



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

GB/T 3903.39-2019

Footwear - Test methods for uppers - Delamination resistance

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4.2 Automatic recorder, or similar equipment, can continuously record force values.

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4.4 Rubber sheet with a thickness of at least 10 mm and a hardness of (40 +/- 10) IRHD.

4.8 Solvent-based polyurethane adhesive with good adhesion to resin rubber and sample coating.

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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 3903.39-2008 "Sheet upper test method for interlayer peel strength", and GB/T 3903.39-

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

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

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

This section uses the translation method equivalent to ISO 17698.2016 "Shoes upper test method interlayer peel strength".

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

---GB/T 3903.7-2019 footwear footwear test method aging treatment (ISO 20870..2017, IDT)

---GB/T 6682-2008 Analytical laboratory water specifications and test methods (ISO 3696.1987, MOD)

--- GB/T 16825.1-2008 Inspection of static single-axis testing machines - Part 1. Tensile and/or

Inspection and calibration (ISO 7500-1.2004, IDT)

---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)

1 Scope

This part of GB/T 3903 specifies the test method for the peel strength between the layers, in order to assess the suitability of the end use.

This section applies to the upper surface of coated 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
(Waterforanalyticallaboratoryuse-Specification)

Andtestmethods)

ISO 7500-1 - Calibration and testing of static single-axial testing machines - Part 1 . Tension and/or pressure testing machines

Calibration and verification of force measurement systems
(Metalicmaterials-Calibrationandverificationofstaticuniaxialtestingma-

chines-Part

1. Tension/compression testing machines-Calibration and verification of the force-measuring system)

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)

ISO 20870 Footwear-Ageingification

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Interlaminar peel strength delamination resistance

The bond strength between the coating and the base material.

4 Test equipment and materials

The following equipment and materials should be used.

4.1 Tensile testing machine, the moving speed of the clamp is (100 ± 10) mm/min, and the applicable force range of the sample (for polyurethane coating)

Fabric sample) is usually 0N~200N, the accuracy of measuring force should meet the requirements of level 2 in ISO 7500-1, and the force measurement accuracy is large.

At 2%.

4.4 Rubber sheet with a thickness of at least 10 mm and a hardness of (40 ± 10) IRHD.

4.5 Radiant heater, power 3kW, heating area is about 0.06m², can heat the dry film on the resin rubber to 80 °C within 15s~

90 ° C. The film is usually placed approximately 100mm~150mm from the heater. It is advisable to use the outsole used in the production of shoes and

Activating device for the face.

4.6 Thermal pen or temperature gun, check the temperature of the film at 80 ° C ~ 90 ° C

equipment. It is advisable to use a thermal pen or red with a melting temperature of 83 °C.

External temperature gun.

4.7 Resin rubber, thickness (3.5 +/- 0.2) mm, hardness (95 +/- 2) IRHD, surface peel strength is greater than the sample to be tested.

Note. IRHD is the international rubber hardness, hardness (95 +/- 2) IRHD equivalent to (95 +/- 2) Shore A.

4.8 Solvent-based polyurethane adhesive with good adhesion to resin rubber and sample coating.

4.9 Adhesive treatments, such as halogenating agents, can effectively increase the adhesion of rubber in the production of footwear.

4.10 Cutting equipment, such as punching or scissors, can cut rectangular specimens of size (50 +/- 1) mm x (70 +/- 1) mm. In addition, if yes

Hydrolyzed samples were tested and another shear tool was required to cut a square specimen with a side length of (70 +/- 1) mm.

4.11 Shearing tools, such as sharp knives or disc knives, can be sampled from bonded specimens. This device should not be excessively compressed or will be sampled

The edge of the sample is layered, so it is not advisable to use a punching knife.

4.12 Distilled or deionized water. If wet bond strength is measured, use tertiary or deionized water in accordance with ISO 3696.

5 sampling

5.1 For dry tests, mark six rectangles (70 +/- 1) mm x (50 +/- 1) mm on the back of the sheet or upper. two long sides and sheets

Parallel to the direction (machine direction or ridge line direction) or in the X-axis direction of the sill (as defined in ISO 17709), the other four long sides and the above

The direction is vertical.

5.2 For the wet test, mark two rectangles (70 +/- 1) mm x (50 +/- 1) mm on the back of the material or upper, and place the 50 mm edge.

Consistent with the direction of the lowest peel strength (if known) in the dry test, or prepare six more rectangles as shown in 5.1.

5.3 Further marking on the material, divide the rectangular material marked in 5.1 and 5.2 into two pieces, (35 +/- 0.5) mm x (50 +/- 1) mm.

Mark the machine direction or X-axis direction on each small rectangular specimen. Use