



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

GB/T 32023-2023

Replacing GB/T 32023-2015

**Footwear - Test methods for whole shoes - Rigidity of flexing
area**

鞋类 整鞋试验方法 屈挠部位刚度

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Foreword

This document was issued on 7 September 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 April 2024.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

It replaces GB/T 32023-2015, which is superseded.

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives

for Standardization - Part 1: Rules for the Structure and Drafting of Standardizing Documents.

This document serves as a replacement of GB/T 32023-2015 Footwear - Test Methods for Whole Shoes - Rigidity of Flexing Area. In comparison with GB/T 32023-2015, apart from structural adjustments and editorial modifications, the main technical changes are as follows:

- a) The Scope of the Standard is modified (see Chapter 1; Chapter 1 of Version 2015);
- b) The definition of "rigidity of flexing area" is modified (see 3.1; 3.1 of Version 2015);
- c) The term and definition of "bending stiffness" is added (see 3.3);
- d) The test principle, instrument and equipment requirements, and test methods of the

bending stiffness test method are added (see 4.2, 5.2 and 7.2);

e) The requirements for specimen and environmental conditioning are modified (see Chapter 6; Chapter 6 of Version 2015);

f) The requirements for the test results of the bending stiffness test method are added (see 8.2);

g) The requirements for the test methods in the test report are added (see Chapter 9).

Please be noted that certain content of this document may involve patents. The institution issuing this document does not undertake the responsibility of identifying these patents.

This document was proposed by China National Light Industry Council.

This document shall be under the jurisdiction of National Technical Committee on Shoemaking

of Standardization Administration of China (SAC/TC 305).

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The issuing of the previous versions:

---Firstly issued in 2015 as GB/T 32023-2015;

Footwear - Test Methods for Whole Shoes - Rigidity of

Flexing Area

1 Scope

GB/T 32023-2023 covers how the rigidity of the flexing area of footwear is determined, the property being defined here as the capability of the flexing area of the whole shoe or of the

sole material to resist elastic deformation. More than one method is set out. Method A is the bending torque test, applicable to the whole shoe and to sole material, and is run with the lift angle of the hinge plate set at 45.0 degrees plus or minus 0.5 unless there are special requirements. Around the methods sit the clauses that make the number repeatable: the instruments and equipment, and a conditioning clause requiring a specimen of not less than one pair of whole shoes or soles, held for at least 4 h in the standard environment of GB/T 22049 before testing - stiffness read off an unconditioned specimen reports the store room it came from as much as the shoe. Results for Method A are expressed as the maximum torque of each specimen in newton metres, to 0.1 newton metre, and a reporting clause closes the document. Footwear manufacturers, sole suppliers, testing laboratories, and brands writing flex and comfort requirements into a specification are the readers.

This document describes the test methods for determining the rigidity of flexing area of footwear.

---Method A: the bending torque test method, which is applicable to the whole shoe and sole

(except those with a thickness greater than 25 mm in the flexing area);

NOTE: the thickness of the flexing area of the sole includes the thickness of the inner sole, that is, to

measure the thickness of the thickest part of the sole (including the inner sole) along the flexing

line of the sole.

---Method B: the bending stiffness test method, which is applicable to the whole shoe and sole.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only

versions with a specified date are applicable to this document. In terms of references without a

specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 22049 Footwear - Standard Atmospheres for Conditioning and Testing of Footwear and

Components for Footwear

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 rigidity of flexing area

The capability of the flexing area of the whole shoe or sole material to resist elastic deformation

when being subject to force.

NOTE: it is expressed by bending torque or bending stiffness.

3.2 torque

The product of the force in the vertical direction and the distance from the center of rotation.

NOTE: it is expressed in (N · m).

6 Specimen and Environmental Conditioning

6.1 The specimen shall not be less than one pair of whole shoes or sole.

6.2 Before the test, the specimen shall be conditioned under the temperature condition of standard environment for at least 4 h in accordance with the stipulations of GB/T 22049.

7 Test Methods

7.1 Method A - Bending Torque Test Method

7.1.1 Test conditions

7.1.1.1 The lift angle of the hinge plate is $(45.0 \pm 0.5)^\circ$ (when there are special requirements, it

can be selected within the range of $0^\circ \sim 60^\circ$).

7.1.1.2 The lifting speed of the hinge plate is $(3.0 \pm 0.1)^\circ/\text{s}$ (when there are special requirements,

it can be selected within the range of $0^\circ/\text{s} \sim 20^\circ/\text{s}$).

7.1.1.3 The test shall be carried out under the temperature condition of standard environment

in accordance with the stipulations of GB/T 22049.

7.1.2 Test procedures

7.1.2.1 If the specimen has shoelaces, the shoelaces of the specimen shall be removed, so as to