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**Leather – Tests for colour fastness –
Colour fastness to cycles of to-and-fro rubbing**

皮革 色牢度试验

往复式摩擦色牢度

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Foreword

This Standard is equivalent to ISO 11640:1993, Leather – Tests for colour fastness – Colour fastness to cycles of to-and-fro rubbing

The drafting of this Standard is slightly different from ISO 11640:1993, and refines some specifications of ISO 11640:1993, for the convenience of use in China, but they will not affect the technical requirements and test results of the standard. Descriptions are as follows:

- 1) In 6.2, ISO 11640 specifies: take wool felt out from water before use; squeeze water to make weight of wool felt to reach approximately 1 g. This Standard modifies it: take each piece of wool felt before use; place it between 4 pieces of absorbent blotting paper (with 2 pieces each on the top and bottom, making test surface in contact with blotting paper horizontal plane); place weight (900 ± 10) g on blotting paper for 1 min; squeeze water to make weight of wool felt to reach approximately 1 g. It is verified by tests that the content added can meet the specifications of ISO 11640; and meanwhile, it enables testing personnel to take uniform test methods to operate more accurately and reduce test errors and ensure consistency of test results.
- 2) The modification content of 6.4 is the same as 1).
- 3) In 7.2, “Due to the higher friction on suede leathers and suede-like leathers, it can be desirable in such cases to carry out the test with a total mass of 500 g (i.e. without the additional weight-piece).” It is NOTE in ISO 11640; based on the actual conditions of China, it is made an official provision of this Standard for convenience of use; and the content “including front clothing leathers” is added.
- 4) Annex A of the International Standard ISO 11640:1993 recommends the commercial sources of apparatus and materials used for this test method standard; Annex B gives names and numbers of IUF International Standards related to this Standard, which are not referenced in this Standard.

Test results of this Standard are not comparable with test results of QB/T 1327-1991, Test method for colour rubbing fastness of leather surface.

This Standard was proposed by the General Business Department of China National Light Industry Council.

This Standard shall be under the jurisdiction of the National Standardization Technical Committee on Leather.

This Standard was drafted by the National Standardization Technical Committee on Leather.

Leather – Tests for colour fastness – Colour fastness to cycles of to-and-fro rubbing

1 Scope

This Standard specifies a method for determining the colour fastness behaviour of the surface of a leather on rubbing with a wool felt.

This Standard applies to leathers of all kinds.

2 Normative references

The provisions in following standards become the provisions of this Standard through reference in this Standard. When this Standard is published, all standards indicated are valid. All standards will be amended, so all parties using this Standard shall discuss the use of the latest editions of the following standards.

GB 250-1995 Gray scale for assessing change in colour

GB 251-1995 Gray scale for assessing staining

GB/T 6682-1992 Water for laboratory use – Specifications and test methods

GB/T 3812.2-1999 Leather – Conditioning of test pieces for physical tests

GB/T 2464.23-1999 Determination Method for Color Fastness of Leather to Perspiration

FZ/T 60004-1991 Textiles – Thickness test methods for non-wovens

3 Principle

One side of the leather specimen is rubbed with pieces of reference wool felt under a given pressure for a given number of forward and backward motions. The degree of colour staining of the wool felt and the change in colour of the leather are assessed with grey scales. Any other visible change in, or damage to, the surface of the leather is also reported.

4.2 Rubbing material, square pieces of white or black wool felt, measuring approximately 15 mm × 15 mm, punched out of a sheet of pure wool felt meeting the following specification:

-- pH of water extract between 5.5 and 7.0, by adding 200 mL of demineralized water (4.5) to 5 g of wool felt, putting in a polyethylene bottle and allowing to stand for 2 h;

-- mass per unit area: 1750 ± 100 g/m²; and

-- thickness, determined in accordance with FZ/T 60004: 5.5 ± 0.5 mm.

The black felt shall be dyed with Acid Black 24 (C.I. 26370).

4.3 Vessel suitable for evacuation, e.g. vacuum-desiccator.

4.4 Vacuum pump, capable of evacuating the vessel (4.3). The vacuum pump shall be capable of achieving approximately 5 kPa (50 mbar) within 4 min.

4.5 Demineralized water, grade 3 in accordance with GB/T 6682.

5 Test specimens

Test specimens shall be rectangular pieces of leather, at least 120 mm long and, for each position of the finger [see 4.1.4 a)], at least 20 mm wide.

NOTE Usually with one set of conditions (conditioning of leather and felt, number of cycles, etc.) only one specimen is tested. In case of dispute, it is strongly recommended to test several specimens, sampled from different positions on the hide or skin.

6 Conditioning of test specimens and pieces of felt

6.1 Dry leather and dry felt

Condition leather and wool felt in accordance with QB/T 3812.2.

6.2 Wet felt

Wet the felt by placing pieces of felt in demineralized water (4.5). Heat the water to boiling and allow it to boil gently until the felt pieces sink. Then decant off the hot water and replace it with cold demineralized water. Allow to stand until the wetted felt pieces have reached room temperature. Take each piece of wool felt just before use; place it between 4 pieces of absorbent blotting paper (with 2 pieces each on the top and bottom,