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

GB/T 43874-2024

**Test method for compressive properties of glass materials and
products**

玻璃材料及制品压缩性能试验方法

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Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting: Please note that some of the contents of this document may involve patents: The issuing organization of this document does not assume the responsibility for identifying patents: This document was proposed by China Building Materials Federation: This document is under the jurisdiction of the National Technical Committee for Standardization of Industrial Glass and Special Glass (SAC/TC447): This document was drafted by: China National Testing Holding Group Co., Ltd., Zhongtian Technology Precision Materials Co., Ltd., Beijing Aobote Technology Co., Ltd., Fujian Jinjiang Zhiying Building Materials Co., Ltd., Xiamen Flexible Electronics Research Institute Co., Ltd., Xinyi Photovoltaic Industry (Anhui) Control Co., Ltd., Dezhou Ruibaili Glass Brick Co., Ltd., Guangdong Province Zhongshan Quality Metrology Supervision and Inspection Institute, China Construction Third Engineering Bureau Group Co., Ltd., Haikong Sanxin (Bengbu) New Energy Materials Co., Ltd., Hunan Qibin Solar Technology Co., Ltd., Hubei Feilihua Quartz Glass Co., Ltd: Co., Ltd., China Construction Second Engineering Bureau Co., Ltd., Heyuan Kibing Silicon Industry Co., Ltd., SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd., Beijing Engineering Vocational University: The main drafters of this document are: Liu Xiaogen, Shen Yichun, Li Nengbin, Xu Haifeng, Lu Hongkui, Xu Xiaoming, Tian Yuan, Mai Weichen, Wang Xiaofei, Yuan Fei, Wan Junpeng, Zhao Jinfeng, Zhang Hu, Lin Rongmao, Liu Maonan, Chen Yali, Wan Detian, Zheng Dezhi, Huang Daquan, Xu Zhenlin, Li Haiyan, Tao Wei, Lü Kuilin, Wang Weizhi, Cheng Lei, Zhang Zhengchao, Mao Yudi, Zhu Yanlei, Yang Shengdan, Tian Yingliang, Tu Hao: Test method for compression properties of glass materials and products

1 Scope

GB/T 43874-2024 specifies how the compressive properties of glass are measured. Glass is famously weak in tension and strong in compression, and it is the compressive strength that structural glass, glass columns and load-bearing glass elements are designed around. Measuring it is more delicate than it sounds: glass fails from surface flaws, so a compression specimen fails wherever the loading platens introduce a stress concentration or a slight misalignment puts a tensile component into what was meant to be pure compression - and the result then reflects the fixture rather than the material. Results scatter widely for genuine reasons as well, since the flaw population differs between specimens. Without a fixed procedure, figures from two laboratories cannot be compared. This document specifies the principles, test equipment, specimens, test procedures, test results and data processing, and the test report, for determining compressive strength and the compressive stress-strain behaviour of glass materials and products. Under ICS 81.040.10 and CCS Q34, it is written for glass manufacturers, for structural glass designers, and for materials testing laboratories.

This document specifies the principles, test equipment, specimens, test procedures, test results and Data processing and test report: This document is applicable to the compressive strength, compressive stress-strain curve, compressive elastic modulus and compressive failure load of glass products: Determination:

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document: For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document:

GB/T 7314 Compression test method for metal materials at room temperature

GB/T 8489 Test method for compressive strength of fine ceramics

GB/T 21389 Vernier, dial and digital calipers

3 Terms and definitions

The terms and definitions defined in GB/T 7314 and GB/T 8489 and the following apply to this document: 3:

1 The ratio of the stress change to the corresponding strain change during the elastic deformation stage when the specimen is subjected to uniaxial compression: 3:2
compression break load compressionbreakload The pressure value corresponding to the

failure of the sample in a uniaxial compression test:

4 Principle

For a specimen of a specific size, a uniaxial incremental compressive load is applied to it at a specified loading rate, and the load and standard load are measured during the loading process: The deformation and its changes within a certain distance are used to draw the stress-strain curve and calculate the compressive strength and compressive elastic modulus:

5 Test equipment

1 Testing machine The testing machine should meet the following requirements:

- a) The accuracy is Class 1 or better;
- b) It can provide a uniform and adjustable loading displacement rate, and the maximum pressure at which the specimen fails is within the load range of the testing machine: 20%~90%;