

Equipping of Liquefied Petroleum Gas (LPG) road tankers

The European Standard EN 12252:2000 has the status of a
British Standard

ICS 43.080.10

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents

AVA

Document Sharing Hub

National foreword

This British Standard is the official English language version of EN 12252:2000.
The UK participation in its preparation was entrusted to Technical Committee PVE/19, LPG containers and their associated fittings, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 18, an inside back cover and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

This British Standard, having been prepared under the direction of the Engineering Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 September 2000

© BSI 09-2000

ISBN 0 580 36485 2

Amendments issued since publication

Amd. No.	Date	Comments

English version

Equipping of Liquefied Petroleum Gas (LPG) road tankers

Équipement des camions citernes pour GPL

Ausrüstung von Straßentankwagen für Flüssiggas (LPG)

This European Standard was approved by CEN on 25 June 2000.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Contents	Page
Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 General requirements	5
5 Tank.....	5
6 Tank accessories.....	6
7 Vehicle LPG equipment	7
8 Specifications for LPG equipment and accessories.....	8
9 Safety systems	10
10 General safety requirements.....	10
Annex A (informative) Discharge rates for relief valves	11
Annex B (informative) Calculation of mountings of tank to the chassis.....	13

Foreword

This European Standard 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 2001, and conflicting national standards shall be withdrawn at the latest by January 2001.

The standard has been submitted for reference into the RID and/or in the technical annexes of the ADR (European agreement on the International Carriage of Dangerous Goods).

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

Annexes A and B are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the 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.

The standard also identifies additional equipment and accessories that may be used on road tankers carrying LPG.

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

This standard does not apply to “tank-containers” and “battery-vehicles” used for the transportation of LPG.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 1762	Rubber hoses and hose assemblies for liquefied petroleum gas, LPG (liquid or gaseous phase) and natural gas up to 2,5 MPa (25 bar) – Specification.
prEN 12493:1996	Design and manufacture of welded steel tanks for LPG road tankers.

3 Terms and definitions

For the purposes of this standard the following terms and definitions apply.

3.1

primary shut-off system

valve or a series of valves attached to the tank which provides a method of closing the tank

3.2

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

3.3

tank

pressure vessel containing the LPG, connecting nozzles and welded attachments

3.4

accessories

fittings connected to the tank

3.5

thermowell

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

4 General requirements

Construction and equipment 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 component the required mechanical properties; in particular, where components are subject to the low temperatures that may be caused by filling, suitably ductile material shall be used;
- have items fit for purpose; equipment shall be protected against accidental damage where such damage could lead to a dangerous escape of LPG.

5 Tank

5.1 Design, calculation, material, manufacture and testing

The tank shall be designed and manufactured in accordance with prEN 12493:1996.

5.2 Mounting of tank on vehicle

5.2.1 General

Design and construction shall ensure that the tank and its fastenings to the structure of the vehicle 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 vehicle shall be designed in accordance with a calculation based on the forces given in Table 1 below.

Table 1 - Forces for fixing the tank to the vehicle

Direction of force	Force N
In the driving direction	$2g \times \text{total mass of tank}$
Horizontal, at 90° to the driving direction	$g \times \text{total mass of tank}$
Vertical, upwards	$g \times \text{total mass of tank}$
Vertical, downwards	$2g \times \text{total mass of tank}$
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.