CODEX GENERAL STANDARD FOR QUICK FROZEN FISH FILLETS

CODEX STAN 190 - 1995

1. SCOPE

This standard applies to quick frozen fillets of fish as defined below and offered for direct consumption without further processing. It does not apply to products indicated as intended for further processing or for other industrial purposes.

2. DESCRIPTION

2.1 PRODUCT DEFINITION

Quick frozen fillets are slices of fish of irregular size and shape which are removed from the carcass of the same species of fish suitable for human consumption by cuts made parallel to the backbone and sections of such fillets cut so as to facilitate packing, and processed in accordance with the process definitions given in Section 2.2.

2.2 PROCESS DEFINITION

The product after any suitable preparation shall be subjected to a freezing process and shall comply with the conditions laid down hereafter. The freezing process shall be carried out in appropriate equipment in such a way that the range of temperature of maximum crystallization is passed quickly. The quick freezing process shall not be regarded as complete unless and until the product temperature has reached -18ºC (0ºF) or colder at the thermal centre after thermal stabilization. The product shall be kept deep frozen so as to maintain the quality during transportation, storage and distribution.

These products shall be processed and packaged so as to minimize dehydration and oxidation.

The recognized practice of repacking quick frozen products under controlled conditions which will maintain the quality of the product, followed by the reapplication of the quick freezing process as defined, is permitted.

2.3 PRESENTATION

2.3.1 Any presentation of the product shall be permitted provided that it:

(a) meets all requirements of this standard, and

(b) is adequately described on the label to avoid confusing or misleading the consumer.

2.3.2 Fillets may be presented as boneless, provided that boning has been completed including the removal of pin-bones.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 FISH

Quick frozen fish fillets shall be prepared from sound fish which are of a quality fit to be sold fresh for human consumption.

3.2 GLAZING

If glazed, the water used for glazing or preparing glazing solutions shall be of potable quality or shall be clean sea-water. Potable water is fresh-water fit for human consumption. Standards of potability shall not be less than those contained in the latest edition of the WHO "International Guidelines for Drinking Water Quality". Clean sea-water is sea-water which meets the same microbiological standards as potable water and is free from objectionable substances.

3.3 OTHER INGREDIENTS

All other ingredients used shall be of food grade quality and conform to all applicable Codex standards.

3.4 DECOMPOSITION

The products shall not contain more than 10 mg/100 g of histamine based on the average of the sample unit tested. This shall apply only to species of *Clupeidae, Scombridae, Scombresocidae, Pomatomidae* and *Coryphaenedae* families.

3.5 FINAL PRODUCT

Products shall meet the requirements of this standard when lots examined in accordance with Section 9 comply with the provisions set out in Section 8. Products shall be examined by the methods given in Section 7.

4. FOOD ADDITIVES

Additive		Maximum level in the final product
Moisture/Water Retention Agents		
339(i)	Monosodium orthophosphate	10 g/kg expressed as P_2O_5, singly or in combination (includes natural phosphate)
340(i)	Monopotassium orthophosphate	
450(iii)	Tetrasodium diphosphate	
450(v)	Tetrapotassium diphosphate	
451(i)	Pentasodium triphosphate	
451(ii)	Pentapotassium triphosphate	
452(i)	Sodium polyphosphate	
452(iv)	Calcium, polyphosphates	
401	Sodium alginate	GMP
Antioxidants		
301	Sodium ascorbate	GMP
303	Potassium ascorbate	GMP

5. HYGIENE AND HANDLING

5.1 It is recommended that the products covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the Code of Practice – General Principles of Food Hygiene (CAC/RCP 1-1969), the Code of Practice for Fish and Fishery Products, the Code of Practice for the Processing and Handling of Quick Frozen Foods (CAC/RCP 8-1976) and other relevant Codex Codes of Hygienic Practice and Codes of Practice.

5.2 The products should comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997).

5.3 The final product shall be free from any foreign material that poses a threat to human health.

5.4 When tested by appropriate methods of sampling and examination prescribed by the Codex Alimentarius Commission , the product:

(i) shall be free from microorganisms or substances originating from microorganisms in amounts which may present a hazard to health in accordance with standards established by the Codex Alimentarius Commission;

(ii) shall not contain histamine that exceeds 20 mg/100 g. This applies only to species of *Clupeidae, Scombridae, Scombresocidae, Pomatomidae* and *Coryphaenedae* families;

(iii) shall not contain any other substance in amounts which may present a hazard to health in accordance with standards established by the Codex Alimentarius Commission.

6. LABELLING

In addition to the General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985), the following specific provisions apply:

6.1 NAME OF THE FOOD

6.1.1 The name of the product as declared on the label shall be "... fillets" or "fillets of..." according to the law, custom or practice in the country in which the product is to be distributed.

6.1.2 There shall appear on the label reference to the form of presentation in close proximity to the name of the food in such additional words or phrases that will avoid misleading or confusing the consumer.

6.1.3 The term "quick frozen", shall also appear on the label, except that the term "frozen" may be applied in countries where this term is customarily used for describing the product processed in accordance with subsection 2.2 of this standard.

6.1.4 The label shall state that the product should be maintained under conditions that will maintain the quality during transportation, storage and distribution.

6.1.5 If the product has been glazed with sea-water, a statement to this effect shall be made.

6.2 NET CONTENTS (GLAZED PRODUCTS)

Where the food has been glazed the declaration of net contents of the food shall be exclusive of the glaze.

6.3 STORAGE INSTRUCTIONS

The label shall include terms to indicate that the product shall be stored at a temperature of -18º C or colder.

6.4 LABELLING OF NON-RETAIL CONTAINERS

Information on the above provisions shall be given either 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 as well as storage instructions, 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.

7. SAMPLING, EXAMINATION AND ANALYSES

7.1 SAMPLING

(i) Sampling of lots for examination of the product shall be in accordance with an appropiate sampling plan with an AQL of 6.5. A sample unit is the primary container or for individually quick frozen products is at least a 1 kg portion of the sample unit.

(ii) Sampling of lots for examination of net weight shall be carried out in accordance with an appropriate sampling plan meeting the criteria established by the Codex Alimentarius Commission.

7.2 SENSORY AND PHYSICAL EXAMINATION

Samples taken for sensory and physical examination shall be assessed by persons trained in such examination and in accordance with procedures elaborated in Sections 7.3 through 7.6, Annex A and the *Guidelines for the Sensory Evaluation of Fish and Shellfish in Laboratories (CAC/GL 31 - 1999)*

7.3 DETERMINATION OF NET WEIGHT

7.3.1 The net weight (exclusive of packaging material) of each sample unit representing a lot shall be determined in the frozen state.

7.3.2 **Determination of Net Weight of Products Covered by Glaze**

As soon as the package is removed from low temperature storage, open immediately and place the contents under a gentle spray of cold water. Agitate carefully so that the product is not broken. Spray until all ice glaze that can be seen or felt is removed. Remove adhering water by the use of paper towel and

weight the product in a tared pan.

7.4 PROCEDURE FOR THE DETECTION OF PARASITES (TYPE 1 METHOD) IN SKINLESS FILLETS

The entire sample unit is examined non-destructively by placing appropriate portions of the thawed sample unit on a 5 mm thick acryl sheet with 45% translucency and candled with a light source giving 1500 lux 30 cm above the sheet.

7.5 DETERMINATION OF GELATINOUS CONDITION

According to the AOAC Methods - "Moisture in Meat and Meat Products, Preparation of Sample Procedure"; 983.18 and "Moisture in Meat" (Method A); 950.46.

7.6 COOKING METHODS

The following procedures are based on heating the product to an internal temperature of 65 - 70ºC. The product must not be overcooked. Cooking times vary according to the size of the product and the temperatures used. The exact times and conditions of cooking for the products should be determined by prior experimentation.

Baking Procedure: Wrap the product in aluminum foil and place it evenly on a flat cookie sheet or shallow flat pan.

Steaming Procedure: Wrap the product in aluminum foil and place it on a wire rack suspended over boiling water in a covered container.

Boil-in-Bag Procedure: Place the product in a boilable film-type pouch and seal. Immerse the pouch in boiling water and cook.

Microwave Procedure: Enclose the product in a container suitable for microwave cooking. If plastic bags are used, check to ensure that no odour is imparted from the plastic bags. Cook according to equipment instructions.

7.7 DETERMINATION OF HISTAMINE

AOAC 977.13.

8. DEFINITION OF DEFECTIVES

A sample unit shall be considered as defective when it exhibits any of the properties defined below:

8.1 DEHYDRATION

Greater than 10% of the surface area of the sample unit or for pack sizes described below, exhibits excessive loss of moisture clearly shown as white or yellow abnormality on the surface, which masks the colour of the flesh and penetrates below the surface, and cannot be easily removed by scraping with a knife or other sharp instrument without unduly affecting the appearance of the product.

Pack Size	Defect Area
a) ≤200 g units	≥ 25 cm^2
b) 201 - 500 g units	≥ 50 cm^2
c) 501 - 5000 g units	≥ 150 cm^2

8.2 FOREIGN MATTER

The presence in the sample unit of any matter, which has not been derived from fish, does not pose a threat to human health, and is readily recognized without magnification or is present at a level determined by any method including magnification that indicates non-compliance with good manufacturing and sanitation practices.

8.3 PARASITES

The presence of two or more parasites per kg of the sample unit detected by the method described in 7.4 with a capsular diameter greater than 3 mm or a parasite not encapsulated and greater than 10 mm in length.

8.4 BONES (IN PACKS DESIGNATED BONELESS)

More than one bone per kg of product greater or equal to 10 mm in length, or greater or equal to 1 mm in diameter; a bone less than or equal to 5 mm in length, is not considered a defect if its diameter is not more than 2 mm. The foot of a bone (where it has been attached to the vertebra) shall be disregarded if its width is less than or equal to 2 mm, or if it can easily be stripped off with a fingernail.

8.5 ODOUR AND FLAVOUR

A sample unit affected by persistent and distinct objectionable odours or flavours characteristic of decomposition, rancidity or feed.

8.6 FLESH ABNORMALITIES

A sample unit affected by excessive gelatinous condition of the flesh together with greater than 86% moisture found in any individual fillet or a sample unit with pasty texture resulting from parasitic infestation affecting more than 5% of the sample unit by weight.

9. LOT ACCEPTANCE

A lot will be considered as meeting the requirements of this standard when:

(i) the total number of "defectives" as classified according to Section 8 does not exceed the acceptance number (c) of an appropriate sampling plan with an AQL of 6.5;

(ii) the average net contents of all containers examined is not less than the declared weight, provided there is no unreasonable shortage in any containers;

(iii) the Food Additives, Hygiene and Handling and the Labelling requirements of Sections 4, 5 and 6 are met.

"ANNEX A": SENSORY AND PHYSICAL EXAMINATION

1. Complete net weight determination, according to defined procedures in Section 7.3 (de-glaze as required).
2. Examine the frozen fillets for the presence of dehydration by measuring those areas which can only be removed with a knife or other sharp instrument. Measure the total surface area of the sample unit, and calculate the percentage affected.
3. Thaw and individually examine each fillet in the sample unit for the presence of foreign matter, parasites, bone where applicable, odour, and flesh abnormality defects.
4. In cases where a final decision on odour cannot be made in the thawed uncooked sate, a small portion of the disputed material (approximately 200 g) is sectioned from the sample unit and the odour and flavour confirmed without delay by using one of the cooking methods defined in Section 7.6.
5. In cases where a final decision on gelatinous condition cannot be made in the thawed uncooked state, the disputed material is sectioned from the product and gelatinous condition confirmed by cooking as defined in Section 7.6 or by using the procedure in Section 7.5 to determine if greater than 86% moisture is present in any fillet. If a cooking evaluation is inconclusive, then the procedure in 7.5 would be used to make the exact determination of moisture content.