INTRODUCTION

1. The Department of Defence or appointed Inspection Body reserves the right to conduct inspections of the production process, the product and the premises of the supplier without prior notification at any working time during the contract period.

SCOPE

2. This specification specifies general requirements for the supply of frozen Battered Fish Fillet Portions (Skin-On), Standard Grade Hake Fillets, Haddock Fillets, Flecked Snoek, Shatter-pack Alaskan Pollock Fillets, Caterers Fish Fingers, Fish Cakes and Tuna Steaks to the South African National Defence Force

APPLICABLE DOCUMENTS

3. These products shall comply with all the applicable requirements of the following documents:

a. National Health Act No 61 of 2003.

b. South African Foodstuffs, Cosmetics and Disinfectants Act, 1972 (No. 54 of 1972) and regulations under this act as amended.

c. "*FAO/WHO Codex Alimentarius Sampling Plans for Pre-packaged Foods*" (1969) (AQL 6.5).

d. SA Trade Metrology Act No 77 of 1973 as amended.

e. Code of Practice for Quality Management Systems Requirements SABS 9001 of 2000.

f. The Standards Act, 1993 (No. 29 of 1993) and regulations under this act as amended.

g. *"Compulsory Standard Specification for Frozen Fish"* (Regulation no R. 530 of 14/05/1999).

COMPULSORY GENERAL REQUIREMENTS

4. Compulsory General Requirements.

a. In the RSA all fish supplies must comply with the Foodstuffs, Cosmetics and Disinfectants Act No 54 of 1972 as amended. If so stipulated in the tender documents a SABS Capability Report might be required.

b. Reserve stock. Suppliers must, during the contract period, carry sufficient reserve stock of frozen fish to be able to fulfil urgent orders.

INSPECTION OF THE SUPPLIER'S PREMISES

5. The Department of Defence or appointed Inspection Body reserves the right to conduct inspections of the production process, the product and the premises of the supplier without prior notification at any working time during the contract period, including inspections of:

a. Class.

b. Handling.

b. Processing.

c. Packaging.

d. Storage and despatching.

e. Health standards.

f. In the event of a deviation from specifications observed, the department or its appointed inspection body may reject the whole consignment.

QUALITY ASSURANCE PROVISION

6. Quality Management System. The processing premises shall maintain a quality management system, which will ensure that all products supplied under this specification are satisfactory in all respects. The quality management system shall be approved by the purchaser and shall ideally comply with the requirements set out in the *Code of Practice for Quality Management Systems Requirements SABS 9001 of 2000 or* Hazard *Analysis for Critical Control Points (HACCP).* If either of the above is not implemented, the SABS Capability Report will be required.

7. Premises and Plant. The premises shall comply with all laid down State and local authority regulations with regard to hygiene and health standards. The premises shall be maintained in an acceptably hygienic condition to the satisfaction of the purchaser. The supplier must be in possession of a certificate of acceptability, issued by the local authority in terms of the Health Act as for the business conducted on the premises.

8. Responsibility for Quality Inspection. The supplier shall be responsible for carrying out all inspections, measurements and tests during or after manufacture or processing to ensure that all items are fully in accordance with the requirements of this specification (documented evidence shall be kept). The Department of Defence or its appointed Inspection Body shall have the right to witness or verify any inspections, measurements and tests which have been carried out. Documented proof will have to be available for audit purposes.

9. Brand Names. Preferred brand names for all fish products are Irvin and Johnson and Sea Harvest.

10. Shelf Life. Storage at minus18 degree C ± 3 degree C (Core temperature).

11. Transit, Delivery, Storage and Handling:

a. During transit, delivery, storage and handling, from the catch vessel or factory ship or processing plant to the distribution points, a cold chain shall be maintained.

b. In accordance with SABS *specification 0156-1979,* all fish or fish products will be frozen via the quick freeze Nitrogen tunnel method, which will ensure that the core temperature of the product remains at minus 18 degrees C ± 3 degree C (Core temperature).

c. The following is applicable:

i. The freezing process must ensure that the fish is protected from dehydration and discolouration.

ii. Cold air must be circulated during freezing to ensure that the core temperature of the product does not rise above minus 18 degrees C ± 3 degrees C (Core temperature).

iii. The method of freezing shall be subject to the approval of the applicable department.

iv. Product during transit delivery and storage must have a core temperature of minus 18 degrees C ± 3 degree C or lower.

v. Transportation shall take place in a freezer vehicle.

vi. Receipt of the product warmer than minus 18 degree C ± 3 degree C (core temperature of product) shall result in the rejection of the consignment.

vii. Delays during off-loading and handling should be reduced to a minimum to prevent an increase in product temperature.

PACKAGING AND LABELLING

12. Packaging. This specification specifies requirements for the packaging and labelling for the supply of fish to the South African National Defence Force.

a. Requirements of cardboard cartons:

i. The cardboard carton must be damp-proof.

ii. The cardboard carton must be strong enough to resist rough handling and must protect the contents.

13. Labelling. The following information must appear on each cardboard container:

a. Name and distributor or brand name of product.

b. True description of contents.

c. Net mass of contents.

d. Dates: All of the following: Production Date and Packaging Date.

e. The following information: "Keep contents in a frozen state at minus18 degrees C ± 3 degree (Core temperature) until required for use".

BATTERED FISH FILLET PORTIONS (SKIN-ON)

14. Product Definition:

a. Battered Fish Fillet Portions are prepared from cutting portions from quick frozen new WS Blocks (including additional fish species, ***John Dory, Oreo Dory, Kingklip, Jacopever, Hake***) of the white fish species ***Merluccius hubbsi, Merluccius gayi*** and ***Theragra Chalcogrammus*** (Alaskan Pollock). The portions are then formed into fillet shapes, enrobed in a adhesive batter, fine crumb and tempura batter then par-fried in vegetable oil and quick frozen in accordance with good commercial practice to attain a product temperature of -18°C or below after thermal stabilisation. After packing into approved cartons, the product is stored at -18°C or below. All of these

operations shall be in accordance with the *"Compulsory Standard Specification for Frozen Fish"* (Regulation no R. 530 of 14/05/1999).

b. This is NOT a minced fish product; the fillets are formed from solid fish, which are cut from solid fish blocks, as described above. The product shall not be made of fish blocks older than 6 months.

15. Net Mass/Count. The net mass of the product (9.45Kg) and the number of portions per carton (54) must comply with the requirements of the *"Trade Metrology Act"* (Govt. Gazette No. 5806, 18/11/1977).

16. Sampling:

a. Compliance with requirements for factors of quality is based on a sample unit size of 1 carton for factor 17.a and 2 sub-samples of 10 and 4 portions for factors 17.b to 17.j and 17.k respectively.

b. The number of sample units per batch to determine compliance with quality factors is as specified in the following sampling plan: *"FAO/WHO Codex Alimentarius Sampling Plans for Pre-packaged Foods"* (1969) (AQL 6.5).

17. Quality Factors. Quality factors 17.a to 17.f are determined while the portions are in the frozen state, factors 17g to 17.j on a thawed sample and 17.k on a cooked sample.

a. Ease of Separation:

i. Upon removal from the container in the frozen state, units should separate easily by slight force exerted by hand without damage.

ii. Coating that is damaged or product units that break as a result of separation shall be regarded as defective.

b. Coating Defects. The coating of the portions must be free from breaks, lumps or ridges and must be reasonably uniform in thickness.

i. Minor: Between 1cm and 4cm^2 of the surface area are devoid of coating.

ii. Major: Between 4-6cm^2 of the surface area are devoid of coating.

c. Mechanical Damage and Deformation. Units that are squashed, misshapen, cracked, broken or in any way mutilated such that the appearance is materially affected shall be regarded as defective.

d. Size Variation. Units shall be defective if they deviate from the following dimensions:

i. Length: 173 ± 4mm.

ii. Width: 67 ± 4mm / 51 ± 4mm.

iii. Thickness: 21 ± 2.5mm.

e. Uniformity Of Mass. The fillets must be reasonably uniform in mass. Units which do not conform to the applicable range, 140-155g shall be regarded as defective.

f. Uniformity of Colour. The coating shall be uniformly creamy-white to light golden-yellow in colour. Units having a colour conspicuously different from the typical colour of the sample, or units with carbon specs that noticeably detract from the appearance of the product, shall be regarded as defective.

g. Fish Content. The fish content is determined on the portions after removal of the coating. Determine separately the mass of each unit. Then thaw to such an extent that the batter layer is soft, but the fish is still frozen. Scrape off the batter layer, and determine the fish content as a percentage of the initial mass. The fish content must be in the range of 50-55%.

h. Discoloured Flesh, Black Membrane and Bone.The flesh colour of the raw fish should be characteristic of the following species:

   i. Merluccius capensis/paradoxus – white to off white.

   ii. Merluccius hubbsi – off white to pink casts.

   iii. Merluccius gayi – pinkish tint.

   iv. Theragra chalcogrammus (Alaskan Pollock) – white to off-white.

i. The fish must also be free from discolouration, blood clots, spinal bone chips and black belly membrane. Portions with more than 2 of these defects (singly or in total) shall be regarded as defective.

j. Scales. The fish portions shall be reasonably free from scales that will materially affect the eating quality. Portions containing more than ten such scales shall be regarded as defective.

k. Foreign Matter. The presence of any noticeable foreign matter, which is not a product ingredient; e.g. viscera or parasites, shall cause a sample to be defective.

l. Organoleptic Assessment. The following factors are evaluated immediately after a frozen sample of 5 portions has been deep-fried for 7-8 minutes in vegetable oil at 185°C ± 5°C. Before testing the sample, the excess oil is removed by blotting with absorbent paper. The excess oil is removed by blotting with absorbent paper before testing the sample. (Alternative: Oven-bake in pre-heated oven at 200°C for 20 minutes):

   i. Flavour and Odour. The product must have the good characteristic flavour and odour. Rancidity and bitterness, foreign or off flavour and odours of any kind shall be regarded as a critical defect.

   ii. Texture. The fish must be tender and moist. Gritty, tough, dry or mushy fish shall be regarded as a major defect. The coating

should have a crispy, light texture. A stodgy, doughy coating shall be regarded as defective.

iii. Fried Colour. Coating must be uniformly golden-brown and the fish must be white to off-white in colour with pieces of skin present.

18. Defect Classification:

a. Critical:

i. Foreign matter.

ii. Off-flavours and odours.

iii. Texture distinctly objectionable.

b. Major:

i. Mechanical damage and deformation.

ii. Coating defects 4.0 – 6.0cm^2 in total area (Par 4.b).

iii. Fish content < 50% or > 55%.

iv. Discolouration (Par 4.h).

v. Scales (Par. 4.j).

vi. Poor colour (raw or fried).

c. Minor:

i. Ease of separation (Par. 4.a).

ii. Under or oversize portions (Par 4.d).

iii. Under/over mass portions (Par. 4.e).

iv. Coating defects 1.0 - 4.0cm^2 in total area (Par. 4.b).

19. Maximum Allowable Deviations (Per Sample):

a. Critical: 0.

b. Major: 1.

c. Minor: 3.

d. Sliding scale. Sliding scale shall apply i.e. with no Major defects, allow 4 Minor.

20. Microbiological Limits:

Total plate count	1 000 000cfu/g
Coliforms	1 000cu/g
E coli	Absent
Staphylococcus aureus	Absent

Salmonella	Absent
Pathogens	Absent

21. Best Before Date. 18 Months at -18°C.

22. Packaging.

a. Packaging consist of:

Packaging Material	
Inner Packaging	Gusseted lay flat tubing: FDA grade HDPE with anti-block and anti-static additives. (25kg/roll) Core diameter 75mm, blue tint, 25 micron
	Reel width: 550mm / Gusset: 125mm
Tare Weight	24.2g
Outer Corrugated Carton	
Dimensions	494 x 194 x 227 mm (Internal Dimensions) – RSC – die cut – glued
Tare Weight	345.0g
Contents	9.45kg
Board	Group B/b Flute 225W : 125 : 150
Printing	2 Colour – Red (Pantone 485U) and Black
Tertiary Materials	
Self adhesive tape	48 x 1000m clear / blue
Adhesive	Hot melt instant loc 1289
Pallet wrap	400 x 2000m clear, 17 micron CAST FILM

b. Sealing. Cartons erected on a endoline machine with bottom flaps automatically hot melt glued and top flaps cello taped with clear / blue tape.

c. Date Coding. Outer cartons must be clearly coded on both main side panels indicating production centre and date code.

d. Appearance. Outer cartons must be clean, undamaged and securely sealed.

23. Batch Acceptance. A batch will be considered as meeting the final product requirements of this standard when:

a. The net mass complies with the requirements of the "Trade Metrology Act".

b. The total number of defective samples does not exceed the acceptance number of the appropriate sampling plan.

c. The bacteriological specifications are not exceeded.

d. The product complies with the packaging, marking and coding requirements.

QUICK FROZEN STANDARD GRADE HAKE FILLETS

24. Product Definition:

a. Quick Frozen Hake fillets is the product prepared from clean, sound hake of the species Merluccius capensis / paradoxus or Merluccius hubbsi, which have been headed, gutted, descaled, filleted, trimmed, sorted, packed and quick frozen in accordance with good commercial practice to attain a product temperature of -18°C or below after thermal stabilisation. All of these operations shall be in accordance with the "Compulsory Standard Specification for Frozen Fish" (Govt. Gazette no. 3757, 12 January 1973).

b. If Sea frozen fish is used, the interval between initial freezing at sea and subsequent processing on land should not exceed 3 months.

25. Net Mass. The net mass of the product must comply with the requirements of the "Trade Metrology Act" (Govt. Gazette no. 5806, 18-11-1977).

26. Sampling:

a. Compliance with requirements for factors of quality is based on a sample unit size of 1 packet.

b. The number of sample units per batch to determine compliance with quality factors is as specified in the following sampling plan: "FAO/WHO CODEX Alimentarius Sampling Plans for Pre-packaged Foods" (1969) (AQL 6,5).

27. Quality Factors. Quality factors 27.a and 27.b are determined while the product is in the frozen state, factors 27.c to 27.o on a thawed sample and 30.p on a cooked sample.

a. Method of Packing. The fillets must be packed skin-down and lengthwise using clear LDPE for interleaving. The product must be packed in such a way that each layer of fillets is interleaved; the fillets are not touching, and can be separated easily and without damage in the frozen state. There must be top and bottom interleaves between the fillets and the internal surface of the carton. Fillets that tear or break on being separated shall be regarded as minor defects.

b. Uniformity of Mass. The fillets in any one pack must be reasonably uniform in mass. Units, which do not conform to the following respective mass ranges, shall be regarded as defective:

   i. GREEN: 55 - 115g (For Breakfast).

   ii. YELLOW: 115 - 170g (For Lunch).

c. Ragged and/or torn units. Fillets of which the edges are markedly and excessively irregular such that the appearance is materially affected, shall be regarded as defective.

d. Uniformity of Colour. The fillets must have a uniform, white to off-white colour for Merluccius capensis / paradoxus, and off-white to pink casts in colour for Merluccius hubbsi. Slight yellowing of the fish flesh will be allowed. Units having a colour conspicuously different from the typical colour of the sample shall be regarded as major defects.

e. Discolouration. The flesh must be free from significant discolouration, which includes bruises, browning, and yellowing. Any discoloured aggregate area of 3,0cm² or more, shall be regarded as defective.

   i. Minor: 3,0 - 6,0cm² or larger areas of light intensity discolouration.

   ii. Major: >6,0cm².

f. Spinal Bones. Each 15mm aggregate length of residual spinal bones shall be regarded as a minor defect.

g. Scales. Fillets with scales having an aggregate area of 3,0cm^2 or more shall be regarded as defective.

   i. Minor: 3,0 - 6,0 cm².

   ii. Major: greater than 6,0cm².

h. Black Membrane (Belly lining). Each piece greater than 2,0 cm in any dimension shall be regarded as a minor defect.

i. Blood clots. Lumps or masses of clotted blood that are 3mm or more in any dimension, shall be regarded as minor defects.

j. Viscera. Any noticeable portion of the internal organs shall be regarded as a major defect.

k. Fins. Each incidence of fins consisting of 2 or more rays shall be regarded as a minor defect.

l. Skin damage. Fillets with skin damage having an aggregate area of 3,0cm² or more shall be regarded as defective.

   i. Minor: 3,0 - 6,0 cm².

   ii. Major: > 6,0cm².

m. Gaping. Fillets of which the appearance is markedly affected due to the separation of the muscle segments shall be regarded as defective.

n. Parasites. Any parasite, whether capsular or wormlike, or the presence of Kudoa, shall be regarded as a defect. (**Kudoa** infection will cause a breakdown of the muscular tissue into a jelly-like mass, normally referred to as "milky-fish". A light infection with **Kudoa** cysts ("hair parasites") i.e. less than 1 readily noticeable unit per 2cm², shall **not** be regarded as a defect).

o. Foreign Matter. Any noticeable foreign body, i.e. matter that is not derived from the fish under consideration shall be regarded as a critical defect.

p. Organoleptic Assessment. Examination for flavour, odour and texture shall be made on a cooked sub-sample of 200g (portions to be cut from at least 4 fillets). The cooking method is as follows: Wrap the sub-sample in aluminium foil and steam it in a closed colander over boiling water for 30 minutes if frozen, or 20 minutes if thawed.

i. Flavour and Odour. The product may be lacking in good flavour and odour, but must be free from rancid, stale, sour or off-flavours and odours.

ii. Texture. The fish may be slightly tough or rubbery or dry. A sample, which is excessively tough or rubbery or has a marked tendency to form a fibrous mass in the mouth, shall be regarded as defective.

28. Defect Classification:

a. Critical:

ii. Parasites.

iii. Foreign matter.

iv. Off-Flavours and Odours.

v. Texture distinctly objectionable.

a. Major:

i. Off colour.

ii. Discolouration > 6,0cm² in total area.

iii. Scales greater than 6,0cm² in total area.

iv. Viscera.

v. Skin damage > 6cm².

vi. Moderately dry, tough, mushy or gelatinous texture.

b. Minor

i. Incorrect packing.

ii. Under/over mass fillets.

iii. Ragged or torn fillets.

iv. Discolouration 3,0 - 6,0cm² in total area.

v. Spinal bones - each 15mm length.

vi. Scales 3,0 - 6,0cm² in total area.

vii. Black membrane greater than 2,0cm.

viii. Blood clots.

ix. Fins.

x. Skin damage 3,0 - 6,0cm².

xi. Gaping fillets.

29. Maximum Allowable Deviations (per packet):

	5kg GREEN	5kg YELLOW
Critical	0	0
Major	8	6
Minor	10	8

30. Bacteriological Standards:

Total plate count	1 000 000cfu/g
Coliforms	1 000cu/g
E coli	Absent
Staphylococcus aureus	Absent
Salmonella	Absent
Pathogens	Absent

31. Best Before Date. 18 months at -18°C.

32. Packaging:

a. Packing Material:

Inner Packaging:	
Interleaving	380 x 330mm sheet, LDPE, 25 micron, blue tint, unprinted
Tare Weight	2.5g
Outer Corrugated Carton:	
Dimensions	368 x 359 x 43mm (Tray)

Tare Weight	140g
Contents	5kg
Board	Group A/e Flute (150: 125: 150)
Printing	Unprinted
Dimensions	374 x 368 x 43mm (Lid)
Tare Weight	114.0g
Board	Group A/e Flute (150W: 112: 140)
Printing	1 colour – Black
Pallet Pattern	Refer attached computer printout.
Ancillary Materials:	
Strapping	9 mm or 12mm AUTO WHITE
Pallet Wrap	400 x 2000m CLEAR, 17 micron CAST FILM

b. Sealing. Units single strapped. 4 x 5kg units strapped in bundles (2 straps crosswise).

c. Appearance. Cartons must be clean, properly sealed and free from damage or scuff marks, which will affect the sale-ability of the product.

d. Coding. The cartons must be clearly coded on a main side panel indicating production centre and date code. The size grading is indicated by a colour dot as per Par 4.b.

33. Batch Acceptance. A batch will be considered as meeting the final product requirements of this standard when:

a. The net mass complies with the "Trade Metrology Act;"

b. The total number of defective samples does not exceed the acceptance number of the appropriate sampling plan;

c. The bacteriological specifications are not exceeded;

d. The product complies with the packaging, marking and coding requirements.

QUICK FROZEN HADDOCK FILLETS

34. Product Definition.

a. Quick frozen Haddock Fillets, is the product prepared from clean, sound hake of the specie ***Merluccius capensis/paradoxus***, which have been headed, gutted, descaled, filleted, trimmed, brined,

coloured, *cold smoked*, packed, and quick frozen in accordance with good commercial practice to attain a product temperature of -18°C or below after thermal stabilisation. All of these operations shall be in accordance with the *" Compulsory Standard Specification for Frozen Fish"* (Govt. Gazette No. 3757, 12/01/1973).

b. If sea frozen fish is used, the interval between initial freezing at sea and subsequent processing on land should not exceed 3 months.

35. Net Mass. The net mass of the product must comply with the requirements of the *"Trade Metrology Act"* (Govt. Gazette No. 5806, 18/11/1977).

36. Sampling:

a. Compliance with requirements for factors of quality is based on a sample unit size of 1 carton.

b. The number of sample units per batch to determine compliance with quality factors is as specified in the following sampling plan: *"FAO/WHO Codex Alimentarius Sampling Plans for Pre-packaged Foods"* (1969) (AQL 6.5).

37. Quality Factors. Quality factors 37.a and 37.b are determined while the product is in the frozen state, factors 37.c to 37.o on a thawed sample and 39.p on a cooked sample.

a. Method of Packing. The fillets must be packed skin-down and lengthways using clear LDPE for interleaving. The product must be packed in such a way that each layer of fillets is interleaved; the fillets are not touching, and can be separated easily and without damage in the frozen state. There must be top and bottom interleaves between the fillets and the internal surface of the carton. Fillets that tear or break on being separated shall be regarded as minor defects.

b. Uniformity of Mass. The fillets must reasonably uniform in mass. Units that do not conform to the applicable mass range shall be regarded as defective, (Yellow: 115-170g).

c. Ragged and/or Torn units. Fillets, of which the edges are markedly and excessively irregular such that the appearance is materially affected, shall be regarded as defective.

d. Uniformity of Colour. The fillets must have a uniform, attractive yellow-orange colour. Units having a colour conspicuously different from the typical colour of the sample shall be regarded as major defects.

e. Discolouration. The flesh must be free from significant discolouration, which includes bruises or browning. Any discoloured aggregate area of 2.0cm^2 or more shall be regarded as defective:

i. Minor. 2.0 - 5.0cm^2 or larger areas of light intensity discolouration.

ii. Major: > 5.0cm^2. Over 10cm^2, each additional complete 5cm^2 shall be regarded as a major defect.

f. Spinal Bones. Each 15mm aggregate length of residual spinal bones shall be regarded as a minor defect.

g. Scales. Fillets with scales including loose scales adhering to the flesh side of the fillet, having an aggregate area of 2.0cm^2 or more, shall be regarded as defective:

   i. Minor: 2.0 - 5.0cm^2.

   ii. Major: 5.0cm^2 over 10cm^2, each additional complete 5cm^2 shall be regarded as a major defect.

h. Black Membrane (Belly lining). Each piece > 2.0cm in any dimension shall be regarded as a minor defective.

i. Blood Clots. Lumps or masses of clotted blood that are between 3mm and 5mm in any dimension shall be regarded as major defects. Over 5mm each additional 3mm shall be counted as a major defect.

j. Viscera. Any noticeable portion of the internal organs shall be regarded as a critical defect.

k. Fins. Each incidence of fins consisting of two or more rays, shall be regarded as a minor defect.

l. Skin Damage. Fillets with skin damage having an aggregate area of 2.0cm^2 or more shall be regarded as defective.

   i. Minor: 2.0 - 5.0cm^2.

   ii. Major: > 5.0cm^2. Over 10cm^2, each additional complete 5cm^2 shall be regarded as a major defect.

m. Gaping. Fillets of which the appearance is markedly affected due to the separation of the muscle segments shall be regarded as defective.

n. Parasites. Any parasite, whether capsular or worm like, or the presence of ***Kudoa*** shall be regarded as a critical defect. ***Kudoa*** infection will cause a breakdown of the muscular tissue into a jelly-like mass, normally referred to as " milky fish ". A light infection with *Kudoa* cysts ("hair parasites") i.e. less than one readily noticeable unit per 1cm^2, shall not be regarded as a defect.

o. Foreign Matter. Any noticeable foreign body, i.e. matter which is not derived from the fish under consideration, shall be regarded as a critical defect.

p. Organoleptic Assessment. Examination for flavour, odour and texture shall be made on a cooked sub-sample of 200g. (Portions to be cut from at least 4 fillets). The cooking methods are as follows:

   i. Wrap the sub-sample in foil and steam in a closed colander over boiling water for 30 minutes if frozen, and 20 minutes if thawed.

   ii. Microwave method. (650W oven) Place sub-sample in a heat resistant glass bowl, cover with clingwrap and prick. Microwave on defrost for 6-7 minutes, then on high for 6 minutes.

iii. Flavour and Odour. The product must have a good characteristic smoky flavour and odour, free from rancid, stale, sour or off-flavour and odours.

iv. Texture. The fish must be flaky and moist but not dry, tough, mushy or gelatinous.

38. Defect Classification:

a. Critical:

i. Parasites.

ii. Foreign matter.

iii. Off-flavours and odours.

iv. Texture distinctly objectionable.

v. Viscera.

b. Major:

i. Under/over-mass fillets - more than 10g deviation.

ii. Off colour.

iii. Discolouration > 5.0cm2, in total area.

iv. Scales > 5.0cm2 in total area.

v. Blood clots.

vi. Skin damage > 5.0cm2

vii. Gaping fillets.

c. Minor:

i. Incorrect packing.

ii. Under/over mass fillets - up to 10g deviation.

iii. Ragged or torn fillets.

iv. Discolouration 2.0 - 5.0cm^2 in total area.

v. Spinal bones - each 15mm length.

vi. Scales 2.0 - 5.0cm2.

vii. Black membrane > 2.0cm.

viii. Fins.

ix. Skin damage 2.0 - 5.0cm^2.

39. Maximum Allowable Deviations (Per Carton).

Critical	0	a. Yellow
Major	3	Yellow

Minor	6	Yellow

40. Bacteriological Standards:

Total plate count	30°C, 48 hours 10^6/g max
Shigella	Absent in 25g
E coli	Absent
Staphylococcus aureus	10/g max
Salmonella	Absent in 25g
Clostridia	Absent in 25g

41. Salt Content. Sodium chloride: 1.5 to 2.5%.

42. Best Before Date. 18 months at -18°C.

43. Packaging:

a. Packaging consist of:

Packaging Material	
Interleaf	330x380mmx25 micron (blue tint LDPE)
Liner	610x760mm x25 micron (blue tint LDPE)
Carton	382x318x50mm (Internal dimensions

b. Sealing. Units single strapped. 4x5Kg units strapped in bundles (2 straps crosswise).

c. Appearance. Cartons must be securely sealed and free from damage or scuff marks that will affect the sale-ability of the product.

d. Coding. Cartons must be clearly coded on a main side panel, indicating production centre and date code. The size grading must be indicating by means of a colour dot as per Par. 4.b.

e. Batch Acceptance. A batch will be considered as meeting the final product requirements of this standard when:

i. The net mass complies with the requirements of the "Trade Metrology Act".

ii. The total number of defective samples does not exceed the acceptance number of the appropriate sampling plan.

iii. The product complies with the bacteriological standards.

iv. The product complies with the requirement for salt content.

v. The product complies with the marking, coding and packaging requirements.

FLECKED SNOEK

44. Product Definition:

a. Snoek is the product obtained from sound fish of the species ***Thyrsites atun***, which have been headed and tailed, flecked, gutted, washed n in a light brine concentration, drained, mildly cured (through salting), packed and blast frozen in accordance with good commercial practice such that the temperature at the thermal centre after thermal stabilisation is -18°C or below. All of these operations shall be in accordance with the "Compulsory Standard Specification for Frozen Fish" (Govt. Gazette No. 3757, 12 January 1973).

b. If sea frozen fish is used, the interval between initial freezing at sea and subsequent processing on land must be less than 3 months.

45. Net Mass. The net mass of the product must comply with the requirements of the "Trade Metrology Act" (Govt. Gazette No. 5806, 18/11/1977) which specifies the following regulations:

a. Any difference between the actual and the represented quantity of a single unit or entity of pre-packed goods for sale shall be within the applicable limits of error.

b. The average of the actual quantity (net mass) of any 10 like units of pre-packed goods of the same kind prepared for sale, taken at random from amongst those which form a batch derived from the same source, shall not be less than the represented quantity.

46. Sampling. The number of sample units per batch to determine compliance with quality factors is as specified in the following sampling plan: *"FAO/WHO Codex Alimentarius Sampling Plans For Pre-Packaged Foods"* (1969) (AQL 6.5).

47. Quality Factors. Quality factor 48.a is determined while the product is in the frozen state, factors 48.b to 48.j on a thawed sample and 48.k on a cooked sample.

48. Method of Packing.

a. The flecked snoek must be individually wrapped and folded in LDPE clear plastic ensuring its original formed shape. Then neatly packed head to tail in the tray lined with a LD clear polythene liner, so that the damage in the frozen state is minimised. Snoek that tears or breaks on separation shall be regarded as defective.

b. Parasites. Any parasite, whether capsular or worm like, or the presence of *Kudoa* shall be regarded as a critical defect. Note: *Kudoa* infection will cause a breakdown of the muscular tissue into a jelly-like mass, normally referred to as "milky fish". A light infection with *Kudoa* cysts ("hair parasites") i.e. less than one readily noticeable unit per $1cm^2$, shall not be regarded as a defect.

c. Foreign Matter. Any noticeable foreign body, i.e. matter that is not derived from the fish under consideration.

d. Ragged Neck Units. Units with ragged or irregular cut surfaces or torn edges, which materially affect the appearance of the unit, shall be regarded as defective.

e. Tail Fins. The tail fins must be neatly trimmed off by means of a straight cut at the caudal peduncle. Ragged, inadequate or excessive trimming shall cause a unit to be defective.

f. Blood Clots. Lumps or masses of clotted blood that is 3mm or more in any dimension.

g. Uniformity of Colour. The flesh must be uniform light caramel to pinkish brown in colour. Units having a colour, which is conspicuously different from the typical colour of sample, shall be regarded as major defects.

h. Discolouration. The flesh must be free from significant discolouration which includes bile stains, bruises, browning, yellowing and belly burn. Any discoloured area of 5.0cm^2 or more shall be regarded as defective.

   i. Minor: 5.0 - 10.0cm^2 or larger areas of light intensity discolouration.

   ii. Major: > 10.0cm^2 Over 20cm^2, each additional complete 10cm^2 shall be regarded as a major defect.

i. Viscera. Any noticeable portion of the internal organs shall be regarded as a major defect.

j. Black Membrane (Belly Lining). Each piece greater than 2cm in any dimension shall be regarded as a minor defect.

k. Soft (Pap) Flesh. The flesh should be typically firm. Units that are mushy shall be regarded as defective.

   i. Critical: Affecting more than 50% of the surface area.

   ii. Major: Affecting 25-50% of the surface area.

   iii. Minor: Affecting less than 25% of the surface area.

l. Organoleptic Assessment. Examination for flavour, odour and texture shall be made on a cooked sub-sample of 200g. The cooking methods are as follows:

   i. Wrap the sub-sample in foil and steam in a closed colander over boiling water for 30 minutes in frozen, and 20 minutes if thawed.

   ii. Microwave Method: Place the sub-sample in a heat resistant glass bowl, cover with cling-wrap and microwave on high power or until cooked for 4 minutes if frozen and 2 minutes if thawed using 650W microwave oven.

m. Cooked Flavour and Odour. The product must have a good characteristic flavour and odour, free from rancid, stale, sour or off-flavour and odours.

n. Texture. The fish must be firm and moist but not dry, tough, mushy or gelatinous.

49. Defect Classification.

a. Critical.

i. Parasites.

ii. Foreign matter.

iii. Distinctly objectionable flavours and odours.

iv. Soft (pap) flesh affecting more than 50% of the surface area.

b. Major.

i. Ragged units.

ii. Viscera.

iii. Off colour.

iv. Discolouration greater than 10.0cm^2 in total area.

v. Soft (pap) flesh affecting 25-50% of the surface area.

c. Minor.

i. Poorly trimmed tail ends.

ii. Discolouration 5.0 to 10.0cm^2 in total area.

iii. Black membrane greater than 2.0cm.

iv. Blood clots greater than 3.0mm.

v. Soft (pap) flesh affecting < 25%.

vi. Incorrect packing.

50. Maximum Allowable Deviations (per carton).

	+ 15Kg (RDW)	25Kg
Critical	0	0
Major	1	2
Minor	3	5
Note: A sample shall be regarded as defective when the allowable deviations in any one of the defect categories are exceeded.		

51. Microbiological Limits.

Total plate count at 30°C, 48 hours	1 000 000 /g max
E coli	Absent in 10g

Staphylococcus aureus	10/g max
Salmonella	Absent in 25g
Shigella	Absent in 25g
Clostridia	Absent in 25g

52. Packaging:

a. Packing Material 5kg:

Interleaf: + 15Kg (RDW)	700mm x 500mm, Clear LDPE
25Kg	Clear LDPE
Caron Liner: + 15Kg (RDW	700m x 500mm, Clear LDPE
Carton: + 15Kg (RDW)	Ref. 498454 (Kohler Packaging)
25Kg	Ref. 228 (Consol Packaging)

b. Sealing. Carton, tray and lid stapled then double strapped.

c. Appearance. Cartons must be clean, undamaged and securely sealed.

53. Coding. Cartons must be stencilled with the date code and factory code on the bottom right hand corner of both main side panels.

54. Best Before Date. 9 Months at -18°C.

55. Batch Acceptance. A batch will be considered as meeting the final product requirements of this standard when:

a. The net mass complies with the requirements of the "Trade Metrology Act".

b. The total number of defective samples does not exceed the acceptance number of the appropriate sampling plan.

c. The bacteriological specifications are not exceeded.

d. The product complies with the packaging, marking and coding requirements.

QUICK FROZEN SHATTER-PACK ALASKAN POLLOCK FILLETS

56. Product Definition:

a. Quick frozen Selected Seafoods Fillets, is the product prepared from the specie ***Theragra chalcogramma***, which have been headed, gutted, descaled, filleted, trimmed, sorted, packed and quick frozen in accordance with good commercial practice to attain a product temperature of -18°C or below after thermal stabilisation.

a. All of these operations shall be in accordance with the *"Compulsory Standard Specification for Frozen Fish"* (Govt. Gazette No. R530 of 14/05/1999).

57. Net Mass. The net mass of the product (5Kg) must comply with the requirements of the *"Trade Metrology Act"* (Govt. Gazette No. 5806, 18/11/1977).

58. Sampling:

a. Compliance with requirements for factors of quality is based on a sample unit size of 1 carton.

b. The number of sample units per batch to determine compliance with quality factors is as specified in the following sampling plan: *"FAO/WHO Codex Alimentarius Sampling Plans for Pre-packaged Foods"* (1969) (AQL 6.5)

59. Quality Factors. Quality factors 59.a and 59.b are determined while the product is in the frozen state, factors 59.c to 59.o on a thawed sample and 61.p on a cooked sample.

a. Method of Packing. The fillets must be packet skin-down and lengthwise using blue tinted LDPE for interleaving. The product must be packed in such a way that each layer of fillets is interleaved; the fillets are not touching, and can be separated easily and without damage in the frozen state. There must be top and bottom interleaves between the fillets and the internal surface of the carton. Fillets that tear or break on being separated shall be regarded as minor defects.

b. Uniformity of Mass. The fillets must be reasonably uniform in mass. Units that do not conform to the applicable mass range shall be regarded as defective.

i. Green: 55 - 115g (For breakfast).

ii. Yellow: 115 - 170g (For Lunch).

c. Ragged and/or Torn Units. Fillets, of which the edges are markedly and excessively irregular such that the appearance is materially affected, shall be regarded as defective.

d. Uniformity of Colour. The fillets must have a uniform, off-white or a light pink colour. Units having a colour conspicuously different from the typical colour of the sample shall be regarded as major defects.

e. Discolouration. The flesh must be free from significant discolouration that includes bruises, browning and yellowing. Any discoloured aggregate area of 2.0cm^2 or more shall be regarded as defective.

i. Minor: 2.0 - 5.0cm^2 or larger areas of light intensity discolouration.

ii. Major: > 5.0cm^2. Over 10cm^2, each additional complete 5cm^2 shall be regarded as a major defect.

f. Spinal Bones. Each 15mm aggregate length of residual spinal bones shall be regarded as a minor defect.

g. Scales. Fillets with scales, having an aggregate area of 2.0cm^2 or more, shall be regarded as defective.

   i. Minor: 2.0 - 5.0cm^2.

   ii. Major: > 5.0cm^2 Over 10cm^2, each additional complete 5cm^2 shall be regarded as a major defect.

h. Black Membrane (Belly lining). Each piece greater than 2.0cm in any dimension shall be regarded as a minor defect.

i. Blood Clots. Lumps or masses of clotted blood that are 3mm and 5mm in any dimension, shall be regarded as major defects. Over 5mm, each additional 3mm shall be counted as a major defect.

j. Viscera. Any noticeable portion of the internal organs shall be regarded as a critical defect.

k. Fins. Each incidence of fins consisting of 2 or more rays, shall be regarded as a minor defect.

l. Skin Damage. Fillets with skin damage having an aggregate area of 2.0cm^2 or more shall be regarded as defective.

   i. Minor: 2.0 - 5.0cm^2.

   ii. Major: > 5.0cm^2. Over 10cm^2, each additional complete 5cm^2 shall be regarded as a major defect.

m. Gaping. Fillets of which the appearance is markedly affected due to the separation of the muscle segments shall be regarded as defective.

n. Parasites. Any parasite, whether capsular or worm like, or the presence of ***Kudoa*** shall be regarded as a critical defect. **Note: *Kudoa*** infection will cause a breakdown of the muscular tissue into a jelly-like mass, normally referred to as "milky fish". A light infection with ***Kudoa*** cysts ("hair parasites") i.e. less than one readily noticeable unit per 1cm^2, shall not be regarded as a defect. .

o. Foreign Matter. Any noticeable foreign body, i.e. matter which is not derived from the fish under consideration, shall be regarded as defective.

p. Organoleptic Assessment. Examination for flavour, odour and texture shall be made on a cooked sub-sample of 200g. Portions to be cut of at least 4 fillets. The cooking method are as follows:

   i. Place the frozen sample in enough boiling water to just cover the fish, bring back to the boil, cover with lid and simmer for 10 minutes.

   ii. Microwave Method: Place the sub-sample in a heat resistant glass bowl, cover with "cling wrap" and microwave at high power for 4 minutes if frozen and 2 minutes if thawed (or until cooked) using a 650W microwave oven.

(a) Flavour and Odour. The product must have a good characteristic flavour and odour, free from rancid, stale, sour or off-flavour and odours.

(b) Texture. The fish must be flaky and moist but not dry, tough, mushy or gelatinous.

60. Defect Classification:

a. Critical:

i. Viscera.

ii. Parasites.

iii. Foreign matter.

iv. Off-flavours and odours.

v. Texture distinctly objectionable.

b. Major:

i. Under/over mass fillets - more than 5g deviations.

ii. Off colour.

iii. Discolouration > 5.0cm^2, in total area.

iv. Scales > 5.0cm^2 in total area.

v. Blood clots.

vi. Skin damage > 5.0cm^2.

vii. Gaping fillets.

c. Minor.

i. Incorrect packing.

ii. Under/over mass fillets - up to 5g deviations.

iii. Ragged or torn fillets.

iv. Discolouration 2.0 - 5.0cm^2 in total area.

v. Spinal bones - each 15mm length.

vi. Scales 2.0 - 5.0cm^2 in total area.

vii. Black membrane greater than 2.0cm.

viii. Fins.

ix. Skin damage 2.0 - 5.0cm^2.

61. Maximum Allowable Deviations (Per Carton):

	GREEN	YELLOW
Critical	0	0

Major	4	2
Minor	6	4

62. Bacteriological Standards:

Total plate count	1 000 000cfu/g
Coliforms	1 000cu/g
E coli	Absent
Staphylococcus aureus	Absent
Salmonella	Absent
Pathogens	Absent

63. Best Before Date: 18 Months at -18°C.

64. Packaging:

a. Packaging Material:

Lithographed Display Cartons	
Size and Style	330 x 380mm sheet, LLDPE, 25 micron, blue tint.
Outer Corrugated Carton	
Dimensions	361 x 261 x 61mm (Tray)
Tare Weight	140.0g
Contents	5kg
Board	Group A/e Flute (150: 125: 150)
Printing	Unprinted
Dimensions	367 x 270 x 61mm (Lid)
Tare Weight	114.0g
Board	Group A/e Flute (150W: 112: 140)
Tertiary Packaging Materials	
Strapping	9mm or 12mm AUTO WHITE

Pallet Wrap	400 x 2000m CLEAR, 17 micron CAST FILM

b. Sealing. 5Kg: Units single strapped. 4x5Kg units, strapped in bundles (2 straps crosswise).

c. Appearance. Cartons must be clean, properly sealed and free from damage or scuff marks, which will affect the saleability of the product.

d. Coding. The cartons must be clearly coded on a main side panel indicating production centre and date code. The size grading must be indicated by means of a colour dot.

65. Batch Acceptance. A batch will be considered as meeting the final product requirements of this standard when:

a. The net mass complies with the requirements of the "*Trade Metrology Act*".

b. The total number of defective samples does not exceed the acceptance number of the appropriate sampling plan.

c. The bacteriological specifications are not exceeded.

d. The product complies with the packaging, marking and coding requirements.

CATERERS FISH FINGERS

66. Product Definition.

a. Fish Fingers are prepared by cutting quick frozen non-poly phosphate HES blocks of Hake species ***Merluccius capensis*** *or* ***paradoxus*** and mince blocks of the species ***Merluccus hubbsi*** , ***Merluccus gayi*** or ***Theragra Chalcogrammus*** (Alaskan Pollock), into regular-shaped pieces 84.3 x 17.9/9.9mm. These pieces are then predusted, enrobing in mustard flavoured batter, coating with wheat crumbs, par frying in vegetable oil then quick frozen in accordance with good commercial practice to attain a product temperature of -18°C or below after thermal stabilisation. After packing into approved outer containers, the product is stored at -18°C or below.

b. All of these operations shall be in accordance with the *"Compulsory Standard Specification for Frozen Fish"* (Regulation No R.530 of 14/05/1999).

c. Fish Fingers shall not be made of fish blocks older than 3 months.

67. Net Mass. The net mass of the product (2kg) must comply with the requirements of the *"Trade Metrology Act"* (Govt. Gazette No. 5806, 18/11/1977).

68. Sampling.

a. Compliance with requirements for factors of quality is based on a sample unit size of 1 carton for factor 69.a, and 2 sub-samples of 20 and 10 fish fingers for factors 69.b to 69.k and 69.l respectively.

b. The number of sample units per batch to determine compliance with quality factors is as specified in the sampling plan namely *"FAO/WHO Codex Alimentarius Sampling Plans for Pre-packaged Foods"* (1969) (AQL 6.5).

69. Quality Factors. Quality factors 69.a to 69.f are determined while the product is in the frozen state, factors 69.g to 69.k on a thawed sample and 69.l on a cooked sample.

a. Loose Crumbs. Surplus loose coating in the final pack must not exceed 0.75% of the declared mass, i.e. 37.5g. Each 3g of loose coating in excess of 0.75% shall be regarded as a minor defect.

b. Coating Defects. The coating of the fingers shall be reasonable free from breaks, lumps or ridges, depressions or blisters and it shall be reasonably uniform in thickness.

i. Minor: Between 0.5cm and 2.0cm^2 of the surface area are devoid of coating.

ii. Major: More than 2.0cm^2 of the surface area devoid are of coating.

c. Mechanical Damage and Deformation. Units that are squashed, misshapen, or in any way mutilated such that the eating quality or appearance is materially affected or which have a break > 10mm which extends into the flesh, shall be regarded as defective.

d. Size Variation. Units shall be defective if they deviate from the following dimensions,(87 ± 2mm) x (22 ± 2mm) x (14.5 ± 1mm).

e. Uniformity of Colour. The coating must be uniformly golden-yellow in colour. Units having a colour conspicuously different from the typical colour of the sample, or units with carbon specs that noticeably detract from the appearance of the product, shall be regarded as defective.

f. Uniformity Of Mass. The fish fingers shall be reasonably uniform in mass. Units, which do not conform to the mass range, 24-29g, shall be regarded as defective.

g. Fish Content. The fish content is determined as follows: Determine separately the mass of each finger. Then thaw to such an extent that the crumb/ batter layer is soft, but the fish is still frozen. Scrape off the crumb/ batter layer, and determine the fish content as a percentage of the initial mass. The must be in greater than 52% and less than 65%.

h. Discoloured Flesh. The flesh colour of the raw fish should be characteristic of the following species:

i. Merluccius capensis/paradoxus – white to off white.

ii. Merluccius hubbsi – off white to light pink.

iii. Merluccius gayi – pink tint with grey casts.

iv. Theragra chalcogrammus (Alaskan Pollock) – white to off-white.

i. Scales. The fish fingers shall be reasonably free from scales that will materially affect the eating quality. Fingers containing more than one such scale shall be regarded as defective.

j. Bones. The fish fingers shall be free from bones and fins that, after being cooked are capable of piercing or hurting the palate. A bone is regarded as a defect if its length is more than 10mm or its diameter is more than 1mm; a bone less than 5mm in length is not to be considered a defect if its diameter does not exceed 2mm.

k. Foreign Matter. The presence of any noticeable foreign matter, i.e. matter which is not a product ingredient; e.g. viscera or parasites, shall cause a sample to be classed as defective.

l. Organoleptic Assessment. The following factors are evaluated immediately after a frozen sample has been deep-fried for 3-4 minutes in vegetable oil at 190°C. The excess oil is removed by blotting with absorbent paper before testing the sample:

i. Flavour and Odour. The product must have the good characteristic flavour and odour of properly prepared Fish Fingers, free from rancidity, bitterness or foreign flavours and odours of any kind.

ii. Texture. The fish must be tender and juicy. If gritty, tough, dry, or mushy, it is defective. The crumb layer must be crisp. Bones smaller than 3mm in any dimension (not capable of piercing or hurting the palate after the product has been cooked) shall not be present in such large numbers as to be objectionable during consumption.

iii. Colour:

(1) Coating. Must be uniformly golden-brown in colour.

(2) Flesh. Must be uniformly white to off-white characteristic of the species and be reasonably free from objectionable discolouration due to blood clots, bruises, black belly membrane and skin.

70. Defect Classification:

a. Critical:

i. Fish content <50%.

ii. Foreign matter.

iii. Off-flavours and odours.

iv. Texture distinctly objectionable.

b. Major:

i. Poor colour (frozen or fried - each instance).

ii. Coating defects > 2.0cm^2 in total area.

iii. Mechanical damage and deformation.

iv. Units <24g.

v. Fish content > 65%.

vi. Bones (each instance).

c. Minor:

i. Loose crumbs.

ii. Coating defects 0.5 - 2.0cm^2 in total area.

iii. Units >29g.

iv. Over or undersize fingers.

v. Fish content 50% - 52%.

vi. Discolouration (Par. 4.h).

vii. Scales.

71. Maximum Allowable Deviations (Per Sample Unit):

a. Critical: 0.

b. Major: 1.

c. Minor: 3.

d. Sliding scale shall apply i.e. with no Major defects, allow 4 Minor.

72. Bacteriological Standards:

Total plate count	1 000 000cfu/g
Coliforms	1000cu/g
E coli	Absent
Staphylococcus aureus	Absent
Salmonella	Absent
Pathogens	Absent

73. Best Before Date. 18 months at -18°C.

74. Packaging:

a. Packaging Material consist of the following:

Inner Packaging	
HDPE Sheet	610 x 760mm, 20 micron, BLUE
Tare Weight	

Outer Corrugated Carton	
Dimensions	230x194x105mm(Internal Dimension)-RSC
Tare Weight	66.0g
Contents	2.0kg
Board	Group B/b Flute
Printing	175W: 112: 175 – Virgin liners
Colours	3 Colours – Red (Pantone 485C), Yellow and Black
Pallet Pattern	Refer attached computer printout.
Tertiary Materials	
Self adhesive tape	48 x 1000m Clear
Adhesive	Hot melt Instant LOC 1289
Pallet wrap	150 x 2000m Clear /17 micron Cast Film 15 micron

b. Sealing. Cartons erected on an endoline machine with bottom flaps automatically glued and top flaps cello-taped with clear tape.

c. Appearance. Outer cartons must be clean, undamaged and securely sealed.

75. Date Coding. Outer cartons shall be coded and labelled in accordance with the buyer's requirements. (Refer Production Specification).

76. Batch Acceptance. A batch will be considered as meeting the final product requirements of this standard when:

a. The net mass complies with the requirements of the "Trade Metrology Act".

b. The total number of defective samples does not exceed the acceptance number of the appropriate sampling plan.

c. The bacteriological specifications are not exceeded.

d. The product complies with the marking, coding and packaging requirements.

QUICK FROZEN FISH CAKES

77. Product Definition:

a. Fish Cakes is the product prepared from a mixture of raw hake mince, of the species ***Merluccus capensis or paradoxus*** or raw mince of the species *Merluccius hubbsi,* with potato flakes, minced onion, lemon

juice, parsley and spices. The mixture is formed into circular patties, enrobed with a starch solution, coated with wheat crumbs and quick frozen in accordance with good commercial practice such that the temperature at the thermal centre, after thermal stabilisation is -18°C or below.

b. All of these operations shall be in accordance with the *"Compulsory Standard Specification for Frozen Fish"* (Regulation No. R530 of 14/05/1999).

78. Net Mass/Count . The net mass of the product and the number of units per carton must comply with the requirements of the *"Trade Metrology Act" (Govt. Gazette No. 5806, 18-11-77*).

79. Sampling:

a. Compliance with requirements for factors of quality is based on a sample unit size of 1 carton for quality factor 80.a and 2 sub-samples of 10 and 4 fish cakes for factors 80.b to 80.g and 80.h respectively.

b. The number of sample units per batch to determine compliance with quality factors is as specified in the following sampling plan: *"FAO/WHO Codex Alimentarius Sampling Plans for Pre-packaged Foods" (1969) (AQL 6,5).*

80. Quality Factors. Quality factors 80.a to 80.e are determined while the fish cakes are in the frozen state, factors 80.f and 80.g on a thawed sample and factor 80.h on a cooked sample.

a. Loose Crumbs. Loose coating in the pack must not exceed 0.75% of the declared net mass. Each 3g of loose coating per pack in excess of 0,75% shall be regarded as a minor defect.

b. Uniformity of Mass. The fish cakes must be reasonably uniform in mass. Units that do not conform to the mass range 96 to 105g shall be regarded as defective.

c. Uniformity of Size. The fish cakes must be reasonably uniform in size. Units that do not conform to the following specifications shall be regarded as defective.

i. Diameter: 77 - 85mm (if a unit is oval, the greatest diameter shall be taken).

ii. Thickness: 24 - 27mm.

d. Coating Defects. The coating of the fish cakes must be reasonably uniform in thickness and be free from breaks, lumps or ridges. The following shall be regarded as defective.

i. Minor: a unit with between 1cm² and 4cm² of the surface area devoid of coating.

ii. Major: more than 4cm² of the surface area devoid of coating.

e. Mechanical Damage and Deformation. Units that are squashed, misshapen, cracked, broken or oval by more than 10mm or in any way

mutilated such that the appearance is materially affected shall be regarded as defective.

f. Fish Content. The fish content is determined on the fish cakes after removal of the coating. Determine separately the mass of each unit. Then thaw to such an extent that the crumb layer is soft, but the core is still frozen. Scrape off the coating and determine the core content as a percentage of the initial mass. This must be in the range of 86 - 90%.

g. Foreign Matter. The presence of any noticeable foreign matter, i.e. matter that is not a product ingredient shall cause a sample to be defective.

h. Organoleptic Assessment. The following factors are determined immediately after the frozen sample has been deep fried in oil at 175°C ± 5°C for 6 - 7 minutes. Excess oil is removed by blotting with absorbent paper before testing the sample.

i. Colour. The exterior should be golden brown and the interior creamy white with pieces of parsley visible.

ii. Texture. The crumb layer must be crisp and not doughy. The fish must be firm and moist, must not be mushy, dry, rubbery or gritty and be free from bones or bone particles. The product must not disintegrate on frying.

iii. Flavour and Odour. The product must have a good savoury fish flavour, free from rancidity or foreign flavours and odours of any kind.

81. Defect Classification:

a. Critical:

i. Foreign matter.

ii. Off or foreign flavours and odours.

iii. Distinctly objectionable texture.

b. Major:

i. Unit mass <96g.

ii. Coating defects >4cm².

iii. Mechanical damage and deformation.

iv. Fish content <85% or >91%.

v. Colour - too dark.

c. Minor:

i. Loose coating >0,75% of declared mass.

ii. Unit mass >105g.

iii. Under/Oversize.

iv. Coating defects 1 - 4cm².

v. Fish content 85 - 86% or 90 - 91%.

82. Maximum Allowable Deviations (Per Sample Unit):

Critical	0	0
Major	1	6
Minor	3	8
Sliding scale shall apply, i.e. with no Major defects, allow 4 Minor defects.		

83. Bacteriological Standards

Total Plate Count	30 °C 48 hours 10^6/g max
Staph.aureus	10/g max
E.Coli I	Absent in 10/g
Salmonella	Absent in 25g
Shigella	Absent in 25g
Clostridia	Absent in 25g

84. Best Before Date. 18 Months at -18ºC.

85. Packaging.

a. Packing material consists of:

Inner Packaging	
Gusseted lay flat tubing	FDA grade HDPE with anti-block and anti-static additives. (25kg/roll) (Core diameter 75mm}, blue tint, 25 micron Reel width: 450mm / Gusset:: 125mm
Outer Corrugated Carton:	
Dimensions	372 x 252 x 144 mm (Internal Dimensions) RSC – die cut - glued
Contents	7.2kg
Board	Group B/b Flute [225W : 125 : 150]
Printing	2 Colour - Red (Pantone 032U) and Black
Tertiary Materials:	

Self adhesive tape	48 x 1000m clear or blue
Adhesive	Hot melt INSTANT LOC 1289
Pallet wrap	450 x 2000m clear / 17 micron CAST FILM 15 MICRON

b. Sealing. Cartons erected on an endoline machine with bottom flaps automatically glued and top flaps cello-taped with clear tape.

c. Date Coding. Outer cartons must be clearly coded on both main side panels indicating production centre and date code.

d. Appearance. Outer cartons must be clean, undamaged and securely sealed.

86. Date Coding. The cartons must be legibly coded on both main side panels indicating production centre and date code.

87. Batch Acceptance. A batch will be considered as meeting the final product requirements of this standard when:

a. The net mass complies with the requirements of the "Trade Metrology Act".

b. The total number of "defective" samples does not exceed the acceptance number of the appropriate sampling plan.

c. The product complies with the bacteriological standards.

d. The product complies with the marking, coding and packaging requirements.

QUICK FROZEN TUNA STEAKS

88. Product Definition:

a. Quick Frozen Tuna Steaks is the product from Tuna, Tunny, Bluefin Tuna, Albacore or Long-fin, which have been headed, gutted, cut into steaks of not less than 145g and not more than 155g each, trimmed, sorted, packed and quick frozen in accordance with good commercial practice to attain a product temperature of -18°C or below after thermal stabilisation. All of these operations shall be in accordance with the "Compulsory Standard Specification for Frozen Fish" (Govt. Gazette no. 3757, 12 January 1973).

b. If sea frozen fish is used, the interval between initial freezing at sea and subsequent processing on land must be less than 3 months.

89. Net Mass. The net mass of the product must comply with the requirements of the "Trade Metrology Act" (Govt. Gazette No. 5806, 18/11/1977) which specifies the following regulations:

a. Any difference between the actual and the represented quantity of a single unit or entity of pre-packed goods for sale shall be within the applicable limits of error.

b. The average of the actual quantity (net mass) of any 10 like units of pre-packed goods of the same kind prepared for sale, taken at random from amongst those which form a batch derived from the same source, shall not be less than the represented quantity.

90. Sampling. The number of sample units per batch to determine compliance with quality factors is as specified in the following sampling plan: ***"FAO/WHO Codex Alimentarius Sampling Plans For Pre-Packaged Foods"*** **(1969) (AQL 6.5).**

91. Quality Factors. Quality factor 92.a is determined while the product is in the frozen state, factors 92.b to 92.g on a thawed sample and 92.h to 92.j on a cooked sample.

92. Method of Packing.

a. The Tuna steaks must be packed lengthwise using clear LDPE for interleaving. The product must be packed in such a way that each layer of steaks is interleaved; the steaks are not touching, and can be separated easily and without damage in the frozen state. There must be top and bottom interleaves between the steaks and the internal surface of the carton. Steaks that tear or break on being separated shall be regarded as minor defects.

b. Uniformity of Mass. The steaks in any one pack must be reasonably uniform in mass, which is not less than 145g and not more than 155g each.

c. Ragged and/or torn units. Steaks, of which the edges are markedly and excessively irregular such that the appearance is materially affected, shall be regarded as defective.

d. Foreign Matter. Any noticeable foreign body, i.e. matter that is not derived from the fish under consideration.

e. Blood Clots. Lumps or masses of clotted blood that is 3mm or more in any dimension shall be regarded as defective.

f. Uniformity of Colour. The flesh must be uniform light caramel to pinkish brown in colour. Units having a colour, which is conspicuously different from the typical colour of sample, shall be regarded as major defects.

g. Discolouration. The flesh must be free from significant discolouration which includes bile stains, bruises, browning, yellowing and belly burn. Any discoloured area of 5.0cm^2 or more shall be regarded as defective.

i. Minor: 5.0 - 10.0cm^2 or larger areas of light intensity discolouration.

ii. Major: > 10.0cm^2 Over 20cm^2, each additional complete 10cm^2 shall be regarded as a major defect.

h. Organoleptic Assessment. Examination for flavour, odour and texture shall be made on a cooked sub-sample of 200g. The cooking methods are as follows:

i. Wrap the sub-sample in foil and steam in a closed colander over boiling water for 30 minutes in frozen, and 20 minutes if thawed.

ii. Microwave Method: Place the sub-sample in a heat resistant glass bowl, cover with cling-wrap and microwave on high power or until cooked for 4 minutes if frozen and 2 minutes if thawed using 650W microwave oven.

i. Cooked Flavour and Odour. The product must have a good characteristic flavour and odour, free from rancid, stale, sour or off-flavour and odours.

j. Texture. The fish must be firm and moist but not dry, tough, mushy or gelatinous.

93. Defect Classification.

a. Critical.

i. Parasites.

ii. Foreign matter.

iii. Distinctly objectionable flavours and odours.

b. Major.

i. Ragged units.

ii. Viscera.

iii. Off colour.

iv. Discolouration greater than 10.0cm^2 in total area.

c. Minor.

i. Poorly trimmed steaks.

ii. Discolouration 5.0 to 10.0cm^2 in total area.

iii. Blood clots greater than 3.0mm.

iv. Incorrect packing.

94. Maximum Allowable Deviations (per carton).

	+ 15Kg (RDW)	25Kg
Critical	0	0
Major	1	2
Minor	3	5
Note: A sample shall be regarded as defective when the allowable deviations in any one of the defect categories are exceeded.		

95. Microbiological Limits.

Total plate count at 30°C, 48 hours	1 000 000 /g max
E coli	Absent in 10g
Staphylococcus aureus	10/g max
Salmonella	Absent in 25g
Shigella	Absent in 25g
Clostridia	Absent in 25g

96. Packaging:

a. Packing Material 5kg:

Interleaf: + 15Kg (RDW)	700mm x 500mm, Clear LDPE
25Kg	Clear LDPE
Caron Liner: + 15Kg (RDW	700m x 500mm, Clear LDPE
Carton: + 15Kg (RDW)	Ref. 498454 (Kohler Packaging)
25Kg	Ref. 228 (Consol Packaging)

b. Sealing. Carton, tray and lid stapled then double strapped.

c. Appearance. Cartons must be clean, undamaged and securely sealed.

d. Coding. Cartons must be stencilled with the date code and factory code on the bottom right hand corner of both main side panels.

97. Best Before Date. 9 Months at -18°C.

98. Batch Acceptance. A batch will be considered as meeting the final product requirements of this standard when:

a. The net mass complies with the requirements of the "Trade Metrology Act".

b. The total number of defective samples does not exceed the acceptance number of the appropriate sampling plan.

c. The bacteriological specifications are not exceeded.

d. The product complies with the packaging, marking and coding requirements.