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Natural gas fuelling stations - LNG unloading connector

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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# EUROPEAN STANDARD
# NORME EUROPÉENNE
# EUROPÄISCHE NORM

**EN 17921**

March 2024

ICS 43.080.10; 75.200

English Version

# Natural gas fuelling stations - LNG unloading connector

Stations-service de gaz naturel - Connecteur de déchargement de GNL

Gasfüllanlagen - LNG-Entladeanschluss

This European Standard was approved by CEN on 8 January 2024.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**



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# European foreword

This document (EN 17921:2024) 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of an identical text or by endorsement, at the latest by September 2024, and conflicting national standards shall be withdrawn at the latest by September 2024.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.

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# Introduction

The transport of LNG over the road in Europa is organized through ADR regulations. This European Agreement concerning the International Carriage of Dangerous Goods by Road specifies the safety procedures of the road tanker and driver. The design, construction, operation, maintenance and inspection including equipment safety and control devices for LNG fuelling stations are described in EN ISO 16924:2016 “Natural gas fuelling stations — LNG stations for fuelling vehicles”.

This document describes a harmonized unloading connector for LNG road tanker at LNG fuelling stations.

While LNG is also transported by rail, European regulations are organized through the International Carriage of Dangerous Goods by Rail (RID). The same configuration as specified by this document, can be utilized for LNG RID applications.

# 1 Scope

This document specifies a harmonized unloading connector for LNG road tanker at LNG fuelling stations. This document is also applicable to LNG RID applications. While LNG is also transported by rail, European regulations are organized through the International Carriage of Dangerous Goods by Rail (RID). The same configuration as defined by this document, can be utilized. This document includes requirements for (at least):

— functional description of the LNG unloading receptacle and LNG unloading nozzle;

— technical layout description of the LNG unloading receptacle.

The technical layout description of the LNG unloading nozzle is not part of this document.

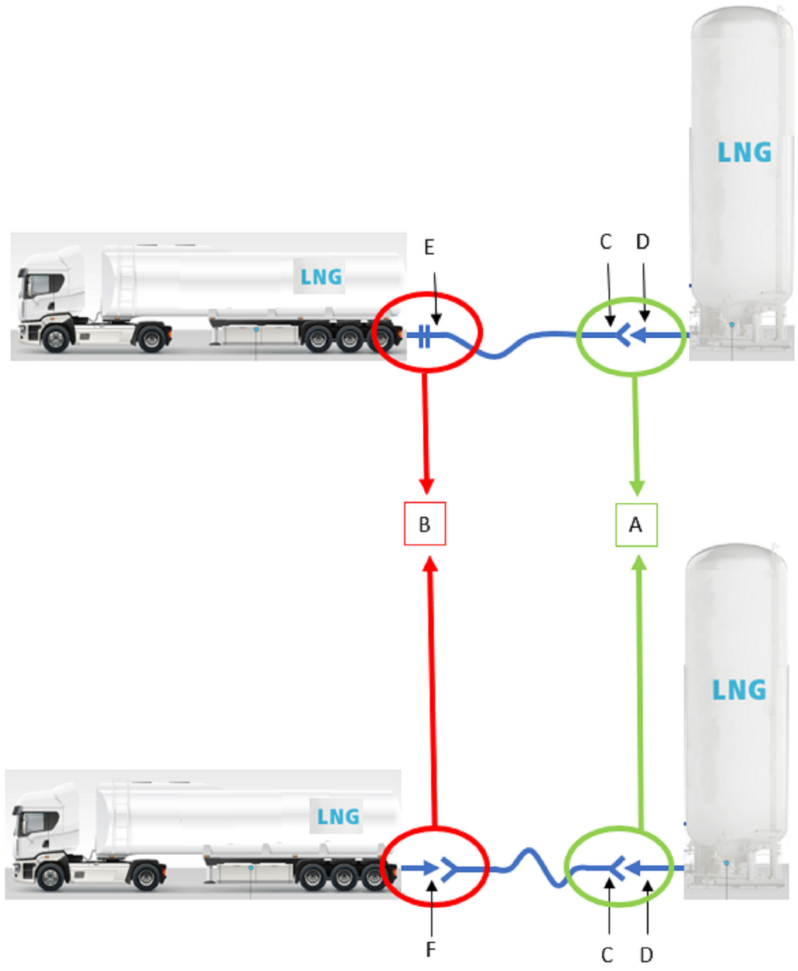
The basic functional requirement of the LNG unloading connector are as follows:

— to prevent leakage of methane during operation and in particular during disconnecting;

— easy handling, no spillage and purging with nitrogen during disconnecting.

The loading connector between the LNG road tanker and the LNG terminal is not covered by this document.

See Figure 1.




**Key**

| | |
|---|---|
| A | scope of the standard |
| B | not part of the scope of the standard |
| C | LNG unloading nozzle at delivery point |
| D | LNG unloading receptacle at receiving tank |
| E | unloading hose fixed to the trailer |
| F | flexible unloading hose |

**Figure 1 — Scope of the document**

## 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 13480-1:2017, *Metallic industrial piping — Part 1: General*

EN 12266-1:2012, *Industrial valves — Testing of metallic valves — Part 1: Pressure tests, test procedures and acceptance criteria - Mandatory requirements*

EN 12516-1:2014+A1:2018, *Industrial valves — Shell design strength — Part 1: Tabulation method for steel valve shells*

EN 12516-2:2014+A1:2021, *Industrial valves — Shell design strength — Part 2: Calculation method for steel valve shells*

EN ISO 9227:2022, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227:2022)*

ISO 16903:2015, *Petroleum and natural gas industries — Characteristics of LNG, influencing the design, and material selection*

ISO 16924:2016, *Natural gas fuelling stations — LNG stations for fuelling vehicles*

ISO 2768-1:1989, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

ISO 5208:2015, *Industrial valves — Pressure testing of metallic valves*

ISO 6708:1995, *Pipework components — Definition and selection of DN (nominal size)*