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Footwear - Test methods for whole shoe - Upper sole adhesion

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part 1: Rules for the Structure and Drafting of Standardizing Documents.

This Document replaced GB/T 21396-2008 Footwear - Test Methods for Whole Shoe - Upper

Sole Adhesion. Compared with GB/T 21396-2008, the major technical changes of this Document are as follows besides the structural adjustments and editorial modifications:

- Increase the accuracy requirements of width measuring equipment (see 4.3 of this Edition);
- Increase sampling area restrictions (see 5.3.1, 5.3.2, 5.3.3 of this Edition);
- Change the sampling requirements for structure types b, c, d and e (see 5.3.2 of this Edition; 5.3.2 of the 2008 Edition).

This Document equivalently adopts ISO 17708:2018 Footwear - Test Methods for Whole Shoe

- Upper Sole Adhesion.

Please note some contents of this Document may involve patents. The issuing agency of this

Document shall not assume the responsibility to identify these patents.

This Document was proposed by China Petroleum and Chemical Industry Federation.

This Document shall be under the jurisdiction of National Technical Committee on Rubber and

Rubber Product of Standardization Administration of China (SAC/TC 35).

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This Document was first-time published in 2008; and it is first-time revised hereby.

Footwear - Test Methods for While Shoe - Upper Sole Adhesion

1 Scope

This Document describes a test method for determining the resistance to separation of the upper

from the outsole, for separating adjacent layers of the outsole or for causing tear failure of the

upper or the sole. It also defines conditions of ageing that can be used for production control.

This Document is applicable to all types of footwear (cementing, vulcanization, injection

moulding, etc.) where the evaluation of sole adhesion on the upper is needed and where the

upper is continuously assembled (closed shoe).

NOTE 1: In all cases the objective is to test the bond strength nearest to the edge of the assembly.

NOTE 2: The test need not be carried out when the bond has been made by grindery (using, for example,

nails or screws) or stitching.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates

indicated are applicable to this Document; for the undated documents, only the latest version

(including all the amendments) is applicable to this Document.

ISO 7500-1 Metallic materials - Calibration and verification of static uniaxial testing machines - Part 1: Tension/compression testing machines - Calibration and verification of the force-measuring systems

NOTE: GB/T 16825.1-2008 Verification of static uniaxial testing machines - Part 1 :

Tension/compression testing machines - Verification and calibration of the force-measuring system

(ISO 7500-1:2004, IDT)

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

NTOE: GB/T 22049-2019 Footwear - Standard atmospheres for conditioning and testing of footwear and components for footwear (ISO 18454:2018, IDT)

3 Terms and Definitions

For the purposes of this Document, the following terms and definitions apply.

3.1 Upper-sole adhesion

Force required to separate the sole-upper bonding.

4 Apparatus and Material

The following apparatus and material shall be used.

4.1 Cutting device.

Sharp tool for clean cutting of the test pieces.

4.2 Tensile testing machine.

The tensile-testing machine shall comply with the requirements of ISO 7500-1 to an accuracy

corresponding to class 2, with a constant rate of traverse of 100 mm/min $\pm$ 10 mm/min, and it

shall be able to measure a force range of 0 N to 600 N. The machine shall be fitted with either

pincer or flat jaws (depending on the type of construction of the test sample), 25 mm to 30 mm

wide, capable of firmly gripping the test pieces.

A low-inertia machine having autographic force recording facilities is essential.

4.3 Measuring device.

Calibrated device for measuring of the width of the upper bonding margin, with an accuracy of

at least $\pm$ 0.5 mm.

5.1 Footwear conditioning

Before dismantling and cutting of the test pieces, condition the footwear according to ISO

18454 for at least 24 h, and, if required, carry out an ageing process according to Annex A.

NOTE: Some adhesives cannot reach full strength for some time after application, therefore, when

samples are taken directly from production, allow at least 72 h conditioning before carrying out the test.