INTERNATIONAL STANDARD ISO 3005

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

Textiles — Determination of dimensional change of fabrics induced by free-steam

Textiles — Détermination de la variation, dans la vapeur saturante, des dimensions des étoffes

Second edition — 1978-09-01

UDC 677.017.635.2

Ref. No. ISO 3005-1978 (E)

Descriptors : textiles, wool, tests, dimensional stability, water vapour tests, steam.

Price based on 4 pages

ISO 3005-1978 (E)

FOREWORD

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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 3005 was developed by Technical Committee ISO/TC 38, *Textiles*. The first edition (ISO 3005-1975) had been approved by the member bodies of the following countries :

Australia	India	Romania
Brazil	Iran	South Africa, Rep. of
Bulgaria	Ireland	Spain
Canada	Israel	Sweden
Czechoslovakia	Italy	Switzerland
Denmark	Japan	Thailand
Egypt, Arab Rep. of	Netherlands	Turkey
Finland	New Zealand	United Kingdom
France	Norway	U.S.A.
Hungary	Poland	

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

Belgium
Germany

This second edition, which supersedes ISO 3005-1975, incorporates the modifications which were circulated in October 1977 to the member bodies as Draft Amendment 1.

This draft amendment has been approved by the member bodies of the following countries :

Australia	Ghana	Romania
Bulgaria	Hungary	South Africa, Rep. of
Canada	India	Spain
Chile	Iran	Sweden
Czechoslovakia	Israel	Switzerland
Denmark	Japan	Thailand
Egypt, Arab Rep. of	Korea, Rep. of	United Kingdom
Finland	New Zealand	U.S.A.
France	Poland	U.S.S.R.

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

Belgium
Italy

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Textiles — Determination of dimensional change of fabrics induced by free-steam

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for determination of the dimensional change of fabrics when subjected to the action of free-steam. It does not deal with the consolidation and felting shrinkage of fabrics in wet treatments, or the mechanical effects of pressing.

2 REFERENCES

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

ISO 3759, *Textiles — Preparation, marking and measuring of fabric specimens and garments in tests for determination of dimensional change.*

3 PRINCIPLE

Measured and conditioned strips of fabric are placed on a fine wire frame. Because their heat capacity is very low, the wires cause negligible condensation on the cloth when the assembly is placed in steam. The assembly is inserted three times in a horizontal cylinder through which steam flows steadily at a prescribed rate from the back of the cylinder to the door at the front of the cylinder. No vacuum is used. After removal from the cylinder, the strips are allowed to cool on the frame before being conditioned, and remeasured. Initial and final lengths are measured at the same regain, both are recorded; the percentage dimensional change is calculated based on the initial length. The method requires the use of the conditioning atmosphere specified in clause 5, in order to minimize the differences between the initial and final regains.

4 APPARATUS

4.1 Marking and measuring equipment as described in ISO 3759.

4.2 Wire supporting frame as specified in annex A.

4.3 Jacketed steaming cylinder constructed and fitted as described in annex B.

4.4 Means of delivering steam to the cylinder at the rate of 70 g/min.

4.5 Means for producing the standard atmosphere for testing textiles.

5 CONDITIONING ATMOSPHERE

The standard atmosphere for testing textiles as specified in ISO 139 shall be used for pre-conditioning and conditioning.

6 TEST SPECIMENS

6.1 Cutting

Cut the specimens 300 mm long and 50 mm wide, with the longer sides in either the length or width direction of the fabric. Avoid selvedges and piece ends.

6.2 Preparation

Pre-condition each test specimen, placed on a flat screen, for not less than 4 h in the pre-conditioning atmosphere specified in clause 5. Then expose each test specimen to the standard atmosphere for testing textiles for 4 h or until equilibrium is obtained, remove the specimen and mark it for measurement on a smooth flat surface using a pair of suitable small indicators (see ISO 3759), 250 mm apart, symmetrically placed on the central axis of the specimen. Measure and record the distance between each pair of indicators.

6.3 Number

Unless otherwise agreed by the interested parties, test four specimens with their length parallel to the warp (or wale) direction and four specimens with their length parallel to the weft (or course) direction.

7 TEST PROCEDURES

7.1 Ensure that the steam flow is within 20 % of the specified value of 70 g/min, and thoroughly warm the cylinder by allowing steam to flow for at least 1 min, or longer if the cylinder was previously cool (see annex B).

7.2 Lay four conditioned specimens flat on the wire supporting frame, one specimen per layer.