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

GB/T 6552-2025

Replacing GB/T 6552-2015

Glass containers - Test method for impact resistance

玻璃容器 抗机械冲击试验方法

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Foreword

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 replaces GB/T 6552-2015 "Test Method for Mechanical Impact Resistance of Glass Containers". Compared with GB/T 6552-2015, except for... Aside from structural adjustments and editorial changes, the main technical changes are as follows:

---The scope has been changed (see Chapter 1, Chapter 1 of the.2015 edition);

---Requirements for digital control devices in instruments and equipment have been added (see Chapter 5);

---The requirements for the pendulum mass and the gravity at the impact hammer's endpoint have been changed (see Chapter 5, Chapter 4 in the.2015 edition);

---The material requirements for the fuselage support column have been removed (see Chapter 4 in the.2015 edition);

---The content of the test report has been changed (see Chapter 9, Chapter 8 of the.2015 edition). 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 was proposed by the China National Light Industry Council. This document is under the jurisdiction of the National Technical Committee on Standardization of Daily-Use Glass (SAC/TC377). This document was drafted by: Anhui Deli Daily Glass Co., Ltd., Guangdong Huaxing Glass Co., Ltd., and Shandong Jingyao Glass Group. Group Co., Ltd., Guizhou Moutai Distillery (Group) Guiding Jingqi Glass Products Co., Ltd., Zhejiang Caifu Glass Co., Ltd., Donghua University, Henan Dongfu New Materials Co., Ltd., Jinan Sanquan Zhongshi Experimental Instrument Co., Ltd., Guangdong Jiayi Instrument Group Co., Ltd., Hangzhou Yu Hangzhenhua Daily Chemical Glass Co., Ltd., Shanghai Second Polytechnic University. The main drafters of this document are. Wang Helan, Zhang Da, Zhou Beiyong, Liu Fenglian, Tang Yong, Xu Xiaojian, Zhu Xuming, Chen Xiyan, Luo Lida, and Sun Xiaoling. Chang Haichao, Ye Jiayi, Bai Zhongwen, Nie Wei, Xia Xiongfeng, Gong Miao. The release history of this document and the document it replaces is as follows:

---First published in 1986 as GB 6552-1986, and revised for the first time in 2015;

---This is the second revision. Test methods for mechanical impact resistance of glass containers

1 Scope

GB/T 6552-2025 is the Chinese national standard covering hitting a bottle until it breaks - the pendulum and the impact point, the energy stepped up until failure, and the statistics over a sample, which is how a filling line knows whether the container will survive being handled. Issued on 31 October 2025, it has been in force since 1 May 2026, replacing GB/T 6552-2015.

This document describes a mechanical testing method for testing the impact resistance of glass containers by impacting samples with a pendulum of fixed mass. This document applies to testing the impact resistance of glass bottles, jars, and similar glass containers.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. 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. This document.

GB/T 308.1 Rolling bearings - Balls - Part

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4. Principles By raising the metal pendulum to a specified height and then releasing it freely, potential energy is converted into kinetic energy, and the energy generated is produced by the instantaneous collision between the pendulum and the glass container. The system generates impact forces to simulate collisions encountered by glass containers during transportation and use, predicting the product's ability to resist impact damage.

5. Instruments and Equipment The impact testing machine consists of a machine body, a dial or digital control device, a pendulum, and a protective cover (see Figure 1), and should meet the following requirements.

a) Pendulum. 1) The pendulum consists of a pendulum rod and an impact hammer, with a mass of $612\text{g} \pm 2\text{g}$. 2) The nominal diameter (D_w) of the steel ball used at the end of the impact hammer is

25.4 mm, and the quality of the steel ball meets the requirements of GB/T 308.1. 3) The

center of gravity of the pendulum should be located on the center line of the pendulum rod, and the distance (L2) from the center of gravity to the support center is $239.0\text{mm} \pm 0.5\text{mm}$. During the swing, the trajectory of the pendulum's center of gravity should be within the same plane. 4) When the pendulum is in a horizontal position, the weight of the impact hammer end point is $4.90\text{N} \pm 0.05\text{N}$. 5) The distance (L1) from the end point of the impact hammer to the center of the support is $293.0\text{mm} \pm 0.5\text{mm}$.

b) A dial or digital control device. 1) The dial should be adjustable and have indications of the pendulum angle ($^{\circ}$) and impact energy (J). 2) When the impact energy is not greater than

0.54 J, its scale division should not be greater than

0.06 J; when the impact energy is greater than

0.54 J, its scale division should be greater than

0.06 J. The degree value should not exceed 0.12J. 3) If a digital control device is used, it should be able to achieve the same impact energy and scale value requirements as the dial.