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

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Replacing GB/T 12782-2007

**Requirement and test method of heating performance for motor
vehicle**

汽车采暖性能要求和试验方法

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Table of Contents

1	Scope
2	Normative References
3	Terms and Definitions
4	Performance Requirements
5	Test Conditions
5.2	Test Environment
5.3	Test Vehicle
5.4	Other Test Conditions
5.4.2	Laboratory test
6	Test Methods
6.1	Arrangement of Position of Measuring Temperature
6.2	Test Conditions
6.3	Test Procedures
6.3.1	Road test procedures
6.3.2	Laboratory test procedures
7	Test Data Processing and Test Report

1 Scope

GB/T 12782-2022 is the Chinese national standard on requirement and test method of heating performance for motor vehicle, 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 30 December 2022 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 July 2023. Classification: ICS 43.020, CCS T04. 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 requirement, test method, data processing and test report of heating performance for motor vehicle. This document is applicable to Category-M and Category-N motor vehicles.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

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

GB/T 15089 Classification of Powder-driven Vehicles and Trailers

GB 18352.6 Limits and Measurement Methods for Emissions from Light-duty Vehicles

GB/T 19596 Terminology of Electric Vehicles

GB/T 27840 Fuel Consumption Test Methods for Heavy-duty Commercial Vehicles

GB/T 38146.1 China Automotive Test Cycle - Part

3 Terms and Definitions

What is defined in GB/T 15089, GB/T 19596, GB/T 38146.1 and GB/T 38146.2, and the following terms and definitions are applicable to this document.

3.1 position of measuring temperature Position of measuring temperature refers to the installation position of temperature sensor.

3.3 transient condition Transient condition refers to the driving condition, in which, the vehicle speed continuously changes within a certain period of time.

4 Performance Requirements

In accordance with the test conditions provided in 6.2.2,

5 Test Conditions

5.1 Test Instrument The measurement parameters, unit and accuracy requirements of the test instrument are shown in Table 1.

5.2 Test Environment

5.2.1 General requirements The test can be carried out under the conditions of road environment or laboratory environment. The conditions of road environment shall comply with the requirements of 5.2.2; the conditions of laboratory environment shall comply with the requirements of 5.2.3.

5.4 Other Test Conditions

5.4.1 Road test The road test shall comply with the requirements of GB/T 12534.

6.1 Arrangement of Position of Measuring Temperature

6.1.1 The requirements for the position of measuring temperature in the vehicle are shown in Table

2.The seat should be placed in the middle position, and the seat back should be adjusted to the vehicle design state. Other positions of measuring temperature can be set in accordance with the test demands.

6.1.2 When conducting the test under outdoor environmental conditions, the average temperature of the two positions of measuring temperature 20 mm away from the center of the left and right rearview mirrors shall be taken as the temperature of the outdoor position of measuring temperature. The position of measuring temperature shall avoid direct sunlight.

6.2 Test Conditions

6.2.1 Selection of test conditions In accordance with the steady state condition provided in 6.2.2, conduct the heating performance test. The heating performance test can be carried out through the mode of road test or laboratory test.

6.2.3 Transient condition The transient condition for the heating performance test of motor vehicle is shown in Appendix A.

6.3.2 Laboratory test procedures

6.3.2.1 For Category-M1 and Category-N1 vehicles, as well as Category-M2 vehicles whose maximum design total mass does not exceed 3,500 kg, the setting of chassis dynamometer shall be carried out in accordance with the requirements provided in GB 18352.6; for Category-M and Category-N vehicles whose maximum design total mass is greater than 3,500 kg, the setting of chassis dynamometer shall be carried out in accordance with the requirements provided in GB/T 27840.The head-on fan shall be set to the vehicle speed following mode.

6.3.2.2 The presetting, inspection and preparation of the test vehicle shall be carried out in accordance with the requirements provided in 6.3.1.1 ~ 6.3.1.3.

6.4 Test Records In accordance with the test demands, record each parameter. For parameters that need continuous measurement, the measurement frequency should not be lower than

0.1 Hz.

7 Test Data Processing and Test Report

7.1 Record and draw the temperature - time change curve of each position of measuring temperature. The form of the test report is shown in Appendix B. The format of the test data record sheet is shown in Table B.1.

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