AFRICAN STANDARD

DARS 470

Third Edition 2023

Wheat flour — Specification

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ICS 67.060

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This African Standard was prepared by the ARSO Technical Committee on *Cereals, pulses and derived products* (ARSO/TC 12).

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Introduction

This revised standard has incorporated the specific compositional requirements for wheat flour. The standard prescribes the permissible levels of food additives in wheat flour. Microbiological requirements for wheat flour have also been stipulated.

This African Standard is a technical revision of the second edition ARS 470:2016(E), *Wheat flour — Specification* which is hereby superseded and cancelled.

Wheat flour — Specification

1 Scope

This Draft African Standard specifies the requirements, test methods and sampling for wheat flour prepared from common wheat (*Triticum aestivum* L.) or club wheat (*Triticum compactum* Host), or their mixtures intended for human consumption.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ARS 53, *General principles of food hygiene — Code of practice*

ARS 56, *Prepackaged foods — Labelling*

ARS 465, *Wheat — Specification*

CODEX STAN 192, *General standard for food additives*

CODEX STAN 150, *Standard for food grade salt*

ISO 1871, *Food and feed products — General guidelines for the determination of nitrogen by the Kjeldahl method*

ISO 2171, *Determination of ash content*

ISO 2591-1, *Test sieving — Part 1: Methods using test sieves of woven wire cloth and perforated metal plate*

ISO 4833, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of microorganisms — Colony-count technique at 30 degrees C*

ISO 5498, *Agricultural food products — Determination crude fibre content — General method*

ISO 6540, *Maize — Determination of moisture content (on milled grains and on whole grains)*

ISO 6579, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*

ISO 6888 (all parts), *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species)*

ISO 16050, *Foodstuffs — Determination of aflatoxin B_1, and the total content of aflatoxins B_1, B_2, G_1 and G_2 in cereals, nuts and derived products — High-performance liquid chromatographic method*

ISO 16649-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli — Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide*

ISO 21527-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 2: Colony count technique in products with water activity less than or equal to 0.95*

ISO 24333, *Cereals and cereal products — Sampling*

3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

3.1
wheat flour
product prepared from common wheat grain (*Triticum aestivum* L.) or club wheat (*Triticum compactum* Host) or their mixtures by grinding or milling process

3.3
white wheat flour
patent wheat flour
obtained by milling wheat grains at extraction rates that leaves negligible amounts of bran

3.4
bakers flour
white wheat flour obtained by milling wheat intended for bread making

3.5
household or home baking flour
product prepared from common wheat grain (*Triticum aestivum* L.) or club wheat (*Triticum compactum* Host) or their mixtures by grinding or milling process

3.6
biscuit flour
white wheat flour obtained by milling a blend of hard and soft wheat with a high percentage of soft wheat for biscuit manufacture

3.7
cracker flour
white wheat flour obtained by milling low protein wheat with no improvers

3.8
self-raising flour
white wheat flour obtained by milling a blend of soft and hard wheat to which raising agents are added

3.9
standard flour
wheat flour obtained by milling wheat grains at a higher extraction than home baking flour

3.10
soft wheat
wheat with low gluten content, and a soft, floury endosperm ratio of not less than 70 % mass fraction; in general, it is suitable for cake, biscuit, and low-volume breads

3.11
hard wheat
wheat with kernels having a high hardness criterion

3.12
wholemeal flour
wheat flour obtained by milling the entire wheat grain to fine particle size without any separation

3.13
atta flour
wheat flour of high extraction rate or white wheat flour to which pollard and or bran are blended

3.14
food grade packaging material

material which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product

3.15
foreign matter
organic or inorganic material other than wheat flour

4 Quality requirements

4.1 Raw materials

The wheat grain from which the flour is obtained shall be of sound quality, free from sand, have characteristic odour and flavour complying with ARS 465.

4.2 General requirements

4.2.1 All types of wheat flour shall have the characteristic colour and shall be free from any objectionable flavours and odours.

4.2.2 The flour shall be free from insects, worms, fungal infestation, rodent contaminations and foreign matter.

4.2.3 The flour shall not contain flour from other cereals. However, the addition of malted barley flour not exceeding 1 % is permissible in the case of baker's flour.

4.3 Specific requirements

The types of wheat flour shall comply with the specific requirements given in Table 1 when tested in accordance with the test methods specified therein.

4.4 Self-raising flour

In addition to the specifications given in Table 1, specific requirements for self-raising wheat flour may contain the following:

4.4.1 Edible salt conforming to CODEX STAN 150.

4.4.2 Acid ingredients

The acid ingredients shall be one or any combination of the following:

a) sodium acid pyrophosphate;

b) mono acid calcium phosphate;

c) sodium aluminium phosphate; and

d) sodium bicarbonate shall be in sufficient amounts to provide not less than 0.4 % of available carbon dioxide.

Table 1 — Specific requirements for wheat flour

Types of flour	Moisture content, max. %, m/m	Crude Fibre content, max. %, m/m on dry matter basis	Total ash content, max. %, m/m on dry matter basis	Residue on sieving through 180 micron sieve, max. %	Protein content, min. %, m/m on dry matter basis	Mixture of acid-ingredients and sodium bicarbonate added, max. %, m/m
White wheat flour	14	1.0	0.70	0.50	8.0	
Baker's flour	14	1.0	0.80	0.80	11.0	-
Home baking flour	14	1.0	0.80	0.80	9.0	-
Biscuit flour	14	1.0	0.8	0.80	8.0	-
Cracker flour	14	1.0	0.80	0.80	8.0	-
Self-raising flour	14	1.0	3.0	0.80	8.0	4.5
Standard flour	14	1.5	1.10	30.0	11.0	-
Atta flour	14	2.0	2.0	55.0	12.0	-
Whole-meal flour	14	2.0	2.0	30.0	12.0	-
Test method	ISO 6540	ISO 5498	ISO 2171	ISO 2591-1	ISO 1871	-

5 Food additives

Wheat flour shall contain only permitted additives specified in CODEX STAN 192.

5.4 Azordicarbonamide (ADA) and potassium bromate

This substance is not allowed in wheat flour.

6 Hygiene

6.1 Wheat flour shall be produced, prepared and handled in accordance with the provisions of appropriate sections of ARS 53.

6.3 The product shall be free from pathogenic micro-organism and shall comply with microbiological limits for wheat flour as given in Table 2 when tested in accordance with the test methods specified therein.

Table 2 — Microbiological limits for wheat flour

S/N	Micro-organism	Requirement	Test method
i.	Total plate count, cfu/g	10^5	ISO 4833
ii.	*Staphylococcus aureus* cfu/g max.	10^2	ISO 6888
iii.	*Escherichia coli,* MPN, max.	Absent	ISO 16649-2
iv.	*Salmonella*, per 25 g, max.	Absent	ISO 6579
v.	Yeasts and moulds, cfu/g, max.	10^4	ISO 21527-2

7 Contaminants

7.1 Heavy metals

Wheat flour shall comply with those maximum limits for heavy metals established by the Codex Alimentarius Commission for this commodity.

7.2 Pesticide residues

Wheat flour shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity.

7.3 Mycotoxins

Wheat flour shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for this commodity. In particular, total aflatoxins in wheat flour shall not exceed 10 µg/kg and 5 µg/kg for aflatoxin B_1 when tested in accordance with ISO 16050 and total fumonisins shall be not more than 1 mg/kg when determined using validated methods.

8 Packaging

8.1 Wheat flour shall be packaged in containers which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product.

8.2 The containers, including packaging material, shall be food grade.

8.3 When the product is packaged in sacks, these shall be clean, sturdy and strongly sewn or sealed.

9 Labelling

9.1 Labelling of retail packages

In addition to the requirements in ARS 56, each package shall be legibly and indelibly marked with the following:

a) product name as “Wheat flour”;

b) type of wheat flour;

c) name, address and physical location of the manufacturer/ packer/importer;

d) lot/batch/code number;

e) net weight, in kg;

f) the declaration “Food for Human Consumption’’;

g) storage instruction as “Store in a cool dry place away from any contaminants’’;

h) date of manufacture;

i) ‘best before’ date;

j) instructions on disposal of used package; and

k) country of origin.

9.2 Non-retail container

Information for non-retail containers shall either be given on the container or in accompanying documents, except that the name of the product, lot identification and the name and address of the manufacturer or packer shall appear on the container. However, lot identification and the name and address of the manufacturer or packer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

10 Sampling

Sampling shall be done in accordance with ISO 24333.

Bibliography

[1] EAS 1:2012, *Wheat flour — Specification*

[2] CODEX STAN 152-1985 (Rev. 1 - 1995), *CODEX Standard for wheat flour*

[3] Department of Agriculture, Regulation Gazette No. 30782, 22 February 2008, Agricultural Product Standards Act, 1990 (Act No. 119 of 1990), *Regulations relating to the grading, packing and marking of wheat products intended for sale in the Republic of South Africa*

