DRAFT TANZANIA STANDARD

TBS/CDC-10 (6266) P3 GLASSINE PAPER — SPECIFICATION

Draft for Stakeholder's Comments Only

TANZANIA BUREAU OF STANDARDS

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First Edition 2020

INTRODUCTION

Glassine paper is used for packaging of confectionery, snacks, dairy products, dehydrated foods, toiletries, pharmaceuticals, etc.

Glassine paper is obtained from highly hydrated pulp and subsequently highly super-calendered. It is translucent (may be coloured or rendered opaque while in stock), very smooth and shiny on both sides and substantially greaseproof.

The paper is resistant to oil and grease. Because of its high density and glass-like surface, it is resistant to moisture and growth of mould also. It also provides a barrier against escape of aroma and flavour of products packed in it because of its low air permeability. Due to lack of stretch characteristics as well as the generation of static and smooth surfaces free from lint and fuzz of small fibres, the paper offers a good printing surface. It is also suited for conversion processes like metallizing, heat seal lacquering and lamination with foils and polyethylene.

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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.

This Draft Tanzania Standard is the first edition of glassine paper – Specification.

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

IS 12490:2013 Glassine Paper - Specification, published by India Bureau of Standards.

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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Glassine Paper – Specification

1 Scope

This draft Tanzania Standard specifies the requirements, sampling, and test methods of glassine paper.

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 values*

TZS 79: - ISO 2758: *Paper – Determination for bursting strength*

TZS 80: Paper – Sampling methods for testing

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

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 748-2: - ISO 1924-3, *Paper and board — Determination of tensile properties —- Part 3: Constant rate of elongation method (100 mm/min)*

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

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

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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 glassine paper
paper obtained from highly hydrated pulp and subsequently highly super-calendered. It is translucent (may be coloured or rendered opaque while in stock), very smooth and shiny on both sides and substantially greaseproof.

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

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

3.5 grammage (substance)
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

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

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

3.8 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.

3.9 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

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4 Requirements

4.1 General requirements

4.1.1 The surface shall be machine glazed (MG) or machine finished (MF). The surface should also be receptive to printing.

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

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

4.1.4 The paper shall be free from any objectionable taint or odour.

4.2 Specific requirements

4.2.1 Glassine paper shall comply with the relevant requirements given in Table 1 when tested in accordance with the method specified therein.

4.2.2 The nominal substance of glassine paper shall be as agreed to between the purchaser and the supplier. A tolerance of ± 5 percent shall be permissible on the nominal substance when determined in accordance with TZS 81.

4.2.3 The thickness of the paper shall be as agreed to between the purchaser and the supplier. A tolerance of ± 0.005 mm shall be permitted when tested in accordance with TZS 891.

Table 1 – Specific requirements for glassine paper

S/No.	Characteristics	Requirements	Test method (see clause 2)
i.	Moisture content, %, m/m	6 – 7	TZS 83
ii.	pH,	4.5 - 5.5	ISO 6588-1
iii.	Tensile index,Nm/g, MD, min.	500	TZS 748-2
iv.	Tensile index, Nm/g, CD, min.	300	
v.	Tear index , mNm^2/g, MD, min	1.25	TZS 747
vi.	Tear index , mNm^2/g, CD, min	1.35	
vii.	Burst Index, $KPa.m^2/g$, Dry, min	3.7	TZS 79
viii	Grease resistance (both sides), s, min	1800	Annex A

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5 Sampling

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

5.2 Number of Tests

Each of the rolls/packages selected from the lot shall first be examined for the requirements given in **4.1** and **4.2**. 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 and 4.2.** 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.

5.3 Criteria for conformity

A lot shall be declared as conforming to the requirements of this standard if the requirements in clause **4.1** and **4.2** 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.

6 Test methods

Samples of glassine paper shall be conditioned in accordance with TZS 82/ISO 187.

7 Packaging and marking

7.1 Packaging

7.1.1 The paper shall be packed in the form of either rolls or sheets or as agreed to between the purchaser and the supplier.

7.1.2 Packaging requirements will vary according to the roll's diameter and width, glassine paper 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.

7.1.3 When supplied in sheets packages shall contain 500 or 250 sheets according to the size and weight of the paper.

7.1.4 Glassine paper shall be packaged in suitable material that protects it from dust, moisture and dirt during transportation, storage and normal use.

7.2. Marking

7.2.1 Each roll, ream or package shall be legibly and indelibly marked with the following:

a) description and the paper grammage (actual);
b) batch number or code number;
c) month and year of manufacture;
d) machine direction;
e) size of sheet or the length and width of roll;
f) country of origin/manufacture; and

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g) name and physical address of the manufacturer or local distributor and registered trademark.

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Annex A

(normative)

Determination of grease resistance

A. General - Grease resistance of paper is determined by the time taken by turpentine to penetrate through the paper.

A.1 Apparatus

A.1.1 Tube of any rigid material, 2·5 cm inside diameter and not less than 2·5 cm in height, with smoothened ends.
A.1.2 Pipette -Calibrated to deliver I·I ml.
A.1.3 Round-Grained Sand - Screened to pass a 850 µm IS sieve and be retained on a 600µm IS sieve.
A.1.4 Paper - Sheets of clay coated white papers of 100 g/m^2 substance

A.2 Reagents

A.2.1 Turpentine - Coloured, water-free turpentine, prepared as follows.

A.2.1.1 To 100 ml of pure gum spirits turpentine (relative density 0.860 to 0.875 at 15'5°C) add 5g of anhydrous calcium chloride and 1·0 g of oil soluble red dye. Stopper the container, shake well and let stand for at least 10 hours. Shake occasionally. Then filter through a dry filter paper and store in an air-tight bottle.

A.3 Test Specimen

A.3.1 Cut representative specimens 10 cm square from the sample under test.

A.4 Procedure

A.4.1 Not less than 10 conditioned specimens shall be used. Make an equal number of tests on each side of the sample; if possible, note which is the felt side and which is the wire side.
A.4.2 Place each specimen on a sheet of the paper, which rests on a smooth plane surface. Place the end of the tube on the specimen and put 5 g of sand in the tube. Since the purpose of the tube is solely to assure a uniform area of the sand pile, remove it immediately after the addition of the sand. Using the pipette add 1.1 ml of the coloured turpentine to the sand and note the time.
A.4.3 Move the test specimens to different positions on the paper and examine the uncovered area of it for staining, every 30 seconds for the first 2 minutes, every minute for the next 8 minutes, and every 3 minutes thereafter. As soon as the first red stain appears on the paper, note the time. The time elapsed, in seconds, between the application of the turpentine and the appearance of the first distinct red stain shall be recorded as the transudation time.

A.5 Report

8.5.1 Results shall be reported as turpentine transudation in terms of seconds. The report shall include the number of specimens tested and the maximum, minimum, and average turpentine transduction. If it is possible to identify the two sides of the paper, results shall be reported separately for specimens tested with the felt side up and with the wire side up. All tests over 1800 seconds shall be reported as 1 800 + seconds and if individual results of 1800 + are included in any average, such average shall be followed by a plus sign. The average shall be reported on the basis of all tests made. It is recommended that the following form be used in reporting results when possible:

Table 2 – Specific requirements for grease resistance

Turpentine transudation, seconds:	Felt side up	Wire side up
Maximum	1800+	1750
Minimum	1500	1400
Average of 10 tests	1750+	1600
Total average	1675 +	