SLOVENSKI STANDARD
SIST EN 12252:2006

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Oprema in pribor za utekoļ injeni naftni plin (UNP) ï Opremljanje cestnih prevoznih cistern za UNP

LPG equipment and accessories - Equipping of LPG road tankers

Flüssiggas-Geräte und Ausrüstungsteile - Ausrüstung von Straßentankwagen für Flüssiggas (LPG)

Equipements pour GPL et leurs accessoires - Equipements des camions citernes pour GPL

Ta slovenski standard je istoveten z: **EN 12252:2005**

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LPG equipment and accessories - Equipping of LPG road tankers

Equipements pour GP et leurs accessoires - Equipements des camions citernes pour GPL

Flüssiggas-Geräte und Ausrüstungsteile - Ausrüstung von Straßentankwagen für Flüssiggas (LPG)

This European Standard was approved by CEN on 26 October 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of 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.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard (EN 12252:2005) 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of an identical text or by endorsement, at the latest by June 2006, and conflicting national standards shall be withdrawn at the latest by June 2006.

This document supersedes EN 12252:2000.

The European Standard 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 European Standard are normative only when the standards themselves are referred to in the technical annexes of the ADR.

The following main changes have been made since the 2000 edition:

— alignment with ADR 2005, 6.8.3.2.3 (liquid discharge);

— inclusion of references to European Standards for materials, welding, fittings etc.

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.

1 Scope

This European Standard specifies equipment and accessories for road tankers used for the transport of Liquefied Petroleum Gas (LPG) and identifies the equipment that is considered necessary to ensure that filling, transportation and discharge operations can be carried out safely. It also specifies the requirements for the assembly of the accessories and the vehicle LPG equipment to the road tanker.

This European Standard also identifies additional equipment and accessories that may be used on road tankers carrying LPG.

NOTE This European Standard does not preclude the use of alternative designs, materials and equipment testing which provide a similar level of safety.

This European Standard does not apply to "tank-containers" and "battery-vehicles" used for the transportation of LPG.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 287-1, *Qualification test of welders — Fusion welding — Part 1: Steels*

EN 549, *Rubber materials for seals and diaphragms for gas appliances and gas equipment*

EN 558-1, *Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems — Part 1: PN-designated valves*

EN 729-2, *Quality requirements for welding — Fusion welding of metallic materials — Part 2: Comprehensive quality requirements*

EN 729-3, *Quality requirements for welding — Fusion welding of metallic materials — Part 3: Standard quality requirements*

EN 837-2, *Pressure gauges — Part 2: Selection and installation recommendations for pressure gauges*

EN 1012-1, *Compressors and vacuum pumps — Safety requirements — Part 1: Compressors*

EN 1418, *Welding personnel — Approval testing of welding operators for fusion welding and resistance weld setters for fully mechanized and automatic welding of metallic materials*

EN 1591-1, *Flanges and their joints — Design rules for gasketed circular flange connections — Part 1: Calculation method*

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*

prEN 1983, *Industrial valves — Steel ball valves*

EN 1984, *Industrial valves — Steel gate valves*

EN 10025 (all parts), *Hot rolled products of structural steels*

EN 10028 (all parts), *Flat products made of steels for pressure purposes*

EN 10045-1, *Metallic materials — Charpy impact test — Part 1: Test method*

EN 10204:2004, *Metallic products — Types of inspection documents*

EN 10216-1, *Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 1: Non-alloy steel tubes with specified room temperature properties*

EN 10217-1, *Welded steel tubes for pressure purposes — Technical delivery conditions — Part 1: Non-alloy steel tubes with specified room temperature properties*

EN 12074, *Welding consumables — Quality requirements for manufacture, supply and distribution of consumables for welding and allied processes*

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

EN 12627, *Industrial valves — Butt welding ends for steel valves*

EN 12760, *Valves — Socket welding ends for steel valves*

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

EN 13709, *Industrial valves — Steel globe and globe stop and check valves*

EN 13789, *Industrial valves – Cast iron globe valves*

EN 13799, *Contents gauges for LPG tanks*

EN 14422, *Clamp type coupling assemblies for LPG transfer hoses*

EN 14424, *Hose fittings with screwed ferrules*

EN ISO 10497, *Testing of valves — Fire type-testing requirements (ISO 10497:2004)*

EN ISO 15609-1:2004, *Specification and qualification of welding procedures for metallic materials – Welding procedure specification – Part 1: Arc welding (ISO 15609-1:2004)*

EN ISO 15614-1:2004, *Specification and qualification of welding procedures for metallic materials – Welding procedure test – Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys (ISO 15614-1:2004)*

3 Terms and definitions

For the purposes of this European Standard, 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
primary shut-off system
valve or a series of valves attached to the tank which provides a method of closing the tank

3.3 Equipment

3.3.1
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 tank and is not part of the LPG fuel system

3.3.2
tank
pressure vessel containing the LPG, connecting nozzles and welded attachments

3.3.3
accessories
fittings connected to the tank

3.4
thermowell
permanently sealed pocket in the tank/pipework for the temperature gauge

3.5
pipework
fabricated tubes and fittings which interconnect the tank, valves and equipment

3.6
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.

4 Requirements

4.1 General

Equipment, when assembled, shall be of such a nature that they withstand the anticipated mechanical, chemical and thermal stresses and remain tight. In particular they shall be:

— manufactured of materials which give the finished equipment the required mechanical properties; in particular, where equipment is subject to the low temperatures (including low temperatures caused by filling), suitably ductile material shall be used;

— protected against accidental damage where such damage could lead to a dangerous escape of LPG.

4.2 Equipment

This European Standard covers mandatory and optional equipment to be fitted to LPG road-tankers in accordance with Table 1.

Table 1 — Road-tanker equipment

Description	Clauses	Mandatory	Optional
Tank accessories			
Contents gauge	6.1.1 / 8.2	X	
Pressure gauge	6.1.2 / 8.3	X	
Primary shut-off system	6.1.3	X	
Temperature gauge	6.2 / 8.4		X
Pressure relief valve (PRV)	6.2 / 8.11		X
Sun shield	6.2		X
Road tanker LPG equipment			
Pipework	7.1.2 / 8.1.6	X	
Emergency shut-down system	10.2	X	
Hoses	7.1.3 / 8.6	X	
Thermal expansion valves/hydrostatic relief valves	7.1.4	X	
Valves	7.1.5 /8.10	X	
Compressor	7.2		X
Pump	7.2/ 8.5		X
Hose reel	7.2/ 8.7		X
Metering system	7.2/ 8.9		X
Earth reel	7.2/ 8.8		X

4.3 Valve access

Valves required for normal and emergency operation shall be readily accessible or remotely operated.

5 Tank

5.1 Design, and manufacture

The tank shall be designed and manufactured in accordance with EN 12493.

5.2 Mounting of tank on road tanker

5.2.1 General

The tank and fastenings to the structure of the road tanker shall be designed and constructed to absorb safely the stresses from normal use such as surge, vibration, braking action etc.

5.2.2 Mounting

5.2.2.1 The fixing of the tank to the road tanker shall be designed in accordance with a calculation based on the forces given in Table 2.

Table 2 — Forces for fixing the tank to the road tanker

Direction of force	Force N
In the driving direction	2 *g* x total mass of tank
Horizontal, at 90° to the driving direction	1 *g* x total mass of tank
Vertical, upwards	1 *g* x total mass of tank
Vertical, downwards	2 *g* x total mass of tank
The total mass of the tank shall be taken as the tare mass plus the maximum allowable mass of the contents. *g* = gravitational acceleration.	

5.2.2.2 A sample method of calculation for the mountings of the tank to the chassis is contained in Annex B.

5.2.2.3 The tank shall be electrically continuous with the chassis. The resistance of this electrical path shall not exceed 10 Ω.

5.2.2.4 If the tank, while on the chassis, will be subjected to a hydraulic test, during which the tank can contain twice the normal weight of its normal operating capacity it shall be established that the chassis is capable of taking this weight.

6 Tank accessories

6.1 Required tank accessories

6.1.1 Contents gauge

6.1.1.1 Tanks shall be equipped with a suitable contents gauge. The requirements of EN 12493 for maximum fill shall apply.

6.1.1.2 If the contents of the tank are to be measured by volume rather than by weight, then at least two independent systems of measuring the contents shall be fitted, only one of which can be a fixed liquid level gauge.

6.1.2 Pressure gauge

Tanks shall be equipped with a pressure gauge in accordance with 8.3.

6.1.3 Primary shut-off system

6.1.3.1 All connections to the tank in excess of 1,5 mm diameter, other than those for pressure relief valves or those permanently fitted with blank flanges or plugs, shall incorporate a primary shut-off system.

6.1.3.2 The primary shut-off system shall be of a design intended to limit the release of the tank's content in the event of external damage.

6.1.3.3 The primary shut-off system required depends upon the purpose of the tank connection as follows:

a) Discharge/filling to liquid phase: