Frozen uncooked chapati – Specification
0 Foreword

Frozen Uncooked Chapati is frozen wheat flour products made from kneaded flour to make flattened dough without leavening agents. The kneaded dough is divided into rolls which are flattened into pliable discs ready for cooking. They are prepackaged, sealed, and frozen at a temperature below -18 °C.

This Tanzania Standard has been formulated to ensure preparation, manufacture or processing of frozen uncooked chapati of good quality and safety intended for human consumption.

In preparation of this Tanzania Standard assistance was derived from:

   a) Local manufacturers


In reporting the result of test or analysis made in accordance with this Tanzania Standard, if the final value observed or calculated is to be rounded off, it shall be done in accordance with TZS 4 (see clause 2).

1 Scope

This Tanzania Standard specifies requirements, sampling and methods of test for frozen uncooked chapati intended for making ready to eat chapati. The standard applies to kneaded flattened pliable flour discs, prepared from wheat flour milled from *Triticum aestivum* L or club wheat, *Triticum compactum* (Host) or a mixture thereof.

2 Normative references

The following referenced documents are indispensable for the application of this standard. 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 100 *Plantation (mill) white sugar-specification*

TZS 101 *Refined white sugar- specification*

TZS 109: *Code of hygiene for food processing units – General*

TZS 111 *Code of hygiene for bakery and biscuits manufacturing units*

TZS 118 -1 /ISO 4833-1 *Microbiology of the food chain —Horizontal method for the enumeration of microorganisms —Part 1: Colony count at 30 °C by the pour plate technique*

TZS 119/ ISO 4831 - *Microbiology of food and animal feeding stuffs – Horizontal method for detection and enumeration of coliforms – Most probable number technique*

3. Terms and definitions

For the purpose of this standard the following term and definition shall apply.

3.1 uncooked chapati

Is a flat wheat flour product, round or disc in shape made from kneaded flour without leavening agents.

3.2 Leavening agents

Substances causing expansion of doughs and batters by the release of gases within such mixtures, producing baked products with porous structure. Such agents include air, steam, yeast, baking powder, and baking soda.

3.3 Lot

Mean the quantity of packaged frozen uncooked chapati produced and packed from the same batch of manufacture.

4. REQUIREMENTS

4.1 General requirements

4.1.1 Appearance and colour

The frozen uncooked chapati shall have a uniform colour characteristic of the product and consistent in size and shape

4.1.2 Texture

The frozen uncooked chapati shall have a soft texture and be pliable upon thawing.

4.1.3 Foreign matter
All ingredients shall be clean, sound, wholesome, and free from foreign material and free from evidence of infestation.

4.2 Essential ingredients

The frozen uncooked chapati shall consist of the following ingredients:

- a) Wheat flour conforming to TZS 439
- b) Salt (Edible) Conforming to TZS 132
- c) Potable water conforming to TZS 789
- d) Cooking vegetable oil, butter or margarine conforming to relevant standards

4.3 Optional ingredients

The frozen uncooked chapati may consist of the following ingredients conforming to relevant standards:

- a) Sugar conforming to TZS 100,101 and, 831
- b) Flavorings
- c) Milk
- d) Coconut milk/creams
- e) Spices and condiments

4.4 Specific requirements

Frozen uncooked chapati shall comply with the following requirements as per Table 1.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Characteristics</th>
<th>Requirement</th>
<th>Method of test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Moisture content % m/m, max</td>
<td>45</td>
<td>TZS 331</td>
</tr>
<tr>
<td>2</td>
<td>Acid Insoluble ash % m/m, max</td>
<td>2.0</td>
<td>TZS 331</td>
</tr>
<tr>
<td>3</td>
<td>Fat content % m/m, max</td>
<td>10</td>
<td>TZS 331</td>
</tr>
<tr>
<td>4</td>
<td>Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thickness (mm)</td>
<td>3 – 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diameter (cm)</td>
<td>15 - 25</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Weight of 1 disc (g)</td>
<td>70 - 100</td>
<td></td>
</tr>
</tbody>
</table>

5 Hygiene

5.1 The frozen uncooked chapati shall be prepared, manufactured and packaged under hygienic conditions in accordance with TZS 109 and TZS 111

5.2 Frozen uncooked chapati shall be free from objectionable matter, pathogenic micro-organisms, substances originating from micro-organisms or any other deleterious substances in amounts which may constitute a health hazard. The frozen uncooked chapati shall also comply with the microbiological limits as given in Table 2.
Table 2: Microbiological limits

<table>
<thead>
<tr>
<th>S/N</th>
<th>Microorganisms</th>
<th>limits</th>
<th>Method of test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Salmonella</em> spp per 25 g</td>
<td>absent</td>
<td>TZS 122 part 1</td>
</tr>
<tr>
<td>2</td>
<td>Total Plate Count, cfu/g max</td>
<td>10⁵</td>
<td>TZS 118 part 1</td>
</tr>
<tr>
<td>3</td>
<td><em>Escherichia coli</em> cfu/g</td>
<td>&lt; 10</td>
<td>TZS 730 (Part 2)</td>
</tr>
<tr>
<td>4</td>
<td>Coliforms MPN/g max</td>
<td>10²</td>
<td>TZS 119</td>
</tr>
<tr>
<td>5</td>
<td>Yeast and moulds cfu/g</td>
<td>10³</td>
<td>TZS 2426-1</td>
</tr>
</tbody>
</table>

6 Sampling and methods of test

6.1 Scale of sampling

6.1.1 Samples shall be selected on each lot and tested separately for ascertaining their conformity to the requirements of this Tanzania Standard.

6.1.2 The number of discs to be selected from the lot shall be in accordance with column 2 of Table 3.

Table 3: Sampling Scale

<table>
<thead>
<tr>
<th>Number of discs in the lot</th>
<th>Number of discs to be sampled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 1200</td>
<td>9</td>
</tr>
<tr>
<td>1201 to 3600</td>
<td>12</td>
</tr>
<tr>
<td>3601 to 10800</td>
<td>15</td>
</tr>
<tr>
<td>10801 and above</td>
<td>21</td>
</tr>
</tbody>
</table>

6.2 Methods of tests

The tests shall be carried out as given in Tables 1 and 2.

7 Packing, marking and labeling

7.1 Packing

The frozen uncooked chapati shall be wrapped in two polyethylene sheets/wrappers capable of maintaining the quality of the product. The wrapped discs shall be packaged in food grade polypropylene bag as outer bag and frozen below - 18 °C.

7.2 Marking and labeling

7.2.1 Labelling of frozen uncooked chapati shall be done in accordance with the requirements of the TZS 538/EAS 38 and the following particulars shall be clearly and indelibly marked on each container; printing ink if any shall be non-toxic and non-transferable:

a) The name of the product

b) The name and address of the manufacturer;

c) Batch or code number;
d) Net weight;
e) A list of ingredients
f) Date of manufacture;
g) Country of origin
h) Nutrition information
i) The wording "store frozen below -18 °C";
j) Instructions for use/cooking instructions.
k) Expiry date
l) Instructions for disposal of used packages.
m) Allergens declaration/information.

7.2.2 The language on the label shall be “Swahili” or Kiswahili and English. A second language may be used depending on the designated market.

7.3 The pack of the frozen uncooked chapati may also be marked with the TBS Quality mark.

NOTE - The TBS Standards Mark of Quality may be used by the manufacturers only under licence from TBS. Particulars of conditions under which the licences are granted, may be obtained from TBS.