TDC8 (4770) CD:2026

ICS: 59.080.20

TANZANIA STANDARD

Embroidery threads — Specifications — Part 2: Polyester filament embroidery threads

Draft Standard for Public Comments

TANZANIA BUREAU OF STANDARDS

© TBS 2026

First Edition 2026

Draft Standard for Public Comments

Copyright notice

This document is copyright-protected by Tanzania Bureau of Standards. Neither this document nor any extract from it may be reproduced, stored or transmitted in any form for any other purpose without prior written permission from TBS.

Requests for permission to reproduce this document for the purpose of use should be addressed as shown below:

Tanzania Bureau of Standards
P O Box 9524
16103 Dar es Salaam
Sam Nujoma Road/Morogoro Road,
Tel +255 (22) 2450206/2450949/2450298
Fax +255 22 2450298
Hotline: 0800110827
E-mail: info@tbs.go.tz

Draft Standard for Public Comments

© TBS 2026 – All rights reserved

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.

Draft Standard for Public Comment

© TBS 2026 – All rights reserved

Embroidery threads — Specification — Part 2: Polyester filament embroidery threads

1 Scope

1.1 This Draft Tanzania Standard specifies requirements, sampling and test methods for polyester filament embroidery threads.

2 Normative references

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

TZS 3: , *conditions for testing*

TZS 4: , *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: *Tests 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
yarns of two or more strands of single yarns doubled or piled 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.

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

Draft Standard for Public Comments

©TBS 2023 – All rights reserved

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

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

4 Requirements

4.1 Classifications

Polyester filament embroidery threads, according to different processes, are classified into the following:

a) Dope colored polyester filament embroidery threads; and
b) Dyed polyester filament embroidery threads (including original white threads).

4.2 Linear density

4.2.1 When determined in accordance with TZS 262 the nominal linear density of the yarn shall be as declared, subject to a tolerance of ± 3 %.

4.2.2 The linear density deviation rate is calculated according to formula (1). The result retains 2 significant digits. The requirements of linear density deviation rate shall be as specified in Table 2.

$$D_T = \frac{T_t - T_0}{T_0} \times 100 \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (1)$$

where

DT is the linear density deviation rate, %;

Tt is the actual linear density, in tex; and

T0 is the nominal linear density, in tex.

Draft Standard for Public Comments

© TBS 2026 – All rights reserved

4.3 Single thread breaking strength and variation coefficient of single thread breaking strength

4.3.1 The minimum breaking strength of the yarn shall be as specified in Table 1 when tested in accordance with the test methods prescribed therein.

Table 1 — Requirements of single thread breaking strength

S/N	Linear density in dtex (den) x number of single yarn	Single thread breaking strength, (cN) min.			Test method
		High-class product	First-class product	Conforming products	
1.	56(50) x 2	390	360	330	TZS 265-1
2.	78(70) x 2	530	500	470	
3.	78(70) x 3	800	750	700	
4.	89(80) x 2	610	570	540	
5.	110(100) x 2	750	700	650	
6.	133(120) x 2	900	850	800	
7.	167(150) x2	1 100	1 050	1 000	
8.	222(200) x 2	1 500	1 400	1 300	
9.	333(300) x 2	2 250	2 050	1 850	

Draft Standard for Public Comments

© TBS 2026 – All rights reserved

4.3.2 The maximum variation coefficient of single thread breaking strength shall be as specified in Table 2 when tested in accordance with the test methods prescribed therein.

Table 2 — Internal quality requirements of polyester filament embroidery threads

S/N	Parameter		High-class product	First-class product	Conforming product	Test method
1.	Variation coefficient of single thread breaking strength, %, max.	Dope colored threads	6.0	9.0	12.0	TZS 265-1
		Dyed threads	8.0	11.0	13.0	
2.	Linear density deviation rate, %	Dope colored threads	±3	±5	±6	Formula (1)
		Dyed threads	-3 +10	-5 +13	-6 +16	
3.	Length allowable deviation rate, %	1 000 m and below	-2.0	-2.5	-4.0	Clause 4.4
		1 001-5 000 m	-1.5	-2.0	-3.0	
		5 001 and above	-1.0	-1.5	-2.0	
4.	Number of knots/piece, max.	5 000 m	0	2	3	Clause 4.6

4.4 Length

4.4.1 The length measuring device used for length test shall meet the requirements of TZS 265.

4.4.2 When testing the length, the pre-tension of single thread is (0.5±0.1)cN/tex.

4.4.3 When the sample is on the length gauge, after every 100 m, it shall be set aside and then continue shaking until all is done. If it is less than 1 m long, use a meter ruler to measure, to the nearest of 0.01 m.

4.4.4 The measured length shall be expressed as the arithmetic average of all test values of the sample. Round the calculation result to one decimal place.

4.4.5 The length shall be as declared subject to deviation rates specified in Table 2.

Draft Standard for Public Comments

© TBS 2026 – All rights reserved

4.5 Colour fastness

Colour fastness of embroidery threads shall comply with the requirements given in Table 3, when tested in accordance with the test methods specified therein.

Table 3 — Colour fastness requirements

S/N	Parameter		High-class product	First-class product	Conforming product	Test Method
1.	Light, min.		5	5	5	ISO 105-B01 ISO 105-B02
2.	Washing, min.	Colour change	4 – 5	4	3 – 4	ISO 105-C10
		Staining	4 – 5	4	3 – 4	
3.	Rubbing, min.	Dry	4 – 5	4	3 – 4	ISO 105-X12
		Wet	4 – 5	4	3 – 4	
4.	Drycleaning, min.	Colour change	4 – 5	4	3 – 4	ISO 105-D01
		Staining	4 – 5	4	3 – 4	
5.	Hot pressing, min.	Colour change	4 – 5	4	3 – 4	ISO 105-X11
		Staining	4 – 5	4	3 – 4	
NOTE The color fastness index of thread is reduced by half level. The color fastness of the white thread and bleached thread is not assessed.						

4.6 Number of knots

Fix the embroidery thread tube. On the embroidery thread rewinding machine, use mechanical yarn clearer to test. The maximum number of knots per piece shall be as given in Table 2 when tested in accordance with the test methods specified therein.

4.7 Appearance quality inspection

4.7.1 Inspection conditions for appearance quality

Use indoor north-facing natural light source. If the light source is insufficient, when the illuminance is lower than 600 lx, use D65 standard light source.

4.7.2 Inspection rules for appearance quality

Draft Standard for Public Comments

© TBS 2026 – All rights reserved

4.7.2.1 In appearance quality inspection, except that the depth of stain is evaluated according to ISO 105-A03, and the color difference (including colored flowers and sandwich) is evaluated according to ISO 105-A02, the rest shall be assessed via visual inspection as given in Table 4.

Table 4 — Requirements for appearance quality of polyester filament embroidery threads

S/N	Item		High-class product	First-class product	Conforming product
1.	Wool thread		Not allowed	No more than 2 per tube	No more than 5 per tube
2.	Stain		None	(1) Above level 4: the area does not exceed 1cm^2 or a single thread does not exceed 4 cm; (2) Not allowed for level 3 and below.	(1) Above level 3: the area does not exceed 1 cm^2 or a single thread does not exceed 8 cm; (2) Above level 2: the area does not exceed 0.16 cm^2 or a single thread does not exceed 3 cm; (3) Level 2 and below: the area does not exceed 0.01 cm^2
3.	Hemp thread		Not allowed	Slight	Obvious
4.	Cobweb thread		Not allowed	The small end of the pagoda thread allows 2 jumpers. The length of each jumper is no more than half a turn. Big head is not allowed.	The small end of the pagoda thread allows 4 jumpers. The length of each jumper is no more than half a turn. Big head is not allowed.
5.	Surface knot		Not allowed	Not allowed	Not allowed
6.	Color difference (including color flower, sandwich)	According to color card or sample	Not less than level 4	Not less than level 3 - 4	Not less than level 3
		Between tube and tube	Not less than level 4-5	Not less than level 4	Not less than level 3

Draft Standard for Public Comments

© TBS 2026 – All rights reserved

4.8 Twist and cross-section reference values

Refer to Annex A for the twist and cross-section reference values of polyester filament embroidery threads.

4.9 Grading

4.9.1 Grading of finished product quality

The quality of finished polyester filament embroidery threads shall be graded into high-class product, first-class product and conforming product.

4.9.2 Assessment rules

4.9.2.1 Internal quality of polyester filament embroidery threads shall be assessed according to batches and graded based on the lowest grading item.

4.9.2.2 Appearance quality shall be assessed based on pieces and graded based on the lowest grading item.

4.9.2.3 The final level of polyester filament embroidery thread shall be comprehensively assessed by the level of internal quality and the level of appearance quality and graded based on the lowest grading item.

5 Packaging

The embroidery thread shall be made up in the form of tubes, reels, balls, hanks or any other convenient form.

6 Marking

6.1 Each tube, reel or ball shall be marked, preferably on a label, with the following information:

a) 100 % polyester filament embroidery thread;
b) nominal linear density (tex);
c) grade i.e. (high-class product, first-class product or conforming product);
d) the length and mass of thread in a unit package;
e) batch number;
f) manufacturer’s name, and address or trade mark; and
g) country of origin.

Draft Standard for Public Comments

© TBS 2026 – All rights reserved

6.2 Each carton of polyester filament embroidery threads shall be marked with indelible ink, the following information:

a) 100 % polyester filament embroidery thread;

b) nominal linear density;

c) grade i.e. (high-class product, first-class product or conforming product);

d) batch number;

e) manufacturer's name, and address or trade mark; and

f) country of origin.

g) Gross weight

h) Net weight

Draft Standard for Public Comments

7 Sampling

Take the products of the same variety, same specification and same color as an inspection lot. See Table 5 for rules on sample quantity extracted per batch for internal quality, colour fastness as well as number of tests. See Table 6 for rules on sampling quantity for appearance quality inspection.

Table 5 — Rules on sampling quantity for internal quality, color fastness as well as number of tests

S/N	Item	Plastic core thread, paper core thread		Tower tube or other	
		Sampling quantity/ pc.	Number of tests	Sampling quantity / pc.	Number of tests
i.	Linear density	10	10	10	10
ii.	Single thread breaking strength	10	30	10	30
iii.	Length	10	10	3	3
iv.	Color fastness to light	4	1	2	1
v.	Color fastness to washing	4	1	2	1
vi.	Color fastness to rubbing	4	1	2	1
vii.	Color fastness to drycleaning	4	1	2	1
viii.	Color fastness to hot pressing	4	1	2	1
ix.	Number of knots	4	1	2	1

© TBS 2026 – All rights reserved

Table 6 — Rules on sampling quantity for appearance quality inspection

Number of each batch (min. packaging)	**Sampling quantity** (min. packaging)
50 and below	2
51 – 100	4
101 – 500	5
501 – 1 000	10
1 001 – 2 000	15
2 001 and above	20

Draft Standard for Public Comments

© TBS 2026 – All rights reserved

Annex A
(informative)

Reference values of twist degree and filament cross section of polyester filament embroidery threads

See Table A.1 for reference values of twist degree and filament cross section of polyester filament embroidery threads.

Table A.1 — Reference values of twist degree and filament cross section of polyester filament embroidery threads

S/N	Linear density/dtex (den) × number of single yarn	Twist degree / (twist/10 cm)		Filament cross section
		Special thread for large machine (number of first twist/number of double twist)	Special thread for small machine (number of first twist/number of double twist)	
i.	56(50) x 2			Round or trefoil
ii.	78(70) x 2			Round or trefoil
iii.	78(70) x 3			Round or trefoil
iv.	89(80) x 2			Round or trefoil
v.	110(100) x 2			Round or trefoil
vi.	133(120) x 2		(65-28)/(52-48)	Round or trefoil
vii.	167(150) x 2	(28-24)/(28-24)	(48-44)/(43-39)	Trefoil
viii.	222(200) x 2	(30-26)/(30-26)		Trefoil
ix.	333(300) x 2	(28-24)/(28-24)	(48-44)/(43-39)	Trefoil

Draft Standard for Public Comments

© TBS 2026 – All rights reserved

Bibliography

[1] **KS 543-2:2022**- Embroidery threads — Specification — Part 2: Polyester filament embroidery threads

Draft Standard for Public Comments

© TBS 2026 – All rights reserved