SLOVENSKI STANDARD
oSIST prEN 14570:2022

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

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

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

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

Ta slovenski standard je istoveten z: **prEN 14570**

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23.020.10	Nepremične posode in rezervoarji	Stationary containers and tanks

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English Version

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 draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 286.

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.

This draft European Standard was established by CEN 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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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.

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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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European foreword

This document (prEN 14570:2022) has been prepared by Technical Committee CEN/TC 286 “Liquefied petroleum gas equipment and accessories”, the secretariat of which is held by NSAI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14570:2014.

In comparison with the previous edition, the following technical modifications have been made:

— Update to align with Directive 2014/68/EU;

— Update to 4.1, 4.2, 4.4;

— Introduction of 5.16 Cathodic protection; and

— Update to 7.2.

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

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document.

Introduction

This document calls for the use of substances and procedures that may be injurious to health and/or the environment if adequate precautions are not taken. It refers only to technical suitability: it does not absolve the user from their legal obligations at any stage.

It is recommended that manufacturers develop an environmental management policy. For guidance, see the EN ISO 14000 series [1], [2] and [3].

Protection of the environment is a key political issue in Europe and elsewhere. For TC 286 this is covered in CEN/TS 16765 [4] LPG equipment and accessories - Environmental considerations for CEN/TC 286 standards, and this Technical Specification should be read in conjunction with this standard. The 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.

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

All pressures are gauge pressures unless otherwise stated.

1 Scope

This document specifies requirements for the equipping (fitting out) of LPG pressure vessels with fittings and accessories.

It is applicable to overground and underground LPG pressure vessels, with a volume not greater than 13 m^3 manufactured in accordance with EN 12542:2020 or equivalent and which have been hydraulically tested.

The fittings and accessories covered by this document are directly mounted onto the pressure vessel connections.

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

It does not cover spare parts which have to be selected according to equipment design and manufacturing standards.

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 549:2019, *Rubber materials for seals and diaphragms for gas appliances and gas equipment*

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 12068:1998, *Cathodic protection - External organic coatings for the corrosion protection of burried or immersed steel pipelines used in conjunction with cathodic protection - Tapes and shrinkable materials*

EN 12542:2020, *LPG equipment and accessories - Static welded steel cylindrical pressure vessels, serially produced for the storage of Liquefied Petroleum Gas (LPG) having a volume not greater than 13 m^3 - Design and manufacture*

EN 13175:2019+A1:2020, *LPG equipment and accessories - Specification and testing for Liquefied Petroleum Gas (LPG) tank valves and fittings*

EN 13636:2004, *Cathodic protection of buried metallic tanks and related piping*

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

EN 14071:2015+A1:2019, *Pressure relief valves for LPG tanks - Ancillary equipment*

EN 14129:2014, *LPG Equipment and accessories - Pressure relief valves for LPG pressure vessels*

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

ISO 4126-7:2013,[1] *Safety devices for protection against excessive pressure - Part 7: Common data (ISO 4126-7:2013)*

[1] Document impacted by A1:2016

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions 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 http://www.electropedia.org/

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

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
overfill 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

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

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 2014/68/EU [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 cap or blind flange.

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

In the case of underground/mounded pressure vessels, when valves are below the ground/backfill level, the valves shall be enclosed in for example a lockable access chamber or a secure compound.