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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 11566-2024

External projections for passenger cars

乘用车外部凸出物

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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 of GB 11566-2009 External Projections for Passenger Car. In comparison with GB 11566-2009, apart from structural adjustments and editorial modifications, the main technical changes are as follows:

---The "Scope" is modified (see Chapter 1);

---The term "vehicle type" and its definition are deleted (see

3.1 of Version 2009);

---The term "front hood" and its definition are added (see 3.1);

---The term "external surface" and its definition are modified (see 3.2;

3.2 of Version 2009);

---The terms "bumper" and "bumper cover" and their definitions are added (see

---The terms "surveillance camera-monitor-recording device" and "surveillance mirror" and their definitions are added (see

---The scope of vehicle exterior components applicable to this document is modified (see 4.2;

4.1 of Version 2009);

---The technical requirements for windshield wipers are modified (see 5.4;

5.4 of Version 2009);

1 Scope

China's mandatory national standard for the external projections of passenger cars. The standard exists for the person outside the car rather than inside it: in a collision with a pedestrian or a cyclist, the injuries are caused by whatever the body strikes, and a sharp edge, a rigid ornament or a protruding handle concentrates the impact where a smooth surface would spread it. So the requirements are geometric - the minimum radius of curvature permitted on the parts of the exterior a body can strike, the maximum projection of fittings, the requirement that ornaments and mirrors deflect or break away under load, and the treatment of edges around wheel arches, bumpers and door handles. It is one of the quieter safety standards, invisible in the finished car precisely because it worked: the flush handles, recessed wipers and rounded edges of a modern body are what compliance with rules of this kind produced.

This document specifies the general requirements, special requirements and test methods for the external projections for Category-M1 vehicles. This document is applicable to Category-M1 vehicles. This document does not apply to external indirect vision devices and traction devices.

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 15084-2022 Motor Vehicles - Devices for Indirect Vision - Requirements of Performance and Installation

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

3 Terms and Definitions

The terms and definitions defined in GB/T 15089, and the following are applicable to this document.

3.1 front hood The powertrain hatch and / or luggage compartment lid in front of the windshield.

3.2 external surface A visible surface on the exterior of a vehicle. NOTE. it includes front hood, luggage compartment lid, doors, fenders, roof, lighting and light signaling devices, and visible reinforcing ribs, etc.

3.3 floor line The geometric trajectory formed by the contact point using a cone with a half angle of 30 and continuous contact along the lowest position where the external surface of a laden vehicle can be touched.

3.4 radius of curvature The radius of the arc of the circle closest to the component.

3.5 laden vehicle A vehicle loaded to the maximum allowable total mass. NOTE. if the vehicle is equipped with a hydropneumatics, hydraulic or air suspension device, or an automatic stabilizing device that changes with the load, load it in accordance with the most unfavorable conditions specified by the manufacturer under normal driving conditions.

3.6 extreme outer edge For both sides of a vehicle, the two planes parallel to the Y plane of the vehicle and tangent to the outmost edges of both sides of the vehicle; for the front / rear end of a vehicle, a vertical transverse plane parallel to the X plane of the vehicle and tangent to the front / rear outmost edges of the vehicle.

4 General Requirements

4.1 Vehicles in stopped and moving conditions shall comply with the requirements of 4.2 ~ 4.6, unless there are explicit requirements in Chapter 5.

4.2 For a laden vehicle, when the doors, windows and various entrance covers are closed, the following components located on the external surface of the vehicle are applicable to this document.

4.3 There shall be no outward-facing sharp components on the external surface of a vehicle, as well as outward-facing protrusions that may increase the risk of scratches or bumps, or aggravate the injuries of the person being hit due to their shapes, dimensions, orientation and hardness, etc. in a collision accident.

4.4 There shall be no outward-facing components on the external surface of a vehicle that may scratch pedestrians, cyclists or motorcyclists.

4.5 The radius of curvature of protruding components on the external surface of a vehicle shall not be less than

4.6 When the hardness of the material of the protruding components on the external surface of a vehicle does not exceed Shore hardness 60 HA, the radius of curvature is allowed to be less than

5.3 Grille

5.3.1 When the gap width is less than 40 mm and greater than 25 mm, the radius of curvature shall not be less than 1 mm; when the gap width is not greater than 25 mm, the radius of curvature shall not be less than

0.5 mm.

5.3.2 The joint of the front and side ends of each element forming a grille gap shall be rounded.

5.5 Bumper

5.6 Doors, Luggage Compartment Lid and Front Hood Handles, Hinges, Buttons and Various Covers like Fuel Tank Caps

5.8 Edges of Metal Panels

5.9 Vehicle Body Panel The radius of curvature of the reinforcing ribs on the vehicle body panel is allowed to be less than

2.5 mm, but it shall not be less than 1/10 of the protruding height h measured in accordance with the method of 6.1.

5.10 Side Air and Rain Deflectors The radius of curvature of the outward-facing edges of the side air and rain deflectors shall not be less than 1 mm.

5.11 Jack Supporting Frame and Exhaust Pipe The distance of the vertical projection of the end of the jack supporting frame and exhaust pipe protruding from the bottom line directly above it shall not be greater than 10 mm. If the end edge of the exhaust pipe is circular and the radius of curvature is not less than

2.5 mm, the exhaust pipe is allowed to protrude from the vertical projection of the bottom line by more than 10 mm.

5.12 Intake and Exhaust Air Flaps The intake and exhaust air flaps shall comply with the requirements of 4.3,

4.5 in all usage positions.