



# SLOVENSKI STANDARD SIST EN 17932:2024

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## Vozila na zemeljski plin - Zahteve za delavnice in upravljanje z vozili na utekočinjeni zemeljski plin (LNG)

Natural gas vehicles - Requirements for liquefied natural gas vehicle (LNGV) workshops and the management of liquefied natural gas (LNG) vehicles

Erdgasfahrzeuge - Anforderungen an Werkstätten und das Management von mit LNG betriebenen Fahrzeugen

Exploitation de véhicules fonctionnant au gaz naturel - Exigences relatives aux ateliers pour véhicules GNL et à la gestion des véhicules fonctionnant au gaz naturel liquéfié (GNL)

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## Natural gas vehicles - Requirements for liquefied natural gas vehicle (LNGV) workshops and the management of liquefied natural gas (LNG) vehicles

Exploitation de véhicules fonctionnant au gaz naturel -  
Exigences relatives aux ateliers pour véhicules gaz  
naturel liquéfié (VGNL) et à la gestion des véhicules  
fonctionnant au gaz naturel liquéfié (GNL)

Erdgasfahrzeuge - Anforderungen an Werkstätten und  
das Management von mit LNG betriebenen Fahrzeugen

This European Standard was approved by CEN on 19 May 2024.

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**EN 17932:2024 (E)****European foreword**

This document (EN 17932:2024) has been prepared by Technical Committee CEN/TC 326 “Natural gas vehicles - Fuelling and operation”, the secretariat of which is held by TSE.

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of an identical text or by endorsement, at the latest by December 2024, and conflicting national standards shall be withdrawn at the latest by December 2024.

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

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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## Introduction

This document provides minimum requirements for professionals on how to safely operate vehicles that use liquefied natural gas (LNG) as a fuel for propulsion. This document also covers associated requirements for LNGV workshops. In addition, the scope of the document addresses the LNGV owner and user and other parties dealing with LNGVs.

This document addresses LNGV workshops and the management of liquefied natural gas (LNG) vehicles. This document can be a useful reference for:

- LNGV workshop architects;
- LNGV workshop owners;
- LNGV workshop staff;
- OEMs;
- system manufacturers;
- LNG trucks owners and users;
- LNG trucks dealers;
- local authorities.

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**EN 17932:2024 (E)****1 Scope**

This document provides requirements for operation of vehicles that use liquefied natural gas (LNG) as a fuel for propulsion, covering various aspects of LNGV workshops including activities, risk management, planning, personnel, layout, systems and operations. It provides requirements regarding the management of LNGV including use, parking, fuelling for commissioning, inspection, installation, repair and maintenance, disposal, transportation and documentation.

This document is applicable to the management of LNG vehicles.

**2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2, *Classification of fires*

EN 50402, *Electrical apparatus for the detection and measurement of combustible or toxic gases or vapours or of oxygen — Requirements on the functional safety of gas detection systems*

EN 60079-10-1, *Explosive atmospheres — Part 10-1: Classification of areas — Explosive gas atmospheres (IEC 60079-10-1)*

EN 60079-29-2, *Explosive atmospheres — Part 29-2: Gas detectors — Selection, installation, use and maintenance of detectors for flammable gases and oxygen (IEC 60079-29-2)*

EN ISO 10012, *Measurement management systems — Requirements for measurement processes and measuring equipment (ISO 10012)*

ISO 31000, *Risk management — Guidelines*

**3 Terms and definitions**

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

**3.1****authorized qualification body**

body, independent of the LNGV workshop, authorized by the certification body to prepare and administer qualification examinations

[SOURCE: EN ISO 9712:2012, 3.1]

**3.2****LNG system**

assembly of components (tank(s), valves, flexible fuel lines, etc.) and connecting parts (rigid fuel lines, pipes fitting, etc.) fitted on motor vehicles using LNG in their propulsion system



### 3.3

#### **competent body**

person or corporate body, defined by the national or relevant authority, which by combination of appropriate qualification, training, experience and resources is able to make objective judgments on a subject

[SOURCE: ISO 10691:2004, 3.2]

### 3.4

#### **liquefied natural gas**

##### **LNG**

natural gas that has been liquefied, after processing, for storage or transportation purposes used as a transport fuel

[SOURCE: EN ISO 16924:2018]

### 3.5

#### **vehicle tank**

cryogenic tank mounted on a vehicle for the storage of LNG as a fuel for that vehicle

[SOURCE: EN ISO 16924:2018]

### 3.6

#### **examining body**

organization that has been appointed to verify compliance with the applicable standard

Note 1 to entry: In certain cases, an external independent examining body can be required.

[SOURCE: ISO/TR 25901-1:2016, 2.5.30]

### 3.7

#### **gas-free**

less than 10 % of the lower flammable limit of natural gas in air (less than 0,5 % in air)

### 3.8

#### **hazardous area**

area in which an explosive gas atmosphere is present, or can be expected to be present, in quantities such as that special precautions for the construction, installation and use of equipment are required

Note 1 to entry: The interior of many items of process equipment is commonly considered as a hazardous area even though a flammable atmosphere might not normally be present to account for the possibility of air entering the equipment. Where specific controls such as inerting are used, the interior of process equipment might not need to be classified as a hazardous area.

[SOURCE: EN 60079-10-1:2015, 3.3.1]

### 3.9

#### **ignition source**

source of energy sufficient to ignite a flammable atmosphere

Note 1 to entry: Ignition sources include naked flames, exposed incandescent material, sparks, electric welding arcs, and electrical or mechanical equipment not approved for use in hazardous locations.

**EN 17932:2024 (E)****3.10****incident**

unplanned event or occurrence that has been assessed as having an actual or potentially adverse effect

Note 1 to entry: An incident can be classified as a 'major incident' or 'minor incident'. A major incident has effect on the LNGV's integrity or structural support (vehicle chassis) whereas a minor incident doesn't. An example of a major incident is damage to the bonnet/wing, which is designed to crumple to absorb the impact rather than continue to transfer the momentum to the car's passengers; a damaged hood can imply a damage on vehicle chassis. An example of a minor incident is damage to a door panel that can be minor when limited to the skin (outer panel).

[SOURCE: ISO 28007-1:2015, 3.21, modified – 'event' has been replaced with 'unplanned event or occurrence' and Note 1 to entry has been added.]

**3.11****inspection**

process of measuring, examining, testing, gauging or otherwise comparing the product with the applicable requirements

[SOURCE: ISO 11961:2018, 3.1.19]

**3.12****learning outcome**

what a person is expected to know, understand or be able to do at the end of a training programme, course or module

[SOURCE: ISO/IEC TS 17027:2014, 2.57]

**3.13****lower flammable limit****LFL**

concentration of flammable gas or vapour in air, below which an explosive gas atmosphere does not form

[SOURCE: EN 60079-10-1:2015, 3.6.12]

**3.14****natural gas**

complex gaseous mixture of hydrocarbons, primarily methane, but generally includes ethane, propane and higher hydrocarbons, and some non-combustible gases such as nitrogen and carbon dioxide

Note 1 to entry: Natural gas can also contain components or contaminants such as mercaptan, sulphur compounds and/or other chemical species.

Note 2 to entry: Annex C provides characteristics of natural gas.

[SOURCE: EN 16723-2:2017, 3.12, modified – Note 2 to entry has been added.]

**3.15****liquefied natural gas vehicle****LNGV**

road vehicle powered by liquefied natural gas

**3.16****LNGV owner**

legal entity responsible for the procedures and activities on LNGV

**3.17****LNGV workshop**

dedicated servicing facility, repair and maintenance where work on LNGV is carried out

**3.18****purging**

displacing natural gas with a dry inert gas

**3.19****qualification**

formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards

[SOURCE: CEN Guide 14:2010, B.2]

**3.20****qualified person**

individual subjected to qualification process which has passed the qualification

**3.21****remote-controlled service valve**

device that allows or interrupts the LNG supply from the vehicle tank

**3.22****requirement**

need or expectation that is stated, generally implied or obligatory

[SOURCE: ISO 9000:2015, 3.6.4, modified — Notes 1 to 6 to entry have been deleted.]

**3.23****service pit**

hole in the ground providing standing access to the underside of a vehicle

**3.24****service valve**

valve for fluid off-take which is manually operated to provide a leak-tight seal

**3.26****system manufacturer**

company which can assume technical responsibility for the manufacturing or retrofitting of LNG system and can demonstrate that it possesses the features required and the necessary means to provide quality assessment and conformity of production of the LNG system

**3.27****technical manager**

qualified person which takes responsibility for decisions relating to installation, maintenance and repair of an LNGV system