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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18386.2-2022

Replacing GB/T 18386-2017

**Test methods for energy consumption and range of electric
vehicles - Part 2: Heavy-duty commercial vehicles**

电动汽车能量消耗量和续驶里程试验方法 第2部分：重型商用车辆

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part

1.Rules for the Structure and Drafting of Standardizing Documents. This Document is Part 2 of GB/T 18386 Test Methods for Energy Consumption and Range of Electric Vehicles. GB/T 18386 has published the following parts.

1.Light-Duty Vehicles;

2.Heavy-Duty Commercial Vehicles. This Document partially replaced GB/T 18386-2017 Electric Vehicles - Energy Consumption and Range - Test Procedures. Compared with GB/T 18386-2017, the major technical changes of this Document are as follows besides the structural adjustment and editorial modification.

a) Change the scope; and add the provisions on on non-applicable models and models to be implemented by reference (see Clause 1 of this Edition; Clause 1 of 2017 Edition);

b) Change the environmental requirements (see

4.1 of this Edition;

4.3.3 of 2017 Edition);

c) Change the test cycle from CCBC and C-WTVC to China Heavy-Duty Commercial Vehicle Test Cycle (CHTC); and add the correction method of the test cycle when the maximum speed of the vehicle is less than the maximum speed of CHTC (see

4.4 of this Edition;

4.4.3 of 2017 Edition);

d) Change the tolerance requirements of the test cycle (see

5.2 of this Edition;

4.4.2 of 2017 Edition);

1 Scope

GB/T 18386.2-2022 is the Chinese national standard on test methods for energy consumption and range of electric vehicles - part 2: heavy-duty commercial vehicles, in the field of road vehicles engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 14 October 2022 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2023.

Classification: ICS 43.020, CCS T47. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Document specifies the test methods for the energy consumption and driving range of

pure electric vehicles. This Document is applicable to pure electric vehicles with a maximum design total mass of more than 3500kg, including trucks, semi-trailer towing vehicles, passenger cars, dump trucks and city buses. Concrete mixer trucks can refer to the relevant measurement methods of dump trucks; and other special transport vehicles can refer to the relevant measurement methods of trucks. This Document does not apply to special operation vehicles, including van type special operation vehicles, tank type special operation vehicles, special dump operation vehicles, grate type special operation vehicles, lifting special operation vehicles and special-structured special operation vehicles, etc.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB 7258 Safe Specification for Motor Vehicles Operating on Roads

GB/T 12534 Motor Vehicles - General Rules of Road Test Method

GB 18352.6-2016 Limits and Measurement Methods for Emissions from Light-Duty Vehicles (CHINA 6)

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in GB 7258, GB/T 19596, GB 18352.6-2016, GB/T 38146.2-2019 apply.

4.1 Environmental conditions

4.1.1 The recommended ambient temperature is (23 ± 5) °C. The ambient temperature range can be extended to 5°C~35°C upon suggestion by the automobile manufacturer and confirmed by the inspection agency.

4.2 Measurement parameters, units and accuracy

4.2.1 The test equipment used for the test shall meet the relevant requirements of CD.1, CD.2 and CD.5 in GB 18352.6-2016.

4.3.2 Vehicle conditions

4.3.2.1 The test vehicle shall be loaded according to the technical requirements of each test.

4.3.2.5 The test driver shall make the rechargeable energy storage system (REESS) work at the normal operating temperature according to the operating procedures recommended

by the vehicle manufacturer.

4.3.2.6 Before the test, the test vehicle shall drive at least 300km with the REESS installed on the test vehicle.

4.3.3 Setting of road load The measurement of running resistance and the simulation on the chassis dynamometer shall be in accordance with the provisions in GB/T 27840. When carrying out the sliding test on the road and chassis dynamometer, the function of the braking energy recovery system shall be shielded. During the sliding test on the road and chassis dynamometer, other parts of the car should be in the same state (such as air conditioning off, etc.).

4.4 Test cycle

4.4.1 The test vehicle shall measure the energy consumption and range of the vehicle in accordance with the China Heavy-Duty Commercial Vehicle Test Cycle (CHTC) stipulated in Appendix A of GB/T 38146.2-2019.

4.4.2 If the maximum vehicle speed of the vehicle is less than the maximum vehicle speed of CHTC, when the target vehicle speed is greater than the maximum vehicle speed, the test cycle shall be corrected according to the provisions of CA.5 in GB 18352.6-2016.

5 Test Procedure

5.1 General requirements The same test procedure shall be used to determine the energy consumption and range, and the test procedure includes the following three steps.

5.2 Tolerance

5.2.1 If the maximum vehicle speed of the vehicle is no less than the maximum vehicle speed of CHTC, the test shall be carried out according to the test cycle specified in 4.4.1. The speed tolerance and time tolerance of the test cycle shall meet the requirements of the tolerance and reference curve given in Figure

1. Each point in Figure 1 gives a speed tolerance of $\pm 3\text{km/h}$ and a time tolerance of $\pm 1\text{s}$. In each test cycle, the cumulative time allowed to exceed the tolerance range does not exceed 15s. The total time out of tolerance shall be noted in the test report.

5.3 Conditions for terminating the test

5.3.1 When carrying out the test specified in 5.5, the test shall be stopped when the following situations occur.

5.3.2 When the condition for ending the test is reached, keep the gear position unchanged, let the vehicle slide to 5km/h, and then depress the braking pedal to stop.