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National Standard of the People's Republic of China

GB/T 5137.1-2020

Replacing GB/T 5137.1-2002

Test methods of safety glazing materials used on road vehicles - Part 1: Mechanical properties tests

汽车安全玻璃试验方法 第 1 部分：力学性能试验

(ISO 3537:2015, Road vehicles - Safety glazing materials -
Mechanical tests, MOD)

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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 3: Radiation, high temperature, humidity, fire and simulated weathering resistance tests;
- Part 4: Determination of solar characteristic;
- Part 5: Resistant-to-chemical and resistant-to-temperature changes test.

This Part is Part 1 of GB/T 5137.

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

This Part replaces GB/T 5137.1-2002 "Test methods of safety glazing materials used on road vehicles - Part 1: Mechanical properties tests". Compared with GB/T 5137.1-2002, in addition to editorial changes, the main technical changes of this Part are as follows:

- ADD the placement requirements for plastic materials before testing (see Table 1 of 5.3);
- ADD the impact height requirement to the steel ball test (see Table 2 of 5.4.1, 6.4);
- Modify the hardness requirements of the abrasive wheel in the abrasion resistance test (see 7.2.1; 7.2.2 of the 2002 edition);
- ADD head-form impact test with deceleration measurement (see 9.2);
- ADD cross-cut test (see Clause 10);
- ADD flexibility and folding test (see Clause 11).

This Part uses the redraft law to modify and adopt ISO 3537:2015 "Road vehicles - Safety glazing materials - Mechanical tests".

Compared with ISO 3537:2015, this Part has a lot of adjustments in structure. Annex A lists the comparison table for clause-subclause number of this Part and ISO 3537:2015.

There are technical differences between this Part and ISO 3537:2015. 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 corresponding technical differences and their causes.

This Part also makes the following editorial changes:

- CHANGE the standard name.

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., Jiangsu Tiemao Glass Co., Ltd., Shentong Science and Technology Group Co., Ltd., AGC Automotive (China) Co., Ltd., Xinyi Automobile Glass (Shenzhen) Co., Ltd., Covestro (Shanghai) Management Co., Ltd., Momentive Performance Materials (Shanghai) Trading Co., Ltd., Kangde Xin Optical Film Materials (Shanghai) Co., Ltd., Nanjing Anda Glass Technology Co., Ltd., Xinyi Auto Parts (Tianjin) Co., Ltd., Dongguan Benson Automobile Glass Co., Ltd., National Safety Glass and Quartz Glass Quality Supervision and Inspection Center.

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

- GB 5137.1-1985, GB/T 5137.1-1996, GB/T 5137.1-2002.

Test methods of safety glazing materials used on road vehicles

- Part 1: Mechanical properties tests

1 Scope

This Part of GB/T 5137 specifies the test methods for impact resistance test, penetration resistance test, abrasion resistance test, fragmentation test, head- form impact test, cross-cut test, and flexibility and folding 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.

QC/T 1119 Road vehicles - Glazing materials - Terminology (QC/T 1119- 2019, ISO 3536:2016, MOD)

ISO 6487 Road vehicles - Measurement techniques in impact tests - Instrumentation

3 Terms and definitions

For the purposes of this document, the terms and definitions given in QC/T 1119 apply.

4 Test conditions

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

- a) Ambient temperature: $20\text{ }^{\circ}\text{C}\pm 5\text{ }^{\circ}\text{C}$;
- b) Atmospheric pressure: $8.60\times 10^4\text{ Pa}\sim 1.06\times 10^5\text{ Pa}$;
- c) Relative humidity: 40%~80%.