



## DRAFT TANZANIA STANDARD

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Second Edition

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**Textiles – Woven, non-woven, Knitted and Lace Household Curtain  
and Drapery fabrics – Specifications**

**Draft for stakeholders comments only!**

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# **Textiles – Woven, non-woven, Knitted and Lace Household Curtain and Drapery fabrics – Specifications.**

## **Foreword**

This 3<sup>rd</sup> edition Draft Tanzania Standard is issued to help manufacturers and producers in manufacturing of Woven, non-woven, Knitted and Lace Household Curtain and Drapery fabrics.

In the preparation of this Draft Tanzania standard assistance was derived from:

- IS: 1246-1978. Specification for Hand-loom curtain cloth, bleached, dyed, striped, checked or printed published by Bureau of Indian Standards.
- ASTM - D3691M-09. Standard performance specification for woven, lace, and knit household curtain and drapery fabrics.
- SANS – 1261- 1: 2008 Performance requirements for retail textiles - Part 1: Household piece-goods and articles

This third edition cancels and replaces the second edition TZS 1422: 2011 Textiles – Woven, non-woven, Knitted and Lace Household Curtain and Drapery fabrics – Specifications

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# Textiles – Woven, non-woven, Knitted and Lace Household Curtain and Drapery fabrics – Specifications

## 1 Scope

1.1 This Draft Tanzania Standard covers the performance specification required for all woven, knitted, stitch bonded and crocheted lace fabrics, bleached, dyed, printed, striped or checked meant for household curtain and drapery.

1.2 For those properties where fabric direction is pertinent, these requirements apply to the length and width directions for woven fabrics, and to both the course and wale directions of a knitted fabric.

## 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.

- a) *TZS 4 Rounding off numerical values.*
- b) *TZS 20 Textiles: Woven fabrics Determination of the number of threads per unit length.*
- c) *TZS 21 Textiles: Woven or knitted fabrics - Determination of mass per unit length and - per unit area.*
- d) *TZS 22 Textiles: Woven fabrics Determination of breaking load and extension.*
- e) *TZS 23 Textile: Tests for colour fastness, - Colour fastness to light: Xenon arc.*
- f) *TZS 24 Textiles: Tests for colour fastness – Colour fastness to washing: Test 4.*
- g) *TZS 26 Textiles: Determination of conductivity, pH, water-soluble matter, chloride and sulphate in aqueous extracts.*
- h) *TZS 27 Textiles: Determination of dimensional changes of fabrics by cold water immersion.*
- i) *TZS 40 Textiles: Tests for colour fastness – Colour fastness to light: Daylight.*
- j) *TZS 44 Textiles: Tests Woven or knitted fabrics- Determination of length and width.*
- k) *TZS 137 Textiles: Determination of dimensional change of woven and knitted fabrics and garments: Machine method.*
- l) *TZS 137 Textiles: Test for colour fastness to rubbing.*
- m) *TZS 529 Textiles: Test for colour fastness to dry cleaning.*
- n) *TZS 139 Textiles: Determination of the linear density of yarn removed from fabric free from added matter.*
- o) *TZS 249 Textiles: Woven or knitted fabrics-determination of bow and skewness.*

## 3 Terms and definitions

3.1 For the purposes of this Draft Tanzania Standard, the following definitions will apply.

**3.1.1 Non-woven Fabrics:** Textile fabrics produced directly from webs or batts of fibres by mechanical entanglement (hydro entanglement and niddle punching) or adhesive bonding, fusing or interlocking, met blown and spun bonding.

**3.1.2 Lace:** A fine open work fabric with a ground of mesh or net on which patterns may be worked at the same time as the ground or applied later, and which is made of yarn, by looping, twisting or knitting.

**3.1.3 Knitting:** A method of fabric manufacture by intermeshing of loops (interloping) of yarns

**3.1.4 Drapery:** Cloth (hung) arranged in loose folds.

**3.1.5 Bonded fabrics:** A non-woven Textile fabric produced directly from one or more webs of fibres held together with a bonding material.

**3.1.6 Stitch bonded fabric:** A fabric produced by bonding together fibre batt or series of laid yarns by sewing or stitching along the length direction.

**3.1.7 Sun filter fabric:** A fabric made from cotton, silk, rayon or wool, twisted yarn provides a semi-transparent window curtain that filters light. It is also called "voile. when it is made from wool and is both sheer and light-weight. This fabric is wrinkle-resistant and quick-drying, making the curtains low maintenance. The yarn is twisted very tightly and combined with other tightly twisted yarn to make the fabric. The qualities of this fabric are ideal when constructing a curtain to filter sunlight.

## **4 Manufacture**

The fibres used in the manufacture of household curtain and drapery fabrics shall be of the required quality to ensure that the cloth complies with the requirements of this Tanzania Standard.

### **4.1 Fabrics**

**4.1.1** The fabrics used in the manufacture of household curtains and drapery shall be woven, nonwoven knitted or lace material.

**4.1.2** The household curtains and drapery fabrics shall be free from dressing and filling materials and from substances liable to cause subsequent tendering.

## **5 REQUIREMENTS.**

**5.1** It should be recognized that fabric can be produced utilizing almost an infinite number of construction variables (Type of fibre, percentage of fibre, yarn twist, yarn number, warp and weft count, chemical and mechanical finish).

**5.2** It should also be recognized that fashion and aesthetics dictate the ultimate consumer to find an acceptable article made from fabrics that do not conform to all of the requirements in Table 1 and Table 2

**5.3** Hence, no single performance specification can possibly apply to all the various fabrics that could be utilized for this end use.

**5.4** The supplied consignment shall be in conformity with the sample agreed between the buyer and seller.

**5.5** Fabrics intended for household curtains and drapery fabrics shall comply with all the requirements in Table 1 and Table 2.

**Table 1 – Woven Curtain fabrics and non-woven (stitch bonded and foam backed curtain fabrics) requirements.**

SN	CHARACTERISTICS	REQUIREMENTS		TEST METHOD
		Woven curtain fabrics	Non-woven(stitch bonded and foam backed curtain fabrics)	
1	Breaking strength, N, min.	67	89	TZS 22
2	Tearing strength N, min.	4.4	6.7	ANNEX A
3	Dimensional changes on a) laundering %, max, (after 5 laundrying in both directions) - Cotton fabrics - Other fabrics	5 3	3 ( for all types of fabrics)	TZS 137
	b) Dry cleaning %, max, (after 3 dry cleaning in both directions)	3		
4	Colour fastness c) Colour fastness to light, min	4	4	TZS 23
	d) Colour fastness to washing, min - Change in colour - Staining on other fabrics	4 3	4 3	TZS 24
	e) Colour fastness to dry cleaning, change in colour, min	4	4	TZS 529
	f) Colour fastness to rubbing, min i) wet ii) Dry	3 4	3 4	TZS 138

**NOTE 1:** i. Ends and picks, course and wale, mass and breaking load specified, relate to the specific finish in which the curtain cloth is delivered.

ii. The S1 Unit for force is the Newton A force of (1N) is approximately equal to the load effect of 0.1 kgf

Table 2 Warp knitted sun filter and warp knitted net/ lace fabrics requirements

SN	CHARACTERISTICS	REQUIREMENTS		TEST METHOD
		Warp knitted sun filter curtain fabrics	Warp knitted net/ lace curtain fabric	
1	Bursting strength, KPa, min	400	138	Annex B
2	Dimensional change a) Dimensional changes on laundering %, max, (after 5 laundering in each direction)	4	3	TZS 137/TZS 27
	b) Dimensional changes on dry cleaning %, Maximum ( after 3 dry cleaning in each direction)	3	3	
3	Colour fastness			TZS 23
	a) Colour fastness to light, min	4	4	
	b) Colour fastness to washing, min			TZS 24
	- change in colour	4	4	
	- staining of adjacent fabrics	3	3	
c) Colour fastness to rubbing, min,			TZS 138	
i) Wet	3	3		
ii) Dry	4	4		
d) Colour fastness to dry cleaning, shade change (minimum)	4	4	TZS 529	

## 6 Packing, Labelling and Marking

### 6.1 Packing

The fabrics shall be packed in polyethylene bags or bales. Unless otherwise required, the fabric shall be supplied in individually wrapped rolls and the rolls shall be packed as required.

### 6.2 Labelling and marking

**6.2.1** Pieces and bulk containers shall be labelled and marked in accordance with This Draft Tanzania Standard. In the case of a pile fabric, and when so required, the direction of the lay of the pile shall be indicated by arrows stamped at intervals not exceeding 1 m on the reverse side of the fabric.

**6.2.2** The product shall be marked at one end with the following:

- a) Name of the material;
- b) Manufacturer's name, and or supplier's name, initials or trade mark;
- c) Design number;
- d) Width and length of the piece.

**6.2.3** The product may also be marked with the TBS Standards Mark.

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## ANNEX A.

**Tearing Strength of Fabric by the Tongue (Single Rip) procedure (Constant-Rate-of-Extension Tensile Testing Machine).****1. Scope.**

1.1 This test method covers the measurement of the tearing strength of textile fabrics by tongue (single rip) procedure using a recording constant-rate-of-extension-type(CRE) tensile testing machine.

1.2 It is recognized that some Constant-Rate-of-traverse-type(CRT) tensile testing machines continue to be used. As a consequence, these test instruments may be used when agreed upon between the purchaser and the supplier.

1.3 This test method applies to most fabrics including woven, knits, stitch bonded layered and pile fabrics.

1.4 Two calculations for tongue tearing strength are provided; The single piece force and the average of five.

1.5 The values stated in either SI units are to be regarded as the standard.

**2. Summary of Test Method**

2.1 A rectangular specimen, cut in the centre of a shot edge to form a two-tongued (trouser shaped) specimen, in which one tongue of the specimen is gripped in the upper jaw and the other tongue in gripped in the lower jaw of a tensile testing machine.

2.2 The separation of the jaw is continuously increased to apply a force to propagate the tear at the same time the force developed is recorded.

2.3 The force to continue the tear is calculated from autographic chart or microprocessor data collection systems.

**3. Apparatus**

3.1 Tensile Testing Machine, of the CRE- type for textiles testing, with autographic recorder, or automatic microprocessor data gathering system.

3.2 Clamps, having all jaw surfaces parallel, flat, and capable of preventing slipping of the specimen during the test, and measuring at least 25 by 75mm with the longer dimension perpendicular to the direction of application of the force.

3.3 Cutting Dior Template, having essentially the shape and dimensions as shown in Fig 1



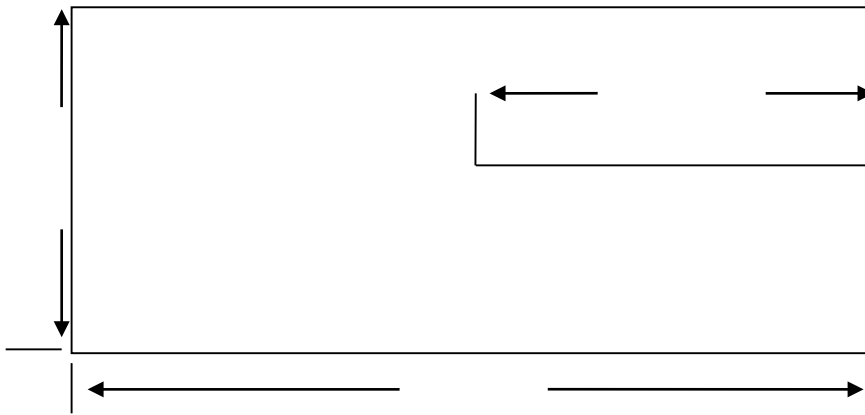


FIG 1. Template for Marking and Cutting Tongue Tear Specimens (All tolerance  $\pm 0.5\%$ ).

#### 4 Lot sample and Test Specimen.

4.1 As a lot sample - for acceptance testing, randomly selected refer to Table 2

4.2 Laboratory sample - For acceptance testing, take a swatch extending the width of the fabric and approximately 1m. Along the machine direction from each roll or piece in the lot sample.

4.3 Test Specimens - From each laboratory sampling unit, take five specimens from the machine direction and five from the cross machine direction.

4.2 Cutting Test Specimens - Cut rectangular specimens 75 by 200mm. Use the cutting die or Template.

#### 5 Preparation of Test Apparatus and Calibrations

5.1 Set The distance between the clamps at the start of the test at  $75 \pm 1$ mm.

5.2 Select the full-scale force range of the testing machine such that the maximum force accrues between 10 and 90% of full scale force.

5.3 Set the testing speed to  $50 \pm 2$ mmjmin.

5.4 Verify calibration of the tensile testing machine as directed in the manufacturer's instruction. (when using the microprocessor automatic data gathering system, set the appropriate parameters as specified in the manufacturer's instruction).

#### 6 Procedure.

6.1 Test the conditioned specimen in the standard atmosphere for testing textiles (TZS3:1979), unless otherwise specified in a material specification of contract order.

6.2 Secure the specimen in the clamp jaws with the slit edge of each tongue centred in such a manner that the original adjacent cut edges of the tongues form a straight line joining the centres of the clamps and the two tongues present opposite faces of the fabric to the operator. .

6.3 Start the machine and record the tearing force on the recording device. The tearing force may increase to a simple maximum value or may show several maxima and minima, as shown in Fig2.

**6.4** After the crosshead has moved to produce approximately 6mm of fabric tear, record the single peak force or multiple-peak forces, as indicated for the type fabric and tearing action observed. Stop the crosshead motion after a total tear of approximately 75mm or the fabric has torn completely, and return the crosshead to its starting position.

**6.5** If a fabric slips in the jaws or if 25% or more of the specimens breaks at a point within 5mm of the edge of the jaw, then;

- The jaws may be padded.
- The fabric may be coated under the jaw face area; or
- The jaw face may be modified.

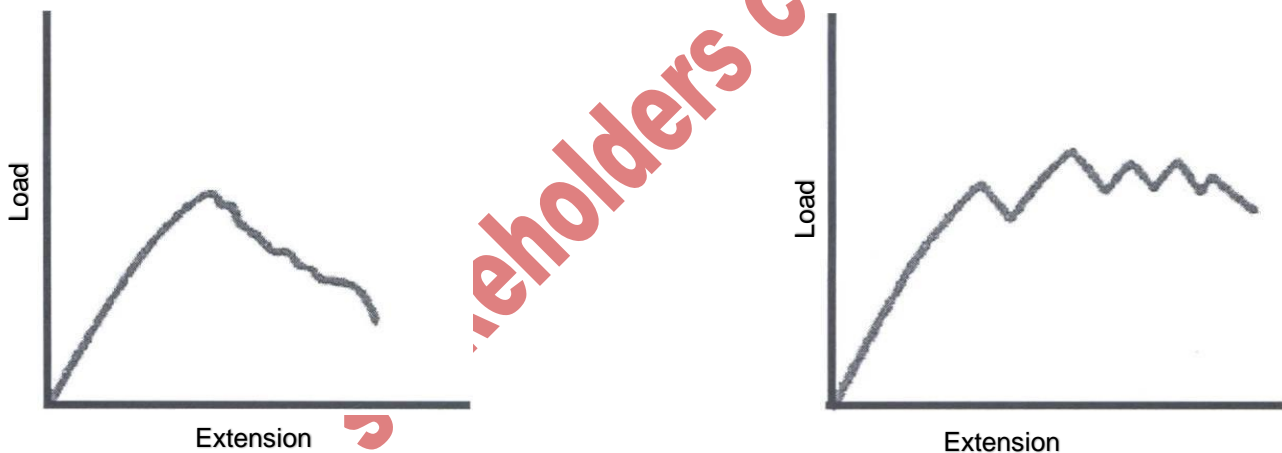
(If any of the proceeding modifications are used state such modification in the report).

**6.6** Record if the tear occurs crosswise to the direction of the applied force.

**6.7** Remove the tested specimen and continue as directed in 6.2 to 6.5 until all the five specimen have been tested for each testing direction and condition from each laboratory sampling unit.

**6.8**

**Fabric Exhibiting several maxima**



**Fig. 2. Typical Tongue Tearing Force-Extension Curves for individual Specimens.**

## **7 Calculation.**

**7.1** Tearing Force, Individual specimens - Calculate the tongue tearing force for individual specimens to the nearest 0.1mN using readings directly from the data collection system using Option 1 or Option 2 as indicated by the tearing action of the material.

**7.1.1** Option 1. Average of Five Highest Peaks:

**7.1.1.1** For fabrics exhibiting five peaks or more, after the first 6mm of tear, determine the 5 highest peak forces to the nearest 0.1mN.

**7.1.1.2** Calculate the average of these five highest peak forces.

**7.1.2** Option 2. Single Peak Force:

**7.1.2.1** For fabrics exhibiting less than five peaks, record the highest peak force as the single peak force to nearest 0.1mN.

**7.2** Tearing Strength - Calculate the tongue tearing strength as the average tearing force for each testing direction and condition for each laboratory sampling unit and for the lot.

**7.3** Computer processed Data - When Data are automatically computer-processed, calculations are generally contained in the associated software. Record values as read from the direct-reading scale to the nearest 0.1mN. In any event, it is recommended that computer-processed data be verified against known property values and its software described in the report.

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## ANNEX B

### Bursting strength of textiles using; Constant-of-Traverse (CRT) –Ball burst Test.

#### 1. Scope.

- 1.1 This test method describes the measurement for bursting strength with a ball burst strength tester of textiles or garments that exhibit a high degree of ultimate elongation.
- 1.2 The values stated in SI units are to be regarded as the standard.

#### 2 Summary of Test method.

- 2.1 A specimen is securely clamped without tension between the grooved, circular plates of the ball burst attachment secured to the pulling (movable) jaw for the constant-rate-of-traverse (CRT) testing machine.
- 2.2 A force is exerted against the specimen by a polished, hardened steel ball that is attached to the pendulum actuating (fixed) clamp of the machine, until rupture occurs.

#### 3 Apparatus

- 3.1 Constant- Rate-of- Traverse (CRT) Tensile Testing Machine, with a ball burst attachment replacing the clamp assembly.
- 3.2 Ball-Burst Attachment, consisting of an attachment having a polished steel ball that replaces the fixed clamp of the tensile tester and of a ring-clamp mechanism that replaces the pulling (moving) clamp of the tensile tester (see Fig 3). Movement of the ring clamp pushes the fabric in the ring clamp against the steel ball.
- 3.2.1 The polished steel ball shall have a diameter of  $25.400 \pm 0.005$ mm and shall be spherical within 0.005. The ring clamp shall have an internal diameter of  $44.450 \pm 0.0025$ mm.

#### 4. Lot sample and Test Specimen.

- 4.1 As a lot sample - for acceptance testing, randomly selected refer to Table 2
- 4.2 Laboratory sample from each roll or piece of fabric selected from the lot sample, cut at least one laboratory sample the full width of the fabric approximately 1m. Along the selvage.
- 4.3 Test Specimens -Take five specimens of the laboratory sample(s) of fabric. Each specimen shall be at least 125mm<sup>2</sup> or a circle of 125mm in diameter. Specimens need not be cut' for testing. No two specimens should contain the same warp and weft or wale and course yarns. Take no specimens nearer the selvage than one tenth the fabric width. (this restriction does not apply to tubular knitted fabric).

## 5. Procedure.

5.1 Test the conditioned specimen in the standard atmosphere for testing textiles (TZS3:1979), unless otherwise specified in a material specification of contract order.

5.2 Place the specimen without tension in the ring clamp and fasten securely in by means of the screw or lever device. Start the CRT tensile testing machine, using a pulling clamp speed of  $305 \pm 13$  mm/min, and continue at that speed until the specimen bursts. Record to the nearest 0.5N the ball-bursting strength of the specimen.

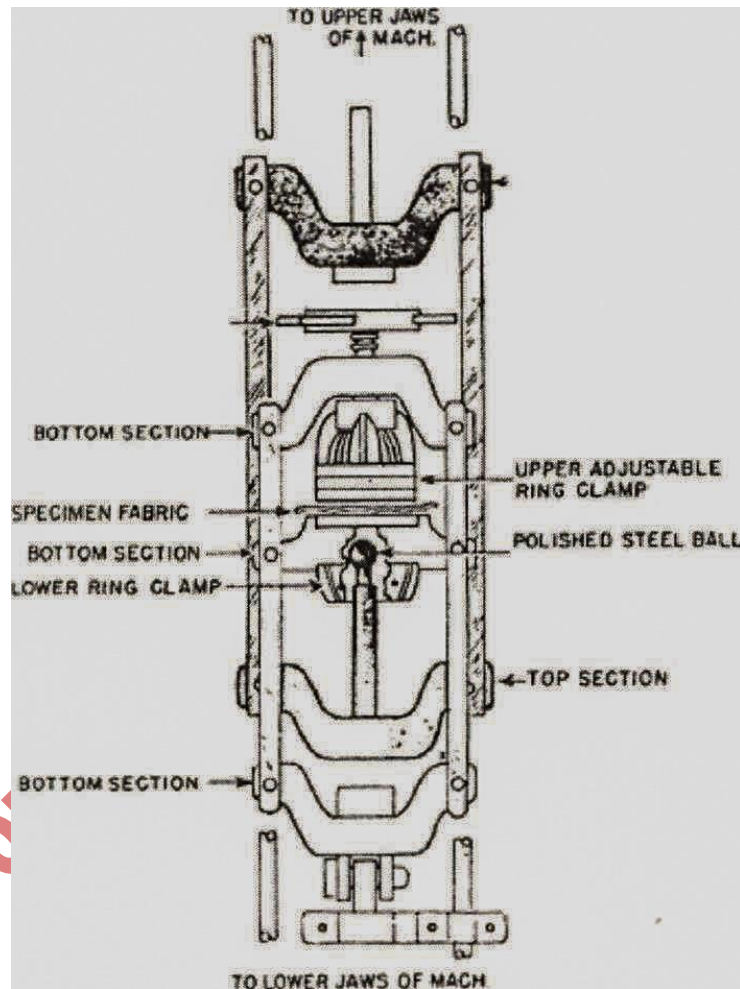


Fig. 3 Ball Burst Attachment

## 6. Calculation.

6.1 Calculate the average bursting force to the nearest 0.5N for each laboratory sample and for the lot.