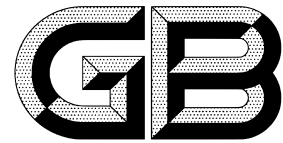


ICS 43.040.60

CCS T 34



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

GB/T 5137.2-2020

Replacing GB/T 5137.2-2002

**Test methods of safety glazing materials used on road vehicles
- Part 2: Optical properties tests**

汽 安全玻璃试验方法 第 2 部分: 光学性能试验

Issued on: March 31, 2020

Implemented on: February 1, 2021

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC..**

Table of Contents

Foreword

1 Scope

2 Normative references

3 Terms and definitions

4 Test conditions

5 Visible light transmittance test

6 Secondary image separation test

7 Optical distortion test

8 Visible light reflectance test

Annex A Structural changes of this Part compared with ISO 3538:1997

Annex B Technical differences between this Part and ISO 3538:1997 and their

Annex C $S(\lambda)V(\lambda)$ values

Foreword

GB/T 5137 "Test methods of safety glazing materials used on road vehicles" is divided into 5 parts:

- Part 1: Mechanical properties tests;
- Part 2: Optical properties tests;
- Part 4: Determination of solar characteristic;
- Part 5: Resistant-to-chemical and resistant-to-temperature changes test.

This Part is drafted in accordance with the rules given in GB/T 1.1-2009.

This Part replaces GB/T 5137.2-2002 "Test methods of safety glazing materials used on road vehicles - Part 2: Optical properties tests". Compared with GB/T 5137.2-2002, in addition to editorial changes, the main technical changes of this Part are as follows:

- ADD Clause 2 Normative references (see Clause 2).
- Delete "Test application conditions"; ADD "Terms and definitions" (see Clause 3; Clause 3 of the 2002 edition).
- Amend the test purpose of the visible light transmittance test to "determine whether the safety glazing material has a certain regular transmittance" (see 5.1; 4.1 of the 2002 edition); ADD sample requirements (see 5.2); modify the requirements for light source of visible light transmittance test (see 5.3.1; 4.3.1 of the 2002 edition); delete "Expression of results" and "Alternative method" (see 4.5 and 4.6 of the 2002 edition).
- ADD the sample requirements (see 6.2); ADD the requirements for the ring target equipment in the secondary image separation test and for the expression of the results (see 6.4.1, 6.4.2.3); ADD the distance requirement of the observer from the sample (see 6.4.2.2); delete the expression of results and move the part of the expression of results related to the test process to the test procedure (see 6.4.2.4; 5.4.3 of the 2002 edition). CORRECT the orientation of the sample in the diagram of the apparatus for collimation telescope test (see Figure 5; Figure 5 of the 2002 edition). CHANGE the method of fast scanning with the target-type illuminant control instrument first to the optional method (see 6.5.2 and 6.5.3; 5.5.2 and 5.5.3 of the 2002 edition). distortion test; ADD screen requirements (see 7.3; 6.3 of the 2002 edition). ADD the deviation range of R1 and R2 (see 7.4.1). Delete "Expression of results" and put its content into the test procedure (see 7.4.4; 6.5 of the 2002 edition).
- Modify the visible light reflectance test; ADD sample requirements; delete the classification description of the instrument and the standard sample; DIVIDE the instrument into spectrophotometer and photoelectric integrating photometer; delete "Expression of

results" (see 8.2, 8.3, 8.4; 9.2, 9.3, 9.4, 9.5 of the 2002 edition).

- Delete the visibility after fracture test (see Clause 7 of the 2002 edition).
- Delete the identification of color test (see Clause 8 of the 2002 edition).

value $S(\lambda)/V(\lambda)$ at 5 nm intervals; modify the formula and put the formula in 8.4.2 (See Annex C; Annex A of the 2002 edition).

This Part uses the redraft law to modify and adopt ISO 3538:1997 "Road vehicles - Safety glazing materials - Test methods for optical properties".

Compared with ISO 3538:1997, this Part has a lot of adjustments in structure. Annex A lists the comparison table for clause-subclause number of this Part and ISO 3538:1997.

There are technical differences between this Part and ISO 3538:1997. The clauses involved in these differences have been marked by a vertical single line (|) at the blank of the outer margin. Annex B gives a table of the relevant technical differences and their causes.

This Part was proposed by Ministry of Industry and Information Technology of the PRC.

This Part shall be under the jurisdiction of National Technical Committee of Auto Standardization (SAC/TC 114).

Drafting organizations of this Part: China Building Material Test & Certification Group Co., Ltd., Fuyao Glass Industry Group Co., Ltd., Nanjing Anda Glass Technology Co., Ltd., Jiangsu Tiemao Glass Co., Ltd., Xinyi Automobile Parts (Wuhu) Co., Ltd., AGC Automotive (China) Co., Ltd., Xinyi Energy-smart Glass (Sichuan) Co., Ltd., Xinyi Automobile Glass (Shenzhen) Co., Ltd., National Safety Glass and Quartz Glass Quality Supervision and Inspection Center.

Main drafters of this Part: Qiu Juan, Wu Huiting, Ding Zuoxin, Zhang Congcong, Wen Yugang, Du Dayan, Dai Lei, He Changlong, An Yongfeng, Wang Yinmao, Yang Jianjun, Wang Sheng, Zhang Ping, Sui Chaoying, Wang Jingjing, Li Boye, Zuo Huixia, Zhang Jingling.

The previous editions of the standard replaced by this Part were released as follows:

1 Scope

This Part of GB/T 5137 specifies the methods for visible light transmittance test, secondary image separation test, optical distortion test, and visible light reflectance test of safety glazing materials used on road vehicles.

This Part applies to the tests of safety glazing materials used on road vehicles.

2 Normative references

The following documents are indispensable for the application of this document. For the dated references, only the editions with the dates indicated are applicable to this document. For the undated references, the latest edition (including all the amendments) are applicable to this document.

3 Terms and definitions

4 Test conditions

Unless otherwise specified, the tests shall be carried out under the following ambient conditions:

5 Visible light transmittance test

5.1 Test purpose

Determine whether the safety glazing material has a certain regular transmittance.

5.2 Sample

It shall use the product or test piece. The test piece can be cut from the corresponding test area on the product. Before the test, the sample shall be clean and free of dirt and condensation.

5.3 Test apparatus

5.4 Test procedure

5.4.1 TURN on the power of the instrument. Before putting the sample into the light path, adjust the display value of the receiver to 100. BLOCK the light path; adjust the receiver display value to 0.

5.4.2 PUT the sample between the diaphragms A1 and A2. Adjust the orientation of the sample, so that the incident angle of the beam and the glass surface is $90^\circ \pm 5^\circ$.

5.4.3 Determine the visible light transmittance of the sample; READ the receiver display value n . The result retains 1 decimal place. The visible light transmittance τ is equal to $n/100$.

6 Secondary image separation test

6.1 Test purpose

Determine the angular separation between the primary and secondary images.