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LPG equipment and accessories - Filling procedures for LPG cylinders

Flüssiggas-Geräte und Ausrüstungsteile - Füllverfahren für Flaschen für Flüssiggas (LPG)

Équipements pour gaz de pétrole liquéfiés et leurs accessoires - Procédures de remplissage des bouteilles de GPL

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

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ICS 23.020.35

Supersedes EN 13952:2003

English Version

LPG equipment and accessories - Filling operations for LPG cylinders

Équipements pour gaz de pétrole liquéfiés et leurs
accessoires - Opérations de remplissage des bouteilles
de GPL

Flüssiggas-Geräte und Ausrüstungsteile - Füllverfahren
für Flaschen für Flüssiggas (LPG)

This European Standard was approved by CEN on 10 April 2017.

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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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 13952:2017) has been prepared by Technical Committee CEN/TC 286 “LPG 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of an identical text or by endorsement, at the latest by December 2017, and conflicting national standards shall be withdrawn at the latest by December 2017.

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 13952:2003.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

The changes to this document include:

- definitions;
- general alignment with EN 1439;
- general updating and modifications to Clause 4 with special emphasis on training requirements and competence;

This European Standard has been submitted for reference into the RID and/or in the technical annexes of the ADR.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

EN 13952:2017 (E)**Introduction**

This document refers to the handling of hazardous substances and procedures that may be injurious to health if adequate precautions are not taken.

This document refers only to operational requirements and does not absolve the operator from legal obligations relating to health and safety at any stage.

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

Protection of the environment is a key political issue in Europe and elsewhere, for CEN/TC 286 this is covered in CEN/TS 16765 [9] and this Technical Specification should be read in conjunction with this standard. This Technical Specification provides guidance on the environmental aspects to be considered regarding equipment and accessories produced for the LPG industry and the following is addressed:

- a) design;
- b) manufacture;
- c) packaging;
- d) use and operation; and
- e) disposal.

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1 Scope

This European Standard specifies the requirements for the operation of a cylinder filling plant to ensure that filling of transportable refillable LPG cylinders is carried out in a controlled and safe manner.

This document is applicable to the filling of cylinders complying with RID/ADR [10][11] (including pi marked cylinders) and also to existing non RID/ADR cylinder populations.

This document is applicable to the following:

- welded and brazed steel LPG cylinders with a specified minimum wall thickness (see EN 1442 [1] and EN 12807 [2] or an equivalent standard);
- welded steel LPG cylinders without specified minimum wall thickness (see EN 14140 [4] or an equivalent standard);
- welded aluminium LPG cylinders (see EN 13110 [3] or an equivalent standard);
- composite LPG cylinders (see EN 14427 [5] or an equivalent standard); and
- over-moulded cylinders (OMC).

This document does not cover the requirements for filling LPG cylinders that are designed and equipped for filling by the user.

2 Normative references

The following documents, in whole or in part, are 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 1439:2008, *LPG equipment and accessories - Procedure for checking LPG cylinders before, during and after filling*

EN 16119, *LPG equipment and accessories - Sealing caps and plugs for LPG cylinder and pressure vessel valves - Specification and testing*

EN ISO 14245, *Gas cylinders - Specifications and testing of LPG cylinder valves - Self-closing (ISO 14245:2006)*

EN ISO 15995, *Gas cylinders - Specifications and testing of LPG cylinder valves - Manually operated (ISO 15995:2006)*

ISO 9162, *Petroleum products — Fuels (class F) — Liquefied petroleum gases — Specifications*

3 Terms and definitions

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

3.1

liquefied petroleum gas

LPG

low pressure liquefied 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

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- 3.2**
filling plant
facility where checking and filling of LPG cylinders takes place
- 3.3**
over-moulded cylinder
OMC
pressure receptacle intended for the carriage of LPG of a water capacity not exceeding 13 litres made of a coated steel inner cylinder with an over-moulded protective case made from cellular plastic, which is non removable and bonded to the outer surface of the steel cylinder wall
- 3.4**
operator
person in charge of an LPG filling plant
- 3.5**
competent person
person which by combination of appropriate qualification, training, experience and resources, is able to make objective judgements on the subject
- 3.6**
cylinder
transportable pressure receptacle with a water capacity not exceeding 150 l

4 General**4.1 Organization**

- 4.1.1** LPG filling plants shall be run exclusively by an operator who shall be a competent person.
- 4.1.2** The operator shall be responsible for providing a documented scheme that includes an organization chart and describes the work and emergency procedures, responsibilities and other minimum requirements related to the filling process.
- 4.1.3** The documented scheme shall be made available to all operatives of the filling plant.
- 4.1.4** Filling plant operatives shall be competent persons and shall have a job description listing responsibilities and tasks. The job description shall also describe how these tasks interact within the organization.
- 4.1.5** Tasks shall be clearly described in written work instructions. The operator shall ensure that these instructions are updated when required (e.g. when applicable regulations change or a relevant standard is updated).
- 4.1.6** The operator shall ensure that the work instructions are being followed and that corrective actions are taken when they are not followed.

NOTE Safety recommendations are described in Annex A.

4.2 Training

4.2.1 Filling plant operatives shall receive training related to the work instructions for the tasks they perform. The training programme shall cover, where appropriate:

- product knowledge and hazards;
- emergency procedures and drills;
- the requirements covered in EN 1439;
- rejection limits for physical and material defects of cylinders;
- filling equipment checking and maintenance;
- correct operation of the filling equipment;
- manual handling;
- correct use of PPE; and
- any other tasks described in the work instructions.

NOTE Safety recommendations are described in Annex A.

4.2.2 The training needs shall be assessed at regular intervals. Training shall be provided as appropriate.

4.2.3 Records of filling plant operatives training shall be held and maintained by the operator for at least the duration of their employment or longer if required by local regulations.

4.3 LPG quality

The operator shall ensure that the LPG meets the appropriate specifications/standards in force in the country where the filled cylinders are to be marketed and is compatible with the cylinder design.

LPG to be filled in cylinders granted a 15 year period for periodic inspection shall be of high quality; this is deemed to be fulfilled if the LPG to be filled is in compliance with the limitations on corrosiveness as specified in ISO 9162.

5 Filling equipment

5.1 Cylinder filling equipment shall be suitable for use in hazardous areas.

NOTE 1 See EN 60079-0 [6], EN 60079-10 [7] and EN 60079-14 [8].

An additional hazard for cylinders made of materials of low electrical conductivity is ignition due to electrostatic discharge, particularly at the cylinder filling station.

To avoid harmful static charging of such cylinders, the operator shall evaluate the need for special filling procedures and earthing, based on manufacturer/owner information, such as

- using small amounts of water applied to the surface of the object; and/or
- air de-ionizer;