



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

GB/T 3903.33-2019

**Footwear - Test methods for insoles and insoles - Water
absorption and desorption**

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Foreword

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

This part replaces GB/T 3903.33-2008 "Shoes insole and inner pad test method water absorption and desorption rate", and

Compared with GB/T 3903.33-2008, the main technical changes are as follows.

--- Revised scope (see Chapter 1, Chapter 1 of the.2008 edition);

--- Revised the normative reference document (see Chapter 2, Chapter 2 of the.2008 edition);

- Added surface terms and definitions (see 3.3);
- Add an explanation in Figure 1 (see 4.2.1);
- Revised the test report (see Chapter 8, Chapter 8 of the 2008 edition).

This section uses the translation method equivalent to ISO 22649:2016 "shoes insole and inner pad test method water absorption and desorption rate".

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

- GB/T 22050-2008 Sampling position, preparation and environmental adjustment time of footwear samples and samples (ISO 17709:2004, IDT);
- GB/T 22049-2019 Standard environment for environmental conditioning and testing of footwear footwear and footwear components (ISO 18454:2018, IDT).

1 Scope

This part of GB/T 3903 specifies two test methods for determining the water absorption and desorption rate of the insole and inner pad, excluding materials.

The two methods are as follows.

- Method A. Determine the static water absorption and desorption rate of the insole and inner pad;
- Method B. Determine the dynamic water absorption and desorption rate of the insole and inner pad.

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 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

Water absorption rate

The mass per unit area increases after the sample absorbs moisture within the specified time.

3.2

Desorption rate water desorption

Percentage of mass loss of the sample relative to the water absorption mass of the sample.

3.3

Surface surface

The visible portion of the shoe material when the shoe is worn.

4.1.1 Balance, accurate to 0.001g.

4.1.2 Square knife, cut sample is (50 ± 1) mm x (50 ± 1) mm. The blade edge of the die has an outward angle of about 5° , so when sampling

The knife will not damage the edges of the specimen.

4.2.1 The equipment (see Figure 1) includes the following sections.

4.2.1.1 The copper drum (A) has a diameter of (120 ± 1) mm and a width of (50 ± 1) mm and is placed on the sample (B).

4.2.1.2 Platform (C), the upper surface is rough and there are enough holes to allow water to flow through the platform to keep the surface of the platform moist. Platform (C)

The upper surface is covered with cotton gauze.

4.2.1.3 Fixture (D), clamp the short side of the specimen (B) so that it is level on the platform (C).

4.2.1.4 Fixture (E), the other short side of the specimen is fixed to the drum, and the short side clamped is parallel to the axis of the drum. The clamp passes through the weak spring

The lines are fixed to maintain a slight tension on the sample.

4.2.1.5 Water supply equipment (F), through the platform (C), can drain excess water.

4.2.1.6 Move the shaft of the roller and reciprocate along the XX axis with a displacement of (50 ± 2) mm. The midpoint of the sample is the center point and the frequency is (20 ± 1) times/min. The movement of the shaft drives the drum to reciprocate on the sample, and the degree of bending of the sample is consistent with the shape of the drum.

4.2.1.7 Apply (80 ± 5) N of pressure to the platform, sample and drum.

Description.

A---copper drum;

B---sample;

C---platform;

D---fixture;

E---fixture;

F---water supply equipment;

G---spring.

Figure 1 Equipment for determining water absorption and desorption rate

5.1 Method A

Using a square knife (4.1.2), cut the specimen from the insole or inner pad, the molded insole or the parts provided, the size is (50 ± 1) mm x

(50 ± 1) mm. Sampling from shoes or cut parts shall be in accordance with ISO 17709.

Perform at least 24h environmental conditioning as specified in ISO 18454.

There must be no less than two samples per group.

5.2 Method B

5.2.1 If sampling from the shoe, it is advisable to take a sample from the front of the insole in the longitudinal direction. If sampling from the sheet, it should be perpendicular to each other

The two main directions are sampled. There must be no less than two samples per group.

5.2.2 The sample is a strip specimen of (110 ± 1) mm x (40 ± 1) mm and shall be subjected to at least 24 h according to ISO 18454 before the test.