



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

GB/T 44153-2024

**General technical requirements for glazing materials used in
power-driven vehicles**

机动车玻璃通用技术要求

Issued on: June 29, 2024

Implemented on: January 1, 2025

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

Table of Contents

1 Scope
2 Normative References
3 Terms and Definitions...
3.11 Windscreen
4 Classification...
5 Technical Requirements
5.1 General
5.2 Thickness deviation...
5.3 Dimensional deviation...
5.4 Curvature tolerance...
5.5 Overlap difference...
5.6 Appearance quality...
5.7 Edge quality...
5.8 Marking quality...
5.9 Visible light transmittance...
5.10 Solar properties...
5.11 Secondary image deviation...
5.12 Optical distortion...
5.13 Pedestrian impact safety...
5.14 Head model impact performance...
5.15 Penetration resistance...
5.16 Impact resistance...
5.17 Fragmentation state...
5.18 Flammability resistance...
5.19 Chemical corrosion resistance...
5.20 Abrasion resistance...
5.21 Heat resistance...
5.22 Radiation resistance...
5.23 Moisture resistance...
5.24 Temperature change resistance...
5.25 Simulated weather resistance...
6 Test Method

6.1 General

6.2 Thickness deviation

6.2.2 Apparatus

6.2.3 Test procedures

6.2.4 Rounding of values

6.4 Curvature tolerance

6.5 Overlap difference

6.7 Edge quality

6.8 Marking quality

6.13.6.7 Calculate the head injury criteria (HIC) value according to the method in

1 Scope

GB/T 44153-2024 is the Chinese general standard for vehicle glazing: windscreens, side and rear windows, glass roofs and the plastic glazing used in their place. It is a safety-critical product regulated everywhere, because the windscreen is part of the restraint system, it holds the roof up in a rollover, and it is what the driver has to see through. The standard sets the classification of the glazing materials and their permitted use by position in the vehicle, the requirements on the optical properties including light transmittance, optical distortion, secondary image and colour identification, on the mechanical properties including the fragmentation of toughened glass, the penetration resistance and the headform impact of laminated glass, and on the resistance to abrasion, radiation, humidity, temperature change and chemicals, together with the requirements arising from heating elements, antennae, coatings, sensors and head-up display areas, the test methods, the marking and the inspection rules. For a glass maker, a carmaker or a certification body in China, this is the acceptance text.

This Document specifies the terms and definitions, classification, technical requirements, test methods, inspection rules, packaging, transportation and storage for glazing materials used in power-driven vehicles. This Document applies to glazing materials used in power-driven vehicles including Types-M, -N, -O, and -L vehicles with cabs, as well as agricultural and forestry special vehicles. This Document does not apply to glass for power-driven vehicle lighting and signal devices and instrument panels.

Note. For the classification of Types-L, -M, -N, and -O vehicles, see GB/T 15089.

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/T 5137.1-2020 Test methods of safety glazing materials used on road vehicles-Part

3.11 Windscreen

4.4 According to the shape, it is divided into flat glazing materials used in power-driven vehicles and curved glazing materials used in power-driven vehicles. Curved glazing materials used in power-driven vehicles is further divided into single curved glazing materials used in power-driven vehicles and compound curved glazing materials used in power-driven vehicles.

5.1 General

5.1.1 Laminated safety glass, plastic-glass safety glazing material and tempered safety glass are applicable to any part of a power-driven vehicle. When tempered safety glass is used for the windscreen, it is only applicable to vehicles with a design speed of less than 40 km/h; insulating safety glazing unit, rigid plastic glazing pane and insulating rigid plastic glazing panes unit are applicable to any glass panes other than windscreen.

5.1.2 The glazing materials used in power-driven vehicles that are used as a substrate of safety glazing faced with plastic material shall comply with the provisions of the corresponding clauses of this Document. The functional film used for safety glazing faced with plastic material shall comply with the requirements of QC/T 1170. In addition to meeting the requirements specified in this Document, the safety glazing faced with plastic material shall also meet the requirements of GB/T 31849.

5.1.3 The glazing materials used in power-driven vehicles constituting safety insulating safety glazing unit shall also meet the corresponding technical requirements specified in this Document.

5.1.4 When the glazing materials used in power-driven vehicles claim to have other functional characteristics other than the inspection items specified in this Document, such as color change, anti-theft, sound insulation, heat insulation or bulletproof, etc.; the functional characteristics shall meet the requirements of the corresponding functional product standards. If there is no corresponding product standard for the functional characteristics, it shall be agreed upon by the supplier and the purchaser.

5.1.5 The windows of Types-M1 and -N1 vehicles should meet the Class I requirements in terms of size deviation, curvature tolerance, overlap difference, appearance quality and edge quality.

5.2 Thickness deviation The thickness tolerance range of glazing materials used in power-driven vehicles should meet the requirements of Table

1.If there are special requirements, the appropriate tolerance range can be formulated with reference to GB 11614 or agreed upon by the supplier and the purchaser. When the sum of the nominal thickness of the intermediate layer of the laminated safety glass and the plastic-glass safety glazing material is less than or equal to 0.76mm, the thickness deviation of the intermediate layer should not be considered. When the sum of the nominal

5.28 Edge stress The edge compressive stress of laminated safety glass and glass-plastic safety glazing material shall be no less than 7MPa; and the edge tensile stress should be no more than 7MPa; and the compressive stress at the same measuring position shall be greater than the tensile stress. If the laminated safety glass and glass-plastic safety glazing material are treated by other processes such as thermal strengthening and chemical strengthening, their edge stress shall be determined through negotiation between the supplier and the purchaser.

5.29 Dew point The dew point of insulating safety glazing unit shall be lower than -40°C.

5.30 Accelerated durability After the test, the dew point of insulating safety glazing unit shall be lower than -35°C.

6.1 General

6.1.1 If the test item has no effect on the performance of the specimen, the specimen can be used to continue the test of other items. When a special test piece is used for testing, the test piece shall be produced with the same structure, material and process conditions as the product.

6.1.2 Unless otherwise specified, the film-coating process of the safety glazing faced with plastic material specimen shall be carried out in accordance with the provisions of GB/T 31848.

6.1.3 Unless otherwise specified, the relevant test methods for insulating rigid plastic glazing panes unit are the same as those for rigid plastic glazing pane.

6.2 Thickness deviation

6.2.1 Specimen The product is a specimen.

6.2.2 Apparatus

6.2.2.1 Rigid plastic glazing pane and insulating rigid plastic glazing panes unit A micrometer with a graduation value of 0.1mm. Other measuring instruments with equal or higher accuracy may also be used.

6.2.2.2 Other glazing materials used in power-driven vehicles except rigid plastic glazing pane and insulating rigid plastic glazing panes unit A micrometer with a graduation value of 0.01mm. Other measuring instruments with equal or higher accuracy may also be used.