Embroidery threads — Specification

Part 1: Cotton embroidery threads

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Fine Spinners Ltd.

Kenya Consumers’ Organization

Spin Knit Ltd.

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Part 1: Cotton embroidery threads

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Foreword

This Kenya Standard has been prepared by the Technical Committee on Yarns and Fibres under guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

Cotton embroidery threads are manufactured using cotton fibres. This Revision is intended to guide manufacturers in producing acceptable embroidery threads and give an assurance to consumers that the threads in the market are of good quality.

This Second edition cancels and replaces the First edition (KS 543-1:2000) which has been technically revised. The changes are as follows;

-Test methods in clauses 4.21, 4.2.5, 4.2.6 and 4.2.7 have been updated

-Clause 7 on sampling have been added

-A requirement on linear density have been added

-Method of determination of length have been added in annex A

During the preparation of this standard, reference was made to the following document:

KS 543-1:2000, Specification for embroidery threads Part 1. Cotton embroidery threads.

IS 1803-1973 Specification for cotton embroidery threads

Acknowledgment is hereby made for assistance received from these sources.

Embroidery threads — Specification Part 1: Cotton embroidery threads

# 1 Scope

This Kenya Standard prescribes the requirements, test methods and sampling method for cotton embroidery threads

# 2 Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

## KS ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

KS ISO 1139, *Textiles — Designation of yarns.*

KS ISO 1144, *Textiles — Universal system for designating linear density (Tex System).*

KS ISO 2062, *Textiles — Yarns from packages — Determination of single-end breaking force and elongation at break using constant rate of extension (CRE) tester.*

KS ISO 2060, *Textiles — Yarn from packages — Determination of linear density (mass per unit length) by the skein method.*

KS ISO 105-B01, *Textiles — Tests for colour fastness — Part B01: Colour fastness to light: Daylight*

KS ISO 105-B02, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*

KS ISO 105-B03, *Textiles — Tests for colour fastness — Part B03: Colour fastness to weathering: Outdoor exposure*

KS ISO 105-B04, *Textiles — Tests for colour fastness — Part B04: Colour fastness to artificial weathering: Xenon arc fading lamp test*

KS ISO 105-C10, *Textiles — Tests for colour fastness — Part C10: Colour fastness to washing with soap or soap and soda*

KS ISO 105-N01, *Textiles — Tests for colour fastness — Part N01: Colour fastness to bleaching: Hypochlorite*

KS ISO 2061, *Textiles — Determination of twist in yarns — Direct counting method.*

KS 545*, Method for determination of colour fastness of textiles to peroxide washing (sodium perborate).*

# 3 Terms and definitions

For the purpose of this document, the definitions given in KS ISO 1139 and KS ISO 1144 apply

# 4 Requirements

## 4.1 General requirements

### 4.1.1 Yarn

Cotton yarn for embroidery thread shall be evenly spun with suitable twist to produce balanced threads.

NOTE: Twist is commonly expressed as Twists per Metre.

### 4.1.2 Thread

The embroidery shall be reasonably free from kinks, projections, slubs, broken or loose ends or, other manufacturing imperfections which may affect its appearance or serviceability.

### 4.1.3 Finish

**4.1.3.1** White embroidery thread shall have a uniform bleached finish. The dyed embroidery thread shall be free from dyeing defects.

**4.1.3.2** The embroidery thread shall be mercerised. Finishing and dressing materials liable to cause subsequent tendering shall not be used. Optical brighteners shall not be appliedon the thread.

**4.1.3.3** Embroidery threads shall comply with the physical requirements given in Table 1

## 4.2 Specific requirements

### 4.2.1 Twist

Twist shall be as declared subject to ± 5 per cent. Twist value shall be determined in accordance with KS ISO 2061.

### 4.2.2 Balance of twist

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

**4.2.3 Knots**

4.2.3.1 The number of knots shall comply with the requirements given in Table 2.

4.2.3.2 The number of knots in the specimen shall be calculated by the following expression:

Number of knots (Knots/km) = k/L

where,

k = the total number of knots in the specimen,

L = the total length of specimen in km.

**4.2.4 Length**

4.2.4.1 The length of the embroidery thread shall be as declared or marked subject to a tolerance of minus 1 per cent when tested in accordance with annex A.

4.2.4.2 Length shall be measured by counter reel in the state initial tension.

**4.2.5 Mass**

The mass of embroidery thread, conditioned as per KS ISO 139, shall be not less than 99 per cent of the declared value.

**4.2.6 Colour Fastness**

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

**4.2.7 Linear density**

The nominal linear density of the yarn shall be as declared, subject to a tolerance of ± 3 per cent. This shall be determined in accordance with KS ISO 2060

**4.2.8 Breaking load**

The minimum breaking load of the yarn shall be as specified in Table 1, when determined in accordance with test method specified therein. For any variety not covered in the table, the minimum breaking tenacity shall be 20cN/tex

**Table 1-Breaking Load of Embroidery Threads**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SN | VARIETY NUMBER | NOMINAL TEX VALUE | MINIMUM BREAKING LOAD IN N ON 50 TEST LENGTH CM | TEST METHOD |
|  | 1 | 12 X 2 | 4.9 | KS ISO 2062 |
|  | 2 | 16 X 2 | 5.3 |
|  | 3 | 18.5 X 1 | 42.1 |
|  | 4 | 42 X 2 | 19.1 |
|  | 5 | 50 X 2 | 25.5 |
|  | 6 | 56 X 3 | 31.6 |
|  | 7 | 60 X 2 | 30.6 |

**Table 2. Permissible Number of Knots**

|  |  |  |
| --- | --- | --- |
| **SN** | **Length (m)** | **Number of Knots, max** |
|  | Under 1 000 | 1 |
|  | Every subsequent | 2 |

**Table 3- Colour Fastness Requirements**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SN** | **Parameter** | **Requirement, Min** | | **Test Method** |
| **Colour Change** | **Staining** |
|  | Light | 5 | - | KS ISO 105-B01  KS ISO 105-B02 |
|  | Washing | 4 | 4 | KS ISO 105-C10 |
|  | Peroxide washing | 4 | 4 | KS 545 |
|  | Weathering | 5 |  | KS ISO 105-B03  KS ISO 105-B04 |
|  | Hypochlorite bleaching | 4 |  | KS ISO 105-N01 |

# 5 Packaging

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

# 6 Marking

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

1. 100 per cent cotton embroidery thread.
2. Nominal tex value.
3. The length and mass of thread in a unit package.
4. Year of manufacture or lot number.
5. Manufacturer’s name, initials or trade mark.
6. Twist value.
7. The declaration 'Made in Kenya’ or country of origin.

# 7 Sampling

**7.1 Lot**

7.1.1 The quantity of cotton embroidery thread of the same variety delivered to a buyer against a despatch note shall constitute the lot.

7.1.2 The conformity of the lot to the requirements of this standard shall be determined based on the tests carried out on the samples selected from the lot.

7.1.3 Unless otherwise agreed to between the buyer and the seller, the number of packs to be selected at random from a lot shall be as follows:

|  |  |  |
| --- | --- | --- |
| **SN** | **Number of Packs in the Lot** | **Number of Packs to be Selected** |
|  | Upto 15 | 5 |
|  | 16-30 | 7 |
|  | 31-50 | 10 |
|  | 51-100 | 15 |
|  | 101-300 | 25 |
|  | 301 and above | 30 |

7.1.4 One tube, reel or ball shall be selected at random from each of the pack selected according to 7.1.3. The tube, reel or ball thus selected shall constitute the test sample for determining:

1. length in m/kg,
2. breaking load,
3. balance of twist, and
4. length per tube, reel or ball (subject to a minimum of 20 samples.

7.1.4 **Acceptance criteria-** Acceptance shall be based on conformity of the lot to the requirements of this standard.

**ANNEX A**

**DETERMINATION OF LENGTH**

**A.1 Atmospheric Conditions for Testing**

The atmospheres for preconditioning, conditioning, and testing shall be as specified in KS ISO 139.

**A.2 Conditioning of Test Specimens**

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

**A.3 Apparatus**

**A.3.1 Warp Reel-**with a perimeter of 1000 ± 4 mm. 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 percent.

**A.3.2**- **Adjustable Yarn Tensioning Device**-It shall be capable of giving a reeling tension that will result in skeins of the specified length when measured under a load of 0.5 gf/tex.

**A.3.3** **Weighing Balance**-It shall be capable of weighing skeins in grams and with an accuracy of 0.2 percent

**A.4 Procedure**

A.4.1 Determine linear density in tex as per KS ISO 2060

A.4.2 Determine the net weight of the yarn in the package in grams

**A.5 Calculation**

Calculate the length per kilogram by the following formula:

A.6- Similarly determine the length in m/kg of other test specimens.