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DRAFT ZANZIBAR NATIONAL STANDARD

Envelope — Specification

DRAFT FOR STAKEHOLDERS COMMENT

ZANZIBAR BUREAU OF STANDARDS

PCD 429: 2022

Foreword

This draft Zanzibar National standard has been developed by Stationary and paper product Standards Technical Committee (TCC5). In accordance with ZBS general procedures, this draft standard is presented to the public in order to receive any technical and editorial comment concerns.

The Zanzibar Bureau of Standard (ZBS) was established under Standard Act No. 1 of 2011.

In the preparation of this Draft Zanzibar National Standard assistance was drawn from the following documents:

IS 13892:2016 Correspondence envelopes – Specification

IS 1060, (Part 3): 2019 Methods of sampling and test for paper and allied products

Technical Committee Representatives

This draft Zanzibar National Standard was prepared by Stationary and paper product Standards Technical Committee which consists of representatives from the following organizations:

Chief Government Chemist Laboratory Agency (CGCLA)

Department of Environment (DoE)

Zanzibar Government Printing Press agency (ZAGPA)

Zanzibar Library Services Board (ZLSB)

Supplier Yaks

Department of Forest (DoF)

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Envelope - Specification

1 Scope

This Draft Zanzibar National Standard prescribes the designations, requirements and methods of sampling and test for correspondence envelopes in general and machineable mail in particular intended to be sent by post.

2 Normative references

For the purpose of this Draft Zanzibar National Standard, the following references shall apply:

ZNS 94, *Rounding off numerical values*.

PCD 431, (Part 1) Methods of sampling and test for paper and allied products

ISO 216:2007, Writing paper and certain classes of printed matter — Trimmed sizes — A and B series, and indication of machine direction

ISO 478:1974, Paper — Untrimmed stock sizes for the ISO-A Series — ISO primary range

ISO 593:1974, Paper — Untrimmed stock sizes for the ISO-A Series — ISO supplementary range

IS 2257, Paper adhesives, liquid gum and office paste type

ISO 269, Correspondence envelopes — Designation and sizes

ISO 535, Paper and board — Determination of water absorptiveness — Cobb method

ISO 536, Paper and board — Determination of grammage

ISO 2494, Paper and board — Recommended procedure for the determination of roughness — Constant-pressure air-flow method

PCD 430, Method for determination of porosity of paper

ISO 1831, Printing specifications for optical character recognition

ISO 24253, Random sampling and randomization procedures

3 Terms and definitions

For the purpose of this draft Zanzibar National standard the following (terms and) definitions shall apply:

3.1

Banker Shape

With opening on the longer side of the envelope.

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3.2

Bottom Flap

The flap on the bottom of the pocket type envelope gummed to the body to seal the bottom, saving the contents from falling out.

3.3

Machineable Mail

First class letters and cards satisfying the requirements of dimensions and paper parameters which make them amenable for processing in high speed automatic mail processing machines.

3.4

Pocket Shape

With opening on the shorter side of the envelope.

3.5

Print Contrast

The difference between the reflectance of a character and that of the paper on which it is printed.

3.6

Print Contrast Signal (PCS)

The ratio, Print contrast divided by the reflectance of the paper on which the character is printed. Also known as print contrast ratio.

3.7

Sealing Flap

The flap on the top edge of the envelope which will act as a closure. This flap may or may not be gummed.

3.8

Seam

The central point running parallel to the height of the pocket type envelope. It may be in the centre or the side.

3.9

Window

A rectangular cut-out made in the face of an envelope and filled with a transparent material through which an address or other information shall be read.

4 Types

The envelopes shall be of the following two types depending on their shape, namely:

- a) *Type 1* — Pocket shape envelope, and
- b) *Type 2* — Banker shape envelope.

Both these types may be with or without window.

NOTE — Pocket shape should be discontinued gradually as it causes rejection in automatic mail sorting machine.

Correspondence envelopes shall be designated by a reference to the type followed by an indication of size.

Table 1: Dimensions of Envelopes

S/NO	Size symbols	Size (mm)
i.	-	90 x 140
ii.	-	90 x 152
iii.	-	100 x 176
iv.	-	105 x 230
v.	DL ¹	110 x 220
vi.	C6	114 x 162
vii.	B6	122 x 176
viii.	C5	162 x 229
ix.	B5	176 x 250
x.	C4	229 x 324
xi.	B4	250 x 353
xii.	C3	324 x 458
xiii.	9 X 4	101 X 228
xiv.	A5	148 X 210
xv.	A4	210 X 297
xvi.	A3	297 X 420
xvii.	X-RAY	420 X 490

NOTE: Other dimensions shall be as agreed to between purchaser/supplier and manufacturers.

¹) Dimension lengthwise.

5 Materials

5.1 Paper

The grammage of the paper used shall be dependent on the area of the envelope and it shall be as per Table 2, when tested by the method prescribed in ISO 536.

Table 2: Grammage of paper

Area of envelop ($\times 10^3 \text{ mm}^2$)	Grammage (g/m^2) min
Up to 30	70
31 to 80	90
81 to 120	120
121 and above	140

5.1.1 Surface of the paper shall normally be with uniform structure; free from dust/dart, blemishes, creases, specks, holes, etc. Mineral filling shall not cause corrosive or abrasive damage to transport means.

5.1.2 Colour of the paper shall be white or coloured.

5.1.3 The paper shall be dimensionally stable and flat when kept in ambient conditions of 20-80 percent relative humidity and 15 to 35°C temperature.

5.1.4 The paper shall also comply with the requirements given in Table 3.

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5.2 Cloth Lining

The cloth lining shall be of cotton, grey unbleached and/or plain wove. The cloth, when visually examined, shall be reasonably free from all defects, such as knots, joints, holes, cuts, weaving defects, etc.

5.2.1 Ends and picks of the lining cloth per centimeter shall be 9 to 10 and the substance shall be 45 ± 2 g/m².

5.3 Window Material

The glassine paper of 35 g/m², cellophane paper of 40 g/m² or PVC/BOPP of 15 micron thickness shall be used as window material. The material shall stick firmly without any wrinkles to the inner side of plain front of the envelope.

5.3.1 Transparency shall be adequate to ensure proper legibility to text under the window with normal sight. Print contrast signal (Print contrast ratio) of address with respect to the background shall be at least 40 percent when tested according to ISO 1831.

6 Requirements

6.1 General

The envelope shall be a flat case, generally rectangular in shape and made from one sheet of paper.

6.1.1 The paper shall be so folded as to provide a plain front and a back consisting of four overlapping flaps. Three flaps shall be stuck together and completely sealed while the fourth, which may or may not be gummed, serves as a closure (or sealing flap) (see Fig. 1). The left and right side flaps shall be sealed under the bottom flap.

6.1.1.1 In case the fourth flap is gummed, the adhesive used for this purpose shall be re-moistenable, non-hygroscopic, non-toxic and of vegetable or synthetic type. The adhesives used for making the envelopes shall be of good quality and may not deteriorate with age or under particular environmental condition.

6.1.2 The paper used for making envelope may be cloth lined, if desired by the purchaser.

6.1.3 The front or working side may have a window fitted with transparent material (see 5.3).

6.1.4 The overlay between envelope and envelope window shall be glued carefully and completely to the inner side of the envelope and shall be located outside the reserved area for bar coding.

6.1.5 The lowest part of the address side of the envelope, 20 mm wide, covering the whole length of the envelope shall be reserved for bar coding.

6.1.6 The inner portion of the envelope may be tinted, if desired by the purchaser; design and shade of tint shall be as agreed to between the purchaser and the supplier.

6.2 Joints

The pasting of the joints, wherever required, shall be even and continuous without leaving any gap or opening. The gum applied on the sealing flap, seam and bottom flap shall not extend beyond the overlapping portion. The left and right side flaps shall be sealed under the bottom flap.

6.2.1 The width of the bottom flap and the seam shall be between 1.5 cm and 2.5 cm to ensure the strength of the envelope and the safety of its contents.

6.3 Flaps

The flaps for closing the envelopes shall be of suitable shape, as agreed to between the purchaser and the supplier. Their width shall be such that it closes the envelope securely and ensures the safety of its content.

NOTE: The adhesive applied on the sealing flap should not go beyond the overlapping area so that it should not stick to the letter in the envelope.

Table 3: Requirements for Paper for Correspondence Envelopes

S/NO	Characteristics	Requirements	Test methods
i.	Burst index N m ² /g, <i>Min</i>	2.0	PCD 431 (Part 1)
ii.	Tear index (Machine direction), mN m ² /g, <i>Min</i>	12.0	PCD 431 (Part 1)
iii.	One minute Cobb test: a) For both top and wire side, <i>Max</i> b) Difference between top and wire side Cobb value, percent, <i>Max</i>	22 15	ISO 535
iv.	Stiffness (Taber): a) 15° in direction of grain b) 15° across the grain	2-20 1-10	Annex A
v.	Smoothness (Bendtsen), ml/min (for both top and wire side)	50-300	ISO 2494
vi.	Porosity (Gurley), 100 ml/s, <i>Min</i>	10	PCD 430
vii.	Opacity, <i>Min</i>	85	PCD 431 (Part 1)

6.4 Size

6.4.1 Dimensions of Envelopes

The nominal dimensions of envelopes shall be as given in Table 1.

6.4.2 Dimensions of Windows

For envelopes with window, the nominal dimensions of the window shall be 39 mm × 93 mm, distance of the left edge of window from left edge of envelope shall be 20 mm and distance of lower edge of window from bottom of envelope shall be 20 mm.

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6.4.3 Tolerances

The tolerance on all nominal dimensions given in Table 1 shall be ± 2 mm.

6.5 Printing

The envelopes, if required, may be suitably and distinctly printed as agreed to between the purchaser and the supplier. This printing shall be on the smooth surface of the paper and at least 2.0 cm away from any of the edges. Six boxes for Pin number of sizes as given in postal envelope, if required, shall be printed above 20 mm from the bottom edge at the right-hand side leaving 20 mm from the edge. One box of sizes 30 mm \times 30 mm or 40 mm \times 25 mm for stamp shall be printed at the top right-hand corner leaving 20 mm from both the sides.

7 PACKING AND MARKING

7.1 Packing

The correspondence envelopes shall be securely packed as agreed to between the purchaser and the supplier.

7.2 Marking

Each package shall be marked with the following information:

- a) Indication of the source of manufacture,
- b) Size of the envelope,
- c) Number of envelopes in the package, and
- d) Batch number with month and year of manufacture.

7.2.1 The product may also be marked with the Standard Mark.

7.2.2 The use of the Standard Mark is governed by the provisions of Bureau of Zanzibar Standards and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from Zanzibar Bureau of Standards.

8 Sampling

The number of correspondence envelopes to be sampled (n) from each lot shall be as given in Table 4.

Table 4: Scale of Sampling

Lot Size (N) (Number of Envelopes)	Sample Size (n)	Acceptance No.
Up to 100	5	0
101 to 150	8	0
151 to 300	13	1
301 to 500	20	1

501 to 1 000	32	2
1 001 to 3 000	50	3
3 001 to 10 000	80	5
10 001 and above	125	7

8.5 Criteria for Conformity

a) While conducting the tests for paper quality, no failure shall occur for the lot to be accepted as conforming to this specification.

b) An envelope shall be termed as defective if it fails in one or more visual or dimensional requirements (as per 5.1.1 to 5.1.4, 5.2, 5.3, 6.1 to 6.5). The number of defectives in the sample shall be less than or equal to the permissible number of defectives [acceptance number as per Table 4, col 3] for the lot to be accepted as conforming to this specification.

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Annex A
Normative
Test for stiffness

A.1 Apparatus:

The apparatus shall consist of the following:

- a) sample holder in which the test piece can be clamped;
- b) Means of applying a controlled bending moment to be portion of the test piece protruding from the clamp, the moment arm being 10 mm in length; and
- c) Suitable scales to indicate simultaneously the angular deflection of the moment arm and the bending moment applied.

A.2 Test Pieces - Representative test pieces 15 mm wide and about 50 mm long shall be cut from the sample in both the machine and the cross directions.

A.3 Procedure

A.3.1 Clamp a test piece in the holder so that the free end of the piece projects 15 to 20 mm. Apply the bending load at such a rate that the moment arm is deflected through 5° in 5 seconds. Note the value of the bending moment and release the load. Repeat the operation three or four times. Record the average bending moment for the test piece in g.cm for a 5° deflection in 5 seconds, neglecting the first reading.

A.3.2 Cut the next piece in the same direction but deflect it in the opposite sense that is towards or away from the front side as the case may be. Test at least four test pieces in each sense from the machine direction and an equal number from the cross direction.

A.3.3 Calculate the bending moment in the machine and the cross directions separately and report the average as the stiffness of the sample.

A.3 The value may also be expressed as stiffness factor as follows:

$$\text{Stiffness factor} = \frac{\text{average stiffness}}{10 t^3}$$

where;

t = thickness in mm