SRI LANKA STANDARD 1250 : 2013
ISO 3759 : 2011

METHOD FOR THE PREPARATION, MARKING AND MEASURING OF FABRIC SPECIMENS AND GARMENTS IN TESTS FOR DETERMINATION OF DIMENTIONAL CHANGE

(Second Revision)

SRI LANKA STANDARDS INSTITUTION

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SRI LANKA

Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

This standard does not purport to include all the necessary provisions of a contract.

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NATIONAL FOREWORD

This standard was approved by the Sectoral Committee on Textiles, Clothing and Leather and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2013-01-22

This Sri Lanka Standard was first published in 2003 which was an adoption of ISO 3759 : 1994. The first revision was in 2008 which was an adoption of ISO 3759: 2007. The ISO 3759 has been revised in 2011. This Sri Lanka Standard is identical with ISO 3759:2011 Textiles – Preparation, marking and measuring of fabric specimens and garments in tests for determination of dimensional change.

TERMINOLOGY AND CONVERSIONS

In this revision the text of the International Standard has been accepted as suitable for publication, without deviation as a Sri Lanka Standard. However certain terminology and conversions are not identical with those used in Sri Lanka Standards, attention is therefore drawn to the following :

a) Wherever the words “International Standard/Publication” appear referring to this standard they should be interpreted as “Sri Lanka Standard”.

b) The comma has been used throughout as a decimal marker. In Sri Lanka Standards it is the current practice to use the full point at the base as the decimal marker.

c) Wherever page numbers are quoted, they are ISO page numbers.

CROSS REFERENCES

International Standard	Corresponding Sri Lanka Standard
ISO 139 Textiles – Standard atmospheres for conditioning and testing	SLS 16 Textiles – Standard atmospheres for conditioning and testing
ISO 3005 Textiles – Determination of dimensional change of fabrics induced by free – steam	No equivalent Sri Lanka Standard.
ISO 3175 (all parts) Textiles - professional care, drycleaning and wetcleaning of fabrics and garments	No equivalent Sri Lanka Standard.
ISO 6330 Textiles – Domestic washing and drying procedures for textile testing	SLS 1302 Textiles – Domestic washing and drying procedures for textile testing
ISO 7771 Textiles - Determination of dimensional changes of fabrics induced by cold-water immersion	No equivalent Sri Lanka Standard.
ISO 15797 Textiles – Industrial washing and finishing procedures for testing of workwear	No equivalent Sri Lanka Standard.
ISO 22198 Textiles – Fabrics Determination of width and length	SLS 1356 Methods for determination of width and length of textile fabrics

SLS 1250: 2013

INTERNATIONAL STANDARD

ISO 3759

Fifth edition
2011-05-15

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

Textiles — Préparation, marquage et mesurage des éprouvettes d'étoffe et des vêtements dans les essais de détermination de la variation des dimensions

Reference number
ISO 3759:2011(E)

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Published in Switzerland

Contents

Page

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 3759 was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 2, *Cleansing, finishing and water resistance tests*.

This fifth edition cancels and replaces the fourth edition (ISO 3759:2007), of which it constitutes a minor revision. ISO 15797 has been added to Clause 1 (Scope), to Clause 2 (Normative references) and to Clause 9 (Treatment of specimens); and in 6.1, the second and the third paragraphs were inverted.

INTERNATIONAL STANDARD **ISO 3759:2011(E)**

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

1 Scope

This International Standard specifies a method for the preparation, marking and measuring of textile fabrics, garments and fabric assemblies for use in tests for assessing dimensional change after a specified treatment, e.g. washing, dry cleaning, soaking in water and steaming, following the procedures in ISO 3005, ISO 7771, ISO 6330, ISO 3175 or ISO 15797. This International Standard is applicable to woven and knitted fabrics, and made-up textile articles. The procedures are not applicable to certain upholstery coverings.

2 Normative references

The following referenced documents are indispensable for the application 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 139, *Textiles — Standard atmospheres for conditioning and testing*

ISO 3005, *Textiles — Determination of dimensional change of fabrics induced by free-steam*

ISO 3175 (all parts), *Textiles — Professional care, drycleaning and wetcleaning of fabrics and garments*

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

ISO 7771, *Textiles — Determination of dimensional changes of fabrics induced by cold-water immersion*

ISO 15797, *Textiles — Industrial washing and finishing procedures for testing of workwear*

ISO 22198, *Textiles — Fabrics — Determination of width and length*

3 Principle

The specimens are selected to represent the bulk of the textile under examination. Pairs of reference points are marked on each specimen, and the distance between each pair of reference points is measured before and after specified treatments.

4 Apparatus

4.1 Ruler or **flexible steel ruler** or **glass-fibre tape**, marked in millimetres and longer than the greatest dimension being measured.

The accuracy of glass-fibre tapes should be verified at least every 6 months.

4.2 Equipment for marking precise reference points, such as:

a) **indelible ink**, for use, if necessary, with a template with a measuring grid;

b) **fine threads of contrasting colour**, sewn into the fabric;

c) **heated wire** for making small holes in thermoplastics materials;

d) **staples** (suitable for tests during which specimens are not agitated, e.g. for soaking in water).

4.3 Smooth, flat surface, large enough to lay out complete articles.

4.4 Workroom stands, to support garments.

5 Atmospheres for conditioning and testing

The atmospheres used for conditioning and testing shall be in accordance with ISO 139.

6 Procedure for fabric specimens

6.1 Selection

For fabric piece goods, select specimens representative of the sample. Do not cut specimens from within 1 m of either end of the roll or piece good. Specimens should be taken from areas with different lengthwise and widthwise yarns. Identify the length direction of the specimens before cutting them out of the sample.

Circular knitted fabrics produced on a body-width machine shall be used in their tubular form. Circular knit, seamless, or knit-to-wear fabric should be tested as a garment.

Tubular knitted samples should be slit and handled in the flat condition in a single layer.

6.2 Dimensions

Cut specimens, each measuring at least 500 mm $\times$ 500 mm, with edges parallel to the length and width of the fabric. For fabrics less than 650 mm in width, full-width specimens may be used and measurements made by agreement between the parties concerned. See ISO 22198 for the measurement of length and width of large textile items.

If the fabric can possibly unravel during the test, overlock the edges of the specimen with dimensionally stable thread.

6.3 Conditioning

Expose the specimen to the conditioning atmosphere (see Clause 5) for at least 4 h, or until a constant mass is achieved.

NOTE A constant mass is considered to be achieved when measurements made at intervals of 1 h do not show a change in mass greater than 0,25 %.

6.4 Marking

Place the specimen on the measuring table and make at least three pairs of marks on it in both length and width directions. Ensure that the distance between the marks of each pair is at least 350 mm, that no mark is less than 50 mm from the edges of the specimen and that the measuring points are regularly spaced across the specimen (see Figure 1).

6.5 Method of measuring

Lay the specimen flat on the smooth, flat surface (4.3) and remove wrinkles without stretching the specimen. Place the ruler (4.1) on the specimen, taking care to avoid distortion of the specimen. Record the distances between the pairs of marks to the nearest 1 mm.

Dimensions in millimetres

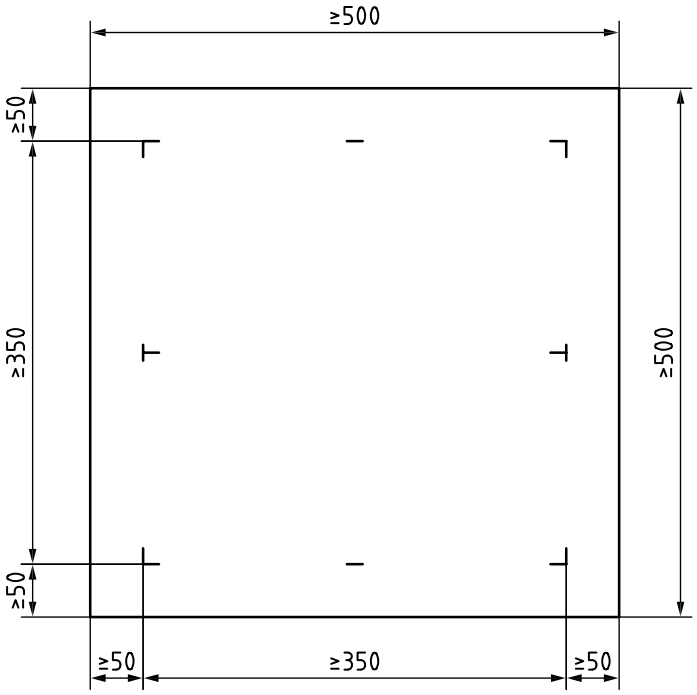

Figure 1 — Marking of fabric specimens

7 Procedure for garments

7.1 General

7.1.1 The measurements listed are comprehensive and may not all be necessary, as their selection depends on the type and style of garment.

7.1.2 Measure between specific points, preferably at seams or between points where seams meet. Mark (see 4.2) the positions on the garment at which the measurements are to be made, if required.

NOTE If the garment design is complicated, it might be helpful to produce a diagram showing the measuring points.

7.1.3 Where linings are of a fabric different from the outer fabric, measure these in the appropriate positions described in 7.2 (i.e. treat the linings separately).

7.1.4 Expose the garment to the conditioning atmosphere (see Clause 5) until a constant mass is achieved (see Note, 6.3) by hanging it on an appropriate hanger. If the garment would not normally be hung, lay each test specimen separately.

7.1.5 Place the garment on the smooth, flat surface (4.3) or on the workroom stand (4.4).

7.1.6 Ensure that all closures are closed. For garments placed flat on the surface, measure the width between seams.

7.1.7 Measure with the ruler (4.1), to an accuracy of at least 1 mm, the distance between each pair of marked positions without unnecessarily tensioning the garment.

7.1.8 Measure elasticated garments or portions of garments in the relaxed state.

7.1.9 Make corresponding measurements on both halves of the garment, e.g. both sleeves.

7.2 Measuring positions

7.2.1 Jacket-like garments (including dresses, coats, pyjamas, shirts and vests)

The measuring positions shall be as follows:

a) length of neckband for garments where the collar is intended to be closed;

NOTE A suitable former can be used to fit the neck/neckband.

b) length from lowest point of armhole to bottom hem of garment;

c) length of front, from the junction of shoulder seam and neck seam to bottom hem;

d) length of centre-back, from neck immediately below collar or ribbing to bottom hem;

e) length of underarm seam(s) from armhole to bottom of sleeve;

f) width across back between sleeve seams measured at a distance halfway between centre-back neck and bottom of armhole, or width of yoke from sleeve seam to sleeve seam;

g) width (i.e. half the girth measure) at not less than three places at approximately equidistant points below the centre-back neck;

h) width of sleeve, from junction of side with sleeve seams, at right angles to sleeve length;

i) width of sleeve at bottom of cuff or bottom of sleeve.

7.2.2 Trouser-like garments

The measuring positions shall be as follows:

a) length from top to junction of leg seams at the front, excluding the waistband;

b) length from top to junction of leg seams at the back, excluding the waistband;

c) inside leg from crotch to bottom of leg; if the leg is short, measure from the bottom of one leg to the bottom of the other leg via the crotch;

d) width at waist;

e) width at bottom of leg;

f) width of leg halfway between crotch and bottom of leg, i.e. knee (omit if leg length is short);

g) width of top of leg, i.e. thigh.

7.2.3 Boiler suits, coveralls, bib and brace overalls, combinations and one-piece swimsuits

Combine the jacket and trouser categories and, where applicable, replace the measuring positions given in 7.2.1 as follows.

— Replace c) in 7.2.1 by “length from centre-front neck to crotch seam or end of opening”.

— Replace d) in 7.2.1 by “length from centre-back neck to crotch”.

7.2.4 Skirts

The measuring positions shall be as follows:

a) length from waist to bottom hem, excluding the waistband if present, taken at centre-front and centre-back;

b) width at waistband;

c) width at not less than three approximately equidistant points below the top edge, or below the bottom edge of the waistband, if present.

8 Procedure for flat made-up textile articles

Follow the procedure described in 7.1, using the following measuring positions:

a) overall length;

b) overall width.

NOTE 1 Heavy drapes can stretch during hanging and shrink during washing. Methods for assessing dimensional change do not, in general, include dimensional changes occurring under tension.

NOTE 2 Additional measurements might be necessary for particular articles, e.g. fitted sheets.

9 Treatment of specimens

Subject the specimen to the required treatment in accordance with ISO 3005, ISO 3175, ISO 6330, ISO 7771 or ISO 15797, and repeat the measurements detailed in Clause 6, 7 or 8.

10 Expression of results

Calculate the percentage change in dimensions using the following formula:

$$\frac{x_t - x_0}{x_0} \times 100$$

where

x_0 is the original dimension, in millimetres;

x_t is the dimension measured after treatment, in millimetres.

Record the changes in measurement separately as a percentage of the corresponding original value. Use a plus sign (+) to indicate an extension and a minus sign (–) to indicate shrinkage.

11 Test report

The test report shall include the following information:

a) a reference to this International Standard, i.e. ISO 3759:2011;

b) the description, mark and size of the article tested;

c) an adequate description of each measuring position;

d) an adequate description of the treatment used;

e) the results, expressed in accordance with Clause 10.

ICS 59.080.30; 61.020
Price based on 6 pages

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Printed at SLSI (Printing Unit)

SRI LANKA STANDARDS INSTITUTION

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The principal objects of the Institution as set out in the Act are to prepare standards and promote their adoption, to provide facilities for examination and testing of products, to operate a Certification Marks Scheme, to certify the quality of products meant for local consumption or exports and to promote standardization and quality control by educational, consultancy and research activity.

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All members of the Technical and Sectoral Committees render their services in an honorary capacity. In this process the Institution endeavours to ensure adequate representation of all view points.

In the International field the Institution represents Sri Lanka in the International Organization for Standardization (ISO), and participates in such fields of Standardization as are of special interest to Sri Lanka.

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