SLOVENSKI STANDARD
oSIST prEN ISO 22650:2016

01-april-2016

Obutev - Preskusne metode za celoten čevelj - Pritrditev pete (ISO/DIS 22650: 2016)

Footwear - Test methods for whole shoe - Heel attachment (ISO/DIS 22650: 2016)

Schuhe - Prüfverfahren für den ganzen Schuh - Absatzbefestigung (ISO/DIS 22650:2016)

Chaussures - Méthodes d'essai applicables à la chaussure entière - Fixation du talon (ISO/DIS 22650:2016)

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ICS:

61.060	Obuvala	Footwear

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Footwear — Test methods for whole shoe — Heel attachment

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

ICS: 61.060

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the European Committee for Standardization (CEN), and processed under the **CEN lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

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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 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 22650 was prepared by Technical Committee ISO/TC 216, *Footwear*, Subcommittee SC , and by Technical Committee CEN/TC 309, *Footwear* in collaboration.

This second/third/... edition cancels and replaces the first/second/... edition (), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

Footwear — Test methods for whole shoe — Heel attachment

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

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.

ISO 7500-1 Metallic materials – Tensile testing – Part 2: Verification of the force measuring system of the tensile testing machines.

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

3 Terms and definitions

For the purposes of this document, the following terms and 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:

4.1 Tensile machine

The tensile-testing machine shall comply with the requirement of ISO 7500-1 to an accuracy corresponding to class 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.

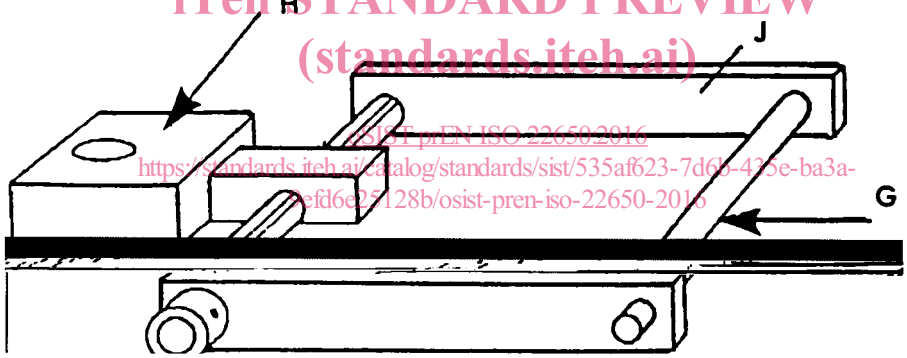

Figure 1 – Type 1 device for providing the connecting link between the tensile testing machine and the heel stem

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.

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.

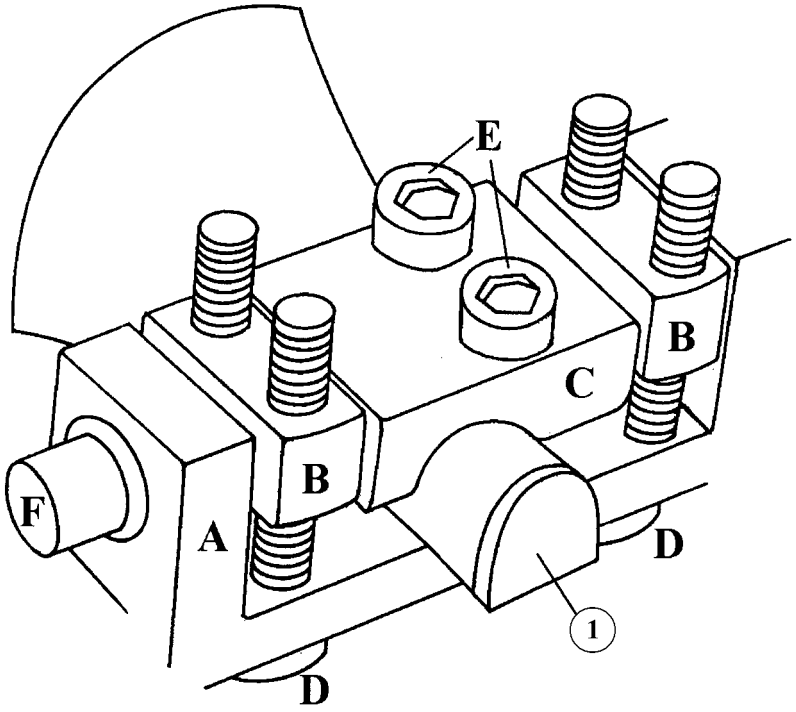

Figure 2 – Type 2 pivoting clamp for the stems of slender heels

Key:

1 Top piece

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

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

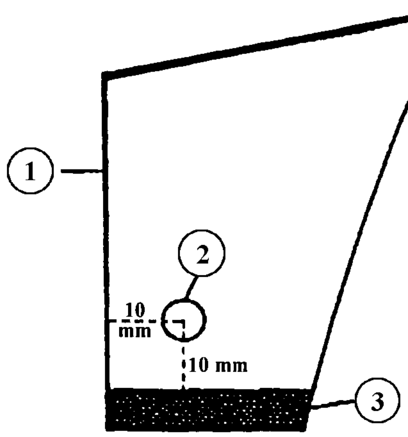

Figure 3 – Horizontal hole drilled through a chunky heel for insertion of rod G (Figure 1)

Key:

1 Heel breast

2 6 or 7 mm hole

3 Top piece

To fix the clamp for slender heels (figure 2) to the shoe heel proceed as follows. Retract the two screws E until their tips do not protrude through part C. Unscrew the four screws D until there is sufficient space between parts A and C to insert the heel stem. Position the heel so that its forward face is in contact with part A and the interface of heel and top piece is in line with the edge of part A (see figure 2). However, where this forward face is markedly curved, it is often better first to grind away some of the plastic near the top of the hell where it sit at the top part of the clamp. Tighten the four screws evenly until part C pivots to fit the back of the heel. Sometimes it is also better to grind away some of the back curve of the heel first so as to reduce the amount part C needs to be pivoted to fit it. This reduces the risk that the clamp might slip during the test when attached to a markedly tapering heel tip. Tighten the two screws E until their tips dig into the heel sufficiently to prevent the clamp being pulled off. The clamp will now be fixed to the heel as shown in figure 2.

6 Test method

6.1 Principle

The basis of the test is that the forepart of the shoe is clamped in one jaw of a tensile testing machine. The heel, near the top piece, is attached in a specified manner to the other jaw of the machine and pulled backwards from the forepart at a specified rate of jaw separation. A general purpose laboratory tensile testing machine with suitable attachments may be used.

The following three quantities are measured:

a) The amount of movement of the tip of the heel relative to the forepart at a force of 200 N.

NOTE 200 N is two or three times larger than the backward force which is applied to the heel during normal walking but the amount of deformation it produces in the test is believed to be a valid way of distinguishing between those shoes which have adequate backpart rigidity in wear and those which do not.

b) The amount of permanent deformation produced by a force of 400 N.

