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EAST AFRICAN STANDARD

Code of practice for the handling, processing, storage and distribution of molluscan shellfish

EAST AFRICAN COMMUNITY

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First Edition 2010

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

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Introduction

This code of practice applies to the more common Kenya's molluscan shellfish intended for human consumption. This Standard indicates methods of handling, processing, storage and distribution which will maintain product quality and minimize the risk of any deterioration from the time the shellfish are harvested until they reach the consumer.

As with any perishable foodstuffs, particularly those which may be eaten raw or after light cooking, hygiene is of paramount importance. Many of the hygienic principles which apply to fish equally apply to shellfish. Certain parts of the standard, therefore, follow the requirements of EAS 62-1:2000, *Fish handling, processing and distribution — Code of practice*.

Where good commercial practice, as described in this standard, is followed at all stages, then a product of high quality can be produced. There are certain key points in harvesting, processing, storage, and distribution which, if followed, will significantly assist in ensuring and maintaining quality of the shellfish.

The quality of the water from which the shellfish is taken is of major importance. Shellfish must never be harvested from polluted waters because of their capability of concentrating pathogenic micro-organisms and toxic chemicals, which can therefore constitute a health hazard. This code of practice does not give detailed specifications for the quality of water from which the shellfish are harvested, nor does it provide details of microbiological and chemical standards for the final product.

When shellfish are landed, it is most important that those which were harvested first are processed first. Water used during processing whether at sea or on land, should at least meet the minimum requirements. If the water which is used is contaminated, there is a considerable risk that extra bacteria will be added to the product, thus reducing its hygienic qualities.

Temperatures should be maintained at appropriate levels so as to minimize or prevent the growth of the various types, of micro-organisms and other deleterious changes which would lower the quality of the product. It is highly desirable that the time and temperature relationships for storage as laid down in this standard should be closely followed. The ultimate acceptability of the shellfish when they reach the consumer is dependent to a large extent on the nature of the storage provided. Shellfish that have been frozen and subsequently thawed must not be re-frozen.

In the preparation of this East African Standard, the following sources were consulted extensively:

KS 1564:1999, *Code of practice for the handling, processing, storage and distribution of molluscan shellfish*

CAC/RCP 52:2003(Rev. 4:2008), *Code of practice for fish and fishery products*

IS 4303-1:1975, *Code of hygienic conditions for fish industry — Part 1: Pre-processing stage*

IS 4303-2:1975, *Code of hygienic conditions for fish industry — Part 2: Canning stage*

Codex Alimentarius website: http://www.codexalimentarius.net/mrls/vetdrugs/jsp/vetd_q-e.jsp

USDA Foreign Agricultural Service website: http://www.mrldatabase.com

USDA Agricultural Marketing Service website: http://www.ams.usda.gov/AMSv1.0/Standards

European Union: http://ec.europa.eu/enterprise/sectors/pharmaceuticals/veterinary-use/maximum-residue-limits/index_en.htm

Assistance derived from these sources is hereby acknowledged.

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Code of practice for the handling, processing, storage and distribution of molluscan shellfish

1 Scope

This Code of Practice prescribes the hygienic and quality requirements for the handling, processing, storage, and distribution of molluscs intended for human consumption, either directly or after further processing. It covers the following species:

Official name	Scientific name
Mussel, blue	*Mytilus edulis aoteatnus*
Mussel, green	*Perna canaliculus*
Oyster, rock	*Craysostrea glomerata*
Scallop	*Pecten novaezealandiae*
Clams	*Paphies spp*

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CAC/GL 21, *Principles for the establishment and application of microbiological criteria for foods*

CAC/RCP 1, *Recommended international code of practice — General principles of food hygiene*

CAC/GL 30, *Principles and guidelines for the conduct of microbiological risk assessment*

CAC/GL 31, *Guidelines for the sensory evaluation of fish and shellfish in laboratories*

CD-K-572-2010, *Fish and fisheries products — Methods of sampling*

CAC/RCP 52[CD/K/521:2010], *Code of practice for fish and fishery products*

EAS 35, *Edible salt — Specification*

EAS 12, *Drinking (potable water) — Specification*

EAS 38, *Labelling of prepackaged foods — Specification*

EAS 41, *Fruits, vegetables and derived products — Sampling and methods of test*

EAS 103, *Schedule for permitted food additives*

EAS 123, *Distilled water — Specification*

ISO 4831, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Most probable number technique*

ISO 4832, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms — Colony-count technique*

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ISO 4833, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of microorganisms — Colony-count technique at 30 degrees C*

ISO 6579, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*

ISO 6887-1, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 1: General rules for the preparation of the initial suspension and decimal dilutions*

ISO 6887-2, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 2: Specific rules for the preparation of meat and meat products*

ISO 6887-3, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 3: Specific rules for the preparation of fish and fishery products*

ISO 6888-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Technique using Baird-Parker agar medium*

ISO 6888-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 2: Technique using rabbit plasma fibrinogen agar medium*

ISO 6888-3, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 3: Detection and MPN technique for low numbers*

ISO 7251, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*

ISO 7937, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of Clostridium perfringens — Colony-count technique*

ISO 13720, *Meat and meat products — Enumeration of Pseudomonas spp.*

ISO 16050, *Foodstuffs — Determination of aflatoxin B_1, and the total content of aflatoxin B_1, B_2, G_1 and G_2 in cereals, nuts and derived products — High performance liquid chromatographic method*

ISO 16654, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Escherichia coli O157*

ISO 21567, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Shigella spp.*

ISO/TS 21872-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of potentially enteropathogenic Vibrio spp. — Part 1: Detection of Vibrio parahaemolyticus and Vibrio cholerae*

ISO/TS 21872-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of potentially enteropathogenic Vibrio spp. — Part 2: Detection of species other than Vibrio parahaemolyticus and Vibrio cholerae*

ISO 11290-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of Listeria monocytogenes — Part 1: Detection method*

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ISO 11290-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of Listeria monocytogenes — Part 2: Enumeration method*

3 Definitions

For the purpose of this standard the following definitions shall apply.

3.1
molluscan shellfish
all marine gastropods and lamellibranchs

3.2
raw molluscs
molluscs which have not been subjected to any form of processing other than shucking, sorting, washing or packing. This includes raw molluscs packed in a closed or sealed container.

3.3
shell-stock
live molluscs in the shell after harvesting

3.4
shucked molluscs
molluscs wholly or partially removed from their shell or shells

3.5
detergent
a cleansing agent whose primary function is to assist in the removal of dirt and organic matter

3.6
sanitizer
a compound whose primary function is to reduce or inhibit the growth of micro-organisms

3.7
shucking
the partial or whole removal of mollusc from their shell(s)

4 Requirements for quality molluscs

4.1 All molluscs for human consumption shall be taken from waters of high sanitary quality and free from undesirable contaminants.

4.2 Molluscs shall not contain pathogenic micro-organisms at levels which represent a health hazard to consumers, and shall not show overt signs of spoilage.

The meat shall be sound, unblemished, and free from toxins and from abnormality.

5 Sanitation requirements on board the fishing vessel

5.1 The entire deck and storage area shall be kept in a clean and sanitary condition, and shall be washed before and after each day's operation. Polluted water shall not be used.

5.2 The decks and holds of vessels, storage tanks and storage areas, containers, shelves, and all surfaces coming into contact with molluscs shall be maintained in good repair.

5.3 Provision shall be made on the vessel for the proper storage of oils or materials which could damage, contaminate, or taint the molluscs.

5.4 The bilge of all vessels shall be maintained in a sanitary condition.

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6 Handling, transportation and treatment of shell-stock

6.1 Shell-stock shall be adequately protected from rain, wind, extremes of temperature and contaminants.

6.2 Sacks or other containers used shall be clean and free from any materials which may impart odours or any other contamination.

6.3 The product when bagged shall be free, as far as practicable, from foreign materials, sand, dirt, and other extraneous matter.

6.4 Shell-stock which are dead, damaged, tainted**,** or showing overt signs of spoilage shall be removed from the catch as soon as possible.

7 Requirements at point of loading and unloading shell-stock

Shell-stock shall be handled in such a manner as to minimize damage and prevent contamination during unloading, and loading.

8 Labelling of containers for holding shell-stock

All sacks and other containers holding shell-stock shall be legibly labelled with the identifying mark of the harvester, the date on which the shell-stock was harvested from the harvest area, and any other requirements of the fisheries legislation and regulations.

9 Holding times between harvesting, shucking and processing

9.1 The production of molluscs of acceptable quality is more readily assured when they are shucked alive.

9.2 The molluscs shall be shucked within the times specified in Table 1.

9.3 Frozen molluscs shall be brought through the critical zone from 0 °C to -5 °C in a period not exceeding 8 hours.

9.4 The recommended maximum time between shucking and processing is 4 hours.

Table 1 — Recommended time intervals between harvesting and shucking

Species	Recommended maximum time
Mussels (blue, green)	96 hours
Oysters, rock	10 days
Scallops	72 hours
Clams	72 hours

10 Requirements for the storage of shucked molluscs

Shucked molluscs shall, at all times, be stored in accordance with the times and temperatures given in Table 2.

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Table 2 — Recommended product temperature during storage of shucked molluscs

Stage	Temperature	Storage times
Raw molluscs opened	–1°C to 2 °C	72 hours
Cooked molluscs	–1°C to 2 °C	48 hours
Frozen cooked molluscs	–23 °C	3 months
Frozen raw molluscs	–23 °C	3 months
Thawed molluscs	1°C to 2 °C	48 hours

11 Requirements during the transportation of shucked and processed molluscs

11.1 Chilled molluscs shall be transported under temperature conditions which ensure that they remain chilled.

11.2 Frozen molluscs shall be transported under temperature conditions which ensure that they remain frozen.

11.3 Molluscs and containers holding molluscs shall be protected against damage and contamination during transportation.

12 Water supplies

For the washing of molluscs, there shall be an adequate supply of water under satisfactory pressure.

13 Cleaning and sanitizing procedures

Cleaning and sanitizing procedures shall be in accordance with Annex A.

14 Requirements for processing establishments

14.1 All processing establishments shall be equipped with a processing room clearly separate from all other areas.

14.2 Processing and packaging rooms

14.2.1 The floor of processing and packaging rooms shall be constructed of an impervious durable material. It shall have a smooth finish that is easily cleaned, and shall be adequately graded and drained.

14.2.2 The walls shall be constructed from impervious, non-toxic, non-absorbent material to a height of not less than 2 m from the floor. The entire wall area shall be smooth, light coloured and capable of being easily cleaned.

14.2.3 All windows, doors and other vents and openings, to the outer air shall, as far as is possible, be covered with screens that will effectively exclude insects, birds, rodents and other vermin, such screens shall be removable for cleaning.

14.2.4 The roof shall be weatherproof.

14.2.5 Ceilings shall be of such construction, materials and finish as to provide a smooth rustproof surface which can be easily cleaned. The ceilings shall be light in colour.

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14.2.6 Overhead pipes shall be properly insulated or covered to prevent condensates from dripping on food or food contact surfaces.

14.2.7 Stairs shall be so constructed that they are easily cleaned, and no contamination can be caused by material passing through the risers or treads.

14.2.8 Ventilation shall be away from sources of odours, dust or smoke.

14.2.9 Condensation shall be avoided and cookers and boilers shall be provided with hoods opening, on to the outer air.

14.2.10 Illuminance shall be at least 540 lux on workmen surfaces and at least 220 lux elsewhere.

14.2.11 Every plant shall be supplied with sufficient water under adequate pressure for cleaning, the quality of the water shall comply with Annex A.

14.2.12 A sufficient supply of hot water having a temperature of not less than 82 °C shall be available under adequate pressure.

14.2.13 Hand-washing units shall be provided in processing rooms. Each hand-washing unit shall be supplied with water at a temperature of not less than 40 °C, and shall be so constructed as to enable the tap to be operated by a foot or knee pedal. Adjacent to each hand-washing unit there shall be provided clean dispenser-type roller towels or paper towels or other acceptable means of drying the hands. Receptacles for used paper towels shall be provided.

14.2.14 No part of any establishment shall be used by any person as living quarters unless that part is physically separated from the remainder of the establishment and there is no direct access from that part to any other part of the establishment.

14.3 Yards or outside working areas

14.3.1 The yard, where it is used as a working area, shall be paved or covered with an impervious, smooth, washable surface and shall be provided with adequate drainage.

14.3.2 Where any part of a yard is used for the storage or cleansing of containers used for molluscs, the walls adjacent to that part shall be constructed of an impervious smooth washable surface to a height of not less than 2 m.

14.4 Temperature controlled rooms

14.4.1 The construction of temperature controlled rooms shall comply with the requirements of 14.2.1, 14.2.2, 14.2.4 and 14.2.6.

14.4.2 Temperature controlled rooms or containers shall be capable of maintaining a product temperature in accordance with the times and temperatures given in Table 2.

14.4.3 Each temperature controlled room shall be equipped with a thermometer or other temperature measuring device which is easily visible, well maintained and calibrated. The sensing element shall be located not more than 2 m and not less than 1.5 m from the floor and not in a direct blast from refrigerated air or near entrance doors. It is preferable that temperature recording be done automatically.

15 Equipment in processing establishments

15.1 Surfaces coming in contact with the product, including cleaning, preparation, and packing tables, shall be made of or covered with plastics, marble, stainless steel, or other corrosion-resistant impervious durable material possessing similar surface characteristics. Surfaces shall be so constructed as to facilitate rapid and effective drainage and shall be free front cracks and crevices. All joints shall be watertight.

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15.2 Tables and the area beneath them shall be easily cleaned.

15.3 Opening-blocks shall be kept in a clean and sanitary condition.

15.4 Equipment containing lead or lead alloys shall not be used.

15.5 Containers, trays, and bins used in the preparation of molluscan products and the storage of semi-processed raw materials shall be made of stainless steel or other corrosion-resistant impervious durable material which is easy to clean.

15.6 Brushes, brooms, hoses, and other cleaning equipment shall be available at all times, and shall be kept in good repair and clean condition. Suitable storage shall be provided for this equipment when not in use.

15.7 Adequate supplies of sanitizers and detergents shall be available at all times.

15.8 Separate storage shall be provided for sanitizers, detergents, and other chemicals not used in the processing of molluscs.

16 Operations in processing establishment

16.1 The same rooms may be used for the processing of other fish products provided that molluscs and fish are not processed simultaneously. At each change of use, the room shall be thoroughly cleaned and sanitized. No other materials shall be stored in these rooms other than those required for preparation of the particular product.

16.2 All containers containing molluscs shall be moved within the establishment on trolleys, barrows, conveyors, or other such suitable equipment and shall not be slid over the floor.

16.3 Containers that have contained molluscs shall be thoroughly cleaned before being re-used.

16.4 Utensils and equipment, including preparation and packaging tables coming, into contact with molluscs, shall at all times be maintained in a hygienic condition and shall be cleaned and sanitized at the conclusion of each working day or more frequently as required.

16.5 Floors in wet working areas shall be kept clean at all times, and at least once daily shall be effectively cleaned and sanitized.

16.6 The interior surfaces of walls shall be kept clean.

17 Vermin control in processing establishments

17.1 The occupier shall, so far as is possible, ensure that the premises are kept free from birds, rodents, insects, and other vermin. Should any of these become apparent, the occupier shall immediately take steps to eradicate them and prevent a re-infestation.

17.2 Insecticides, rodenticides, and other toxic chemicals shall not be applied while processing is in operation, or the exposed product is present. Working surfaces, containers, packaging, and raw materials shall at all times be kept free from toxic residues.

17.3 Animals shall not be permitted in any part of the premises.

17.4 There shall be maintained in a conspicuous place a notice printed legibly in plain capital letters as follows:

‘ANIMALS ARE NOT PERMITTED IN THESE PREMISES’

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18 Offal disposal in processing establishments

18.1 A sufficient number of portable watertight containers shall be provided for empty shells or other debris. These shall be of metal or other suitable impervious, non-absorbent material and shall be provided with an impervious flyproof cover.

18.2 The containers specified in 18.1, when filled or not being used for immediate reception of offal, shall be kept covered, and held in a separate room or enclosure or outside on a stand. The stand shall be constructed of impervious material and shall extend at least 300 mm above a sealed area suitably graded and drained.

18.3 Shells and offal shall be removed from the premises at least once daily. Immediately after emptying, shell and offal receptacles shall be effectively washed and cleaned in accordance with Annex A.

18.4 Garbage and trade refuse shall be stored in suitably covered containers and removed from the premises at frequent intervals.

19 Requirements for retailers

19.1 **Preparation area** — The preparation area shall comply with the provisions of 14.2. The public shall not be permitted in this area.

19.2 Partitions and screens shall be easily cleaned, and of a light colour.

20 Shop-serving area

20.1 The shop-serving area shall be so constructed as to comply with the provisions of 14.2.1 to 14.2.11 inclusive.

20.2 Every retailer dealing in fresh molluscs shall have effective chilled storage with a capacity of not less than 1 days' supply. Retailers dealing in frozen molluscs shall provide refrigerated storage with a capacity of not less than 2 days' supply.

20.3 Molluscs shall, at all times, be stored in accordance with the times and temperatures shown in Table 2.

20.4 Frozen molluscs which have been thawed for retail sale shall not be re-frozen.

20.5 Molluscs exhibited for sale shall be:

(a) shaded from the direct rays of the sun, and protected by windows from external contamination;

(b) even where refrigerated windows or refrigerated slabs are in use, ice is desirable;

(c) on display as short a time as possible.

21 Dwelling accommodation

Dwelling accommodation shall be separated from the fishmonger's business except where it is necessary for a passageway from one to the other.

22 Equipment and utensils

22.1 All serving counters and working surfaces shall comply with the provisions of Clause 5.

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22.2 Window slabs and shelves used for displaying molluscan products shall be made of or covered with stainless steel, glass, marble, plastics, or other material possessing similar surface characteristics and shall be so arranged as to facilitate drainage and cleaning.

22.3 Shelves shall be located not less than 500 mm from the floor.

22.4 Containers in which molluscs are washed and processed shall be made of stainless steel or other corrosive resistant impervious durable material which is easy to clean.

23 Cleaning

23.1 The cleaning of the premises, equipment and utensils shall be in accordance with the requirements of 16.4 to 16.6 inclusive.

23.2 Returnable containers used for molluscs shall be effectively cleaned and treated with a sanitizer immediately after use and returned as soon as practicable.

23.3 Returnable containers for molluscs shall not be used for any other purpose.

24 Vermin control

Measures for vermin control shall be in accordance with the requirements of Clause 17.

25 Alternative means of retailing

This standard shall apply to itinerant traders and to those using other methods of retailing and distribution.

26 Requirements for all staff engaged in handling molluscs

26.1 No person who is suffering from a communicable disease, or suffering from a condition causing a discharge of pus or serum from any part of the head, neck, hands, or arms, shall engage in the preparation, packing or handling of molluscs or molluscan products for sale, or of any material used or likely to be used as a wrapper or container for molluscs.

26.2 If the occupier of any establishment engaged in handling molluscs has reason to believe or suspect that any person, whether suffering from a communicable disease or not, is likely to transmit disease- producing organisms to any molluscs, he shall ensure that person is excluded from working in any such establishment until that person furnishes a certificate from a medical practitioner that he/she is free from infection.

26.3 No person shall spit, or smoke, or chew tobacco, where molluscs are being handled. The consumption of food or drink shall be prohibited. Notices, to this effect shall be prominently displayed.

26.4 All persons in the processing area shall wear clean protective clothing, including headgear and mouth gear. All personnel coming in contact with shucked and unpacked molluscs shall wear waterproof protective clothing, which shall be kept clean at all times and treated with a sanitizer after each days' operations.

26.5 All protective clothing shall be maintained in good repair, and except for laundering shall not be removed from the premises. Neither protective clothing nor outer clothing shall be stored in processing areas.

26.6 Gloves used in the handling of molluscs shall be maintained in a sound, clean, and sanitary condition and shall be made from an impermeable material except where their usage would be incompatible with the work involved.

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26.7 Staff shall keep their fingernails, beards and hair short and clean. The wearing of fingernail varnish and jewellery by employees while handling shucked molluscs with the bare hands shall not be permitted. Employees shall wash their hands with soap and dip their feet in a footpath containing disinfectant before starting work and after each absence from the processing area.

27 Staff facilities

27.1 Adequate toilet facilities shall be provided and shall comply with the Factory Act.

27.2 Rooms or cubicles in which toilet facilities are located shall have self-closing, doors and shall not open directly into a processing area.

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Annex A
(normative)

Cleaning and sanitizing procedure

A.1 In the cleaning and sanitizing of plant and equipment, the following five distinct operations shall be employed:

(a) Dry-clean;

(b) Rinse with cold water to remove gross dirt and contamination;

(c) Rinse with warm water containing a detergent. Preferably heated to 40 °C to 50 °C. Rinse off with warm water;

(d) Sanitize by steaming, immersion in hot water, or rinsing with a sanitizer, preferably heated to 40 °C to 50 °C;

(e) Rinse off with warm water, preferably at 81 °C, before processing recommences.

A.2 Standard cleaning procedures shall be developed for use in the various stages of the catching and processing line. Where practicable the effectiveness of routine cleaning shall be checked by periodic bacteriological sampling. Other points to be noted are as follows:

(a) Cold water, preferably under pressure, shall be used for the preliminary rinse.

(b) Cleaning is the most important stage in the whole operation. All possible aids including warm water 40 °C to 50 °C, soap or synthetic detergents, scrubbing, or high pressure sprays shall be used. The choice of detergent depends on the type of dirt, the nature of the surface, and the degree of hardness of the water being used, and it must be of an approved non-tainting type. After scrubbing, hot water shall be used to rinse off remaining dirt and excess detergent. This is necessary as many sanitizers are neutralized by detergents.

(c) Sanitising of well cleaned surfaces provides a safeguard against the build-up and spread of pathogenic and spoilage micro-organisms. As sanitizers lose most of their effectiveness when used on dirty surfaces, the sanitizing procedure shall not be employed as a substitute for thorough cleaning. Steam or hot water over 82 °C can be used for sanitizing only if the temperature at the surface of the object being treated is maintained above 82 °C for at least 2 minutes and preferably longer. Where these conditions cannot be met consistently in practice, the use of sanitizer rinses is recommended. Sanitizers shall be non-corrosive, non-perfumed, non-tainting, and used in sufficient concentration to be effective in the contact time available.

(d) It is recommended that a formulated product designed for fish factories shall be used. Particular care shall be taken in using these products and attention paid to the manufacturer's instructions.

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