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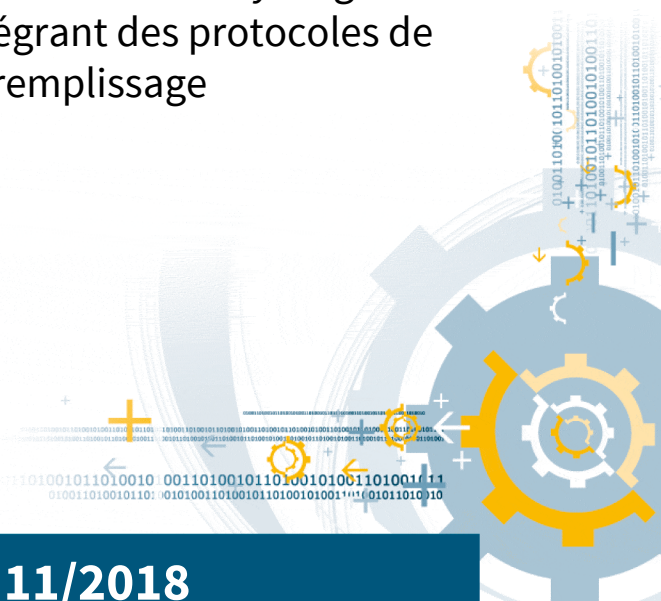
**ILNAS-EN 17127:2018**

**Outdoor hydrogen refuelling points  
dispensing gaseous hydrogen and  
incorporating filling protocols**

Wasserstofftankstellen im Außenbereich  
zur Abgabe gasförmigen Wasserstoffs  
und Betankungsprotokolle umfassend

Points de ravitaillement en hydrogène en  
extérieur distribuant de l'hydrogène  
gazeux et intégrant des protocoles de  
remplissage

**11/2018**



## National Foreword

This European Standard EN 17127:2018 was adopted as Luxembourgish Standard ILNAS-EN 17127:2018.

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
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EUROPEAN STANDARD ILNAS-EN 17127:2018 **EN 17127**  
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English Version

**Outdoor hydrogen refuelling points dispensing gaseous  
hydrogen and incorporating filling protocols**

Points de ravitaillement en hydrogène en extérieur  
distribuant de l'hydrogène gazeux et intégrant des  
protocoles de remplissage

Gasförmiger Wasserstoff - Betankungsanlagen - Teil 1:  
Allgemeine Anforderungen

This European Standard was approved by CEN on 25 June 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.



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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 17127:2018) has been prepared by Technical Committee CEN/TC 268 “Cryogenic vessels and specific hydrogen technologies applications”, 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 May 2019, and conflicting national standards shall be withdrawn at the latest by May 2019.

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 Mandate M/533 given to CEN by the European Commission and the European Free Trade Association.

It applies to vehicles covered by GTR13.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

## Introduction

The European Commission in its standardization request M/533 of March 12th, 2015, aims to ensure that technical specifications for interoperability of refuelling points are specified in European Standards compatible with the relevant International Standards. These specifications aim to meet the European needs, be compatible and aligned as much as possible with relevant International Standards and as far as possible with existing refuelling infrastructure already in place and leave room to accommodate the adopted standard to local technical, analytical and regulatory needs. The requested European Standards aim to be technologically and commercially neutral and based on the know-how currently in possession of the EU industry and of the public sector on a fair, reasonable and non-discriminatory basis.

According to the legal requirements given in the Alternative Fuels Infrastructure Directive (AFID) and M/533, European Standards specifying only the required specifications for ensuring the interoperability of refuelling points have to be provided. European standards and common requirements with respect to “interoperability” mean the capacity of an infrastructure to supply energy that is compatible with all vehicle technologies and allows seamless EU-wide mobility and a clear definition of fuel pressure and temperature levels and connector designs<sup>1</sup>.

The European Standardization Organizations (ESOs) should adopt European Standards in accordance with Article 10 of Regulation (EU) No 1025/2012 of the European Parliament and of the Council, and those standards should be based on current International Standards or ongoing international standardization work, where applicable.

Direction from the standardization request M/533 for European Standards for hydrogen supply are to *develop European Standards containing technical solutions for interoperability with technical specifications in regard to Article 5 and point 2 of Annex II, in particular for:*

- a) outdoor hydrogen refuelling points dispensing gaseous hydrogen;
- b) hydrogen purity dispensed by hydrogen refuelling points;
- c) fuelling algorithms and equipment of hydrogen refuelling points;
- d) connectors for vehicles for the refuelling of gaseous hydrogen.

This document specifies Items a) and c). Item b) is covered by EN 17124 and Item d) by EN ISO 17268.

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<sup>1</sup> The energy to be supplied is hydrogen as a fuel and this fuel is dispensed in a hydrogen refuelling station meeting interoperability requirements.

## 1 Scope

This document defines the minimum requirements to ensure the interoperability of public hydrogen refuelling points including refuelling protocols that dispense gaseous hydrogen to road vehicles (e.g. Fuel Cell Electric Vehicles) complying with applicable regulations.

The safety and performance requirements for the entire hydrogen refuelling station (HRS), addressed in accordance with existing relevant European and national legislation, are not included in this document.

NOTE Guidance on considerations for hydrogen refuelling stations (HRS) is provided in ISO/TS 19880-1.

## 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 17124, *Hydrogen fuel — Product specification and quality assurance — Proton exchange membrane (PEM) fuel cell applications for road vehicles*

EN ISO 17268, *Gaseous hydrogen land vehicle refuelling connection devices (ISO 17268)*

## 3 Terms and definitions

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

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

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

NOTE Units used in this document follow SI (International System of Units).

### 3.1

#### **compressed Hydrogen Storage System**

##### **CHSS**

hydrogen storage on-board vehicle, as defined in the GTR#13

### 3.2

#### **hydrogen refuelling station**

##### **HRS**

facility for the dispensing of compressed hydrogen vehicle fuel and includes the supply of hydrogen compression, storage and dispensing systems

### 3.3

#### **HRS Interoperability**

capacity of an infrastructure to supply hydrogen at the HRS/vehicle interface that is compatible with road vehicles and allows seamless EU-wide mobility through applying clear definitions of connector designs, fuel quality, pressure levels and temperatures

**3.4****maximum allowable working pressure****PS**

maximum pressure permissible in a vessel or system at the temperature specified for the pressure.

Note 1 to entry: The maximum allowable working pressure may also be defined as the design pressure, the maximum allowable operating pressure, the maximum permissible working pressure, or the maximum allowable pressure for the rating of pressure vessels and equipment manufactured in accordance with national pressure vessel codes.

**3.5****maximum/minimum allowable temperature****TS**

values of the maximum/minimum temperatures at which safe and good functioning of the component is ensured and for which it has been designed, as specified by the manufacturer

**3.6****maximum operating pressure****MOP**

highest pressure that is expected for a component or system during normal operation

**3.7****nominal working pressure****NWP**

pressure of a full vehicle CHSS at a gas temperature of 15 °C

Note 1 to entry: See GTR#13 Clause II-3.37, on Page 54.

Note 2 to entry: For road vehicles, this is typically 35 MPa or 70 MPa.

**3.8****refuelling protocol**

automated process to ensure safe filling of vehicles, called refuelling algorithms in the Alternative Fuel Infrastructure Directive (2014/94/EU)

**3.9****safety distance**

distance to acceptable risk level or minimum risk-informed distance between a hazard source and a target (human, equipment or environment) which will mitigate the effect of a likely foreseeable incident and prevent a minor incident escalating into a larger incident

**3.10****safety measure**

measure intended to protect a protected item located outside the facility from the effects of an identifiable gas leak caused by a malfunction when the facility is not operated as intended

Note 1 to entry: Safety measures include, but are not limited to, safety distances, sufficiently tall pressure relief lines, firewalls.