International Standard

ISO 10239

Small craft — Liquefied petroleum gas (LPG) systems

Petits navires — Installations alimentées en gaz de pétrole liquéfiés (GPL)

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Contents

Page

Foreword ... **iv**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **2**

4 General provisions ... **4**

5 Pressure regulating device ... **5**

6 LPG supply line ... **6**
6.1 General ... 6
6.2 Piping ... 6
6.3 Hose assemblies ... 7
6.4 Materials ... 8
6.5 Installation ... 8
6.6 Shut-off valves ... 9

7 Appliances ... **10**

8 Ducts and flues for air intake and combustion product discharge ... **11**

9 Location and installation of LPG cylinders ... **12**
9.1 General ... 12
9.2 Cylinder lockers ... 13
9.3 Cylinder housings ... 13

10 Ventilation ... **14**

11 LPG installation tightness test ... **14**

12 LPG system commissioning label ... **14**

13 Ignition protection from electrical devices ... **15**

14 Owner's manual ... **15**

Annex A (informative) **Design guidelines for pressure drop due to hose/pipe resistance** ... **16**

Annex B (normative) **Ventilation** ... **17**

Annex C (normative) **Instructions to be included with the owner's manual** ... **18**

Annex D (normative) **Cooking appliances with integral LPG cartridges with a capacity of 225 g or less** ... **20**

Annex E (informative) **Examples of cylinder lockers and cylinder housings and their locations** ... **21**

Bibliography ... **24**

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 188, *Small craft*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 464, *Small Craft*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 10239:2014), which has been technically revised.

The main changes are as follows:

— the Scope has been clarified;

— new definitions for "room-sealed appliance" and "open-flued appliance" have been added;

— new definitions for "cylinder locker" and "cylinder housing" have been added, including some examples in a new Annex E;

— Clause 9 on the location and installation of LPG cylinders has been revised;

— a new Clause 12 has been added with details of a commissioning label;

— the location of pressure regulating devices has been clarified;

— Annex C has been revised to update the instructions to be included with the owner's manual;

— a new Annex E has been added to provide examples of cylinder lockers and cylinder housings.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Small craft — Liquefied petroleum gas (LPG) systems

1 Scope

This document specifies requirements for the installation of permanently installed liquefied petroleum gas (LPG) systems and LPG-burning appliances on small craft.

This document is applicable to portable cooking appliances with internal LPG cartridges, with a capacity of 225 g or less (see Annex D).

This document is applicable to the storage of all LPG cylinders.

NOTE 1 National regulations can apply to the technical requirements of LPG cylinders.

This document does not contain procedures for commissioning new LPG installations or system maintenance or upgrades.

This document does not apply to LPG-fuelled propulsion engines or LPG-driven generators.

NOTE 2 National codes and procedures appropriate to the country concerned can be available.

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.

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

ISO 8434-1:2018, *Metallic tube connections for fluid power and general use — Part 1: 24° cone connectors*

ISO 8666, *Small craft — Principal data*

ISO 8846, *Small craft — Electrical devices — Protection against ignition of surrounding flammable gases*

ISO 9094, *Small craft — Fire protection*

ISO 11812, *Small craft — Watertight or quick-draining recesses and cockpits*

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

EN 1254-2, *Copper and copper alloys — Plumbing fittings — Part 2: Compression fittings for use with copper tubes*

EN 1949, *Specification for the installation of LPG systems for habitation purposes in leisure accommodation vehicles and accommodation purposes in other vehicles*

EN 15266, *Stainless steel pliable corrugated tubing kits in buildings for gas with an operating pressure up to 0,5 bar*

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EN 16129:2013, *Pressure regulators, automatic change-over devices, having a maximum regulated pressure of 4 bar, with a maximum capacity of 150 kg/h, associated safety devices and adaptors for butane, propane, and their mixtures*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
craft
small craft
recreational boat, and other watercraft using similar equipment, of up to 24 m length of hull (L_H)

Note 1 to entry: The measurement methodology for the length of hull (L_H) is defined in ISO 8666.

[SOURCE: ISO 8666:2020, 3.15, modified — Note 1 to entry added.]

3.2
liquefied petroleum gas
LPG
mixture of light hydrocarbons, gaseous under conditions of normal temperature and pressure, and maintained in the liquid state by increase of pressure or lowering of temperature

Note 1 to entry: The principal components are propane, propene, butanes or butenes.

Note 2 to entry: LPG can be obtained as commercial butane, commercial propane or a mixture of the two.

[SOURCE: EN 624:2011, 3.1.7, modified — Note 2 to entry added.]

3.3
permanently installed
securely fastened so that tools are required for removal

[SOURCE: ISO 10088:2022, 3.3]

3.4
cylinder housing
ventilated enclosure with or without a door which is vapour tight to the interior of the *craft* (3.1), intended solely for storage of one or more *liquefied petroleum gas* (3.2) cylinders, *pressure regulating devices* (3.12) and safety devices, and located so that leakage flows overboard unimpeded

3.5
cylinder locker
enclosure which is vapour-tight to at least the height of the cylinder valve and other high-pressure components and is completely vapour tight to the interior of the *craft* (3.1), intended solely for storage of one or more *liquefied petroleum gas* (3.2) cylinders, *pressure regulating devices* (3.12) and safety devices, and fitted with a drain so that leakage flows overboard unimpeded

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