



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

GB/T 3903.41-2019

Footwear - Test methods for uppers and lining - Flex resistance

Issued on: August 30, 2019

Implemented on: March 1, 2020

Issued by: SAMR; SAC

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5.1 Test machine, in accordance with ISO 5402-1:2011 (4.1) includes.

5.2 Die cutter, size (70 $\pm$ 1) mm $\times$ (45 $\pm$ 1) mm, or use a similar tool for sampling.

5.3 Optical magnifying glass, the magnification is about 4 to 6 times.

5.4 For wet samples, the following instruments and materials are required.

6 Sampling and environmental conditioning

6.1 General

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7.1 Test principle

7.2 Test procedure

1000 No is yes

2000 No Yes

5000 No is yes

10000 is yes

25000 Whether or not

50000 Whether or not

100000 whether or not

8 test report

Foreword

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 3903.41-2008 "Foot-resistant upper and lining test methods for folding performance", and GB/T 3903.41-

Compared to.2008, the main technical changes are as follows.

- Revised the normative reference document (see Chapter 2, Chapter 2 of the.2008 edition);
- Added the term "surface" (see 3.2);
- Added an overview (see Chapter 4);
- Added requirements for "wet test, low temperature test" in "Sampling and Environmental Regulation" (see 6.3 and 6.4);
- Revised the number of tests the sample was removed from the machine (see 7.2.6, 6.2.7 for the.2008 version);
- Revised the requirements for the recorded content of the coated material on the surface (see 7.2.8, 6.2.9 of the.2008 edition);
- The test report has added requirements for the record "label" (see Chapter 8).

This section uses the translation method equivalent to ISO 17694.2016 "Footwear lining and lining test method folding performance".

The documents of our country that have a consistent correspondence with the international documents referenced in this part are as follows.

- GB/T 6682-2008 Analytical laboratory water specifications and test methods (ISO 3696.1987, MOD)
- GB/T 22049-2019 Standard environment for environmental conditioning and testing of footwear footwear and footwear components (ISO 18454.2018, IDT)
- GB/T 22050-2008 Sampling position, preparation and environmental adjustment time of footwear samples and samples (ISO 17709.2004, IDT)
- QB/T 2714-2005 Determination of the fastness to the physical and mechanical tests of leather (ISO 5402.2002, MOD)

1 Scope

This part of GB/T 3903 specifies the test method for determining the folding resistance of the upper and the lining. The purpose is to evaluate the suitability of the end use.

Suitability.

This section applies to the upper faces and linings of various materials.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

ISO 3696 Analytical Laboratory Water Specifications and Test Methods
(Water for analytical laboratory use - Specification)

And test methods)

ISO 5402-1:2011 Determination of the fastness of leather - Part 1. Deflection method
(Leather - Determination of flex
resistance - Part 1. Flexometer method)

ISO 17709 Sampling position, preparation and environmental conditioning time for footwear
samples and specimens (Footwear - Sampling location,

Preparation and duration of conditioning of samples and test pieces)

ISO 18454 Standard environment for environmental conditioning and testing of footwear
footwear and footwear components (Footwear - Standard atmospheres

For conditioning and testing of footwear and components for footwear)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Flexibility resistance

The ability of the material to resist cracking or resist other damage at the crease.

3.2

Surface surface

The visible portion of the shoe material when wearing the shoe.

Note. The visible part of the material, for the upper surface, for example, the grained portion of the leather or the coated portion of the coated fabric, for the lining, the visible material inside the shoe

section.

4 Overview

The sample was cut from the upper or the shoe material, folded and clamped into the testing machine. Test simulates the damage caused by the inward bending of the upper, but not

It can better simulate the damage of outward bending. The test is carried out under wet, dry or low temperature conditions.

5 Test equipment and materials

The following test equipment and materials should be used.

5.1 Test machine, in accordance with ISO 5402-1.2011 (4.1) includes.

5.1.1 At least four pairs of clamps. The upper clamp consists of a pair of plates, see Figure

1. Lower clamp clamp fixed, perpendicular to the upper clamp

On the surface.

The unit is mm

Description.

1---bending angle $22^{\circ}30' \pm 0^{\circ}30'$;

2---fixing clamp fastening screw;

3---fillet radius 2mm;

4---horizontal axis.

Figure 1 Upper clamp size

5.1.2 Upper clamp clamp, can swing back and forth, the swing angle is $22^{\circ}30' \pm 0^{\circ}30'$. The swing rate is (100 ± 5) r/min. Upper clamp

When the clamp is in the horizontal position, the distance between the upper and lower clamps is (25 ± 1) mm.

5.4.1 Glassware, at least 100mm in diameter and 25mm in depth.

5.4.2 Distilled or deionized water shall comply with the requirements of Class 3 water in ISO 3696.

5.4.5 Vacuum pump, the dryer can be vacuumed to below 4kPa.

5.5 For the low temperature folding test, the freezer can keep the internal air temperature at $(-5 \pm 2)^{\circ}\text{C}$, and the space inside the freezer is large enough to be placed.