

PS: 383-2014
ICS No: 67.060

PAKISTAN STANDARD

Pakistan Standard Specification for Biscuits (Excluding Wafer Biscuits) (3rd Revision)



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PAKISTAN STANDARDS AND QUALITY CONTROL AUTHORITY
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**PAKISTAN STANDARD SPECIFICATION
FOR
BISCUITS (EXCLUDING WAFER BISCUITS)
(3rd REV.)**

0. FOREWORD
- 0.1 This Pakistan Standard Specification was adopted by the Pakistan Standards & Quality Control Authority, Standards Development Centre, on 30th December 2014 after the draft finalized by the Cereal, Pulses & their Products Technical Committee had been approved by the National Standards Committee for Agricultural & Food Products.
- 0.2 In the preparation of this standard the views of the Manufacturers, Consumers, Scientists, Technologists & Testing Authorities have been taken in to consideration.
- 0.3 The term 'Biscuits' covers a large variety of sweet, salted, filled and coated biscuits. This standard mainly lays down essential requirements to which biscuits of different varieties should conform.
- 0.4 This standard was established in 1964, first revised in 1980 and second revised in 2003. Keeping in view the latest technological and trade advances the committee felt it to revise in the light of latest development in the industries
- 0.5 For the purpose of deciding whether a particular requirement of this standard in complied with, the final value, observed or calculated expressing the results of a test or analysis, shall be rounded off in accordance with PS:103 for method of rounded off numerical values; the number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.
- 0.6 This standard is intended chiefly to cover the technical provisions relating to the supply of the material and it does not purport to include all the necessary provisions of a contract.
1. SCOPE
- 1.1 This standard prescribes the essential requirements; and the sampling for biscuits baked from dough containing essential materials (see clause 2) with or without the addition of other ingredients (see 3).
- 1.2 This standard applies to all type of Biscuits (excluding Wafer Biscuits).
2. ESSENTIAL INGREDIENTS (Halaal)
- 2.0 The following materials shall be used in the preparation of biscuit dough

- 2.1 Maida Flour - Conforming to PS: 381.
- 2.2 FAT OR SHORTENING – Hydrogenated Edible Vegetable Oil, PS: 221 for Banaspati, Bakery Shortenings, Refined Edible Vegetable Oil, Butter, PS: 1831 for Butter Oil PS: 2856 for Butter Oil Anhydrous Butter Oil and Anhydrous Milk Fat, (Ghee) or Margarine (PS: 1653).
- 2.3 WATER – Water Potable PS: 1932.
3. OTHER INGREDIENTS(Halaal)
- 3.1 In addition to the essential ingredients specified under 2 any of the following codex list of permitted food additives ingredients may be used in the preparation of biscuits.

3.1.1 Cereals and Cereals Products

Whole Meal Wheat Flour (Atta) PS: 380
 Semolina SUJI OR RAVA OF FARINA (PS: 190)
 Barley Flour (see PS: 192)
 Gram Flour (PS: 1798)
 Edible Food Grade Salt (PS: 3746)
 Edible Oat or Oat Flour,
 Corn Flour
 Rice Flour
 Malt Flour

3.1.2 Oil Seed Products

Soybean Flour (full fat or solvent extracted)
 Peanuts
 Peanuts Butter
 Peanut Flour, Expeller Pressed (see PS: 223) or Solvent Extracted.
 Cottonseed Flour

3.1.3 Edible Starches

Potato Starch, (PS: 154 for Maize, Rice, Wheat and Potato Starch)
 Sweet-Potato Starch, (PS: 547)
 Arrowroot Starch, (PS: 370)
 Maize Starch, PS: 4456 for Corn Flour Maize Starch (Food Grade)
 Wheat Starch

3.1.4 Milk & Milk Products

Casein, Edible (PS: 758)
 Milk Powder (Whole & Skimmed) (PS:363)
 Butter Milk and its solids
 Pasteurized Milk (see PS: 4561)
 Condensed Milk (PS: 364).
 Cheese (PS: 526).
 Whey Solid

3.1.5 SWEETENERS

Sugar for food Preservation (PS: 362).
 Sugars (Sucrose) (PS: 1822).
 Dextrose Monohydrate (PS: 140).
 Jaggery and Khandsari
 Sugarcane Molasses (PS: 139).
 Lactose, Fructose
 Malt extract/Malt syrup
 Honey (PS: 1934).

3.1.6 Fruit & Fruit Products

Desiccated Coconut
 Fresh / Dry Fruits
 Edible Nuts

3.1.7 Spices

Ginger
 Chilli powder (PS: 1742)
 Black pepper & white pepper (PS: 3432)
 Saffron (PS: 2987)
 Ajwain (PS: 4565)
 Cardamom (small Elaichi) (PS: 2094)
 Cumin whole (PS: 3112)
 Other edible permitted spices

3.1.8 Miscellaneous

Jam and Jellies (PS: 2096)
 Coffee Powder (PS: 763)
 Cocoa powder (Cocoas) and Dry cocoa Sugar mixture
 Chocolate & Covering chocolate
 Edible vegetable or vegetable products-soyabean milk, tartaric acid, citric acid
 Egg and egg products

3.1.9 Food Additives (As per Codex)

- 3.1.9.1 Flavours, Flavour enhances, flavorings, improvers and fixers
- 3.1.9.2 Permitted food colours
- 3.1.9.3 Antioxidants-as permitted by FAO/WHO
- 3.1.9.4 Emulsifying agents- as permitted by FAO/WHO
- 3.1.9.5 Leavening agents - as permitted by FAO/WHO
- 3.1.9.6 Gluten conditioners-as permitted by FAO/WHO
- 3.1.9.7 Enzymes
- 3.1.9.10 Nutritional additives- vitamins, minerals, lysine monohydrochloride, protein concentrates or others permitted by FAO/WHO
 Chocolate & Covering Chocolate (PS: 736).
- 3.1.10 Nutrients (Food grade)
 Vitamins and Minerals Permitted by FAO/WHO.
 Lysine monohydrochloride
 Protein concentrates.
- 3.1.11 Edible Vegetables or Vegetable Products

4 REQUIREMENTS

- 4.1 General Requirements – The biscuits shall be properly baked so that they are crisp and have uniform texture and appearance. The design, if any, on the biscuits should be clear. They shall have desirable and agreeable flavour typical of well baked biscuits of different types and shall be free from any soapy or bitter after-taste. The biscuits shall be free from fungus and insect infestation, rancid taste and odour.
- 4.1.1 Filled Biscuits – Filled biscuits shall be biscuits sandwiched with a filling of either cream, jam, jelly, marshmallow, caramel, chocolate, cocoa powder, dry fruit, cheese, and other ingredients of nutritional value, or the like.
- 4.1.2 Coated Biscuits – Coated biscuits shall be biscuits as such or with the filling in between but coated with chocolate or caramel or cocoa and cocoa cream or any other edible coating.
- 4.1.2.1 Biscuits labeled as “Biscuits” or those in which the presence of butter biscuits is highlighted, shall contain not less of percent of milk fat by weight of the product. If the total fat content of the product exceeds 14 percent by weight of the product, if the total fat content of the product exceeds 14 percent by weight 50 percent of the total fat shall be milk fat.
- 4.1.2.2 Biscuits labeled as “Milk Biscuits” or those in which the presence of milk is highlighted, shall contain not less then 4 percent by weight of milk solids calculated on dry basis.
- 4.1.2.3 Biscuits labeled as “Cheese Biscuits” or those in which the presence of cheese is highlighted shall contain not less than 3.5 percent of cheese solids calculated on dry basis.
- 4.1.3 Biscuits shall also comply with the requirements given in Table-1 and 2

TABLE-1
REQUIREMENTS FOR BISCUITS

S.No.	CHARACTERISTIC	REQUIREMENT
i.	Moisture, % by weight, Max.	4.0
ii.	Acid insoluble ash (on dry basis), % by weight , Max	0.05
iii.	Acidity of extracted fat (as oleic acid), % by weight, Max.	1.0

TABLE -2
MICROBIOLOGICAL REQUIREMENTS

S.No.	Evaluation Criteria	Accepted Standard
i.	Total Microbial Count	Less than 10000 cfu/gms
ii.	Coliform	Less than 10 cfu/gm
iii.	E.Coli	Less than 3 cfu/gm
iv.	Yeast & mould	Less than 100 cfu/gm
v.	S. aureus	Less than 3 cfu/gm
vi.	Salmonella	Absent/25 gms

5. PACKING AND MARKING

5.1 Packing – Biscuits shall be packed in clean dry and sound containers, made of tinfoil, PCRC sheets, cardboard paper (BOPP) Bioxyline Oriented Polypropylene Food grade Flexible Packaging, material agreed upon between the purchaser and the vendor, in such a way as to protect them from breakage, damage contamination, absorption of moisture and seepage of fat from the biscuits into the packing materials. The biscuits shall not come in direct contact with the packing materials other than greaseproof or sulphite paper, cellulose film or any other non-toxic food Grade packing material which may be covered with a moisture-proof film, waxed paper or Moisture-proof laminates or coated paper. The biscuits in tins should not come in direct contact with the metal walls.

5.1.1 In the case of printed packaging material the printing ink shall not come into direct contact with the product.

5.2 Marking – The following particulars shall be clearly and indelibly marked on label on each container :-

- (a) Name of the Product
- (b) Name and address of the manufacturer,
- (c) Batch or code number,
- (d) Net weight,
- (e) The statement of ingredients including permitted flavoring and coloring agents used, are Halaal.
- (f) Date of manufacture and expiry.
- (g) Pakistan standard number, mark and license number.

NOTE: - Packets containing less than 60 g of biscuits may not be marked with the particulars mentioned under 5.2 . But packets having more than 60 g and less than 120 g of biscuits shall be marked as required under 5.2 (a), (b) and (e) and may not be marked with particulars required under 5.2 (c) and (d).

5.3 LABELLING

The Product covered by this Standard shall be labelled in accordance with the General Standard for the Labelling of Prepackaged Food (PS: 1485) and Guideline on Nutrition Labelling (PS: 2099).

6. SAMPLING

6.1 The method of drawing representative samples of the biscuits and the criteria for conformity shall be as prescribed in Appendix – A.

7. TESTS

7.1 The relevant testing methods of PS, ISO, CAC and of other internationally recognized Standard methods may be taken in to account for analysis purpose.

7.2 Quality of Reagents – Unless specified otherwise, pure chemicals of laboratory analytical grade shall be employed in tests and distilled water shall conform PS: 593 for Water for Analytical Laboratory Use, be used in the analysis and in the preparation of reagents.

NOTE: 'Pure Chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

APPENDIX – A
(Clause 6.1)

SAMPLING OF BISCUITS

A-1 GENERAL REQUIREMENTS OF SAMPLING

A-1.0 In drawing, preparing, storing and handling samples, the following precautions and directions shall be observed.

A-1.1 Samples shall be taken in a protected place not exposed to damp air, dust or soil.

A-1.2 Precautions shall be taken to protect the samples, the lots being sampled, the sampling instrument and the containers for samples from contamination.

A-1.3 The samples shall be stored at room temperature.

A-1.4 Each container containing the samples shall be sealed air-tight and marked with full details of sampling such as date and time of sampling, batch or code number, name of the manufacturer, and other relevant particulars.

A-2 SCALE OF SAMPLING

A-2.1 Lot – All the biscuit containers in a single consignment drawn from the same batch of manufacture shall constitute a lot. If the consignment is declared to consist of different batches of manufacture, the batches shall be marked separately and groups of containers in each batch shall constitute separate lots.

A-2.1.1 Samples shall be tested for ascertaining the conformity of the biscuits to the requirements of the specification.

A-2.2 The number of containers to be sampled from each lot shall depend on the size of the lot and be in accordance with Table-2.

A-2.3 The containers shall be selected at random from each lot and for this purpose, random number tables shall be used. In case such tables are not available, the following procedure shall be adopted.

Starting from any container, count them as 1, 2, 3,, up to r and so on in one order, where r is equal to the integral part of the value N/n , being the total number of containers in the lot and n the number of containers to be selected (see Table-2). Every rth container thus counted shall be separated until the required number of containers is obtained from the lot.

TABLE

NUMBER OF CONTAINER TO BE SELECTED FOR SAMPLING
(Clause A-2.2 and A-2.3)

LOT SIZE N	SAMPLE SIZE N
Up to 50	3
51 to 150	4
151 to 300	5
500 and above	7

- A-3 TEST SAMPLES AND REFEREE SAMPLES
- A-3.1 Draw from each selected container, required number of biscuits packs. These packs shall be opened and mixed. If the container is packed with loose biscuits, sample of required quantity shall be taken from different parts of the selected container.
- A-3.2 Preparation of Individual Sample – from the selected containers about 600 g of biscuits shall be taken from different parts of the container. From this about 300 g of the biscuits shall be taken from testing general requirements. This 300 g of biscuits shall be divided into 3 equal parts, one for the purchaser, another for the vendor and the third for the referee. These biscuits shall be packed in air-tight, dry containers and labeled with particulars as given A-1.5.
- A-3.3 Preparation of Composite Sample
- A-3.3.1 The composite sample shall be prepared from the remaining 300 g of biscuit from each selected container, after the sample for general requirement is taken out as given in A-3.3.1.1 to A-3.3.1.3.
- A-3.3.1.1 Plain biscuits – Grind the sample as quickly as possible.
- A-3.3.1.2 Filled biscuits – The cream, caramel, chocolate, marshmallow, jam, jelly, or any other filling between biscuits should be removed by gentle scraping, before powdering the sample.
- A-3.3.1.3 Coated and filled biscuits – As far as possible, the coating and the fillings should be removed before powdering the biscuits.

NOTE :- The biscuits are highly hydroscopic and take up moisture quickly when exposed to atmosphere. The preparation of sample should be done very quickly, preferably in a dry place.

- A-3.3.2 A small but approximately equal quantity of the material (see A-3.3.1) shall be taken from the powdered sample of each selected container and mixed thoroughly so as to form a composite sample weighing not less than 200 g. This sample shall be divided approximately into three equal parts one for the purchaser, another for the vendor and the third for the referee. These parts shall be transferred immediately to clean, air-tight and dry containers which are then sealed air-tight and labelled with particulars as given in A-1.5.
- A-3.3.3 The remaining portions of the powdered sample from each selected container (after a small quantity needed for the formation of the composite sample has been taken out) shall be divided into approximately three equal parts. These parts shall be transferred to clean, dry and air-tight containers which are then sealed with all the particulars as given in A-1.5. The sample in each such sealed container shall constitute an individual test sample. These individual samples shall be separated into three identical sets of test samples in such a way that each set has a sample representing each selected container (see Table-2). One of these sets shall be marked for the purchaser, another for the vendor and the third for the referee.
- A-3.4 Referee Sample – Referee samples shall consist of a set of individual biscuit samples (see A-3.2) marked for general requirements, a composite sample (see A-3.3.2) and a set of individual test samples (see A.3.3.3) and shall bear the seals of the purchaser and the vendor. These shall be kept at a place agreed to between the two.
- A-4 NUMBER OF TESTS
- A-4.1 This biscuits selected according to A-3.2 shall be tested for general requirements.
- A-4.2 Test for moisture shall be conducted individually on each of the samples constituting a set of individual test samples (see A-3.3.3).
- A-4.3 Tests for the determination of acid insoluble ash an acidity of extracted fat shall be conducted on the composite sample (see A-3.3.2).
- A-5 CRITERIA FOR CONFORMITY
- A-5.1 Lot shall be declared as conforming to the requirements of the specification for biscuits when the criteria given in A-5.1.3 are satisfied.
- A-5.1.1 In case of general requirements, the biscuits shall satisfy the requirements as given in clause 4.1.
- A-5.1.2 In case of moisture each of the test results as obtained from the individual test samples (see A-4.2) shall be less than or equal to 4 percent (see Table-1).
- A-5.1.3 For acid insoluble ash and acidity of extracted fat, the test results obtained from the composite sample (see A-4.3) shall be less than or equal to 0.05 percent and 1.0 percent respectively (see Table-1).
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