

ICS 31.030
CCS L 90



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

GB/T 48020.6-2026

**Cover glass for mobile display devices - Part 6: Mechanical
testing - Retained biaxial flexural strength (abraded
ring-on-ring)**

移动显示器件用玻璃盖板 第6部分：机械试验方法 保留双轴弯曲强度（磨损环对
环）

(English Translation)

Issued on: July 30, 2026

Implemented on: November 1, 2026

Issued by: State Administration for Market Regulation

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Foreword

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This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 6 of GB/T 48020 "Glass covers for mobile display devices". GB/T 48020 has published the following...

part.

--Part 6: Mechanical testing methods retain biaxial bending strength (wear ring to ring).

This document is modified to adopt IEC 61747-40-6:2018 "Liquid crystal display devices - Part 40-6. Glass cover plates for mobile display devices".

Mechanical testing methods retain biaxial bending strength (wear ring to ring).

This document has undergone the following structural adjustments compared to IEC 61747-40-6:2018.

--Section 6.4 has been deleted, and its contents have been merged into Chapter 8.

The technical differences between this document and IEC 61747-40-6:2018, and the reasons therefor, are as follows.

--The term "retaining biaxial bending strength" has been added (see 3.1) for clear definition to facilitate understanding and standard use.

The following editorial changes have been made to this document.

--To align with existing standards, the standard title has been changed to "Glass Covers for Mobile Display Devices - Part 6: Mechanical Testing Methods" Method to retain biaxial bending strength (wear ring to ring);

--The symbols used to define the format of the diagrams have been standardized (see 5.2);

--Added "See Appendix A for a schematic diagram of depth measurement" [see 6.3 k).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document is under the jurisdiction of the National Technical Committee on

Standardization of Electronic Display Devices (SAC/TC 547).

Introduction

The new display industry is a strategic, fundamental, and pioneering industry for national economic and social development; it is crucial for the future, affects the overall situation, and has a profound impact.

In the high-tech field with far-reaching implications and strategic importance, accelerating the development of the new display industry is crucial for promoting my country's industrial restructuring and implementing innovation-driven development.

Strategically, it is of great significance to promote the quality and efficiency of economic development. Glass cover plates are one of the key materials for new displays, and are essential for meeting the needs of my country's glass industry.

The design, research and development, production, and inspection requirements of cover glass products necessitate the development of a series of standards for glass cover glass. GB/T 48020 "Glass Covers for Mobile Display Devices" the "Glass Cover Plate" standard specifies the requirements for mechanical testing methods for glass cover plates used in mobile display devices, and is proposed to consist of six parts.

--Part 1: Guidelines for Mechanical Testing Methods. The purpose is to specify the key mechanical testing performance parameters for glass covers, mainly including...

Including strength and resistance to damage.

--Part 2: Mechanical Testing Methods - Uniaxial Bending Strength (4-Point Bending). The aim is to specify the method for measuring glass bending strength at four points.

Uniaxial bending edge strength of the cover plate.

The cover plate has biaxial bending impact resistance.

--Part 4: Mechanical Testing Methods - Biaxial Bending Strength (Ring to Ring). The purpose is to specify the biaxial bending strength (ring to ring) produced by ring-to-ring testing.

The surface fracture load of the glass cover plate is measured by bending.

--Part 5: Mechanical Testing Methods Rigidly supported specimens resist dynamic impacts from sharp objects. The purpose is to specify the testing methods for resistance to impacts from falling balls.

Impact measurement of biaxial bending impact resistance, with failure mode caused by contact with a sharp object, is one of the failure modes in mobile display devices.

One of the failure modes.

--Part 6: Mechanical Testing Methods Retaining Biaxial Bending Strength (Wear Ring to Ring). The aim is to specify the strength achieved through abrasive grinding.

After cracks are generated, the surface fracture load of the glass cover is measured. Following the wear test, the surface fracture load is measured according to the method specified in Part 4.

The amount of surface fracture load is retained.

Glass cover for mobile display devices Part 6: Mechanical Testing Methods Preserve biaxial bending strength (wear ring to ring).

1 Scope

This document describes a mechanical testing method for glass covers used in mobile display devices, specifically a wear test using abrasive grinding.

The surface fracture load of the glass cover was measured using a method that retains biaxial bending strength (wear ring to ring).

This document applies to the evaluation of the mechanical properties of glass cover plates used in mobile display devices.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are listed below.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

IEC 61747-40-1 Liquid crystal display devices - Part 40-1.Guidelines for mechanical test methods of glass cover plates for mobile display devices (Liquid crystal display devices-Part 40-1.Mechanical testing of display cover glass for mobile devices-Guidelines) Bending strength (ring to ring) [Liquid crystal display devices - Part 40-4.Mechanical testing of display cover glass for] mobile devices-Biaxial flexural strength (ring-on-ring)]

3 Terms and Definitions

The following terms and definitions apply to this document.

Retained biaxial flexural strength the residual fracture load on the glass cover surface was measured using a ring-to-ring method after wear testing.

sample

A single glass cover plate used to measure the remaining fracture load after wear testing.

sample

A set of samples from the same production batch (e.g., the same production process and production cycle) can be used to statistically analyze and report fracture load data.

sample size

The number of samples in the sample.

sample holder

The fixture consists of two parts. a groove for placing the sample and a back plate, which can hold the sample in place during testing.