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Oprema in pribor za utekočinjeni naftni plin (UNP) - Pregledi in preskušanje rezervoarjev za utekočinjeni naftni plin (UNP) za prevoz po cesti

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

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

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

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.

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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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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (prEN 14334:2010) 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 14334:2005.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports the objectives of the framework Directives on Transport of Dangerous Goods.

This document has been submitted for reference into the technical annexes of the ADR.

Therefore the standards listed in the normative references and covering basic requirements of the ADR not addressed within the present standard are normative only when the standards themselves are referred to in the technical annexes of the ADR.

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

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Introduction

This document 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.

The frequencies of the different types of tank 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. Protection of the environment is taken in a very broad sense. What is meant is the total life cycle aspects of, e.g. a product on the environment, including expenditure of energy and during all phases from mining of raw materials, fabrication, packaging, distribution, use, scrapping, recycling of materials, etc.

NOTE Annex D indicates which clauses in this standard address environmental issues.

Provisions have to be restricted to a general guidance. Limit values are specified in national laws.

It is recommended that companies using this standard develop an environmental management policy. For guidance see ISO 14000 series

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

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1 Scope

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

This document does not specify requirements for the initial inspection (after manufacture) of a tank, see EN 12493 or the road tanker, see EN 12252.

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

NOTE 2 For inspection and testing requirements of equipment other than the tank, tank accessories and vehicle LPG equipment, see applicable regulations.

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 444, *Non-destructive testing — General principles for radiographic examination of metallic materials by X- and gamma-rays.*

EN 473, *Non destructive testing — Qualification and certification of NDT personnel — General principles*

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 1290, *Non-destructive examination of welds — Magnetic particle examination of welds.*

EN 1435, *Non-destructive examination of welds — Radiographic examination of welded joints.*

EN 1711, *Non-destructive examination of welds — Eddy current examination of welds by complex plane analysis*

EN 1714, *Non destructive examination of welds — Ultrasonic examination of welded joints.*

EN 12252, *Equipping of Liquefied Petroleum Gas (LPG) road tankers.*

EN 12493, *Welded steel tanks for liquefied petroleum gas (LPG) — Road tankers — Design and manufacture.*

EN 13109, *LPG tanks – Disposal*

EN 13175, *LPG equipment and accessories – Specification and testing for Liquefied Petroleum Gas (LPG) tank valves and fittings*

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

EN 13477-2, *Non-destructive testing — Acoustic emission — Equipment characterisation — Part 2: Verification of operating characteristic*

EN 13554:2002, *Non-destructive testing — Acoustic emission — General principles*

EN 14584:2005, *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

LPG (liquefied petroleum gas)

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.

3.2

periodic inspection

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

3.3

intermediate inspection

inspection to be carried out between the initial and first periodic inspection, or between two periodic inspections, the results of which are recorded

3.4

vehicle LPG equipment

equipment and pipework on the vehicle which is in contact with LPG and forms part of the LPG operating system, shut-down system or safety system, but which is not directly connected to the tank and is not part of the LPG fuel system

3.5

tank accessories

equipment directly connected to the tank used for filling, discharge, venting, measuring, insulating or pressure relief

3.6

repair

correction of a defect which has impaired the safety of the tank or its structural equipment, not including normal service and maintenance operations and/or replacements of gaskets, vehicle LPG and tank accessories

3.7

road tanker

rigid vehicle, semi-trailer or trailer comprising of one or more fixed tanks

NOTE Referred to as fixed tanks (tank-vehicles) and demountable tanks in the ADR.

3.8

exceptional check

inspection/test outside the frequency of intermediate and periodic inspections/tests

3.9

gas-free

without a concentration of LPG in the tank that can affect the health and safety of the inspecting personnel

NOTE See national regulations.

prEN 14334:2010 (E)**3.10****inspector**

individual or a body approved by the competent authority to perform designated inspections and tests

3.11**competent person**

person who by a combination of training, experience and supervision is able to make objective judgments on the subject

3.12**structural equipment**

external reinforcing, fastening or stabilizing member of the shell, being an integral part of and directly welded to the shell, or to a backing plate on the shell

4 Inspection and testing

The requirements for inspection and testing, as detailed below, shall apply to tanks designed and manufactured in accordance with EN 12493 and equipped in accordance with EN 12252, but can also be used for existing tank designs.

The following inspections/tests/checks shall be carried out in accordance with Table 1.

NOTE The frequency of the inspections/tests is being given by ADR.

Table 1 — Required inspections/tests

Inspections/Tests	Clause	Intermediate	Periodic	Exceptional checks ^a
Necessary documents	5.2	X	X	X
Tank interior	5.3	X	X	X
Tank exterior	5.4	X	X	X
Hydraulic pressure	5.5	-	X	X
Tank accessories	5.6	-	X	X
Vehicle LPG equipment	5.6	-	X	X
Leakproofness	5.7	X	X	X
Structural equipment – after repair	5.8	-	-	X

^a As appropriate to the repair. If the tank is being remounted then all inspections shall be as for the original construction, as appropriate to the repair.

An exceptional check may be required when the safety of the tank accessories, vehicle LPG equipment, the tank, or structural equipment may have been impaired as a result of repairs, alterations or accidents.

5 Inspection and testing requirements

5.1 General

Additional inspections/tests/checks can be required, subject to the results of the inspections/tests/checks required by 5.

Precautions shall be taken for the safety of the inspecting personnel, and any other personnel in the vicinity of the road tanker, when inspections/tests are carried out.

5.2 Inspection of the necessary documents

The following documents shall be provided for the inspection:

- certificate of initial inspection, or
- certificate of last periodic inspection,
- certificate of intermediate inspection/ exceptional check, if applicable.

The documents shall be inspected to ensure that they are relevant to the tank and vehicle LPG equipment, and that they are satisfactory. Additional requirements and remarks in these documents shall be taken into account.

5.3 Inspection of the tank interior

The tank shall be empty, clean, certified gas-free and safe to enter at the time of inspection. Suitable methods for gas freeing are given in Annex C.

A complete visual internal inspection shall be performed.

The entire surface of the tank shall be inspected for:

- surface defects such as dents, cuts, gouges, bulges, cracks;
- other defects indicating possible abnormal operating conditions.

NOTE The inspector may request that this inspection is supplemented by NDT-techniques, see 5.5.1.

Surface defects deemed to impair the integrity of the tank shall be repaired or the tank shall be rejected from service and disposed of safely in accordance with EN 13109.

If the tank is to be scrapped, as much material as possible shall be recycled.

5.4 Inspection of the tank exterior

5.4.1 External visual inspection

A complete visual inspection shall be performed.

The visual inspection of the tank exterior shall include:

- the identification of any surface defect. In case of doubt, appropriate non-destructive methods can be used;
- the condition of the protective coating;