DRAFT TANZANIA STANDARD

Wafers – Specification

TANZANIA BUREAU OF STANDARDS
0 Foreword

Wafer is a crispy crunchy product made from wheat flour. Production, importation and marketing of wafers have increased in the country following trade liberalization. In the manufacture of wafer such as plain, sandwitched or coated wafer the consistency and composition of the butter; mixing time, baking time and temperature are of considerable importance.

This Tanzania Standard is being prepared to ensure safety and quality of wafers traded and manufactured in the country.

In the preparation of this Tanzania Standard assistance was drawn from the following publication:


In reporting the result of a 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.

1 Scope

This Tanzania standard specifies requirements, methods of sampling and test for wafers intended for direct human consumption. This standard applies to plain, modified, sandwitched and coated wafers.

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;

Codex standard 192 General Standard for food additives
TZS 4 Rounding off numerical values.
TZS 76 Method for determination of arsenic.
TZS 109 Food processing units – Code of hygiene
TZS 111 Bakery and biscuit manufacturing units – Code of hygiene.
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 122 -1/ISO 6579-1 Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of Salmonella- Part 1: Detection of Salmonella spp.
TZS 268: General atomic absorption spectrophotometric method for determination of lead in foods and foodstuffs.
TZS 439 -1/ EAS: 1 Wheat flour – Specification
TZS 439 -2/ EAS: 767 Fortified wheat flour – specification
TZS 730 -2/ISO 16649-2: Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of -b-glucuronidase-positive Escherichia coli – Part 2 – Colony-count technique at 44 0C using 5-bromo-4-chloro-3-indolyl-b-D-glucuronide
3 Terms and definitions

For the purpose of this Tanzania Standard, the following definitions shall apply:

3.1 wafer
Properly baked, crisp, crunchy, and light textured product made from the ingredients listed under 4 and conforming to the requirements detailed under 5.

3.2 plain wafers
Unfilled wafer which may be hollow or flat in any shape desired by the purchaser.

3.3 modified wafer
Filled wafer which can be:

3.3.1 double (filled) wafer
Wafer having two plain wafers pressed with filling of sugar in between with doubling plates.

3.3.2 sandwiched wafer
Wafer having two or more plain wafers sandwiched with filling in between. The filling may be of cream (e.g. orange, lemon or strawberry flavoured cream, among others.), jam, jelly, marshmallow, caramel, figs, raisins or the like and shall be 50-70 percent by mass of the filled wafer.

3.4 Coated wafers- These include both half-coated and full-coated wafers. The coating may be of chocolate, substitute fats butter scotch and the like and shall be 50-60 percent by mass of the coated wafers.

4 Requirements
4.1 General requirements

4.1.1 Wafers shall be properly baked and shall not show signs of under-baking or over-baking.

4.1.2 Wafers shall be crispy, crunchy and light in texture. The design impressed on them, if any, shall be clear.

4.1.3 Wafers shall have an agreeable odour typical of well baked wafers, and shall be free from soapy or other objectionable flavours.

Note. - The appearance, taste and odour shall be determined by sensory tests.

4.1.4 Wafers shall be free from insects, moulds, yeast, any harmful or foreign matters and contamination.

4.1.5 Each pack of wafers shall not have more than 5 % broken pieces.
4.1.7 The cream to be filled in wafers should be a homogenous mixed preparation of hydrogenated fat, or bakery shortening, icing sugar, flavours and permitted food colours with or without other ingredients in small proportions.

4.2 Ingredients

4.2.1 Essential ingredients

The following materials shall be used in the preparation of batter of wafers:

  a) Wheat flour, conforming to TZS 439
  b) Water, conforming to TZS 789
  c) Aerating agent, complying to TZS 2441 Specification for baking powder or other approved leavening agents, e.g. sodium bicarbonate or ammonium bicarbonate.

4.2.2 Optional ingredients

In addition to the 4.2.1 essential ingredients, wafers may contain the following any other optional ingredient complying with relevant Tanzania Standard:

  a) Food additives – antioxidants, emulsifiers, flavours, colorants, enzymes
  b) Cereals Chocolate
  c) Cocoa powder
  d) Desiccated coconut
  e) Dextrose
  f) Dry fruits and nuts
  g) Edible common salts
  h) Eggs
  i) Fat or shortening-hydrogenated edible oil, refined edible oil, bakery shortening, butter, mayonnaise, butter oil, or mixture of two or more of these
  j) Flour improvers
  k) Ginger
  l) Gluten
  m) Honey
  n) Jellifying agents
  o) Oilseeds and their products
  p) Spices
  q) Edible starches
  r) Sugar and sugar products
  s) Leaven and filling agents
  t) Other edible flours

4.3 Specific requirements

The wafers shall also comply with the requirements given in Tables 1.
Table 1 – specific requirements for wafers

<table>
<thead>
<tr>
<th>S/N</th>
<th>Characteristics</th>
<th>Requirements</th>
<th>Methods of test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Plain</td>
<td>Modified/coated Wafers</td>
</tr>
<tr>
<td>1</td>
<td>Moisture content, % m/m, max.</td>
<td>4.5</td>
<td>6.0</td>
</tr>
<tr>
<td>2</td>
<td>Acid insoluble ash (on dry basis), % m/m, max.</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AFDC 15(6522)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Acidity of extracted fat (as oleic acid), % m/m, max.</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>4</td>
<td>Crude fibre, % (max.), on dry basis</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Fat, % m/m (min.)</td>
<td>0.7</td>
<td>2.0</td>
</tr>
</tbody>
</table>

5 Food additives

Only the food additives permitted by CODEX STAN 192 in the manufacture of wafers may be used without exceeding the limits.

6.0 Hygiene

6.1 The wafers shall be prepared, manufactured and packaged under hygienic conditions in accordance with TZS 109 and TZS 111.

6.2 Wafers shall be free from pathogenic organisms and shall comply with microbiological limits in Table 2.

Table 2 – Microbiological limits for wafers

<table>
<thead>
<tr>
<th>S/N</th>
<th>Microorganisms</th>
<th>limits</th>
<th>Method of tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total Plate Count cfu / g</td>
<td>$10^3$</td>
<td>TZS 118 -1</td>
</tr>
<tr>
<td>2</td>
<td>E. coli cfu/g</td>
<td>&lt;10</td>
<td>TZS 730 - 2</td>
</tr>
<tr>
<td>3</td>
<td>Salmonella per 25g</td>
<td>Absent</td>
<td>TZS 122 - 1</td>
</tr>
<tr>
<td>4</td>
<td>Yeast and moulds cfu/g</td>
<td>$10^6$</td>
<td>TZS 2426 - 2</td>
</tr>
</tbody>
</table>
7.0 Contaminants

7.1 Mycotoxins

The total aflatoxins limits in the wafers shall not exceed 10 ppb and 5 ppb for aflatoxin B1.

7.2 heavy metal contaminants

The acceptable limits of Heavy metal in wafers shall conform to the requirements specified in Table 3

<table>
<thead>
<tr>
<th>Table 3 – Limits for heavy metals</th>
</tr>
</thead>
<tbody>
<tr>
<td>S/N</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

8 Sampling and method of tests.

8.1 Sampling

The method of drawing representative samples of wafers and the criteria for conformity shall be as prescribed in AFDC 15(6523)

8.2 Tests

Tests shall be carried out as prescribed in Table 1, 2 and 3.

9 Packing, marking and labelling

9.1 Packing

The wafer shall be packaged in food grade materials that will ensure the safety and integrity of the product throughout the shelf life.

9.2 Marking and labelling

9.2.1 Labelling of wafers 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) Name of the product shall be “wafers”
b) Type of wafer
c) number of wafers;
d) Name, trade mark and address of the manufacturer;
e) batch or code number;
f) Net weight,
g) list of ingredients;
h) Date of manufacture,
i) Expiry date,
9.2.2 The language on the label shall be “Swahili” or Kiswahili and English. A second language may be used depending on the designated market.

9.2.3 The containers of the wafers 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.