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TANZANIA STANDARD

**Draft Tanzania Standard
Requirements for Sisal fibre**

TANZANIA BUREAU OF STANDARDS

Draft for Public Comments' Only

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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 representatives 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 the Textile and Leather Division standards Committee (TLDC). The technical committee responsible for this standard is TDC7-Textile fibres

1. Scope

This Draft Tanzania Standard specifies the, requirements, packaging, labeling, of sisal fibre intended for both domestic and export market.

2. Normative References

The following standards are referred to in the text in such a way that some or all of their content constitutes requirements of this Draft Tanzania Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

TZS 4, Rounding off numerical values

TZS 325, *Textiles - Textile fibres -Some methods of sampling for testing*

TZS 534, *Textiles -Standard atmospheres for conditioning and testing*

ISO 6938, Textiles-Natural fibres — Generic names and definitions

TZS 3375, Textiles -Sampling methods for fibres, yarns and fabrics for testing

ISO 5079, Textile fibres — Determination of breaking force and elongation at break of individual fibres

ASTM D2654-22, Determination of Moisture content in textile fibre

3. Terms and definitions

For the purposes of this Draft Tanzania Standard, the following terms and definitions including those explained in ISO 6938: shall apply;-

3.1 Sisal fibre

natural fibre extracted from *Agave sisalana*.

3.2 Impurities

non-fibrous matter such as dust, leaves, or foreign particles mixed in with fibre.

3.3 fibre bundle

a fibre weighing 1g is made by aligning and assembling single fibres with a length of 300mm cut from the middle of sisal fibre

3.4 fibre length

the distance between the two ends of a fibre measured along its length without the influence of external force

4 Requirements for sisal grading

The technical requirements for sisal grading encompass a range of factors that ensure the quality and suitability of sisal fibre for various applications. These include:

4.1 Fibre Length

The length of the sisal fibres is crucial as it directly impacts their spinnability and suitability for different end-uses. Longer and more uniform fibres are preferred for textile and high-grade cordage applications.

4.2 Strength (Tenacity)

The force required to break a fibre is measured as strength, which is vital for products requiring high tensile resistance, such as ropes, twine, and reinforcement materials.

4.3 Cleanliness

Premium sisal fibre must be free from impurities such as bark particles, foreign matter, dust, and tangled knots. Cleanliness directly affects processing efficiency and the quality of the final product.

4.4 Colour

The most desirable fibres exhibit a creamy white to yellowish-white hue. Discolouration can indicate poor and late decortication, drying, or storage, potentially affecting market value.

4.5 Moisture Content

Excess moisture can lead to mould growth, fibre degradation, and increased shipping weight. International standards typically specify maximum moisture levels to preserve fibre integrity during transit and storage.

4.6 Uniformity and Texture

Consistency in diameter and texture across a batch ensures predictable processing behaviour and end-product quality.

4.7 Maturity

This is the condition where the harvested leaves have reached its optimal physiological development, producing fibres with maximum strength, elasticity, and durability.

4.7.1 The Indicators for maturity of sisal fibre is when the Leaf tip thorn changes color from dark brown to light brown (a common sign of ripeness), Outer leaves reach full length (60–180 cm), and Fibres extracted are creamy white and lustrous after drying.

4.7.2 The Matured fibre is Longer at 100–125 cm), strong, resistant to saltwater, and ideal for ropes, mats, and industrial composites

4.7.3 The Immature fibre is Shorter, coarser, and less tensile strength and often unsuitable for high-quality ropes or carpets.

5. The Grading

The Grades of sisal fibres are largely determined by fibre length, moisture content, and impurities and this parameters influence its typical use as indicated in Table one below.

Table 1: Grades of sisal fibre

Grade	Fibre quality level	Fibre length, cm	Moisture content, %	Impurities, %	Strength of fibre bundle, g/tex
A(1, 3L	Export Premium	≥ 90	≤ 12	≤ 1	≥ 25
B (2)	Export standard	≥ 80	≤ 13	≤ 2	≥ 25
C(3, 3SHORT	Domestic Industrial	≥ 70	≤ 14	≤ 3	≥ 20
D(UG, S.S.U.G.	Utility fibre	≥ 60	≤ 15	≤ 5	≥ 15
Test Methods		TZS 3375	ASTM-D2654-22	ISO/TR 11827:2012	ISO 5079

6. Packaging

Unless otherwise agreed to between the seller and buyer, the sisal fibre should be packed in compressed bales weighing 250 kg per bale. The bales shall be secured by twisted sisal fibre ropes made from the same fibre or any other material subject to an agreement to between the seller and buyer.

7. Labelling

Each bale of sisal fibre shall be labelled with the following information:

- a) Name/trademark and address of producer
- b) Fibre grade
- c) Bale weight
- d) Country of origin (Tanzania)
- e) Production date

8. Sampling and Criteria for conformity

The number of test and criteria for conformity shall be done in accordance with TZS 3375.