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Automobile sun visor

汽车遮阳板

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Automobile sun visor

1 Scope

This document specifies the terms and definitions, technical requirements, test methods, inspection rules, marking, packaging, transportation, storage of automobile sun visors.

This document applies to automobile sun visors (not including roller blinds, tinted glass and other types of sun visors).

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, for dated reference documents, only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 250-2008 Textiles - Tests for color fastness - Grey scale for assessing change in color

GB 8410 Flammability of automotive interior materials

GB 11551 The protection of the occupants in the event of a frontal collision for motor vehicle

GB 11552 The interior fittings of passenger car

GB 11562-2014 Motor vehicles forward visibility for drivers - Requirements and measurement methods

GB/T 16422.2-2014 Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc sources

GB 38262 Flammability of interior materials for buses

QC/T 484 Automotive paint coating

QC/T 625 Metallic coatings and conversion coatings for automobiles

3.7

The spring back angle

The included angle of the sun visor body, from the rebound starting point to the rebound end point.

3.8

Working area

The area, which is covered by the sun visor body, when is flipped from the rebound starting point to the foremost position, that is, the actual use range of the sun visor body.

4 Technical requirements

4.1 General requirements

4.1.1 The sun visor shall conform to the product drawings and design documents, which are approved by the prescribed procedures.

4.1.2 The sun visor is installed on the upper beam of the automobile windshield frame, the upper end of the front windshield, or the A-pillar and other parts, which have certain strength. When the sun visor body rotates around the X axis, to the lowest position of its lower edge, THEN, for the category M1 vehicle, the lower edge of the sun visor may be within the range 0° ~ 2° of the pitch angle, which is determined by the V1 point specified in GB 11562-2014. For the other categories of vehicles, the lower edge of the sun visor may be located within the range 0° ~ 4° of the pitch angle, which is determined by the V1 point specified in GB 11562-2014. when the sun visor is not in use, it shall not reduce the driver’s front vision.

4.1.3 The body of the sun visor shall be made of energy-absorbing and shock-absorbing materials OR the surface covered with flexible materials OR designed as an energy-absorbing and shock-absorbing structure. The sun visor shall not have sharp corners. The sun visor of category M1 vehicles shall meet the requirements of GB 11552.

4.1.4 The sun visor shall be adjusted flexibly, smoothly, without abnormal noise. It can be stopped at any position, in the work area; it shall not change position with the vibration of the vehicle body.

4.1.5 For vehicles, which are equipped with airbags on the front passenger side, the sun visor's label shall meet the requirements of GB 11551.

4.2 Appearance requirements

4.2.1 The color and pattern of the sun visor shall be consistent with the color plate or sample, which is approved by the specified procedures.

4.2.2 If heat-sealed seams are used around the sun visor, the height of the heat-sealed seams shall not be greater than 0.5 mm.

4.2.3 The sun visor body and accessories shall have a smooth appearance, without warping.

4.2.4 The skin of the sun visor shall be free from defects, such as wrinkles, bumps, ripples, slack, cracks, stains, peeling off of warning labels.

4.2.5 The surface of plastic parts shall be smooth and free of defects, such as burrs, warpage, obvious parting lines.

4.2.6 The metal installation parts must be corrosion-resistant; the surface shall be smooth AND free from cracks or rust. The metal plating layer and chemical treatment layer shall meet the relevant requirements of QC/T 625. The paint coating shall meet the relevant requirements of QC/T 484.

4.2.7 After the sun visor is assembled according to the actual assembly position in the vehicle, the cantilever end of the body shall fit the mounting surface; the body shall not sag.

4.3 Performance requirements

4.3.1 Operating torque

4.3.1.1 Operating torque of sun visor rotating around X axis (referred to as vertical operating torque): At any position during the turning process, for the category N vehicles, the minimum operating torque of the sun visor shall be greater than the equivalent torque, when the vibration acceleration of the sun visor is 50 m/s^2 (calculation method as shown in Appendix A); for the vehicles of other categories, the minimum operating torque of sun visor shall be greater than the equivalent torque, when the vibration acceleration of the sun visor is 35 m/s^2 (calculation method as shown in Appendix A); the maximum operating torque shall be less than 4 N • m (when the minimum operating torque is not less than 4 N • m, the operating torque can be determined, through negotiation, between the supplier and the buyer).

4.3.1.2 The operating torque of the sun visor rotating around the Y axis (referred to as the horizontal operating torque): At any position, the minimum operating torque shall be greater than 0.4 N • m; the maximum operating torque shall be less than 4 N • m. This requirement does not apply to non-rollover type sun visor.

After testing in accordance with the provisions of 5.13, the sun visor shall be free from warpage, deformation, discoloration, cracks, loose connections, or other abnormal changes.

4.3.11 Resistance to low temperature

After testing in accordance with the provisions of 5.14, the sun visor shall meet the provisions of 4.3.1 and 4.3.3.2; the body shall have no abnormal noise, during the turning process.

4.3.12 Lightfastness

After testing in accordance with the provisions of 5.15, there shall be no abnormal changes in the appearance of the sun visor, such as deformation, chalking, or cracking; the gray-scale color fastness level shall be greater than or equal to level 4, in accordance with the provisions of GB/T 250-2008.

4.3.13 Combustion characteristics

The combustion characteristics of passenger car's sun visors shall meet the requirements of GB 38262. The combustion characteristics of the sun visors of other vehicles shall meet the requirements of GB 8410.

5 Test method

5.1 Test conditions

The test shall be carried out in an indoor environment: The test temperature shall be 23°C ± 5°C' the relative humidity of the test shall be 65% ± 20%.

5.2 Visual inspection

The visual inspection of the sun visor shall be carried out according to the requirements of 4.2. The corrosion resistance of the electroplating layer and chemical treatment layer of metal parts shall be checked, according to the relevant requirements of QC/T 625. The paint coating shall be tested, according to the relevant requirements of QC/T 484.

5.3 Operating torque

5.3.1 Vertical operating torque

Fix the sun visor on the bench, that simulates the assembly position of the whole vehicle. Turn the sun visor around the X axis, for 5 times. Place the dynamometer in the middle of the outer edge (see Figure 1), perpendicular to the surface of the body. At any position, measure the data at the beginning of the rotation. The operating torque is calculated by formula (1):

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