



DRAFT TANZANIA STANDARD

Pillows for Domestic Use – Specification (Synthetic-fibre filled)

For Stakeholder's comments only

TANZANIA BUREAU OF STANDARDS

0 Foreword

This Draft Tanzania Standard is being developed by Plastic and Plastic Products Technical Committee under supervision of the Chemical Division Standards Committee and it is in accordance with the procedures of the Bureau

This Draft Tanzania Standard is the first edition of pillows for domestic use – Specification (Synthetic-fibre filled)

This Draft Tanzania Standard has been prepared with assistance drawn from the following documents:

KS 1267-2: 2019, *Specification for Pillows for Domestic use – Specification (Synthetic-fibre filled)*, published by Kenya Bureau of Standards

BS 1877: Part 10: 2011, *Specification for mattresses and bumpers for children's cots, perambulators and similar domestic articles*, published by British Standards Institution
Various specifications of local spring mattresses manufacturing companies

TZS 360: 1996, *Domestic mattresses - Flexible polyurethane foam –Specification*, published by Tanzania Bureau of Standards

SABS 1394-2: 2003, *Specification for duvets and pillows — Part 2: Synthetic-fibre filled*, published by South African Bureau of Standards

SABS 79:2004, *Mass per unit area of conditioned fabrics*, published by South African Bureau of Standards

The assistance obtained from the above source is hereby acknowledged with thanks.

For the purpose of deciding whether a particular requirement of this Tanzania Standard is complied with, the final value observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with TZS 4.

Pillows for Domestic Use – Specification (Synthetic-fibre filled)

1 Scope

This Tanzania Standard specifies requirements, sampling and test methods of pillows for domestic use (Synthetic-fibre filled).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.”

TZS 4, *Rounding off numerical values*

TZS 43/ ISO 105-C10, *Methods for the determination of colour fastness of textile*

Materials to washing

TZS 138/ISO 105-D01, *Method for determination of colour fastness of textile materials to*

dry cleaning

TZS 360, Domestic mattresses - Flexible polyurethane foam – Specification

ISO 139, *Conditions for the testing of textile*

ISO 1833, *(Series of standards) Textiles - Quantitative chemical analysis*

ISO 3758, *Care labelling code using symbols*

ISO 12945, *Textiles-determination of fabric propensity to surface fuzzing and to pilling*

TZS 22/ ISO 13934-1, *Textile - Tensile properties of fabrics - Part 1: Determination*

of maximum force and elongation at maximum force using the strip method

3 Terms and definitions

For the purpose of this draft Tanzania Standard, the following definitions shall apply:

3.1 casing

the textile fabric envelope that contains the filling

3.2 filling filler

the insulating material within the casing of a pillow

3.3 gauge (stitch-bond fabric)

the number of row of stitches per 25 mm width of fabric

3.4 outer cover

a textile fabric envelop that contains a pillow and that is easily removable for cleaning purposes

3.5 warp

yarns / threads lying lengthways in a fabric as woven

3.6 weft

yarns / threads lying widthways in a fabric as woven (at right angles to the warp)

3.7 yarn

a generic term for a continuous strand of textile fibres or filaments without twisting, suitable for plying, knitting, braiding, weaving or otherwise intertwining to form a textile end product.

For Stakeholder's comments only

4 Requirements

4.1 General requirement

4.1.1 The pillow shall be cut and made with first-class workmanship throughout.

4.1.2 The pillow shall be free from defects that could affect their appearance or their serviceability (or both).

4.1.3 The pillow shall be made such that all seams are smooth and all sewing is free from twists, pleats and puckers, and sufficiently extensible to prevent seam-cracking and undue shrinkage in use.

4.1.4 The pillow shall be made such that all ends of sewing have been trimmed and loose threads removed.

4.1.5 The pillow shall be made such that ends of sewing that are not secured in seams or in other sewing are adequately backstitched.

4.1.6 The pillow shall be made of uniform, acceptable colour and delivered in a clean and commercially dry condition.

4.1.7 The pillow shall be capable of being cleaned in accordance with the care instructions, without giving rise to any defect, such as puckering, lumpiness, tears, etc.

4.2 Specific requirement

4.2.1 Casing fabric

The casing fabric shall either be a woven fabric or a stitch-bond fabric of at least 14 gauge that shall conform to the specific requirements given in Table 1.

4.2.2 Synthetic-fibre filling

The synthetic-fibre filling shall, when tested in accordance with ISO 1833 consist entirely of clean, crimped continuous filaments or staple synthetic fibres. The length of staple fibres shall be at least 30 mm (Annex D). The fibres shall be thermo bonded or resin-bonded and the blend of melting fibres shall not exceed 30 %.

4.2.3 Sewing thread

Any appropriate type of sewing thread may be used, provided that the minimum breaking strength of the thread is at least 8 N. The colour of the sewing thread shall be such as to be acceptable.

4.2.4 Casing fabric and synthetic fibre- filling for pillows shall conform to the specific requirements given in Table 1 when tested in accordance with the methods prescribed therein.

Table 1 — specific requirements casing fabric and synthetic fibre filling

SL. No	Characteristic	Requirement	Test method	
i)	Fibre composition, %	casing fabric	Shall comply with the stated composition	ISO 1833.
		synthetic fibre filling		
ii)	Mass per unit area, g/m ² , min.	casing fabric	90	Annex A
		synthetic fibre-	baby pillows	1250

		filling(including the surface stabilizer)	Others pillows	1450	
iii)	Breaking strength N, min.	Warp		350	ISO 13934
		Weft		200	
iv)	Resistance to opening at seams, N, min.			65	Annex C
v)	Colour fastness to washing	Change in colour, rating, min.		4	ISO 105-C10
		Staining of transfer cloths, rating, min			
vi)	Colour fastness to dry-cleaning	Change in colour, rating, min.		4	ISO 105-D01
		Staining of transfer cloths, rating, min			

4.2.5 The dimensional requirements shall be as shown in Table 2 when tested in accordance with the method specified therein.

Table 2 - Unfilled casing Requirements for dimensions

S/No.	Characteristic	Pillow size	Requirement, cm	Test method
i	Length	Baby	40	TZS 359 (see clause 2)
		Standard	70	
		Continental	80	
ii	Width	Baby	30	
		Standard	45	
		Continental	80	

4.3 Construction and material requirements

4.3.1 A pillow shall consist of a casing made from one piece of fabric (or from two equally size pieces of fabric) enclosing a synthetic-fibre filling. The mass per unit area of the filling (including the surface stabilizer), shall conform to the specific requirements given in Table 1 when tested in accordance with the methods prescribed therein.

4.4 Stitches and seams

4.4.1 Stitches shall be of the following types:

- a) Stitch type:
 - 1) binding: Stitch type 301 or 401;
 - 2) edge-overlocking: Stitch type 505 or 502; and
 - 3) all other stitching: Stitch type 301; and
- b) Number of stitches per 10 cm: At least 24 per 10 cm.

4.4.2 Seams shall comply with the following requirements:

4.4.2.1 Edge-over locked closing seams of seam type SSn-1 shall be of width at least 4 mm. All other seams shall be of width at least 8 mm.

4.4.2.2 Closing seams, Seam type SSc-a, BSc-1, SSa-1, SSav-2 or SSn-1.

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5 Sampling

5.1 Representative samples shall be taken randomly from the factory, market or elsewhere and tested for compliance with the standard.

6 Packing and marking

6.1 Packing

6.1.1 Each pillow shall be wrapped individually in a wrapper and then packed in a suitable bulk container or in a suitable transparent material and in case; plastics coverings are used as packaging for a pillow, the plastic cover shall be conspicuously marked with a warning to the effect that the covering should be kept away from children.

6.1.2 Unless the quantities ordered are such that packing of the same colour of casing and nominal dimensions is not justified, only pillows of the same colour of casing and nominal dimension and that contain the same type of filling shall be packed together in a bulk container or in a suitable transparent material.

NOTE 1 - An example of suitable wording is as follows: To avoid danger of suffocation, remove these plastics cover before using pillow. The cover should then be destroyed or kept away from children.

6.1.3 Plastics used for packaging shall be not less than 30 microns thick

6.2 Marking

6.2.1 Pillows for domestic use - Specification (Synthetic-fibre filled) shall be indelibly and legibly marked in the outer upper waist of the or a label attached on it, with the following descriptions:

- a) Name or mark of the manufacturer,
- b) Registered trade name of the product if any,
- c) Batch number and date of manufacture,
- d) The nominal width and length,
- e) Country of origin,
- f) The composition of the casing fabric and of the filling, for example; Casing fabric All cotton; filling polyester fibre;

NOTE — The TBS Certification Mark may be used by manufacturers only under license from TBS. Particulars of conditions under which the licenses are granted may be obtained from TBS offices.

Annex A

(Normative)

MASS PER UNIT AREA OF CASING FABRIC

A.1 Principle

This method specifies the procedures for determining the mass per unit area of woven fabrics (including those of the stretch type), knitted fabrics, nonwoven fabrics, composite fabrics and narrow fabrics.

A.2 Apparatus

A.2.1 Table, that has a smooth flat surface and is of a size that exceeds that of the fabric to be measured

A.2.2 Cutter, that is capable of cutting a square or circular specimen of area, 0.01 m² to an accuracy of 1 % or better.

A.2.3 Metal plate, that is 5 mm smaller than the cutter and that has a thickness of 10 mm.

A.2.4 Balance, that is capable of determining the mass of the specimen to an accuracy of 0.2 % or, in the case of 0.01 m² specimens, to an accuracy of 0.001 g.

A.3 General

Condition the sample at 25 °C ± 2 with relative humidity of 65 ± 2 % or in accordance to ISO 139.

A.4 Procedure 1 - Full width specimen

A.4.1 Ensure that the fabric, which should preferably be selected from the middle of a piece, is not less than 0.5 m and not more than 4 m long, and lay it flat, and without tension, on the table.

A.4.2 Cut at both ends across the full width of the sample along parallel lines at right angles to the selvedge.

A.4.3 If the mass per unit area of a selvedge on a full –width piece appears to deviate appreciably from the mass per area of the body of the fabric, or if so agree upon between the parties concerned, trim off the selvedge along the outermost threads of the body of the fabric and use only the body of the fabric for the determination of the mass per unit area.

A.4.4 Measure the width and length of the specimen.

A.5 Procure 2 — For representative for large cuttings

A.5.1 Ensure that available cutting is representative of the sample.

A.5.2 Trim the cutting into a square or rectangle specimen by cutting along parallel lines at right angles to the warp (length) direction and at right angles to the weft (width) direction.

A.5.3 Measure the width and length of the specimen.

A.5.4 Use the balance to determine the mass of the specimen

A.6 Procedure 3 — For several small (0.01m²) specimens

NOTE 2: On fabrics with large in woven designs, which involve local areas of appreciably different mass per unit area, the use of procedure 1 or procedure 2 is preferable.

A.6.1 Cut at least three square pieces, of side length of approximately 150 mm, from areas of the fabric selected to represent the samples as fully as possible but not within 50 mm of the selvedge.

A.6.2 Lay each piece flat, and without tension, on a suitable cutting surface. place the metal plate and cutter on each piece in turn and cut out a 0.01 m² specimen from each piece, ensuring that no loss of threads occurs.

A.6.3 Use the balance to determine the mass of the 0.01 m² specimens, and calculate the mean mass.

A.7 Calculation

A.7.1 In the case of procedure 1 and procedure 2, calculate the mass per unit area M in grams per square meter, using the following formula:

$$M = \frac{m \times 1,000,000}{L \times w}$$

where

m is the mass of the specimen, in grams

L is the length of the specimen, in millimeters; and

w is the width of the specimen, in millimeters

A.7.2 In the case of procedure 3, calculate the mass per unit area (M in grams per square meter) by multiplying the mean mass (in grams) by 100.

Annex B

(Normative)

MASS PER UNIT AREA OF SYNTHETIC FIBRE FILLING

B.1 Determine, in grams, the mass of the finished pillow and calculate, in grams per square meter, the mass per unit area from the mass of the pillow and its dimensions (see TZS 359).

B.2 Determine, in grams per square meter, the mass per unit area of the casing fabric. If a separate sample of the fabric is available, use annex A. If a separate sample of the casing fabric is not available, cut a suitably sized specimen of the fabric from the pillow, remove any filling adhering to the inner surface of the casing fabric, and then use annex A.

B.3 Calculate the mass per unit area of the filling, M_f , using the following formula:

$$M_f = A - 2B$$

where

A is the mass per unit area of the pillow, in grams per square meter; and
 B is the mass per unit area of the casing fabric, in grams per square meter.

NOTE The mass per unit area of the casing fabric is doubled to make allowance for the upper and lower surfaces of the casing

For Stakeholder's Comments Only

Annex C

(Normative)

RESISTANCE TO OPENING AT SEAMS

C.1 Apparatus and materials

C.1.1 Sewing thread, core-spun with a polyester core and cotton sheath of ticket No. 80 and ticket No. 50 (see Table 3)

Table 3 - Requirements for stitching

1	2	3	4
Mass per area of test specimen g/m ²	Sewing thread ticket No.	Sewing machine needle size Metric (imperial)	Stitch rating Number of stitches per 10 cm
<250	80	90 (No. 14)	50 ± 2
≥ 250	50	100 (No. 16)	40 ± 2

C.1.2 Sewing machine needles of size 90 (No. 14) and size 100 (No. 16), examine the points of the sewing machine needle for signs of damage.

C. 1.3 Sewing machine, electrically operated, single-needle, lock-stitch, capable of producing stitch type 301 and provided with the appropriate throat-plate(s) and feed-dog(s) for use with the sewing threads.

C.1.4 CRE tensile-strength testing machine, that is capable of constant rate of extension of 100 mm/min, fitted with jaws.

Of a type that will not weaken the test specimen during test and such that each jaw has a front face of size 25 mm x 25 mm and a back face of size at least 25 mm x 40 mm. the longer dimension being at right angles to the direction of the applied load.

C.1.5 Transparent template, of size approximately 125 mm x 30 mm ruled with three lengthways and parallel lines, the clear distance between adjacent lines being 3 mm ± 0.05 mm.

C.2 Sampling and preparation of test specimens

C.2.1 Take a laboratory sample as specified in the relevant product specification.

C.2.3 From the conditioned laboratory sample, cut 10 test specimens, each of approximately 200 mm x 75 mm, so that in five of the test specimens the longitudinal yarns are warp yarns and in the other five test specimens the longitudinal yarns are weft yarns.

C.2.4 Cut the two sets of test specimens so that their longitudinal yarns all represent different threads and, if possible different portions of the warp and the weft respectively. Do not cut any warp-direction test specimen closer to a selvage than 8 mm.

C.2.5 Select the sewing thread and the sewing machine needle size appropriate to the mass per area of the test specimen (see Table 3) and fit the corresponding throat-plate and feed dog to the sewing machine.

C.2.6 Fold each test specimen in half by placing the two shorter ends together and while maintaining a constantly sewing speed, sew a row of stitches parallel to and at a distance of 15 mm from the fold at the stitch rating (see Table 3) appropriate, to the mass per area of the test specimen.

C.2.7 Cut each test specimen on the fold and parallel to the line of stitching so as to provide a seam of width approximately 1 mm.

C.3 Procedure

C.3.1 Clamp a test specimen symmetrically in the jaws of the CRE tensile-strength testing machine with the sear midway between and parallel to the edges of the jaws so that the free distance between the jaws at the start of the test is 75 mm.

C.3.2 Hold the transparent template in front of the clamped test specimen so that its center line is parallel to the line of stitching at the seam of the clamped test specimen and set the CRE tensile-strength testing machine in motion.

C.3.3 Stop the CRE tensile-strength testing machine and record the load, in newton's, when

C.3.3.1 Any part of the opening of the seam reaches a width of 6 mm (reduced to 32 mm in the case of test specimens that have warp threads and weft threads of contrasting colours).

C.3.3.2 A failure owing to the breakdown of the fabric or sewing thread occurs, whichever occurs first

C.4 Repeat C 3.1 to C 3.3 (inclusive) until all 10 test specimens have been tested.

For Stakeholder's comments only

Annex D

(Normative)

DETERMINATION OF FIBRE LENGTH

D.1 Apparatus and materials

D.1.1 Polished glass plate, with millimeter scale engraved or photographed on it.

D.1.2 Pointed forceps

D.1.3 White petroleum jelly or liquid paraffin

D.2 Procedure

D.2.1 Measure the fibre length of individual fibres on a graduated glass plate.

D.2.2 Smear the glass plate with a small quantity of the white petroleum jelly or liquid paraffin. Using the forceps arrange a fibre in a straight line on the glass plate and along the scale, keeping it straight by applying a minimum tension at its two extremities. Measure the length of the fibre along the scale. Repeat the operation for each fibre to be tested.

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