

KENYA STANDARD

DKS 1113-4:2022

ICS 59.080.20

Second Edition

Specification for spun yarns

Part 4: Polyester/wool blended yarns

PUBLIC REVIEW DRAFT

TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

Agriculture and Food Authority — Fibre Crops Directorate (AFA-FCD)
Intertek International Ltd.
Kenya Agricultural & Livestock Research Organization (KALRO)
Kenya Association of Manufacturers (KAM)
Ministry of State Defence — Research and Development Department
Moi University
Ministry of Industrialization, Trade and Enterprise Development — State Department for Industrialization — Directorate of Agro-Industries
Technical University of Kenya — Department of Fashion, Clothing and Textiles
Texfab B.S
Nakuru Fibres Ltd.
East African Fine Spinners Ltd.
Nakuru Industries Ltd.
Spin Knit Ltd.
Kenya Consumers' Organization
Ministry of Public Works — Materials Branch
Kenya Taitex Mills Ltd.
Mount Kenya Textiles Ltd.
Rift Valley Textiles Ltd.
Spinners and Spinners Ltd.
Ken-knit (K) Ltd.
Raymond's Woolen Mills (K) Ltd.
Kenya Prisons — Tailoring Division
Bonar (E.A.) Ltd.
Kenya Industrial Research and Development Institute (KIRDI)
Kenya Bureau of Standards — Secretariat

REVISION OF KENYA STANDARDS

In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

© Kenya Bureau of Standards 2022

Copyright. Users are reminded that by virtue of Section 25 of the Copyright Act, Cap. 130 of 2001 of the Laws of Kenya, copyright subsists in all Kenya Standards and except as provided under Section 25 of this Act, no Kenya Standard produced by Kenya Bureau of Standards

may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from the Managing Director.

PUBLIC REVIEW DRAFT

Specification for spun yarns

Part 3: Polyester/wool blended yarns

Kenya Bureau of Standards, Popo Road, Off Mombasa Road,
P.O. Box 54974 - 00200, Nairobi, Kenya



+254 020 6948000, + 254 722202137, + 254 734600471



info@kebs.org



@KEBS_ke



kenya bureau of standards (kebs)

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.

Yarn quality affects not only the efficiency of fabric production but also the fabric quality. Yarn quality specification will therefore be of utmost importance and interests to the spinner, weaver, knitter and yarn merchant. This standard has been developed with these interests in mind.

Yarn is produced in a wide range of linear densities (counts) of varying fibre blend compositions and proportions for various end-uses. This standard takes into consideration all these variations and specifies only the minimum requirements for the essential quality characteristics of yarns.

This Second edition cancels and replaces the First edition (KS 1113-3:1993) which has been technically revised. The changes are as follows.

- Test methods in clauses 5.1, 5.2, 5.3, 5.4, 5.5, 5.6 and 5.7 have been updated
- Formular for coefficient of variation of linear density has been added
- Clause 7 on sampling have been added
- Method of determination of moisture regain have been added in annex A

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

KS 1113-4:1999 Specification for staple spun yarns Part 4. Polyester/wool blended yarns

The wira textile data book.

The wira textile data book.

Acknowledgement is hereby made for the assistance received from these sources.

Specification for spun yarns — Part 4. Polyester/wool blended yarns

1 Scope

This Part 4 of KS 1113 specifies the requirements for polyester/wool blended yarns.

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*

ISO 1833-4, *Textiles — Quantitative chemical analysis — Part 4: Mixtures of certain protein fibres with certain other fibres (method using hypochlorite)*

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

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

KS ISO 6741-1, *Textiles — Fibres and yarns — Determination of commercial mass of consignments — Part 1: Mass determination and calculations.*

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 16549, *Textiles — Unevenness of textile strands — Capacitance method*

3 Application

This standard applies to singles-spun grey polyester/wool blended yarns, except single-spun fancy yarns

4 Terms and definitions

For the purpose of this standard, the definitions given in KS 1113: Part 1, apply.

5 Requirements

5.1 Fibre Composition and Proportion

The fibre composition and proportion of the yarns shall be as declared, subject to a tolerance of ± 5 per cent. This shall be determined in accordance with KS ISO 1833-4

5.2 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

5.3 linear density variation

The inter-package coefficient of variation of linear density of the yarn shall not exceed 2 per cent. The coefficient of variation (C.V.) of the yarns shall be determined using the following formula:

$$\text{C.V.} = \frac{\sigma}{\bar{x}} \times 100\%$$

where

$$\sigma = \sqrt{\frac{\sum (\bar{x} - x)^2}{n - 1}}$$

where

x is the linear density in tex of any yarn sample;

\bar{x} is the mean linear density in tex of all the yarn samples;

n is the total number of samples; and

σ is the standard deviation in tex.

5.4 Yarn twist

The turns per metre (or centimetre) in the yarn shall be as declared, subject to a tolerance of ± 5 per cent. This shall be determined in accordance with KS ISO 2061.

5.5 Elongation at the breaking force

The minimum elongation at breaking force shall be 10 per cent. This shall be determined in accordance with KS ISO 2062.

5.6 Breaking tenacity

The minimum breaking tenacity of the yarn shall be 12 cN/tex. This shall be determined in accordance with KS ISO 2062.

5.7 Yarn unevenness (irregularity)

The yarn unevenness (irregularity) in terms of C.V. per cent shall not exceed those specified in Table 1. The uster C.V. per cent shall be determined in

accordance with KS ISO 16549.

5.8 Moisture regain

The moisture regain of the yarn shall not exceed 10 per cent. This shall be determined in accordance with Annex A.

5.9 Package mass

The mass of the package, conditioned as per KS ISO 139, shall be as declared subject to a tolerance of – 2 per cent.

Table 1. Requirements for Unevenness (Irregularities)

S/N	Range of Linear Density, tex	Maximum C.V.. %	Test Method
i.	Coarser than 70	14.0	KS ISO 16549
ii.	70-60	14.5	
iii.	59-50	15.0	
iv.	49-40	16.5	
v.	39-30	18.0	
vi.	29-20	19.5	
vii.	19-15	20.0	
viii.	14-12	21.0	
ix.	11-10	22.0	
x.	Finer than 10	23.5	

6 Wrapping and packing

Yarn package(s) shall be wrapped in suitable wrappers and/or packaged in suitable containers to protect them from damage during storage, handling or while on transit.

7 Marking

7.1 Unit Packages — Each unit packages shall have a label bearing the following information:

- (a) Manufacturer's name, address or registered trade mark;
- (b) Linear density, in tex;
- (c) Fibre composition and proportion;
- (d) Package net mass, in g or kg;
- (e) Country of origin

7.2 Bulk Containers — Each bulk container shall have a label bearing the following information:

- a) Manufacturer's name, address or registered trade mark;
- b) Name of material, i.e. polyester/wool yarn;
- c) Linear density, in tex;
- d) Quantity of pieces;
- e) Gross mass of container, in kg or tonnes;
- f) Lot number/batch; and
- g) Country of origin

8 Sampling

8.1 Lot

8.1.1 The quantity of polyester/wool spun yarns of the same variety delivered to a buyer against a dispatch note shall constitute the lot.

8.1.2 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.

8.1.3 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
i.	Upto 15	5
ii.	16-30	7
iii.	31-50	10
iv.	51-100	15

v.	101-300	25
vi.	301 and above	30

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

PUBLIC REVIEW DRAFT

ANNEX A
(Normative)

Determination of Moisture Regain

A.1 Principle

A known mass of yarns is dried and then the loss in mass expressed as a ratio of the dry mass.

A.2 Apparatus

A.2.1 Weighing balance, Capable of weighing to an accuracy of 0.001 g.

A.2.2 Drying Oven, well ventilated with a temperature of 102 °C to 105 °C

A.2.3 Desiccator, waterproof when sealed, will be used for transfer of analysed material and during weighing.

A.3 Procedure

A.3.1 From the sample under test draw at least three test specimens each weighing approximately 5 g.

A.3.2 Take a test specimen drawn as in A.3.1 and weigh it accurately (M_1)

A.3.3 Dry it at a temperature of 102°C to 105°C until constant mass is obtained (see note)

A.3.4 Cool the test specimen in a desiccator and determine the oven-dry mass (M_2).

NOTE The mass is usually regarded as constant if the loss between two successive weighing, taken at an interval of 30 min does not exceed 0.1 per cent of the first of the two values.

A.3.5 Similarly test the other test specimen(s).

A.4 Calculation

$$\text{Moisture regain} = \frac{M_1 - M_2}{M_2} \times 100\%$$

A.5 Report

Report the average of the value calculated in A.4 as the moisture regain in %.