



# SLOVENSKI STANDARD

## SIST EN 13776:2013

01-december-2013

Nadomešča:  
SIST EN 13776:2002

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### Oprema in pribor za utekočinjeni naftni plin (UNP) - Postopek polnjenja in praznjenja cestnih cistern za utekočinjeni naftni plin (UNP)

LPG equipment and accessories - Filling and discharge procedures for LPG road tankers

Flüssiggasgeräte und -Ausrüstungsteile - Füll- und Entleerungsverfahren für Straßentankfahrzeuge für Flüssiggas (LPG)

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Équipements et accessoires pour GPL - Procédures de chargement et déchargement des camionsciterne pour GPL

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**Ta slovenski standard je istoveten z: EN 13776:2013**

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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

**SIST EN 13776:2013**

**en,fr,de**

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EUROPEAN STANDARD

EN 13776

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2013

ICS 43.080.10

Supersedes EN 13776:2002

English Version

## LPG equipment and accessories - Filling and discharge procedures for LPG road tankers

Équipements et accessoires pour GPL - Procédures de chargement et déchargement des camions-citernes pour GPL

Flüssiggas-Geräte und Ausrüstungsteile - Füll- und Entleerungsverfahren für Straßentankfahrzeuge für Flüssiggas (LPG)

This European Standard was approved by CEN on 18 April 2013.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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## Foreword

This document (EN 13776:2013) 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 2013, and conflicting national standards shall be withdrawn at the latest by December 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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

This document supersedes EN 13776:2002.

The main changes regarding the 2002 version include:

- Deletion of Annex A;
- Deletion of Annex B;
- Deletion of maintenance requirements;
- Addition of a new informative Annex A on filling ratios and test pressures for mixtures; and
- Addition of a new informative Annex B environmental checklist.

This European Standard has been submitted for reference into the technical annexes of the ADR [5].

**NOTE** These regulations take precedence over any clause of this standard. It is emphasised that RID/ADR/ADN are being revised regularly at intervals of two years which may lead to temporary non-compliances with the clauses of this European Standard.

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

**EN 13776:2013 (E)****Introduction**

This European Standard calls for the use of substances and procedures that may be injurious to health and/or the environment if adequate precautions are not taken. It refers only to technical suitability: it does not absolve the user from their legal obligations at any stage.

Protection of the environment is a key political issue in Europe and elsewhere around the world. Protection of the environment in this document is understood in a very broad sense. The phrase is used, for example, in relation to the total life-cycle aspects of a product on the environment, including expenditure of energy, and during all phases of its existence, from mining of raw materials, to fabrication, packaging, distribution, use, scrapping, recycling of materials, etc.

NOTE Annex B comprises an environmental checklist which highlights the clauses of this European Standard that address environmental aspects.

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

It is recommended that manufacturers develop an environmental management policy. For guidance see the EN ISO 14000 series [2], [3] and [4].

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

All pressures are gauge pressures unless otherwise stated.

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## 1 Scope

This European Standard specifies filling, discharge and emergency procedures for road tankers equipped in accordance with EN 12252 used for the transportation of liquefied petroleum gas (LPG).

This European Standard does not apply to “batteries of receptacles”.

## 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 12252, *LPG equipment and accessories - Equipping of LPG road tankers*

## 3 Terms and definitions

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

### 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

#### **road tanker**

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

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

### 3.3

#### **pressure vessel**

assembly of the pressure-retaining envelope (including the openings and their closures) and non-pressure-retaining parts attached directly to it

Note 1 to entry: Referred to as “shell” in the ADR.

### 3.4

#### **competent person**

person which by combination of appropriate qualification, training, experience, and resources, is able to make objective judgments on the subject

### 3.5

#### **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

### 3.6

#### **tanker loading control system**

method of ensuring the integration of the vehicle's safety systems into the plant safety systems

## EN 13776:2013 (E)

## 4 General

**4.1** Safety systems as required by EN 12252 shall be used. Personnel carrying out LPG transfer operations shall wear personal protection equipment according to applicable regulations. Filling and discharging shall be under the constant supervision of a competent person.

**4.2** The filling and discharge areas shall be inspected for fire hazards prior to beginning operations. Suitable fire protection shall be readily available.

NOTE Responsibilities for fire protection are subject to national regulations

**4.3** Written procedures and other appropriate information shall be made readily available, understood and followed by those undertaking filling and discharging procedures. The training programme for driver certification shall be approved by the competent authority.

Consideration shall be given to include specific instructions for the use of the road tanker's LPG equipment and fixed LPG installation relevant to the operations in the training programme.

**4.4** 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. For appropriate measures regarding training and written procedures and the corresponding responsibilities refer to national health and safety regulation.

## 5 Filling procedures

### 5.1 Preparation for filling

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

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

**5.1.3** All road tanker electrical equipment not required for the filling process shall be switched off. Any other sources of ignition shall be removed/de-activated.

**5.1.4** The handbrake shall be applied and, where required, the wheel-scotch put in place. Anti-drive-away system interlock/installation barriers shall be engaged.

**5.1.5** 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 (see Annex A).

NOTE In the ADR the terms "placarding" and "orange-coloured plate marking" are used in place of "labelling".

Road tankers with pressure vessels which are not divided by partitions or surge plates into sections of not more than 7 500 litres capacity, shall be filled to not less than 80 % or not more than 20 % of their capacity.

**5.1.6** Where fitted tanker loading control systems shall be connected.

### 5.2 Filling operations

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

**5.2.2** All road tanker outlets and internal valves shall be checked to ensure that they are in the closed position.



**5.2.3** The blanking cap shall be removed from the vapour return (where fitted and when used) and the liquid inlet connections.

**5.2.4** The transfer couplings (hoses or loading arms) shall be connected without submitting them to any abnormal stresses. The road tanker, product terminal and vapour return valves, where applicable, shall be opened in the required sequence and manner in accordance with the written procedures. The connections between the transfer couplings and the road tanker shall be checked for leakage. Further periodic leakage checks shall be carried out directly after the product transfer operation has begun.

### 5.3 Completion of filling

**5.3.1** The road tanker, product terminal and vapour return valves, where applicable, shall be closed in the required sequence and manner in accordance with the written procedures ensuring that valves closest to the pressure vessel of the vehicle are closed first.

**5.3.2** Any LPG between the transfer couplings shall be vented in a safe manner before fully disconnecting.

**5.3.3** After disconnection of the filling line and any other connections to the road tanker (vapour return or tanker loading control) all road tanker valves shall be properly closed and the caps secured in place.

**5.3.4** A final check shall be made to ensure 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.

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

**5.3.6** The driver shall verify that the correct quantity and grade of LPG (as per dataplate of the pressure vessel, see Annex A) has been loaded and that the road tanker displays the appropriate hazard warning labels and the legal restrictions applicable are observed before leaving the site.

**5.3.7** The driver shall verify completeness and correctness of the required documentation.

### 5.4 Precautions against overfilling

**5.4.1** The gross vehicle mass (weight) shall not be exceeded when the mass of the road tanker's fuel and the driver are taken into account.

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

**5.4.3** 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.

**5.4.4** When filling by mass, the tare of the vehicle shall be determined i.e. by weighing before every filling operation to ensure that the vehicle is not overfilled.

## 6 Discharging procedures

### 6.1 Preparation for discharge

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

**6.1.2** The driver shall ensure that the pressure vessel is suitable to receive the LPG product to be discharged. Road tankers with pressure vessels which are not divided by partitions or surge plates into sections of not more than 7 500 litres capacity shall be emptied to not more than 20 % of their capacity.