Significant hazards according to EN ISO 12100:2010		Significant hazards, danger zones, hazardous situations or events, associated with the covered machinery	Safety requirements
No.	Type of hazard	—	Clauses of this standard
1	Mechanical hazards due to — Falling objects — High pressure — Rotating elements — Inadequate mechanical strength — Stability	Moving parts and ejected fuel Fluid in the hose, pipes etc. Drive belts and/or shafts Stability of the dispenser in normal use Vehicle movement	5.3.6 5.3.1.4, 5.3.1.5, 5.3.1.6, 5.3.3.2, 5.3.4, 5.3.5, 6.1.2, 6.1.3, 6.1.6 5.3.6.1, 5.3.6.2, 7.3 5.3.6.4, 6.1.7, 6.1.8 5.3.1.6, 6.1.5 5.3.4.7, 7.3
2	Electrical hazards — Electrostatic phenomena — Live parts — Parts which have become live under fault conditions	Charging of belts, hoses and cladding	5.3.3, 5.3.4.1, 5.3.4.3 5.3.2, 6.1.4, 6.1.9 5.3.2, 6.1.4
3	Thermal hazards — Explosion	Ignition of possible explosive atmosphere by electrical or non-electrical parts or electrical change	5.1, 5.2, 5.3
7	Material/substance hazards — Explosive  — Fluid  — Gas	Sparks or high temperature from electrical and non-electrical parts in combination with explosive atmospheres  Tightness of components, pipes, hoses  Tightness of components, pipes, hoses	5.1, 5.2, 5.3  5.3.3, 5.3.4  5.3.3, 5.3.4
8	Ergonomic hazards — Design, location or identification of control devices  — Human errors	Explosive atmosphere due to unexpected liquid flow  Errors of fitting	5.3.1.1, 5.3.1.2, 5.3.1.3, 5.3.2, 5.3.4.2, 7.3  7.3