DRAFT TANZANIA STANDARD

Paper adhesive, liquid gum and office paste Specifications

TANZANIA BUREAU OF STANDARDS

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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 representative 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 Chemical Divisional Standards Committee [*CDC*]. The Technical Committee responsible for the standard is Paper and Stationery Products

This second edition cancels and replaces the first edition (*TZS 89: 1980*), which has been technically revised.

The reporting of the results of a test or analysis made in accordance with this Tanzania Standard, if the final value, observed or calculated is to be rounded off, shall be done in accordance with TZS 4.

Paper adhesive, liquid gum and office paste- Specifications

1 Scope

This Tanzania Standard prescribes the requirements, test methods and sampling for adhesives for joining paper to paper or paper to other surfaces like paperboard, wood, cloth, glass and metal in general office use.

This standard does not cover adhesives used for making cartons and quick-setting adhesive used for labelling with high speed machinery.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

4. Requirement

4.1 General Requirement

4.1.1 TYPES

4.1.1.1 There shall be three types of the material, namely:

Type A liquid gum, based on gum arabic (Acacia nilotica Leguminosae (Acacia arabica Willd Leguminosae)

Type B Office paste, based on starch, dextrin and soluble starches

Type C Transparent adhesives, based on polyvinyl alcohol and· partially hydrolysed polyvinyl acetate

4.1.2. Description

The material shall be uniform in consistency and free from lumps, dirt, fillers, pigments and other suspended matter. The liquid gum shall be clear and office paste shall be translucent white in colour. The material and its dried film shall be free from objectionable odour.

The material shall be uniform in consistency and free from lump, dirt, pigments and other suspended matter. The material covered under Type A shall be clear liquid, Type B translucent white in colour and Type C transparent. The material and its dried film shall be free from objectionable odour.

4.2 Specific Requirement

The product shall comply with the specific requirements specified in Table 1 when tested in accordance with the test methods specified therein.

Table 1 Requirements for paper adhesives, liquid gum and office paste type.

S/N	CHARACTERSISTCS	TYPE A	TYPE B	TYPE C	TEST METHOD
1	Total solids by mass, Min (cross check)	30	20	10	Annex A
2	pH	4-6	5-7	5-7	Annex B
3	Adhesion strength	To pass the test			Annex C
4	Brittleness and moisture absorption of the dried film	To pass the test			Annex D
5	Stability at 37°C	To pass the test			Annex E
6	Consistency 27℃ ±2 (by Ford cup viscometer No.4), min	6-7			ASTM D1200

5. PACKAGING

The product shall be packaged in suitable containers to prevent deterioration during transportation, storage and handling

6 LABELLING

The containers shall be legibly and indelibly marked with the following information.

a) Name and type of the product;
b) Manufacturer's name and trade-mark, if any;
c) Country of origin;
d) Date of manufacture;
e) Expiry date;
f) Mass or volume of the product in the container;
g) Instruction for use and storage; and
h) Lot/batch.

7. SAMPLING

Sampling shall be done in accordance with Annex F.

ANNEX A

Normative

DETERMINATION OF TOTAL SOLIDS

A.1 Procedure

Take about five grams of the material, accurately weighed in a weighed porcelain basin and evaporate to near dryness on a water-bath. Then remove the basin to an air-oven maintained at 105 ± 2°C. Cool in a desiccator and weigh. Repeat the operation tiII constant mass is obtained.

A. 2 Calculation

Total solids, per cent by mass = $100m_2/m_1$

Where

m_2 = mass in g of the residue, and

m_1 mass in g of the material taken for the test

ANNEX B

Normative

DETERMINATION OF pH VALUE

B.1 Weigh about 10g of adhesive, add distilled water to make up the volume to 100 ml and determine pH value of the solution. The use of a potentiometer with glass electrode or any suitable pH meter is advised.

If any other method is used for determination of pH value, it shall be as agreed to between the purchaser and the supplier

ANNEX C

Normative

TEST FOR ADHESION STRENGTH

C.1 Procedure

C.1.1 Take six pieces of 56 cm of each of (a) offset cartridge paper, (b) machine glazed paper, (c) coated art paper (d) machine finished printing paper, (e) kraft paper. Mark off with a pencil or by folding. a strip one centimetre wide leaving an area of five centimetre square. Pour about 0.5 ml of the adhesive to be tested on the paper (on the glazed and coated side in the case of machine glazed paper and coated art paper respectively) and spread it evenly over the 5 cm square area with a squeezer, spatula or similar non-absorbent implement, leaving an ungummed flap one centimetre wide. Stick the pieces on to a larger piece of (a) the same paper, (b) strawboard, (c) packing case wood, (d) jaconet cloth, (e) pane glass. and (f) galvanized iron sheet. Keep the specimens for one hour at room temperature with relative humidity not more than 75 per cent. Test by gripping the free one centimetre wide flap and pulling the piece apart with a steady pull

C.1.2 The material shall be taken to have passed the test if each piece tears during stripping, leaving the fibres still attached over at least 50 per cent of the original area of attachment

ANNEX D

Normative

DETERMINATION OF BRITTLENESS AND MOISTURE ABSORPTION OF THE DRIED FILM

D.1 Procedure

Take one millilitre of the adhesive make thick film on kraft paper 2.5 x 100 cm in size and keep it at room temperature with relative humidity not more than 75%. After one hour, roll the paper on a wooden office ruler of 2.5 cm diameter, first with the coated side up and next with the coated side down.

D. 2 The material shall be considered to have passed the test if the film and the paper do not show any sign of cracking and the paper does not get stuck to the rod.

ANNEX E

TEST FOR STABILITY AT 37°C.

E.1 Procedure

Take 25 ml of the product in a petri dish of 100 mm diameter cover the dish and keep it in an incubator maintained at a temperature of 37 ± 1 °C for 14 days.

E.2 The product shall be taken to have passed the test if there is no fungus growth, separation or sedimentation.

ANNEX F

Normative

SAMPLING

F.1 Sample preparation

F.1.1 In drawing, preparing, storing and handling test samples, the following precautions and directions shall be observed.

F.1.1.1 Samples shall not be taken in an exposed place to avoid inclusion of foreign matters.

F.1.1.2 The material in each container selected from the lot shall be mixed thoroughly before drawing samples.

F.1.1.3 Precautions shall be taken to protect the samples, the materiel being sampled, the sampling instrument and the containers for samples from adventitious contamination

F.1.1.4 The samples shall be placed in clean and dry glass containers.

F1.1.5 After filling, the sample containers shall be closed tightly with a stopper. sealed and marked with full details of sampling, date of manufacture, name of manufacture and other particulars of the consignment.

F.1.1.6 The samples shall be stored in such a manner that the conditions of storage do not unduly affect the quality of the material.

F.2 SCALE OF SAMPLING

F.2.1 Lot

All the containers of the same size in a single consignment of the material drawn from a single batch of manufacture shall constitute a lot. If a consignment is declared or known to consist of different belonging to the same batch and of the same size shall be grouped together and each group shall constitute a separate lot.

F.2.2 Samples shall be tested from each lot for ascertaining the conformity of the material to the requirements of the specification.

F 2.3 The number of containers to be chosen from a lot shall depend on the size of the lot and shall be in accordance with Table 2

F.2.4 These containers shall be chosen at random from the lot and in order to ensure randomness of selection, random number table shall be used. In case such a table is not available, the following procedure shall be Adopted

F.2.5 Arrange all the containers in the lot in a systematic manner and starting from any container count them as 1,2,3, up to and so on. where r is the integral part of Nin, N being the lot side and n the number of containers to be chosen. Every rth container thus counted shall be withdrawn from the lot to give a sample for tests.

F.3 TEST SAMPLES

F.3.1 From each of the containers selected (see Table 2), a test sample weighing about 20 g shall be drawn with an appropriate sampling instrument. I' squeezed out from small bottles provided with dispenser initial portion may be discarded while collecting the sample. The samples collected shall be stored separately in suitable sample containers.

F.4 NUMBER OF TESTS AND CRITERION FOR CONFORMITY

F.4.1 Tests for all the characteristics specified in Clause 4 shall be performed on each of the samples drawn as in F.3.

F.4.2 The lot shall be declared as conforming to specification if all the sample satisfy the specified requirements

TABLE 2 Scale of sampling

Lot size N	No. of containers to be selected r
Up to 100	3
101 to 200	**4**
201 to 300	5
301 to 400	6
401 to 500	7
501 to 600	8
601 to 800	9
801 and above	10

Bibiography

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