INTERNATIONAL STANDARD

ISO 17708

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Footwear — Test methods for whole shoe — Upper sole adhesion

Chaussures — Méthodes d'essai applicables à la chaussure entière — Liaison tige semelle

Reference number
ISO 17708:2003(E)

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17708 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 216, *Footwear*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read "...this European Standard..." to mean "...this International Standard...".

Contents

Foreword

This document (EN ISO 17708:2003) has been prepared by Technical Committee CEN/TC 309, "Footwear", the secretariat of which is held by AENOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2004, and conflicting national standards shall be withdrawn at the latest by January 2004.

This document has been prepared on the basis of the European Standard EN 344:1992 (subclause 5.1).

Annex A is normative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard describes a test method for the determination of the resistance to separation of the upper from the outsole or to separate adjacent layers of the outsole or to cause tear failure of the upper or the sole is measured. It also defines conditions of ageing that can be used for production control.

It applies to all types of footwear (cementing, vulcanisation, 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 should be 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

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 12222, *Footwear — Standard atmospheres for conditioning and testing of footwear and components for footwear.*

EN ISO 7500-1, *Metallic materials - Verification of static uniaxial testing machines - Part 1: Tension / compression testing machines (ISO 7500-1:1999).*

3 Term and definition

For the purposes of this European Standard, the following term and definition apply.

3.1
upper-sole adhesion
force required to separate the sole-upper interface.

4 Apparatus and material

The following apparatus and material shall be used:

4.1 Sharpness tool

For a clean cutting up of the test pieces.

4.2 Tensile testing machine

The tensile-testing machine shall comply with the requirements of EN ISO 7500-1 to an accuracy corresponding to class 2, with a constant rate of traverse of 100 mm/min ± 10 mm/min. 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 Vernier callipers

For measuring of the width of the upper assembling margin or covering.

5 Sampling and conditioning

5.1 Footwear conditioning

Before dismantling and cutting out the test pieces, condition the footwear according to EN 12222 for 24 h and, if required, carry out an ageing process according to annex A.

5.2 Samples number

For each model, the minimum number of samples shall be two items of footwear.

5.3 Preparation of test pieces

5.3.1 Upper-sole adhesion: construction type a (see Figure 1)

Take a test piece from either the inner or the outer joint region.

Cut the test piece at X-X and Y-Y with sides at right angles to the edge of the sole using a press knife or bandsaw (see 4.1) to cut through the upper, innersole or outsole to produce a test piece about 25 mm wide. The length of the upper and sole shall be about 15 mm measured from the feather line (see Figure 2). Remove the insole.

5.3.2 Upper-sole adhesion: construction types b, c, d and e (see Figure 1)

Take a test piece from either the inner or outer joint region.

Cut the upper and sole at X-X and Y-Y to produce a test piece with a width of about 10 mm and a length of not less than 50 mm. Remove the insole.

Separate the upper from the sole for a length of about 10 mm by inserting a hot knife in the adhesive layer (see Figure 3).

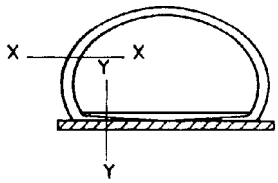
NOTE It is considered that a construction is c or d when the distance from the X-X to the upper face of the insole is at least 8 mm.

5.3.3 Sole-interlayer adhesion: construction types f and g (see Figure 1)

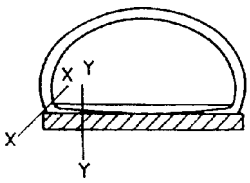
Take a test piece from either the inner or the outer joint region.

Remove the upper by cutting along the feather line at X-X. Remove the insole if present. Cut a strip parallel to and including the sole edge at Y-Y to produce a test piece about 15 mm wide and at least 50 mm long.

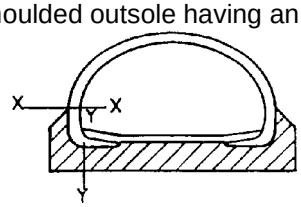
Separate the sole layers for a length of about 10 mm by inserting a hot knife into the adhesive layer (see Figure 3).



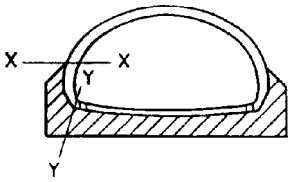
Type a: Conventional lasting
Cemented or moulded outsole having an extended edge



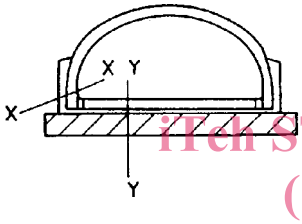
Type b: Conventional lasting
Close trimmed outsole



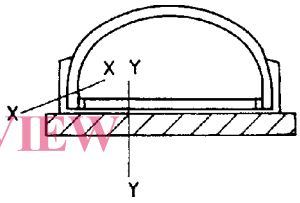
Type c: Conventional lasting
Direct injected or vulcanized outsole or cemented dished outsole



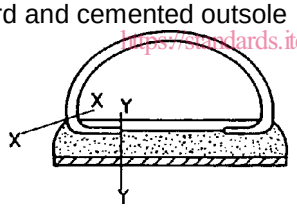
Type d: Strobel stitched
Cemented dished outsole or direct injected or vulcanized outsole



Type e: Conventional lasting or strobel stitched with rubber mudguard and cemented outsole



Type f: Machine sewn or welted where the outsole is bonded to the throughsole



Type g: Multilayered sole
It may be moulded-on sole, a moulded unit or a built unit

Figure 1 — Types of construction showing positions for preparation of the test piece for bond strength