

INTERNATIONAL STANDARD



ISO 5084

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

Textiles — Determination of thickness of woven and knitted fabrics (other than textile floor coverings)

Textiles — Détermination de l'épaisseur des étoffes tissées et tricotées (autres que les revêtements de sol textiles)

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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.

International Standard ISO 5084 was drawn up by Technical Committee ISO/TC 38, *Textiles*, and was circulated to the member bodies in November 1975.

It has been approved by the member bodies of the following countries :

Brazil	Iran	South Africa, Rep. of
Bulgaria	Israel	Spain
Canada	Italy	Sweden
Czechoslovakia	Mexico	Switzerland
Finland	Netherlands	Turkey
France	New Zealand	United Kingdom
Germany	Norway	U.S.A.
Hungary	Poland	U.S.S.R.
India	Romania	Yugoslavia

The member body of the following country expressed disapproval of the document on technical grounds :

Belgium

Textiles — Determination of thickness of woven and knitted fabrics (other than textile floor coverings)

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the thickness, when under a specific pressure, of woven and knitted textile fabrics. It is applicable to woven and knitted textile fabrics only and is not applicable to textile floor coverings, to nonwoven textile fabrics or to fabrics coated with rubber or plastics.

The recommended areas and pressures to be used during the test are given in the annex.

NOTE — For the determination of thickness of textile floor coverings, see ISO 1765, *Machine-made textile floor coverings — Determination of thickness*.

2 REFERENCE

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

3 DEFINITION

thickness : The distance between the face and the back of a textile fabric measured as the vertical distance between a reference plate on which the fabric rests and a parallel presser-foot that is applying a pressure to the fabric.

4 PRINCIPLE

Measurement of the thickness of a specimen of a woven or knitted fabric as the vertical distance between the reference plate on which the specimen rests and a parallel circular presser-foot that exerts a specified pressure on the area under test.

5 APPARATUS

5.1 Thickness tester

This shall incorporate (or be equipped with) the following elements.

5.1.1 Interchangeable presser-feet of area appropriate to the type of fabric to be tested.

5.1.2 Reference plate with a plane upper surface of diameter at least 50 mm greater than that of the presser-foot (5.1.1).

5.1.3 Means for moving the presser-foot (in a direction normal to the upper surface of the reference plate) so that its bearing surface is maintained parallel (to within 0,2 %) to the upper surface of the reference plate (5.1.2) and that the relevant specified pressure can be applied to a test specimen that is supported on the plate.

5.1.4 Gauge that registers the vertical distance between the bearing surfaces of the presser-foot (5.1.1) and the reference plate (5.1.2) to an accuracy of 1 % for fabrics over 0,1 mm in thickness, and to 0,001 mm for fabrics of thickness not exceeding 0,1 mm.

5.2 Stop-watch.

6 ATMOSPHERE FOR CONDITIONING AND TESTING

The specimens shall be conditioned and the test conducted in one of the standard atmospheres for conditioning and testing of textiles specified in ISO 139.

7 SAMPLING, SELECTION AND CONDITIONING OF SPECIMENS

Take samples and select specimens in one of the following ways, as appropriate :

- according to the directions given in the relevant material specification;
- if such directions are not included in the material specification, according to the procedure agreed upon by the parties interested in the test results.

Condition specimens by exposing them for 48 h to the appropriate standard atmosphere for testing.

8 PROCEDURE

8.1 Clean the presser-foot (5.1.1) and the reference plate (5.1.2). Check that the presser-foot shaft moves freely. With the presser-foot so loaded as to exert the appropriate specified pressure on the reference plate, set the thickness gauge (5.1.4) to read zero.

NOTE — The area of the presser-foot and the applied pressure shall be a matter of agreement between the parties interested in the test results (see the annex).

8.2 Raise the presser-foot and position the specimen, without tension, on the reference plate so that no part of the area to be measured lies nearer to a selvage than one-tenth of the width of the fabric. Ensure that the area chosen for the test is free from creases. Do not attempt to flatten out any creases as this may affect the result.

8.3 Lower the presser-foot gently onto the specimen and note the gauge reading, after 30 s, unless some other time is specified. Such other time should be selected so that no appreciable change in fabric thickness is indicated by the instrument during a lapse of a further 20 % of that time.

8.4 Determine, in accordance with the procedure in 8.2 and 8.3, the thickness of 10 areas on the specimen that are so chosen that each area contains different warp and weft threads or different courses and wales, as relevant.

9 EXPRESSION OF RESULTS

Calculate the arithmetic mean of the measurements

determined in accordance with clause 8 to an accuracy of 1 % for fabric thickness over 0,1 mm and to the nearest 0,001 mm for fabric thickness not exceeding 0,1 mm.

10 TEST REPORT

The test report shall include the following particulars :

- a) a statement that the test was conducted in accordance with this International Standard;
- b) the description of the fabric;
- c) the area of the presser-foot used;
- d) the applied pressure;
- e) the time for which this pressure was applied;
- f) the standard atmosphere for testing used (temperate or tropical);
- g) the maximum, minimum and mean thickness of the specimen under the applied pressure;
- h) details of any deviations from the specified test procedure.

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ANNEX

GUIDE TO THE SELECTION OF AREA OF PRESSER-FOOT AND APPLIED PRESSURE

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A.1 PRESSER-FOOT

It is recommended that

- a) the ratio of foot diameter to fabric thickness be not less than 5 : 1;
- b) the area of foot be not less than 50 mm² and not greater than 10 000 mm², and
- c) a presser-foot of one of the following preferred sizes be used :

50 mm ² (diameter	7,98 mm)
100 mm ² (diameter	11,28 mm)
500 mm ² (diameter	25,22 mm)
1 000 mm ² (diameter	35,68 mm)
2 500 mm ² (diameter	56,43 mm)
5 000 mm ² (diameter	79,8 mm)
10 000 mm ² (diameter	112,84 mm)

A.2 APPLIED PRESSURES

It is recommended that the applied pressure be one of the following :

0,2 kPa* ; 0,5 kPa; 1 kPa; 2 kPa; 5 kPa; 10 kPa.

* 1 kPa ≈ 10 gf/cm²