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Series 32

Série 32

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April 2020

### Selected standards in the series Food

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**GCS 32.141-91**

Converted to GCS in 2014

## **Fresh, Chilled or Frozen Fish and Fish Products**

Withdrawn

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## Fresh, Chilled or Frozen Fish and Fish Products

ICS 67.120.30

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Canadian General Standards Board 

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*Acknowledgment is made for the French translation of this Canadian General Standards Board specification by the Translation Bureau of the Department of the Secretary of State.*

**Preface**

This document has been converted to a Government of Canada (GC) Standard in November 2014. Its previous designation was 32.141M. The original content has not been modified.

Withdrawn

CANADIAN GENERAL STANDARDS BOARD

**FRESH, CHILLED OR FROZEN FISH AND FISH PRODUCTS**

**1. SCOPE**

- 1.1 This specification gives requirements for fresh, chilled or frozen fish including lobster, crab and squid. It also includes processed products thereof such as dressed fish, fillets, steaks, fish sticks or portions, that may be raw, cooked and/or breaded, and imitation crab meat produced from surimi. This specification is intended to be used by food services in procurement of food.
- 1.2 With the exception of fish fillets (par. 6.3), this specification does not cover detailed requirements on sampling, examination or lot acceptance, nor does it cover definitions of defects or defect classification, since these aspects are covered by the Fish Inspection Regulations and the applicable product standards and inspection manuals of the Department of Fisheries and Oceans (par. 2.1.1).

**2. APPLICABLE PUBLICATIONS**

- 2.1 The following publications are applicable to this specification.
- 2.1.1 Canadian General Standards Board (CGSB)  
32.72M — Handling, Packaging and Labelling of Meat, Poultry and Fish for Food Services.
- 2.1.2 Department of Fisheries and Oceans  
Fish Inspection Act and Regulations  
Fish Products Standards and Methods Manual  
Fish Inspection Policies and Procedures Manual  
Chemical Methods Manual  
Standard Procedures for Bacteriological Analysis.
- 2.1.3 Department of National Health and Welfare  
Food and Drugs Act and Regulations  
Health Protection Branch Methods of Analysis.
- 2.2 Reference to the above publications is to the latest issues. The sources for these publications are shown in the Notes Section.

**3. DEFINITIONS**

- 3.1 **Fish** — Any fish, including shellfish (molluscs and crustaceans) and marine animals, and any parts, products or byproducts thereof.
- 3.2 **Whole Fish** — Fish as captured, ungutted.
- 3.3 **Fresh Fish** — Fish or products thereof that have received no preserving treatment other than chilling to a temperature between -1° and +4°C.
- 3.4 **Frozen Fish** — Fish that have been subjected to a freezing process specified in Part IV of Schedule I in Fish Inspection Regulations until all parts of the fish have reached a temperature of -21°C.

- 3.5 **Dressed Fish** — Fish that has been opened by cutting through the body wall along the ventral line from the tail to the throat and from which head, viscera and blood along the backbone have been removed.
- 3.6 **Fish Steak** — Uniformly cut unit of dressed fish with skin and bone but without scales. Each steak is derived from whole or subdivided fish and has two parallel surfaces which are cut perpendicularly to the axial length, or backbone, of a whole fish. The steak is of uniform thickness.
- 3.7 **Boned Fillet** — Fillet, from which essentially all bones, including pin bones, have been removed.
- 3.8 **Fillet** — Slice of fish of irregular size and shape, removed from the carcass of a fish by cuts made parallel to the backbone, from which all internal organs, head, fins, discoloured flesh and practically all bones (except intramuscular or lateral bones) have been removed.
- 3.9 **Breaded Fish** — Fish or fish flesh that is coated with batter and breading.
- 3.10 **Fish Portion** — Rectangular or triangular mass of cohering pieces (not minced) of skinless fish fillet. Fish portions may be cut from frozen blocks of skinless fillets.
- 3.11 **Breaded Fish Portion** — A unit of uniform, rectangular or triangular mass of fish flesh coated with batter and/or breading which weighs more than 50 g. Breaded fish portions may be cut from skinless fillets or from frozen blocks of skinless fillets.
- 3.12 **Fish Stick** — A uniform rectangular portion of breaded fish flesh weighing between 25 and 50 g, at least 10 mm thick, and shaped so that the length is not less than 3 times the greatest width. Fish sticks may be prepared from frozen blocks of skinless fillets.
- 3.13 **Glaze** — A thin, protective layer of ice, that is formed on the surface of a frozen product by spraying it with, or dipping it into, potable water or potable water with approved additives.
- 3.14 **Excessive Jelly** — Fish flesh which has a gelatinous texture and a glossy translucent appearance as a result of a moisture content of 86% or more by weight.
- 3.15 **Unwholesome Fish** — Fish that has in or upon it bacteria of public-health significance or substances toxic or aesthetically offensive to man.
- 3.16 **Tainted Fish** — Fish that is rancid or has an abnormal odour or flavour.
- 3.17 **Decomposed Fish** — Fish that has an offensive or objectionable odour, flavour, colour, texture or substance associated with spoilage.
- 3.18 **Surimi** — An intermediate, processed, fish protein from the flesh of pollock or other suitable species of fish to be used for manufacture of imitation/simulated forms of natural fish and shellfish products. Cryoprotectants may be added to promote shelflife.

#### 4. CLASSIFICATION

4.1 Fish shall be supplied in the following types and be of any edible species as specified (par. 9.1):

##### 4.1.1 *Types*

- a. Whole, fresh or frozen
- b. Dressed, fresh or frozen
- c. Steaks, frozen
- d. Fillets (with or without skin, bone-in or boned), fresh or frozen
- e. Fish portions, frozen
- f. Breaded fish portions, frozen, cooked or raw
- g. Fish sticks, frozen, cooked or raw
- h. Shrimps, frozen, peeled and deveined, plain or breaded, cooked or raw

- i. Scallop (meat), frozen, roe removed
- j. Lobster or crab meat, cooked, frozen.

#### 4.1.2 *Usual Species*

Arctic char	Ocean perch (redfish)
Capelin	Perch (walleye)
Cod	Pike
Crab	Pickrel
Flounder and sole	Pollock (Boston Bluefish)
Haddock	Salmon (Atlantic or Pacific)
Hake (red, white or silver)	Scallop
Halibut	Shrimp
Herring	Smelt
Lobster	Squid
Mackerel	Trout (lake or rainbow)
Monkfish	Tuna
Mullet	Turbot
	Whitefish

### 5. GENERAL REQUIREMENTS

- 5.1 In addition to meeting the requirements of this specification, fresh, chilled or frozen fish and fish products shall meet the requirements in the regulations and manuals specified in par. 2.1.1 and 2.1.2.
- 5.2 Fish shall be transported, stored and processed in vessels and establishments that meet the requirements for export as specified in Fish Inspection Regulations.
- 5.3 Fish and fish products according to this specification shall be sound, wholesome, clean and free from foreign matter and from substances toxic or aesthetically offensive to man. The odour and flavour of the fish shall range from characteristic to neutral and shall not be tainted or decomposed.
- 5.4 Fish flesh shall be firm, resilient, and free from abnormal conditions such as excessive jelly, milky (milk-white, excessively mushy, pasty or fluidized), chalky, dry or granular appearance, parasites, bruises (i.e., diffused blood in the tissue), or other discolourations as appropriate for the food product or in accordance with the tolerances specified in Appendix A.
- 5.5 Skin-on fish shall not have readily discernable damage to the skin (cuts, wounds, or other skin breaks) nor discoloured skin deviating from the normal characteristic colour as specified in the applicable standard by the Department of Fisheries and Oceans.

### 6. DETAILED REQUIREMENTS

#### 6.1 Refrigeration Requirements

- 6.1.1 **Fresh Fish** — Fresh fish shall be handled as given in par. 5.2 and be thoroughly chilled as soon as possible after catching or removing from water. The chilling shall be accomplished by packing the fish in well dispersed, finely crushed ice made from potable water or by other suitable method that brings the temperature of the fish between -1 and +4°C. Dressed and filleted fish shall be rechilled immediately after processing. Fresh fish shall be maintained at the temperature between -1 and +4°C until it reaches the food service operations.
- 6.1.2 **Frozen Fish and Fish Products** — All types of frozen fish shall be frozen as given in par. 3.4 and 5.2 and stored in rooms that are maintained at a temperature of -26°C or colder until delivery. The temperature of frozen fish or fish products shall not exceed -18°C during transport.

- 6.2 **Dressed Fish** — The body cavity and the carcass shall be washed and clean. When specified (par. 9.1) the scales shall be removed. The head may remain only if so specified (par. 9.1).
- 6.3 **Fish Fillets**
- 6.3.1 Fish fillets shall comply with the definition in par. 3.8. They shall be prepared as specified (par. 9.1) in any of the following ways:
- Skin-on, scaled, boned
  - Skinless, boned
  - Skinless, bone-in.
- 6.3.2 The fillets shall be reasonably free from foreign matter, scales, internal organs, ragged edges, tears and flaps, fins, blood clots, black membrane (belly wall), parasites, discoloured flesh and, as applicable, skin and bones. Sampling for inspection and testing and determination of compliance shall be as given in Appendix A.
- 6.4 **Breaded Fish Portions and Fish Sticks**
- 6.4.1 Breaded fish portions and fish sticks shall meet the definitions given in par. 3.11 and 3.12. Cooked fish sticks shall contain at least 60% and cooked breaded fish portions at least 67% fish flesh by mass. The uncooked fish sticks shall contain at least 67% and the uncooked breaded fish portions at least 75% fish flesh by mass.
- 6.4.2 The skinless fillets used as raw material shall be free from skin or bones or other defects as specified in Appendix A.
- 6.4.3 Frozen fish sticks and breaded fish portions shall be made of skinless fillets and be cooked (fried) or uncooked as specified (par. 9.1). All sticks or portions in an individual package shall be prepared from only one species of fish.
- 6.4.4 The frozen sticks and portions shall be easily separated by hand from each other or from packaging material. The coating shall be reasonably uniform in coverage, crisp and tender in texture without excessive dryness, sogginess, starchiness or stickiness. The fish portions shall be triangular or rectangular as specified (par. 9.1).
- 6.4.5 The packages of frozen fish sticks or breaded fish portions shall be free from physically or mechanically damaged or broken sticks or portions and shall not contain excessive loose breading, loose frost or, in the case of cooked products, loose oil.
- 6.5 **Frozen Shrimps, Peeled** — The frozen shrimps shall be presented without shell, head and tail fan. When specified (par. 9.1) the peeled shrimps shall be deveined, cooked and/or frozen individually as applicable. The final product shall be reasonably free from discolouration and other undesirable parts, such as legs, shell particles, antennae, heads or pieces thereof. The shrimps shall be uniform in size within a specified count range (par. 9.1). The shrimp species shall be as specified (par. 9.1).
- 6.6 **Frozen Breaded Shrimps, Raw** — The shrimps shall be raw, peeled and headed as given in par. 6.5. They shall be breaded and frozen individually. The shrimp material content of the coated shrimps shall not be less than 60% of the total declared net weight.
- 6.7 **Scallops, Raw, Frozen** — Frozen scallops shall consist of adequately drained, whole or cut adductor muscles of the scallop of the specified (par. 9.1) commercial species. The scallops shall be washed, drained, and graded for size. When specified (par. 9.1) the scallops shall be glazed. The scallops shall meet a specified (par. 9.1) count range (count per mass).
- 6.8 **Cooked Lobster Meat, Frozen** — Cooked lobster meat shall be free from stomach, intestinal tract, gills, cartilage, shell particles, liver, roe or any other part that is not lobster flesh. It shall be delivered frozen, and without brine, unless otherwise specified (par. 9.1). Fine or broken meat shall not constitute more than 1/3 of the package contents. The meat shall be white or off-white. The blood shall not have discolouration and the pigment shall be bright with only traces of the pigment rubbed off. The texture shall be firm, elastic and moist. The odour shall be pleasant, strong, characteristic of sound lobster. The brine, when provided, shall be clear or practically clear and colourless.
- 6.9 **Cooked Crab Meat, Frozen** — Cooked crab meat shall be free from discolouration and reasonably free from undesirable parts, such as egg capsules, shell, cartilage or blood clots. It shall be free of any organoleptic evidence of spoilage and the texture shall be firm, elastic and moist. The colour of the meat shall be creamy white, bright

glistening or with slight loss of sheen. The pigment shall be bright red or dull red. The cooked crab meat shall be delivered frozen and without brine, unless otherwise specified (par. 9.1).

**6.10 Imitation Crab Meat (Simulated Crab Meat)** — Imitation crab meat shall be made from surimi with appropriate crab flavoring (natural or artificial). Water, sugar, eggs, starch, colouring, flavouring, sweetening agents and other food additives in accordance with Food and Drug Regulations (par. 2.1.2) may be added. The appearance, flavour and texture of the imitation crab meat shall be similar to natural crab meat. It shall be provided in the form of sticks, flakes or chunks as specified (par. 9.1). The protein content of the imitation crab meat shall be  $13 \pm 2\%$  and moisture content  $75 \pm 3\%$ . The pH of the product shall be 6.8 to 7.2. The weight loss through drip after thawing shall not exceed 3%. The imitation crab meat shall be delivered precooked (pasteurized) and frozen in vacuum packages.

**6.11 Squid** — Fresh and frozen squid shall be supplied whole (round) or with split mantle and with guts, beak and eyes removed as specified (par. 9.1). The fresh squid shall be chilled with non-contact icing to avoid colour and texture changes. The skin of the round, fresh or thawed squid shall have a sheen and a red-brown colour. The inside mantle shall have an off-white sheen without yellow or brown-green stains. The texture shall be firm, rubbery or slightly chalky. The outside shall not be sticky, crumbly or slimy.

## **6.12 Grades**

**6.12.1** Frozen, gutted Pacific salmon shall be supplied in grade "A".

**6.12.2** When specified, frozen Atlantic smelts and whole, frozen Whitefish shall be graded for size as given below and supplied in the specified size (par. 9.1):

<u>Markings on Containers</u>	<u>Length of Smelts in Containers</u>
Small size	under 100 mm
Medium size	100 mm but less than 140 mm
No. 1 size	140 mm but less than 180 mm
Extra size	180 mm and over
<u>Markings on Containers</u>	<u>Mass of Whitefish in Containers</u>
Small	under 680 g
Medium	680 g but less than 1.35 kg
Large	1.35 kg but less than 1.80 kg
Jumbo	1.80 kg and over

## **7. PREPARATION FOR DELIVERY**

**7.1** Fish and fish products covered by this specification shall be packed, labelled, marked, stored and packaged as specified in CGSB specification 32.72M and by the purchaser (par. 9.1).

**7.2 Protective packaging or glazing** — Frozen whole or dressed fish, fish steaks and fillets shall be glazed or adequately packaged immediately after freezing to protect the fish from dehydration. The glaze may contain approved food additives (par. 2.1.2). When specified (par. 9.1), these products shall be individually frozen. The final product shall be free from dehydration that cannot easily be removed by scraping.

## **8. INSPECTION**

**8.1 Sampling** — Sampling for inspection and testing shall be as specified in par. 6.3.2 or in manuals given in par. 2.1.2 as applicable.

## **9. NOTES**

**9.1 Options** — The following options must be specified in the application of this specification:

- Type and species (par. 4.1)
- Whether fresh, chilled or frozen, cooked or uncooked product (as applicable) is desired (par. 4.1.1)



- c. Whether dressed fish shall be supplied without scales and whether the head may remain (par. 6.2)
- d. Whether fish fillets shall be supplied with or without skin, boned or bone-in (par. 6.3.1)
- e. Whether frozen fish sticks or breaded fish portions shall be cooked or uncooked (par. 6.4.3)
- f. Whether triangular or rectangular portions are required (par. 6.4.4)
- g. Whether frozen shrimps shall be deveined, cooked or individually frozen and desired count per mass (par. 6.5)
- h. The shrimp species desired, such as pink shrimp, *Pandalus borealis* (par. 6.5)
- i. Desired count per mass (count range) and whether the scallops shall be glazed (par. 6.7). Usual count ranges per pound are 21/25, 26/30 and 30/40.
- j. The scallop species desired, such as sea scallop, *Placopecten magellanicus* (par. 6.7)
- k. Whether crab or lobster meat shall be packed with brine (par. 6.8 and 6.9)
- l. The form of imitation crab meat (sticks, flakes, chunks, par. 6.10)
- m. Whether squid shall be whole or split, fresh or frozen (par. 6.11)
- n. Whether a specific size is required in case of Atlantic smelt and whole frozen Whitefish and the desired size (par. 6.12.2)
- o. Details regarding packaging and packing according to specification 32.72M or otherwise
- p. Whether whole or dressed fish, fish steaks or fillets shall be individually frozen (par. 7.2).

## 9.2 Sources of Referenced Publications

- 9.2.1 The publication referred to in par. 2.1.1 may be obtained from the Canadian General Standards Board, Sales Unit, Ottawa Canada K1A 1G6. Telephone (819) 956-0425 or 956-0426. Fax (819) 956-5644.
- 9.2.2 The procedures and manuals referred to in par. 2.1.2 may be obtained from the Department of Fisheries and Oceans, Communications Branch, 200 Kent Street, Ottawa, Ontario K1A 0E6.
- 9.2.3 The acts and regulations referred to in par. 2.1.2 and 2.1.3 may be obtained from the Canada Communication Group, Publishing, Ottawa, Canada K1A 0S9. Telephone (819) 956-4802.
- 9.2.4 The methods of analysis referred to in par. 2.1.3 may be obtained from the Department of National Health and Welfare, Health Protection Branch, Food Directorate, Ottawa, Ontario K1A 0L2.

(This Appendix forms part of the specification.)

**A1. SAMPLING OF FILLETS FOR INSPECTION AND TESTING**

The size of a sample unit shall be 2.27 kg (5 lb) and the number of units to be randomly drawn from a lot and acceptance number shall be as given in the applicable sampling plan for the lot size specified by the Department of Fisheries and Oceans.

For package sizes less than 2.27 kg, adequate number of packages shall be withdrawn so that a sample unit consisting of 2.27 kg of fillets is examined.

**A2. DEFINITIONS AND MAXIMUM DEFECT INCIDENCES ON FISH FILLETS**

A sample unit is considered defective if it is found to have a higher number of any defect incidence than that specified in the following table. A lot is unacceptable if the number of defective sample units exceeds the acceptance number of sampling plan used. Defect incidences shall be defined as given below. The fillets shall be examined in fresh or thawed state, except for dehydration, which shall be examined in the frozen state.

**DEFINITION OF DEFECT INCIDENCES**

Maximum Number of  
Defect Incidences  
per 2.27 kg Sample

**1. Dehydration of Frozen Fillets**

An area is affected by dehydration if it has a white fibrous appearance due to moisture loss that masks the colour of the fish and the affected appearance penetrates below the surface. The dehydrated material can only be removed with a knife or other sharp instrument, not by scraping. The number of incidences shall be derived from the sum of affected areas divided by 3% of the total area examined. Any decimal number shall be considered as one incidence.

1

**2. Small Fillet Pieces**

Each piece that weighs less than 28 g.

2

**3. Foreign Matter**

Each occurrence of foreign material that is:

- offensive in appearance but not harmful if consumed, such as shrimp antennae, paper or packing tags.
- potentially harmful, such as glass, insects or excessive grit or sand

0

**4. Parasites**

Each occurrence of a nematode or copepod regardless of size or encapsulation.

1

**5. Bones and Fins (Boned Fillets Only)**

Each part or whole pin-bone, rib-bone, backbone or fin ray (internal or external), that is larger than 5 mm in any dimension that occurs in fillets designated as boned.

1

**6. Bruises and Discolouration**

An area is considered bruised or discoloured if it has a readily discernible, significant colour abnormality such as blood discolouration (bruising), browning, yellowing, greening or other discolouring. The number of incidences shall be derived by dividing the sum of discoloured areas in square centimetres, by 6 cm<sup>2</sup>. Any decimal number shall be considered as one incidence.

3

## DEFINITION OF DEFECT INCIDENCES

- 7. Blood Clots**  
Blood clot is a lump or mass of clotted blood. The number of incidences shall be derived from the sum of the longest dimensions of each blood clot expressed in centimetres. Any part centimetre shall be considered as one incidence. 2
- 8. Skin and Black Membrane**  
The number of incidences shall be derived from the sum of skin area (in skinless fillets) and black visceral membrane area in square centimetres divided by 6 cm<sup>2</sup>. Any decimal number shall be considered as one incidence. 1
- 9. Melanin Spots**  
Up to 10 black or dark brown spots constitute one incidence. 1
- 10. Scales**
  - a. Skinless fillets — An incidence is each occurrence at three or more loose scales within an area of 6 cm<sup>2</sup>. 1
  - b. Skin-on fillets — The number of incidences shall be derived from the sum of areas covered by a clump or a cluster of scales (in square centimetres) divided by 6 cm<sup>2</sup>. Scales are not measured along the lateral line of perch fillets. Any decimal number shall be considered as one incidence. 1
- 11. Frills (Flatfish Only)**  
The number of incidences shall be derived from the total area of jelly-like tissues from or on the edges of flatfish fillets (in square centimetres) divided by 6 cm<sup>2</sup>. Any decimal number shall be considered as one incidence. 3
- 12. Roe**  
The number of incidences shall be derived from the total area of roe (egg mass) in square centimetres divided by 6 cm<sup>2</sup>. Any decimal number shall be considered as one incidence. 1
- 13. Viscera**  
Each readily visible incidence of matter from any internal organ. 0
- 14. Gaping and Raggedness**  
Gaping and raggedness means separation breaks, tears or perforations of flesh or crushing of muscle myotomes on the cut surface of a fillet. Natural longitudinal separation in the loin portion shall be exempted.
  - a. Moderate gaping and raggedness — Each fillet or part fillet, that has more than 25% but not more than 50% of its surface area affected by gaping and raggedness or a fillet that has a hole, more than 1 cm in diameter, completely through the fillet. An incidence is each 340 g of fillets (15% of the sample mass) that have moderate gaping and raggedness. 1
  - b. Excessive gaping and raggedness — Each fillet or part of fillet, that has more than 50% of its surface area affected by gaping and raggedness or a fillet that has two or more holes completely through the fillet that are larger than 1 cm in diameter. 0
- 15. Chalkiness**  
Each occurrence of excessively dry, chalking white and/or granular flesh. 0

DEFINITION OF DEFECT INCIDENCES

Maximum Number of  
Defect Incidences  
per 2.27 kg Sample

16. **Jellyness**

Jelly means gelatinous, glossy, translucent flesh as a result of excessive water content.

- a. Moderate jellyness — Each 227 g of fillets or fillet pieces (10% of sample mass) that have jelly containing more than 84% but not more than 86% water by mass.
- b. Excessive jellyness — Any fillet or part of fillet that has jelly containing more than 86% water by mass.

1

0

17. **Odour and Flavour**

Any flesh that has decomposed or tainted flavour or odour.

0

Withdrawn



Withdrawn