DRAFT TANZANIA STANDARD

TBS/CDC-10 (1963) P3 KRAFT LINER BOARD — SPECIFICATION

Draft for Stakeholder's Comments Only

TANZANIA BUREAU OF STANDARDS

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0 Foreword

This Draft Tanzania Standard is being developed by Stationery and Paper Products Technical Committee under supervision of the Chemicals Divisional Standards Committee and it is in accordance with the procedures of the Bureau.

Kraft liner board is a strong paper made from chemical pulping (sulphate/ soda pulps) and other pulps used especially for the manufacture of corrugated fibreboard boxes for general packaging and Kraft papers. Kraft liner board is attached to the corrugating medium suitably to give the corrugated fibreboard boxes the desired quality.

This Draft Tanzania Standard is the first edition of Kraft liner board – Specification.

This draft Tanzania Standard has been prepared with assistance drawn from the following documents:

IS 9588:2014 Kraft liner - Specification, published by India Bureau of Standards.

IS 1763: 2018 Specification for substances of paper and pulp board, published by India Bureau of Standards

TZS 2146: 2018 - EAS 865: 2017 Corrugated fibre board boxes for general packaging – Specification

SANS431:2007 Liners and fluting for corrugated board - Specification, published by South African National Standard

The assistance obtained from the above source is hereby acknowledged with thanks.

For the purpose of deciding whether a particular requirement of this Tanzania Standard is complied with, the final value observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with TZS 4 (see clause 2).

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Kraft liner board – Specification

1 Scope

This draft Tanzania Standard specifies the requirements, sampling and test methods of Kraft liner board.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 value*

TZS 79: *Paper – Determination for bursting strength*

TZS 81: *Method for the determination of grammage (basic mass)*

TZS 80: *Paper – Sampling methods for testing*

TZS 82: -ISO 187, *Paper board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples*

TZS 83*: -ISO 287; Paper and board — Determination of moisture content of a lot — Oven-drying method*

TZS 423*: -ISO 535: Paper and board — Determination of water absorptiveness- cobb method*

TZS 747: - ISO 1974, Paper — *Determination of tearing resistance — Elmendorf method*

TZS 891*: -ISO 534; Paper and board — Determination of thickness, density and specific volume*

ISO 5636/5*: Paper and board – Determination of air permeance (medium range)- Part 5 (Gurley Method)*

ISO 6588-1*: Paper, board and pulps — Determination of pH of aqueous extracts — Part 1: Cold extraction*

ISO 12192: Paper and Board - Determination of compressive strength – Ring Crush method

ISO 9895: *Paper and Board- Compressive strength – Short Span Test*

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3 Terms and definitions

For the purpose of this draft Tanzania Standard the following definitions shall apply:

3.1 bursting strength
maximum uniformly distributed pressure, applied at right angles to its surface, that a test piece of paper or board will stand, under specified test conditions.

3.2 cross direction (CD)
direction in the paper that is at right angles to the machine direction.

3.3 defective
set of test pieces that fails in one or more respects to comply with the relevant requirements of the standard.

3.4 grammage (substance)
the mass of unit area of paper or board determined by the specified method of test and expressed in grams per square meter and conditioned in accordance with TZS 82/ISO 187.

3.5 nominal grammage (substance)
the value of the mass per unit area used for reference purposes (i.e. when purchasing material)

3.6 actual grammage (substance)
the value of the mass per unit area determined by testing

3.7 Kraft liner
any liner made almost entirely from kraft pulp.

3.8 Liner
any paper or paper board intended for covering another paper or paper board material to become part of finished product.

3.9 long grain
orientation when the machine direction of the paper is in the long direction of the sheet.

3.10 lot
one or more nominally identical package of paper, the paper having been made on the same equipment under essentially the same conditions, from one manufacturer, and submitted at any one time for inspection and testing.

3.11 machine direction (MD)
direction in a paper or a board parallel to the direction of travel of the web on the paper or board machine.

3.12 wood-free paper or board
paper or board having in principle only chemical pulp in its fibre composition; in practice, however, it may contain a small amount of other virgin pulps less than five percent (< 5%).

3.13 scuffing
become marked by scrapping or brushing

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4 Requirements

4.1 General requirements

4.1.1 Kraft liner board shall be made from 100 % bleached or unbleached sulphate pulp, or combination of any other material that will ensure compliance with the requirements given in Table 1. It is known as virgin kraft liner board.

4.1.2 The surface shall be machine glazed (MG) or machine finished (MF). The surface should also be receptive to printing. Shall be resistant to scuffing.

4.1.3 The material if used for the packaging of food materials, shall be manufactured from virgin pulp and shall be free from dioxins.

4.1.4 The papers shall be free from fibre bundles, tears, shives, foreign matter, specks, holes, blemishes, creases and other visible defects and shall be uniform in texture.

4.1.5 The paper shall be of reasonably good formation or uniform formation, thickness and substance.

4.1.6 The surface of the paper shall be such as to accept the adhesives commonly used in the manufacture of corrugated board.

4.2 Specific requirements

4.2.1 Kraft liner board shall be manufactured as per preferred (standardized) substances given in Table 1.

4.2.2 If a substance not given in Table 1 is required, it shall be agreed upon between the purchaser and the supplier and shall be selected so that it conforms to the steps of increment given below:

Range of substance	Steps of increment of substance
g/m^2	g/m^2
110 - 150	10
Above 150	25

4.2.3 The minimum allowable grammage for kraft liner shall be **100 g/m^2** and a tolerance of ± 5 percent shall not be permitted on the **100 g/m^2** when tested in accordance with **TZS 81**.

4.2.4 Kraft liner board shall comply with the relevant requirement given in Table 1 when tested in accordance with the method specified therein.

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Table 1- Specific requirements for Kraft liner board

S/No.	Characteristics	Requirements															Test method (see clause 2)
		Product range (Nominal grammage, g/m^2)															
		100	110	120	130	140	150	175	200	225	250	275	300	400	425	450	TZS 81
i	Actual Grammage	Nominal grammage, ± 5 %															
ii.	Moisture content, %, m/m	6 - 8															TZS 83
iii.	pH, min	5.00															ISO 6588-1
ix.	R.C.T, KN/m, CD, min	0.70	1.22	1.25	1.27	1.40	2.00	2.03	2.10	2.20	3.20	3.85	4.10	5.30	5.40	5.60	ISO 12192
x.	S.C.T, KN/m, CD, min	2.10	2.15	2.40	2.55	2.85	3.05	3.15	4.00	4.3	4.45	5.20	5.50	7.45	7.80	8.20	ISO 9895
xi.	Bulk, cc/g	1.60 - 1.70															TZS 891
xii.	Burst Strength, KPa, min	420	435	500	560	600	715	750	855	900	1000	1170	1200	1350	1380	1430	TZS 79
xiii.	Burst Index, $KPa.m^2/g$, Dry, min	3.5															
ix.	Burst Index, $KPa.m^2/g$, Wet, min	1.3															
x.	Cobb 60 seconds, g/m^2, 27^0C, Top side, max	30															TZS 423
xi.	Cobb 60 seconds, g/m^2, 27^0C, Wire side, max	40															

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5 Dimensions

The size of the rolls or sheets form shall be as agreed between the purchaser and the supplier. The permissible tolerance on the size shall be in accordance with clause 4 of TZS 63.

5.1 Joints

All joints shall be joined properly using a suitable adhesive. A suitable, nontoxic and environmentally friendly adhesive shall be used and shall be adequately resistant to moisture and climatic conditions. There shall be not more than three joints in a roll.

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6 Sampling

6.1 Sampling methods shall be carried out as prescribed in **TZS 80**.

6.2 Number of Tests

Each of the rolls/packages selected from the lot shall first be examined for the requirements given in **4** and **5**. Then a sheet of suitable size from rolls shall be cut, taking at least the top three layers. Test pieces shall then be cut from sheets for testing requirements mentioned in **4.1, 4.2** and **5.** Tests for these characteristics except pH shall be conducted individually on each of the sample sheet. A roll or sheet not meeting the requirements for any one or more of these characteristics shall be considered as defective. Test for pH shall be conducted on composite sample.

6.3 Criteria for conformity

A lot shall be declared as conforming to the requirements of this standard if the requirements in clause **4** and **5** are satisfied and if the number of defective roll and sheets does not exceed the acceptance number. This acceptance number shall depend on the size of the sample and shall be equal to 0 if the sample size is less than 13. It shall be equal to 1 if the sample size is greater than or equal to 13. A roll or sheet not meeting the requirements for any one or more shall be considered as defective.

7 Test methods

Samples of Kraft liner board shall be conditioned in accordance with TZS 82/ISO 187.

8 Packaging and marking

8.1 Packaging

Packaging requirements will vary according to the roll's diameter and width, Kraft liner board shall be packed in rolls on a core of 75 to 100 mm inside diameter and in length equivalent to the width of paper, with a wooden or plastic plug at each extending to a minimum of 75 mm into the core.

8.1.1 Kraft liner board shall be packaged in suitable material that protects it from dust, moisture and dirt during transportation, storage and normal use.

8.2 Marking

8.2.1 Each roll shall be legibly and indelibly marked with the following:

a) description and the paper grammage (actual);
b) batch number or code number;
c) machine direction;
d) month and year of manufacture;
e) diameter and width of roll;
f) weight in Kg of the roll including the mass of the core and plugs;
g) country of origin/manufacture; and
h) name and physical address of the manufacturer or local distributor and registered trademark.

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