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TANZANIA STANDARD

Textile – Cotton sewing and embroidery threads – Specification

Draft Standard for Public Comments

TANZANIA BUREAU OF STANDARDS

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Foreword

This Tanzania Standard was published under the authority of the Board of Director of Tanzania Bureau of Standards.

Tanzania Bureau of Standards (TBS) is the statutory national standards body for Tanzania established by the Standards Act Cap. 130.

Tanzania Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. The Technical Committees work under the supervision of Divisional (sectoral) Committees. The Standards are developed in accordance with the Guide and Procedure for Development of Tanzania Standards and TZS 0, *Guide for presentation of Tanzania Standards*.

Tanzania Standards are subject to review, to keep pace with science and technological advances. Users of the Tanzania Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

This Tanzania Standard was developed under the supervision of Textile Divisional Standards Committee (TDC). The Technical Committee responsible for the standard is *TDC 8– Yarns and Twines)*

The reporting of the results of a test or analysis made in accordance with this Tanzania Standard, if the final value, observed or calculated is to be rounded off, shall be done in accordance with TZS 4.

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Textile — Cotton sewing and embroidery threads — Specification

1 Scope

1.1 This Draft Tanzania Standard prescribes constructional details and other particulars such as wound length, breaking load, of 44 selected varieties of cotton sewing and embroidery threads, mercerized, unbleached, bleached or dyed.

This Draft Tanzania Standard does not specify the type of finish and feel of the sewing and embroidery threads, nor does it specify the degree of the bleached threads or the colour of the dyed threads.

2 Normative references

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

TZS 3: *Atmospheric conditions for testing*

TZS 4: *Rounding off numerical values*

TZS 23: *Tests for colour fastness — Colour fastness to light: Xenon ARC*

TZS 24: *Tests for colour fastness — Colour fastness to washing — Test 4*

TZS 40: *for colour fastness to light: Daylight*

TZS 262: *Textiles — Yarn from packages — Determination of linear density (mass per unit length) — Skein method*

TZS 263: Textiles — Universal system for designating linear density (Tex system)

TZS 264: , Textiles — Designation of the direction of twist in yarns and related products

TZS 265 (Part 1): Textiles method of testing the strength of yarns from packages — Part 1 — Determination of breaking strength and extension

TZS 266: Textiles — Methods of testing the strength of twist in yarns

3 Terms and definitions

For the purpose of this Draft Tanzania Standard, the following terms and definitions shall apply:

3.1
thread
yarn of two or more strands of single yarns doubled or plied and twisted together

3.2
ply
term used to yarns formed by twisting together two or more single yarns in one folding operation.

3.3
length
the amount in length of the sewing and embroidery thread wound on a tube or reel.

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3.4
breaking strength
the breaking strength of a 50 cm test length on a single strength tester.

3.5
count
a number indicating the length per unit mass or the unit length of a yarns .

3.6
tex
the weight in grams of 1000 metres of a yarn.

4 Manufacture

4.1 Yarn — cotton yarn for the sewing thread shall be evenly spun to produce a balanced thread

4.2 The sewing and embroidery thread shall be reasonably free from knots, spinning and doubling defects.

4.3 Direction of twist – unless agreed otherwise, the direction of twist in the single and double (ply) yarns shall be at the discretion of the manufacturer.

4.4 Finish — White sewing and embroidery thread shall have a uniform bleached finish. The dyed sewing and embroidery threads shall be of the required shade, evenly dyed and free from all dyeing defects.

The threads shall be finished soft, mercerized or polished as required. The use of finishing and dressing materials liable to cause subsequent tendering is prohibited.

5 Requirements

5.1 Sewing and embroidery threads shall comply with the requirements of Table 2.

5.2 Balance of twist – A maximum of 5 turns as re-twist or double on account of the kink shall be permitted in the loop when the two ends of the thread gripped by hand at an approximate distance of 1.5m are brought together.

5.3 Colour fastness – the dyed threads with colour declared as “Fast” shall conform to the requirements **of Table 1**

Table1 — Colour fastness;

S/NO	Agency	Rating	Test methods
1	Washing	4 or better	TZS 24: 1979
2	Light	5 or better	TZS 23: 1979
3	Perspiration	4 or better	TZS 280: 1986

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5.4 Length of sewing and embroidery thread – The length of sewing and embroidery thread in a tube or reel shall not be less than length marked on its label. The length of the sewing and embroidery thread shall be determined using a wrap reel with tensioning device as specified in Annex B – 3.1 and B – 3.1.2.

5.5 Working – The threads shall work satisfactorily on the appropriate types of hand power driven sewing machines, under specified conditions such as machine speed, tension control, needle gauge and for sewing in to fabric or other specified material for which the thread is intended.

6 Packing

6.1 Sewing and embroidery threads shall be compactly wound in the form of tubes or in any other form as required. In the case of polished thread wound on parallel tubes or tapered cones, and all the thread wound on reels (whether wooden or plastic), the free end or the thread shall be securely fastened to prevent unravelling.

6.2 Make-up of pieces — Each cone or cheese shall be wrapped in cellophane; tissue paper or polyethylene film of suitable thickness polyethylene film shall not be used if the tread is in grey skeins condition). In the case of spools, tubes, hanks and 6, 10, 12 or more units shall be wrapped in a thick paper or packed in a carton.

7 Marking

7.1 Each tube, package of sewing and embroidery thread shall be marked preferably on a label with the following information:

a) Name of the material and fibre
b) Nominal count
c) Nominal length
d) The word “fast” in the case of threads conforming to 5.3
e) Whether mercerized
f) Batch number
g) Manufacture's s name initials or trade – mark

In the case of cones and cheeses, the labels shall be applied on the inner side of the package.

7.1.1 Each unit package may also be marked with TBS Standards Mark of Quality**.**

NOTE — The TBS Standards Mark of Quality may be used by manufactures only under licence from TBS

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Table 2 — Particulars of cotton sewing and embroidery threads (clause 5.1)

Variety No	Nominal count universal in tex, (cotton count) or Metric count)	Construction of thread	Length min M/kg	Single thread breaking strength on 50 cm test length , kg
1	50 tex x 2 (12s /2) or (Nm 20/2)	2 ply 2 strands (each single)	9530	1.65
2	21 tex x 2 (28s /2) or (Nm 48/2)	2 strands (each single)	22020	0.70
3	20 tex x 2 (30s/2) or (Nm 50/2)	2 strands (each single)	24560	0.65
4	16 tex x 2 (36s / 2) or (Nm 62/2)	2 strands (each single)	29640	0.68
5	15.5 tex x 2 (36s /2) or (Nm 64/2)	2 strands) (each single)	31340	0.68
6	15 tex x 2 (40s/2) or (Nm 66/2)	2 strands (each single)	33030	0.65
7	98 tex x 3 (6s / 3) or (Nm 10/3)	3ply 3strands (each single)	3102	7.000
8	60 tex x 3 (10s / 3) or (Nm 17/3)	3strands (each single	5220	4.10
9	50 tex x 3 (12s / 3) or (Nm20 /3)	3strands) (each single	6340	2.75
10	37 tex x 3 (16s / 3) or (Nm 27 / 3)	3 strands (each single)	8200	2.05
11	25 tex x 3 (24s / 3) or (Nm40 / 3)	3 strands (each single)	12900	1.60
12	18.5 tex x 3 (32s / 3) or Nm 54/3)	3strands (each single)	16940	1.40
13	15 tex x 3 (40s/3) or (Nm 66 / 3)	3strands (each single)	21510	1.00
14	12 tex x 3 (50s / or (Nm 83 / 3)	3strands	27100	0.78

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		(each single		
15	12 tes x 3 (50s / 3) or Nm 83/3) (mercerized)	3strands (each single	27100	0.78
16	9.8 tex x 3 (60s/3) or (Nm 102 /3)	3strands (each single	32690	0.67
17	7.4 tex x3 (80s / 3) or Nm 135 /3)	3strands (each single	43520	0.52
18	6 tex x 3 (100s /) or (Nm 168 /3)	3strands (each single	53680	0.40
19	98 tex x 4 (16s / 4) or (Nm 10 /4)	4 ply 4strands (each single)	4725	0.00
20	50 tex x4 (12s / 4) or (Nm 20 /4)	4strands (each single)	4725	3.75
21	25 tex x 2 x2 (24s (2/2) or (Nm 40 2/2)	4 cord 2 strands (each 2 fold)	9310	2.10
22	18.5 tex x 2x2 (32s/2/2) or Nm 54 / 2/2)	2 strands (each 2 fold)	11750	1.75
23	15 tex x 2x2 (40s /2/2) or (Nm 66/2/2)	2 strands (each 2 fold)	15120	1.30
24	12 tex x 2 x 2 (50s 2/2) or(Nm 83 /2/2)	2 strands (each 2 fold)	19050	1.00
25	9.8 tex x 4 (60s / 4) or (Nm 102 /4)	4 ply 4strands (each single)	2400	0.90

26	7.4 tex x 4 (80s/4) or (Nm 135/4)	4strands (each single)	32180	0.70
27	98 tex x 5 (6s/ 4) or Nm10 /5)	5 ply 5strands (each single	1780	11.50
28	18.5 tex x 2 x3 (32s / 2/3) or (Nm 54/ 2/ 3	6 cord 3strands (each 2 fold)	7910	1150
29	16 tex x2x3 (36s / 23) or Nm 66/ 2/3)	3strands (each 2 fold)	9070	2.60
30	15 tex x 2x 3 (40s / 2/ 3) or (Nm 66/ 2/3)	3strands (each 2 fold)	10720	2.15

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31	12 tex x 2x3 (50s/2/3) or Nm 83 / 2 /3)	3strands (each 2 fold)	13350	1.70
32	9.8 tex x 2 x3 (60s /2 x3) or (Nm102/ 2/3)	3strands (each 2 fold)	15120	1.35
33	7.4 tex x 2 x 3(80s /2/3)or (Nm 135/ 2 /3)	3strands	21170	1.10

		(each 2 fold)		
34	6 tex x 8 (100s /2/3) or (Nm 168 / 2/3)	3strands (each 2 fold)	26250	0. 90
35	98 tex x 8 (6s / 8) or (Nm 10/8)	8ply 8strands (each 2 fold)	1100	16. 80
36	Tex x 3 x 3 (22s /3/) or (Nm 37/ 3/ 3	9 cord 8strands (each 2 fold)	3600	5.60
37	25 tex x 3 x3 (24s /3/3)or (Nm 40/3/3)	3strands (each 3 fold)	4050	5.00
38	18.5 tex x 3 x (32s / 3/ 3) or (Nm 54 /3/3)	3strands (each 3 fold)	5250	4.10
39	15 tex x 3 x 3 (40s /3/3) or (Nm 66/3/3)	3strands (each 3 fold)	6550	3.20

40	12 tex x 3x 3 (50s /3 /3) or (Nm 83/3 /3)	3strands (each 3 fold)	8280	2. 64
41	918 tex x 10 (6s / 10) or (Nm 10/ 10)	10 ply 10 strands (each 3 fold)	800	19.50
42	30 tex x 9 x 3 (30s / 9/3) or (Nm 33/ 9 /3)	27 cord 3strands (each 9 fold)	1130	17.25
43	16 tex x 9 x 3 (36s / 9/ 3) or Nm 62 / 9 / 3)	(3strands) (each 2 fold)		
44	25 tex x 15 x3 (24s / 15/3) or (Nm 40 / 15/3)		805	26. 00

NOTE — The minimum breaking strength vales and minimum lengths in metres per kilogram as specified in the table shall apply sewing and embroidery threads irrespective of the type of finish.

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8. Sampling

8.1 Lot – the quality of cotton sewing and embroidery threads derived of the same variety to buyer against a dispatch note shall constitute the lot.

8.2 The conformity of the lot to the requirements of this Tanzania Standard shall determine the basis of tests carried out on the samples selected form the lot.

8.3 The number of packs to be selected at random from a lot shall be as follows:

Number of packs in the lot	Number packs to be selected
Up to 15	5
16 – 30	7
31 – 50	10
51 - 100	15
101 – 300	25
301 and above	30

8.4 One tube or reel shall be selected at random from each of the packs selected according to **8.3**, the tune thus selected shall constitute the test sample for determining

a) length in m kg;
b) breaking strength;
c) balance of twist;
d) Length per tube or reel (subject to a minimum or 20 tubes or reels

8.4.1 For testing colour fastness, two specimens of the required size for a lot size of more than 30 pack or less and tree specimens for lot size of more than 30 packs shall be taken from the tubes drawn in accordance with **8.4** and tested individually.

8.5 Criteria for conformity – The lot shall be declared as conforming to the requirements of this Tanzania Standard if the following conditions are satisfied:

a) From the test results for lengths in m/kg or braking strength, the average X and the rage 'R' or average range R shall be calculated and the value of the expression X – kR is greater than or equal to the minimum value specified;

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b) All the test specimens tested for balance or twist and colour fastness satisfy the relevant requirements;

c) The average of the length measurements is not less than the marked length.

NOTE 1 — Average X is the value obtained by divining the sum of the observed values by the number of tests;

NOTE 2 — Range 'R' is the difference between the maximum and minimum and minimum in a set of observed values;

NOTE 3 — When the number of test results is 10 or more they shall be grouped in groups of five. The mean range R is the value obtained by taking the average of the ranges of the groups;

NOTE 4 — The value of the constant K is equal to 0.4

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Annex A

(Clause 0.3)

General end uses

Variety No	*general end use*
1	Embroidery of emblems, insignia, etc
2	Basting, hemming and stitching o light clothing, cables 3 Basting, hemming and stitching o light clothing, cables
4	Clothing, hosiery
5	Clothing hosiery and cobles
6	Clothing hosiery and cobles
7	Heavy leather and canvass material, such as tarpaulins, canopies, ankle boot, uppers, harness and saddlery, bag closing, bag closing, harness for jacquard looms, page – cord
8	Gloves, tents, harness and saddlery
9	Light leather stitching and for repair work
10	Light leather materials
11	Woolen jerserys, woolen pullovers, caps, wool-cotton short-drawers, wool cotton vests
12	Chappal uppers, shoes, book – binding
13	Clothing, towels, household linen, hosiery
14	Clothing, towels, household linen, hosiery
15	Synthetic and blended fabrics
16	Clothing, hand- kerchiefs, towel, hosiery
17	Clothing, hand- kerchiefs, towel, hosiery
18	Hand – kerchiefs, hosiery, clothing
19	Heavy leather; canvas, such as tarpaulin; canopies; boot uppers; harness and sanddlery bag closing; harness for jacquard looms.
20	hand stitching or tentage and repair of door curtains
21	umbrellas, healds, fishnets, book- carpets, woven and knitted heavy fabrics
22	Umbrellas, book-binding, carpets, woven and bags
23	Umbrellas, chappal uppers, bags, book- binging clothing (uniforms etc), healds)
24	Clothing, umbrella, chappal uppers, healds
25	Clothing
26	Clothing, jari trad
27	Boots uppers, sole and welt
28	Book-binding, bags tents, carpets, fishnets healds, selvedging
29	Book-binding, bags, tents, carpets, fishnets healds, selvedging, canvas footwear upper.

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30.....Leather footwear uppers

31.....Leather footwear uppers

32…… Leather footwear uppers, piece- end, joining, clothing

33.....Footwear clothing

34 .....Clothing

35.....Sole and welt stitching

36….....Boots and shoes upper, sole and welt, sports and travel goods, goods, upholstery, spindle tape, binding, jari- making, harness for jacquards, light tarpaulins.

37 .....Boots and shoes upper, sole and welt, sports and travel goods, goods, upholstery, spindle tape, binding, jari- making, harness for jacquards, light tarpaulins

38 ..... Leather and canvas material, spindle tape, upholstery, sports ods, jari

39 ..... Materials, book-binding shoe upper, upholstery, light leather and canvas

40 ..... Book sewing, upholstery, spindle tape, light leather materials

41 ..... Sole stitching of heavy boots

42 ..... Head, tarpaulins and canopies

43 ..... Head, tarpaulins and canopies

44 ..... Healds, meteorological radiosonde/ Rawin baloons

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Annex B

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(Clauses 5.4 and table 1)

Measurement of length

B.1 Atmospheric conditions for testing (see TZS 3: 1979).

B.1.1 The tests shall the carried out in a standard atmosphere.

B.2 Conditioning of test specimens

B.2.1 Prior to test, the test specimens shall be conditioned in a standard atmosphere for at least 24 hours.

B.3 Length

B.3.1 Apparatus

B.3.1.1 wrap reel – with a perimeter of 1 m ± 0. 4 %. Determine the actual perimeter of the reel with a strip of gummed paper passed tightly around the reel and secured by adhesion at the overlap. Cut the paper strip and measure its length to an accuracy of 0.1 %.

B.3.1.2 Adjustable Yarn Tensioning Device

It shall be capable of giving a reeling tension that will result in skeins of the of the specified length when measured under a load of 0.5 gf / tex.

B.3.1.3 *Weighing balance*

It shall be capable of weighing skeins in grams, and with a sensitivity of 1 in 500.

B.3.2 Place the package constituting the test specimen on the wrap reel and wind 100 m of tread under a suitable reeling tension (see B- 3 1.2). Remove the tread so wound from the warp reel and weigh in grams.

B.3.3 Calculation

Calculate the length per kilogram by the following formula:

$$\text{Length in metres per kg} = \frac{100 \times 1000}{W_1}$$

Where

W_1 = weight in g of 100 m of thread

B.3.4 Similarly determine the length in m/kg of other test specimens.

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