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Shaving Systems - Disposable Razors - Specification

ZANZIBAR BUREAU OF STANDARDS

First edition

National Foreword

This Zanzibar National standard was prepared by the Mechanical and Automotive Standards Technical Committee and approved by ZBS Board of Directors in accordance with the General procedures and guidelines for the development of Zanzibar National Standards.

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

In the preparation of this Standard, the reference was made to the following source:

IS 13973: 1994 - *Shaving Systems - Disposable Razors - Specification*

Technical Committee Representatives

This Zanzibar National Standard was prepared by the Mechanical and Automotive Standards Technical committee which consist of representatives from the following organizations:

Buda Auto Parts
Department of Environment Zanzibar (DoE)
Government Agency for Automobile Workshop Services (GAAWS)
Karume Institute of Science and Technology (KIST)
Zanzibar Road Transport and Safety Authority (ZARTSA)
Zanzibar Utilities Regulatory Authority (ZURA),
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Shaving Systems - Disposable Razors – Specification

1. Scope

This standard covers the requirements of disposable razors which is a self suflicient unit with blade fixed on the handle which may be twin type or single type used for shaving purpose. Razors are discarded when the blade becomes unusable.

2. Normative references

There are no normative references in this document.

3. Terms and definitions

For the purposes of this document, the following terms and definitions apply

3.1

protrusion (E)

a perpendicular distance of the cutting edge of the blade which remains beyond the reference line drawn tangentially to the top cap and the seat serration bar arc from the reference line is defined as protrusion of the blade.

3.2

shaving Angle (A)

an angle between a reference line which bisects the included angle of the cutting edge of the blade and the line drawn tangentially from the cutting edge of the blade to the seat serration bar arc.

3.3

span of Blade (S)

It is the distance between the edge of the blade and the tangent point on the seat serration bar arc.

3.4

protrusion of the Top Blade (PT)

A reference line which extends from the cutting edge of bottom blade to a tangent point on the surface of the top cap and the perpendicular distance that the cutting edge of the top blade remains beyond from the reference line is known as the protrusion of top blade.

3.5

protrusion of the Bottom Blade (PR)

reference line which extends from the cutting edge of top blade to the tangent point of blade seat serration bar arc and the perpendicular distance of the cutting edge of bottom blade remain beyond that line is known as protrusion of bottom blade.

3.6

effective Shaving Angle or Tangent of Top Blade (AT)

angle between a reference line which bisects the included angle of the cutting edge of top blade and the line that extends from the cutting edge of top blade to the cutting edge of the bottom blade.

3.7

effective shaving angle or tangent angle of bottom blade (AB)

angle between a reference line which bisects the included angle of cutting edge of the bottom blade, and the line that extends from the bottom blade to the tangent point on the seat serration arc.

3.8

span of top blade (ST)

distance between edge tips of the top blade and the bottom blade taking exactly one above other.

3.9

span of bottom blade (SB)

distance between edge of bottom blade and the tangent point on the seat serration bar arc.

3.10

blade's offset (OS)

distance between the both blade cutting edges.

3.11

groove width for razor head slide (SL)

width between which the razor head of the sliding type razor is inserted.

4. Types

4.1 Disposable razors covered in this standard shall be of the following types depending upon the number of blades used for shaving:

i) Twin Blade Type

ii) Single Blade Type

Schematic arrangement is shown in Figure. 1

5. Materials

5.1 The material used in the manufacture of different components of disposable razors shall be such that they would ensure good performance.

5.2 The material to be used for the manufacture of top cap, composite seat with handle and spacer shall be High Impact Polystyrene as shown in table 1

Table 1: Polystyrene Materials, Detail Requirements, Natural Colour Only

Description	Grade	Melt flow rate (200/5kg), g/10min, Minimum	Izod Impacts[2] (12.7x6.35mm) kg.cm/cm Noth, Minimum	Tensile Strength[3]), at Yield, kg/cm^2, Minimum	Percent, Elongation Minimum
High impact	1	3.0	10.0	220	45
	2	4.0	9.0	250	40

2) kg. cm/cm Notch = ft./lbf/in. x 5.44, ft. lbf/in Notch = 53.39 J/m.

3) kgf/cm^2 = psi x 0.0704: 6.9865 x 10^{-3} psi = MPa.

5.3 The materials of the blades shall be cold rolled stainless steel strip of medium thickness (0.1 $\pm$ 0.005 mm)

5.4 The spacer may also be made of aluminium alloy strip (0.50 $\pm$ 0.02 mm)

6. Shapes

The shape of the disposable razors shall be as shown in Figure 1.

7. Dimensions

DIMENSIONS	A	C	D	E	L	S	W

			mm	mm	mm	mm	mm
MAXIMUM	35^0	70^0	16	0.18	130	1.66	40.2
MINIMUM	22^0	60^0	6	0.03	70	1.3	39.3

7.1 The dimensions of the single blade disposable razor shall be as shown in Figure I and Figure 2).

Table 2: The dimensions of the single blade disposable razor

7.2 The dimensions of the twin blade disposable razor shall be as shown in Figure I and Figure 2)

Table 3: The dimensions of the twin blade disposable razor

DIMENSIONS	*W*	*P*T	*P*B mm	*A*T	*A*B	*S*T mm	*S*B mm	*O*S	SL	SP
MAXIMUM	40.2	0.10	0.10	27^0	30^0	1.65	1.60	1.50	7.35	20.10
MINIMUM	39.3	-	-	21^0	23^0	1.45	1.40	1.35	7.10	19.20

8. Workmanship and finish

8.1 All the parameters of double edge such as cutting edge, straightness and parallelism, flexibility of blade, final bevel angle of cutting edge, hardness and anti-corrosiveness.

8.2 Swarf cleaning facilities shall be in cartridge for cleaning after shaving.

8.3 The disposable razor when it reaches to the customer shall be in a clean and new condition and free from dirt and dust.

9. Test for finished disposable razor

9.1 Measurement of Exposure and Shaving Angle

Tie contour of cartridge is recorded by the movement of the stylus or the cartridge with the help of contourgraph at 20 X. All the reference lines are drawn as per 3. The measurement of exposure and shaving angles are taken with the help of a scale and an angle protractor.

9.2 Microscopic Examination

Oil, grease, protective film and other adherent particles should be removed from the cutting edge of the blades by any suitable means which shall not damage the blade edge. The blade shall be placed under a microscope at 100 X with proper illumination. The size of nicks greater than 0.01 mm shall be counted and average number of nicks should not be greater than 3.0.

10. Performance test

10.1 General

The test shall be carried out on 24 $\pm$2 hours old human 'stubble'.

10.2 Procedure

The operator shall shave using the disposable razor employing usual shaving technique with shaving soap. The operator shall also follow the guidelines (if any) for the use of the razors given by the manufacturer.

10.3 Size of the Panel of the Operators and the 'Number of Blades to be Tested

For evaluating the performance, a panel consisting of five operators shall be formed. Each operator shall be given a set of five razors and shall be required to evaluate the performance of all the razors. With each razor the operator shall be required to shave on consecutive days till the razor has become unsatisfactory for use.

10.4 Expression of Results and Evaluation of the Performance

10.4.1 An operator shall grade the satisfaction of the shave (with regard to smoothness and closeness of the shave) on each day by awarding points in a scale of five. For the purpose of this standard, the points 1 to 5 shall indicate the performance as follows:

Point 1: Very unsatisfactory

Point 2: Unsatisfactory

Point 3: Average (neither unsatisfactory nor satisfactory)

Point 4: Satisfactory

Point 5: Very satisfactory

10.4.2 The number of shaves where the score per shave is 3 or above for all the five razors and the corresponding scores shall be totaled up separately and average number of shaves per razor and average score per shave shall be calculated. The razors shall be considered satisfactory with regard to the performance requirement when the following criteria are fulfilled:

a. The average number of shaves per razor shall not be less than 4 in case of single blade type and 8 in case of twin blade type;
b. The average score per shave is 3.5 or more.
c. When the average score per shave is less than 3.5 then in order to give weightage to number of extra shaves a value of 0.1 shall be added to the average score obtained for every additional increase of 0.5 in average number of shaves beyond 4 in case of single blade 8 in case of twin blade razor.

11. Marking

11.1 Each razor shall be legibly and indelibly marked either with the manufacturer's name or initials or trade-mark.

11.2 Each individual packet of disposable razor shall be marked with the following information:

a. Name of manufacturer;
b. Trade mark of manufacturer, if any;
c. Batch number; and
d. Manufacturing date.

12. Packing

12.1 Each disposable razor shall be packed in a tamper proof packing.

12.2 The packing shall be in accordance with the accepted trade practices, or as agreed to between the purchaser and supplier.

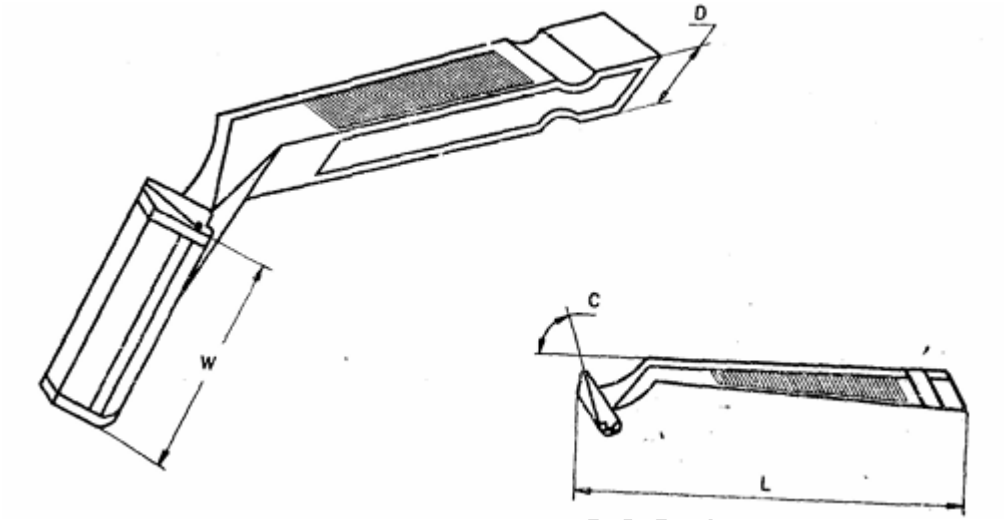
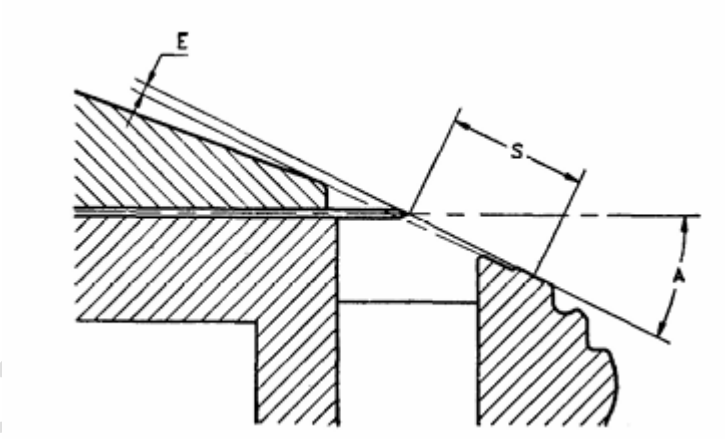
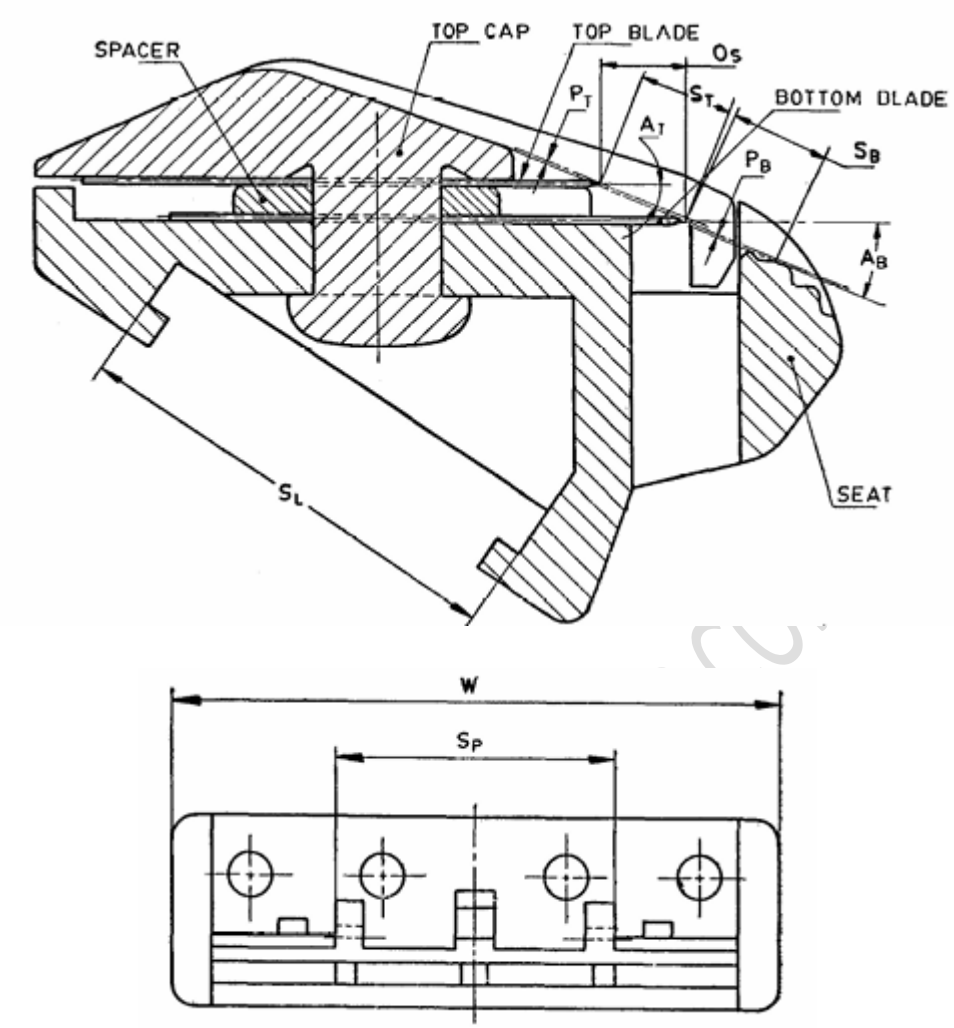


Figure 1: Disposable Razor



Single blade



Twin Blade

Figure 2: Cartridge Dimensions of Disposable Razor