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Test Methods for Power Performance of Fuel Cell
Electric Vehicles
燃料电池电动汽车动力性能试验方法

(English Translation)

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FOREWORD

This document is drafted in accordance with the rules given in GB/T 1.1-2020 “*Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents*”.

This document replaces GB/T 26991-2011 “*Fuel cell electric vehicles - Maximum speed test method*”. In addition to structural adjustments and editorial modifications, the following technical deviations have been made with respect to GB/T 26991-2011:

- a) Modified the application scope of this standard (See Clause 1 vs. Clause 1 of GB/T 26991-2011);
- b) Added the term and definition of REESS mode (See 3.1);
- c) Added the term and definition of hybrid mode (See 3.2);
- d) Modified the environment conditions (See 4.1 vs. 5.4 of GB/T 26991-2011);
- e) Modified the test apparatus (See 4.2 vs. Clause 4 of GB/T 26991-2011);
- f) Modified the vehicle conditions (See 4.4 vs. 5.2 of GB/T 26991-2011);
- g) Modified the road conditions (See 4.5 vs. 5.3 of GB/T 26991-2011);
- h) Added the hydrogen refueling requirements (See 5.1);
- i) Modified the requirements for regular SOC adjustment of REESS (See 5.2 vs. 5.5.2 of GB/T 26991-2011);
- j) Added the arrangement of test items (See 6.1);
- k) Added the requirements for setting of drive mode (See 6.2);
- l) Added the maximum 30 min speed test (See 7.2);
- m) Added the acceleration ability test (See 7.3);
- n) Added the speed uphill test (See 7.4);
- o) Added the maximum gradability test (See 7.5);
- p) Added the hill starting ability test (See 7.6).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The organizations issuing this document shall not be held responsible for identifying any or all such patent rights.

This document was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

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The previous editions of this document are as follows:

- Firstly issued in 2011 as GB/T 26991-2011;
- This edition is the first revision.

Test Methods for Power Performance of Fuel Cell Electric Vehicles

1 SCOPE

This document describes the test methods for power performance, e.g., acceleration ability, maximum speed, and gradeability, etc., of fuel cell electric vehicles.

This document is applicable to the power performance testing of categories M and N fuel cell electric vehicles (hereinafter referred to as “vehicle” or “FCEV”) using compressed hydrogen.

2 NORMATIVE REFERENCES

The following normative documents contain provisions which, through normative reference in this text, constitute essential provision of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendment) applies.

| | |
|-------------------|------------------------------------------------------------------------------------------------------------------------------|
| GB/T 3730.2 | Road vehicles - Masses - Vocabulary and codes |
| GB/T 12428 | Laden mass calculating method for bus |
| GB/T 12534 | Motor vehicles - General rules of road test method |
| GB/T 12539 | Motor vehicles steep hill climbing test method |
| GB/T 12545.1-2008 | Measurement methods of fuel consumption for automobiles - Part 1: Measurement methods of fuel consumption for passenger cars |
| GB/T 15089 | Classification of power-driven vehicles and trailers |
| GB 18384 | Electric vehicles safety requirements |
| GB/T 18385 | Electric vehicles - Power performance Test method |
| GB/T 19596 | Terminology of electric vehicles |
| GB/T 19752 | Hybrid electric vehicles-Power performance-Test method |
| GB/T 24548 | Fuel cell electric vehicles - Terminology |
| GB/T 37244 | Fuel specification for proton exchange membrane fuel cell vehicles - Hydrogen |

3 TERMS AND DEFINITIONS

For the purpose of this document, the terms and definitions given in GB/T 12539, GB/T 15089, GB 18384, GB/T 18385, GB/T 19596, GB/T 19752 and GB/T 24548 as well as the following apply.

3.1 rechargeable electrical energy storage system (REESS) mode

A drive mode in which the REESS provides energy or power for the vehicle only

3.2 hybrid mode

A drive mode in which two or more energy sources or power sources are used to provide energy or power for the vehicle at the same time

4 TEST CONDITIONS

4.1 Environment Requirements

4.1.1 Atmospheric temperature and atmospheric pressure

The atmospheric temperature is 0°C to 40°C; the atmospheric pressure is 91 kPa to 104 kPa.

4.1.2 Air density

The air density at the time of the test, calculated by Equation (1), shall not vary by more than 7.5 % from the air density in the reference conditions:

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