

<b>STN</b>	<b>Cestné vozidlá Plniaci konektor na stlačený zemný plyn (CNG) (ISO 14469: 2017)</b>	<b>STN EN ISO 14469</b>  30 2312
------------	---	--

Road vehicles - Compressed natural gas (CNG) refuelling connector (ISO 14469:2017)

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

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/18

Obsahuje: EN ISO 14469:2017, ISO 14469:2017

**126085**

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2018  
Podľa zákona č. 264/1999 Z. z. o technických požiadavkách na výrobky a o posudzovaní zhody a o zmene a doplnení niektorých zákonov v znení neskorších predpisov sa slovenská technická norma a časti slovenskej technickej normy môžu rozmnožovať alebo rozširovať len so súhlasom slovenského národného normalizačného orgánu.

EUROPEAN STANDARD

**EN ISO 14469**

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2017

ICS 43.060.40

English Version

## Road vehicles - Compressed natural gas (CNG) refuelling connector (ISO 14469:2017)

Véhicules routiers - Connecteur de remplissage en gaz  
naturel comprimé (GNC) (ISO 14469:2017)

This European Standard was approved by CEN on 11 September 2017.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>3</b>

## European foreword

The text of ISO 14469:2017 has been prepared by Technical Committee ISO/TC 22 “Road vehicles” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 14469:2017 by Technical Committee CEN/TC 301 “Road vehicles” the secretariat of which is held by AFNOR.

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 March 2018, and conflicting national standards shall be withdrawn at the latest by March 2018.

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.

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

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### Endorsement notice

The text of ISO 14469:2017 has been approved by CEN as EN ISO 14469:2017 without any modification.

---

---

## **Road vehicles — Compressed natural gas (CNG) refuelling connector**

*Véhicules routiers — Connecteur de remplissage en gaz naturel  
comprimé (GNC)*





**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
copyright@iso.org  
www.iso.org

# Contents

Page

<b>Foreword</b> .....	<b>v</b>
<b>Introduction</b> .....	<b>vi</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 General construction requirements</b> .....	<b>2</b>
<b>5 Nozzles</b> .....	<b>3</b>
<b>6 Standard receptacle dimensions</b> .....	<b>4</b>
6.1 Standard receptacle dimensions Size 1 (B200, B250).....	4
6.2 Standard receptacle dimensions size 2 (C200, C250).....	7
<b>7 Receptacles</b> .....	<b>10</b>
<b>8 Instructions</b> .....	<b>11</b>
<b>9 Marking</b> .....	<b>11</b>
<b>10 Tests</b> .....	<b>12</b>
10.1 General requirements.....	12
10.2 User interface.....	12
10.3 Impact resistance.....	12
10.4 Receptacle protective caps.....	13
10.5 Leakage at room temperature.....	13
10.5.1 Nozzle.....	13
10.5.2 Receptacle.....	13
10.6 Valve operating handle.....	14
10.7 Abnormal loads.....	14
10.7.1 General.....	14
10.7.2 Test in the unpressurized condition.....	15
10.7.3 Test in the pressurized condition.....	15
10.8 Rocking/Twisting.....	15
10.9 Mounting hardware torque.....	16
10.10 Low and high temperatures.....	16
10.10.1 General.....	16
10.10.2 Leakage test.....	16
10.10.3 Operation test.....	17
10.11 Durability.....	17
10.11.1 Durability cycling.....	17
10.11.2 Oxygen ageing.....	23
10.11.3 Seal material compatibility.....	23
10.11.4 Ten-day moist ammonia-air stress cracking.....	24
10.11.5 Electrical resistance.....	24
10.12 Hydrostatic strength.....	24
10.13 Corrosion resistance.....	24
10.13.1 Nozzles.....	25
10.13.2 Receptacles.....	25
10.14 Deformation.....	25
10.15 Non-igniting evaluation.....	25
10.16 Pressure-tight protective cap (PTPC).....	25
10.16.1 General.....	25
10.16.2 Leakage.....	26
10.16.3 Durability cycling.....	26
10.16.4 Abuse.....	27
10.16.5 Impact resistance.....	27

10.16.6 Corrosion resistance.....	27
10.16.7 Hydrostatic strength.....	27
<b>Annex A (informative) Nozzle characteristics.....</b>	<b>28</b>
<b>Annex B (normative) Receptacle test fixture.....</b>	<b>29</b>
<b>Bibliography.....</b>	<b>37</b>



## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. [www.iso.org/directives](http://www.iso.org/directives)

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. [www.iso.org/patents](http://www.iso.org/patents)

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 22, *Road vehicles*, Subcommittee SC 41, *Specific aspects for gaseous fuels*.

This first edition of ISO 14469:2016 cancels and replaces the first edition of ISO 14469-1:2004, ISO 14469-2:2007 and ISO 14469-3:2006, which have been technically revised.

## Introduction

This document was developed to use in the examination, testing and certification of newly produced compressed natural (CNG) gas vehicle fuelling nozzles and receptacles and, as such, applies only to the nozzles and receptacles used in CNG fuelling systems, and not to the system itself.

A nozzle certified to this International Standard will be functionally compatible from a safety and performance perspective with all listed receptacles of compatible profile and system pressure. Similarly, a certified receptacle will be functionally compatible from a safety and performance perspective with all listed nozzles of compatible profile and system pressure.

As there may eventually be many different kinds of nozzles and receptacles available from a variety of manufacturers which, for safety reasons, have to be all compatible with one another, this document specifies a series of receptacle profiles. These standard profiles incorporate the design specifications (mating materials, geometry and tolerances) which may be considered in the certification of a submitted nozzle or receptacle.

The construction and performance of nozzles and receptacles are based on the observation that three main parameters affect user safety and system compatibility.

### a) Service pressure

All nozzles and receptacles are designed to have a service pressure of either 20 MPa (200 bar) for B200 and C200 connectors or 25 MPa (250 Bar) for B250 and C250 connectors.

### b) Design life

Frequency of use is the second parameter to be considered. Since frequency of use will differ with the nozzle/receptacle application (i.e. public sector, fleet employee and residential), all receptacles will be tested at 10 000 connect/disconnect cycles for compliance with this document. In addition, all nozzles will be tested according to the following frequency use classifications, as applicable:

- Class A Nozzle, specifying high frequency use, with a cycle life of 100 000 cycles and equating to approximately 100 fills per day for three years;
- Class B Nozzle, specifying medium frequency use, with a cycle life of 20 000 cycles and equating to approximately 10 fills per day for five years.

### c) Training

Operator training required is in accordance with national requirements.

# Road vehicles — Compressed natural gas (CNG) refuelling connector

## 1 Scope

This document specifies CNG refuelling nozzles and receptacles constructed entirely of new and unused parts and materials, for road vehicles powered by compressed natural gas. A CNG refuelling connector consists of, as applicable, the receptacle and its protective cap (mounted on the vehicle) and the nozzle.

This document is applicable only to such devices designed for a service pressure of 20 MPa (200 bar) and 25 MPa (250 bar), to those using CNG according to ISO 15403-1 and ISO 15403-2 and having standardized mating components, and to connectors that prevent natural gas vehicles from being fuelled by dispensers with service pressures higher than that of the vehicle, while allowing them to be fuelled by dispensers with service pressures less than or equal to the vehicle fuel system service pressure.

This document refers to service pressures of 20 MPa and 25 MPa for:

- size 1: B200 and B250;
- size 2: C200 and C250.

NOTE All references to pressures, given in megapascals and bar<sup>1)</sup> are considered gauge pressures, unless otherwise specified.

## 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.

ISO 188, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

ISO 1817, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

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

ISO 15501-1, *Road vehicles — Compressed natural gas (CNG) fuel systems — Part 1: Safety requirements*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**