FINAL DRAFT International Standard

ISO/FDIS 23122

Textile floor coverings — Production of changes in appearance by means of a hexapod tumbler tester

Revêtements de sol textiles — Production de changements d'aspect au moyen d'un tambour d'essai pour hexapode

ISO/TC **219**

Secretariat: **NBN**

Voting begins on:
2025-04-04

Voting terminates on:
2025-05-30

Reference number
ISO/FDIS 23122:2025(en)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword ..... **iv**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Principle **1**
5 Apparatus **1**
6 Atmosphere for conditioning and testing **4**
7 Selection and preparation of test specimens **4**
7.1 Selection 4
7.2 Number and dimensions 4
7.3 Preparation 5
8 Procedure **5**
9 Test report **6**
Bibliography **7**

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 219, *Floor coverings.*

This first edition of ISO 23122 cancels and replaces ISO 10361:2015, which has been technically revised.

The main changes are as follows:

— this document covers Method B of ISO 10361:2015 only;

— Method A has been removed from this document (it is now covered by ISO 23106).

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Textile floor coverings — Production of changes in appearance by means of a hexapod tumbler tester

1 Scope

This document specifies requirements for a procedure that uses the mechanical action of a hexapod tumbler tester to produce changes in appearance (surface structure and colour) to all types of textile floor coverings. It does not include pilling or colour changes due to other actions.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 48-4, *Rubber, vulcanized or thermoplastic — Determination of hardness — Part 4: Indentation hardness by durometer method (Shore hardness)*

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

ISO 1957, *Machine-made textile floor coverings — Selection and cutting of specimens for physical tests*

ISO 2424, *Textile floor coverings — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2424 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Principle

A hexapod with studs rolls randomly inside a rotating drum which is lined with the textile floor covering specimens.

After fatiguing, the change in appearance of the specimens is assessed in accordance with the applicable assessment standard.

5 Apparatus

5.1 Hexapod tumbler tester, with a plastic drum of the following dimensions:

— internal diameter: (305 ± 1) mm;

— wall thickness: approximately 8 mm;

— internal depth: (210 ± 1) mm.

The drum shall rotate at a speed of (35 ± 2) r/min and shall have facilities for reversing the direction of rotation every 15 min (14 min 30 s rotating and 30 s stop). The drum system shall incorporate a revolution counter and the drum base and lid shall have a locating groove to hold a Polyethylene specimen backing sheet (5.2) flat against the inner wall of the drum. Figure 1 illustrates the drum and lid disassembled and Figure 2 shows the drum in cross-section.

5.2 Polyethylene specimen backing sheet, of nominal size 950 mm long, 215 mm wide, and thickness of 2 mm.

5.3 Hexapod, comprising a 50 mm mild steel cube with 25 mm thick plates connected to each face. The outside corners of the plates shall be rounded, such that, when the studs are fitted and the hexapod placed on a flat surface, no metal touches the flat surface (see Figure 3).

A replaceable polyurethane stud with steel backing shall be screwed centrally into each face.

— diameter of stud: (40 ± 1) mm;

— height of stud: (15 ± 1) mm;

— edge radius of stud: (15 ± 1) mm;

— thickness of steel backing: (3 ± 0,25) mm;

— shore A hardness, measured in accordance with ISO 48-4 (92,5 ± 7,5);

— total mass of hexapod with its six studs: (3,8 ± 0,1) kg.

The physical properties of height, diameter, and hardness shall be tested after every 400 000 cycles. If any of the physical properties of any of the studs are found not to conform to the stud specification, the non-conformant studs shall be replaced.

Studs shall be replaced in any case after two years' use.[1)]

5.4 Double-sided adhesive tape, 50 mm wide.

5.5 Vacuum cleaner, having a width of suction head at least equal to the width of the specimens.

Upright vacuum cleaner with rotating brush and beater bar.

If this type of vacuum cleaner is not recommended by the manufacturer, then the recommended one should be used and described in the test report.

1) Replacement studs for the hexapod tumbler tester can be obtained from Wira Instrumentation Ltd. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO of the product named. Equivalent products may be used if they can be shown to lead to the same results.