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Natural gas fuelling stations - CNG stations for fuelling vehicles (ISO 16923:2016)

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. 10/18

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 16923

April 2018

ICS 75.200

English Version

Natural gas fuelling stations - CNG stations for fuelling vehicles (ISO 16923:2016)

Stations-service de gaz naturel - Stations GNC pour le ravitaillement de véhicules (ISO 16923:2016)

Erdgastankstellen - CNG-Tankstellen zur Betankung von Fahrzeugen (ISO 16923:2016)

This European Standard was approved by CEN on 26 January 2018.

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: Rue de la Science 23, B-1040 Brussels

Ref. No. EN ISO 16923:2018 E

EN ISO 16923:2018 (E)

Contents

Page

European foreword

The text of ISO 16923:2016 has been prepared by ISO/TMBG “Technical Management Board - groups” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 16923:2018 by Technical Committee CEN/TC 326 “Natural Gas Vehicles - Fuelling and Operation” the secretariat of which is held by NEN.

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 October 2018, and conflicting national standards shall be withdrawn at the latest by October 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

This document has been prepared under the standardization request M/533 given to CEN by the European Commission and the European Free Trade Association in the framework of Directive 2014/94/EU on the deployment of alternative fuels infrastructure.

The standardization request M/533 focuses on interoperability aspects of the alternative fuels infrastructure, which for CNG fuelling stations are covered in this document by the following items:

— Fuelling pressure (service pressure): This document applies a fuelling pressure of 20,0 MPa gauge (200 bar) at 15 °C. This document allows possible higher fuelling pressures if the necessary requirements as provided are met accordingly. When adopting the fuelling pressure of 20,0 MPa at 15 °C, the maximum fuelling pressure can be 26,0 MPa with “temperature compensation”.

— Connector profile: The harmonized connector profile is described in EN ISO 14469:2017, that specifies CNG refuelling nozzles and receptacles constructed entirely of new and unused parts and materials, for road vehicles powered by CNG, and which is referenced in this document as well as included in UN/ECE Regulation N° 110. EN ISO 14469:2017 refers to fuelling pressures of 20 MPa and 25 MPa for both "size 1" (B200 and B250) and "size 2" (C200 and C250).

In addition to interoperability aspects, the following aspects are relevant for applying this document in Europe:

— Fuel quality: The quality of CNG for use as automotive fuel is covered in EN 16723-2:2017, that specifies the requirements and test methods for natural gas, biomethane and blends of both.

— Fuel labelling: The fuel label for CNG at dispensers is covered by EN 16942:2016, that lays down harmonized identifiers for marketed liquid and gaseous fuels, and which has also been developed to support Directive 2014/94/EU.

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.

EN ISO 16923:2018 (E)

Endorsement notice

The text of ISO 16923:2016 has been approved by CEN as EN ISO 16923:2018 without any modification.

Annex A
(informative)

A-deviation

A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN-CENELEC national member.

This European Standard does not fall under any Directive of the EU.

In the relevant CEN-CENELEC countries these A-deviations are valid instead of the provisions of the European Standard until they have been removed.

Country	**Clause**	**Deviation**
ITALY	Annex B (normative) Separation distances B.3 Internal Separation distances, Table B.1 – Internal separation distances	According to Italian legislation concerning rules of fire prevention for the design, construction and operation of stations for fuelling compressed natural gas (CNG) to vehicles, the internal safety distances are higher than those prescribed in the standard Ministerial Decree of 24th May 2002 (published on the Official Journal of the Italian Republic n. 131 of 6th June 2002), as amended by Ministerial Decree of 28th June 2002 (published on the Official Journal of the Italian Republic n. 161 of 11th July 2002)

INTERNATIONAL STANDARD

ISO 16923

First edition
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Natural gas fuelling stations — CNG stations for fuelling vehicles

Stations-service de gaz naturel — Stations GNC pour le ravitaillement de véhicules

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Contents

Page

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 (see 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 (see 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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/PC 252, *Natural gas fuelling stations for vehicles*.

INTERNATIONAL STANDARD **ISO 16923:2016(E)**

Natural gas fuelling stations — CNG stations for fuelling vehicles

1 Scope

This document covers the design, construction, operation, inspection and maintenance of stations for fuelling compressed natural gas (CNG) to vehicles, including equipment, safety and control devices.

This document also applies to portions of a fuelling station where natural gas is in a gaseous state and dispensing CNG derived from liquefied natural gas (LCNG) according to ISO 16924.

This document applies to fuelling stations supplied with natural gas as defined in local applicable gas composition regulations or ISO 13686. It also applies to other gases meeting these requirements including biomethane, upgraded coal-bed methane (CBM) and gas supplies coming from LNG vaporization (on-site or off-site).

This document includes all equipment for downstream gas supply connection (i.e. point of separation between the CNG fuelling station piping and the pipeline network). Fuelling station nozzles are not defined in this document.

This document covers fuelling stations with the following characteristics:

— slow fill;

— fast fill;

— private access;

— public access (self-service or assisted);

— fuelling stations with fixed storage;

— fuelling stations with mobile storage (daughter station);

— multi-fuel stations.

This document is not applicable to domestic CNG fuelling devices without buffer storage.

NOTE This document is based on the condition that the gas entering the fuelling station is odorized. For unodorized gas fuelling stations, additional safety requirements are included in Clause 10.

2 Normative references

The following documents are referred to in 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.

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 834-1, *Fire-resistance tests — Elements of building construction — Part 1: General requirements*

ISO 4126-1, *Safety devices for protection against excessive pressure — Part 1: Safety valves*

ISO 8580, *Rubber and plastics hoses — Determination of ultra-violet resistance under static conditions*

ISO 9809-1, *Gas cylinders — Refillable seamless steel gas cylinders — Design, construction and testing — Part 1: Quenched and tempered steel cylinders with tensile strength less than 1 100 MPa*

ISO 9809-2, *Gas cylinders — Refillable seamless steel gas cylinders — Design, construction and testing — Part 2: Quenched and tempered steel cylinders with tensile strength greater than or equal to 1 100 MPa*

ISO 11119-1, *Gas cylinders — Refillable composite gas cylinders and tubes — Design, construction and testing —Part 1: Hoop wrapped fibre reinforced composite gas cylinders and tubes up to 450 l*

ISO 11119-2, *Gas cylinders — Refillable composite gas cylinders and tubes — Design, construction and testing — Part 2: Fully wrapped fibre reinforced composite gas cylinders and tubes up to 450 l with load-sharing metal liners*

ISO 11119-3, *Gas cylinders — Refillable composite gas cylinders and tubes — Design, construction and testing — Part 3: Fully wrapped fibre reinforced composite gas cylinders and tubes up to 450L with non-load-sharing metallic or non-metallic liners*

ISO 11439, *Gas cylinders — High pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles*

ISO 11925-3, *Reaction to fire tests — Ignitability of building products subjected to direct impingement of flame — Part 3: Multi-source test*

ISO 12100, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 13847, *Petroleum and natural gas industries — Pipeline transportation systems — Welding of pipelines*

ISO 14120, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

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

ISO 15500-17, *Road vehicles — Compressed natural gas (CNG) fuel system components — Part 17: Flexible fuel line*

ISO 15589-1, *Petroleum, petrochemical and natural gas industries — Cathodic protection of pipeline systems — Part 1: On-land pipelines*

ISO 15649, *Petroleum and natural gas industries — Piping*

IEC 31010, *Risk management — Risk assessment techniques*

IEC 60079-0, *Electrical apparatus for explosive gas atmospheres — Part 0: General requirements*

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

IEC 60079-11, *Explosive atmospheres — Part 11: Equipment Protection by Intrinsic Safety "i"*

IEC 60079-14, *Electrical apparatus for explosive gas atmospheres — Part 14: Electrical installations in hazardous areas (other than mines)*

IEC 60079-25, *Explosive atmospheres — Part 25: Intrinsically safe electrical systems*

IEC 60204-1, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*