International Standard

ISO 23231

Textiles — Determination of dimensional change of fabrics — Accelerated machine method

Textiles — Détermination des variations dimensionnelles des étoffes — Méthode machine accélérée

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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

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Foreword

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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).

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This document was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 2, *Cleansing, finishing and water resistance tests.*

This second edition cancels and replaces the first edition (ISO 23231:2008), which has been technically revised.

The main changes are as follows:

— the scope (see Clause 1), principles (see Clause 4) and test report (see Clause 13) have been revised.

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.

Textiles — Determination of dimensional change of fabrics — Accelerated machine method

1 Scope

This document specifies a test method for an accelerated procedure for the determination of the dimensional change of fabrics which will then be made into garments or other end-use articles that will be laundered in a variety of settings. The procedure uses an apparatus with programmable settings that simulate multiple domestic or industrial laundering actions as well as wet processing operations in fabric manufacturing. This method is less suitable for heavy, tightly woven fabrics, such as denim, and fabrics with water-repellent finish. This method and the apparatus are not intended to be used to develop care labels.

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 6330, *Textiles — Domestic washing and drying procedures for textile testing*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological 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/

3.1
dimensional change
change in length or width of a fabric specimen subjected to specified conditions

Note 1 to entry: The change is usually expressed as a percentage of the initial dimension of a specimen.

3.2
growth
⟨of textile materials⟩ *dimensional change* (3.1) resulting in an increase of length or width of a specimen

3.3
laundering
⟨of textile materials⟩ process intended to remove soils and/or stains by treatment (washing) with an aqueous detergent solution and normally including subsequent rinsing, extracting and drying

3.4
shrinkage
⟨of textile materials⟩ *dimensional change* (3.1) resulting in a decrease in the length or width of a specimen

4 Principle

This is an accelerated method for ascertaining the relaxation and shrinkage behaviour of textile fabrics and textile products. A test specimen is submitted separately to a short complete washing cycle in a whirling

hot washing bath and to a few short complete treatment cycles in a whirling hot water bath, each cycle being finished by a short hydroextraction of the test specimen and drying in a hot air stream. The method is performed during incessant movement of the yarns at cross-over points and flexing of the yarns in the textile structure of the test specimen. Dimensional changes are determined by comparing the distances between length and width direction benchmarks before and after a programmed test cycle.

NOTE 1 While this document is intended to measure the same dimensional property as in ISO 5077, its application is as an accelerated test for use in a production environment. It is not unusual for different test methods to exist for determining the same property. Examples are methods for abrasion, for pilling, and for colour fastness to light.

NOTE 2 This method is intended for internal production decisions based on correlations to known results from the combination of ISO 3759, ISO 5077, and ISO 6330. It is in no way intended to replace these methods for end use decisions of quality.

NOTE 3 See Annex A for information on interlaboratory studies using this method

5 Uses and limitations

5.1 Although data have been generated comparing the dimensional change of some textile materials after home laundering and when using this accelerated apparatus, the user will find it necessary to determine the correlation between the results from a selected programme for this apparatus and the dimensional change results from other chosen test methods or wet processes.

5.2 Dimensional changes exhibited by articles produced from textile fabrics are primarily (but not entirely) dependent on dimensional changes exhibited by the fabrics.

5.3 While the term “laundering” includes the use of an aqueous detergent solution, this accelerated method does not use detergents.

6 Apparatus and materials

6.1 **Apparatus for performing the method**, comprising a vertical perforated drum (1) containing radially arranged partitions (2) dividing the drum into two or more chambers and rotatable in two directions, arranged in a heat-insulated protective casing (3), covered by a lid (4), a means which can give the drum alternately a rotational motion or an oscillating motion, an air heater (5) connected over inlets (6) to the inside of the casing (3), above each chamber, and a water heater (7) connected to the casing via a water inlet and outlet pipe (8), (see Figure 1.)

6.2 **Indelible ink marking pen**, selected with the smallest tip.

6.3 **Tape** or **ruler**, marked in millimetres.