

SLOVENSKI STANDARD

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Nadomešča:

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SIST EN 12820:2002

Oprema in pribor za utekočinjeni naftni plin (UNP) - Pregledi in periodični preskusi rezervoarjev za utekočinjeni naftni plin (UNP) z notranjo prostornino nad 13 m³

LPG equipment and accessories - Inspection and requalification of LPG tanks greater than 13 m³

iTeh STANDARD PREVIEW

Flüssiggas-Geräte und -Ausrüstungsteile - Überprüfung und erneute Qualifizierung von Behältern für Flüssiggas (LPG) mit einem Fassungsraum größer als 13 m³

[SIST EN 12819:2010](https://standards.iteh.ai/catalog/standards/sist/0dc4f72-5852-441a-9582-d2923521803a/sist-en-12819-2010)

Équipements et accessoires GPL - Inspection et requalification des réservoirs GPL d'un volume supérieur à 13 m³ pour gaz de pétrole liquéfiés (GPL)

Ta slovenski standard je istoveten z: EN 12819:2009

ICS:

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

EN 12819

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English Version

**LPG equipment and accessories - Inspection and requalification
of LPG tanks greater than 13 m³**

Équipements et accessoires GPL - Inspection et
requalification des réservoirs GPL d'un volume supérieur à
13 m³ pour gaz de pétrole liquéfiés (GPL)

Flüssiggas-Geräte und -Ausrüstungsteile - Überprüfung
und erneute Qualifizierung von Behältern für Flüssiggas
(LPG) größer als 13 m³

This European Standard was approved by CEN on 7 November 2009.

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 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 Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 12819:2009) 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 supersedes EN 12819:2002 and EN 12820:2002.

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 June 2010, and conflicting national standards shall be withdrawn at the latest by June 2010.

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.

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 that 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.

The main modifications concern the following:

- merging of two European Standards: EN 12819:2002 and EN 12820:2002;
- improvement of Annex C which becomes normative;
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- a new clause: normative references.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

Periodic and routine inspection and requalification regimes for LPG tanks greater than 13 m³ have developed in various countries in different ways that range from defined to variable inspection periods with requalification regimes achieved by various methods. This European Standard for periodic and routine inspection and requalification is based on European countries' legislation and codes of practice and industries' codes of practice. In addition, use of LPG in different applications has encouraged the industry to approach the requirements for routine and periodic inspection and requalification in different ways for each application.

This European Standard calls for the use of substances and procedures that can 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.

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1 Scope

This European Standard specifies requirements for:

- a) routine inspection, periodic inspection and requalification of fixed LPG storage tanks of sizes greater than 13 m³, and associated fittings;
- b) marking tanks and/or keeping records, as appropriate, as a result of routine inspection, periodic inspection and requalification.

This European Standard excludes refrigerated storage.

2 Normative references

The following referenced documents are indispensable for the application 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 1330-9, *Non-destructive testing — Terminology — Part 9: Terms used in acoustic emission testing*

EN 13477-1, *Non-destructive testing — Acoustic emission — Equipment characterisation — Part 1: Equipment description*

EN 13447-2, *Non-destructive testing — Acoustic emission — Equipment characterisation — Part 2: Verification of operating characteristic*

EN 13554, *Non-destructive testing — Acoustic emission — General principles*

EN 14584, *Non-destructive testing — Acoustic emission — Examination of metallic pressure equipment during proof testing — Planar location of AE sources*

3 Terms and definitions

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

3.1

periodic inspection

external inspection of the visible parts of a tank and its fittings

3.2

routine inspection

external inspection of the visible parts of a tank and its fittings, carried out more frequently than periodic inspections

3.3

requalification

inspection/test carried out at intervals, in order to confirm that a tank is fit for a further period of service

3.4

competent body

person or corporate body, defined by a national competent authority, that, by appropriate qualification, training, experience, and resources, is able to make objective judgements related to inspection and testing of pressure equipment in LPG service

3.5**competent person**

person who, by qualification, training, experience, and resources, is able to make objective judgements related to inspection and testing of pressure equipment in LPG service

3.6**national competent authority**

organization, recognized or appointed by a member state, that oversees safe operation of LPG pressure equipment

3.7**written scheme**

document, prepared by a competent body, containing inspection information

3.8**commissioning**

preparation for safe service

3.9**decommissioning**

removing from service and safe preparation for inspection/test

3.10**Liquefied Petroleum Gas****LPG**

mixture of predominantly butane or propane with traces of other hydrocarbon gases classified in accordance with UN number 1965, hydrocarbon gases mixture, liquefied, NOS or UN number 1075, petroleum gases, liquefied

NOTE In some countries, UN numbers 1011 and 1978 may also be designated LPG.

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4 Safety**4.1 Safety precautions**

Appropriate safety precautions shall be taken during decommissioning, commissioning and inspection/requalification of a tank and its fittings.

4.2 Unsafe conditions

Any unsafe condition observed by a competent person on the site of an LPG storage tank shall be reported to the person responsible for safe operation of the tank/site, as appropriate, and action taken.

4.3 Leaks

Any leak discovered from the tank or its fittings shall be reported immediately to the person responsible for safe operation of the tank.

Action to make the tank or its fittings safe shall be taken by a competent person.

NOTE Methods for detecting leaks include:

- visual inspection;
- smell;

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- listening;
- use of gas detectors.

5 Written scheme

5.1 Each tank and its fittings shall be included in a written scheme taking into account the requirements of Clauses 6 to 8.

5.2 If duties are shared between different parties then the written scheme shall clearly identify the respective areas of responsibility.

5.3 Intervals between inspections shall be determined by consideration of the following:

- the design specification of the tank and its equipment;
- the corrosion protection system on the tank;
- the system used to ensure that the LPG quality conforms to its specifications/standards, and that it does not contain components damaging to the material of the tank or its fittings;
- the level of control over filling and maintenance of the tank.

NOTE The maximum period between requalifications should not normally be greater than 12 years, and if conditions are not satisfactory the period should be reduced.

5.4 The written scheme shall contain the following information:

- the maximum interval between inspections; [SIST EN 12819:2010](https://standards.iteh.ai/catalog/standards/sist/0cdcef52-5f62-441a-9582-d2923521803a/sist-en-12819-2010)
- the parts to be inspected; <https://standards.iteh.ai/catalog/standards/sist/0cdcef52-5f62-441a-9582-d2923521803a/sist-en-12819-2010>
- the nature of the inspection;
- the critical parts that, if modified or repaired, must be inspected by a competent person/body before they can be put back into service;
- the requirements for pressure relief valves (see 7.5.1);
- the name of the competent body preparing the written scheme;
- the date of the preparation of the written scheme.

6 Tank inspection and requalification**6.1 Routine inspection**

6.1.1 Each tank and its fittings shall be routinely inspected at intervals defined in the written scheme.

6.1.2 An inspection or exception test report shall be produced if repairs are required.

6.1.3 Routine inspections shall include 7.1, 7.2, 7.3, 7.4, 7.5.2, 7.5.3, 7.7, 7.14 and 7.16.

6.2 Periodic inspection

6.2.1 Each tank and its fittings shall be periodically inspected at intervals defined in the written scheme.

6.2.2 Periodic inspections shall include 6.1.3, 7.5.4, 7.6, 7.8, 7.12, 7.13 and 7.15.

6.2.3 A visual inspection of external surface shall be carried out (see Annex A). If tanks are provided with fixed passive fire protection, techniques described in Annex A are unsuitable. The written scheme shall specify alternative techniques to those specified in Annex A to ensure that no corrosion occurs on the external surface of the tank.

6.3 Requalification

6.3.1 Requalification of overground LPG tanks

Requalification intervals shall be specified in the written scheme. Requalification shall include 7.5.1, 7.9, 7.10, 7.11, an external visual inspection, and at least one of the following:

- an internal visual inspection (see Annex A);
- a hydraulic pressure test (see Annex B);
- an acoustic emission test (see Annex C);
- an ultrasonic thickness test (see Annex D);
- any other method equivalent to the above

6.3.2 Requalification of underground LPG tanks

Requalification intervals shall be specified in the written scheme. Each tank shall include 7.5.1, 7.9, 7.10, 7.11, and shall be requalified, with at least one test from group 1 and one from group 2 of Table 1.

Table 1 — Requalification tests

Group 1	Group 2
Internal visual inspection (see Annex A)	External visual inspection (i.e. excavation)
Hydraulic pressure test (see Annex B)	Cathodic protection monitoring (see Annex E or Annex F)
Acoustic emission test (see Annex C)	
Ultrasonic thickness test (see Annex D)	
Other equivalent method	

6.3.3 Commissioning

At commissioning, leak checks shall be carried out at connections. Gaskets that have been removed when breaking connections shall not be reused.

7 Inspection of tank and tank fittings

7.1 Tank

Tanks shall be checked for severe external corrosion or visible damage.

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7.2 Tank fittings and immediate pipework

Tank fittings and immediate pipework shall be checked for the following:

- severe corrosion;
- damage;
- inoperative or leaking filler valves;
- worn or damaged filler valve thread or connection;
- damaged or lifting pressure relief valve;
- inoperative fixed liquid level gauge.

7.3 Valve cover

There shall be checks that the valve covers (if fitted) are in place, undamaged and able to be locked.

7.4 Bonding

7.4.1 The electrical bonding between the tank and earth point shall be visually checked, where fitted.

7.4.2 There shall be a check that the road tanker bonding tag is undamaged (if applicable).

7.5 Pressure relief valves

7.5.1 There shall be either:

- a) a test of the set pressure of the pressure relief valve and, for an external pressure relief valve, a check of the condition of the spring; or
- b) the pressure relief valve shall be replaced with a new or reconditioned valve if required.

WARNING — Do not remove a pressure relief valve from a pressure relief valve manifold or check-device while a tank is under pressure, unless a serviceable replacement is available for immediate fitting. Do not remove a pressure relief valve mounted in a tank under pressure unless the type and construction of the check device can be identified and the manufacturer's instructions for safe removal are complied with. A check device shall include positive means of confirming that the check device has closed before the pressure relief valve is unscrewed to an otherwise dangerous stage.

7.5.2 The pressure relief valve drain hole shall be checked to ensure it is clear.

7.5.3 Stack pipes shall be inspected for corrosion. Pressure relief valves shall also be externally inspected if corrosion is found in the stack pipes. There shall be a check that rain caps are present and in good condition.

7.5.4 Multiport mechanisms shall be checked to ensure that they move freely into position when operated.

WARNING — After testing, the mechanism shall be positioned so that pressure relief valve inlets are not obstructed.

7.6 Pressure gauges

Pressure gauges shall be checked against a test gauge or replaced.