



DRAFT TANZANIA STANDARD

Textiles – Specification for Spun Hemp Yarn

DRAFT FOR STAKEHOLDER'S COMMENTS ONLY

0. FOREWORD

This Draft Tanzania Standard specifies the requirements of spun hemp yarn, tarred or untarred. Spun hemp yarn is produced from hemp fibre. The hemp fibre is light-colored, lustrous and strong and is obtained from hemp plant known as cannabis sativa. When spun, the hemp yarn is rather like flax but thicker and coarser. Hemp yarn can be blended with other fibres such as polyester and wool to create the desirable quality of textiles products for interior design and apparel fabrics. This Draft Tanzania Standard outlines the requirements for spun hemp yarn as guidance for manufacturer to protect the buyer.

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

The number of significant places retained in the rounded off value shall be the same as that of the specified value in this specification.

In the preparation of this specification the valuable assistance was derived from:

IS 6587:1987 – Specification for spun hemp yarn published by the Bureau of Indian Standards.

1. SCOPE

This Draft Tanzania Standard prescribes the requirements, sampling and test methods of spun hemp yarn, tarred or untarred.

2. NORMATIVE REFERENCES

For the purpose of this Draft Tanzania Standard, the following references shall apply. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- a) TZS 534; Standard atmospheres for conditioning and testing of textiles.
 - b) TZS 262; Yarn from Packages-Determination linear density (mass per unit length)-Skein method.
 - c) TZS 196:1984, Leather – Determination of total water – soluble matter, water – soluble inorganic matter and water – soluble organic matter.
 - d) TZS 266; Method of testing the strength of twist in yarns
 - e) TZS 490; Textiles – Natural fibre twines – Specification.
 - f) TZS 302:1988; Determination of yarn strength parameter of spun yarns.
- TZS 197: Leather – Determination of sulphated total ash.

3. REQUIREMENTS

3.1 Manufacture

3.1.1 Hemp fibre

The spun hemp yarn should be made from hemp fibre originated from cannabis sativa or cotolaria juncea plants. The fibre should be unadulterated, free from defects and well- hackled. Depending on the end uses, Hemp fibers varies in length and therefore the length of the fibre should be subject to the agreement between the seller and buyer.

3.1.1.1 The Colour

Hemp fiber is dark tan or brown and is difficult to bleach, but it can be dyed bright and dark colors or any colour which is agreeable between the buyer and seller.

3.1.1.2 Yarn

The hemp yarn should be evenly spun. The arrangement and groupings of warp and weft threads shall follow 'Z' and 'S' twist direction. The plied yarns shall be made from a single yarn of the same count of approximately 5.56ktex. Each skein should be continuous through its length and should not contain any loose ends.

3.1.1.3 The spun hemp yarn shall conform to the requirements prescribed in Table 1.

3.1.1.4 Rot proof treatment

The requirement of rot proof on spun hemp yarn shall be done in an appropriate quantity as agreed to between the buyer and seller. In case zinc or copper naphthenate is used, the zinc content shall be within 0.8 to 1.2 percent and copper content shall be within 0.4 to 0.8 percent.

4. PACKING AND MARKING

4.1 Packing

The spun hemp yarn shall be packed in suitable packing material as agreed between the buyer and seller.

4.2 Marking

The following information shall be marked or labeled legibly and indelibly on each individual package:

- a) Name of the material;
- b) Length and net mass of the bundle;
- c) Name and address of the manufacturer
- d) Brand name if any
- e) Batch identification mark.

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Table 1 – Requirements for spun hemp yarn

Variety No.	Linear density (± 0.3) Ktex		Turns per meter of plied Yarn, Min	Runnage m/25kg) Min		Breaking load, N Min (60 cm Test length)		Tar content for tarred yarn	Ash content	Water soluble matter content (of extracted yarn)
	Untarred	Tarred		Untarred	Tarred	untarred	Tarred			
1	5.6	7.5	-	4430	3323	490	400	25% min 33% Max	4% Max	3% Max
2	11.8	15.7	59	2123	1588	805	645			
3	18.1	24.0	46	1385	1043	1205	960			
4	24.2	32.3	39	1034	775	1605	1295			
5	30.1	40.0	36	831	628	2010	1605			
Methods of Test	TZS 262		TZS 266	TZS 490-Annex A		TZS 302		A-3	TZS 197	TZS 196

NOTE 1:

Variety No.1 is not a plied yarn.

5. SAMPLING AND CRITERIA FOR CONFORMITY

5.1 Lot

In any consignment all the bundles of hemp yarn of the same variety delivered to one batch of manufacture or supply shall constitute a lot.

5.1.1 The conformity of a lot to the requirements of this Draft Tanzania Standard shall be determined on the basis of the test carried out as per samples selected from the lot.

5.2 Sampling

5.2.1 Unless otherwise agreed to between the buyer and the seller, the number of bundles to be selected from a lot shall be in accordance with Table 4.

Table 2 – Scale of sampling

No. of pieces in the lot	No. of pieces to be selected
Up to 15	2
16 to 25	3
26 to 50	5
51 and above	8

5.2.2 To determine the content of tar, ash and water soluble matter, any two skeins shall be drawn as noted in clause **5.2.1** and one sample for each requirement shall be tested for each requirement.

5.3 Criteria for Conformity

5.3.1 The lot shall be considered conforming to the requirements of this Draft Tanzania Standard if the following conditions are satisfied.

- From the test results for turns per metre of plied yarn, runnage and breaking load, the grand average (\bar{x}) and the average range R is determined, and the value of the expression $\bar{x} - 0.4R$ is found to be greater than or equal to the relevant specified value (\geq).
- From the test results for ash content and water soluble matter content, the average \bar{x} and the range is determined, and the value of the expression $(\bar{x}) + 0.4R$ is less than or equal to the relevant specified requirement.
- All the individual test results obtained on tar content shall remain within the specified limits

Notes 2;

- Average (\bar{x}) is the value obtained by dividing the sum of the observed value by the number of tests.
- Range (R) is the difference between the maximum and minimum in a set of observed values.

APPENDIX A

Method of test

A-1 Conditioning of Test specimens and Atmospheric Conditioning for Testing.

A-1.1 Conditioning of the test specimens- Prior to test, the test specimens shall be conditioned to moisture equilibrium in a standard atmosphere at (65 ± 2) percent relative humidity and (27 ± 2) °C temperature as explained in **TZS 534**; Methods of conditioning of textiles.

A-1.1.1 When the test specimens have been left in the standard atmosphere for 48 hours in such a way as to expose, as far as possible, all portions of the specimens to the atmosphere, they shall be deemed to have reached moisture equilibrium.

A-1.2 All test shall be carried out in the standard atmospheric conditions as mentioned in **A-1.1**

A-2 Runnage (length in m/kg or m/25 kg)

A-2.1 Take off from the skein a test specimen of 10 metres length measured under a tension of 2 percent of the specified breaking load. Condition the specimen to moisture equilibrium as explained in **A-1.1** and determine the mass. On the basis of the result obtained, calculate the length in m/kg or m/25 kg of the yarn.

A-3 Tar Content

A-3.1 Cut out from each skein a test specimen weighing about 10g. Condition the test specimen to moisture equilibrium as explained in **A-1.1** and determine its mass to the nearest 25 mg. extract the specimen in a soxhlet apparatus with benzene as the solvent for about an hour and a half with a minimum of six syphonings. Evaporate the solvent from the extract until the odour of the solvent disappears. Dry the residue at 100 to 105°C for one hour and then condition it to moisture equilibrium. The difference in mass, expressed as a percentage of the mass of the unextracted specimen, shall be taken as the tar content.