INTERNATIONAL STANDARD

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Footwear — Test methods for outsoles — Flex resistance

Chaussures — Méthodes d'essai applicables aux semelles d'usure — Résistance à la flexion

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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 17707 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...".

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Foreword

This European Standard (EN ISO 17707:2005) has been prepared by Technical Committee CEN /TC 309 "Footwear", the secretariat of which is held by AENOR, in collaboration with Technical Committee ISO/TC 216 "Footwear".

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of an identical text or by endorsement, at the latest by January 2006, and conflicting national standards shall be withdrawn at the latest by January 2006.

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

1 Scope

This European Standard specifies a method for determining the flex resistance of outsoles. This method is intended to assess the effect of sole materials and surface patterns on cut growth. This method is applied to outsoles that, in accordance with the test mentioned in Clause 6, have a maximum longitudinal rigidity of 30 N.

NOTE The method described in this standard is based on the method for the determination of the flex resistance for outsoles described in EN ISO 20344.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

EN ISO 534, *Paper and board - Determination of thickness, density and specific volume (ISO 534:2005)*

3 Terms and definitions

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

3.1
flex resistance
number of flexes that cause cut growth and/or initiation of cracks in the outsoles

4 Apparatus and material

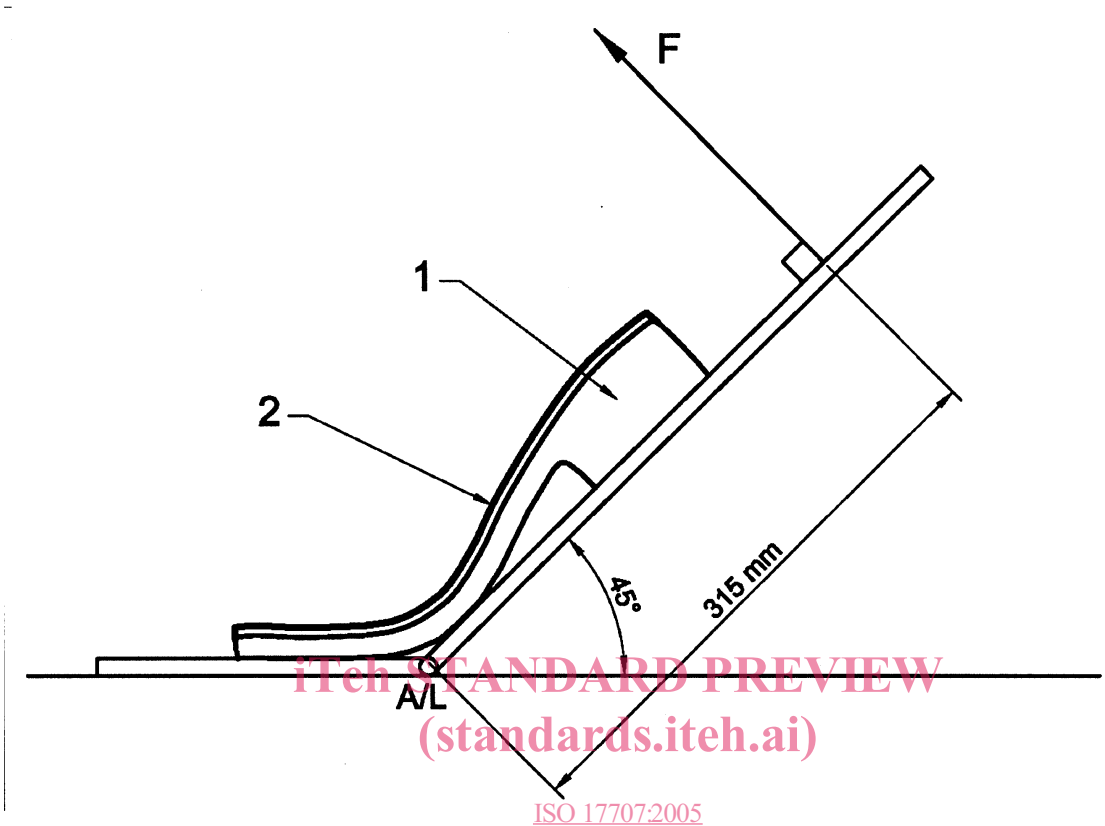
4.1 The following apparatus shall be used:

4.2 Device for the measurement of the longitudinal rigidity of outsoles (See Figure 1)

4.2.1 **Smooth metal hinged plate**, fixed to a rigid base with provision to reduce the friction between the heel of the outsole and the hinged plate.

4.2.2 **Clamping device**, to fix the forepart of the outsole to be tested to the rigid base.

4.2.3 **Sensor**, capable of measuring forces from 0 N to 50 N, to a tolerance of 1 %, fixed to the hinged plate (4.2.1) at a distance of 315 mm from the hinge. **3.1**



Key

1 Outsole
2 Standard insole
A/L Hinge axis of the base plate
F Force applied

Figure 1 - Device for the measurement of the longitudinal rigidity of outsoles

4.3 Device for the measurement of the flex resistance of outsoles (See figure 2)

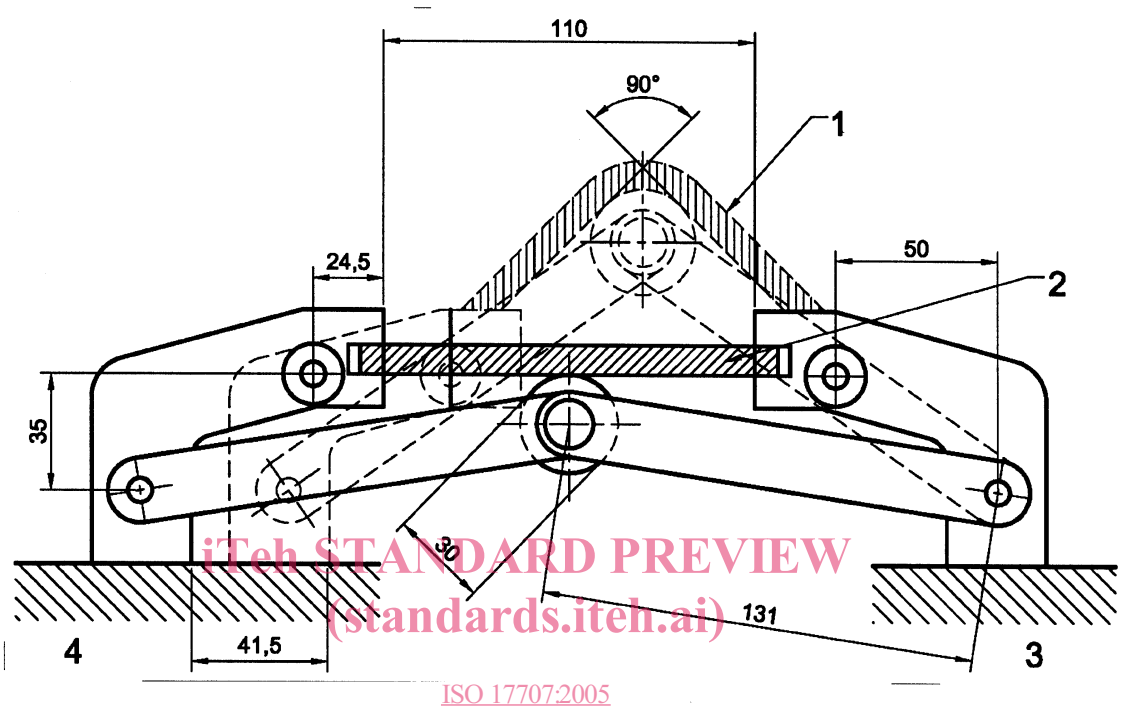
4.3.1 A **mandrel** of diameter (30 ± 0,1) mm around which the outsole is flexed.

4.3.2 A **means of firmly clamping** the outsoles at both ends so that the flexing line is aligned with the axis of the mandrel.

4.3.3 A **means of flexing** the outsoles at a constant rate between 135 cycles per minute and 150 cycles per minute through an angle of (90 ± 2) ° about the axis of the mandrel.

4.3.4 A **means of counting** the total number of flexing cycles.

Dimensions in mm



Key
1 Test piece at maximum flex position
2 Test piece at null flex position
3 Fixed bearing
4 Moveable bearing

Figure 2 - Device for the measurement of the flex resistance of outsoles

4.4 Chisel (or **cutting tool**), to pierce the outsole, the dimensions of which are defined in Figure 3.

NOTE A means of firmly clamping the outsole in a jig is advisable to minimise the risk of breaking the chisel as it is withdrawn from the outsole.