Draft

Tanzania Standard

Textiles-Woven or knitted fabrics-Determination of length and width

TANZANIA BUREAU OF STANDARDS

0 Foreword

0.1 This Draft Tanzania Standard is intended for use when precise determination of fabric length or width is essential. The strains imposed during manufacture and finishing may appreciably affect the length or width of fabrics and some recovery may take place during storage. It is therefore advisable for fabrics to remain unrolled and freely exposed for as long as possible in order to allow for relaxation before taking measurements.

0.2 In the preparation of this Draft Tanzania standard, reference was made to the following publications:

1) ISO 22198:2006, Fabrics – *Determination of width and length.*
2) IS: 1954: 2002, *Determination of length and width of woven method*, published by the Indian Standards institution.

0.3 In reporting the result of a test made in accordance with this Draft Tanzania Standard, if the final value, observed or calculated, is to be rounded, off it shall be done in accordance with TZS 4: 2009 *Rounding off numerical values.*

1 Scope

1.1 This Draft Tanzania Standard specifies requirements for the determination of the length and width of fabrics. The method is applicable both to woven and knitted fabrics, except those containing rubber and synthetic elastomeric threads, and those that either extend readily or are liable to relax appreciably when subjected to handling or to cyclic changes in relative humidity.

2 Terminologies

For the purpose of this Draft Tanzania standard, the following definitions shall apply:

2.1 Length of piece: the distance measured from end to end (lengthwise), along the selvedge of a fabric.

2.2 Overall width of piece: distance between the outermost edges of the sample measured perpendicular to the length of the fabric

2.3 Usable width of piece: width of the fabric excluding any selvedge materials, marks, pin-holes or other non-homogeneous areas of the fabric

> NOTE – for some end uses or specifications, the usable width may be defined differently, as agreed between the interested parties.

2.4 Lot: All bales or cases containing pieces of fabrics of the same type and quantity delivered to one buyer against one dispatch note.

2.5 Gross sample: the number of bales cases selected for testing from the gross sample

2.6 Test sample: Collection of pieces of fabric selected for testing from the gross sample

3. Sampling

Samples shall be selected either in accordance with the procedure laid down in the material specification for the fabric or as agreed to between the interested parties.

4. Atmospheres for conditioning and testing

4.1 Conditioning and testing of fabrics shall be carried out in the standard atmospheres (27 ± 2°C and 65 ± 2 percent RH) or prevailing atmospheres as agreed to between the interested parties, (see TZS 534: -Textiles-Standard atmospheric conditioning and testing).

NOTE – Preconditioning – when the textile material does not undergo any permanent change in physical or atmosphere, the textile material may be preconditioned in an atmosphere created by heating air at 65% relative humidity and 27°C to a temperature up to 50°C. Air at 27°C and 65% relative humidity will, when heated at constant pressure to 50°C, have a relative humidity of 12% or 24% according to the starting temperature.

4.2 Prior to testing, the test sample shall be freely exposed at zero tension (see A.1) to the standard atmosphere for testing textiles for at least 24h, or for a sufficiently longer period to ensure that the change in length or width direction in a period of 24h is less than 0.25 per cent. Fabrics containing threads of rubber may require a period not less than four days for relaxation.

5 Procedure

5.1 General

The sample shall be laid out flat on the surface of the measuring table. The test shall be performed on the fabric as made up in full width or folded down the middle along the length of the fabric or in tubular form. Avoid distortion of the fabric in its own plane.

5.2 Measuring the length of the sample

5.2.1 Samples shorter than 1 m

Samples having a length of less than 1m shall be measured by placing the rule parallel to the longitudinal edges to the nearest millimeter. Repeat the procedure of measuring the full length of the sample three times at different places across the width of the fabric.

5.2.2 Samples longer than 1 m

Mark the fabric at the edges. Place second markers at a distance of 1 m using the markers on the table. Mark the entire sample in consecutive increment of 1 m. The residual length of less than 1 m is measured using the calibrated rule. The total length of the sample is the sum of the 1 m increments plus the residual length. Repeat the procedure three times with new marker stroke being placed on the sample if necessary.

The interested parties shall agree in advance whether the connecting strips at the beginning and the end of the sample are to be included in the length measured.

5.3 Measuring the width of the sample

The width of fabrics made up full width is the distance between the outermost edge measured perpendicular to the edges. The width of a fabric folded vertical down the middle is double the distance from the folded edge to the congruently superimposed outer edges, measured perpendicular to the folded edge.

If the outer edges are not superimposed congruently, the measurement shall be made from the folded edge to the edge nearest to it. This shall be stated in the test report. The width of a fabric in tubular form is the distance from edge to edge measured perpendicular to the edges when the sample is positioned properly and the edges are kept flat. Measure the width of the sample distributed uniformly over the entire length of the sample.

- For sample lengths up to 5m: 5 determinations.
- For sample lengths up to 20 m: 10 determinations.
- For sample lengths more than 20 m: at least 10 determination at distance of 2 m.

If the width fabric is not to be measured as the overall width from edge to edge, then the parties interested in the result shall agree on the definition of the usable width. This shall be stated in the test report.

If the usable width is to be measured, then the measurements shall be made according to the overall width, but avoiding any selvedges, etc. described in 5.3. The usable width may be defined differently because of variation in weaving construction or because of special requirements for the manufacturing of garments or other made – up products.

6. Calculations and expression of results

6.1 Length of piece

Calculate the arithmetic mean of the length of the sample in metres to the nearest centimeter. If required, calculate the coefficient of variation in percent to the nearest 1% and the 95% confidence limits to the nearest centimeter, or state the results of the individual measurements in metres to the nearest centimeter

6.2 Width of piece

Calculate the arithmetic mean of the width of the sample in metres to the nearest centimetre and, if required the coefficient of variation in percent to the nearest 1% and the 95% confidence limits to the nearest centimetre.

8 Test report

The test report shall include the following information:

a) general information
   1) the number and date of this Tanzania Standard and the date of test,
   2) identification of the sample and sampling procedure
   3) the configuration of the sample (made up full width, folded down in the middle along the length of the fabric, tubular form) and a statement if the sample was tested after special treatment.
   4) any deviation from the given procedure:

b) length of sample
   1) the arithmetic mean of the length, in metres
   2) if required, the coefficient of variation, in percent, and the 95% confidence limits, in metres, or the results of the individual measurements, in metres.
   3) a statement, if the length of the edges varied e.g. because of stretching of one edge and if connecting strips were included in the measurement;

c) width of sample
   1) a statement if the width was measured as overall width or as usable width or as some other defined and agreed width,
   2) the arithmetic mean of the width, in metres
   3) If required, the coefficient of variation, in percent, and the 95% confidence limits, in metres,
   4) the minimum width, in metres.

Annex A
(Informative)

Arrangement for conditioning, relaxing and measurement

A convenient and effective method of arranging a long piece of fabric for conditioning so that it is free from applied tension and is well exposed to the conditioning atmosphere is to unroll the piece and lay it in loose corrugated folds of suitable size (see Figure 1)

During marking and measuring, it is essential that the piece of fabric whose width is being determined should be free from tension as it lies on the measuring table. To achieve this, it has been found convenient to cuttle– fold (see Figure 2) the ends of the piece which extend beyond the portion being measured, thus producing a stack fabric at each end of the portion being measured.

If the measuring table is too short to enable this method to be used, supplementary tables may be used at each end of the measuring surface, provided that such extra tables are exactly the same height and at least as wide as the main table, and that they are so placed as to form (with the measuring table) a continuous rectangular surface.

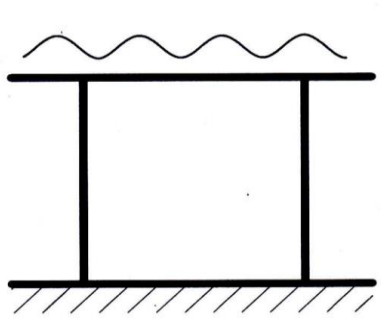

Figure 1 – **Loose folding**

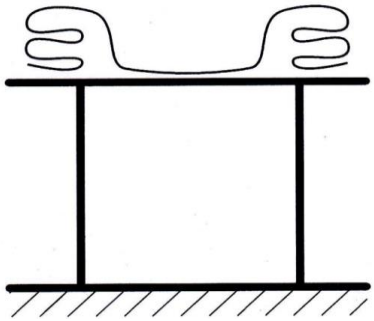

Figure 2 – **Cuttle folding**