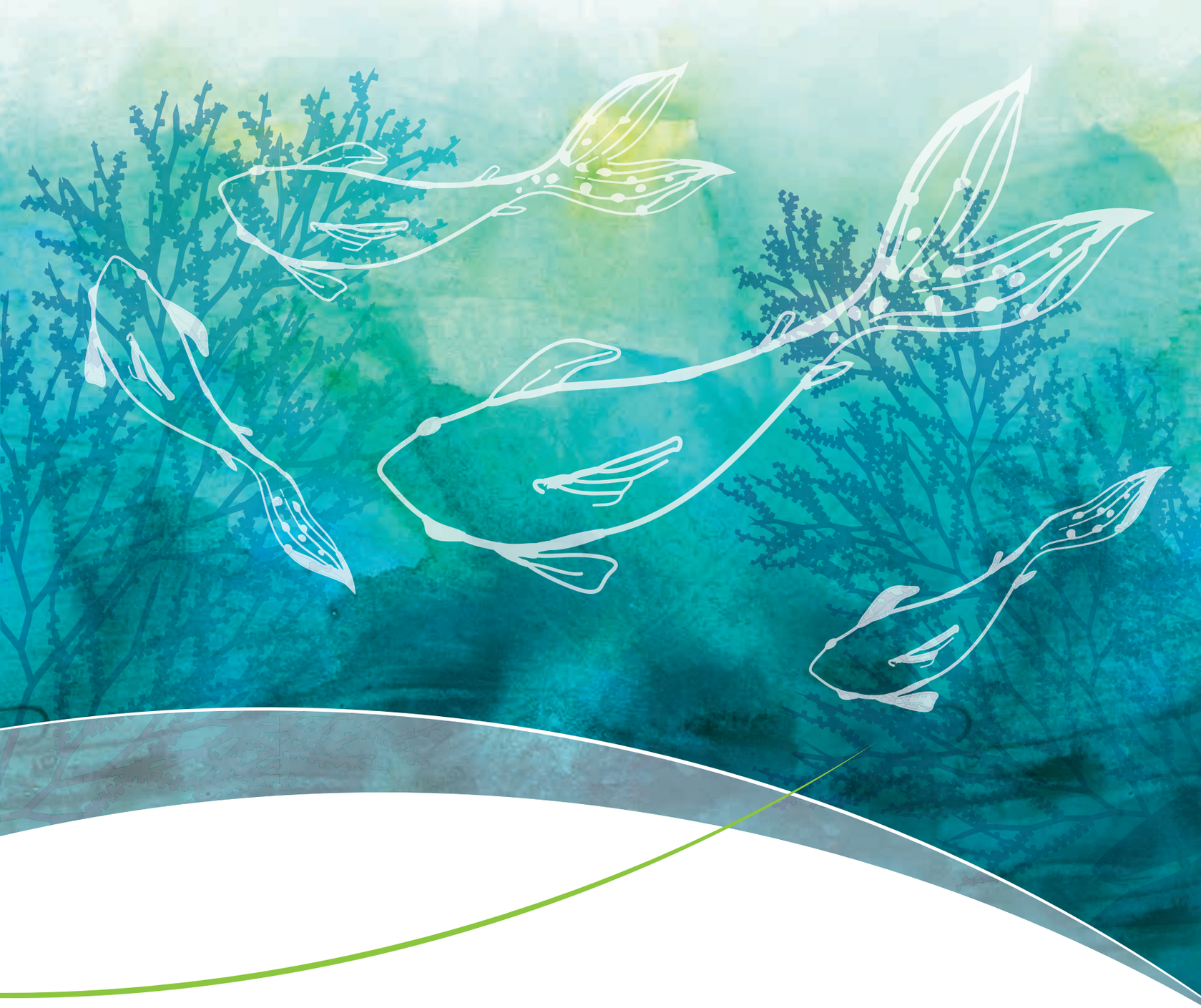

Food Safety Workbook

for Seafood Retailers

2nd edition

BIM Ireland's Seafood Development Agency

BIM Ireland's Seafood Development Agency

FOOD SAFETY WORKBOOK

for Seafood Retailers

2nd edition
(first published in January 2014)

Business Name:

Date:

This Food Safety Workbook was developed by Bord Iascaigh Mhara (BIM) to assist seafood retailers in the implementation of a Food Safety Management System for their business.

The workbook provides guidance for complying with food safety legislation and/or best practice and should assist seafood retailers in ensuring that all seafood offered for sale meets the highest standards of food safety. Some aspects of seafood quality are also addressed in the workbook.

It is recommended that the workbook is used in conjunction with Irish Standard I.S.341: 2007 Hygiene in food retailing and wholesaling: *National Standards Authority of Ireland (NSAI) (Including amendment A1:2015 to I.S.341:2007).*

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CONTENTS

INTRODUCTION

How to use this Workbook

Each section in the workbook gives guidance on legal requirements and/or best practice. The seafood business is required to complete each section with details of how these requirements are met in their business.

In some sections, examples are provided which may be used or can be adapted to suit the needs of a particular business.

Blank record sheets are provided in the workbook. These are available electronically and can be printed by the business or photocopied as required.

Acknowledgements

This workbook was developed by Eileen Soraghan, Seafood Quality Officer in BIM with assistance from the BIM food safety team and contributions from Dr Lisa O Connor: Food Safety Authority of Ireland, Aileen O'Sullivan: Sea-Fisheries Protection Authority and Marie Ryan: Senior Environmental Health Officer, Health Service Executive.

Disclaimer

The advice given in this workbook is based on information to hand and is subject to revision in the light of further information or revised legislation. The information in the workbook is not intended to be a definitive guide to, or a substitute for, the relevant law.

The responsibility for food safety lies with the food business operator and it is their responsibility to ensure that all current legislation is complied with. Independent legal advice should be sought where appropriate.

INTRODUCTION

Terms and Definitions

Codex: *Codex Alimentarius* (Latin for Food code) is the joint food standards programme of the Food and Agriculture Organisation of the United Nations (FAO) and the World Health Organisation (WHO).

Food Business Operator: The natural or legal person(s) responsible for ensuring that the requirements of food law are met within the food business under their control.

Potable Water: Water meeting the minimum requirements laid down in Council Directive 98/83/EC of 3 November 1998 on the quality of water for human consumption and S.I. 278 of 2007.

Prerequisite Programme: Basic conditions and activities which are necessary to maintain a hygienic environment throughout the food business, suitable for the production, handling and provision of safe end products.

Ready-to-Eat: Food that is intended by the producer or the manufacturer for direct human consumption without the need for cooking or other processing to eliminate or reduce to an acceptable level, microorganisms of concern.

Retail: The handling and/or processing of food and its storage at the point of sale or delivery to the final consumer, and includes distribution terminals, other similar food service operations, shops, supermarkets, supermarket distribution centres and wholesale outlets.

ABP: Animal By-Products

BIM: Bord Iascaigh Mhara / Irish Sea Fisheries Board

EHO: Environmental Health Officer

FAO: Food and Agriculture Organisation of the United Nations

FSAI: Food Safety Authority of Ireland

HSE: Health Service Executive

NSAI: National Standard Authority of Ireland

SFPA: Sea-Fisheries Protection Authority

S.I.: Statutory Instrument

INTRODUCTION

References

BIM Guidance Note for Retailers - Cold Chain Management for Seafood, Issue 3, July 2017.

BIM Guidance Note for Retailers - Labelling Requirements for Sale of Seafood, Issue 4, July 2017.

BIM Guidance Note for Seafood Retailers - Allergen Information for Consumers, Issue 2, July 2017.

Butchers' Booklet Guidance on Food Safety and Labelling Requirements relating to Butchers' counters: *Environmental Health Officers' Association 2011.*

Code of Practice for fish and fishery products, Second edition 2012: *Codex Alimentarius.*

Commission Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs.

Guidance Note 10 Product Recall and Traceability (Revision 3): *Food Safety Authority of Ireland.*

Guidance Note 11 Assessment of HACCP Compliance (Revision 2): *Food Safety Authority of Ireland.*

HACCP: a practical guide (5th edition) 2015 Guideline no.42: *Campden BRI UK.*

HACCP: *The Letters of the Law for Food Safety,* Information Pack: *Food Safety Authority of Ireland.*

Irish Standard I.S.341: 2007 Hygiene in food retailing and wholesaling: *National Standards Authority of Ireland (NSAI).*

Regulation (EC) No 178/2002 Of The European Parliament And Of The Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety.

Regulation (EC) No 852/2004 Of The European Parliament And Of The Council of 29 April 2004 on the hygiene of foodstuffs.

Safe Catering - your guide to making food safely: *Food Safety Authority of Ireland (FSAI).*

S.I. No. 121 of 2016 European Union (Labelling of Fishery and Aquaculture products) Regulation 2016

S.I. No. 369/2006 - European Communities (Hygiene of Foodstuffs) Regulations 2006.

S.I. No. 747/2007 - European Communities (General Food Law) Regulations 2007.

BUSINESS DETAILS

Business name:	
Owner/Manager:	
Address:	

Business Profile

Give brief details of the food business location, history and ownership:

Give brief details of activities carried out in the premises e.g. filleting, pin-boning and cooking:

Customers: e.g. general public/other businesses:

Staff Details:

Name	Position	Main duties	Date employment commenced in the business	Experience

Products for Sale

Whole fish:

Fish fillets:

Shellfish:

Value-added raw fish products prepared on the premises:

Value-added cooked or ready-to-eat fish products prepared on the premises:

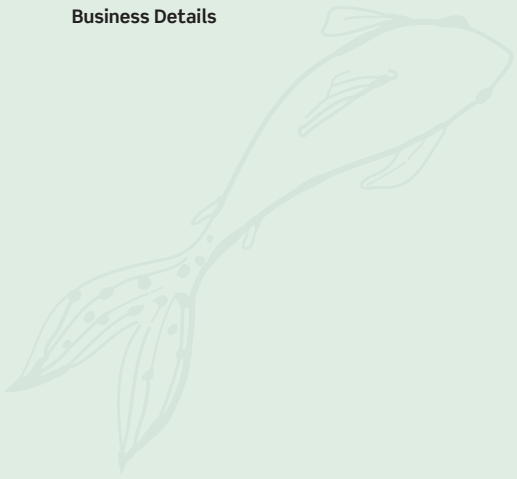
Pre-packaged chilled fish products not prepared on the premises:

Pre-packaged frozen fish products not prepared on the premises:

Organic products (loose):

Wild salmon, wild trout, wild molluscan shellfish:

Other products:



1 REGULATORY CONTROL

1.1 Official Agency Contact Details

The business should have contact details for relevant staff in various agencies who may be able to assist with food safety issues.

Complete the table

Official Agency	Contact person	Website and email address	Phone number
Health Service Executive (HSE) Local office			
Food Safety Authority of Ireland (FSAI)		www.fsai.ie *info@fsai.ie*	01 817 1300 1890 33 66 77
Sea-Fisheries Protection Authority (SFPA)		www.sfpa.ie *info@sfpa.ie*	023 885 9300 1890 76 76 76
Bord Iascaigh Mhara (BIM)		www.bim.ie *foodsafety@bim.ie*	01 214 4100
Environmental Health Association of Ireland (EHAI)		www.ehai.ie *info@ehai.ie*	01 276 1211

1.2 Food Legislation

Regulation (EC) No 178/2002 contains general obligations for food businesses and makes it a legal offence to sell unsafe food *"Food shall not be placed on the market if it is unsafe"*. This regulation also places the responsibility for food safety primarily with the food business operator. *"A food business operator is best placed to devise a safe system for supplying food and ensuring that the food it supplies is safe; thus, it should have primary legal responsibility for ensuring food safety"*.

Regulation (EC) No 852/2004 also places the onus for food safety with the food business operator: *"Primary responsibility for food safety rests with the food business operator"*.

Regulation (EC) No 2073/2005 establishes microbiological criteria for foodstuffs. The FSAI have produced a fact sheet which outlines the main issues to be considered by retailers to ensure compliance with this regulation.

See FSAI Microbial Factsheet series Regulation (EC) No. 2073/2005 on Microbiological Criteria for Foodstuffs - Information for Retailers

The food business operator must be familiar with food hygiene legislation and guidance documents relevant to their business in particular:

- Regulation (EC) No 178/2002
- Regulation (EC) No 852/2004
- Irish Standard I.S.341:2007 Hygiene in food retailing and wholesaling, National Standards Authority of Ireland (NSAI).

In addition to the food hygiene regulations, the business must be aware of and comply with labelling regulations (in particular the requirements in Regulation (EU) No 1379/2013 and Regulation (EU) No 1169/2011 where relevant), waste management regulations, general product safety regulations and any other legislation specific to their business.

The Food Safety Authority of Ireland website **www.fsai.ie** should be checked regularly for food legislation updates.

List regulations and guidance documents relevant to food safety which are held on file:

1.3 Registration of the Business

Fish retail businesses are legally obliged to register with the local office of the Health Service Executive (HSE) prior to operating. The frequency with which a business is inspected by the HSE following registration depends upon its risk categorisation.

In some circumstances where a business has an approved fish processing facility on the same site as the retail outlet, the business may be inspected by officers from the SFPA instead of the HSE.

In addition to registration, the food business operator must notify the local HSE office of any significant changes in the food business.

All correspondences received from the HSE should be retained on file. The name and contact details of the local HSE office should be recorded in section 1.1.

Date business was registered with HSE:

Details of any significant changes to the business since first registered:

1.4 Sale of Organic Seafood

The only products labelled as organic that can be sold by non-licenced operators are pre-packaged, pre-labelled organic products. Retailers selling loose organic fish and fish products (labelled as organic) must be registered with the Department of Agriculture Food and the Marine as an organic operator.

If the premises already holds a licence for sale of other loose organic produce e.g. vegetables, the inspection and certification body should be contacted to include the organic fish or fish products in the inspection process and on the licence.

For further information, see BIM Retailer Guidance Note on Sale of Loose Organic Fish and Fish Products

Give details of any organic seafood products offered for sale:

Name of organic certification body:

1.5 Sale of Wild Salmon, Wild Trout, Wild Molluscan Shellfish or Eel(s)

Businesses selling loose wild salmon, wild trout, wild molluscan shellfish or eel(s) must have a valid dealers licence.

These licences are issued by Inland Fisheries Ireland through their River Basin District offices. Licences are issued for a period representing a calendar year.

Further information and contact details for each district office are available on the Inland Fisheries Ireland website at: **www.fisheriesireland.ie.**

No eel dealer licences have been issued since 2008 due to a ban on the fishing and killing of eel in Ireland.

Does the business sell wild salmon, wild trout or wild molluscan shellfish?

Details of licence to sell wild salmon, wild trout or wild molluscan shellfish:

2 COMPANY POLICIES

2.1 Food Safety and Quality Policy

The food business management should develop and document a Food Safety and Quality Policy. This policy should outline the businesses views and aspirations in relation to food safety and quality. It should also outline a commitment to comply with all relevant food safety legislation.

Management should draw up a food safety and quality policy for their business. It should illustrate a commitment to offering customers the finest quality fish, produced in a safe and hygienic manner. It should be communicated to all staff and displayed in a suitable location.

It is recommended that the Food Safety and Quality Policy is displayed in a prominent position in the shop for customers and staff to see.

An example of a food safety policy is provided below.

EXAMPLE

Food Safety and Quality Policy for "The Fish Shop"

- The management of *"The Fish Shop"* is committed to offering its customers the finest quality fresh fish at all times
- We are committed to ensuring that we comply with all food safety legislation
- We have implemented a Food Safety Management System to help ensure the safety of all products offered for sale
- Procedures are in place to ensure that strict hygienic rules are followed by staff
- All staff have received training and are aware of our commitment to food safety.

Signed
Manager/Owner

Date

Food Safety and Quality Policy:

Signed
Manager/Owner

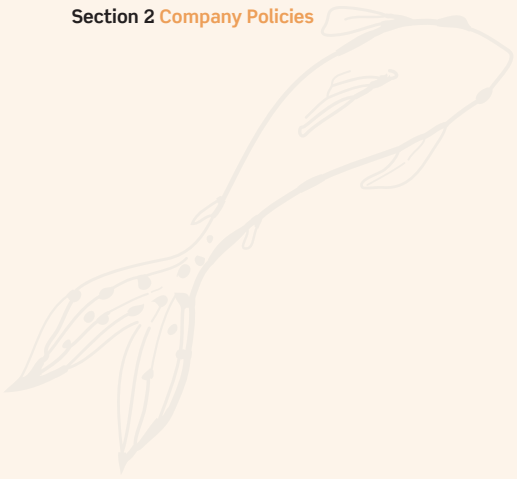
Date

2.2 Customer Complaints Policy

The business should have a policy and procedure for dealing with customer complaints. All complaints should be investigated in a timely manner and appropriate action taken. Complainants should be informed of the outcome of the investigation.

Where necessary, action should be taken to prevent recurrence of the issues raised by the complainant. Details of all complaints and action taken should be recorded.

Customer Complaints Policy:



3 PRODUCT IDENTIFICATION

3.1 Traceability

Supplier traceability

The food business must be able to readily identify the suppliers of all fish products. Any product that does not have an adequate method of identification at time of delivery must be rejected.

Each delivery must be accompanied by the appropriate documentation from the supplier with the following information:

- An accurate description of the food
- The volume or quantity of the food
- The name and address of the food business operator from which the food has been dispatched
- The name and address of the consignor (owner) if different from the food business operator from which the food has been dispatched
- The name and address of the food business operator to whom the food has been dispatched
- The name and address of the consignee (owner) if different from the food business operator to whom the food has been dispatched
- A reference identifying the lot, batch or consignment as appropriate
- The date of dispatch.

If the retailer collects fish from the supplier, they must obtain the above information from the supplier at time of purchase.

List the information given on documentation accompanying fish from supplier:

Customer traceability

Customer traceability is not required for food business operators who solely sell direct to the final consumer.

If, however, fish products are supplied to another business e.g. a catering establishment, the information outlined under supplier traceability should be made available to this business and a copy retained on file. The contact details for the business should also be retained on file.

Are products sold only directly to the final consumer or also to other businesses?

List the information given on documentation accompanying fish supplied to other businesses:

Process traceability

Batches of fish should be labelled and not mixed during transport, processing, in storage or on display in order to maintain traceability and correct stock rotation.

What precautions are taken to ensure that batches are not mixed during transport, processing, in storage or on display?

Product recall/withdrawal

All food businesses must have procedures in place to allow for product recall/withdrawal in the event of a food safety incident or food alert.

A **product recall** is the removal of unsafe food from the market when it may have reached the consumer and therefore involves communication with consumers.

A **product withdrawal** is the removal of unsafe food from the market before it has reached the consumer.

If a retailer only sells products directly to consumers then there must be a product recall procedure in place. If a retailer sells products to another business as well as directly to consumers then it will be necessary to have a product recall and withdrawal procedure in place.

In the event of a product recall/withdrawal, customers must be notified by suitable means and the competent authority (FSAI, HSE and SFPA) must also be notified.

Product recall/withdrawal procedure:

Retention of traceability records

See Section 7.2 Retention of Documents and Records

3.2 Labelling Requirements

3.2.1 Non-prepacked fishery and aquaculture products

(Includes fish sold loose e.g. from a wet fish display, prepacked for direct sale or packed at the consumers request)

This applies to fishery and aquaculture products with the following CN codes: CN 0301, CN 0302, CN 0303, CN 0304, CN0305, CN 0306, CN 0307 and CN 1212 20 00 as outlined in Regulation (EU) 1379/2013 Annex 1(a), (b), (c) and (e).

It applies to fish to which no other ingredient except salt has been added and includes: live fish, fresh chilled and frozen fish, fish fillets and other fish meat (whether minced or not) dried salted or brined fish, smoked fish (whether hot or cold smoked), crustaceans (except when they are both cooked and peeled), molluscs (except when cooked) seaweeds and other algae.

The following information must be displayed either on the label or on a billboard or poster.

- Commercial name
- Scientific name
- Production method
- Catch or Production Area
- Category of fishing gear used
- Allergen information
- Whether the product has been defrosted (with some exceptions)
- Price.

For loose product, it is recommended that the information is given on a counter label in close proximity to the product to which it relates (rather than on a billboard or poster).

For products prepacked for direct sale, it is recommended that the information is given on the packaging (rather than on a billboard or poster).

This will assist the consumer in making informed choices and budgetary decisions.

- **Commercial name:**
  This is the common name of the species of fish e.g. cod, salmon, mackerel.

  The Fishery and Aquaculture Products Commercial Designations List for Ireland is available on the SFPA website at: http://www.sfpa.ie/SeafoodSafety/RegistrationApprovalofBusinesses/FishSpeciesList(CommercialDesignationsList).aspx.

- **Scientific name:**
  Example: *Gadus morhua (cod), Scomber scombrus (mackerel), Nephrops norvegicus* (Dublin Bay Prawn or Langoustine).

- **Production method:**
  - For fish produced through aquaculture (farmed species) the word "**farmed**" must be used.
  - For fish caught at sea the word "**caught**" must be used
  - For wild freshwater fish "**caught in fresh water**" must be used.
- **Catch or Production Area:**
  - Country of origin for farmed species must be stated
  - Catch area if caught at sea
    - Fish caught in the Northeast Atlantic or in the Mediterranean and Black Sea areas must display the name of the **sub-area** or **division**, along with a name that is easy for the consumer to understand or a map or a pictogram
    - Fish caught anywhere else in the world, only the **area name** in writing is needed e.g. North-West Atlantic or Pacific Ocean

Further details of fishing areas is available on the FAO website at: http://www.fao.org/fishery/area/search/en

  - Freshwater wild fish – both the name of the body of water and the country where the product was caught must be given.

In addition a more precise indication of the catch or production area may be given provided it is clear, unambiguous and verifiable.

If a batch on display or in a pack consists of fish from different catch areas or countries, the origin that is most representative of the fish in that pack or on display must be stated along with an indication that some of the fish has come from another area. If the fish originates from **only one country** *or* **only one catch area then only this one country or catch area can be stated on the label**. *It is not acceptable to list two or three countries of origin on a label when the product only came from one of those countries.*

Where a mixed product is offered for sale consisting of the same species but which has been derived from different production methods, the production method for each batch must be stated.

- **Category of Fishing Gear used:**

Information on the category of fishing gear used to capture the fish. This is only required for wild caught fish. The categories of fishing gear are:

- Seines
- Trawls
- Gillnets and similar nets
- Surrounding nets and lift nets
- Hooks and lines
- Dredges
- Pots and traps.

In addition more detailed information on the fishing gear used as listed in columns 2 and 3 of Annex III to the CMO regulation (EU Regulation No. 1379/2013) may be given.

- **Allergen information:**
  Fish, crustaceans and molluscs are all allergens. Where the name of the food clearly refers to the name of the allergen, there is no need for a separate allergen statement.

  For fish species that are very familiar to the Irish consumer and as such are easily recognised as "fish" there is no need to include the word "fish" once the species name is clearly written on the label/notice on or beside the product.

  For lesser known fish and shellfish species that the consumer may not be familiar with, it may not be clear that the product is an allergen or which is the correct allergen category (fish, crustacean or mollusc).

The allergen information must be provided in writing, either on the label or by other suitable written means such as an allergen chart in the shop.

If there is any doubt about the need to include the word fish, crustacean or mollusc, it should be included to give the consumer clear information.

For further information on provision of allergen information, see BIM Guidance Note for Seafood Retailers: Allergen Information for Consumers and the Seafood Retailer Allergen Chart Template.

- **Defrosted Products:**
  For fishery and aquaculture products (as outlined at the start of Section 3.2.1) that have been frozen but are defrosted prior to sale, the word "defrosted" must be included on the label, billboard or poster. The only exemptions are:

  - Ingredients present in the final product
  - Foods for which freezing is a technologically necessary step in the production process
  - Fishery and Aquaculture products previously frozen for health safety purposes in accordance with Annex III, Section VIII of Regulation 853/2004 (in order to kill parasites). This applies to certain fishery products intended to be consumed raw or marinated / salted where the presence of parasites could pose a health risk to the consumer
  - Fishery and aquaculture products which have been defrosted before the process of smoking, salting, cooking, pickling, drying or a combination of any of these processes.

These exemptions only apply if the consumer is not being misled and the business has back-up data to show why the exemption applies.

- **Price:**
  The price must be displayed in the shop either on the counter label or on a billboard or poster in the shop. The price per kilogram or the actual selling price e.g. price per fillet must be given.

e Some examples of labels on the fish counter. (The information can alternatively be made available to the consumer on a poster or billboard).

European Lobster *Homarus gammarus* Caught in the Irish Sea (Dublin/Meath coastal waters) *Using* **Pots and traps** €35/Kg Crustacean	**American Lobster** *Homarus americanus* Caught in Northwest Atlantic (Canadian coastal waters)* *Using* **Pots and traps** €24/Kg Crustacean
Dublin Bay Prawns *Nephrops norvegicus* Caught in the Celtic Sea North (off South Coast of Ireland) *by* **Trawls** €25/Kg Crustacean	**Hake** *Merluccius merluccius* Caught in the Celtic Sea North *Using* **Gillnets and similar nets** €17/Kg Fish 
Gigas Oysters *Crassostrea gigas* Farmed in Ireland (Carlingford Lough)* €12/ Kg Molluscs	**Salmon** *Salmon salar* Farmed in Ireland €12 each Fish
Rainbow Trout *Oncorhynchus mykiss* Farmed in fresh water in Ireland (Goatsbridge trout farm, Co Kilkenny)* €2.50 per fillet Fish	**European Perch** *Perca fluviatilis* Caught in fresh water River Shannon, Ireland *Using* **Hooks and Lines** €10/Kg Fish

**Optional more precise catch or production area*

Organic products:

If loose organic products are sold, the words "certified organic" must be used as well as the code of the Organic Certification Body. The EU organic logo can also be used on a voluntary basis for non-prepacked products. See Section 1.4 for further details.

3.2.2 Non-prepacked value added products

(Example fish cakes sold loose, prepacked for direct sale or packed at the consumers request)

- Name
- Allergen Information. (A notice placed on or beside the products listing the allergenic ingredients or an allergen chart in the shop). See 3.2.1 for further details on provision of allergen information. There is no need to include an ingredient list on these products, but if an ingredient list is given, then the allergen information must be highlighted in the list of ingredients.

Cooked or ready-to-eat products:

Any cooked or ready-to-eat products must be segregated from raw products during all stages of delivery, storage, preparation and display and should be clearly labelled to prevent the risk of cross-contamination.

How is the consumer information for loose fishery and aquaculture products displayed? (label/ billboard/poster)

How is the consumer information for fishery and aquaculture products prepacked for direct sale or packed at the consumers request displayed? (label/billboard/poster)

Give details of the wording used on labels, billboards or posters for fishery and aquaculture products:

List products that are defrosted prior to sale:

How are cooked or ready-to-eat products labelled?

Give details of labelling of loose organic products:

3.2.3 Prepacked products

Prepacked products, packed on another premises, even if owned by the same business must be labelled in full. The label must comply with criteria outlined in Regulation (EU) No. 1169/2011 on the provision of food information to the consumer (FIC).

The Mandatory Information is a follows:

- Name of the food (may need to include the word defrosted if relevant - there are exceptions)
- List of ingredients
- Allergens/intolerances - highlighted in list of ingredients
- Quantity of certain ingredients
- Net quantity (same field of vision as name)
- Date of minimum durability or the use-by date (For live bivalve molluscs, the date of minimum durability should be replaced by the statement "these animals must be alive when sold")
- Special storage conditions and/or conditions of use
- Name and address of the food business operator
- Country of origin or place of provenance - where its absence may mislead or where required under product specific legislation
- Nutrition declaration - mandatory from Dec 2016. (There are some exemptions including unprocessed products that comprise of a single ingredient or category of ingredients. See Annex V to Regulation (EU) No 1169/2011 for further details)
- Batch or lot number (the durability date can double up as a lot provided it is sufficiently precise to identify a particular batch)
- Price

Where relevant the following information must be included:

- Date of packaging for live bivalve molluscs
- Frozen unprocessed fishery products:
  - Date of freezing or date of first freezing
- Fish packaged with packaging gases:
  - Must state *"Packaged in a protective atmosphere"*
- Organic Products:
  - Must state "certified organic"
  - Include the code of the organic certification body
  - Include the EU organic logo

  - Licence no. (only mandatory if the name and address of the producer/packer does not appear on the packaging)
  - country of origin or a reference to EU agriculture / non-EU agriculture
- Identification mark – This is a unique identification mark which indicates that the product has originated in a premises approved by the Sea Fisheries Protection Authority (SFPA) or other competent authority. It takes the form of an oval shaped mark and includes reference to the country where produced, the premises approval number and the EU community mark, usually the letters EC. (Note: if the product was produced outside the EU, the identification mark may take a different format).
- The commercial name, scientific name, production method, catch/production area and the category of fishing gear used will also need to be stated on the label for fish to which no other ingredient except salt has been added (as described in 3.2.1).

For further information, see FSAI Booklet: Food Information on Prepacked Foods , European Commission's guide: A pocket guide to the EU's new fish and aquaculture consumer labels and visit the fish labelling section on the FSAI website: https://www.fsai.ie/legislation/food_legislation/fish_and__fishery_products/labelling_of_fish_and_fishery_products_EU_legislation.html

4 COLD CHAIN MANAGEMENT

Cold chain management is crucial in the seafood industry. Maintaining fish at the correct temperature, from catching/harvest until it reaches the consumer, will ensure optimum freshness and quality. Spoilage cannot be stopped in fresh fish, it can however, be controlled to a great extent.

The two most important words to remember when dealing with fresh fish are time and temperature. It is a legal requirement for food business operators to ensure that all chilled and frozen foods are maintained at the correct temperature during transport, storage, delivery and display.

In addition, there must be sufficient refrigerated space to allow cooked and/or ready-to-eat food to be segregated from raw food.

Poor temperature control can cause an increase in bacterial growth, enzyme activity and oxidation leading to rapid spoilage, decreased shelf-life and possible food safety risks.

4.1 Seafood Spoilage and Safety

Fish starts to spoil from the time it is caught and this spoilage continues throughout its shelf-life. The main reason for fish spoilage is bacterial growth and enzyme activity. In addition, oil-rich fish such as mackerel and herring will spoil due to oxidation. All of these activities occur more rapidly at higher temperatures.

Bacteria

Bacteria are the major cause of fish spoilage. Millions of bacteria live on the skin, on the gills and in the intestines of live fish. After harvest, these bacteria invade the flesh of the fish through the gills, skin and belly cavity lining. Some of these bacteria may be pathogenic and could cause food poisoning.

Other bacteria, not naturally present in the fish, can be introduced from humans and the environment through handling or contact with contaminated boxes, knives or other equipment.

Histamine poisoning

Histamine poisoning (scombroid poisoning) is caused by consuming fish containing high levels of histamine. Naturally occurring bacteria in fish produce an enzyme which converts histidine to histamine. Histamine poisoning occurs very quickly after eating the fish, usually within 30 minutes.

Common signs of histamine poisoning may include a tingling or burning sensation in the mouth, a rash on the upper body, headaches, dizziness and itching of the skin. In some cases, nausea, vomiting and diarrhoea may occur.

Species associated with histamine poisoning include mackerel, sardines, tuna and swordfish. Once histamine has formed in the product, subsequent cooking will not destroy it.

The best way to prevent histamine poisoning is to ensure that the fish is maintained at a temperature below 4°C.

For further information, see BIM Guidance Note for Retailers: Controlling Histamine Fish Poisoning.

Enzymes

Enzymes in live fish help to build tissue and digest food. After the fish dies, enzyme activity continues and starts to digest or breakdown the flesh. This causes the flesh to soften resulting in poor quality.

Enzyme activity destroys the lining of the gut allowing bacteria to enter the flesh of the fish.

Oxidation

Oxygen in the air reacts with oils in fish and causes rancidity, off-odours and off-flavours. This occurs in oil-rich fish such as salmon and mackerel.

Other factors affecting the rate of spoilage

Small fish tend to spoil faster than larger fish.

Certain species will usually spoil faster than others e.g. whiting will spoil faster than plaice.

Fish that have recently spawned or have been feeding heavily will spoil more rapidly.

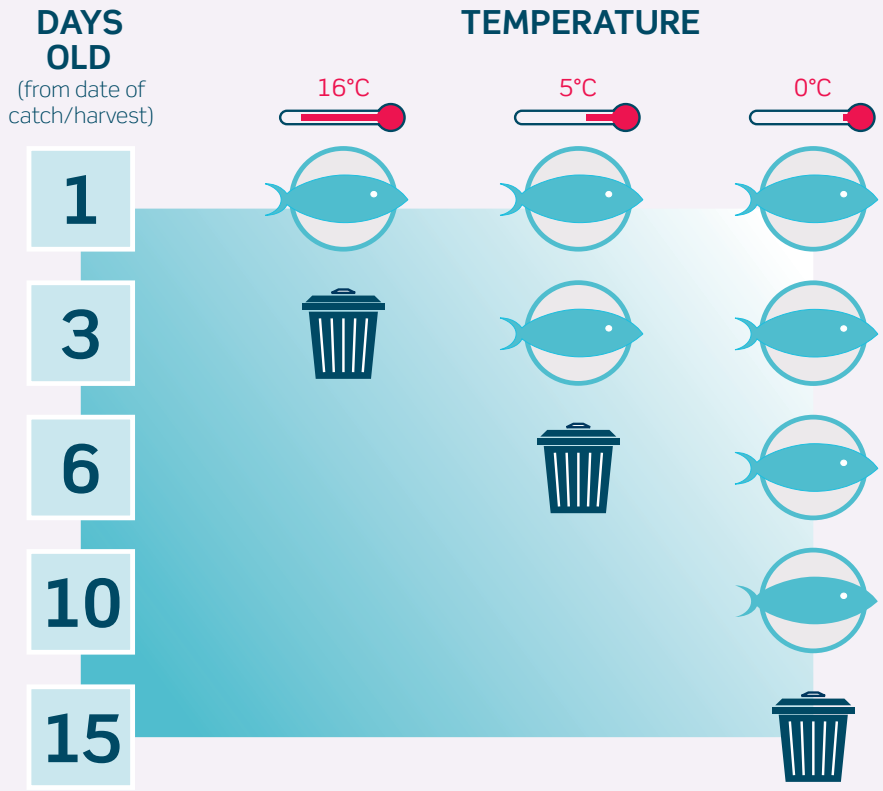
4.2 Shelf-life of Fish

The control of spoilage by reducing the temperature is the most common and practical way of keeping fish fresh. The lower the temperature, the longer it will take for fish to spoil.

While some fish may have a shelf-life of up to fifteen days from date of catch if maintained in optimum conditions, the intrinsic quality of the fish at the time of catching may also affect the shelf-life.

Fish may already be several days old by the time it reaches the retailer. Use-by dates placed on products by suppliers are only relevant if strict temperature control is adhered to at all stages from delivery, during storage and on display.

The following diagram illustrates the effect of chilling on the shelf-life of fish.



4.3 The Chill Chain

Chilled food products must be maintained at a temperature between 0°C and 5°C. Because fish is highly perishable, the shelf-life is greatly increased if it is maintained at a temperature between 0°C and 2°C.

The retailer must take care to ensure that fish is maintained at the correct temperature and that the cold chain is not broken during transport, storage, processing and display.

4.4 Vacuum and Modified Atmosphere Packaged (MAP) Raw Fish Products

Reducing the amount of oxygen may increase the shelf-life by reducing the growth of aerobic spoilage bacteria. However, there may be an increased risk of *Clostridium botulinum* toxin formation in these products if strict temperature control is not adhered to.

Clostridium botulinum will not grow and produce a toxin if the product temperature is maintained at less than 3°C throughout the shelf-life.

Guidance for safety and shelf-life of vacuum and modified atmosphere packaged chilled foods recommends a maximum shelf-life of 10 days if the product is held at refrigeration temperatures above 3°C, when no other controls are in place. (Other controls would include adding salt, heat treatment or reducing the pH). Because fish is highly perishable, a shorter shelf-life is recommended.

Use of a suitable oxygen permeable packaging material may provide sufficient exchange of oxygen to allow aerobic spoilage organisms to grow and spoil the product before toxin is produced under moderate temperature abuse.

4.5 Fish for Sushi or Sashimi

In order to ensure that any parasites which may be present are killed, fishery products to be consumed raw or almost raw must be frozen to either:

- -20°C in all parts of the product for a minimum of 24 hours
- -35°C in all parts of the product for a minimum of 15 hours.

This process is not necessary if:

(i) There is evidence that the fishery grounds of origin do not present a health hazard with regard to the presence of parasites; and
(ii) If the competent authority so authorises.

Freezing will kill parasites but not bacteria; therefore, good quality fish must be used.

If the freezing takes place prior to reaching the retailer, the products must be accompanied by the appropriate documentation from the supplier verifying that the freezing treatment to kill parasites has taken place. This documentation should be retained on file.

If the freezing process takes place on the retailer's premises, details of the treatment must be recorded and retained on file.

If fish that is intended to be consumed raw hasn't been frozen the business must obtain documentation from the supplier which demonstrates that the fish is exempt from the freezing requirement. This documentation should be retained on file.

4.6 Temperature Monitoring

All temperature monitoring devices should be calibrated prior to use and annually thereafter or if damaged in anyway.

Ensure that the calibration provider is using test equipment that has been certified by an appropriate body for example the Irish National Accreditation Board (INAB) or the United Kingdom Accreditation Service (UKAS).

Thermometers should have an accuracy of at least + / -0.5°C.

Probes that come into direct contact with food must be sanitised before and after use using food grade sanitising wipes.

The accuracy of the temperature probes should be checked regularly in-house as follows:

- Immerse the probe in slush ice and allow the reading to stabilise
- Check to see if it reads 0°C +/-0.5°C
- Immerse the probe in boiling water and allow the reading to stabilise,
- Check to see if it reads 100°C +/-0.5°C
- If the internal calibration indicates that the readings are not correct, then the thermometer must be sent away for external calibration or replaced.

The following temperature checks should be carried out:

- Chilled stores and freezers: twice daily (at least)
- Wet fish display: Check temperature of several products and at different locations twice daily (at least)
- Pre-packaged products: Check temperature at surface and/or between packs
- Transport: Check product temperature on arrival.

See sections 5.14, 5.15, 5.16 and 5.19 for further details.

How are temperature probes calibrated?

4.7 Recommended Temperatures

Location/Product	Recommended product temperature*	Acceptable temperature range*
Display		
Fresh fish display	0˚C to 2˚C	0˚C to 4˚C
Chill display cabinets	0˚C to 4˚C	0˚C to 4˚C
Display freezers	Less than -18˚C	Less than -18˚C
Live bivalve molluscs	4˚C to 8˚C	2˚C to 12˚C
Storage		
Fresh fish	0˚C to 2˚C	0˚C to 2˚C
Processed fishery products	0˚C to 4˚C	0˚C to 4˚C
Frozen fish	Less than -18˚C	Less than -18˚C
Live bivalve molluscs	4˚C to 8˚C	2˚C to 12˚C
Transport		
Fresh fish	0˚C to 2˚C	0˚C to 4˚C
Processed fishery products	0˚C to 4˚C	0˚C to 4˚C
Frozen products	Less than -18˚C	-15˚C to less than -18˚C
Live bivalve molluscs	4˚C to 8˚C	2˚C to 12˚C

***Note**: Units may need to be set lower then these temperatures to ensure that the fish is at the correct temperature.

Records of temperature monitoring and details of calibration of temperature monitoring devices should be retained on file.

Temperature Record Sheet(s) and Equipment Maintenance/Calibration Record Sheet(s) are available in Section 8 Blank Record Sheets.

4.8 Temperature Control Corrective Action

The following corrective action should be taken for chilled fish:

Temperature	Step in operation	Action
4˚C to 8˚C	Receipt of fresh fish Or during handling, preparation, storage or display	Restore temperature to less than 4°C (ideally less than 2°C) as soon as possible Carry out a risk assessment to determine the action to be taken. Factors to consider: • Species • Time
Greater than 8˚C	Fresh fish receipt	Reject/ Return to supplier
Greater than 8˚C	During handling, preparation, storage or display	Discard or carry out a risk assessment to determine action to be taken Factors to consider: • Species • Time

The following corrective action should be taken for frozen fish:

Temperature	Step in operation	Action
Temperature -15˚C to -18˚C	Receipt of frozen fish	Restore temperature to to -18˚C as soon as possible Inform supplier
Signs of thawing or temperature is higher than -15˚C	Receipt of frozen fish	Reject/ Return to supplier
Temperature higher than -18˚C	During handling, preparation or display	Thaw product fully and use Discard or carry out a risk assessment to determine action to be taken

If a freezer or refrigerated unit is not maintaining the correct temperature, it must be removed from use and repaired or replaced.

In addition to food safety concerns, there may be a significant loss in product quality if recommended product temperature is exceeded and shelf-life will need to be reviewed.

For further information, see BIM Guidance Note for Retailers: Cold Chain Management for Seafood

5 PREREQUISITE PROGRAMME (HYGIENE REQUIREMENTS)

The prerequisite programme refers to the basic hygiene conditions and activities that are necessary to produce safe food. These basic hygiene requirements must be in place in all food businesses.

In some seafood retail businesses, meeting the prerequisite requirements along with an effective cold chain management programme will be a sufficient means of controlling all food safety hazards. If a formal HACCP system is required, then the prerequisite programme must be in place prior to its implementation.

There are three areas addressed in the prerequisite programme:

1. Personnel: Sections 5.1 - 5.2
2. Premises and Equipment: Sections 5.3 - 5.10
3. Food Operations: Sections: 5.11 - 5.21

PART 1 PERSONNEL

5.1 Training

The food business operator must ensure that all staff are trained in food hygiene matters. The individual(s) with responsibility for food safety must be trained in food safety management systems incorporating HACCP. Details of all training must be recorded and retained on file.

Training Record Sheet(s) are available in Section 8 Blank Record Sheets.

Details of food safety training programme:

5.2 Personal Hygiene and Health

Food workers have a legal responsibility to behave in a hygienic manner. Staff must maintain a high degree of personal cleanliness, behave in a manner that will not cause contamination of food and wear clean protective clothing. A First Aid box should be available containing suitable visible waterproof dressings (e.g. blue plasters).

Protective clothing and hairnets

Protective clothing should be maintained in clean condition and stored separately from outdoor clothing. Personal garments should not be worn over protective clothing. Protective clothing should not be worn in toilet areas or outside the food premises. The use of hairnets is not a legal requirement, but it is recommended that hairnets or some other suitable form of hair covering is used to reduce the risk of hair falling onto food. Hair should be neat, clean and tidy.

Hand washing

Hand washing is vital in preventing contamination of food by food handlers. Harmful bacteria such as *Staphylococcus aureus, E.coli* and Salmonella and viruses such as Noroviruses, which may be present on the hands of food workers, are removed by proper hand washing techniques.

Antibacterial soap may be used, however, this is not essential as it is the correct hand washing technique and frequency that is more important. Antiseptic wipes and alcohol hand disinfectants are only effective when used on clean hands as they are inactivated by any organic matter (e.g. pieces of food).

There should be a separate, designated hand wash sink provided, ideally with knee, elbow, foot or electronically operated taps. There must be an adequate supply of hot and cold running water, non-perfumed soap in appropriate dispensers and a suitable method of drying hands such as disposable paper towel or cabinet roller towel.

Hands should be washed in the hand wash sink as follows:

- Wet hands and wrists with warm running water
- Use sufficient non-perfumed soap to form a lather
- Rub all parts of the hands and wrists with soap and water
- Lather for at least 15-20 seconds vigorously and thoroughly rubbing all hand surfaces including fingertips, nails and thumbs.
- Rinse hands thoroughly with warm running water
- Dry hands thoroughly using disposable paper towel, cabinet roller towel or hand dryer.

Hands must be washed in the hand wash sink:

- Before starting work
- Before using disposable gloves
- Before handling unpacked cooked or ready-to-eat food
- After using the toilet
- After handling refuse
- After using a handkerchief, blowing or touching the nose
- After handling or preparing raw food
- After cleaning duties
- After smoking
- After eating
- After handling money
- After using a mobile phone.

Disposable gloves

It is not a legal requirement for food workers to wear gloves. The use of disposable gloves should not be substituted for hand washing by food workers. If disposable gloves are used, they should only be worn for short periods and changed regularly. They should be discarded following:

- Cleaning duties
- Handling refuse
- Handling or preparing raw food
- Handling money.

Each business must decide on their policy regarding whether or not disposable gloves are used. This must be communicated to all staff and included in the staff hygiene rules.

Staff health and fitness to handle food

Staff must report immediately any illness or symptoms of illness to their supervisor.

The health/medical conditions that must be reported by the food worker include:

- Vomiting and/or diarrhoea
- Skin disorders such as boils or infected wounds
- Infection/skin disorder of the face, hands or forearms
- Flu, coughing, infections of the mouth, throat, ears or eyes
- Jaundice.

Staff suffering from or being a carrier of a disease likely to be transmitted through food must not be permitted to handle food or enter any area where food is unpackaged.

It is recommended that staff should be requested to report any gastrointestinal illness suffered while on holidays upon their return to work.

While it is not a legal requirement, it is recommended that a medical questionnaire should be completed prior to employment by all new staff members including temporary staff.

Staff hygiene rules

Each business should draw up a list of staff hygiene rules for their own business. The rules must be communicated to staff and should be displayed in a suitable location.

Staff should sign a copy of the rules to show that they have read and understood the requirements. The signed copies should be retained in the training file.

Not only is a high degree of personal hygiene essential for food safety but customers expect to see staff behaving in a hygienic manner at all times. Any unnecessary handling of food should be avoided. Uniforms should be well maintained and clean at all times.

e An example of staff hygiene rules is provided

EXAMPLE

Staff Hygiene Rules

1 Staff must maintain a high degree of personal cleanliness at all times and behave in a manner that will not cause contamination of food.

2 Jewellery is not allowed except for plain wedding rings and sleeper earrings.

3 Excessive aftershave and/or perfumes shall not be worn.

4 Staff are responsible for ensuring that their uniform is maintained in a clean condition.

5 Hair shall be clean and tidy and hair nets/hats worn.

6 Cuts, sores and grazes shall be covered with visible dressings (blue plasters) that will not pose a risk of physical contamination of food.

7 Finger nails must be kept clean, short, free from nail varnish and no false nails allowed.

8 Hands must be washed in the hand wash sink using the correct procedure:
- Before starting work
- Before using disposable gloves
- Before handling unpacked cooked or ready-to-eat food
- After using the toilet
- After handling refuse
- After using a handkerchief, blowing or touching the nose
- After handling or preparing raw food
- After cleaning duties
- After smoking
- After eating
- After handling money
- After using a mobile phone.

9 Disposable gloves are provided and must be changed regularly so that they do not become a source of contamination. Disposable gloves are removed before handling money. Gloves must always be changed before handling cooked or ready-to-eat food.

10 Staff must report any of the following illnesses to their supervisor immediately:
- Vomiting
- Diarrhoea
- Skin disorders such as boils or infected wounds
- Flu, cold, coughing, infection of the mouth, throat, eyes or ears
- Jaundice.

I have read and understand the staff hygiene rules. I will abide by these rules at all times.

Signed _____ **Date** _____

Staff Hygiene Rules:

I have read and understood the staff hygiene rules. I will abide by these rules at all times.

Signed **Date**

Give details of staff uniforms including hairnet and gloves policy:

First Aid Facilities:

Where are staff hygiene rules displayed:

PART 2 PREMISES AND EQUIPMENT

5.3 Premises

Design

The premises must be designed and constructed in a manner that facilitates maintenance and cleaning.

There should be no opportunities for harbourage or breeding of microorganisms or pests such as insects, rodents or birds.

When designing or refurbishing a food premises or whenever a major change takes place within the food premises, advice should be sought from the local Environmental Health Officer to ensure that the proposed changes will meet legal requirements.

Floors

Floors (and any expansion joints) must be maintained in good condition. Floors must be free from cracks, holes or corrosion. They should be constructed from impervious material, be smooth, durable and easy to clean.

Examples of floor finishes that are acceptable in food preparation and processing areas include:

- Polymer derivatives of epoxy, polyester, acrylic resins and rubber latex
- Heavy duty vinyl sheeting
- Ceramic or quarry tiles.

Smooth sealed concrete is an acceptable floor finish in warehouse/storage areas.

Ceramic or quarry tiles should be laid using the correct bedding, jointing and grouting material which is waterproof and easily cleaned. Any joints present in floors should be level with the surrounding tiles.

Drainage

There must be adequate floor drains with a gradient to prevent pooling of water.

Floor drains/gullies should be fitted with an effective grid to prevent excessive amounts of product entering the drainage system particularly in filleting areas.

There must be no interconnection within the premises of floor drainage system and sewerage system. Vents from drains must be piped to the outside of the building.

Drains should be flushed through with clean water and disinfected regularly to remove any solid material and to prevent bad odours.

Walls

Walls must be maintained in good condition. They must be impervious, free from flaking paint, damp or mould growth. They must be durable, easily cleaned and free from cracks, holes or corrosion. Tiled walls and grouting must be maintained in good condition.

Examples of wall finishes that are acceptable in food preparation and processing areas include:

- Washable, painted plaster or rendering
- Ceramic tiles with a suitable easily cleanable waterproof flush grouting
- Plastic cladding e.g. panels bonded directly onto a sound wall surface where all joints are sealed
- Stainless steel sheeting

The paint used should be non-toxic and suitable for use in food rooms.

In storage and warehouse areas where food is stored in its original packaging and is not exposed, a plain breeze block finish is acceptable for walls.

Ceilings and overhead fixtures

Ceilings and overhead fixtures must be constructed and finished in a manner that prevents the accumulation of dirt, the growth of moulds or excessive condensation.

All ceilings must be easily accessible for cleaning. They should be durable, smooth, impervious and easy to clean. Where suspended ceilings are installed, there should be a means to access the space above the ceiling for pest control inspections and maintenance work.

Examples of ceiling finishes that are acceptable in food preparation and processing areas include:

- Plaster ceilings painted with washable paint
- Plastic panelling that can be easily cleaned.

The paint used should be non-toxic and suitable for use in food rooms.

Windows

Windows and frames must be maintained in good condition. The frames should be tight fitting, smooth and easy to clean. Shatterproof material instead of glass should be used where food is exposed. If glass is used, it should be free from cracks and covered with a protective film. Window sills should be avoided and if present should be sloped. Windows that can open should be fitted with a suitable screen to prevent the entry of pests, particularly flies. The screens must be well-maintained and easily cleaned in-situ or easily removed for cleaning.

Doors

Doors must be maintained in good condition. They should be smooth, durable, non-absorbent and easy to clean. Door frames should be tight fitting. Kick plates and push plates should be used on doors. Door handles and/or kick and push plates should be easily cleaned. If external doors are left open, consider fitting with a screen to prevent the entry of pests, particularly flies. However, the use of such screens may not be suitable at the main entry to the shop and other means of pest control need to be considered. If screens are used, they must be well maintained and easily cleaned in-situ or easily removed for cleaning.

Food contact surfaces

Food contact surfaces must be durable, non-toxic, washable and easy to clean. They must be maintained in good condition, free from cracks and crevices.

Examples of material suitable for use as food contact surfaces include:

- Stainless steel
- Food grade synthetic material.

Glass and brittle plastic

Glass or other brittle material must be excluded or protected in areas where open products are handled or displayed. All light fittings in display or holding cabinets where open food is displayed must be suitable for use in such areas.

There should be a list of all such items detailing location, number, type and condition. If a breakage occurs, care must be taken when clearing up. Any product that may have been contaminated must be discarded. A record of any breakages that have occurred should be kept.

Give details of the premises, outlining how the above guidelines are complied with:

Floors:

Drainage system (include reference to any relevant documentation such as the site plan):

Walls:

Ceilings and overhead fixtures:

Windows:

Doors:

Food contact surfaces:

List the location of all glass and brittle plastic on the premises:

How are fish products protected from contamination with glass or brittle plastic?

Give details of procedure for dealing with glass breakages:

5.4 Water and Ice

Potable water

There must be an adequate supply of potable water available. Potable water is drinking water that is safe for human consumption and meets the requirements specified in Council Directive 98/83/EC.

Potable water must be used when filleting/washing fish, making ice, cooking, cleaning and rinsing of food contact surfaces.

Water from a rising mains taken from a public supply can be regarded as potable water unless there is a warning from the local authority that it is not fit for human consumption. Water from a public supply that goes through a storage tank is no longer considered potable.

Water from a well, private supply or group water scheme cannot be regarded as potable unless it is tested to ensure that it meets potable water standards.

Water storage tanks should be covered and inspected for evidence of contamination at least annually.

The water supplier should be included on the suppliers list in section 5.14.

Source of potable water:

Number and location of potable water taps:

Water storage tanks details:

Details of water testing:

Ice

Ice that comes into direct contact with fish must be made from potable water. Facilities used to make and store ice must be suitable to prevent contamination. The ice-making machine must be completely emptied, cleaned and disinfected on a regular basis as outlined in the cleaning schedule section 5.8. The ice-making machine should be located in close proximity to the seafood counter. The lid(s) on the ice-making machine must be kept closed. The ice scoop must be stored in a hygienic condition and must not become a source of contamination.

It is recommended that ice-making machines are connected upstream of final draw points in order to reduce the danger from water stagnation. The pipe work connecting the mains water to the ice-machine should be as short as possible.

If ice is not prepared on site, there must be procedures in place to ensure that it has been made from potable water by the supplier and is of acceptable quality.

The ice supplier should be included on the suppliers list in section 5.14.

Details of ice supply including whether prepared in-house or purchased from supplier:

Ice storage facilities:

Procedure for ensuring the quality of ice:

Non-potable water

Where non-potable water is available on the premises, it must only be used for specific purposes e.g. fire control. Non-potable water must be clearly segregated from potable water and procedures must be in place to ensure that there is no cross-contamination between potable and non-potable supplies.

Details of non-potable water on the premises:

5.5 Ventilation and lighting

Ventilation

A suitable means of natural and/or mechanical ventilation must be provided in food storage, preparation areas, staff facilities and toilet areas. The ventilation provided should be sufficient to prevent condensation on walls, ceilings and overhead structures.

Ventilation in the toilet facilities and lobby to the toilets must be sufficient to prevent any bad odours.

Lighting

Adequate lighting must be provided. Light bulbs over seafood display must not emit excessive heat that could cause fish temperature to rise. Light fittings used where food is exposed must not pose a risk of contamination.

Give details of ventilation in the premises:

Give details of lighting in the premises:

5.6 Staff Facilities

There must be adequate staff changing facilities provided. The facilities must be well maintained, clean and adequately ventilated.

Toilet facilities with hand wash sinks must be provided for staff. Toilets must be connected to an adequate drainage system and be ventilated to external air. Toilet areas must not open or connect directly into rooms or areas where food is handled, processed or stored. Non-perfumed soap and suitable means of drying hands such as paper towels, roller towels or air hand driers must be provided in the toilet facilities.

Separate hand washing facilities must also be available in food preparation area. They must have a constant supply of hot and cold water, non-perfumed soap and a suitable method of hand drying. Hand washing facilities should have knee, foot, elbow or electronically operated taps to ensure that clean hands are not re-contaminated.

Give details of staff facilities

Changing area:

Toilets facilities:

Hand washing facilities:

5.7 Equipment and Utensils

Equipment

All equipment that comes into contact with food must be maintained in good condition and should be easily cleaned. There should be easy access under and around all equipment to facilitate cleaning.

It is recommended that chilled storage facility is located in close proximity to the fish display.

A list of all equipment should be available giving details of frequency for carrying out maintenance and calibration. After service, repair or calibration is carried out the details should be recorded and retained on file.

Details of companies which carry out maintenance/calibration should be included on the suppliers list in section 5.14. This should include out-of-hours contact details in the case of emergency breakdowns.

Equipment Maintenance /Calibration Record Sheet(s) are available in Section 8 Blank Record Sheets

Equipment List Page.....of.....

Equipment	Date in Service	Location	Maintenance Frequency	Calibration Frequency

Equipment List Page.....of.....

Equipment	Date in Service	Location	Maintenance Frequency	Calibration Frequency

Utensils

All utensils that come into contact with food must be maintained in good condition and be easily cleaned. Separate utensils (ideally different coloured) should be used for cooked or ready-to-eat and raw products.

Chopping boards should be maintained in good condition and be free from flaking. They must be made of smooth, washable, corrosion resistant non-toxic material. They must be kept in a clean and hygienic condition.

Give details of all utensils used and measures taken to prevent cross-contamination:

5.8 Cleaning

The premises (exterior and interior), all display units, equipment and utensils must be maintained hygienically clean at all times.

A *"clean as you go"* policy should be in place. In addition, there should be a cleaning schedule in place listing all areas and equipment to be cleaned, the method of cleaning and frequency. Examples of areas to be included on the cleaning schedule include:

- Exterior of the premises
- Floors
- Drains
- Wet fish display
- Chill display
- Freezers
- Chill store
- Doors
- Windows
- Walls
- Surfaces
- Hand wash sink
- Utensils
- Ceiling
- Filleting table
- Toilet facilities
- Changing room
- Ice-making machine
- Lobster tank
- Bins.

e An example of a partially completed cleaning schedule is provided.

There must be an adequate supply of hot and cold water available for cleaning. Suitable cleaning chemicals and equipment must be provided.

Care must be taken when cleaning to ensure that the fish is not contaminated with cleaning chemicals.

Particular attention should be given to areas underneath and behind equipment.

Ice on the wet fish display should be removed or allowed to melt away each evening to allow for effective cleaning.

A separate identifiable mop should be used for cleaning the toilet area.

There should be a suitable well ventilated storage location for all cleaning chemicals and cleaning materials such as mops and buckets. Hooks should be provided to allow brushes and mops to be stored off the ground.

Maintaining clean premises will help prevent contamination of food, build-up of bad odours and infestation of pests.

Cleaning chemicals

Food grade chemicals must be used and the manufacturer's instructions followed. Make sure to wear suitable protective equipment such as gloves and goggles.

Dilution rate: Most cleaning chemicals are concentrated, so water needs to be added to dilute them before they can be used. It is important to follow the manufacturer's instructions on how much water to use with the chemical. This is the "dilution rate". If two much water or too little water is added the cleaning chemical may not work effectively.

Contact time: This is how long a cleaning chemical needs to be left in contact with the surface in order to be effective. It is important to follow the manufacturer's instructions on contact time for the chemical to work effectively.

There are several different chemicals that can be used. It is important to understand when and how to use these chemicals effectively.

A **detergent** is a cleaning agent that helps to remove grease, dirt and food e.g. washing-up liquid.

A **disinfectant** is a chemical agent or process that kills bacteria. Disinfectants do not kill all bacteria and viruses but reduces them to safe levels. Grease, dirt and food particles should be removed from surfaces prior to using disinfectants.

A **sanitiser** is a two-in one product that acts as both a detergent and a disinfectant.

When cleaning is complete, the cleaning record should be filled in.

Cleaning Records Sheet(s) are available in Section 8 Blank Record Sheets

Include details of cleaning chemical supplier(s) on the supplier's list in Section 5.14.

Customers expect premises to be hygienically clean and tidy at all times. Any bad odours in the premises or in the vicinity of the seafood counter are unacceptable to the customer. It is important that the exterior of the premises is also well maintained and kept clean. Cleaning equipment and chemicals should be stored in a designated area, out of customer sight.

Where are cleaning chemicals and cleaning materials such as mops and buckets stored?

List cleaning chemicals that are used:

EXAMPLE
Cleaning Schedule "Page 1 of x"

Area/ Item	Frequency				Method of cleaning	Cleaning chemicals	Person Responsible
	After use	Daily	Weekly	Other			
Work surfaces	√				1. Remove any obvious food and dirt. 2. Wash the surface with detergent in accordance with the manufacturer's instructions to remove grease, food and dirt. 3. Rinse with clean water to remove the detergent and loosened food and dirt. 4. Apply a disinfectant for the time recommended by the manufacturer. 5. Rinse with clean water to remove the disinfectant. 6. Leave to dry naturally or use a clean disposable cloth.	x *"detergent name"* diluted 4:1 x *"disinfectant name"* diluted 5:1	*"Name"*
Ice-making machine			√		1. Turn off power supply and disconnect lead. 2. Remove any ice. 3. Wash inside with detergent in accordance with the manufacturer's instruction. 4. Rinse with clean water to remove the detergent and any dirt. 5. Apply a disinfectant for the time recommended by the manufacturer. 6. Rinse with clean water to remove the disinfectant 7. Pay particular attention to corners, drainage grills, seals and ceiling of the machine. 8. Wash and disinfect the outside of the machine. 9. Leave to dry before switching back on.	x *"detergent name"* diluted 4:1 x *"disinfectant name"* diluted 4:1	*"Name"*
Loose fish display counter		√			1. Remove all fish from the display. Return any fish that is still of acceptable quality to chilled storage and discard any that is not. Remove all trays and bowls from the unit and discard any garnish. 2. Remove all ice from display unit either physically or by allowing it to melt away. 3. Wash all surfaces of the display unit with detergent in accordance with the manufacturer's instructions. 4. Rinse with clean water to remove the detergent and any dirt. 5. Apply a disinfectant for the time recommended by the manufacturer. 6. Rinse with clean water to remove the disinfectant. 7. Pay particular attention to the outlet drainage and corners. 8. Leave to dry naturally or use a clean disposable cloth.	x *"detergent name"* diluted 4:1 x *"disinfectant name"* diluted 5:1	*"Name"*

Daily Cleaning Schedule Page.....of.....

Date: .....

Area/Item	Frequency/ time	Procedure	Cleaning Chemicals	Person responsible

Daily Cleaning Schedule Page.....of.....

Date: .....

Area/Item	Frequency/ time	Procedure	Cleaning Chemicals	Person responsible

Daily Cleaning Schedule Page.....of.....

Date: .....

Area/Item	Frequency/ time	Procedure	Cleaning Chemicals	Person responsible

Daily Cleaning Schedule Page.....of.....

Date: .....

Area/Item	Frequency/ time	Procedure	Cleaning Chemicals	Person responsible

Weekly Cleaning Schedule Page.....of.....

Date: .....

Area/Item	Frequency/ time	Procedure	Cleaning Chemicals	Person responsible

Weekly Cleaning Schedule Page.....of.....

Date: .....

Area/Item	Frequency/ time	Procedure	Cleaning Chemicals	Person responsible

Weekly Cleaning Schedule Page.....of.....

Date: .....

Area/Item	Frequency/ time	Procedure	Cleaning Chemicals	Person responsible

Monthly/Longer term Cleaning Schedule Page.....of.....

Date: .....

Area/Item	Frequency/ time	Procedure	Cleaning Chemicals	Person responsible

Monthly/Longer term Cleaning Schedule Page.....of.....

Date: .....

Area/Item	Frequency/ time	Procedure	Cleaning Chemicals	Person responsible

5.9 Waste Disposal

General

Waste must be disposed of from the premises at regular intervals to prevent harbourage of pests and bad odours. Bins in the shop should have lids which are pedal operated. They should be emptied frequently throughout the day.

There should be a designated area for the storage of waste while awaiting disposal. This should be located well away from food handling and storage areas. The area should be kept clean and all waste should be placed in suitable leak-proof containers with tight-fitting lids.

Waste should be segregated, stored, labelled and disposed of in accordance with relevant legislation.

Animal by-products

Animal by-products (ABP) are defined as animal carcasses, parts of carcasses and other products of animal origin that are not intended for human consumption. This includes both cooked and uncooked fish, shellfish and other products of animal origin that are not intended for human consumption.

Legislation controls the collection, transport, storage, handling, processing and use or disposal of all ABP. The ABP material is divided into 3 categories based on its potential risk to animals, humans or the environment. The legislation sets out how each category should be used or disposed of. The majority of ABP of fish origin are classified as category 3 which is the lowest risk.

Examples include:

- Fish material that is not destined for human consumption
- Finfish by-products arising from processing activities (excluding mortalities)
- Shellfish that have been previously fit for human consumption but have now passed their shelf-life.

All ABP generated within the food business should be stored in leak-proof covered containers separate from other waste.

If a small shop produces very little category 3 ABP, this waste may be placed in frozen storage for a short time while awaiting disposal provided that it takes place on the retail premises and does not breach any hygiene regulations. It should be placed in a designated area in the freezer. It must be kept separate from food and clearly labelled as "Category 3 ABP Not for Human Consumption".

ABP can only be transported by a haulier/transporter approved by the Department of Agriculture Food and the Marine. (If a fish shop produces less than 20kg of category 3 waste per week, it is not necessary to have this waste transported by an approved haulier).

To ensure traceability, all consignments of ABP must be accompanied by a fully completed commercial document. Category 3 waste can be disposed of by various means including processing in a plant approved to handle category 3 ABP, used in the manufacture of pet food, or as fertiliser.

Include details of waste disposal contractor(s) on the supplier's list in section 5.14.

Give details of storage, labelling and disposal of waste:

General waste:

Food waste not of animal origin:

Food waste of animal origin:

5.10 Pest Control

Pest control is important because pests can carry food poisoning bacteria that can contaminate foods and cause illness. These food poisoning bacteria can be passed to the food on contact with their body, hair, faeces and urine. There must be procedures in place to control the entry of rodents, insects, birds, domestic and other animals to the premises with the exception of assistance dogs e.g. guide dogs.

Common pests

- Rodents e.g. rats and mice
- Flies and other flying insects e.g. wasps
- Cockroaches
- Ants
- Birds.

Control measures for pests:

Good housekeeping

Frequent waste disposal and keeping the premises clean at all times are essential elements of a pest control programme. Effective cleaning and waste disposal will prevent bad odours which attract pests as well as removing the food source.

- Waste should be placed in suitable containers with lids and removed regularly
- Deliveries should be checked on arrival to ensure that there are no pests present or visible signs of damage by pests
- Food that is awaiting preparation should be covered
- In storage, food should be stored off the floor and away from the walls
- External areas should be kept clean and tidy.

Airflow

Airflow through the shop can help prevent the entry of flying insects. Airflow can be created by:

- Opening doors and/or windows at opposite ends of the shop
- Use of an air curtain at entry to the shop
- Air conditioning.

Pest-proofing the premises

The building must be in good condition in order to restrict pest access and prevent potential breeding sites. This can be done by:

- Using wire mesh screens to pest-proof air vents
- Sealing holes and other places where pests can gain access
- Keeping the floors, walls, roof, doors and windows in a good state of repair with no gaps or spaces to prevent the entry of pests
- Fitting drain covers to prevent pests gaining access.

Any gap exceeding 6mm can allow for the ingress of rodents. (A good test is if you can get a pencil through the hole then a mouse can also squeeze through!)

Insect screens

- Windows should be fitted with suitable screens capable of preventing entry of common flying insects (ideally apertures should be of mesh size 16 or 1.2mm or less)
- Doors may also be suitably screened using a close-fitting insect-proof screen door, however, this may not be appropriate at main entry door to shop.

Electronic fly-killing (EFK) devices

- Flying insects can be killed using electronic fly-killing devices
- These devices should be located not more than 2.4 meters from the floor, away from natural light and in areas free from draughts
- They must be fitted with a catch tray and it should be emptied frequently
- The device(s) should be left on permanently
- Bulbs should be changed at least annually. Date of bulb replacement should be recorded
- The device(s) must not be located above any area where food is exposed, open or unwrapped.

Pesticides/Bait

- Adequate precautions must be taken if using pesticide sprays or powders
- Pesticides must only be used by suitably trained, competent personnel in accordance with the manufacturer's instructions
- Pesticides must be held in secure containers, labelled correctly and stored in a secure location
- Fly or insect sprays must not be used in food areas
- A location map should be available showing the location of baiting points.

Flies are not only a food safety hazard but are also unsightly and are unacceptable to the customer.

Pest Control Contractor

Pest control can be done in-house by suitably trained and experienced personnel. However it is recommended that an external pest control company is employed to assist in implementing a pest control system as they will have the necessary skills and experience in pest-proofing the premises and checking for signs of pest activity.

The contract with the company should include checking for the presence of all pests, monitoring the pest-proofing of the premises and the eradication of any infestations found.

If there is any incident of infestation by rodents/insects, action must be taken to eliminate the problem and to prevent recurrence. Details of any such incident and action taken should be recorded.

There are particular dangers posed by an infestation of rats. The presence of a rat in a food business usually constitutes a "grave and immediate danger" and will generally result in immediate closure of the business by the EHO.

Include details of external pest control contractor(s) on the supplier's list in section 5.14.

Details of pest control programme:

Give details of contract with external pest control contractor:

Details of pest-proofing the premises:

Electronic fly-killing device(s):

Insect screens:

Pesticides used:

Bait and bait maps:

PART 3 FOOD OPERATIONS

5.11 High-Risk and Low-Risk Activities

During all operations such as transport, storage, preparation, processing, display and packaging it is important that the product quality and safety is maintained. All products should be handled as little as possible and always in a hygienic manner. Procedures must be in place to ensure that the cold chain is maintained.

The business should carry out a review of all activities carried out in order to identify the high-risk activities.

High-risk activities are activities where high-risk foods are prepared and where the potential exists to put vulnerable people (e.g. infants or the elderly) or large numbers of consumers at serious risk.

Examples of high-risk activities include:

- Preparation, storage or display of cooked or ready-to-eat fishery products
- Preparation storage or display of fish that will be consumed raw e.g. fish for sushi or sashimi
- Displaying live bivalve molluscan shellfish in tanks.

Low-risk activities are activities where the potential to cause harm to the consumer is low for example:

- Preparation, storage, display and sale of raw fish that will be fully cooked prior to consumption
- Storage, display and sale of pre-packaged fishery products where packs are not opened on the premises.

List high-risk activities carried out on-site:

List low-risk activities carried out on-site:

5.12 Prevention of Cross-Contamination

Fish shops that are selling both raw and cooked or ready-to-eat products must be extremely careful in order to prevent the risk of cross-contamination.

Cross-contamination is where harmful bacteria can be transmitted from raw foods to cooked or ready-to-eat foods either directly or indirectly.

Food poisoning bacteria can be transmitted directly from raw fish if there is direct contact between raw fish and cooked or ready-to-eat products.

Food poisoning bacteria can also be transmitted indirectly from raw fish to cooked or ready-to-eat products through a vehicle, such as the contaminated hands of a food worker, shared equipment or a dirty cloth.

If you are selling pre-packaged cooked or ready-to-eat products, these products must be stored and displayed separately from raw fish. Even though the products are pre-packaged, they must still be stored and displayed separately to prevent contamination of their outer packaging which could be subsequently be transferred to the product.

Cross-contamination can be prevented by ensuring that the following controls are in place:

Zoning

Raw fish must be physically separated from cooked or ready-to-eat products at all times during transport, handling, storage and display.

Raw fish and cooked or ready-to-eat products must be stored and displayed in completely separate refrigerated units to prevent cross-contamination. Where this is not possible, cooked and ready-to-eat foods must be stored on separate shelves above raw fish in chilled storage and in separate areas of the display.

The layout of the fish shop should be adequate to ensure that cross-contamination risks are prevented. Proper systems of zoning i.e. the physical separation of activities should be in place.

Equipment

Completely separate equipment and utensils, such as knives, trays, weighing scales, mincers and vacuum packers should be provided for use with cooked and ready-to-eat products. Equipment for use with cooked and ready-to-eat products only should be clearly identifiable to prevent mistakes e.g. use of colour coding.

Complex equipment is the term given to items of equipment that can be very difficult to clean. This may be because it is hard to access all parts of the equipment or because it is made up of a number of small parts and surfaces may not be smooth or easy to clean. These include vacuum packers, mincing machines and slicers. Complex equipment used for cooked or ready-to-eat food must never be used for raw food.

Staff

Staff must wash their hands thoroughly between handling raw and cooked or ready-to-eat products. Ideally, a separate member of staff should be involved in the handling and serving of cooked or ready-to-eat products. Where separate staff cannot be provided it is very important that cross-contamination is prevented by implementing strict hygiene procedures. The procedure should be as follows:

- Hands should be thoroughly washed on leaving the raw fish area
- Separate clean outer clothing (e.g. white coat or apron) should be worn before entering the cooked fish area
- Hands should be washed again in the cooked fish area before handling any cooked or ready-to-eat products.

Cleaning

Separate cleaning equipment should be provided for use in the cooked fish area.

Labelling

Any cooked or ready-to-eat products should be clearly labelled as such to help prevent the risk of cross-contamination.

5.13 Allergen Management

There are currently 14 categories of ingredients (and products thereof) legally defined as ingredients that are known to cause allergic reactions. These are:

- Cereals containing gluten and products thereof (with some exceptions)
- **Crustaceans and products thereof**
- Eggs and products thereof
- **Fish and products thereof**
- Peanuts and products thereof
- Soybeans and products thereof (with exceptions)
- Milk and products thereof including lactose (with some exceptions)
- Nuts i.e. almonds, hazelnuts, walnuts, cashews, pecan nut, brazil nuts, pistachio nuts, macadamia nuts and queensland nuts, and products thereof (with exceptions for nuts used for making distillates and alcoholic beverages)
- Celery and products thereof
- Mustard and products thereof
- Sesame seeds and products thereof
- **Sulphur dioxide and sulphites at concentrations of more than 10mg/kg or 10 mg/litre expressed as SO_2**
- Lupin and products thereof
- **Molluscs and products thereof**.

Fish, crustaceans and molluscs are all classed as allergens. Individuals may be allergic to only one or all of these products (e.g. allergic to molluscs but not to fish or vice versa).There should be segregation of crustaceans, molluscs and fish at all stages of delivery, storage, preparation and display.

Information on allergenic ingredients should be provided to customers. This is a legal requirement for pre-packaged food. It will also be legally required to provide this information for foods sold loose from December 2014.

List any allergens used as ingredients or present on the premises:

Give details of the allergen management programme including details of segregation of products and labelling:

5.14 Supplier Control, Goods-In and Food Returns

Supplier control

Fish and other food should only be purchased from suppliers on the approved supplier list. The supplier list should also include details of all suppliers providing services e.g. maintenance, calibration, pest control and utilities like water or ice.

There must be criteria for adding a supplier to the approved list as well as criteria for de-listing suppliers.
Fish should only be purchased from suppliers that have approval from the SFPA (or equivalent).

Approved Supplier List Page 1 of..... Date amended:.....

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

Approved Supplier List Page 2 of..... Date amended:.....

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

Approved Supplier List Page 3 of..... Date amended:.....

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

Approved Supplier List Page 4 of..... Date amended:.....

BUSINESS NAME	Contact name:
Telephone numbers:	**How and when was this supplier approved?**
Address:	**Goods supplied:**
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	**How and when was this supplier approved?**
Address:	**Goods supplied:**
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	**How and when was this supplier approved?**
Address:	**Goods supplied:**
Email address:	

Approved Supplier List Page 5 of..... Date amended:.....

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

Approved Supplier List Page 6 of..... Date amended:.....

BUSINESS NAME	Contact name:
Telephone numbers:	**How and when was this supplier approved?**
Address:	**Goods supplied:**
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	**How and when was this supplier approved?**
Address:	**Goods supplied:**
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	**How and when was this supplier approved?**
Address:	**Goods supplied:**
Email address:	

Approved Supplier List Page 7 of..... Date amended:.....

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

BUSINESS NAME	Contact name:
Telephone numbers:	How and when was this supplier approved?
Address:	Goods supplied:
Email address:	

Goods-In

Fish deliveries should be checked on receipt and the business should only accept products from approved suppliers that are of satisfactory quality and temperature. Checks should be carried out to ensure that the goods comply with product specifications agreed with the supplier. Fresh fish should be between 0°C and 4°C on receipt.

Deliveries must be traceable to the supplier and must also be accompanied by the appropriate documentation as outlined under traceability requirements in section 3.1. Delivery documents should be retained and a goods inwards record sheet filled in. The goods inwards record sheet should include the following details: supplier name, delivery date, delivery time, product description, production method, origin, quantity, batch number, use-by date, quality check, temperature check and transport vehicle check. This should be signed by an authorised person and retained on file.

All deliveries including fish, other food and packaging should not be left exposed to the elements and must be transferred to appropriate storage i.e. chilled storage, freezer or dry goods area as soon as possible.

Good that do not comply with quality, temperature and documentation requirements or if there is any food safety concern should be rejected and returned to the supplier.

Goods Inwards Record Sheet(s) are available Section 8 Blank Record Sheets

Details of Goods Inwards Procedure:

Control of returns

A designated, clearly identified area must be provided for returns. This should include any fish returned by customers or product that is past its use-by date. Any such products must be clearly labelled and removed as soon as possible.

Detail procedure for dealing with returns:

5.15 Transport

All fish must be transported in a manner that will not compromise its safety.

The vehicles used to transport food must be clean, waterproof and must not permit entry of exhaust fumes or pests. Any reusable containers in direct contact with food must be sanitised before use.

There must be clear segregation of raw and cooked or ready-to-eat products during transport.

Non-food items such as cleaning chemicals must be suitably packaged and segregated from food during transport. Fish should be transported and packed as per specification agreed with supplier. Fresh fish should be delivered, packed in ice, in clean unbroken boxes or cartons.

Fresh fish should be delivered in refrigerated containers capable of maintaining the product temperature between 0°C and 4°C. Suitable refrigerated or insulated containers where the temperature is maintained at or below -18°C should be used for transport of frozen seafood. The temperature of frozen food should not rise by more than 3°C during transport. The temperature should be restored to -18°C as soon as possible after receipt by immediately placing in frozen storage.

Give details of transport used:

Specifications agreed with supplier for transport of fish:

How is the cold chain maintained during transport?

How is the product segregated during transport to ensure that there is no risk of cross-contamination?

5.16 Storage

All fish must be stored in a manner that will not compromise its safety.

There must be adequate chilled and frozen storage facilities sufficient to ensure that there is no risk of cross-contamination between raw and cooked or ready-to-eat products. Cooked or ready-to-eat foods should not be stored in the same fridge as raw foods. If it is necessary to store raw and cooked or ready-to-eat food in the same fridge, there must be separate shelves or containers. Raw food must not be stored above cooked or ready-to-eat food.

In storage, fish should be maintained between 0°C and 2°C. This temperature should be readily achieved through a combination of ice and refrigeration.

Fish should be re-iced as necessary and not allowed to remain in melt-water. Whole, un-gutted fish should be stored belly up and layered with ice while whole gutted fish should be stored belly down and layered with ice. Fish fillets should be stored flesh to flesh and layered with ice. Salmon cutlets, darnes, fillets, tuna and trout fillets should be protected with polythene film or other suitable material before adding ice.

The doors to the chilled stores and freezers must only be opened for the shortest time possible to facilitate placing and/or removal of product and for cleaning.

Fish boxes should not be placed directly on the floor or directly against the wall of the chilled stores. They should be stored off the floor on suitably maintained racks or shelving that allows ease of cleaning of the storage area. There should be adequate shelving in storage to allow for correct stock rotation.

There must be suitable designated areas for storage of packaging and other food items that do not require chilled or frozen storage. The goods must be stored off the floor on suitably maintained racks or shelving.

Live bivalve molluscan shellfish should ideally be stored in a separate fridge between 4°C and 8°C as this is the optimum temperature to keep them alive.

The temperature of fish in storage should be checked at least twice daily. See section 4 Cold Chain Management for further details.

Temperature Record Sheet(s) are available in Section 8 Blank Record Sheets

Outline storage procedure to ensure effective cold chain management and no risk of cross-contamination:

5.17 Fish Preparation

If fish is filleted on-site there must be a suitable filleting table with adequate potable running water.

Fish should only be taken from chilled storage to the filleting/preparation area as required and returned to chilled storage or placed on display as soon as possible in order to maintain temperature control.

Staff involved in fish preparation should have received adequate training in handling fish, filleting, skinning and removal of bones.

Bones

Bones are a natural hazard associated with some seafood. Staff must be aware of the location of bones in all species (where relevant) and be trained to remove them. Products should be offered that have bones removed in advance or on customer request.

Many consumers regard bones as the major hazard associated with seafood and the main reason for not eating it. The retailer should inform the customer when bones have been removed or offer to do so where appropriate. The customer should also be informed about the parts of the fish that don't contain any bones and the varieties that contain very little or no bones.

Parasitic worms

Round worms or nematodes are commonly found in fish from all over the world. The herring worm and the cod worm are two extremely common examples of round worms found in fish in the north Atlantic. Fish species associated with the presence of round worms including cod, herring, hake, gurnard and monkfish.

If present, most round worms are removed when the fish is gutted. If they have penetrated the flesh into the belly flaps they are removed by trimming the belly flaps from the fillets. If there are a small number of round worms present in the flesh they can be removed with a knife. Round worms embedded deep in the flesh may not be immediately obvious. Fish should be inspected for the presence of round worms during filleting, preparation and prior to sale. If there is a significant infestation of round worms the fish must be discarded.

Round worms are killed by freezing as outlined in section 4.5 or by cooking and are generally considered to only pose a food safety risk if present in fish that will be consumed raw. Controls must be in place for fish that will be consumed raw as outlined in Section 4.5.

Not only do nematodes pose a food safety risk in fish that will be consumed raw but they are an unsightly presence in any fish and their presence will lead to consumer dissatisfaction.

Give details of preparation work carried out on site such as filleting, skinning, and pin-boning:

What action is taken to deal with the presence of bones in fish?

What precautions are taken to ensure that there are no nematodes or round worms present in fish offered for sale?

What precautions are taken to ensure that there are no live nematodes or round worms present in fish that will be consumed raw?

5.18 Processing

The procedure for preparation of products on-site should be documented to ensure consistency of product each time a batch is produced. The procedure should include details of all ingredients used.

Ingredients used in preparation of value-added products must be purchased from an approved supplier.

Include details of suppliers of all ingredients in the suppliers list in Section 5.14.

Value-added products (raw)

When preparing value-added products such as raw fish in a sauce or with a topping, small batches should be prepared on a daily basis or as required.

Fresh fish should be used immediately after delivery or within one day of receipt. Fish that has been on display should not be used.

Ensure that the cold chain is maintained by having fish out of refrigeration for the shortest time possible.

Bones should be removed when preparing value-added products.

Cooking products on-site

Where cooking of raw fish takes place in a fish shop normal cooking of fish to a core temperature of at least 75°C will be sufficient to kill harmful bacteria.

Ensure that procedures outlined in section 5.12 are in place to prevent the risk of cross-contamination.

If the product will be served hot e.g. when a tasting is taking place, it should be served immediately after cooking or held above 63°C.

If the product is not for immediate consumption, it must be cooled as quickly as possible after cooking to prevent bacterial growth ideally in a blast chiller and then transferred to chilled storage.

Give details of processing activities carried out on site:

Give details of measures to ensure that there is effective cold chain management and no risk of cross-contamination during processing:

Thawing of frozen products prior to sale

If previously frozen products are offered for sale, the food business operator must ensure that the product was defrosted in a manner that does not compromise food safety. Good hygiene practices and strict temperature control must be adhered to.

Thawing must be carried out in a controlled atmosphere to ensure that no part of the product reaches a temperature higher than 4°C. It is therefore recommended that such products are thawed in a chill, and not placed on the display in a frozen state.

Only the quantity of fish required on a daily basis should be thawed.

The refreezing of previously frozen foods is generally regarded as an unsafe practice which is to be avoided. However, if the thawing process can be carefully controlled and validated to ensure that the microbial safety of the product remains unchanged from the frozen to the thawed state, then the general recommendation does not apply. The freeze/thaw process may, however, impact on the texture of fish resulting in deterioration in quality.

Records of freeze/thaw activity should be maintained.

If the retailer cannot ensure that the thawing has been carried out in the controlled manner outlined above, then they should advise the customer not to re-freeze the product.

A fishery product that has previously been frozen and then defrosted prior to sale cannot be labelled as a fresh fishery product. The product name on the label must be accompanied by the word "defrosted" as outlined in Section 3.2 Labelling.

List any products that are purchased frozen but defrosted prior to sale. Include procedure for de-frosting such products and details of shelf-life:

5.19 Display

All fish must be displayed in a manner that will not compromise its safety.

Cooked or ready-to-eat foods should not be displayed in the same display unit as raw fish. If it is necessary to display raw and cooked or ready-to-eat food in the same display unit, there must be clear segregation and separate utensils to ensure that there is no risk of cross-contamination. Raw fish must not be lifted across cooked or ready-to-eat food. Any cooked or ready-to-eat products on display should be clearly labelled as such.

Fish will maintain optimum quality in chilled storage between 0°C and 2°C. Maintaining the temperature of fish between 0°C and 2°C can be difficult on display. Temperatures up to 4°C are generally acceptable on display, provided the fish is not maintained at this higher temperature for long periods. When fish is placed on display, deterioration in quality speeds up, therefore, the amount of time the fish is kept on display should be kept to a minimum.

Displaying large quantities of fish which have to be returned to chilled storage at the end of the day should be avoided.

Display fixtures should be placed in a suitable location to ensure that the temperature of fish cannot be increased by heat from overhead lights, wall heaters or direct sunlight.

There must be clear segregation on the display counter for:

- Raw fish fillets
- Cooked and/or ready-to-eat fish products
- Bivalve molluscan shellfish
- Crustaceans
- Smoked fish.

Batches of fish should not be mixed on display.

Management of the display

There should be procedures in place for management of the fish display throughout the day including:

- Initial set-up of display:
  - The use-by dates and quality of all fish should be checked prior to placing on display
  - Sufficient quantities of each species (that is expected to sell within a few hours) should be placed on display
- On-going maintenance throughout the day such as:
  - temperature control
  - re-icing
  - re-stocking
- Returning fish to chilled storage:
  - The quality of all fish should be checked and it should be discarded if not acceptable
  - Fish should be placed in clean trays or containers
  - It should be clearly labelled to ensure correct stock rotation
  - Old fish boxes should not be reused unless they have been thoroughly cleaned, disinfected and all old labels removed.

Garnish on display should be kept to a minimum. Any garnish used should be in good condition and must not be a source of contamination.

Sneeze barriers or equivalent should be used to help prevent contamination.

The temperature of fish on display should be checked at least twice daily.

Temperature Record Sheet(s) are available in Section 8 Blank Record Sheets

Refrigerated displays (not using any ice)

For refrigerated displays that do not use ice, separate trays should be used for each species/ product. Segregation of products and maintaining consistent product temperature can generally be readily achieved on refrigerated displays.

Care must be taken to ensure that fish does not become dried out. Suitable trays must be used and any melt-water removed regularly.

Displays using ice

The use of ice is an excellent way of chilling fish without freezing it. Correctly used, ice can rapidly reduce the temperature of fish. However, maintaining consistent product temperature on displays using ice can be challenging if the counter is not well managed throughout the day.

Fish fillets should be displayed skin side down in thin layers, flesh to flesh in order to maintain the correct temperature. They should be top-iced lightly on a regular basis throughout the day.

Ice should not come into direct contact with smoked fish, tuna, or with the flesh of salmon or trout as it tends to leach out the colour.

Ice must be made from potable water. Ice that remains on display at the end of the day should be removed or allowed to melt away. The display should be cleaned and fresh ice used each day.

Live Bivalve molluscan shellfish (e.g. oysters and mussels)

Bivalve molluscan shellfish should be displayed in deep bowls or trays made from suitable material such as stainless steel or durable plastic. They should not be placed directly on ice as the cold temperatures could kill them however it is sudden changes in temperature that is more likely to cause mortalities. They should be kept cool ideally between 4°C and 8°C.

The shells should remain closed. Mussels may open slightly but should close when gently tapped. Any that remain open or any with broken shells should be discarded.

Particular attention is required when handling oysters that are often consumed raw and therefore are considered a ready-to-eat food.

Bivalve molluscan shellfish feed by filtering large volumes of water across their gills to obtain oxygen and food. In the process of filtering water, they also trap and concentrate bacteria, viruses, chemical contaminants and any other impurities that may be present in the water.

The microbiological quality of water where bivalve molluscan shellfish are harvested is rigorously controlled and purification is carried out in approved depuration centres where necessary. **Re-immersion of bivalve molluscan shellfish in water risks re-contaminating them and is not permitted in catering and retail operations.**

Crustaceans

Lobster and crab must be sold either live or cooked. If live, they should not be displayed directly on ice but should ideally be held in specially designed storage tanks. The water in these tanks should be visibly clean and microbiological safe. The manufacturer's instructions for maintenance and cleaning of these tanks should be followed.

Tanks should be inspected on a daily basis and any dead lobsters or crab removed.

Cooked crustaceans should not be displayed directly on ice but placed in a suitable tray or dish.

Uncooked crab claws spoil rapidly and will have a short shelf-life even when strict temperature control is adhered to.

Describe the types of displays used for:

Whole fish:

Fish Fillets:

Value-added products:

Bivalve molluscan shellfish:

Crustaceans:

Management of the Display:

Give details of procedures for setting up the display(s):

Give details of procedures for management of the display(s) throughout the day:

Outline procedure for returning fish to storage at close of business:

What measures are in place to prevent cross-contamination on display(s)?

What measures are in place to ensure effective cold chain management on display(s)?

Display of pre-packaged chilled and frozen fishery products

Display units should be designed to allow ease of cleaning and correct stock rotation.

Chilled fishery products should be maintained between 0°C and 4°C on display and frozen fishery products should be maintained at less than -18°C. Temperature checks should be carried out between packs at various locations throughout the unit.

Give details of displays used for pre-packaged chilled and frozen fishery products:

5.20 Packaging

When fish is sold loose it must be placed in suitable leak-proof packaging for the customer. Suitable types of packaging include plastic bags, foil trays, foil bags, microwavable bags and straight to oven bags.

The fish should not be handled directly where possible. Non-touch techniques should be used especially when handling cooked or ready-to-eat products. Non-touch techniques include use of an inverted bag, spoons, tongs or fork.

If fish is pre-packaged in advance of sale, ensure that only the freshest fish is used. These products should be prepared on a daily basis.

If using vacuum and modified atmosphere packaging (MAP) for raw fish the food safety issues outlined in Section 4.4 must be addressed.

Give details of types of packaging used:

Give details of any raw fish products packaged in advance of sale:

5.21 Sale to Consumers

Ensure that use-by dates placed on packaging for consumers comply with original use-by dates specified by supplier.

Use-by dates placed on fish by supplier(s) are only relevant when strict temperature control is adhered to. Use-by dates should not be relied on alone when determining if fish is fit for sale. Quality checks must also be carried out. See section 4.2 for further details.

Ensure that live bivalve molluscan shellfish are still alive when sold.

Fish that will be consumed raw or very lightly cooked (e.g. fish for sushi and sashimi) must have received the correct freezing treatment to kill any parasites that may be present unless exempt from the freezing requirement. See Section 4.5 for further details.

Inform the customer if the fish has previously been frozen. See section 5.18 for further details.

Advice for your customers

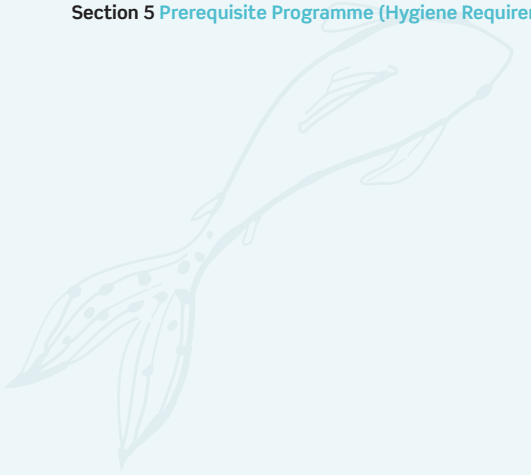
Refrigerate fish as soon as possible after purchase. Fresh fish in good condition at time of purchase should not be kept for more than two days in a standard domestic fridge. Even fish that is very fresh when purchased can rapidly spoil if not correctly handled.

If the customer chooses to freeze fish, it should be split into portions as it is intended to be used and frozen on the day of purchase.

Oil-rich fish is best if used within 3 months of freezing. Fresh white fish can be frozen for a maximum of 6 months in a freezer with a four star rating (****).

Check that mussels are still alive before cooking. The shells should be closed or should close when tapped gently. If they don't close, discard them. When cooked, the shells will open up themselves. Any mussels that remain closed after cooking should be discarded.

Take care when eating fish and check for the presence of bones. The fishmonger should offer to remove bones and inform the customer about bone-free options.



6 HACCP

6.1 HACCP Introduction

All food business operators are legally obliged to put in place, implement and maintain a permanent procedure(s) based on the Hazard Analysis and Critical Control Point (HACCP) principles. The requirements are specified in Regulation (EC) No. 852/2004.

A hazard control system based on HACCP principles is science-based and systematic and is intended to prevent the production of unsafe food. HACCP is applicable to the identification of microbiological, chemical and physical hazards affecting product safety. The HACCP principles can also be used to identify and control allergen hazards.

HACCP should only be applied for food safety but the technique may, with care, be used to identify and control hazards associated with microbiological spoilage and quality of products. The main objective of HACCP is to ensure food safety and the HACCP system, therefore, should be targeted at safety issues. Where quality issues are included, they must be clearly distinguished from food safety issues. This distinction must be fully understood by the food business.

Prior to establishing a food safety management system based on HACCP principles, the necessary food hygiene requirements or prerequisite programme must be in place as outlined in Section 5 of this manual.

Personnel whose responsibilities include the implementation of the control of food safety hazards must have an understanding of HACCP principles.

6.2 HACCP Compliance Options

The legislation allows for flexibility in the implementation of food safety management systems based on the size of the business, scale of production and level of risk involved.

There are three options available for meeting the legal requirements of a food safety management system.

Option 1: Implementation of the prerequisite hygiene requirements

If meeting the prerequisite hygiene requirements is deemed sufficient to control hazards then there is no need to put in place a permanent procedure based on the principles of HACCP. This option generally applies to food businesses where there is no preparation, manufacturing or processing of food, e.g. market stalls, small retail shops, transport and storage of pre-packaged food or non-perishable food.

Option 2: Follow a recognised guide to good practice

Examples include the National Standards Authority of Ireland (NSAI) I.S.341: 2007 Hygiene in food retailing and wholesaling. Businesses choosing this option must ensure that the guide covers all activities carried out on the premises. (This workbook is based on the requirements outlined in I.S.341: 2007).

Option 3: Develop a system based on the HACCP principles

This involves application of the seven HACCP principles (according to the classical Codex Alimentarius approach) as outlined in Section 6.3.

Retailers involved in low-risk activities only, as described in section 5.11, should generally be able to control all hazards by the implementation of the prerequisite hygiene requirements (Option 1). Because fish is highly perishable an effective cold chain management programme is also essential. If all hazards are effectively controlled by the cold chain management and the prerequisite hygiene requirements, as outlined in Sections 4 and 5 of this workbook then the strict application of the HACCP principles may not be necessary. If the retailer is involved with high-risk activities as outlined in section 5.11 then it may be necessary to implement the HACCP principles in full (Option 3).

How does this business control food safety hazards?

Options 1 and 2 combined

Cold chain management and implementation of the prerequisite hygiene requirements as outlined in Section 4 and 5 of this workbook. (Based on requirements outlined in I.S.341: 2007 Hygiene in food retailing and wholesaling). ☐

OR

Options 3

Application of the seven HACCP principles in full as outlined in section 6.3 of this manual in addition to the cold chain management and implementation of the prerequisite hygiene requirements. ☐

It is recommended that these options are discussed and agreed with the local Environmental Health Officer.

For most fish shops, food safety hazards will be adequately controlled through implementation of the prerequisite hygiene requirements and the cold chain management programme. A formal HACCP plan as outlined in section 6.3 would therefore not be required.

If, however, the business deems that all food safety hazards are not adequately controlled through the cold chain management and prerequisite programme, then section 6.3 must be completed.

6.3 Development of a HACCP Based System by Applying the HACCP Principles

Scope of the HACCP Study

The HACCP study should be carried out on a clearly defined product/process or on a specific range of activities.

Certain products may be grouped together where they have similar characteristics or similar associated hazards. For example it may be acceptable to group products, such as raw fresh fish fillets (e.g. cod, haddock and whiting), on one HACCP study and to do a separate HACCP study for bivalve molluscan shellfish (e.g. mussels and oysters).

Give details of products to be covered in each HACCP study:
(Tick the appropriate box)

☐ *Raw fresh whole fish and fish fillets (requiring cooking prior to consumption)*

Give details:

☐ *Raw fresh fish to be consumed raw (sold for sushi or sashimi)*

Give details:

☐ *Live bivalve molluscan shellfish*

Give details:

☐ *Live crustaceans (Lobster and/or crab)*

Give details:

☐ *Value-added products (raw)*

Give details:

☐ *Value-added products (cooked /ready-to-eat)*

Give details:

☐ *Vacuum and Modified Atmosphere Packaged (MAP) Raw Fish Products*

Give details:

Will quality issues be addressed in the HACCP study and if so how will they be distinguished from food safety issues?

Preliminary Steps and Codex Principles

There are twelve steps which should be followed when carrying out a HACCP study. They are divided into five preliminary steps and the seven HACCP Principles.

Preliminary Steps

Step 1 Assemble a HACCP team

Step 2 Describe the product or process

Step 3 Identify the intended use of the product and the end-user

Step 4 Construct a flow diagram

Step 5 Confirm the accuracy of the flow diagram

Codex Principles

Step 6 Carry out a **Hazard Analysis** (Principle 1)

Step 7 Identify the **Critical Control Points (CCPs)** (Principle 2)

Step 8 Establish **Critical Limits** for each CCP (Principle 3)

Step 9 Establish a **Monitoring** procedure for each CCP (Principle 4)

Step 10 Establish a procedure for **Corrective Action** (Principle 5)

Step 11 Establish **Verification** procedures (Principle 6)

Step 12 Establish **Documentation** and records commensurate with the nature and size of the food business (Principle 7).

Examples of a completed HACCP documentation are included in Section 6.4

- Fresh Fish: Product Data Sheet
- Fresh Fish: Flow Diagram
- Fresh Fish: Hazard Analysis and Determination of CCPs Step 3 (Filleting and Washing)
- Cooked Prawns: Hazard Analysis and Determination of CCPs (Step 5 Cooking)
- Cooked Prawns: HACCP Plan

Documents that can be used to assist in completing the HACCP study are available in Section 8 Blank Record Sheets. These are:

- Product Data Sheet
- Hazard Analysis and Determination of CCPs
- HACCP Plan.

Step 1 Assemble a HACCP team

A HACCP study requires the collection, collation and evaluation of information about the product(s) and associated hazards and is best carried out by a multi-disciplinary team within the business.

In a small business it may be necessary to seek specialist external support. Consultants may be helpful in the development and implementation of a HACCP system and they can provide scientific/technical knowledge but it is recommended that the consultant does not write the HACCP plan. This is because it is important that the people in the business using the HACCP-based procedures have a strong sense of ownership and understanding of the system.

The HACCP team should ideally consist of 4-6 people but in a small retail business, 2-4 people will suffice. A HACCP team leader must be appointed. There is a legal requirement for the person responsible for the development and implementation of the HACCP system to have received adequate training in the application of HACCP principles. It is recommended that the HACCP team leader receives formal HACCP training example FETAC Level 5 Risk-based HACCP for Seafood. All HACCP team members should receive HACCP training.

Give details of the members of the HACCP team and identify the HACCP team leader:
HACCP Team:

Name	Job Title	Qualification / Experience	HACCP Training Record
HACCP Team Leader			

Step 2 Describe the product or process

Describe the finished product in full to ensure that all aspects of the product which may affect food safety have been considered. The product data should include the following information:

- Product name (fully describe the finished product)
- List all ingredients and identify their origin
- Describe any treatment and/or processing that the product has undergone prior to reaching the premises
- Describe any treatment and/or processing that the product has undergone on the premises
- Storage conditions
- Allergen information
- Packaging
- Shelf-life
- Instructions for use by consumer.

Step 3 Identify the intended use of the product and the end-user

On the product data sheet, also include details of the intended use, end-user and any potential misuse by the consumer.

- Specify the intended use of the product for example:
  - To be eaten raw such as oysters or fish for sushi or sashimi
  - Product is already cooked and ready-to-eat (with/without heating)
  - Product must be fully cooked before consumption.
- Identify the expected end-user of the product e.g. general population. Specify if product is designed for consumption by vulnerable groups e.g. small children or patients in hospitals or nursing homes.
- Consider the likely abuse/unintended use of the product by the consumer for example:
  - Holding fish at higher temperatures for long periods after purchase
  - Re-freezing products that were previously frozen
  - Consuming raw fish that was intended to be cooked.

Complete a product data sheet for each product or group of products in the HACCP study. Identify the intended use of the product and end-user.

Include the completed product data sheet(s) at the end of section 6.

Step 4 Construct a process flow diagram

Construct a process flow diagram indicating all process steps, including all inputs (e.g. raw materials, ice and water) and outputs (e.g. waste guts, fish heads, bones and waste water).

The flow diagram should be a clear and simple step-by-step outline of all activities involved in the process from intake to dispatch. All steps in the process should be numbered.

The process should be described in further detail (if it is not obvious from the flow diagram) by giving a detailed account of what occurs at each step.

Step 5 Confirm the accuracy of the flow diagram

The HACCP team should perform an on-site review of the process to confirm the accuracy of the flow diagram. They should sign the flow diagram confirming that they have verified its accuracy.

Construct a flow diagram for each product or group of products in the HACCP study. Include the flow diagram(s) at the end of section 6.

The members of the HACCP team should sign the flow diagram, confirming that they have verified its accuracy on-site.

Describe the process in further detail (if it is not obvious from the flow diagram) by giving details of what occurs at each step.

Step 6 Hazard Analysis

Carry out a hazard analysis at each process step. The hazard analysis can be broken down into 3 steps as follows:

(i) List all potential hazards at each step
(ii) Conduct a hazard analysis (risk assessment)
(iii) Identify appropriate control measures.

(i) List all potential hazards at each step under the following headings:

- Biological hazards
- Chemical hazards
- Physical hazards
- Allergens.

A food safety hazard can be described as *"A biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect"*.

The HACCP team should make a list of all the potential hazards that may be reasonably expected to occur at each process step.

The following examples of general food safety hazards and some food safety hazards associated with seafood may be used as a guide.

EXAMPLE

Examples of general food safety hazards

Biological hazards:

- Pathogenic (food poisoning) bacteria e.g. *Salmonella spp., S.aureus*
- Viruses
- Parasites.

Chemical hazards:

- Pesticide residues
- Cleaning chemicals such as acids and alkalis
- Sanitising agents
- Pollutants (dioxin, heavy metals)
- Chemical residue associated with packaging material.

Physical hazards:

- Glass
- Metal pieces (nuts, bolts, broken knives or machinery parts, nails, staples)
- Hard brittle plastic
- Wood splinters (from pallets).

Allergens:

- Peanuts
- Milk
- Eggs.

Examples of food safety hazards associated with seafood

Biological Hazards:

- Pathogenic (food poisoning) bacteria e.g. *Listeria monocytogenes, Vibrio spp., Clostridium botulinum, E.coli.*
- Viruses e.g. Hepatitis A, Hepatitis non-A, non-B virus, Noroviruses
- Parasites e.g. Nematodes (cod worms).

Chemical Hazards:

- Marine biotoxins e.g. Diarrhetic Shellfish Poisoning (DSP) toxins, Amnesic Shellfish Poisoning (ASP) toxins, Paralytic Shellfish Poisoning (PSP) toxins
- Scombrotoxin poisoning (histamine)
- Antibiotic residue.

Physical hazards:

- Bones
- Shell fragments/pieces.

Allergens:

- Fish
- Crustaceans
- Molluscs
- Sulphur dioxide and sulphites at concentrations of more than 10mg/kg.

(ii) Conduct a Hazard Analysis (Risk Assessment)

Determine which of the hazards identified by the HACCP team are of such a nature that, in order to produce safe food they must be prevented, eliminated or reduced to acceptable levels.

The risk assessment should be based on available scientific evidence and must take into account the probability of the hazard occurring if controls fail and the consequences of the hazard occurring i.e. severity.

The significance of the hazard is determined by combining probability and severity.

Probability:	The likelihood of the hazard occurring if control measures fails (High/ Medium/ Low)
Severity:	How serious would the consequences be if the hazard occurs and if the consumer ingests the hazard? (Critical/Moderate/ Negligible)
Significance Rating:	Probability and Severity ratings multiplied together.

Various scoring systems have been developed to help the HACCP team carry out the risk assessment. The HACCP team decides which (if any) of these systems are used.

e An example of a 3 x 3 matrix scoring system that may be used to assist in carrying out a risk assessment

EXAMPLE

Probability Level (3 x 3 matrix)

Rating	Probability (Level of probability of the hazard occurring if the control fails)	Definition
3	High	Likely to happen/often/frequent
2	Medium	Can happen but not frequent
1	Low	Unlikely to happen/rare/remote

Severity Level (3 x 3 matrix)

Rating	Severity (Consequence of the hazard occurring and the consumer ingesting the hazard)	Definition
3	Critical	Death or serious illness (long term effects)
2	Moderate	Reversible or short term illness (full recovery)
1	Negligible	Minor injury or illness/unlikely to cause illness or injury

Determination of the Significance of the Hazard (3 x 3 matrix)

Severity / Probability	Negligible 1	Moderate 2	Critical 3
Low 1	Not Significant 1	Not Significant 2	Significant 3
Medium 2	Not Significant 2	Significant 4	Significant 6
High 3	Significant 3	Significant 6	Significant 9

Adapted from Campden BRI 2009

Green	1-2	Hazard is not significant
Orange	3-4	Hazard is significant but usually is adequately controlled by the prerequisite programme
Red	6-9	Hazard is significant

(iii) Identify appropriate control measures

A control measure is any action or activity which can be used to prevent or eliminate a food safety hazard or reduce it to an acceptable level.

Control measures need to be underpinned by the use of detailed procedures and specifications, e.g. detailed cleaning procedures and schedules, heat treatment specifications and agreed raw material specifications. Many of the measures used as controls will come from the prerequisite programme.

Complete a hazard analysis sheet for each step in the process.

For each process step, list the potential food safety hazards, causes and control measures. Carry out a risk assessment of these hazards. Document the reasons for decisions made regarding probability and severity when carrying out the risk assessment.

Step 7 Critical Control Points (CCPs)

Identify the critical control points (CCPs) in the process. A CCP is a step in which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.

The step is often the last process step where the hazard can be controlled. Correct determination of CCPs is vital to ensure that there is effective management of food safety.

Identification of CCPs requires a logical approach and professional judgement. There are two main factors that will determine if a step in a process is a CCP:

(i) Is there a significant hazard(s) identified by carrying out a risk assessment at this process step which must be controlled?
(ii) Is the hazard(s) adequately controlled by the prerequisite programme?

The knowledge and experience of the HACCP team is crucial when determining which steps become CCPs.

If the hazard(s) at the process step are not significant than it is most likely that they will be adequately controlled by the prerequisite programme. Even if these hazards are not controlled by the prerequisite programme, they may be deemed so insignificant that their presence would not result in a realistic risk of illness or injury and therefore this step may not become a CCP.

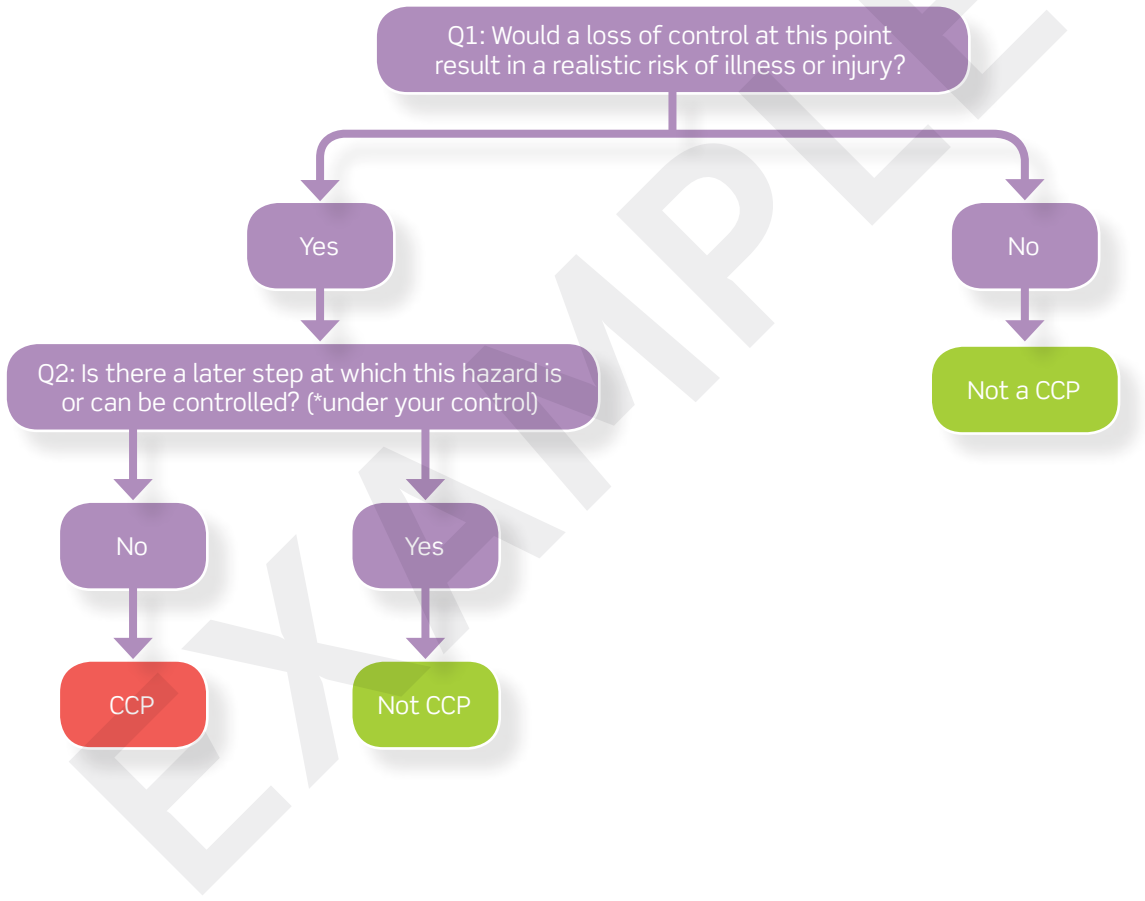
Even if there is a significant hazard(s) at the process step, the HACCP team may deem that it is adequately controlled by the prerequisite programme and therefore the step may not become a CCP.

The HACCP team may use a CCP decision tree to help determine which steps in the process are CCPs. A CCP decision tree is merely a tool and not a mandatory element of HACCP. There are various types of decision trees, some involving two, four or five questions. A simple two step decision tree is recommended.

e An example of a simple two step CCP Decision Tree.

EXAMPLE

CCP Decision Tree



** The HACCP team must decide if they only consider steps under their control e.g. cooking by the consumer is not under their control.*

Outline method used to determine the CCPs:

Was a CCP decision tree used?

Give details of the CCP decision tree that was used: Include a copy of the CCP decision tree if different from the example given

Complete the hazard analysis sheets clearly identifying the CCPs. Indicate where hazards are controlled by the prerequisite programme.

Where a step(s) has been identified as a CCP transfer the information regarding the hazard, cause and control to the HACCP Plan sheet.

If no steps have been identified as CCPs, and all identified hazards are adequately controlled by the prerequisite and cold chain management programme then there is no need to complete the remaining steps in section 6.3.

Step 8 Critical Limits

A critical limit(s) must be specified for all CCPs. A critical limit is the dividing line between what is acceptable and what is unacceptable. Failure to meet a critical limit will compromise the safety of the food and may harm the consumer.

The critical limit is for the control measure and not the hazard. Critical limits can relate to measurements such as temperature of product, salt content or a time/temperature combination.

The critical limit must be validated to ensure that the limit given for the control measure is effective at preventing, eliminating or reducing the food safety hazard.

Non-numerical critical limits are permitted if valid such as the change of physical properties of food during cooking, e.g. white fish becomes opaque and flakey when cooked.

On the HACCP plan, fill in the critical limit(s) for each CCP.

Step 9 Monitoring

Establish a monitoring procedure for each CCP. Monitoring must be carried out at each CCP to ensure that the critical limits for ensuring food safety are achieved. Monitoring should be carried out in time for corrective action to be implemented. Monitoring procedures should outline:

- Method of monitoring - How?
- Frequency - When?
- Responsibility for monitoring and recording - Who?

Monitoring can be an assessment of a numerical value e.g. reading a temperature gauge or a visual check e.g. the water is boiling.

There are various forms of monitoring

- Continuous monitoring e.g. a temperature data logger on a chill/freezer
- Non-continuous e.g. manually reading a temperature gauge or probing a product with a temperature probe.

On the HACCP plan, fill in the monitoring procedure, the frequency of monitoring and the name of the person who is responsible for carrying out the monitoring at each CCP.

Step 10 Corrective Action

Establish a corrective action procedure. Corrective action is any action to be taken when the results of monitoring at the CCP indicates that the critical limit for food safety has not been achieved. Corrective action is taken to ensure that unsafe food does not reach the consumer.

The corrective action procedure should outline what action is to be taken and who is responsible. This should include immediate action on affected product as well as action to prevent recurrence of the problem.

On the HACCP plan, fill in details of corrective action for each CCP.

Step 11 Verification

Establish procedures to verify that the HACCP plan is working effectively. Verification demonstrates that the HACCP system has been implemented as planned and that the food hazards are being controlled. Verification activities may include laboratory testing, review of customer complaints, review of records and auditing of the HACCP plan.

On the HACCP plan, fill in details of verification activities for each CCP.

Step 12 Documentation

Give details of documentation relevant to monitoring and verification activities for each CCP. For further details, see section 7 Documentation.

On the HACCP plan, fill in the details of documentation relevant to monitoring and verification activities for each CCP.

Include the completed hazard analysis sheets with details of risk assessment decisions for each step and the completed HACCP plan at the end of section 6.

Review of the HACCP plan

The HACCP plan should be reviewed and updated if there are any changes to products, procedures or raw materials.

It is recommended that the HACCP plan is reviewed at least on an annual basis even if no changes have taken place.

Give details of when HACCP plan is reviewed:

6.4 Examples of completed HACCP record sheets

EXAMPLE

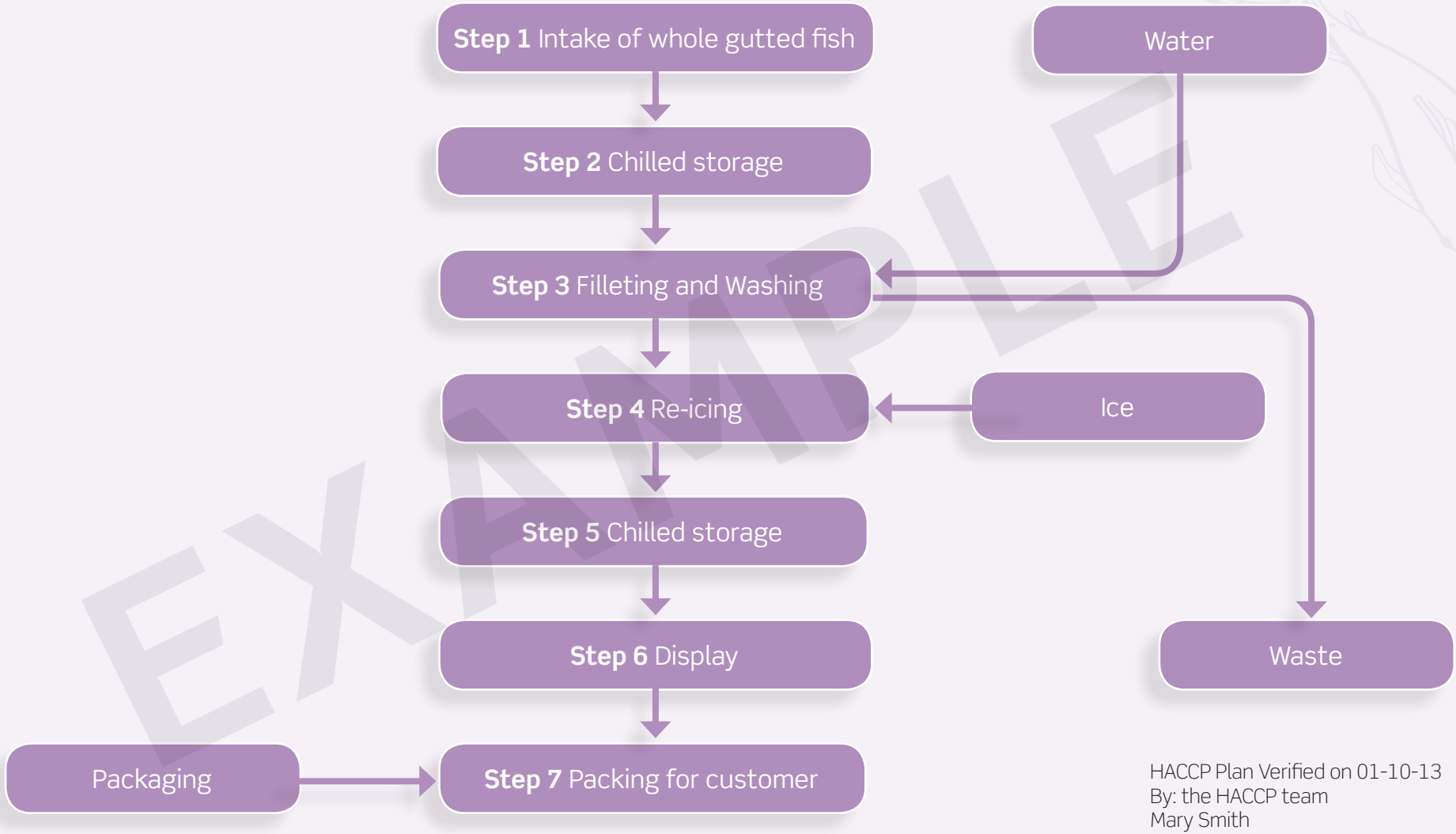
Product Data Sheet

Product/Process: Fresh fish **Author:** The HACCP team **Date:** 1-10-13

1. Product name	Raw white fish fillets (e.g. cod, whiting, haddock, hake) and salmon
2. Ingredients and origin of ingredients	Whole fish supplied directly from "xxx" fish processors. White fish: All caught in the North East Atlantic Salmon: Farmed in Ireland
3. Treatment and/or processing that the product has under gone prior to reaching the premises	Gutted, boxed and iced
4. Treatment and/or processing that the product has under gone on the premises	Filleted, re-iced, stored and displayed
5. Storage conditions	0-2°C
6. Allergen information	Fish are allergens. The product must not come into direct contact with any other allergenic product such as bivalve molluscan shellfish or crustaceans in storage or on display.
7. Packaging	Packaged on customer request in plastic bags or microwavable bags
8. Shelf-life	Two days from sale to consumer Must be stored in a refrigerator
9. Instructions for use by consumer	Place in refrigerated storage as soon as possible. Grill, fry, bake or microwave until fully cooked
10. Intended use of the product	Must be fully cooked before consumption
11. End-user (consumer group -general population / vulnerable groups e.g. elderly/babies)	General population
12. Potential for customer misuse	Delay in placing product in refrigeration Inadequate cooking /consuming the product raw

EXAMPLE

Fresh Fish – Flow Diagram



HACCP Plan Verified on 01-10-13
By: the HACCP team
Mary Smith
Joe Boggs
Tom Dune
Michael Reilly

EXAMPLE

Hazard Analysis and Determination of CCPs

(Complete separate sheet for each step in the process)

Process: Fresh Fish **Step: 3** Filleting and Washing **Author:** The HACCP team **Date:** 01-10-2013

Hazard (What can go wrong)	Cause (Why did it go wrong?)	Control Measure (What can I do about it?)	*Risk Assessment			CCP Determination			Comment
			Prob.	Severity	Significant Rating	Decision tree (2 step) Q1	Decision tree (2 step) Q2	CCP Yes/No	
Biological Hazards: Contamination of fish with food poisoning bacteria from the water, hands or equipment e.g. *E.coli, S.aureus,* Salmonella.	Poor water quality Poor personal hygiene Inadequate cleaning programme	Ensure that only potable water is used. Water must be from an approved source. Training in personal hygiene at induction and compliance with personal hygiene rules Cleaning programme	Med. (2)	Mod. (2)	** Significant (4)				Prerequisite - Supplier control - Water - Personal hygiene - Cleaning
Chemical Hazards: Residue of cleaning chemicals	Cleaning chemicals not used correctly and/ or inadequate rinsing following cleaning	Cleaning programme	Med. (2)	Neg. (1)	Not Significant (2)				Prerequisite - Cleaning
Physical Hazards: Hair from staff	Inadequate protective clothing i.e hair not covered adequately	Training in personal hygiene at induction and compliance with personal hygiene rules	Low (1)	Neg. (1)	Not significant (1)				Prerequisite - Personal Hygiene
Allergens None identified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

KEY: Risk Assessment (see 3 x 3 matrix in section 6.3, ≥3 = Significant). Prob. = Probability, Neg. = Negligible, Med. = Medium, Mod.= Moderate, N/A = Not applicable.

* Risk Assessment: Reasons for decisions are explained on page 2 of 2.

**Even though this hazard is significant, the HACCP team deemed that it is adequately controlled by the prerequisite programme and therefore the CCP decision tree was not used.

EXAMPLE

Hazard Analysis and Determination of CCPs
(Complete separate sheet for each step in the process)

Process: Fresh Fish **Step: 3** Filleting and Washing **Author:** The HACCP team **Date:** 01-10-2013

Hazard	Probability	Severity	Risk Assessment: Reason for Decision
Contamination of fish with food poisoning bacteria from the water, hands or equipment e.g. *E.coli, S.aureus,* Salmonella.	Medium (2)		If there is poor water quality, poor personal hygiene or an inadequate cleaning programme, there is a medium probability of product contamination.
		Moderate (2)	In the event of the consumer (a child) ingesting the hazard, the potential adverse health effect would most likely be reversible short term illness.
Residue of cleaning chemicals	Medium (2)		If cleaning chemicals are not used correctly and/or if there is inadequate rinsing following cleaning, there is medium probability of product contamination.
		Negligible (1)	In the event of the consumer (a child) ingesting the hazard, it is unlikely to cause illness or injury.
Hair from staff	Low (1)		If there is inadequate protective clothing i.e. hair not covered, there is a low probability of product contamination
		Negligible (1)	In the event of the consumer (a child) ingesting the hazard, it is unlikely to cause illness or injury.

EXAMPLE

Hazard Analysis and Determination of CCPs
(Complete separate sheet for each step in the process)

Process: Cooked Prawns **Step: 5** Cooking **Author:** The HACCP team **Date:** 01-10-2013

Hazard (What can go wrong)	Cause (Why did it go wrong?)	Control Measure (What can I do about it?)	*Risk Assessment			CCP Determination			Comment
			Prob.	Severity	Significant Rating	Decision tree (2 step) Q1	Decision tree (2 step) Q2	CCP Yes/No	
Biological Hazards: Survival of food poisoning bacteria e.g. *E.coli,* Salmonella, *L. monocytogenes.* *Vibrio spp.* (if caught or farmed in warm waters)	Inadequate cooking temperature and/or time	Cooking prawns - Standard Operating Procedure (SOP) Training in procedure and compliance with procedure. Effective maintenance and calibration programme	High (3)	Critical (3)	Significant (9)	Yes	No	Yes	CCP 1 - Cooking procedure. Prerequisite - Equipment maintenance and calibration
Chemical Hazards: Cleaning residues left on cooking baskets and in cooking vats	Inadequate rinsing	Cleaning programme	Med. (2)	Neg. (1)	Not significant (2)				Prerequisite - Cleaning
Physical Hazards: Pieces of equipment e.g. screws, metal pieces from cooking basket	Inadequate maintenance and servicing of equipment	Maintenance Programme	Low (1)	Mod. (2)	Not significant (2)				Prerequisite - Equipment maintenance
Allergens None identified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

KEY: Risk Assessment (see 3 x 3 matrix in section 6.3, ≥3 = Significant). Prob. = Probability, Neg. = Negligible, Med. = Medium, Mod.= Moderate, N/A = Not applicable. SOP = Standard Operating Procedure.

* Risk Assessment: Reasons for decisions are explained on page 2 of 2.

EXAMPLE

Hazard Analysis and Determination of CCPs
(Complete separate sheet for each step in the process)

Process: Cooked Prawns **Step: 5** Cooking **Author:** The HACCP team **Date:** 01-10-2013

Hazard	Probability	Severity	Risk Assessment: Reason for Decision
Survival of food poisoning bacteria e.g. *E.coli, Salmonella, L. monocytogenes.*	High (3)		If the product is not cooked at the correct temperature or for the correct length of time, there is a high probability that any food poisoning bacteria present will survive.
Vibrio spp. (if caught or farmed in warm waters)		Critical (3)	In the event of the consumer (a child) ingesting the hazard, the most likely adverse health effect would be serious illness.
Residue of cleaning chemicals	Medium (2)		If there is an inadequate rinsing of equipment, there is a medium chance of cleaning residue getting onto product.
		Negligible (1)	In the event of the consumer (a child) ingesting the hazard, it is unlikely to cause illness or any illness will be minor
Pieces of equipment e.g. screws, metal pieces from basket	Low (1)		In the event of loss of control i.e. inadequate maintenance programme, there is a low risk of product contamination from equipment
		Moderate (2)	In the event of the consumer (a child) ingesting the hazard, the most likely adverse health effect would be reversible or minor injury

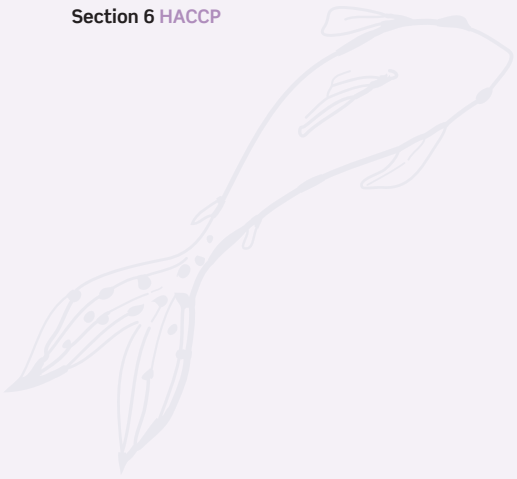
EXAMPLE

HACCP Plan

Process: Cooked Prawns **Author:** The HACCP team **Date:** 01-10-2013

Critical Step (CCP)	Potential Hazard (What can go wrong?)	Cause (Why did it go wrong?)	Control Measure (What can I do about it?)	Critical Limits (What must I achieve?)	MONITORING			Corrective Action (if critical limit not reached)	Document Ref.	Verification
					Procedure	Responsibility	Frequency			
Step 3 Cooking	Pathogen survival (if prawns are not properly cooked)	Inadequate cooking temperature and/ or time	Training and compliance with prawn cooking procedure	Temp: *99°C Time: *120 seconds	Temperature (visual- water boiling bubbles in water) Time is measured from when water returns to boil using calibrated timer	Cooking operator	Every batch	Extend cooking time or temperature Or Hold product and carry out an evaluation based on time and temperature records Or Reject batch	Cooking Record Sheet Prawn cooking procedure	Review cooking records Internal audit Lab analysis of product

* Cooking times and temperatures are for demonstration purpose only. The business must validate its critical limits.



7 DOCUMENTATION

7.1 General

Efficient and accurate record keeping is essential to the application of HACCP. Regulation (EC) No. 852/2004 requires the food business operator to provide the competent authority with evidence of their compliance with HACCP.

These records include the documentation relating to the initial HACCP study, documented procedures and record sheets. The level of documentation and records should reflect the nature and size of the food business. As a general rule, documents and records should be designed to support the food safety management system without generating excessive paper work.

The level of documentation and record keeping required will vary from business to business. For example, in some cases where a premises and equipment is maintained hygienically clean at all times and the cleaning schedule is adhered to, it may not be necessary to complete a daily cleaning record.

Where all food safety hazards are controlled by the prerequisite and cold chain management programme, it may be sufficient to only record measurements of non-compliances. For example where monitoring involves checking the gauge of a refrigerator, the food business could decide to only record the temperature whenever it exceeds the critical limit i.e. "record by exception". If this option is used than there would be no requirement to fill in daily temperature records, but instead details of the non-compliance and the corrective action taken would be recorded. A diary or corrective action record sheet could be used.

The requirements regarding record keeping should be discussed and agreed with the local Environmental Health Officer.

7.2 Retention of Documents and Records

HACCP

Records and documents relating to HACCP should be retained on file for the following period of time as outlined in S.I. 369/2006:

Food for immediate consumption	3 months from date of sale
Foods with a use-by date	3 months after expiry of this date
Foods with a best-before date or best-before end date	12 months after the expiry of this date

Traceability

All relevant traceability records should be retained on file for the following period of time as outlined in S.I. 747/2007:

Food products for immediate consumption with no use-by date or with a use-by date of less than 3 months	6 months
Foods with a shelf-life of more than 5 years	6 months beyond the shelf-life
All other cases	5 years

7.3 Documentation and Records Relating to HACCP

Documents relating to the initial HACCP study should be retained. These include:

- Product Data Sheet(s)
- Flow Diagram(s)
- Hazard Analysis and Determination of CCP(s)
- Risk Assessment Reasons for Decisions
- CCP Decision tree used (if any)
- Documentation relating to how critical limits were established
- HACCP Plan
- Detailed standard operating procedures (SOPs).

Records relating to monitoring activities should also be retained for example:

- Cooking records
- Temperature records
- Corrective action records.

Documentation and records relating to verification activities should also be retained for example:

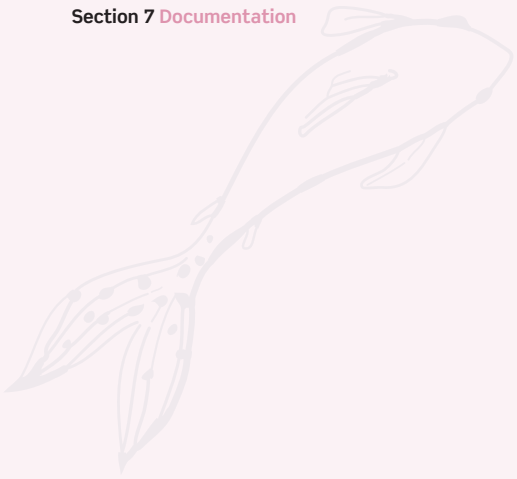
- Results of laboratory analysis
- Audit Reports.

7.4 Documentation and Records Relating to Customer complaints, the Prerequisite Programme, Traceability and Cold Chain Management

Section		*Documentation retained on file	*Record sheets to be completed
2.2	Customer Complaints Policy	Details of any customer complaints and action taken	
3.1	Traceability and product recall/withdrawal	Traceability documentation from supplier Copy of traceability information given to customers (when the customer is another business) and customer contact details	
4.5	Fish for sushi or sashimi	Documentation from supplier confirming that the necessary freezing treatment has taken place or documentation which demonstrates that the fish is exempt from the freezing requirement (unless freezing is carried out in-house and records available)	Records of freezing treatment (if carried out in-house)
4.6	Temperature monitoring	Calibration certificates	
5.1	Training	Copies of training certificates	Training record
5.2	Personal hygiene and health	Signed copies of staff hygiene rules	
5.3	Premises	Site plan with drainage system Details of any glass breakage	
5.4	Water and ice	Information from local authority regarding water quality Results of any water testing carried out	
5.5	Ventilation and lighting		

Section		*Documentation retained on file	*Record sheets to be completed
5.6	Staff facilities		
5.7	Equipment and utensils	Equipment list	Equipment maintenance/ calibration record
5.8	Cleaning	Cleaning schedule Information from supplier of cleaning chemicals: - instructions for use - material safety data sheets - confirmation that chemicals used are food grade	Cleaning record
5.9	Waste disposal	Contract with waste disposal company Details of approval of haulier/transporter to carry animal by-products waste	
5.10	Pest control	Contract with pest control company Pest inspection reports Details of any pest infestation Map showing location of baiting points	
5.11	High-risk and low-risk activities		
5.12	Prevention of cross-contamination		
5.13	Allergen management		
5.14	Supplier control, goods-in and food returns	Approved supplier list Delivery documents and invoices Details of any returns, recall/withdrawal that occur	Goods inwards record
5.15	Transport		Temperature record
5.16	Storage		Temperature record
5.17	Fish preparation		
5.18	Processing	Procedures for preparation of value-added products/de-frosting products (if relevant)	Processing record/ de-frosting record (if relevant)
5.19	Display	Results of any microbiological analysis	Temperature record
5.20	Packaging		
5.21	Sale to consumers		
Where any issues or non-conformances arise requiring corrective action			Corrective action record

***The level of documentation and record keeping required will vary from business to business. It is recommended that this is discussed and agreed with the local Environmental Health Officer.**



CLEANING RECORD

Week Commencing: .....

Area/ Item	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Checked by							

TEMPERATURE RECORD

Week Commencing .....

Unit	Product Checked	Correct Temperature	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Chilled Storage																
Fish on Wet Fish Display																
Chill Display																
Freezer																
Filleting Room																
Signed																
Corrective Action																

GOODS INWARDS RECORD

Day: ..... Date: .....

Time	Supplier	Product Description	Production Method and Origin	Quantity	Batch / Invoice No.	Use-by Date	Quality Check	Temp. Check	Transport Vehicle Check	Comments	Signed

EQUIPMENT MAINTENANCE/CALIBRATION RECORD

Equipment Name: .....

Model Number/Reference: ..... **Date in Service:** .....

Date	Maintenance/Calibration Details	Signed

TRAINING RECORD

Name: ..... Position held: .....

Duties: .....

.....

Date commenced work in the fish shop: ..... Qualifications: .....

Previous relevant experience: .....

Date	Courses, Workshops and/or details of in-house training	Trainer	Comments	Signed	
				Manager	Staff member

CORRECTIVE ACTION RECORD

Date	Issue	Action Taken	Signed

PRODUCT DATA SHEET

Product/Process: ..... Author: ..... Date: .....

1. Product name	
2. Ingredients and origin of ingredients	
3. Treatment and/or processing that the product has under gone prior to reaching the premises	
4. Treatment and/or processing that the product has under gone on the premises	
5. Storage conditions	
6. Allergen information	
7. Packaging	
8. Shelf-life	
9. Instructions for use by consumer	
10. Intended use of the product	
11. End user (consumer group -general population / vulnerable groups e.g. elderly/babies)	
12. Potential for customer misuse	

HAZARD ANALYSIS AND DETERMINATION OF CCPs

Process: ..... Step: ..... Author: ..... Date: .....

Hazard (What can go wrong)	**Cause** (Why did it go wrong?)	**Control Measure** (What can I do about it?)	***Risk Assessment**			**CCP Determination**			**Comment**
			Prob.	Severity	Significant Rating	Decision tree (2 step)		CCP Yes/No	
						Q1	Q2		
Biological Hazards:									
Chemical Hazards:									
Physical Hazards:									
Allergens:									

KEY: Risk Assessment (see 3 x 3 matrix in section 6.3, ≥3 = Significant). Prob. = Probability, Neg. = Negligible, Med. = Medium, Mod.= Moderate, N/A = Not applicable.

* Risk Assessment: Reasons for decisions are explained on page 2 of 2

HAZARD ANALYSIS AND DETERMINATION OF CCPs

Process: ..... Step: ..... Author: ..... Date: .....

Hazard	Probability	Severity	Risk Assessment: Reason for Decision

HACCP PLAN

Process: ..... **Author:** ..... **Date:** .....

Critical Step (CCP)	**Potential Hazard** (What can go wrong?)	**Cause** (Why did it go wrong?)	**Control Measure** (What can I do about it?)	**Critical Limits** (What must I achieve?)	**MONITORING**			**Corrective Action** (if critical limit not reached)	**Document Ref.**	**Verification**
					Procedure	**Responsibility**	**Frequency**			