



**BSI Standards Publication**

# **Fuel cell road vehicles — Performance measurement — Vehicles fuelled with compressed hydrogen**

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## National foreword

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The UK participation in its preparation was entrusted to Technical Committee PEL/69, Electric vehicles.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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# Technical Report

**ISO/TR 11954**

## **Fuel cell road vehicles — Performance measurement — Vehicles fuelled with compressed hydrogen**

*Véhicules routiers avec pile à combustible — Mesure des  
performances — Véhicules alimentés par hydrogène comprimé*

**Second edition  
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# Contents

Page

|                                                                              |           |
|------------------------------------------------------------------------------|-----------|
| <b>Foreword</b>                                                              | <b>iv</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 Parameters, units and accuracy of measurements</b>                      | <b>3</b>  |
| <b>5 Test conditions</b>                                                     | <b>3</b>  |
| 5.1 Vehicle conditions                                                       | 3         |
| 5.2 Atmospheric conditions                                                   | 4         |
| 5.2.1 Ambient temperature and atmospheric pressure                           | 4         |
| 5.2.2 Air density                                                            | 4         |
| 5.2.3 Wind speed                                                             | 4         |
| 5.2.4 Relative humidity                                                      | 4         |
| 5.3 Track conditions                                                         | 4         |
| 5.3.1 General conditions                                                     | 4         |
| 5.3.2 Straight track                                                         | 4         |
| 5.3.3 Loop track                                                             | 5         |
| 5.3.4 Single direction test                                                  | 5         |
| <b>6 Preconditioning of the vehicle</b>                                      | <b>5</b>  |
| 6.1 Hydrogen refuelling                                                      | 5         |
| 6.2 RESS state of charge preconditioning of externally chargeable FCHEV      | 5         |
| 6.3 Warming up                                                               | 6         |
| 6.4 Selection of driving mode                                                | 6         |
| <b>7 Test sequence</b>                                                       | <b>6</b>  |
| 7.1 Test sequence for non-externally chargeable FCHEV                        | 6         |
| 7.2 Test sequence for externally chargeable FCHEV                            | 6         |
| <b>8 Test procedure</b>                                                      | <b>7</b>  |
| 8.1 Maximum speed                                                            | 7         |
| 8.1.1 Standard test procedure                                                | 7         |
| 8.1.2 Single direction test procedure                                        | 7         |
| 8.2 Maximum thirty minutes speed                                             | 8         |
| 8.3 Acceleration ability ( $v_1$ to $v_2$ )                                  | 8         |
| 8.3.1 Acceleration ability 0 km/h to 50 km/h                                 | 8         |
| 8.3.2 Acceleration ability 50 km/h to 80 km/h                                | 9         |
| 8.4 Speed uphill                                                             | 9         |
| 8.5 Hill starting ability                                                    | 9         |
| 8.5.1 Principle                                                              | 9         |
| 8.5.2 Procedure                                                              | 9         |
| 8.5.3 Evaluation of $\alpha_0$                                               | 10        |
| <b>Annex A (informative) Test results of performance measurements</b>        | <b>11</b> |
| <b>Annex B (informative) Quantity of electricity measurement of the RESS</b> | <b>13</b> |
| <b>Bibliography</b>                                                          | <b>15</b> |

## Foreword

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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 document 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](http://www.iso.org/directives)).

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This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 37, *Electrically propelled vehicles*.

This second edition cancels and replaces the first edition (ISO/TR 11954:2008), which has been technically revised.

The main changes compared to the previous edition are as follows:

- revision of the scope;
- addition of normative references;
- addition of terms and definitions, e.g. complete vehicle kerb mass, maximum thirty minutes speed, acceleration, speed uphill and hill starting performance;
- addition of driving performance tests, e.g. maximum thirty minutes speed, acceleration, speed uphill and hill starting performance;
- revision of the method for adjusting the RESS SOC;
- addition of driving mode setting method.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

# Fuel cell road vehicles — Performance measurement — Vehicles fuelled with compressed hydrogen

## 1 Scope

This document specifies test methods for the measurement of performance, such as acceleration, maximum speed and hill climbing ability, of fuel cell hybrid electric vehicles (FCHEV) as passenger cars and light duty trucks with a maximum authorized total mass of 3 500 kg and fuelled with compressed hydrogen.

## 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.

ISO/TR 8713:2019, *Electrically propelled road vehicles — Vocabulary*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions given in ISO/TR 8713 and the following apply.

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

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

### 3.1 acceleration ability

shortest time required to accelerate the vehicle from speed  $v_1$  to speed  $v_2$

[SOURCE: ISO 8715:2001, 3.7, modified — Note 1 to entry was removed.]

### 3.2 complete vehicle kerb mass

mass of the vehicle including batteries, without occupants but with fuel, cooling liquid, window washer fluid, lubricating oil, tools and spare wheel, on-board charger, portable charger or part of it, if provided as standard equipment by the vehicle manufacturer

[SOURCE: ISO 8715:2001, 3.1]

### 3.3 dynamic loaded radius

effective radius of a tyre when it is deformed by the mass of the vehicle loaded to its *test mass* ([3.14](#))

[SOURCE: ISO 8715:2001, 3.4]

### 3.4 FCHEV operation mode fuel cell hybrid electric vehicle operation mode

mode of a *fuel cell hybrid electric vehicle (FCHEV)* ([3.5](#)) in which both a *rechargeable energy storage system (RESS)* ([3.10](#)) and fuel cell system are used sequentially or simultaneously for vehicle propulsion