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Footwear - Test methods for uppers - Resistance to rubbing using a rubber strip

鞋类 帮面试验方法 耐橡胶摩擦性

(ISO 24265:2020, MOD)

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Footwear - Test methods for uppers - Resistance to rubbing using a rubber strip

1 Scope

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

The method aims 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 contents of the following documents, through normative references in this text, constitute indispensable provisions of this document. Among them, for dated references, only the edition corresponding to that date applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 250 Textiles - Tests for colour fastness - Grey scale for assessing change in colour (GB/T 250-2008, ISO 105-A02:1993, IDT)

GB/T 3903.6 Footwear - Test methods for whole shoe - Slip performance

GB/T 6682-2008 Water for analytical laboratory use - Specification and test methods (ISO 3696:1987, MOD)

GB/T 22049 Footwear - Standard atmospheres for conditioning and testing of footwear and components for footwear (GB/T 22049-2019, ISO 18454:2018, IDT)

3 Terms and definitions

There are no terms or definitions to be defined in this document.

4 Principle

The shoe upper material is drastically rubbed with the abrading rubber element under a

of the colour fastness to to-and-fro rubbing of leather, to which the wooden or metallic semi-cylinder of 10 mm radius and 20 mm wide is attached on the base of the finger (5.2) and a suitable device is coupled for attaching the rubber strips.

5.4 Rubbing material, a (5.0±1.0)mm wide, (5.0±1.0)mm thick, (75±3) Shore A hardness rubber strip with a friction coefficient of 0.20±0.05, the surface of which shall be previously roughened (see the note in 7.2.3). Use preferably a light-coloured material to avoid staining the sample.

The friction coefficient is the dynamic friction coefficient. It is tested according to GB/T 3903.6. The test medium is detergent solution. The test interface is ceramic tiles. The vertical load is 500 N. The test mode is heel mode. The rubbing material size refers to S96 standard rubber. The width is (25.4±0.1)mm. The length is at least 50 mm. The thickness is at least 5 mm.

5.5 Beaker or other suitable vessel.

5.6 Grey scale, in accordance with GB/T 250, for assessing the change in colour of leather or synthetic materials.

5.7 Vacuum desiccator or other suitable vessel.

5.8 Vacuum pump, capable of evacuating the vacuum desiccator (5.7) and achieving a vacuum degree of 5 kPa in 4 min.

5.9 Distilled water, which meets the grade 3 water requirements of GB/T 6682-2008.

6 Preparation of test pieces

6.1 General requirements

Test piece shall be free from sewing thread, decorative part, hook and eyelet.

6.2 Dry rubbing resistance

Cut a test piece measuring approximately 120 mm×70 mm in any direction of the sample.

Condition test pieces in accordance with GB/T 22049 for a minimum of 24 h.

6.3 Wet rubbing resistance

Cut a test piece measuring approximately 120 mm×70 mm in any direction of the sample. To ensure uniform wetting, proceed as follows:

Immerse the test-piece in the vessel (5.5) containing distilled water (5.9); place the

vessel (5.5) in the vacuum desiccator (5.7). Produce a vacuum of 5 kPa and hold it for 2 min. Then release the pressure and restore normal pressure. Carry out this procedure two more times. Allow the test piece to soak in the water at (23±2)℃ 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.

7 Test procedure

7.1 Dry rubbing resistance

7.1.1 Mount the test-piece (6.2) on the test carriage (5.1) and stretch it 10%, or stretch it by other proportions to avoid the formation of creases.

7.1.2 Attach a rubber strip (5.4) to the wooden or metallic semi-cylinder and hold it adequately. Place the finger with the rubber strip 15 mm from the left long edge of the test-piece. Carry out 10 cycles and lift the finger off the test-piece.

7.1.3 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 rubbing position. Carry out 20 cycles and lift the finger off the test-piece.

7.1.4 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 to the right of the previous rubbing position. Carry out 30 cycles and lift the finger off the test-piece.

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

7.2 Wet rubbing resistance

7.2.1 Mount the wetted test-piece (6.3) on the test carriage (5.1), stretch it 10%, or stretch it by other proportions to avoid the formation of creases.

7.2.2 Proceed as described in 7.1.2, 7.1.3 and 7.1.4, but carrying out 5, 10 and 20 cycles, respectively.

7.2.3 Release the test piece and leave it to dry at ambient temperature before assessment.

Note: The rubber strips can be prepared or regenerated before use by mounting them on the test-piece holder and carrying out 5 cycles using a 100 grit abrasive paper attached to the wooden or metallic semi-cylinder. Then, use an appropriate method to clean the rubber strip, such as using clean compressed air or a clean and dry soft-bristled brush.

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