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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 46022-2025

Cover glass for vehicle displays

车载显示用盖板玻璃

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1 Scope

This document specifies the classification, technical requirements, test methods, inspection rules, packaging, marking, transportation and storage of cover glass for vehicle displays (hereinafter referred to as the "cover glass").

This document applies to transparent glass materials with touch control function and protective effect within the cabin of motor vehicles; the cover glass for other displays may take this document as a reference.

2 Normative References

GB/T 2680

GB/T 2828.1-2012

GB/T 3922-2013

GB/T 13891

GB/T 20314-2017

GB/T 30447-2013

GB/T 32642

GB/T 32643

GB/T 37900-2019

GB/T 39815-2021

3 Terms and Definitions

The terms and definitions defined in GB/T 39815-2021, GB/T 30447-2013, GB/T 20314-2017 and JC/T 2462-2018, and the following are applicable to this document.

3.1 Cover glass for vehicle displays

Transparent glass material that is used inside motor vehicles for the surface of displays to protect the display components.

3.2 Scratch resistance

The ability of a specimen surface to resist scratching by a hard object.

NOTE. it is expressed as a critical load value.

[source. GB/T 39815-2021, 3.3, modified]

3.3 Gloss

Under specified light source and receiving angle conditions, the ratio of the luminous flux reflected in the specular direction of an object to the luminous flux reflected in the specular direction of glass with a refractive index of 1.567.

3.4 Contact angle

The angle between the tangents of the gas-liquid interface and the solid-liquid interface at the gas-liquid-solid three-phase junction point.

NOTE. the symbol theta, and the unit is degrees (°).

[source. GB/T 30447-2013, 3.1, modified]

3.5 Depth of layer "DOL"

When light enters chemically tempered glass at a certain angle, and the refractive index difference along the glass thickness direction from the surface layer to the interior just reaches its maximum value, the depth, at which, retro-refraction is generated.

NOTE. the DOL value is less than the ion exchange layer depth but greater than the compressive stress layer depth.

3.6 Micro-waviness

The degree of minor fluctuations and unevenness on the glass surface.

[source. GB/T 20314-2017, 3.4]

3.7 Roughness

The unevenness of the glass surface formed during acid etching, characterized by small spacing and minor peaks and valleys. [source. JC/T 2462-2018, 3.4]

4 Classification

Based on whether a coating treatment is performed, it is divided into ordinary cover glass and coated cover glass for vehicle displays.

5.1 Appearance Quality

The appearance quality shall comply with the provisions of Table 1.

5.2 Dimensional Deviations

The thickness, length and width deviations of the cover glass shall conform to the provisions of Table 2.For irregularly shaped cover glass, the dimensional deviations shall be agreed upon by test, the absolute value of the difference in water contact angle shall not exceed 10°.

5.11 Surface Stress (CS)

The surface stress (CS) shall not be less than 550 MPa.

5.12 Depth of Layer (DOL)

The depth of layer (DOL) shall not be less than 10 ?m.

5.13 Scratch Resistance

After the test, no scratches longer than 3 mm shall appear.

5.14 Vickers Hardness

The Vickers hardness shall not be less than 5.80 GPa (591.426 kgf/mm2). NOTE. 1 GPa = 101.97 kgf/mm2.

5.15 Impact Resistance

After the test, the number of specimens damaged shall not exceed one.

5.16 Corrosion Resistance

Coated cover glass with anti-fingerprint function shall undergo this test. Before and after the test, the absolute value of the difference in the water contact angle shall not exceed 5°.

5.17 High Temperature and Humidity Resistance

Coated cover glass with anti-fingerprint function shall undergo this test. Before and after the test, the absolute value of the difference in the water contact angle shall not exceed 5°.

6.1 Test Conditions

Unless otherwise specified, the test shall be conducted under the following environmental conditions.

a) Ambient temperature. 20 ?C ? 5 ?C;

b) Relative humidity. 40% ~ 80%.