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Oprema in pribor za utekočinjeni naftni plin (UNP) - Oprema za nadzemne in podzemne posode za utekočinjeni naftni plin (UNP)

LPG equipment and accessories - Equipping of overground and underground LPG vessels

iTeh STANDARD PREVIEW

Flüssiggas-Geräte und Ausrüstungsteile - Ausrüstung von oberirdisch und unterirdisch aufgestellten Behältern für Flüssiggas (LPG)

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Équipements et accessoires GPL - Équipement des réservoirs sous pression GPL aériens et enterrés

Ta slovenski standard je istoveten z: EN 14570:2014

ICS:

23.020.10	Nepremične posode in rezervoarji	Stationary containers and tanks
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EUROPEAN STANDARD

EN 14570

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LPG equipment and accessories - Equipping of overground and underground LPG vessels

Équipements et accessoires GPL - Équipement des réservoirs sous pression GPL aériens et enterrés

Flüssiggas-Geräte und Ausrüstungsteile - Ausrüstung von oberirdisch und unterirdisch aufgestellten Behältern für Flüssiggas (LPG)

This European Standard was approved by CEN on 4 February 2014.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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EN 14570:2014 (E)**Foreword**

This document (EN 14570:2014) 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of an identical text or by endorsement, at the latest by October 2014, and conflicting national standards shall be withdrawn at the latest by October 2014.

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 14570:2005.

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 Directive(s), see informative Annex ZA, which is an integral part of this document.

The main modifications in comparison to EN 14570:2005 are:

- update of definitions taking into account the terminology document prepared by TC 286 WG11 (tanks replaced by pressure vessels ,etc..);
- amendment A1 September 2006 included in new standard : paragraph 5.5.1 modified by addition of "or" at the end of the a) and b) paragraphs.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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 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.

It is recommended that companies using this European Standard develop an environmental management policy. For guidance see ISO 14000 series.

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

All pressures are gauge pressure.

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EN 14570:2014 (E)**1 Scope**

This European Standard specifies requirements for the equipping of LPG pressure vessels, overground and underground, with a volume not greater than 13 m³ manufactured in accordance with EN 12542 or equivalent and have been hydraulically tested.

The equipment covered by this European Standard is directly mounted onto the pressure vessel connections.

This European Standard excludes the equipping of depot storage pressure vessels and refrigerated storage vessels.

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 751-2:1996, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 2: Non-hardening jointing compounds*

EN 751-3:1996, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 3: Unsintered PTFE tapes*

EN 12542:2010, *LPG equipment and accessories - Static welded steel cylindrical tanks, serially produced for the storage of Liquefied Petroleum Gas (LPG) having a volume not greater than 13 m³ - Design and manufacture*

EN 13175:2003+A2:2007, *LPG equipment and accessories - Specification and testing for Liquefied Petroleum Gas (LPG) tank valves and fittings*

EN 13799:2012, *LPG equipment and accessories - Contents gauges for Liquefied Petroleum Gas (LPG) pressure vessels*

EN 14071:2004, *Pressure relief valves for LPG tanks - Ancillary equipment*

EN 14129:2004, *Pressure relief valves for LPG tanks*

EN ISO 10497:2010, *Testing of valves — Fire type-testing requirements (ISO 10497:2010)*

EN ISO 15995:2010, *Gas cylinders — Specifications and testing of LPG cylinder valves — Manually operated (ISO 15995:2006)*

3 Terms, definitions and abbreviations**3.1 Terms and definitions**

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

3.1.1**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

3.1.2**pressure vessel**

assembly of the pressure envelope (including the openings and their closures) and non-pressure-retaining parts attached directly to it

3.1.3**underground pressure vessel**

pressure vessel below the surrounding ground level and completely covered

3.1.4**overground pressure vessel**

pressure vessel above the surrounding ground level and not covered

3.1.5**fixed liquid level gauge**

control device, such as a dip tube in combination with a vent valve to indicate when a predetermined liquid level has been reached or surpassed

3.1.6**depot storage vessel**

pressure vessel at an installation where LPG is stored before being transferred into road/rail tankers and/or LPG cylinders for distribution

3.1.7**remotely operated**

operated from a point at least 3 m from the vessel

3.1.8**drainage**

process of removal of residual vessel content

3.1.9**liquid removal**

withdrawal of LPG from the vessel for a purpose different from the normal use of the LPG (e.g. removal of LPG for decommissioning, maintenance or in case of an emergency)

3.1.10**vapour service**

delivery of LPG in its vapour phase

Note 1 to entry: Vapour service is also referred to as vapour off-take.

3.1.11**liquid service**

delivery of LPG in its liquid phase

Note 1 to entry: Liquid service is also referred to as liquid off-take.

3.1.12**connection**

boss, flange, pad provided at an opening for the purpose of attaching equipment piping or pipe fittings

3.1.13**fail-safe shut-off valve**

valve that automatically returns to its safe position in case of actuating power failure or fire engulfment

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EN 14570:2014 (E)**3.1.14****shut-off valve**

valve to provide a leak-tight seal which is operated either manually, remotely or is self-closing

3.1.15**hydrostatic relief valve**

self-closing valve which automatically, without the assistance of any energy other than that of the fluid concerned, discharges fluid at a predetermined pressure

3.1.16**filler valve**

valve system for liquid fill service

3.1.17**overflow protection device****OPD**

device designed to automatically reduce the filling rate to a minimal flow when the fill level reaches a predetermined amount

Note 1 to entry: In automotive applications, the predetermined amount is 80 % of the water capacity.

3.1.18**mounded vessel**

pressure vessel above or partially underground of which the part above the ground is completely covered

3.1.19**semi-mounded vessel**

pressure vessel above or partially underground of which the part above the ground is partially covered

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3.1.20**pressure relief valve****PRV**

self-closing valve which automatically, without the assistance of any energy other than that of the vapour concerned, discharges vapour at a predetermined pressure, and operates with a pop action

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Note 1 to entry: This is known as a "safety valve" in ADR.

3.1.21**non-return valve**

valve designed to close automatically to restrict reverse flow

3.1.22**excess flow valve**

valve designed to close automatically, with a small residual flow, when the fluid flow passing through it exceeds a predetermined value, and to re-open when the pressure differential across the valve has been restored below a certain value

3.1.23**occasional liquid withdrawal valve**

normally blanked valve, used for occasional liquid withdrawal which is designed to be opened by the engagement of a special connector valve

3.1.24**plug**

component which seals a female connection

3.1.25**cap**

component which seals a male connection

3.2 Abbreviations

PRV	Pressure Relief Valve
PS	Maximum allowable pressure
PED	Pressure Equipment Directive (Directive 97/23/EC) [1]
PTFE	Polytetrafluoroethylene

4 Pressure vessel equipment**4.1 General**

Pressure vessel connections, that are not in use or piped up during normal operation, shall be plugged or capped or blanked off (blind flange). A valve may be fitted between the connection and the plug or blind flange.

Except for PRVs and level gauges, all operating valves shall be protected from unauthorised operations. This can be achieved by enclosure within a lockable valve cover, secure compound or other suitable means.

In the case of underground/mounded pressure vessels, when valves are below the ground/backfill level, the valves shall be enclosed in a suitable access chamber.

4.2 Selection of pressure vessel equipment

The selection of pressure vessel equipment is related to the size of the pressure vessel and/or the complexity of the operation, and shall match the level of safety required.

Pressure vessel equipment shall be rated for the maximum allowable pressure (PS) of the pressure vessel.

Pressure vessel equipment shall be selected to meet the design conditions of the pressure vessel and shall be in accordance with EN 13175 (or EN ISO 15995 for manual shut-off valves up to DN 25), EN 13799, EN 14071 and EN 14129, as appropriate.

Normal service connections, where the passageway diameter into the pressure vessel is greater than 1,5 mm and up to 3 mm for liquid and 8 mm for vapour, shall be equipped with a shut-off valve.

Normal service connections, where the passageway diameter into the pressure vessel is greater than 3 mm for liquid and 8 mm for vapour, shall be equipped with at least one of the following:

- a) a remotely operated fail-safe shut-off valve;
- b) an excess flow valve plus manual shut-off valve;
- c) a non-return valve plus manual shut-off valve.

Where two valves are fitted, they shall be located as close as practicable to each other.

These requirements shall not apply to:

- 1) pressure relief valves (PRV's);
- 2) filler connections which include a double non-return valve;