



SLOVENSKI STANDARD

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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)

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

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ICS:

23.020.20	Posode in vsebniki, montirani na vozila	Vessels and containers mounted on vehicles
43.080.10	Tovornjaki in priklopniki	Trucks and trailers

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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 draft European Standard is submitted to CEN members for unique acceptance procedure. 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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (FprEN 14334:2014) 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 Unique Acceptance Procedure.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document has been submitted for reference into the technical annexes of the ADR [1].

The main modifications with regard to EN 14334:2005 are:

- a) the definitions in Clause 3 were updated;
- b) Clause 4, Table 1 was adapted to ADR requirements;
- c) Subclause 5.4 was adapted to ADR requirements;
- d) Subclause 5.5 was reviewed to provide detailed prerequisites and requirements on NDT techniques used as an alternative to hydraulic pressure test;
- e) Subclause 5.7.2 was corrected to accommodate for typical working pressures for LPG pressure vessels;
- f) an environmental checklist (Annex B) was added;
- g) document was adapted to current CEN regulations.

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FprEN 14334:2014 (E)**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 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. 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 B indicates which clauses in this standard address environmental issues. Clauses addressing environmental issues are restricted to a general guidance. Limiting values can be specified in national laws.

It is recommended that companies using this standard develop an environmental management policy. For guidance see EN ISO 14001.

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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SIST EN 14334:2015

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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 specify requirements for the initial inspection (after manufacture) of a pressure vessel, see EN 12493 or for service equipment on the road tanker, see EN 12252.

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 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, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 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 1711, *Non-destructive examination of welds - Eddy current examination of welds by complex plane analysis*

EN 12252, *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 ISO 3452-1, *Non-destructive testing - Penetrant testing - Part 1: General principles (ISO 3452-1)*

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

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)*

3 Terms and definitions

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

FprEN 14334:2014 (E)**3.1****liquefied petroleum gas****LPG**

low pressure liquefied gas composed of one or more light hydrocarbons which are assigned to UN 1011, UN 1075, UN 1965, UN 1969 or UN 1978 only and which consists mainly of propane, propene, butane, butane isomers, butene with traces of other hydrocarbon gases

3.2**periodic inspection**

activities carried out at defined intervals, such as examining, measuring, testing or gauging the characteristics of a pressure vessel and comparing these with specified requirements

3.3**intermediate inspection**

inspection 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 road tanker 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 pressure vessel and is not part of the automotive LPG system

3.5**accessories**

devices connected to the system whose main function is not for the storage or conveyance of LPG

Note 1 to entry: Referred to as "service equipment" in ADR.

3.6**repair**

correction of a defect

Note 1 to entry:

It does not include normal service and maintenance operations of the shell or service equipment or replacement of gaskets or service equipment to the same specification.

3.7**road tanker**

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

Note 1 to entry: Referred to as fixed tanks (tank-vehicles) and demountable tanks in the ADR.

3.8**exceptional check**

inspection/test after repair of the vessel, vessel accessories, vehicle LPG equipment or structural equipment

3.9**gas-free**

less than 20 % of the lower explosive limit of LPG in air

3.10**inspector**

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

3.11**inspection body**

independent inspection and testing body approved by the competent authority

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

3.13**hot work**

any work that requires a flame or other ignition source for its execution, or which could produce or expose a possible source of ignition (e.g. sparks) capable of igniting flammable gases, liquids or other materials

4 Inspection and testing

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

The following inspections/tests/checks shall be carried out, under the supervision of the inspector, in accordance with Table 1.

NOTE According to ADR testing, inspection and certification duties are allocated to either the competent authority or to inspection bodies. ADR includes detailed requirements on the qualification, obligations, accreditation and approval of these inspection bodies as well as the frequency for inspections and tests.

Table 1 — Required inspections/tests

Inspections/Tests	Clause	Intermediate	Periodic	Exceptional checks ^a
Necessary documents	5.2	X	X	X
Interior of the pressure vessel	5.3	–	X	X
Exterior of the pressure vessel	5.4	X	X	X
Hydraulic pressure	5.5	–	X	X
Accessories	5.6	X	X	X
Vehicle LPG equipment	5.6	X	X	X
Leakproofness	5.7	X	X	X
Structural equipment – after repair	5.8	–	–	X

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

An exceptional check can be required when the safety of the accessories, vehicle LPG equipment, the pressure vessel, 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 this clause.

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.

FprEN 14334:2014 (E)**5.2 Inspection of the necessary documents**

The following documents shall be provided for the inspection:

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

The documents shall be inspected to ensure that they are relevant to the pressure vessel, accessories 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 interior of the pressure vessel

The pressure vessel shall be empty, clean, certified gas-free and safe to enter at the time of inspection. Suitable methods for gas freeing are described EN 13109.

A complete visual internal inspection shall be performed.

The entire surface of the pressure vessel shall be inspected for:

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

NOTE The inspector can request that this inspection is supplemented by NDT-techniques, see 5.5.8.

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

5.4 Inspection of the exterior of the pressure vessel**5.4.1 External visual inspection**

A complete visual inspection shall be performed.

The visual inspection of the exterior of the pressure vessel shall include:

- the identification of any surface defect;

NOTE In case of doubt, appropriate non-destructive methods can be used.

- the condition of the protective coating;
- the fastenings of the pressure vessel and its structural equipment;
- the marking of the pressure vessel, which shall be in accordance with 6.2.

5.4.2 Inspection of earthing

Road tankers with an earth connection shall be inspected for conformity of the connection with the design requirements. The electrical resistance between the earth connection and the metallic parts of the pressure vessel / vehicle chassis, shall not exceed 10 Ω .