
International Standard



2551

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Machine-made textile floor coverings — Determination of dimensional changes due to the effects of varied water and heat conditions

Revêtements de sol textiles fabriqués à la machine — Détermination de la variation des dimensions due à diverses conditions de mouillage et de chaleur

iTeh STANDARD PREVIEW

Second edition — 1981-12-01 (standards.iteh.ai)

[ISO 2551:1981](#)

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UDC 645.12 : 620.1

Ref. No. ISO 2551-1981 (E)

Descriptors : textiles, carpets, floor coverings, water, heat, dimensional stability, shrinkage, swelling.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

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International Standard ISO 2551 was developed by Technical Committee ISO/TC 38, *Textiles*.

This second edition was submitted directly to the ISO Council, in accordance with clause 5.10.1 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 2551-1972), which had been approved by the member bodies of the following countries :

Canada	Israel	Sweden
Czechoslovakia	Japan	Switzerland
Denmark	Netherlands	Thailand
Egypt, Arab Rep. of	New Zealand	Turkey
Finland	Norway	United Kingdom
France	Poland	USA
Hungary	Romania	USSR
India	South Africa, Rep. of	
Ireland	Spain	

The member bodies of the following countries had expressed disapproval of the document on technical grounds :

Belgium
Germany, F. R.

Machine-made textile floor coverings — Determination of dimensional changes due to the effects of varied water and heat conditions

1 Scope and field of application

This International Standard specifies a procedure for the determination of the dimensional changes that take place when machine-made textile floor coverings are subjected to varied water and heat conditions.

The method is applicable to all machine-made textile floor coverings.

2 Reference

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

3 Principle

Comparison is made between dimensions of a test specimen after conditioning in the standard atmosphere for testing textiles and then after being subjected to specified varied water and heat conditions.

4 Apparatus

4.1 Instrument capable of measuring length to the nearest 0,05 mm; for example, optical bench or mechanical device with gauge.

4.2 Plate glass sheet, marginally smaller than the test specimen, or other means of keeping the specimen flat while measurements are made. This will not be required if the instrument in 4.1 incorporates such a glass or metal plate.

4.3 Ventilated drying oven, capable of being controlled at 60 ± 2 °C, with perforated and lacquered shelves that can be placed in the oven.

4.4 Steel pins, or other appropriate means of indicating the reference points on the test specimen, if necessary.

4.5 Enclosure, to provide the standard atmosphere for testing textiles.

4.6 Container, to hold water at 20 ± 2 °C, of dimensions at least 20 mm greater than the test specimen and deep enough to accommodate the submerged test specimen.

5 Test specimen

5.1 Sampling

Select the specimens according to the directions in ISO 1957.

5.2 Number and dimensions

Take at least three test specimens each measuring not less than 250 mm × 250 mm, noting the direction of manufacture.

5.3 Conditioning

Condition the test specimens until they are in equilibrium with the standard atmosphere for testing textiles.

6 Procedure

6.1 Initial measurement of the specimen

Make all measurements on the conditioned specimen when it is completely flat; this can be achieved by use of the glass plate (4.2) or other means.

On the conditioned specimen, measure the distance between the edges parallel to the direction of manufacture and between the edges at right angles to the direction of manufacture, each at two locations approximately 200 mm apart. If required by the method of measuring adopted, mark the pair of reference points, for example by the use of steel pins (4.4), approximately 200 mm apart on the edge parallel to the direction of manufacture and also on the edge at right angles to the direction of manufacture. Make all measurements on the back of the specimen to the nearest 0,05 mm.

NOTE — Products made of discrete layers, for example foam-backed constructions, should be measured on both the backing and the use-surface, and the results of both measurements given in the test report.

6.2 Determination

Place the test specimen, lying freely on the perforated and lacquered shelves, in the drying oven (4.3), controlled at 60 ± 0.5 °C. Keep the specimen in the drying oven for 2 h, then remove it and measure the distance between the two parallel edges or the two sets of marks to the nearest 0.05 mm, within between 6 and 7 min of removing the specimen from the oven.

Immerse the test specimen, laid flat, in water at a temperature of 20 ± 2 °C and allow it to soak in the water for 2 h. Remove the specimen from the water, taking precautions to avoid distorting its shape. Excess moisture may be removed by placing the specimen between sheets of blotting paper. Within 5 ± 1 min of removing the specimen from the water, again measure the distance between the two parallel edges or the two sets of marks as specified in 6.1.

Dry the test specimen for 24 h in the drying oven at 60 ± 2 °C in the same conditions as before. Within between 6 and 7 min of removing the specimen from the oven again measure the distance between the two parallel edges or two sets of marks as specified in 6.1.

Finally, leave the test specimen for 48 h in the standard atmosphere for testing textiles. Measure the distance between the two parallel edges or the two sets of marks to the nearest 0.05 mm, note the final appearance of the test specimen, and assess the degree of cockling.

7 Expression of results

Calculate the arithmetic mean of the dimensions obtained for all specimens in the direction of manufacture and in the direction at right angles to this for each of the stages referred to in clause 6.

Calculate in each case the variations observed and express as a percentage using the formula

$$\frac{l_m - l_o}{l_o} \times 100$$

where

l_o is the arithmetic mean of the initial measurements;

l_m is the arithmetic mean of measurements at each of the stages referred to in clause 6.

Indicate shrinkage by a minus sign, and an increase in dimensions by a plus sign.

8 Test report

The test report shall include the following particulars :

- a) a statement that the procedure was conducted in accordance with this International Standard, and details of any operations not included, or optional;
- b) the individual values for each specimen of the measurements made in the direction of manufacture and in the direction at right angles to the direction of manufacture, together with the results obtained as specified in clause 7;
- c) a description of the final appearance of the test specimens, i.e. whether they exhibit mild, moderate or severe cockling;
- d) an indication of the type of measuring instrument used.