

ICS 43.020



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 43399-2023

**Road vehicles - Liquefied natural gas (LNG) refuelling
connector - 3.1MPa connector
(English Translation)**

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part 1: Rules for the Structure and Drafting of Standardizing Documents.

This Document modified and adopted ISO 12617:2015 Road Vehicles - Liquefied Natural Gas

(LNG) Refueling Connector - 3.1MPa Connector.

Compared with ISO 12617:2015, this Document made the following structural adjustments:

- 3.3, 3.4~3.8, 3.9~3.13 correspond to 3.4, 3.6~3.10, 3.12~3.16 in ISO 12617:2015;
- Add the numbers of 4.1~4.3;
- 7.3 corresponds to 7.3 and 10.4 in ISO 12617:2015;
- 9.2~9.4 corresponds to 9.2~9.5 in ISO 12617:2015; and add the numbers of 9.2.1~9.2.3;
- 10.4~10.10 corresponds to 10.5~10.11 in ISO 12617:2015; and add the numbers of 10.9.1~10.9.4.

The technical differences and the causes between this Document and ISO 12617:2015 are as

follows:

--- Replace ISO 14469 (see 10.10) with normatively quoted GB/T 43408 to comply with China's technical situation;

--- Delete 3.3 in ISO 12617:2015, which is likely to cause confusion. Delete 3.5 in ISO 12617:2015, the hydrostatic strength is clearly specified and explained in this Document, and there is no need to define it. Delete the second half of the NOTE of 3.7 in ISO 12617:2015, there shall be no requirements in NOTE. Delete the NOTE of 3.9 in ISO 12617:2015, which is already confirmed in 3.1. Delete 3.11 in ISO 12617:2015, and it only appears once in the document;

--- Delete the prerequisite for international certification in 4.1 of ISO 12617:2015, and international certification cannot be carried out through this Document. Delete the operator training requirements in 4.1c) of ISO 12617:2015, which comply with national requirements, and there are clear regulatory requirements for operators. Delete the filling port shall be installed outside the engine compartment in 4.8 of ISO 12617:2015, and there shall be no installation requirements in the product technical requirements standard;

--- Delete that the filling port should not be installed in areas where the temperature exceeds

85 °C in 7.5 of ISO12617:2015; and there shall be no installation requirements in the

product technical requirements standard;

--- Change 9.3 and 9.4 in ISO 12617:2015; merge 9.3 and 9.4; and do not produce Road Vehicles - Liquefied Natural Gas (LNG) Refueling

Connector - 3.1MPa Connector

1 Scope

This Document specifies the general construction requirements, refueling nozzle, refueling receptacle, instructions for use, markings and test methods for new and unused 3.1MPa connectors for road vehicle liquefied natural gas (LNG) filling connectors.

This Document applies to connectors with a working pressure of 3.4MPa.

NOTE: Unless otherwise specified, pressures in MPa mentioned in this Document are considered

gauge
pressures.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates

indicated are applicable to this Document; for the undated documents, only the latest version

(including all the amendments) is applicable to this Document.

GB/T 43408 Road vehicles - Compressed natural gas (CNG) refueling connector (GB/T 43408-2023, ISO 14469:2017, MOD)

ISO 15500-2 Road vehicles - Compressed natural gas (CNG) fuel system components - Part 2: Performance and general test methods

3 Terms and Definitions

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

3.1 Check valve

A component installed inside the refueling receptacle or refueling gun to prevent fuel backflow

or discharge after the refueling nozzle is disconnected from the refueling receptacle.

3.2 Cycle life

The number of refueling that can be withstood by the components without leakage or other malfunctions.

3.3 Dry air

Air with a dew point temperature at the test pressure that is at least 11°C lower than the ambient

test temperature.

3.4 Liquefied natural gas (LNG)

A colorless, cryogenic liquid fluid that is composed primarily of methane and may contain small

amounts of ethane, propane, butane, nitrogen, or other components commonly found in natural

gas.

[SOURCE: GB/T 8423.3-2018, 2.1.14]

3.5 Refueling connector; LNG refueling connector

The connecting assembly of the LNG refueling nozzle (3.6) and the LNG refueling receptacle

(3.7).

NOTE: There are check valves (3.1) in the refueling nozzle and the refueling receptacle that can be opened mechanically by mutual operation.

3.6 Refueling nozzle; LNG refueling nozzle

The component that is safely and quickly connecting and disconnecting the fuel supply from the LNG refueling receptacle (3.7).

3.7 Refueling receptacle; LNG refueling receptacle

The component that is installed on the vehicle to connect to the LNG storage system and dock

with the LNG refueling nozzle (3.6) for safe fuel transferring.

3.8 Maximum service pressure

The maximum pressure that the refueling station provides the fuel.

3.9 Poppet

The moving part within the check valve (3.1) that has the function of closing and opening the

valve body.