



## UNITED STATES STANDARDS FOR GRADES OF FISH FILLETS

---

### Scope and product description

- (a) This standard shall apply to fresh or frozen fillets of fish of any species that are suitable for use as human food and processed and maintained in accordance with good manufacturing procedures. Products covered by specific grade standards are not covered by this grade standard.
- (b) Fillets are slices of practically boneless fish flesh of irregular size and shape, which are removed from the carcass by cuts made parallel to the backbone and sections of such fillets cut so as to facilitate packing.
- (c) The product may contain bones when it is clearly labeled on the principle display panel to show that the product contains bones.

[44 FR 32386, June 6, 1979, as amended at 55 FR 23551, June 11, 1990]

### Product forms.

- (a) *Types:*
- (1) Fresh.
  - (2) Frozen individually (IQF); glazed or unglazed.
  - (3) Frozen solid packs; glazed or unglazed.
- (b) *Styles:*
- (1) Single
    - (i) Skin-on.
    - (ii) Skin-on scaled.
    - (iii) Skin-on (white side only) (applies only to flatfish).
    - (iv) Skin-off (skinless).
  - (2) Butterfly
- (c) *Bone classifications*
- (1) Practically boneless fillet.
  - (2) Bone-in (fillet cut, with bones).

[44 FR 32386, June 6, 1979, as amended at 55 FR 23551, June 11, 1990]

### Grades

- (a) *U.S. Grade A.* Fish fillets shall:
- (1) Possess good flavor and odor characteristic of the species; and
  - (2) Comply with the limits for defects for U.S. Grade A quality as outlined in Grade Determination.
- (b) *U.S. Grade B.* Fish fillets shall:
- (1) Possess reasonably good flavor and odor characteristic of the species; and
  - (2) Comply with the limits for defects for U.S. Grade B quality in accordance with Grade Determination.



(c) *U.S. Grade C*. Fish fillets shall:

- (1) Possess minimal acceptable flavor and odor characteristic of the species with no objectionable off-flavors or off-odors; and
- (2) Comply with the limits for defects for U.S. Grade C quality in accordance with Grade Determination.

(d) “*Substandard*”. Fish fillets shall:

- (1) Possess minimal acceptable flavor and odor characteristics of the species with no objectionable off-flavors or off-odors; and
- (2) Fail to meet the limits for physical defects for U.S. Grade C quality given under Grade Determination, paragraphs (d), (e), and (f).

[44 FR 32386, June 6, 1979]

### **Grade determination**

(a) *Procedures for grade determination*: The grade shall be determined by evaluating the product in the frozen, and/or thawed, and cooked states. Each defect is classified as to its relative severity as minor, major, or serious in accordance with paragraphs (d), (e), and (f) of this section. Odor and flavor are evaluated in accordance with paragraph (c) of this section. Tolerances for the various defects are set for each grade classification according to group species.

(b) *Sampling*. Sampling is to be done in accordance with the Regulations Governing Processed Fishery Products, Title 50, Chapter II, Subchapter G, 260.61, Tables II, V, or VI, where applicable. The sample unit shall be the container and its entire contents for containers up to 10 pounds. A representative 3 pound sample unit for containers over 10 pounds shall be used.

(c) *Evaluation of flavor and odor*.

(1) Evaluation of flavor and odor on each of the sample units shall be carried out only by those trained to do so. For evaluation of the odor of raw fillets, the thawed fillets should be broken and the broken flesh held close to the nose immediately to detect off-odor.

(2) If raw odor evaluation indicates any non-characteristic and/or off-odors, the sample unit or parts thereof shall be cooked by any of the following methods for verification of results of raw odor evaluation:

- (i) *Baked method*. Package the product in aluminum foil. Place the packaged product on a flat cookie sheet or shallow flat-bottom pan of sufficient size so that the packages can be evenly spread on the sheet or pan. Place the pan and frozen contents in a properly ventilated oven preheated to 400°F until the internal temperature of the product reaches 160°F.
- (ii) *Boil in bag method*. Insert the thawed unseasoned sample into a boilable film-type pouch. Fold open end of the pouch over a suspension bar. Clamp in place to provide a loose seal after evacuating the air by immersing the pouch into boiling water. Cook the contents until the internal temperature of the product reaches 160°F.



- (iii) *Steam method.* Wrap the sample in a single layer of aluminum foil and place on a wire rack suspended over boiling water in a covered container. Steam the packaged product until the internal temperature of the product reaches 160°F.

(d) *Examination for physical defects:* Each sample unit shall be examined for defects using the list of defect definitions that follow. Defects will be categorized as minor, major, and serious according to Table 1 of this standard.

(e) *Definition of defects in fillets:*

(1) “Abnormal condition” means that the normal physical and/or chemical structure of the fish flesh has been sufficiently changed so that the usability and/or desirability of the flesh is adversely affected. It includes but is not limited to the following:

- (i) *Jellied*--refers to the abnormal condition wherein a fish fillet is partly or wholly characterized by a gelatinous, glossy, translucent appearance.
- (ii) *Milky*--refers to the abnormal condition wherein a fish fillet is partly or wholly characterized by a milky-white, excessively mushy, pasty, or fluidized appearance.
- (iii) *Chalky*--refers to an abnormal condition wherein a fish fillet is partly or wholly characterized by a dry, chalky, granular appearance, and fiberless structure.

The intensity of abnormal conditions is defined as follows:

- (A) *Moderate*--refers to a condition that is distinctly noticeable but does not seriously affect the appearance, desirability, and/or the eating quality of the product.
- (B) *Excessive*--refers to a condition which is both distinctly noticeable and seriously objectionable.

(2) *Appearance defect*--refers to the color of the fish flesh and to the degree of surface dehydration of the product.

- (i) *Color defect*--refers to any readily discernable abnormal coloration including bruises, blood spots, browning, yellowing, and melanin spotting. Each square inch (6.5 cm<sup>2</sup>) of affected area is counted as one instance as determined by a transparent grid of 1 inch squares.

The extent of appearance defects is defined as follows:

- (A) *Slight*--2-4 instances.
  - (B) *Moderate*--5-6 instances.
  - (C) *Excessive*--over 6 instances.
- (ii) *Dehydration*--refers to loss of moisture from fish fillet surfaces during frozen storage.
    - (A) *Slight dehydration*--is surface color masking affecting more than 5 percent of surface area which can be readily removed by scraping with a blunt instrument.
    - (B) *Moderate dehydration*--is deep color masking penetrating the flesh affecting less than 5 percent, but more than 1 percent of surface area and requiring a knife or other sharp instrument to remove.



- (C) Excessive dehydration--is deep color masking penetrating the flesh affecting more than 5 percent of surface area and requiring a knife or other sharp instrument to remove.

(3) Workmanship defects refer to:

- (i) Cutting and trimming imperfections, ragged edges, holes, tears, and improper or misplaced cuts. Each square inch (6.5 cm<sup>2</sup>) of affected area is counted as one instance whether it is full or fractional. "Ragged edges" refers to the irregular or shredded appearance of the fillet edge.
- (ii) Scales, fins, or pieces of fins or extraneous material.
  - (A) Scales (skin-off) scaled fillets--An occurrence of attached or loose scales in any sample unit up to 1 square inch (6.5 cm<sup>2</sup>) is counted as one instance. Each additional 1 square inch (6.5 cm<sup>2</sup>) is an additional instance.
  - (B) Fins--Any fin or parts of any fin up to 1 square inch (6.5 cm<sup>2</sup>) in area shall be considered one instance of fin.
  - (C) Extraneous material means any piece of foreign matter on the fillet or elsewhere in the package. Each occurrence is considered one instance.

The extent of workmanship defects is defined as follows:

- Slight degree--1-2 instances.
- Moderate degree--3-4 instances.
- Excessive degree--over 4 instances.

(4) Bone--refers to a bone, or piece of bone, that exceeds either the dimension 15 mm in length or 0.355 mm in diameter. Each area of one inch square (6.5 cm<sup>2</sup>) which contains a bone or a cluster of bones shall be regarded as one instance of bones.

The amount of bones is defined as follows:

- Slight--1 instance.
- Moderate--2-4 instances.
- Excessive--over 4 instances.

In fillets intended to contain bones, the presence of bones will not be considered a workmanship defect.

(5) Skin--includes exterior skin and black membrane (belly lining).

- (i) For skinless fillets, each piece of skin up to 1 square inch (6.5 cm<sup>2</sup>) and every additional complete 1 square inch (6.5 cm<sup>2</sup>) thereafter shall be considered an instance.
- (ii) In the case of skin-on or skinless fillets, each piece of black membrane (belly lining) up to 1 square inch (6.5 cm<sup>2</sup>) thereafter shall be considered an instance.

The amount of skin is defined as follows:

- Slight degree--1 instance.
- Moderate degree--2-4 instances.
- Excessive degree--over 4 instances.



(6) Size of fillets--refers to the freedom from undesirably small pieces of fillets. Undesirably small shall mean any piece of fillet weighing less than 1 ounce (30 grams) per container.

Moderate degree--2 pieces.

Excessive--over 2 pieces.

(7) "Texture defect"--refers to the texture of the cooked fish being not characteristic of the species.

(i) Slight--fairly firm, does not form a fibrous mass in the mouth, moist but not mushy.

(ii) Moderate--moderately tough or rubbery, has noticeable tendency to form a fibrous mass in the mouth, moist but not mushy.

(iii) Excessive excessively tough or rubbery, has marked tendency to form a fibrous mass in the mouth, or is very dry or very mushy.

(f) *Categorization of physical defects.* Instances shall be assessed on a per pound basis for physical defects, except for defects relating to abnormal conditions, texture, dehydration and sizes of fillets.

TABLE 1-DEFECT TABLE

DEFECT DESCRIPTION	CLASSIFICATION		
	Minor	Major	Serious
1. Abnormal Condition: Moderate Excessive	---- ----	2 ----	---- 4
2. Appearance: (a) Color defects <sup>1</sup> : Slight (2-4 instances) Moderate (5-6 instances) Excessive (over 6 instances) (b) Dehydration: Slight (surface <5% of area) Moderate (deep 1 to 5% of area) Excessive (deep >5% of area)	1 ---- ---- ---- 1 ---- ----	---- 2 ---- ---- ---- 2 ----	---- ---- 4 ---- ---- 4
3. Workmanship defects: (a) Cutting and trimming <sup>1</sup> : Slight (1-2 instances) Moderate (3-4 instances) Excessive (over 4 instances) (b) Scales, fins, extraneous material <sup>1</sup> : Slight (1-2 instances) Moderate (2-4 instances) Excessive (over 4 instances)	1 ---- ---- ---- 1 ---- ----	---- 2 ---- ---- ---- 2 ----	---- ---- 2 ---- ---- 2
4. Bones <sup>1</sup> : Slight (1 instance) Moderate (2-4 instances) Excessive (over 4 instances)	1 ---- ----	---- 2 ----	---- ---- 4
5. Skin and Membrane <sup>1</sup> : Slight (1 instance) Moderate (2-4 instances) Excessive (over 4 instances)	1 ---- ----	---- 2 ----	---- ---- 2
6. Size of Fillets: Moderate (2 instances) Excessive (over 2 instances)	---- ----	2 ----	---- 2
7. Texture: Slight Moderate Excessive	1 ---- ----	---- 2 ----	---- ---- 4

<sup>1</sup>Assessed on per pound basis



	<b>TOLERANCES FOR VARIOUS DEFECTS</b>	
COMBINED MINOR AND MAJOR DEFECTS	SERIOUS DEFECTS	GROUP SPECIES <sup>1</sup>
U.S. Grade A: Up to 4 points Up to 5 points Up to 6 points	None --do-- --do--	Groundfish Flatfish All others
U.S. Grade B: Up to 8 points Up to 10 points Up to 12 points	--do-- --do-- --do--	Groundfish Flatfish All others
U.S. Grade C: Up to 10 points Up to 12 points Up to 14 points	Up to 8 points --do-- --do--	Groundfish Flatfish All others

<sup>1</sup> Groundfish (white fish) includes cusk, ocean catfish, pollock, hake, whiting, and ling. Flatfish includes Greenland turbot and halibut.

(g) *Grade assignment:* Each sample unit will be assigned the grade into which it falls in accordance with the tolerance contained in Table 1 for Group Species. The grade to be assigned a lot is the grade indicated by the average of the total scores, provided the number of sample units in the next lower grade for both physical defects and flavor and odor does not exceed the acceptance number as indicated in the sampling plans contained in § 260.61.

[44 FR 32386, June 6, 1979, as amended at 51 FR 34990, Oct. 1, 1986; 55 FR 23551, June 11, 1990]