ICS 43.080.01
CCS T 47

中华人民共和国国家标准
NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 26990-2023
Replaces GB/T 26990-2011 and GB/T 29126-2012

Fuel Cell Electric Vehicles-Onboard Hydrogen System Technical Specifications
燃料电池电动汽车 车载氢系统技术条件

(English Translation)

Issued on 2023-11-27 **Implemented on 2023-11-27**

Jointly Issued by
State Administration for Market Regulation of the People's Republic of China &
Standardization Administration of the People's Republic of China

CONTENTS

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 26990-2011 "*Fuel Cell Electric Vehicles - Onboard Hydrogen System - Specifications*" and GB/T 29126-2012 "*Fuel Cell Electric Vehicles - Onboard Hydrogen System - Test Methods*". In addition to structural adjustments and editorial modifications, the following technical deviations have been made with respect to GB/T 26990-2011 and GB/T 29126-2012:

a) Modified the scope into "the working pressure of onboard hydrogen system does not exceed 70 MPa" (See Clause 1 vs. Clause 1 of GB/T 26990-2011);

b) Modified the definition of onboard hydrogen system (See 3.1 vs. 3.1 of GB/T 26990-2011);

c) Modified the Chinese name of "pressure regulator" (See 3.4 vs. 3.4 of GB/T 26990-2011);

d) Deleted the term "pressure relief valve" (See 3.5 of GB/T 26990-2011);

e) Added the requirements for measurement parameters, and their units, accuracies and resolutions (See Clause 4);

f) Deleted certain information contained in the Requirements (See Clause 4 of GB/T 26990-2011);

g) Added the test requirements for main shutoff valve (See 5.2.3 vs. 4.1.6 of GB/T 26990-2011);

h) Modified the requirements for mounting strength and the test requirements (See 5.3 vs. 4.2.4 of GB/T 26990-2011);

i) Added the requirements for gas tightness and the test requirements (See 5.4);

j) Added the requirements for environmental adaptability and the test requirements (See 5.5);

k) Added the test conditions (See Clause 6);

l) Added the test method for main shutoff valve (See 7.1);

m) Added the test method for mounting strength (See 7.2);

n) Added the test method for gas tightness (See 7.3);

o) Added the test method for environmental adaptability, including high/low temperature test, damp heat test, vibration test and salt spray test (See 7.4).

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.

This document was prepared by SAC/TC 114 (National Technical Committee on Road Vehicles of Standardization Administration of China).

This document was drafted by Zhejiang University, China Automotive Technology Research Center Co., Ltd., China Automotive Research New Energy Vehicle Inspection Center (Tianjin) Co., Ltd., Toyota Motor (China) Investment Co., Ltd., Shanghai Shunhua New Energy System Co., Ltd., Dongfeng Motor Group Co., Ltd., BAIC Foton Motor Co., Ltd., Daimler (China) Commercial Vehicle Investment Co., Ltd., Xiamen Jinlong United Automobile Industry Co., Ltd FAW Toyota Technology Research and Development Branch, Shanghai Jening New Energy Technology Development Co., Ltd., and Baowu Clean Energy Co., Ltd.

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The previous editions of this document are as follows:

— This document was first issued in 2011 as GB/T 26990-2011;

— This edition is the first revision, and the content of GB/T 29126-2012 was amalgamated.

Fuel Cell Electric Vehicles-Onboard Hydrogen System Technical Specifications

1 SCOPE

This document specifies the technical requirements and test methods of the onboard hydrogen system of fuel cell electric vehicles (FCEV).

This document is applicable to the fuel cell electric vehicles, fueled with compressed gaseous hydrogen, of which the working pressure does not exceed 70 MPa at an ambient temperature of 15°C.

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 2423.4 Environmental testing for electric and electronic products - Part 2: Test method - Test Db: Damp heat, cyclic (12h+12h cycle)

GB/T 2423.17 Environmental testing for electric and electronic products - Part 2: Test method - Test Ka: Salt mist

GB/T 2423.43 Environmental testing for electric and electronic products - Part 2: Test methods - Mounting of specimens for vibration, impact and similar dynamic tests

GB/T 2423.56 Environmental testing - Part 2: Test methods - Test Fh: Vibration, broadband random and guidance

GB/T 24548 Fuel Cell Electric Vehicles - Terminology

GB/T 24549 Fuel cell electric vehicles - Safety requirements

3 TERMS AND DEFINITIONS

For the purpose of this document, the terms and definitions given in GB/T 24548 and GB/T 24549, as well as the following apply.

3.1 onboard hydrogen system

the device from hydrogen fueling receptacle to pressure regulator of the FCEV, which is related to hydrogen refueling, storage, transportation, supply and control

Note: See Annex A for the diagram of onboard hydrogen system.

3.2 hydrogen storage cylinder

a device in the FCEV, intended for storing high pressure hydrogen

3.3 check valve

a valve intended for preventing backflow of gas medium

3.4 pressure regulator

a valve that reduces the pressure to a value required for operation

4 MEASUREMENT PARAMETERS, AND THEIR UNITS, ACCURACIES AND RESOLUTIONS

Table 1 specifies the parameters to be measured during test, and their units, accuracies and resolutions.

Table 1 Requirements for measurement parameters, and their units, accuracies and resolutions

Measurement parameter	Unit	Accuracy	Resolution
Time	s	± 0.1	0.1
Temperature	°C	± 1	1

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