Vedelgaasi seadmed ja tarvikud. Seadmed vedelgaasitanklatele. Osa 1: Tankurid

LPG equipment and accessories - Construction and performance of LPG equipment for automotive filling stations - Part 1: Dispensers

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 14678-1:2013 sisaldab Euroopa standardi EN 14678-1:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 14678-1:2013 consists of the English text of the European standard EN 14678-1:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.03.2013.	Date of Availability of the European standard is 20.03.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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LPG equipment and accessories - Construction and performance of LPG equipment for automotive filling stations - Part 1: Dispensers

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Flüssiggas-Geräte und Ausrüstungsteile - Bau- und Arbeitsweise von Flüssiggas-Geräten für Autogas-Tankstellen - Teil 1: Zapfsäulen

This European Standard was approved by CEN on 5 February 2013.

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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
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Contents

Page

Foreword

This document (EN 14678-1:2013) has been prepared by Technical Committee CEN/TC 286 “Liquefied petroleum gas equipment and accessories”, the secretariat of which is held by NSAI.

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 September 2013, and conflicting national standards shall be withdrawn at the latest by September 2013.

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 supersedes EN 14678-1:2006+A1:2009.

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.

Differences between this document and EN 14678-1:2006+A1:2009 include:

— The addition of test requirements to 5.7.1 and 5.8.1;

— The definition of unattended filling stations; and

— The addition of an environmental checklist.

EN 14678 consists of the following parts:

— EN 14678-1, LPG equipment and accessories — Construction and performance of LPG equipment for automotive filling stations — Part 1: Dispensers;

— EN 14678-2, LPG equipment and accessories — Construction and performance of LPG equipment for automotive filling stations — Part 2: Components other than dispensers and installation requirements;

— EN 14678-3, LPG equipment and accessories — Construction and performance of LPG equipment for automotive filling stations — Part 3: Refuelling installations at private and industrial premises.

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, 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.

Introduction

This document is a type C standard as stated in EN ISO 12100:2010. When provisions of this type C standard differ 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.

This European Standard calls for the use of substances and procedures that may be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Protection of the environment is a key political issue in Europe and elsewhere. Protection of the environment is taken in a very broad sense. What is meant is the total life cycle aspects of, e.g. a product on the environment, including expenditure of energy and during all phases from mining of raw materials, fabrication, packaging, distribution, use, scrapping, recycling of materials, etc.

NOTE Annex D indicates which clauses in this European Standard address environmental issues. Clauses addressing environmental issues are restricted to a general guidance. Limiting values can be specified in national laws.

It is recommended that companies using this European Standard develop an environmental management policy. For guidance see ISO 14000 series [15], [16] and [17].

It has been assumed in the drafting of this European Standard that the execution of its provisions is entrusted to appropriately qualified and experienced people.

All pressures are gauge unless otherwise specified.

The PED, Directive 97/23/EC [20], applies to any assembly with a component defined as category II or higher in this Directive:

— Article 1, 3.6 of the PED excludes equipment classified as no higher than category I under article 9 if it is covered by Directive 94/9/EC (ATEX).

— The category I limit is defined in Annex II Table 6 of the PED. It applies to piping for liquids whose vapour pressure at the maximum allowable temperature is greater than 0,5 bar (50 kPa) above DN 100 or, in the case of maximum allowable pressures greater than 10 bar (1 kPa), is above the product of DN and PS of 1 000.

— Because the maximum allowable pressure (PS) in this document is 25 bar (2 500 kPa) and the DN of the intended piping is less than 40, the product of DN and PS of 1 000 in Table 6 of the PED is not reached.

— The category I limit for vessels is defined in Annex II Table 1 of the PED. It also applies to vessels for liquids whose vapour pressure at the maximum allowable temperature is greater than 0,5 bar (50 kPa) above volumes (V) of 1 l up to a pressure of 200 bar or, in the case of the product of V and PS of 50.

— Because the maximum allowable pressure (PS) in this document is 25 bar (2 500 kPa) and if the V of the intended vessel is less than 2 l, the product of V and PS of 50 in Table 1 of the PED is not reached.

1 Scope

This European Standard covers the requirements for the design, manufacture, testing and marking of LPG dispensers for automotive LPG filling stations with a maximum allowable pressure of 25 bar (2 500 kPa), where the piping has a maximum DN 40 and any vessel fitted has a volume less than 2 l.

This European Standard covers the requirements for the LPG parts in multi-fuel dispensers.

This European Standard does not cover dispensers with integral pumps.

This European Standard may also be used for piping greater than DN 40 and/or vessels greater than 2 l, but then the PED [20] should also be consulted.

This European Standard does not include any requirement for metering performance.

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 549, *Rubber materials for seals and diaphragms for gas appliances and gas equipment*

EN 837-1, *Pressure gauges — Part 1: Bourdon tube pressure gauges — Dimensions, metrology, requirements and testing*

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

EN 1762, *Rubber hoses and hose assemblies for liquefied petroleum gas, LPG (liquid or gaseous phase), and natural gas up to 25 bar (2,5 MPa) — Specification*

EN 1775, *Gas supply — Gas pipework for buildings — Maximum operating pressure less than or equal to 5 bar — Functional recommendations*

EN 13463-1, *Non-electrical equipment for use in potentially explosive atmospheres — Part 1: Basic method and requirements*

EN 13480-1, *Metallic industrial piping — Part 1: General*

EN 13480-2, *Metallic industrial piping — Part 2: Materials*

EN 13480-3, *Metallic industrial piping — Part 3: Design and calculation*

EN 13480-4, *Metallic industrial piping — Part 4: Fabrication and installation*

EN 13480-5, *Metallic industrial piping — Part 5: Inspection and testing*

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

EN 13760, *Automotive LPG filling system for light and heavy duty vehicles — Nozzle, test requirements and dimensions*

EN 15001-1, *Gas Infrastructure — Gas installation pipework with an operating pressure greater than 0,5 bar for industrial installations and greater than 5 bar for industrial and non-industrial installations — Part 1: Detailed functional requirements for design, materials*

EN 50525-2-21, *Electric cables — Low voltage energy cables of rated voltages up to and including 450/750 V (U_0/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 (U_0/U) — Part 2-51: Cables for general applications — Oil resistant control cables with thermoplastic PVC insulation*

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

EN 60079-7:2007, *Explosive atmospheres — Part 7: Equipment protection by increased safety "e" (IEC 60079-7:2006)*

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

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

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

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, mod.)*

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)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
liquefied petroleum gas
LPG
low pressure gas composed of one or more light hydrocarbons which are assigned to UN 1011, UN 1075, UN 1965, UN 1969 or UN 1978 only and which consists mainly of propane, propene, butane, butane isomers, butene with traces of other hydrocarbon gases

Note 1 to entry: For the specification of automotive LPG see EN 589.

3.2
maximum allowable pressure
maximum pressure for which the equipment is designed