

ICS 43.040.60

CCS T26



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

GB 11555-2025

**Technical specification for demisting and defrosting systems of
motor vehicles-windshield**

汽车风窗玻璃除霜和除雾系统技术规范

Issued on: March 28, 2025

Implemented on: January 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

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Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives for Standardization - Part

1.Rules for the Structure and Drafting of Standardizing Documents. This document serves as a replacement for GB 11555-2009 Motor Vehicles - Windshield Demisting and Defrosting Systems - Performance Requirements and Test Methods. In comparison with GB 11555-2009, apart from structural adjustments and editorial modifications, the main technical changes are as follows:

a) The term "mist" and its definition are deleted (see

3.5 of Version 2009);

b) The definitions of the terms "V points" and "R point" are modified (see

3.9 of Version 2009);

- c) The angle in Figure 2 is modified (see Figure 2; Figure 2 of Version 2009);
- d) The test conditions for windshield defrosting are modified (see 6.1.1; 6.1.1 of Version 2009);
- e) The test equipment and requirements for windshield defrosting are modified (see 6.1.2; 6.1.2 of Version 2009);
- f) The test procedures for windshield defrosting are modified (see 6.1.3; 6.1.3 of Version 2009);
- g) The test conditions for windshield demisting are modified (see 6.2.1;

1 Scope

China's mandatory technical specification for the demisting and defrosting systems of motor vehicle windscreens. It is a visibility standard rather than a comfort one, and the reason is straightforward: a driver who cannot see out of the windscreen is driving blind, and the condition arrives quickly - a car full of people on a cold wet morning fogs its glass in under a minute. The test is correspondingly literal. The vehicle is soaked in a cold chamber, the windscreen is fogged or coated with ice under defined conditions, and the system must clear defined zones of the glass within defined times, measured as a percentage of the critical vision area cleared at intervals. The zones matter as much as the times, because clearing the middle of the screen while the corners stay opaque is not a cleared screen. The standard specifies the requirements and the test methods for those systems.

This document specifies the technical requirements for the demisting and defrosting systems of the front windshield glass of motor vehicles, describes the method for determining the test area, the test methods for the demisting and defrosting systems, and the determination of the same type. This document is applicable to the design, manufacture and acceptance of the demisting and defrosting systems of the front windshield glass of Category-M1 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 11562-2014 Motor Vehicles Forward Visibility for Drivers - Requirements and Measurement Methods

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 defrosting Through the operation of the defrosting system and / or windshield wipers, frost or ice is removed from the outer surface of the windshield.

3.2 defrosting system A system used to remove frost or ice from the outer surface of the windshield, thereby restoring the field of vision.

3.4 demisting Through the operation of the demisting system, the mist covering the inner surface of the windshield is removed.

3.5 demisting system A system used to remove condensation products from the inner surface of the windshield, thereby restoring the field of vision.

3.6 demisted area After demisting, the area on the inner surface of the windshield with the restored field of vision.

4 Determination of Test Area

4.1 Area A Area A is the area enclosed by the intersection lines of the following four planes extending forward from the V point and the outer surface of the front windshield (see Figure 1). The positions of points V1 and V2 are determined in accordance with the provisions of 5.1 in GB 11562-2014.

4.2 Area B Area B is the area enclosed by the intersection lines of the following four planes and the outer surface of the front windshield, and is at least 25 mm inward from the edge of the transparent area of the front windshield, whichever is smaller (see Figure 2).

5.1 Defrosting Requirements for Windshield

5.1.1 The vehicle shall be equipped with a defrosting system that can ensure to restore the windshield visibility in cold weather conditions.

5.1.2 The defrosting system shall be tested in accordance with

6.1 and its defrosting performance shall meet the following requirements.

6.1.1 Test conditions

6.1.1.1 The test shall be carried out in a low-temperature chamber that is large enough to accommodate the vehicle under test. The chamber shall be equipped with a refrigeration air circulation device to circulate cold air.

6.1.1.3 The horizontal component of the air velocity in the low-temperature chamber shall be lower than

2.2 m/s, and the measurement point is at point 0 as shown in Figure 3.

6.1.1.8 During the entire test period, the defrosting system shall be set to the maximum operating position. If the vehicle manufacturer has special requirements, then, it shall be set in accordance with the requirements specified by the vehicle manufacturer. During the test, the use of wipers is permitted.

6.1.2 Test equipment and requirements The test spray gun shall meet the following requirements.

6.1.3 Test procedures

6.1.3.1 In accordance with the procedures specified in Chapter 4, determine Area A, Area B and Area A of the front windshield of the test vehicle.

6.1.3.5 After the test begins, draw a defrosted area outline on the inner surface of the windshield every 5 minutes and mark the driver's side.

6.2.1 Test conditions

6.2.1.1 The test shall be carried out in a low-temperature chamber that is large enough to accommodate the vehicle under test and can maintain the test temperature at $3 \text{ C} \pm 1 \text{ C}$. The location of the measurement point is shown in Figure 3.

6.2.1.5 If equipped with an engine, the engine speed with the transmission is in neutral shall not exceed 50% of the maximum power speed (within the first 5 minutes after the start of the test, the "fast idle" engine speed recommended by the vehicle manufacturer for starting the engine in cold weather conditions may be used).

6.2.1.6 During the entire test period, the demisting system shall be set to the maximum operating position. If the vehicle manufacturer has special requirements, then, it shall be set in accordance with the requirements specified by the vehicle manufacturer.

6.2.2 Test equipment and requirements

6.2.2.1 The test steam generator (see Figure 4) shall meet the following requirements.

6.2.3 Test procedures

6.2.3.1 In accordance with the procedures specified in Chapter 4, determine Area A and Area B of the front windshield of the test vehicle.

6.2.3.5 After the steam generator has been operating in the vehicle for 5 minutes, 1 ~ 2 test personnel quickly enter the front row of the vehicle and the door opening time shall be less than 8 seconds. The amount of steam output by the steam generator shall be reduced by 70 g/h 5 g/h for each test personnel entering the vehicle.