Draft
Tanzania Standard
Textiles – Towels – Specifications
0. Foreword

This second edition of this Draft Tanzania Standard has been prepared to help manufacturers of towels in producing products of defined quality and hence safeguarding the interests of the consumer.

This second edition cancels and replaces the first edition TZS 899: 2006 Textiles – Towels – Specification which is due for review.

In this second edition the parameters of mass per unit area, breaking strength and colour fastness have been reviewed so as to be in harmony with technological trend in Tanzania. Performance requirement of knitted terry towels have been incorporated in this second edition.

In the preparation of this Draft Tanzania Standard assistance was derived from:

- **KS 408 - Towels – Specification**
- **ASTM D5433 -12 Standard Performance Specifications for Towel Products for Institutional and Household Use**

Acknowledgement is made for the assistance received from these sources.
1. Scope

1.1 This Draft Tanzania Standard specifies the evaluation of specific performance characteristics of importance in woven and knitted terry kitchen towel, Dish towel, crash towel, Huck towel, hand towel, wash towel and bath towel.

1.2 The Draft Tanzania Standard may be used by mutual agreement between the purchaser and the supplier to establish purchasing specification requirements.

1.3 This Draft Tanzania Standard is not applicable for coated and laminated products, nonwoven products, or terry fabrics used for apparel.

2. Normative references

The following referenced documents are indispensable for the application of this document. 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 20, Method for determination of number of threads per centimeter

TZS 21, Method for determination of mass per unit length and mass per unit area of woven or knitted fabrics

TZS 22, Method for determination of breaking load and extension of strips of woven textile fabrics

TZS 23, Method for determination of colour fastness of textile materials to artificial light (xenon arc lamp)

TZS 40, Method for determination of colour fastness of textile materials to daylight
TZS 43, Method for determination of colour fastness of textile materials to washing

TZS 137, Method for determination of dimensional change of woven and knitted fabrics and garments

TZS 138, Method for determination of colour fastness of textile materials to rubbing

TZS 262, Method for determination of linear density of yarn (mass per unit length) – Skein method

TZS 534, Standard atmospheres for conditioning and testing
3. Terms and definitions

For the purposes of this Draft Tanzania Standard, the following terms and definitions shall apply.

3.1 Pile (terry or Turkish)

cut or uncut loops composing the surface of a fabric. The pile may be on one or both sides of the fabric.

3.2 Towel heading

Plain (not terry) portion of the towel including the end hems. The heading may be continuous from the hem to the main body of the towel or may include a bar of terry as decorative element.

3.3 Length of the towel

Length of the material alone without the fringes

3.4 Width of the towel

Total width of the towel including the selvedges or sewn hems

3.5 Crash towel

Super absorbent towels made of 100% cotton ideal for wiping up big spills.

3.6 Huck towel

Made from a pure cotton fabric favored for cleaning surgical instruments, window washers, car dealers and cleaning companies also use these long-lasting, absorbent towels, as they tend to hold up well even after many washings. “Huck” refers to the style of weave used to make the fabric. A huck towel typically has one smooth side and one with threads slightly raised above the surface.

4. Requirements

4.1 Yarn – The yarn used in the manufacture of the towel shall be soft and uniform spun and free from spinning defects.

4.2 Fabric – The fabric used shall be either of the following:

a) All cotton;

b) One in which the pile is composed of a minimum of 50% cotton blended with viscose and in which the base yarns are all cotton.

4.3 Breaking strength, dimension change, bursting strength and colour fastness ratings

The requirement of towels with respect to breaking strength, bursting strength, dimensional change and colour fastness ratings shall be as given in Table 1 and Table 2.
Table 1 knitted and woven Terry fabric Specification Requirements.

<table>
<thead>
<tr>
<th>SN</th>
<th>Characteristics</th>
<th>Kitchen towels</th>
<th>Dish cloth</th>
<th>Bath, Hand wash cloths, Baths sheets.</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Breaking strength</td>
<td></td>
<td></td>
<td></td>
<td>TZS 22</td>
</tr>
<tr>
<td></td>
<td>Warp, min;</td>
<td>178N</td>
<td>220N</td>
<td>178N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weft, min;</td>
<td>133N</td>
<td>178N</td>
<td>133N</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Bursting Strength</td>
<td>222N</td>
<td>222N</td>
<td>133N</td>
<td>TZS 22</td>
</tr>
<tr>
<td>3</td>
<td>Dimensional Change</td>
<td></td>
<td></td>
<td></td>
<td>TZS 137</td>
</tr>
<tr>
<td></td>
<td>Warp, max;</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weft, max;</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bow and Skew, max;</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td></td>
</tr>
</tbody>
</table>

Table 2– Colour fastness ratings for terrycloth

<table>
<thead>
<tr>
<th>SN</th>
<th>Agency</th>
<th>Minimum</th>
<th>Rating</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Light</td>
<td>4</td>
<td></td>
<td>TZS 23</td>
</tr>
<tr>
<td>ii)</td>
<td>Washing</td>
<td>Color change</td>
<td>4</td>
<td>TZS 43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Staining</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>iii)</td>
<td>Rubbing</td>
<td>Wet</td>
<td>3</td>
<td>TZS 138</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dry</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

5. Finish

5.1 The borders of the towel along the length shall be finished with selvedges which shall not be less than 4 mm wide. The selvedges shall be woven firm, straight and even.

5.2 The borders of the towel along the width shall be finished with selvedges, hems or fringes. The fringes shall be at least 25mm long. The sewn borders shall be not less than 8 mm wide, the raw edges having a turn-in of a minimum 4mm before the hem is formed.

5.3 The sewing thread shall be of even tension and the ends finished securely and neatly. The number of stitches shall be not less than 32 stitches per 10cm. The sewing thread shall match the shade and colour fastness as the towel.

5.4 The bleached cloth shall have a full white finish. The dyed towel shall be evenly dyed, free from stains and patches. The colour fastness of the dyed towel shall comply with the requirements given in table 2.
6. Absorbency

The absorbency of the towel when tested in accordance with annex A, shall not exceed 20 seconds for duration of complete saturation.

7. Dimensions

The dimensions of the towel shall be as declared on the label subjected to tolerance of ±2% or if not declared shall be one of the following combinations with the tolerance of ±2%

<table>
<thead>
<tr>
<th>Table 3 Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand and kitchen towel, cm</td>
</tr>
<tr>
<td>Bath towel, cm</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Face towel, cm</td>
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<td></td>
</tr>
</tbody>
</table>

8. Grading

Towels shall be graded into Grades A and B as specified below.

8.1 Grade A
In addition to complying with all the requirements of this Draft Tanzania Standard, when visually examined, Grade A towels shall not have any major or minor defects specified in Annexes B and C.

8.2 Grade B
In addition to complying with all the requirements of this Draft Tanzania Standard, when visually examined, Grade B towels shall not have any major and not more than three (3) minor defects specified in Annexes C.

9. Marking and packing

9.1 Marking
The towel shall be marked with the following information:
   a) Manufacturer’s name and or/ trade name
   b) Name of the material
   c) Size of the towel

9.2 Packing
The towel shall be packed in a suitable material e.g. polyethylene bags to ensure protection against stains and dust.
Annex A
(Normative)
Determination of absorbency

Wash the towel in water at approximately 95°C and let it dry. Cut from the test towel three square test specimens of approximately 75mm. Condition them in accordance with TZS 534 (see clause 2). Place each specimen on the surface of water at a temperature of 25°C±5°C and measure the sinking time of the specimen. The average of the three readings is the absorbency time of the towel.
Annex B
(Normative)

List of major defects of towels

i) Weft crack or two or more missing picks across the width of the towel.

ii) More than two adjacent ends running parallel, broken or missing and extending beyond 15cm.

iii) Conspicuous broken pattern.

iv) Gout due to foreign matter, usually lint or waste woven into towel.

v) Coloured fleck.

vi) Defective hemming.

vii) Blurred or dark patch.

viii) Patchy or streaky or uneven dyeing.

ix) Dye bar.

x) Oil or other stain more than 10mm in size.

xi) More than one adjacent end missing in the body of the material running throughout the towel or more than three ends missing at a place and running over 60cm.

xii) Smash rupturing the texture of the towel.

xiii) Hole, cut or tear in the body of the material.

xiv) Damaged selvedge throughout the towel.
Annex c
(Normative)
List of minor defects in towels

i) Weft bar due to difference in raw material, count, twist, luster, colour, shade or pick spacing of adjacent groups yarn.

ii) Warp or weft float in the body of the towel.

iii) Uneven pile.