INTERNATIONAL STANDARD

ISO 22650

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Footwear — Test methods for whole shoe — Heel attachment

Chaussures — Méthodes d'essai applicables à la chaussure entière — Fixation du talon

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 22650 was prepared by CEN (as EN 12785:2000) and was adopted, under a special “fast-track procedure”, by Technical Committee ISO/TC 216, *Footwear*, in parallel with its approval by the ISO member bodies.

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For the purposes of international standardization, a list of corresponding International and European Standards for which equivalents are not given in EN 12785 has been added as annex ZZ.

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Foreword

This European Standard 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of an identical text or by endorsement, at the latest by August 2000, and conflicting national standards shall be withdrawn at the latest by August 2000.

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This standard specifies a method for the determination of the heel attachment of footwear. It applies to woman's medium and high heeled footwear.

This test method measures three related wear properties:

- the rigidity of the shoe backpart during normal walking
- the amount of permanent deformation of the backpart caused by a fairly large force applied to the heel in a backward direction
- the force required to detach the heel.

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 into it by amendment or revision. For undated references the latest edition of the publication referred to applies.

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EN 10002-2 *Metallic materials – Tensile testing – Part 2: Verification of the force measuring system of the tensile testing machines.*

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

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3 Definitions

For the purposes of this standard the following definitions apply:

3.1
heel attachment strength
the maximum force in newtons measured under these testing condition required to detach the heel from the sole/insole assembly

3.2
rigidity
back part deformation measured under these test conditions under a force of 200 N

3.3
permanent deformation
the permanent set of the backpart measured under these test conditions at a force of 400 N

4 Apparatus and material

The following apparatus and material shall be used:

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4.1 Tensile machine

The tensile-testing machine shall comply with the requirement of EN 10002-2 to an accuracy corresponding to grade B, with a constant rate of traverse of 100 mm/min ± 10 mm/min.

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

4.2 Devices for attaching the shoe heel

Devices for attaching the shoe heel near its tip to the upper clamp attachment of the tensile testing machine so that the heel can pivot freely during the test. Different designs are needed for chunky and slender heels as described below.

4.2.1 Device for chunky heels

A suitable device is shown in figure 1. The 6 mm diameter rod G is removable and may be inserted through a 6 mm or 7 mm diameter pre-drilled hole in the heel as shown in figure 3. The block H at the opposite end of the device has a 13 mm diameter hole which enables it to be fitted directly to a tensile testing machine in place of the top clamp. Alternatively, where a tensile testing machine is being used which does not have removable clamps, the block H would be replaced by a part which can be gripped in the machine clamps.

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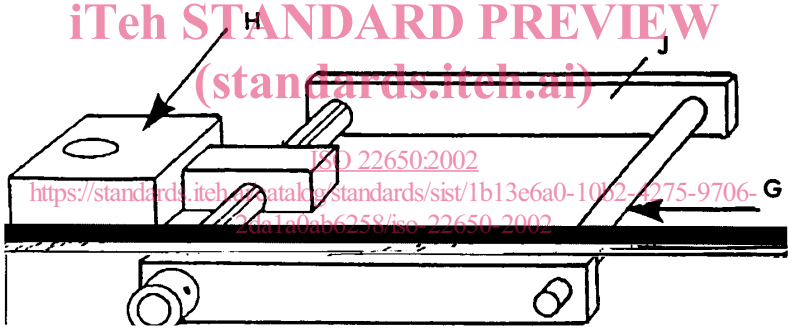

NOTE Rod G can be inserted through the hole drilled in chunky heels or removed and replaced by the clamp shown in figure 2 for testing slender heels.

Figure 1 – Type 1 device for providing the connecting link between the tensile testing machine and the heel stem

4.2.2 Clamp for slender heels

The device shown in figure 2 consists of a U-shaped part A which clamps against the front face of the heel (the heel breast), and parts B and C which clamp against the curved back of the heel.

The distance between parts B and A is adjustable to suit the heel tip dimensions, using the four screws D. Part C pivots in the two parts B, to allow for the tapering of most slender heels near their tip. The two screws E have pointed ends to dig into the heel and so prevent the clamp slipping. The clamp is 20 mm deep. At each end of part A are two spigots F of diameter 6 mm whose centres are 10 mm above the clamping face of part A and 10 mm from each edge. These spigots enable the clamp to be fitted into the connecting device shown in Figure 2 in place of rod G.

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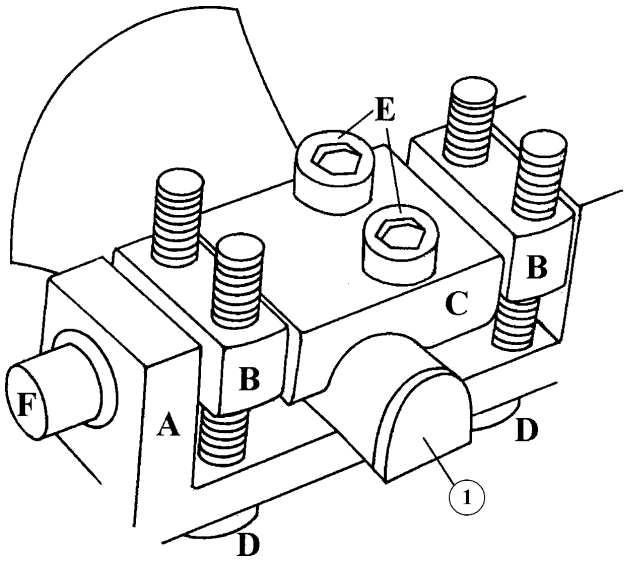

1 Top piece

NOTE This clamp may be fitted into the connecting link shown in figure 1 in place of the removable rod G.

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Figure 2 – Type 2 pivoting clamp for the stems of slender heels

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4.3. Dividers

Dividers which can be opened to measure a distance of about 100 mm. These are needed to measure the amount of movement of the heel tip during the test.

5 Sampling and conditioning

For most purposes it is not necessary to condition the footwear in a controlled atmosphere before testing it.

Cut off the shoe upper in the forepart level with the insole, so that the shoe bottom here is easier to fit into the clamping jaw of the tensile strength machine. Where the shoe upper construction includes a long stiffener in the waist region, make sure this is not cut. Leave the top piece, heel cover and heel breast flap, if used, intact. Should the shoe not have a top piece attached, it can still be tested.

In the case of chunky heels, which are too large to be fitted into a type 2 clamp, drill a 6 mm or 7 mm diameter hole in the position shown in figure 3 parallel to the heel breast and the heel/top piece interface, so that its centre is 10 mm from the heel breast and 10 mm above the heel/top piece interface. It is best to drill this hole from both sides inwards, as this increases its positional accuracy.

Minimum three test pieces are necessary

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