



SLOVENSKI STANDARD

SIST EN 13109:2003

01-december-2003

Rezervoarji za utekočinjeni naftni plin (UNP) - Prenehanje uporabe

LPG tanks - Disposal

Flüssiggas - Druckbehälter - Entsorgung

Réservoirs de GPL - Mise au rebut

Ta slovenski standard je istoveten z: EN 13109:2002

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ICS:

23.020.10	Nepremične posode in rezervoarji	Stationary containers and tanks
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13109

November 2002

ICS 23.020.30

English version

LPG tanks - Disposal

Réservoirs de GPL - Mise au rebut

Flüssiggas - Druckbehälter - Entsorgung

This European Standard was approved by CEN on 11 November 2001.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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Contents

	page
Foreword.....	3
Introduction	4
1 Scope	4
2 Terms and definitions.....	4
3 Gas freeing	4
4 Scrapping of tanks.....	5
5 Disposal of tanks for uses other than for LPG storage	5
Annex A (informative) Methods of gas freeing.....	6
A.1 Preparation for gas freeing	6
A.2 Methods of gas freeing.....	6
A.2.1 By water	6
A.2.2 By inert gas.....	6
A.2.3 By steam	6
A.2.4 By vacuum pump or compressor.....	7
Annex B (informative) High level venting of LPG tanks	8
Annex C (informative) A—deviations	9

[SIST EN 13109:2003](https://standards.iteh.ai/catalog/standards/sist/d1b26b21-6429-47ac-b3a0-f09d6aabc3/sist-en-13109-2003)
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Foreword

This documents (EN 13109:2002) 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 May 2003, and conflicting national standards shall be withdrawn at the latest by May 2003.

Users of this EN, prepared in the field of application of Article 118A of the EC Treaty, should be aware that standards have no formal legal relationship with Directives, which may have been made under Article 118A of the Treaty. In addition, national legislation in the Member states may contain more stringent requirements than the minimum requirements of a Directive based on Article 118A. Information on the relationship between the national legislation implementing Directives based on Article 118A and this EN may be given in a national foreword of the national standard implementing this EN.

Annexes A and B are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

This European Standard specifies methods for the safe disposal of LPG tanks.

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.

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

1 Scope

This European standard specifies methods for the safe disposal of tanks above 150 litre water capacity.

2 Terms and definitions

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

2.1

gas free

LPG concentration in air less than 20% of the lower flammable limit

2.2

disposal

gas freeing and discarding LPG tanks either in the form of scrap metal or for use in non-pressure applications

2.3

competent person

person who, by qualification, training, experience and resources, is able to make objective judgements related to the safe disposal of LPG tanks

3 Gas freeing

3.1 Residual liquid LPG shall be safely removed from tanks by competent persons

The LPG shall be either:

- returned to an in service LPG tank, or
- flared, or
- vented in a controlled and safe manner (e.g. by high level venting if permitted by local regulations, see annex B), or
- a combination of any of these options.

3.2 Tanks shall be made gas-free by a method chosen and controlled by a competent person.

NOTE Annex A gives examples of such methods.

3.3 Gas free tanks shall be labelled or have a “gas free” certificate.

WARNING If tanks are to be entered, a valid safe entry certificate will be required.

3.4 Pressure relief valve assemblies and LPG fill couplings shall be removed.

4 Scrapping of tanks

4.1 Tanks shall be checked to ensure that they are gas free.

WARNING Tanks are not safe for cutting or hot work unless they have been physically checked, e.g. by explosimeter and a valid hot work permit is available.

4.2 Tanks shall be scrapped by either:

- crushing by mechanical means, or
- cutting each tank into 2 or more irregularly shaped pieces.

4.3 After the above procedure, tanks shall be considered as scrap material. Scrap material shall be passed only to an authorised scrapping agent who is liable for the effective disposal of the material. The scrapping agent shall be given details of any tank coatings.

4.4 Underground tanks shall be filled with inert materials, if left in place.

5 Disposal of tanks for uses other than for LPG storage

5.1 The use of tanks for non-pressure applications is not excluded. Adequate precautions shall be taken with respect to the nature and use of the product stored.

5.2 Tanks shall be checked to ensure that they are gas free.

5.3 Nameplates shall be removed or permanently defaced.

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Annex A (informative)

Methods of gas freeing

A.1 Preparation for gas freeing

In each of the methods described below, tanks should be nominally free of liquid LPG before gas freeing.

Once liquid free, tanks should be depressurised e.g. piping LPG vapour from a suitable tank connection to a safely located flare burner, which should be fitted with a permanent pilot flame.

The internal tank pressure should be reduced to a suitable level to enable one of the following methods to be used to gas free the tank.

A.2 Methods of gas freeing

A.2.1 By water

Care should be taken to ensure that the tank and its supports are capable of safely supporting the extra weight of water.

Water is progressively introduced and LPG vapour expelled via suitable tank connections, selected so that as far as possible no vapour space is left in the tank when the procedure is completed, i.e. when the tank is full of water.

The vapour shall be piped to a safe location or a flare.

Once the water has been drained, the tank should be certified as being gas free and suitably labelled.

WARNING Hydrates may be formed in the tank. Hydrates will release LPG vapour when they melt.

A.2.2 By inert gas

A suitable inert gas, e.g. nitrogen or carbon dioxide, is used to displace and dilute the LPG vapour to a gas free level. Care should be taken to avoid:

- over pressurisation of the tank;
- hazards associated with asphyxiant inert gases;
- electrostatic hazards;
- hazards associated with low temperatures e.g. if the inert gas is generated from a liquid phase.

When the internal pressure reduction as described in A.1 is approached, the inert gas can be introduced via a tank connection. The connections should be chosen considering the relative properties of LPG and the inert gas. The exhaust mixture should be sent to a flare with a pilot burner.

When a non-flammable mixture reaches the flare burner, the inert gas should continue being introduced and vented until a gas free condition is reached. Tank orifices should be plugged.

The tank should be certified as being gas free and suitably labelled.

A.2.3 By steam

The procedure is similar to that described in A.2.2. The use of steam requires the following additional precautions:

- the comparatively high temperatures should be taken into account, as this may cause tank expansion. Care should be exercised to ensure this expansion does not cause instability of tank supports;
- any oily residues in the tank will be made more volatile. Care should be exercised when confirming that the tank is gas free;
- oily residues should be disposed of properly.

A positive pressure should be maintained throughout the procedure to avoid air being introduced into the tank leading to the formation of flammable mixtures. Care should be taken to avoid rapid condensation of steam which could cause negative internal pressures.

A.2.4 By vacuum pump or compressor

It should be established that the tank is rated for the negative pressure to be generated.

Vapour is removed from the tank through a vacuum pump/compressor and discharged through a safely located flare fitted with a permanent pilot flame, or to a safe location.

Following evacuation of the LPG vapour the vacuum should be broken and the tank should be certified as being gas free and suitably labelled.

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