



SLOVENSKI STANDARD

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Filling and discharge procedures for LPG road tankers

Füll- und Entleerungsverfahren für Straßentankwagen für Flüssiggas (LPG)

Procédures de chargement et déchargement des camions citernes pour GPL

Ta slovenski standard je istoveten z: **EN 13776:2002**

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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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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13776

June 2002

ICS 43.080.10

English version

Filling and discharge procedures for LPG road tankers

Procédures de chargement et déchargement des camions-
citernes pour GPL

Füll- und Entleerungsverfahren für Straßentankwagen für
Flüssiggas (LPG)

This European Standard was approved by CEN on 11 April 2002.

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 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 Management Centre 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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document EN 13776:2002 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of an identical text or by endorsement, at the latest by December 2002, and conflicting national standards shall be withdrawn at the latest by December 2002.

The annexes A, B and C 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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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EN 13776:2002 (E)**1 Scope**

This European Standard specifies filling, discharge and emergency procedures for road tankers used for the transport of liquefied petroleum gas (LPG).

This standard also covers routine maintenance procedures for LPG equipment of road tankers.

This standard applies to road tankers equipped in accordance with EN 12252.

This standard does not apply to “batteries of receptacles”.

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

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

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3 Terms and definitions

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

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3.1**LPG**

mixture of light hydrocarbons, gaseous under standard atmospheric conditions which can be liquefied by increased pressure or decreased temperature. The main components are propane, propene, butane and butene isomer

3.2**commercial butane**

mixture of light hydrocarbons, composed predominantly of butane and butene isomers; the remaining components are mainly propane, propene, pentane and pentene isomers

3.3**commercial propane**

mixture of light hydrocarbons, composed predominantly of propane and propene; the remaining components are mainly butane and butane isomers, ethane and ethene

3.4**work permit system**

controlled permission to work under specific conditions for a particular duration

3.5**routine maintenance**

inspection and checks together with replacement of parts and repairs

3.6**competent person**

person who, by qualifications, training, experience and resources, is able to make objective judgements

3.7**anti-drive-away system interlock/installation barrier**

method of ensuring that the road tanker cannot be driven away accidentally unless hoses are disconnected and stowed

3.8**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 General

Safety systems as required by EN 12252 shall be used. Personnel shall wear personal protection equipment while carrying out LPG transfer operations. Filling and discharging shall be under the constant supervision of the driver or other competent person. The road tanker fire extinguisher shall be readily available.

The responsibility for fire protection shall be clearly defined.

The road tanker driver shall be trained in the use of the road tanker/installation/equipment.

Written procedures shall be readily available, understood and followed. This shall be achieved by training and supervision. The responsibilities of all persons involved in the operation shall be clearly defined.

The procedures shall include:

- routine filling;
- routine discharge;
- the prevention of filling tanks containing air or inert gas;
- uplift;
- emergency action.

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5 Filling procedures**5.1 Preparation for filling**

The vehicle shall be driven to the filling area and positioned in accordance with the site procedure.

The loader/filler shall ensure that any device provided to check the loaded quantity is operational and in the correct position.

All road tanker electrical equipment not required for the filling shall be switched off. Any other sources of ignition shall be removed/de-activated. The handbrake shall be applied and, if required, the wheel-scotch put in place. Mobile telephones shall be switched off.

Precautions shall be taken to ensure that the grade of LPG to be filled is correctly identified and that the road tanker is suitable for the intended load and that it is correctly labelled.

Anti-drive-away system interlock/installation barriers shall be engaged.

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5.2 Filling operations

The electrostatic potential of the road tanker and the fixed installation shall be equalised before the LPG hoses are connected.

All vehicle tank outlets and internal valves shall be checked to ensure that they are in the closed position.

The blanking cap shall be removed from the vapour return (if fitted) liquid inlet and connections.

Connect the transfer couplings (hoses or loading arms) without submitting them to any abnormal stresses. Open the road tanker, terminal product and vapour return valves, where applicable, in the required sequence and manner in accordance with the procedures. Check the connections between the transfer couplings and the road tanker for leakage. Check again for any sign of leakage during transfer.

5.3 Completion of filling

The driver shall ensure that the correct quantity and grade of LPG has been loaded and that the road tanker displays the appropriate hazard warning panels, before leaving the site.

The driver shall also check that the correct Transport Emergency Card is on the vehicle (see annex A).

Vent any LPG between the transfer couplings in a safe manner before fully disconnecting.

After disconnection of the filling lines, a final check shall be made to ensure that all road tanker valves are properly closed, caps are replaced and secured and that the road tanker is in a fit condition to be driven away. There shall be no sign of leakage. The connection made to equalise the electrostatic potential shall be disconnected.

Anti-drive-away system interlock/installation barriers shall be disengaged.

5.4 Precautions against overfilling

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Gauging devices shall be monitored continuously during the filling operation, to ensure that the road tanker is not overfilled.

If a road tanker is accidentally overfilled the excess LPG shall be removed in a controlled manner without delay, before departure of the road tanker.

When filling by weight, the tare weight of the vehicle shall be determined to ensure that the vehicle is not overfilled and that the gross weight is not exceeded when the weight of the automotive fuel and the driver are taken into account.

6 Discharging procedures

6.1 Preparation for discharge

The electrostatic potential of the road tanker and the fixed installation shall be equalised before the LPG hoses are connected.

The driver shall ensure that the tank is suitable to receive the product to be discharged.

The vehicle shall be positioned so that the driver has access to the road tanker, the vehicle flow meter (where fitted), the receiving tank contents gauge and fixed liquid level gauge.

The handbrake shall be applied and, if required, the wheel-scotch put in place.

Anti-drive-away system interlock/installation barriers shall be engaged.

The immediate surroundings of the tank shall be checked to ensure there are no potential sources of ignition or any obvious dangers, also ensure that the area around the road tanker is safe to allow LPG to be discharged.

Care shall be taken to avoid damage to the hose caused by:

- running hoses across sharp objects; or
- heat sources and naked flames.

Hoses shall normally be routed in the open air. However, if hoses are routed through enclosed spaces, access by the public shall be restricted and the area shall be under the direct control of the driver. If direct control by the driver cannot be assured, a special procedure shall apply.

If hoses, during road side deliveries, are run across pavements or foot paths, a warning sign shall be prominently displayed, e.g.

"FLAMMABLE GAS TRANSFER TAKING PLACE – NO SMOKING OR NAKED FLAMES".

NOTE National regulations and /or laws regarding road side deliveries may apply.

Delivery hoses shall be visually examined for kinks, wear or obvious damage. Couplings and seals shall also be examined to ensure compatibility and that no dirt etc. is present before connection.

During road side delivery at night or bad visibility the road tanker lighting shall be kept on or other suitable lighting shall be provided.

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6.2 Discharge operations

All vehicle tank outlets and internal valves shall be checked to ensure that they are in the closed position.

The blanking cap shall be removed from the liquid inlet and vapour return connections, if used.

Connect the transfer couplings (hoses or loading arms) without submitting them to any abnormal stresses. Open the road tanker and tank product and vapour return valves (where applicable), in the required sequence and manner in accordance with the procedures. Check the connections between the transfer couplings and the road tanker for leakage. Check again for any sign of leakage during transfer.

6.3 Completion of discharge

The delivery shall be stopped when the maximum fill level in the receiving tank is reached.

NOTE Transfer rates may need to be reduced before reaching the maximum fill level to avoid overfilling.

If a tank is accidentally overfilled any excess LPG shall be removed in a safe manner.

The road tanker shall be disconnected and hoses stowed or reeled in, and protective caps re-attached.

Anti-drive-away system interlocks/installation barriers shall stay engaged until the vehicle can be safely moved. If any deficiency is noted, then it shall be immediately reported to the delivery site owner or his representative.

Before driving away the filled tank and its immediate surroundings shall be inspected to ensure that there is no sign of leaks.