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LPG equipment and accessories - Inspection and testing of LPG road tankers



## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.07.2023.	Date of Availability of the European standard is 12.07.2023.
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EUROPEAN STANDARD

**EN 14334**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

## LPG equipment and accessories - Inspection and testing of LPG road tankers

Équipements pour GPL et leurs accessoires - Inspection  
et essais des véhicules citernes routiers pour GPL

Flüssiggas-Geräte und Ausrüstungsteile - Inspektion  
und Prüfung von Straßentankwagen für Flüssiggas  
(LPG)

This European Standard was approved by CEN on 28 May 2023.

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-CENELEC 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-CENELEC 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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 14334:2023) 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 January 2024, and conflicting national standards shall be withdrawn at the latest by January 2024.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 14334:2014.

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

- Removal of the Annex on the Environmental checklist, addition of a reference to CEN/TS 16765;
- where possible, the terms in Clause 3 were substituted with a reference to CEN/TS 16769;
- the definitions for test and inspection from EN ISO 10286 “Gas cylinders — Terminology” were adopted and included to Clause 3;
- the clause on initial inspection and testing was taken from EN 12252 and the document is re-structured; with the new Clause 4 “Initial inspection and testing” and Clause 5 “In-service inspection and testing”;
- Table 1 on the frequency of required inspections and tests was updated;
- a footnote regarding road tankers was added to Table 1;
- introduction of new Clause 6.5 “Inspection of the vehicle LPG equipment and accessories”;
- a note and a test regarding PRVs was added to 6.5.1
- 6.7.2 “Leakproofness test pressure” was updated;
- 6.8 “Testing of the vehicle LPG equipment and accessories” was thoroughly revised;
- the term “inspectors” was substituted with “inspection body”, where appropriate;
- requirements on the inspection of necessary documents were simplified;
- a recommendation for the use of gas detectors was added;
- the test of earthing connections was clarified;
- acoustic emission testing was added as possible method.

This document will be submitted for reference in

- the RID and/or
- the technical annexes of the ADR [5].

**NOTE** These regulations take precedence over any clause of this standard. It is emphasized that RID/ADR are being revised regularly at intervals of two years which can lead to temporary non-compliances with the clauses of this standard.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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## Introduction

This document 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.

The frequencies of the different types of pressure vessel inspection are given by the relevant international regulations concerning the transport of dangerous goods.

Protection of the environment is a key political issue in Europe and elsewhere, for CEN/TC 286 this is covered in CEN/TS 16765 [1] and this Technical Specification should be read in conjunction with this document. This 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 is recommended that companies using this document develop an environmental management policy. For guidance, see EN ISO 14001 [3].

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.

**NOTE** This document requires measurement of material properties, dimensions and pressures. All such measurements are subject to a degree of uncertainty due to tolerances in measuring equipment etc. It might be beneficial to refer to the leaflet "measurement uncertainty leaflet" SP INFO 2000 27 [4].

## 1 Scope

This document specifies minimum requirements for the inspection and testing of the LPG road tanker, which includes its pressure vessel, accessories and vehicle LPG equipment.

This document does not apply to compartmented road tankers.

NOTE 1 There is no upper size limit for the pressure vessel as this will be determined by the gross vehicle weight limitation.

NOTE 2 For further information on inspection and testing requirements of equipment other than the pressure vessel, accessories and vehicle LPG equipment, see applicable regulations.

## 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.

CEN/TS 16769, *LPG equipment and accessories - Terminology*

EN 837-1:1996, *Pressure gauges - Part 1: Bourdon tube pressure gauges - Dimensions, metrology, requirements and testing*

EN 837-3:1996, *Pressure gauges - Part 3: Diaphragm and capsule pressure gauges - Dimensions, metrology, requirements and testing*

EN 1762, *Rubber hoses and hose assemblies for liquefied petroleum gas, LPG (liquid or gaseous phase), and natural gas up to 25 bar (2,5 MPa) - Specification*

EN 12252:2022, *LPG equipment and accessories - Equipping of LPG road tankers*

EN 12493, *LPG equipment and accessories - Welded steel pressure vessels for LPG road tankers - Design and manufacture*

EN 13109, *LPG equipment and accessories - LPG tanks and drums - Disposal*

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

EN 14025, *Tanks for the transport of dangerous goods - Metallic pressure tanks - Design and construction*

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

EN ISO 3452-1, *Non-destructive testing - Penetrant testing - Part 1: General principles (ISO 3452-1:2021)*

EN ISO 5579, *Non-destructive testing - Radiographic testing of metallic materials using film and X- or gamma rays - Basic rules (ISO 5579:2013)*

EN ISO 9712, *Non-destructive testing - Qualification and certification of NDT personnel (ISO 9712:2021)*

EN ISO 17636-2, *Non-destructive testing of welds - Radiographic testing - Part 2: X- and gamma-ray techniques with digital detectors (ISO 17636-2)*

EN ISO 17638, *Non-destructive testing of welds - Magnetic particle testing (ISO 17638)*

EN ISO 17640, *Non-destructive testing of welds - Ultrasonic testing - Techniques, testing levels, and assessment (ISO 17640)*

EN ISO 17643, *Non-destructive testing of welds - Eddy current examination of welds by complex plane analysis (ISO 17643)*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in CEN/TS 16769 and the following 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 test

technical operation(s) for determining one or more characteristics according to a specified procedure to identify differences between specified, expected and actual results

[SOURCE: EN ISO 10286:2021]

#### 3.2 inspection

evaluation of conformity by observation and judgment accompanied as appropriate by measurement, examination, testing or gauging

[SOURCE: EN ISO 10286:2021]

### 4 Initial inspection and testing

Pressure vessels of road tankers and their equipment shall undergo, either together or separately, an initial inspection and testing before being put into service by inspection bodies approved by the competent authority. These inspections and tests shall include:

- a check of conformity to the approved type in accordance with 6.2;
- a check of the design characteristics;
- an examination of the internal and external conditions in accordance with 6.3 and 6.4;
- a hydraulic pressure test in accordance with 6.6;
- a leakproofness test in accordance with 6.7;
- a check of satisfactory operation of the equipment.

NOTE For the pressure vessels of road tankers and their equipment, the inspections and the tests in 6.6 and 6.7 conforming to the requirements of ADR see 6.8.2.4 of ADR.