SLOVENSKI STANDARD
oSIST prEN ISO 24265:2020

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Obutev - Metode za preskušanje odpornosti zgornjih delov proti drgnjenju z gumijastimi blazinicami (ISO/DIS 24265:2019)

Footwear - Test methods for uppers-fastness to rubbing using a rubber pad (ISO/DIS 24265:2019)

Schuhe - Prüfverfahren für Oberteile - Prüfung der Reibfestigkeit mit einem Gummikissen (ISO/DIS 24265:2019)

Chaussures - Méthodes d'essai pour les tiges - Résistance au frottement à l'aide d'un patin en caoutchouc (ISO/DIS 24265:2019)

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Footwear — Test methods for uppers — Fastness to rubbing using a rubber pad

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Foreword

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 216, *Footwear*.

Footwear — Test methods for uppers — Fastness to rubbing using a rubber pad

1 Scope

This Standard specifies a method for the determination of the rubbing resistance of leather and synthetic materials using rubber.

The method is aimed to establish testing conditions that are similar to those of the practical use of footwear subjected to drastic stress, as is the case of hiking or children's footwear, where the upper of one of the shoes is expected to rub with the sole of the other. This method is applicable to all types of leather and synthetic materials intended for shoe uppers.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

EN ISO 11640, *Leather — Tests for colour fastness — Colour fastness to cycles of to-and-fro rubbing*

EN 20105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

ISO 18454, *Footwear — Standard atmospheres for conditioning and testing of footwear and components for footwear*

3 Principle

The shoe upper material is drastically rubbed with the abrading rubber element for a given number of 'to-and-fro' motions (cycles).

4 Apparatus

4.1 Beaker or other suitable vessel.

4.2 The test apparatus suitable for this test shall incorporate the following elements:

4.2.1 A carriage with:

a) horizontal, completely planar metal platform;

b) holder for fastening the material to be tested leaving 80 mm freely exposed;

c) device which allows the test-piece to be extended at least 10 % in the direction of rubbing.

4.2.2 A finger, of mass (500 ± 25) g, removable but able to be fixed firmly, provided with:

a) a base formed by a wooden semi-cylinder measuring 10 mm radius × 20 mm wide;

b) a device for attaching the rubber strips on the wooden semi-cylinder base (see Figure 1);

c) an additional weight of mass (500 ± 10) g;

d) means for guiding the finger when fully loaded (total mass 1 000 ± 35 g) flat on the test piece, stretched or not, as appropriate.

4.2.3 Means for driving the carriage (4.2.1) to and fro with:

a) a distance travel of 35 mm to 40 mm;

b) a frequency of (40 ± 2) cycles/min.

NOTE 1 The following items are convenient, but not essential parts of the equipment:

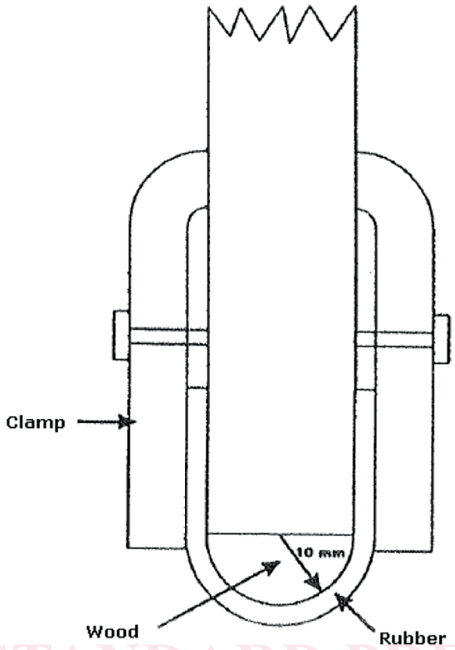
a) means to move the finger at right angles to the direction of rubbing, so that two or three tracks may be used for rubbing on one test piece;

b) a motor to drive the carriage to and fro (4.2.3);

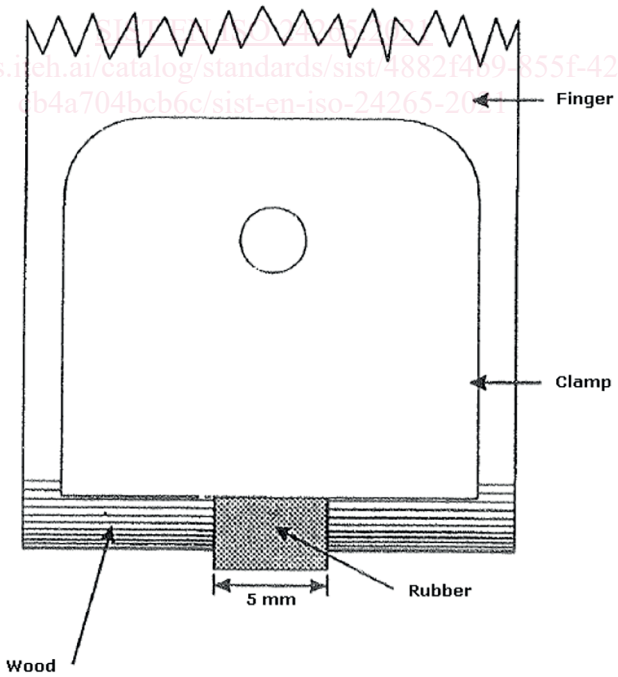
c) means to pre-select a given number of cycles.

NOTE 2 This test apparatus is similar to the one specified in the Standard EN ISO 11640 for the determination of the colour fastness to to-and-fro rubbing of leather, to which the wooden semi-cylinder of 10 mm radius and 20 mm wide is attached on the base of the finger (4.2.2) and a suitable device is coupled for attaching the rubber strips.

4.3 Rubbing material, a (5,0 ± 0,1) mm wide, (5 ± 1) mm thick, (75 ± 3)° Shore A hardness nitrile rubber strip with a friction coefficient of 0,20 ± 0,05 (see figure 1), the surface of which shall be previously roughened (see the note in Clause 6). Use preferably a light-coloured material to avoid staining the sample.



a) Side view



b) Front view

Figure 1

4.4 Grey scale, in accordance with EN 20105-A02, for assessing the change in colour of leather or synthetic materials.

4.5 Vacuum desiccator or other suitable vessel for evacuation.

4.6 Vacuum pump, capable of evacuating the vessel (4.5) and achieving 5 kPa (50 mbar, approximately 40 Torr) in 4 min.

5 Preparation of test pieces

5.1 Dry rubbing resistance

Cut a test piece measuring approximately 12 mm × 70 mm for each one of the sample directions.

Condition test pieces in accordance with ISO 18454 for a minimum of 24 h.

5.2 Wet rubbing resistance

Cut a test piece measuring approximately 120 mm × 70 mm for each one of the sample directions. To ensure uniform wetting, proceed as follows:

Immerse the test-piece in distilled water and place the containing vessel (4.1) in the vacuum desiccator (4.5). Produce a vacuum of 5 kPa (4.6) and hold it for 2 min. Restore normal pressure. Carry out this procedure two more times. Allow the test piece to soak in the water at 23 °C ± 2 °C at atmospheric pressure for 30 min. Take the test-piece out of the water and remove excess water on its surface with blotting paper, and then start the test.

No conditioning is required for the wet test.

6 Procedure

6.1 Dry rubbing resistance

6.1.1 Mount the test-piece (5.1) on the apparatus (4.2) and stretch it 10 %, or stretch it sufficiently to avoid the formation of creases.

6.1.2 Attach a rubber strip (4.3) to the wooden semi-cylinder and hold it adequately. Place the finger with the rubber strip 15 mm from the left long edge. Carry out 10 cycles and lift the finger off the test-piece.

6.1.3 Move the rubber strip a little bit to one side, so a non used part of the strip is in front of the test piece during the test, or replace the strip with a new one. Place the finger with the rubber strip 15 mm to the right of the previous position. Carry out 20 cycles and lift the finger off the test-piece.

6.1.4 Move the rubber strip a little bit to one side, so a non used part of the strip is in front of the test piece during the test, or replace the strip with a new one. Place the finger with the rubber strip 15 mm from the right long edge. Carry out 30 cycles and lift the finger off the test-piece.

6.1.5 Release the test-piece and assess the rubbed areas.

6.2 Wet rubbing resistance

6.2.1 Mount the wetted test-piece (5.2) on the apparatus, stretch it 10 %, or stretch it sufficiently to avoid the formation of creases.

6.2.2 Proceed as described in 6.1.2, 6.1.3 and 6.1.4, but carrying out 5, 10 and 20 cycles, respectively.